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SPATIAL DIVERSITY OF ENTREPRENEURSHIP IN COMMUNES OF THE ŚWIĘTOKRZYSKIE VOIVODSHIP IN 2009-2017

Paweł Dziekański¹, Adrian Lipa², Anna Novoseletska³

Abstract. The region includes a part of the economic space separated from the environment that is developed by a given community and interrelated economic entities. Owned territorial capital means that regions differ in the scale of entrepreneurship. The purpose of the article is to analyze and evaluate the spatial diversity of entrepreneurship in municipalities using a synthetic measure. The analysis was made in the system of 102 rural communes of the Świętokrzyskie Voivodship. The source material was data from the Local Database of the Central Statistical Office for 2009-2017. In analyzing the diversity of entrepreneurship in communes of the Świętokrzyskie Voivodship, synthetic measure based on the TOPSIS method was used. In 2017, TOPSIS's synthetic measure of entrepreneurship ranged from 0.39 (Waśniów (2)) to 0.81 (Kielce (1)). The best group includes units with an industrial function and a developing labor market, a developed tourist or spa function. The group of Kielce (1), Sandomierz (1), Skarżysko-Kamienna (1) and Ostrowiec Świętokrzyski (1), as the leading units in the analyzed period, is also indicated by gravity analysis (indicating the concentration of the phenomenon in the central region of the region). As a result of the analysis, it has been established that the condition for creating growth is the creation of permanent spatial systems resulting from the activities of enterprises. In the short term, enterprises generate local economic growth.

Key words: synthetic measure, entrepreneurship, municipalities, Świętokrzyskie Voivodship.

JEL Classification: C38, H76, L26, M19, O12

1. Introduction

The region is a social and economic system comprising a separate part of the economic space developed by a given community and functioning of the various interrelated economic entities (Huczek, 2016). The development possibilities of the regions are determined by their endogenous (territorial) capital and exogenous environment. A. Klasik and F. Kuźnik define regional development as a long-term increase in the economic potential of regions, their competitive strength and the quality of life of residents. The essence of regional development is to ensure cohesion in its three dimensions: economic, social and territorial (Klasik, Kuźnik, 2001).

The structural features of regions and their territorial capital strengthen regional diversity and the scale of entrepreneurial activity. Factors creating or blocking entrepreneurship in the region include: demographic region, regional labor market, quality of human capital,

entrepreneurship of the region, housing resources, infrastructure equipment. Entrepreneurship is an interdisciplinary, multifaceted and complex concept. It is important for social and economic development. Entrepreneurship is considered in terms of process, set of features, innovation and as a factor influences regional development (Miłek, Kantarek, 2017).

Entrepreneurship, as E. Skawińska indicates, plays an important role in the efficient allocation of existing resources of the region. It concerns the actions of people in the process of seeking innovation and detecting new relationships in the economic and social system (Skawińska, 2009). A. Klasik indicates that entrepreneurship is the basis of the attractiveness of the regional economies and their communities. It is a socially conditioned process of creating opportunities for creating wealth, using financial and material resources as well as human capital in an innovative way (Klasik, 2006).

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2. Material and research method

The purpose of the article is to analyze and evaluate the spatial diversity of entrepreneurship in municipalities using a synthetic measure. The analysis was made in the system of 102 rural communes of the Świętokrzyskie Voivodship. The material used was the data from the Local Data Bank of the Central Statistical Office for 2009–2017.

In analyzing the diversity of entrepreneurship in communes of the Świętokrzyskie Voivodship, a synthetic measure based on the TOPSIS method was used. The following stages were used in the conducted research:

I. The stimulant and destimulant sets were determined and presented in the form of an observation matrix x_{ij} :

$$x_{ij} = \begin{bmatrix} x_{i1} & x_{i2} & \dots & x_{im} \\ x_{21} & x_{22} & \dots & x_{2m} \\ \dots & \dots & \dots & \dots \\ x_{n1} & x_{n2} & \dots & x_{nm} \end{bmatrix} \quad (1),$$

where x_{ij} – denotes the values of the j -th feature for the i -th object ($i = 1, 2, \dots, n; j = 1, 2, \dots, m$).

From the set of variables, those with low spatial variability (coefficient of variation less than 0.10) and high correlation of variables (according to the inverse correlation matrix) were removed (Malina, 2004). The set of variables selected for analysis is presented in Table 1.

Table 1
List of variables describing entrepreneurship potential in communes

Variables	S/D
Entities entered into REGON register	S
Newly registered units in the REGON register	S
Units removed from the REGON register	D
Self-employed persons	S
Net migration rate	S
Registered unemployed persons	D
Employed in communes	S

as – stimulant; d – destimulant

Source: study based on data available at the Central Statistical Office of Poland (CSO)

II. Selected destimulants were replaced with a stimulant according to the formula;

$$x_{ij} = \frac{1}{x_{ij}} \quad (2).$$

III. Stimulants were subjected to the unitarization procedure zeroed according to the formula:

$$\text{for stimulants } z_{ij} = \frac{x_{ij} - \min_i x_{ij}}{\max_i x_{ij} - \min_i x_{ij}} \text{ when } x_{ij} \in S \quad (3)$$

where: S – stimulant, D – destimulant; $i = 1, 2, \dots, n; j = 1, 2, \dots, n$, x_{ij} – means the value of the j -th feature for the examined unit, max – the maximum value of the j -th feature, min – the minimum value of the j -th feature (Wysocki, Lira, 2005; Kukuła, 2000; Młodak, 2006). As a result of the unitarisation process, the matrix of property values was obtained z_{ij} :

$$z_{ij} = \begin{bmatrix} z_{11} & z_{12} & \dots & z_{1m} \\ z_{21} & z_{22} & \dots & z_{2m} \\ \dots & \dots & \dots & \dots \\ z_{n1} & z_{n2} & \dots & z_{nm} \end{bmatrix} \quad (4),$$

where z_{ij} is the unified value of x_{ij} .

IV. The measure of entrepreneurship was determined based on the TOPSIS method. As part of the method, Euclidean distances of communes from the pattern (= 1) and antipattern (= 0) were determined, according to the following formulas:

$$d_i^+ = \sqrt{\frac{1}{n} \sum_{j=1}^m (z_{ij} - z_j^+)^2} \quad (5)$$

$$d_i^- = \sqrt{\frac{1}{n} \sum_{j=1}^m (z_{ij} - z_j^-)^2} \quad (6)$$

where n – stands for the number of variables making up the synthetic measure, z_{ij} – stands for the unified value of the j -th feature for the tested unit, z_j^+, z_j^- – stands for the pattern or antipattern object (Wójcik-Leń, Leń, Mika, Kryszk, Kotlarz, 2019; Behzadian, Khanmohammadi Otaghsara, Yazdani, Ignatius, 2012; Zalewski, 2012).

The synthetic measure (TOPSIS) was determined for municipalities based on the formula:

$$q_i = \frac{d_i^-}{d_i^- + d_i^+}, \text{ where } 0 \leq q_i \leq 1, i = 1, 2, \dots, n; \quad (7)$$

with: $q_i \in [0; 1]$; d_i^- means the distance of the object from the antipattern (from 0), d_i^+ means the distance of the object from the pattern (from 1). A higher value of measure indicates a better situation of the individual in the studied area¹.

V. Finally, the study area was divided into 4 quartile groups. The first, second and third quartiles were used as threshold values. The size of the synthetic measure in the first group means a better unit, the weakest in the last one. The mutual compliance of the results obtained was also verified based on the correlation coefficient. A scatter chart with an adjustment line for synthetic measures is also presented (Zeliaś, Malina, 1997).

3. Entrepreneurship and regional development

Municipalities do not develop evenly. This is due to uneven access to factors of production. The endogenous

¹ C.L. Hwang, K. Yoon, 1981, *Multiple attribute decision making. Methods and applications*, Springer, Berlin, For: A. Bieniasz, Z. Gołaś, A. Łuczak, 2013, *Zróżnicowanie kondycji finansowej gospodarstw rolnych wyspecjalizowanych w chowie owiec i kóz w krajach Unii Europejskiej*, *Roczniki Ekonomii Rolnictwa i Rozwoju Obszarów Wiejskich*, T. 100, z. 1; M.B. Pietrzak, 2016, *The problem of the inclusion of spatial dependence within the TOPSIS Method*, *Montenegrin Journal of Economics*, vol. 12(3), p. 69–86.

potential of the individual, the potential inherent in people and local entrepreneurship is also important. It should be remembered that development is not only the effect of the activities of the administration but also of the simultaneous operation of enterprises. According to J. Paryska, local development is a long-term process of social and economic development, using local development factors (Parysek, 2001). R. Brol defines local development as the activity of the local community, local authority and business entities operating in the commune. Their activities are aimed at creating new and improving the existing utility and competitive values of the commune and creating favorable conditions for the local economy (Brol, 1998).

The development of communes can be considered on its three main planes: social, ecological and economic. A characteristic feature of development is the relatively low mobility of major development factors. These include, among others: the state of infrastructure, qualifications of the workforce, social structure, branch structure of the local economy. There are dependencies between external and internal factors of development. These relationships are an important driving force for development. Internal and external factors (entrepreneurship, economic, social, spatial, political and ecological, unique to the local system) can interact with different strength and character (Korenik, 1999).

R. Brol indicates that entrepreneurship should be treated as an endogenous factor in the development of the regional economy (Brol, 2006). In addition to the economic function, it carries out a social, economic and ecological function. T. Markowski indicates that entrepreneurship is an attribute of social capital (Markowski, 2008). W. Kosiedowski emphasizes the economic dimension of entrepreneurship in shaping regional development (Kosiedowski, 2008). In order for entrepreneurship to have a real impact on the development of the region, favorable economic, mental, legal and institutional conditions must exist (Kola-Bezka, 2010) in it.

Factors affecting the level of entrepreneurship include: demographics of the region, labor market, economic structures of the region, human capital, housing resources, infrastructure equipment. The development of entrepreneurship should be considered in the broader context of the elements constituting local development. These elements are: environment, culture, community, economy and power.

Entrepreneurship plays an important role in the process of economic development of the region. It provides an opportunity to increase development potential. It enables the effective use of endogenous resources of the region and obtaining exogenous ones. Creating the right conditions for the development of

local entrepreneurship is one of the main tasks of local government. In this respect, municipalities have, among others, short- and long-term financial instruments and technical infrastructure, with the help of which they can influence local economic life.

There are many entrepreneurship development barriers and their rank is different. Some of them have the nature of macroeconomic restrictions related to solutions resulting from the socio-economic policy of the state, the economic system and formal and legal solutions (Zarębski, 2002). Others regarding the amount of taxes, as well as fees provided for by law, lack of suitably qualified employees, waiting time for payment from a contractor, barriers to innovation and access to information.

4. Diversification of entrepreneurship in rural communes of the Świętokrzyskie Voivodship

The Świętokrzyskie Voivodship is located in the south-eastern part of Poland. The area of the Świętokrzyskie Voivodship is 11691.05 km², 66% of the area of the Voivodship is the protected area. Świętokrzyskie has an industrial and agricultural character². The main industries of the Świętokrzyskie Voivodship are: metallurgical (Ostrowiec Świętokrzyski), metal (Skarżysko-Kamienna), machine (Starachowice), construction materials (Kielce), ceramic, foundry (Końskie), food (Pińczów, Kielce). The economy of the Świętokrzyskie region is based on the mining industry in the field of construction materials (limestone, dolomites, marls, gypsum, sandstone), due to which the voivodship has gained the name of the capital of the Polish construction. The agricultural south is the base for the production of organic food (Józwiak, Józwiak, Strzyż, 2010).

In 2017, the synthetic measure of TOPSIS entrepreneurship ranged from 0.39 (Waśniów (2); Ostrowiecki County) to 0.81 (Kielce (1), regional capital). The best group A includes units with an industrial function (Kielce (1), Sandomierz (1), Skarżysko-Kamienna (1), Ostrowiec Świętokrzyski – cities of the region) and a developing (developed) labor market, developed tourist or spa function (e.g. Busko-Zdrój (3)). In the weakest group D and units with an agricultural function (e.g. Działoszyce (3), Klimontów (2), Koprzywnica (3), Michałów (2), Ruda Maleniecka (2), Waśniów (2), Iwaniska (2), Nowy Korczyn (2))³, the process of human capital leaching and the weak market work (see Figure 1).

The dispersion analysis (Figure 2) of the measure of synthetic entrepreneurship in communes of the Świętokrzyskie Voivodship in 2009 and 2017 indicates a slight increase in diversity. Outliers were Kielce

² Charakterystyka dotyczy przewagi danego rodzaju działalności w regionie: przemysłowa północ i rolnicze południe.

³ (1) gminy miejskie, (2) gminy wiejskie, (3) gminy miejsko-wiejskie

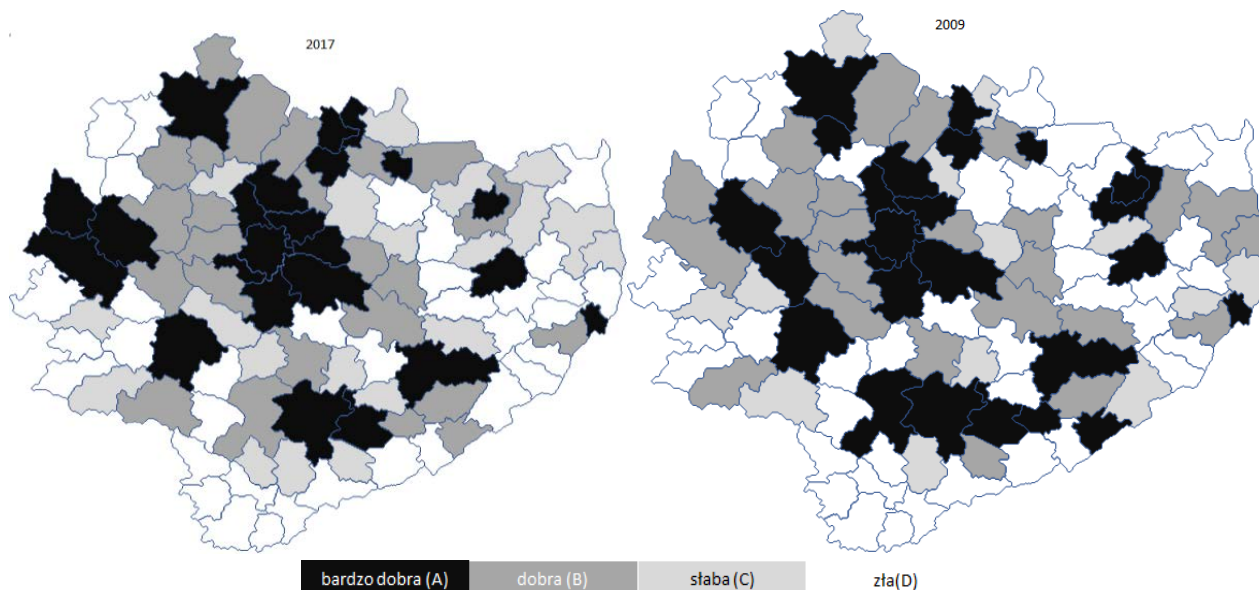


Figure 1. Spatial differentiation of the synthetic measure TOPSIS entrepreneurship of communes of the Świętokrzyskie Voivodship in 2009 and 2017

Source: the author's own development based on BDL GUS

(1), Sandomierz (1), Skarżysko-Kamienna (1), Masłów (2), Busko-Zdrój (3), Ostrowiec Świętokrzyski (1), Miedziana Góra (2), Końskie (3). These are units located in the central part of the region with a developed industrial function and a developing labor market.

Measures of spatial differentiation indicate the relative stability of communes in the aspect of entrepreneurship measure (Table 2). In 2017, compared to 2009, the results show stability according to the standard

deviation (0.06-0.06), the classic coefficient of variation (0.13-0.13), the quarterly range (0.05-0.05). The range of 0.33-0.41 indicates an increase in diversity (small changes in the area under study).

Pearson's correlation coefficient between the value of the synthetic entrepreneurship measure in 2017 in relation to 0.953 in 2009 (Figure 3). It can be assumed that the spatial diversity of the studied area was quite stable, and the units reacted similarly to changes in the economy. Outstanding units are: Kielce (1), Sandomierz

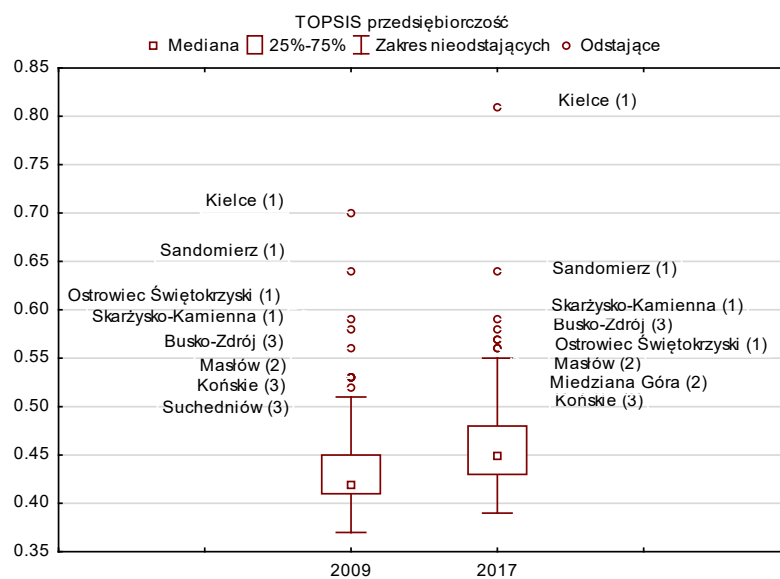


Figure 2. Dissipation of the synthetic measure of entrepreneurship TOPSIS of communes of the Świętokrzyskie voivodship in 2009 and 2017

Source: the author's own development based on BDL GUS

Table 2

Dissipation of the synthetic measure of entrepreneurship TOPSIS of communes of the Świętokrzyskie voivodship in 2009 and 2017

	2009	2017
average	0.44	0.47
median	0.42	0.45
standard deviation	0.06	0.06
quarter (quartile) deviation	0.43	0.45
classic coefficient of variation	0.13	0.13
positional coefficient of variation	1.01	1.01
min.	0.37	0.39
max	0,70	0.81
range	0.33	0.41
quartile 1	0.41	0.43
quartile 2	0.42	0.45
quartile 3	0.45	0.48
quartile range	0.05	0.05
skewness	2.04	2.51
measure concentration - kurtosis	5.23	10.36

Source: the author's own development based on BDL GUS

(1), Ostrowiec Świętokrzyski (1). These are cities that have a developed industrial function.

The gravitational effect, indicating the effect of concentration of the phenomenon, connecting two communes is directly proportional to the product of the competitive potential of these communes and inversely proportional to the square of the geographical distance separating these units. Municipalities with high development potential located close to each other have a stronger impact than those located far apart (Filipowicz, Tokarski, 2015).

The first group (Figure 4) for the TOPSIS measure consists of central municipalities (26; units with an industrial, tourist, spa, developing labor market; among others, Kielce (1), Masłów (2), Daleszyce (3), Morawica (2), Miedziana Góra (2), Sitkówka-Nowiny (2), Zagnańsk (2), Bieliny (2), Busko-Zdrój (3), Suchedniów (3), Skarżysko-Kamienna (1), Starachowice (1), Chęciny (3), Bodzentyn (3), Staszów (3)). The second and third groups are 25 and 27 units. The weakest group is 24 units with a peripheral character (units with an agricultural function, a process

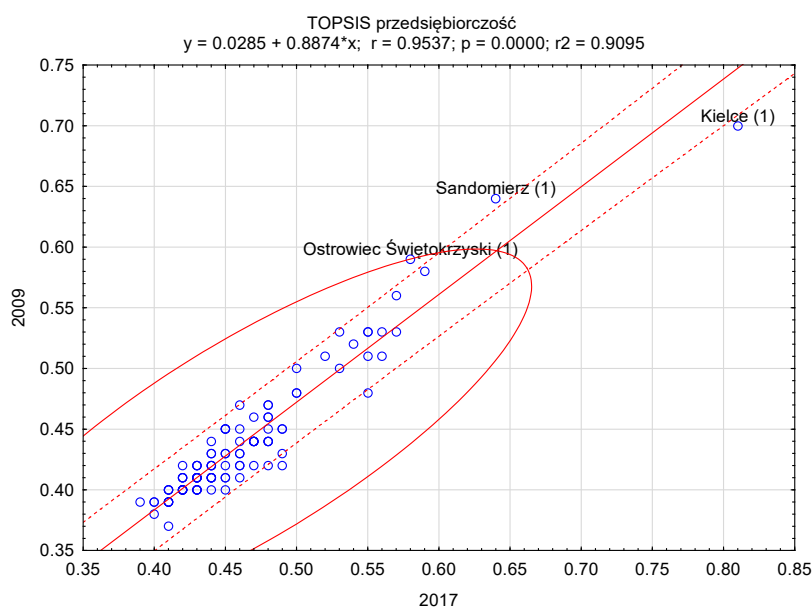


Figure 3. Year-to-year ratio of synthetic measures – entrepreneurship TOPSIS of communes of the Świętokrzyskie Voivodship in 2009 and 2017

Source: the authors' own development based on BDL GUS

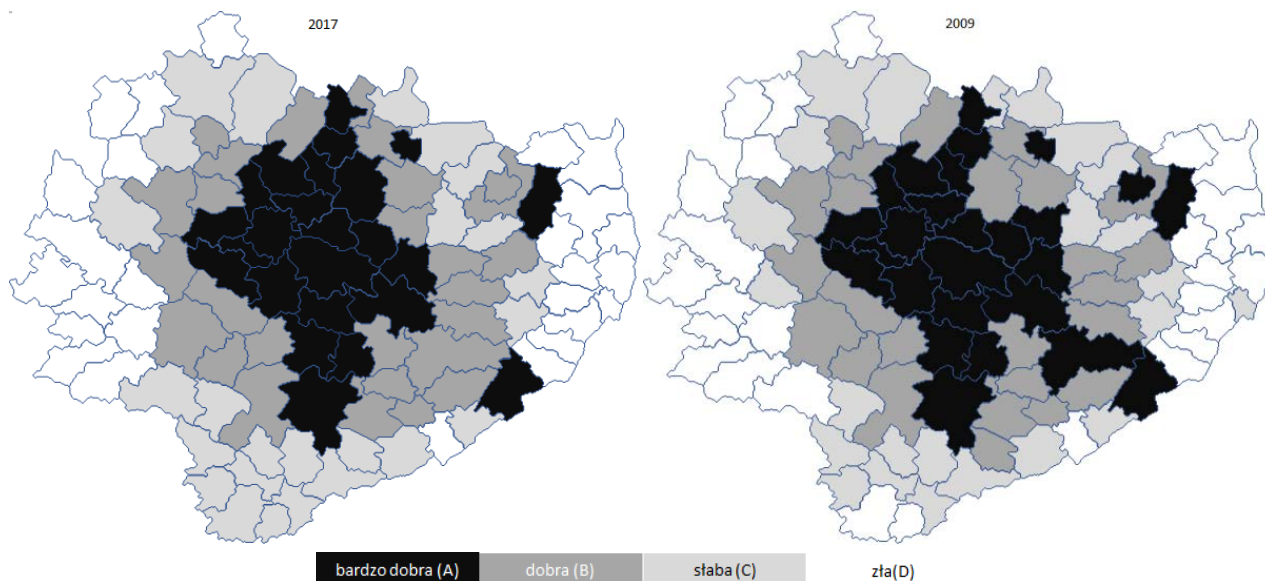


Figure 4. Result of the gravity analysis (concentration) for the synthetic measure TOPSIS entrepreneurship of communes of the Świętokrzyskie Voivodship in 2009 and 2017

Source: the author's own development based on BDL GUS

of human capital leaching and a weak labor market; among others, Łoniów (2), Samborzec (2), Ożarów (3), Wojciechowice (2), Koprzywnica (3), Włoszczowa (3), Bałtów (2), Dwikozy (2), Tarłów (2), Zawichost (3)).

The level of entrepreneurship in communes of the Świętokrzyskie Voivodship was influenced by: the number of the unemployed and employed, entities conducting economic activity, micro-entities (employing from 0 to 9), macro-entities (10-49) and medium (50-249), newly registered and entities removed from the register economic entities and natural persons conducting economic activity.

To assess the impact of selected elements of endogenous potentials of communes on the spatial diversity of the measure of synthetic entrepreneurship, a regression model describing the dependence of variables has been estimated taking the form:

$$\begin{aligned}
 F(\text{TOPSIS entrepreneurship}) &= \\
 &= \Sigma(\text{TOPSIS development, Registered unemployed persons, Employed in communes, Own income, Investment expenditures, Population in the working-age, Migration balance}).
 \end{aligned}$$

The regression analysis of the entrepreneurship measure versus selected endogenous potentials of communes in the Świętokrzyskie Voivodship explains $R = 0.781$ variable variations (at $R^2 = 0.780$; the interpretation value of this model turns out to be satisfactory⁴). The statistics values $F(7, 910) 466.31$ and the corresponding probability level p mean that all parameters are statistically significant. Further

increasing the multidimensionality of the model would cause a slight increase in R^2 . The model could include statistically insignificant variables.

5. Conclusion

The condition of the enterprises determines the economic situation of the region. The situation of enterprises operating in a given region should be of interest to both residents and entities making legal, economic and social decisions regarding the region. An attempt to apply a synthetic enterprise measure seems justified.

Economic potential is one of the most important factors for the development of municipalities. The high level of economic development creates positive conditions enabling the increase in the standard of living of the inhabitants or the development of enterprises.

An analysis of the dispersion of the measure of synthetic entrepreneurship in communes of the Świętokrzyskie Voivodship indicates a slight increase in diversity. The level of entrepreneurship in communes of the Świętokrzyskie Voivodship was influenced by: the number of the unemployed and employed, entities conducting economic activity, micro entities (employing from 0 to 9), macro entities (10-49) and medium (50-249), newly registered and entities removed from the register economic entities and natural persons conducting economic activity.

In 2017, the synthetic measure of TOPSIS entrepreneurship ranged from 0.39 (Waśniów (2); Ostrowiecki County) to 0.81 (Kielce (1), regional capital). The best group A includes units with an

⁴ Skorygowany współczynnik determinacji nie osiągnął 60%. Za optymalną wartość uważa się przekroczenie progu determinacji na poziomie 95%.

Table 3

Estimation of synthetic entrepreneurship and selected endogenous potentials of communes in the Świętokrzyskie province

	Rate	Standard error	t-Student's	p-value
const	0.152815	0.0328855	4.647	< 0.0001
TOPSIS development	1.02534	0.0354469	28.93	<0.0001
Registered unemployed	3.86181e-06	2.10744e-06	1.832	0.0672
Working in communes	2.08307e-06	3.25707e-07	6.396	< 0.0001
Own income	-4.50888e-06	2.32033e-06	-1.943	0.0523
Investment expenses	-1.55529e-05	1.85079e-06	-8.403	< 0.0001
Working age population	-0.00235618	0.000613920	-3.838	0.0001
Net migration rate	0.00100655	0.000273999	3,674	0.0003

Arithmetic mean of the dependent variable	0.451427	Standard deviation of the dependent variable	0.055337
Sum of residual squares	0.612168	Residual Standard Error	0.025937
Determining coefficient R- square	0.781994	Corrected R-square	0.780317
F (7, 910)	466.3134	P-value for the F-test	7.3e-296
Logarithm of credibility	2054.057	Akaike's information criterion	-4.092.113
Bayesian, Schwarz information criterion	-4053.536	Hannan-Quinn criterion	-4077.390

observations used 1-918; dependent variable TOPSIS entrepreneurship

Source: the authors' own development based on BDL GUS

industrial function and a developed labor market, a developed tourist or spa function. The group of Kielce (1), Sandomierz (1), Skarżysko-Kamienna (1), Ostrowiec Świętokrzyski (1), as the leading units in the analyzed period is indicated by gravity analysis (indicating the concentration of the phenomenon in the central region of the region).

The results of the study give local governments the opportunity to compare their own situation with the situation of neighboring municipalities or municipalities with similar economic and social conditions. The conclusions drawn on this basis may allow local authorities to set out potential directions for optimizing their economic policy.

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INCOME STRUCTURE OF COMMUNES OF THE ŚWIĘTOKRZYSKIE VOIVODSHIP IN 2009-2018

Pietrowski Wojciech¹

Abstract. The issue of this paper concerns the income of municipalities and their structures. The research topic is not a new issue, it has been raised in the literature. However, it is justified to take up this subject due to the dynamics of this phenomenon and outdated research results. Undertaking the subject matter is also justified by the variable economic situation affecting the achieved revenues of municipalities. The article aims to analyze the income structure of communes in the Świętokrzyskie Province. The author will also refer to changes in the structure of income, the dominant categories of income over the decade under review. When reading the literature, no similar research was found covering the Świętokrzyskie region. The analysis was based on data from the Local Data Bank regarding municipalities in the Świętokrzyskie Province. The formatted databases included municipal incomes divided by a source. During the study, all municipalities from the Świętokrzyskie Province were taken into account, along with Kielce – a city with powiat status. In total 102 units were included in the study. The research period covered the years 2009-2018 and resulted from the availability of statistical data and a correspondingly long period of analysis. While discussing the phenomenon, data on individual years were used, and the average share of a given category in the period under consideration was determined. Due to the attention paid to the structure of income at work, the data was presented as a percentage. The obtained data, expressed in terms of value, was developed by transforming it into a percentage share. The average values for the research period were determined by taking the average value from the sum of values of individual years. The author does not refer to data other than the accepted one, instead he focuses on analyzing changes in the structure. Differentiation of particular categories of income is visible. Comparing the data at the country and region level, the deviations are not large. However, by looking at the data of individual units, one can see their diversity under this account. Despite the presentation in the main three areas (own revenues, subsidies and general subsidy) of their detailed elements, large differences in the share between individual taxes and subsidies can be seen. The average income structure in communes in the Świętokrzyskie voivodship does not differ significantly from the national trend. In communes with the highest share of own revenues, their amount is determined by property tax. The structure presented in this way, its diversity in the Świętokrzyskie region is a premise for comparing the analyzed data on individual municipalities with indicators from other areas.

Key words: commune income, commune own income, general subsidy, grants, tax revenues, shares in taxes.

JEL Classification: H20

1. Introduction

The tasks of the local government unit (LGU) can only be carried out if they are properly financed. Without properly secured means, it is not possible for local government units to function properly. The area providing such security is the entity's income. It provides the basis for the implementation of tasks assigned to local government units.

The issue of this paper concerns the income of municipalities and their structures. The research topic is not a new issue, it has been raised in the literature. However, it is justified to take up this subject due to the

dynamics of this phenomenon and outdated research results. Undertaking the subject matter is also justified by the variable economic situation affecting the achieved revenues of municipalities.

The article aims to analyze the income structure of communes in the Świętokrzyskie Voivodship. The author will also refer to changes in the structure of income, the dominant categories of income over the decade under review. When reading the literature, no similar research has been found covering the Świętokrzyskie region.

The analysis was based on data from the Local Data Bank regarding municipalities in the Świętokrzyskie

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Voivodship. The formatted databases included municipal incomes divided by a source. During the study, all municipalities from the Świętokrzyskie Province were taken into account, along with Kielce – a city with poviats status. In total, 102 units were included in the study.

The research period covered the years 2009-2018 and resulted from the availability of statistical data and a correspondingly long period of analysis. While discussing the phenomenon, data on individual years were used, and the average share of a given category in the period under consideration was determined. Due to the attention paid to the structure of income at work, the data was presented as a percentage. The obtained data, expressed in terms of value, was developed by transforming it into a percentage share. The average values for the research period were determined by taking the average value from the sum of values of individual years. The author does not refer to data other than the accepted one, instead he focuses on analyzing changes in the structure.

2. Income characteristics

Local self-government's revenues are part of its budget adopted for the calendar year. The amount of planned budget revenues for a given year is specified in the budget resolution¹.

Local self-government's budget revenues are a source of information on the shape of its wealth and affect the directions of spending funds. They can be classified in different ways. We can talk about the division into compulsory and optional incomes. Obligatory revenues include: own revenues, general subsidy and earmarked subsidies from the state budget. Optional revenues include: funds from foreign sources, non-returnable funds, funds from the EU budget and other funds specified in provisions separate from the Act on the income of local government units. Another division of local self-government's income is into current and property income. Property income includes subsidies and funds allocated for investments, income from the sale of assets, income from the transformation of perpetual usufruct right into ownership. Other income is recognized as current income. Another classification divides the revenues of local government units from the perspective of their sources of origin, separating own and supplementary income.

Supplementary income includes general subsidies and grants². The Act divides the income of local government units into³:

- own revenues;
- general subsidy;
- earmarked subsidies from the state budget.

It also indicates other possible sources of income⁴. In the paper for the purposes of the analysis, the above-mentioned division of income of local government units indicated in the Act was adopted.

As part of our own revenues we distinguish, among others⁵:

- revenues from taxes (on real estate, agricultural, forestry, on means of transport, income from individuals, paid in the form of a tax card, on inheritances and donations, on civil law transactions);
- income obtained by municipal budgetary units and payments from municipal budgetary establishments;
- income from the commune's assets;
- inheritances, bequests and donations to the commune.

Special-purpose subsidies from the state budget may be granted for⁶:

- government administration tasks and other tasks commissioned by statutes;
- tasks implemented under agreements;
- financing or co-financing of own tasks;
- implementation of tasks resulting from international agreements;
- removing immediate threats to public security and order.

Budget revenues are an important element of the local government finance system, as they affect the ability of local government units to perform public tasks⁷.

The general subsidy for municipalities consists of the equalization part, the balancing part and the educational part. It is an important component of public finances in terms of the analysis of state budget expenditure and the income of local government units. The system of subsidizing the local government sector involves a significant amount of public funds⁸. The general subsidy's performance of its income and compensatory function is determined by objective and stable criteria for its granting. It is also important to emphasize the continuing increase in the importance of the educational subsidy due to all municipalities in relation to the compensatory and balancing part⁹.

¹ Ustawa z dnia 27 sierpnia 2009 roku o finansach publicznych (Dz.U. 2009 Nr 157 poz. 1240 z późn. zm.), art. 211 i 212.

² M. Dworakowska, *Dochody budżetowe jednostek samorządu terytorialnego z perspektywy absorpcji funduszy unijnych*, Optimum. Economic Studies Nr 3(93), Białystok 2018, s. 54–56.

³ Ustawa z dnia 13 listopada 2003 r. o dochodach jednostek samorządu terytorialnego (Dz.U. 2020 poz. 23, 374) Art. 3, pkt. 1.

⁴ op. cit., Art. 3, pkt. 3.

⁵ op. cit., Art. 4, pkt. 1.

op. cit., Art. 8, pkt. 1.

⁶ M. Dworakowska, *Dochody budżetowe jednostek...*, op. cit., p. 61.

⁷ A. Sekuła, *System subwencjonowania jednostek samorządu terytorialnego w Polsce: dysfunkcje i pożądane kierunki racjonalizacji*, Politechnika Gdańska, Gdańsk 2016, p. 244.

⁸ J. Szolono-Koguc, *Subwencja ogólna jako instrument wsparcia transferowego samorządu gminnego*, Prace Naukowe Uniwersytetu.

⁹ Ekonomicznego we Wrocławiu, nr 485 *Relacje fiskalne państwo – samorząd terytorialny*, Wrocław 2017, p. 470.

Subsidies are a source of funding for tasks that must be carried out by a local government unit. Due to their desirability, they limit the free spending of funds, at the same time ordering them to account for their use¹⁰.

Budget revenues are an important element of the local government finance system, as they affect the ability of local government units to perform public tasks¹¹. Local government has the ability to implement its tasks when it has stable and efficient sources of its own revenues. The share of own income has a positive effect on the independence of decision making. These revenues are characterized by the highest stability, predictability and the possibility of direct impact on their amount. The share of own revenues in total revenues is one of the determinants of financial independence of the

commune. The structure of municipalities' revenues in the voivodship and the country is presented in Charts 1 and 2, taking into account the city with poviats rights.

The above chart presents the income structure of communes of the Świętokrzyskie voivodship in selected years of the examined period. The structure of income in the period under review slightly changed, which is visible mainly in 2018 where the increase in the level of subsidies by 10% was accompanied by a decrease in the level of own revenues and general subsidy.

Own revenues in a local government unit should constitute a financial base, which should reflect their highest share in the total income structure¹².

Comparing data from the Świętokrzyskie region (Figure 1) to data from the whole country (Figure 2),

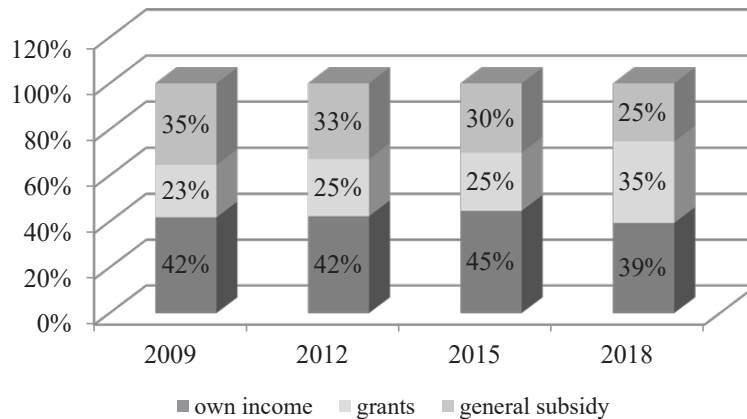


Diagram 1. The structure of municipalities' revenues in the Świętokrzyskie voivodship in the years 2009-2018

Source: own study based on data from Bank Danych Lokalnych GUS

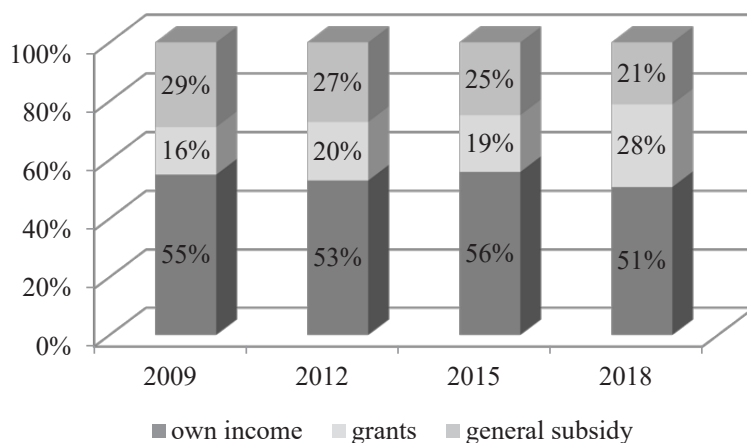


Diagram 2. The structure of municipalities' revenues in Poland provinces in the years 2009-2018

Source: own study based on data from Bank Danych Lokalnych GUS

¹⁰ K. Owsiak, *Kontrowersje wokół dotacji celowych dla jednostek samorządu terytorialnego*, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, nr 485 *Relacje fiskalne państwo – samorząd terytorialny*, Wrocław 2017, p. 341.

¹¹ M. Dworakowska, *Dochody budżetowe jednostek...*, op. cit., p. 61.

¹² M. Dworakowska, *Dochody budżetowe jednostek...*, op. cit., p. 55.

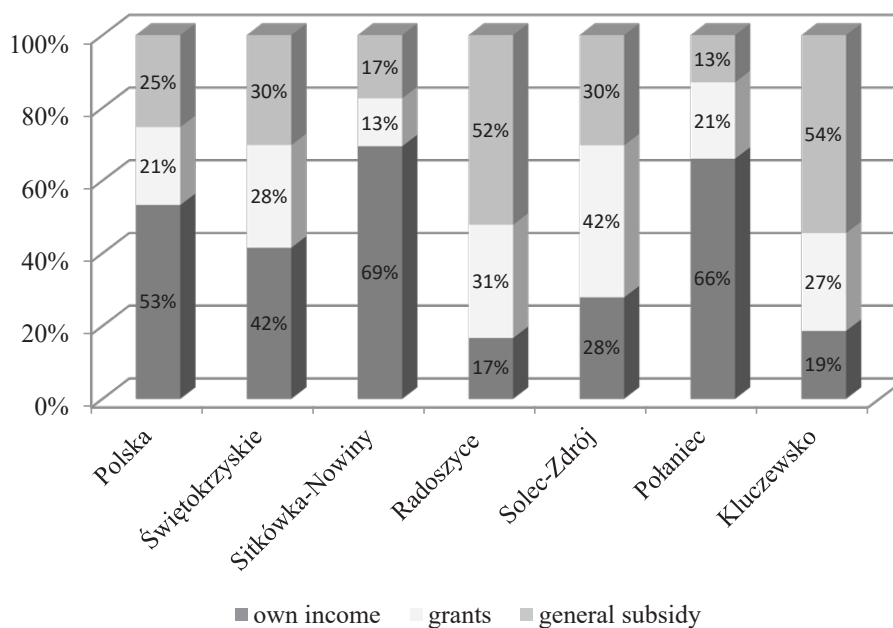


Diagram 3. Income structure in selected communes of the Świętokrzyskie voivodship

Source: own study based on data from Bank Danych Lokalnych GUS

we can state the existing analogies. Namely, it is the advantage of own revenues and the increase in the share of subsidies in 2018. However, there is an approximate 10% advantage of the share of own revenues in the revenues of municipalities throughout the country. Own revenues are the dominant source of municipalities' revenues, which constitute about 40% of municipalities' revenues in the Świętokrzyskie voivodship, and over 50% of municipalities' revenues in the country.

Chart 3 shows the structure of municipalities' income in the country, region and selected communes from the region with the largest and smallest shares of individual income categories. The structure diversity is not visible in relation to the average country and voivodship. However, if we look at the income structure of individual municipalities, the situation changes significantly. The difference in the share of own income between the municipality with the highest share (Sitkówka-Nowiny) and the lowest (Radoszyce) is 52%. It is true that these are extreme cases, and their scale in the studied region is not so large. The smaller variation is represented by subsidies, in which the difference between the extreme communes (Solec-Zdrój and Sitkówka-Nowiny) is 29%, while in the case of the general subsidy it is 41% (Kluczewsko and Połaniec). Referring to changes in the structure in individual years of the audited period, they vary in different municipalities. Due to the very large volume of databases (102 units and 10 years), the conclusions of some observations will be presented only in a descriptive form.

3. Structure of own income, subsidies and general subsidy

Own income is a special type of commune income. It decides on the degree and scope of financial independence of the entity. The appropriate level of own income provides freedom in shaping financial policy, allows to dispose of the assets independently, which translates into its stable development¹³.

Table 1 shows the division of communes in the Świętokrzyskie Voivodship due to the share of own revenues in revenues. A division into 5 groups including 20% ranges was used. The largest number of communes was in the group with a share of 21% to 40% – 70 communes per 102 communes. In the ranges above 40%, municipalities were in the majority, 21 communes in total. The lowest share of own revenues occurred in Mniów, Radoszyce and Słupia Konecka amounting to 17%. For 11 municipalities, the share of own revenues in revenues is less than 20%.

In order to compare the spatial distribution of municipalities with the data contained in Table 1, Figure 1 was developed, in which municipalities were presented, taking into account the division into groups already cited in the paper.

As shown in the figure, the share of own revenues in terms of the distribution of municipalities on the map of the region is varied. It should be noted, however, that 6 out of 11 communes with the lowest share of own revenues are located in the northwestern part of the region, bordering each other. 3 communes with the highest share of own revenues, i.e., Sitkówka-

¹³ P. Dziekański, *Wykorzystanie wskaźnika syntetycznego do oceny poziomu rozwoju samorządu na przykładzie gmin wiejskich województwa świętokrzyskiego*, [in:] *Determinanty rozwoju Polski*, S. Owsiak (ed.), PTE, Warszawa 2015, p. 261.

Table 1

Average share of own revenues in the revenues of communes of the Świętokrzyskie voivodship in the years 2009-2018

No.	average share of own income in the commune's income	name of the commune commune (own income in %); number of communes
1	2	3
2	from 0% to 20%	Mniów (17), Radoszyce (17), Słupia Konecka (17), Klimontów (18), Pawłów (18), Bieliny (19), Smyków (19), Waśniów (19), Łubnice (19), Kluczewsko (19), Łopuszno (20) 11 communes
3	from 21% to 40%	Oksa (21), Gowarczów (21), Falków (22), Iwaniska (22), Imielno (23), Górnio (23), Lipnik (23), Tarłów (23), Samborzec (23), Wilczyce (23), Mirzec (23), Wiślica (24), Sobków (24), Bejsce (24), Bodzentyn (24), Złota (24), Brody (24), Secemin (24), Nowy Korczyn (25), Pacanów (25), Nowa Słupia (25), Raków (25), Gnojno (26), Nagłowice (26), Słupia (26), Czarnocin (26), Ruda Maleniecka (26), Michałów (26), Koprzywnica (26), Łoniów (26), Pierzchnica (27), Ćmielów (27), Bliżyn (27), Moskorzew (27), Radków (27), Solec Zdrój (28), Opatowiec (28), Sadowie (28), Zawichost (28), Wodzisław (29), Łągów (29), Kije (29), Skalbmierz (30), Dwikozy (30), Łączna (30), Skarżysko Kościelne (30), Szydłów (30), Chmielnik (31), Strawczyn (31), Stąporków (31), Obrazów (31), Wąchock (31), Rytwiany (31), Stopnica (32), Daleszyce (32), Kunów (32), Działoszyce (32), Bogoria (32), Baćkowie (33), Bałtów (33), Miedziana Góra (34), Wojciechowice (34), Bodzechów (34), Oleśnica (35), Kazimierza Wielka (37), Zagnańsk (37), Krasocin (38), Chęciny (39), Opatów (40), Osiek (40) 70 communes
4	from 41% to 60%	Staszów (42), Sędziszów (43), Jędrzejów (43), Piekoszów (43), Suchedniów (44), Tuczępy (45), Małogoszcz (45), Morawica (45), Masłów (46), Włoszczowa (46), Busko-Zdrój (49), Pińczów (50), Końskie (52), Kielce (52), Ożarów (55), Ostrowiec Świętokrzyski (55), Starachowice (55), Skarżysko-Kamienna (60) 18 communes
5	from 61% to 80%	Sandomierz (61), Połaniec (66), Sitkówka-Nowiny (69) 3 communes
6	from 81% to 100%	– 0 commune

Source: own study based on data from Bank Danych Lokalnych GUS

Nowiny, Połaniec and Sandomierz are significantly separated from each other. The reasons for the share of own revenues at the level of over 60% in the indicated communes will be discussed further in the paper.

The rest of the paper is based on the basic division of income into own revenues, subsidies and general subsidy. A comparison of revenues at the level of communes in the Świętokrzyskie voivodship and communes throughout the country was presented. The following Table presents the share of individual categories of income in total own revenues.

As part of own revenues, the highest share is represented by taxes constituting state budget revenues, i.e., from personal income tax and corporate income tax. Tax revenues including agricultural tax, forest tax, property tax, tax on means of transport, tax on civil law transactions are another category of own income constituting about 30% share in the income of municipalities both in the Świętokrzyskie voivodship and the whole country. The share of other own income groups in total income does not exceed 10%. Table 2 shows a sustained level of tax revenue, which is

Table 2

Structure of communes' own revenues in the Świętokrzyskie voivodship and Poland in selected years

Own income	Świętokrzyskie				Poland			
	2009	2012	2015	2018	2009	2012	2015	2018
tax revenues - determined and charged on the basis of separate acts	33%	33%	33%	31%	29%	30%	28%	27%
proceeds from fees	1%	3%	7%	6%	2%	2%	6%	6%
income from assets	9%	9%	6%	5%	8%	9%	8%	7%
shares in taxes constituting total state budget revenues	37%	36%	38%	43%	40%	39%	40%	45%
receipts from services	5%	6%	6%	6%	6%	7%	6%	5%
other income	15%	13%	10%	9%	14%	13%	11%	10%

Source: own study based on data from Bank Danych Lokalnych GUS

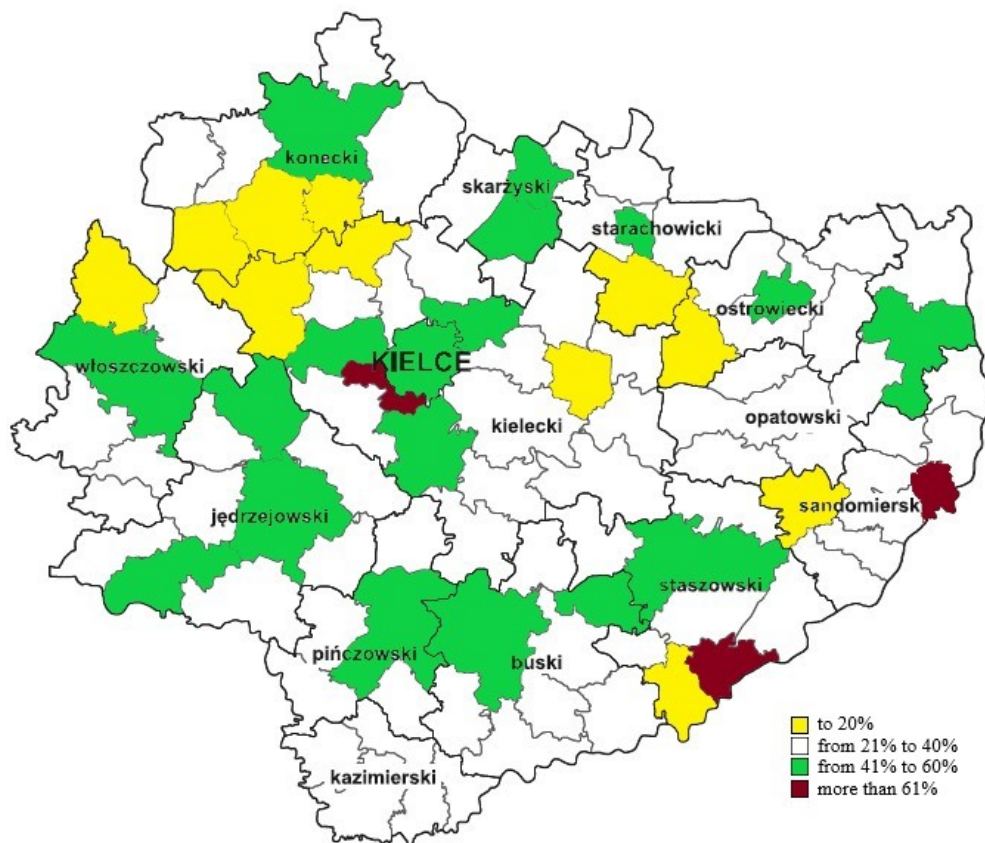


Figure 1. Spatial differentiation of the share of own revenues of communes of the Świętokrzyskie voivodship in total revenues (on average in the years 2009-2018)

Source: own study

slightly higher in the region studied than in the whole country. The share of taxes constituting state budget revenues is gradually increasing, especially in 2018. On the national scale, this category of own revenues has a higher share than in relation to the region.

The figure above presents the share of individual categories of income in the own revenues of communes of the Świętokrzyskie Province. The % share was presented as average income from 2009-2018. It confirms the data contained in Table 2. Tax revenues

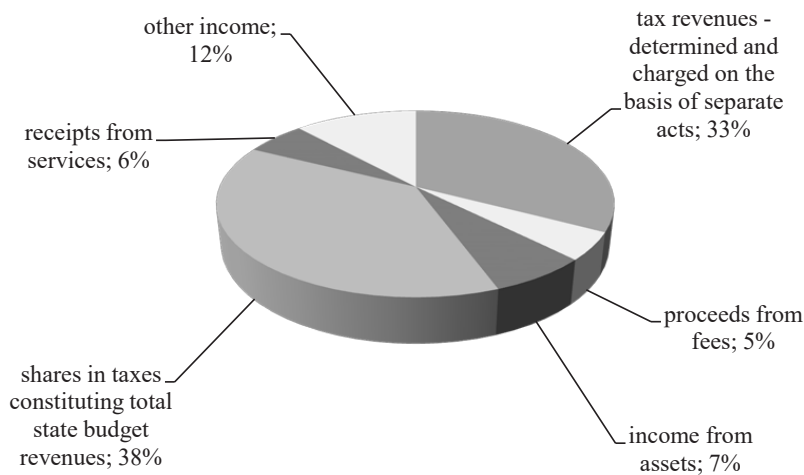


Figure 2. Structure of own revenues of communes in the Świętokrzyskie voivodship (on average from 2009-2018)

Source: own study based on data from Local Data Base GUS

and shares in taxes constitute over 70% of the revenues of communes of the Świętokrzyskie voivodship in the analyzed period, determining their decisive role in shaping the revenues of communes.

Table 3 presents a detailed structure of two categories of income deciding on the amount of own revenues of communes. Analyzing the data contained in the table above, we can see a clear advantage of personal income tax and real estate tax in the structure of own income. Other taxes have only a few percent share in income. One can also state a systematic increase in the share of personal income tax, which increased in the 10-year period by approx. 6%. The share structure of the two main categories of income overlaps at the regional and national levels. The 0% share of personal income tax paid in the form of tax cards results from the applied rounding of the percentage share to whole numbers. In the case of the Połaniec and Sitkówka-Nowiny municipalities, real estate tax receipts account for over 50% of revenues, referring to the Sandomierz commune the structure of own revenues is similar to the regional and national average.

The structure of targeted subsidies is discussed below. Table 4 presents the percentage share of earmarked subsidies in the revenues of municipalities.

Target subsidies from the state budget for government administration tasks have the largest share in the revenues of municipalities under targeted subsidies.

In the years 2009, 2012 and 2015 they remained at a similar level, while in 2018 the share of this type of subsidies in the revenues of municipalities more than doubled. These changes can be related to the "Family 500 plus" program introduced in 2017 and its significant share in the state budget expenditure on meeting social needs¹⁴. Special-purpose subsidies from the state budget for own tasks remain at a similar level during the period considered. Subsidies paragraphs 200, 620 and subsidies paragraphs 205, 625 concern in particular funds under programs financed with the participation of the European funds. As part of the financial perspective 2014-2020, paragraphs 205 and 625 have been separated for local government units acting as beneficiaries¹⁵.

The literature on the subject often emphasizes the aspect of treating subsidies as instruments of state interference in the activities of local government units. The high share of subsidies in the total income structure indicates a decrease in income independence. It should also be noted that there is considerable discretion regarding the amount of subsidies awarded due to the

Table 3

The share of selected categories in the own revenues of communes in the Świętokrzyskie voivodship and Poland

Own income		Świętokrzyskie				Poland			
		2009	2012	2015	2018	2009	2012	2015	2018
tax revenues - determined and charged on the basis of separate acts	agricultural tax	3%	3%	3%	3%	2%	2%	2%	1%
	forest tax	0%	0%	0%	0%	0%	0%	0%	0%
	property tax	25%	26%	27%	24%	22%	24%	23%	22%
	tax on means of transport	2%	2%	2%	2%	1%	1%	1%	1%
	tax on civil law transactions	2%	2%	2%	2%	3%	2%	2%	3%
shares in taxes constituting total state budget revenues	business tax on natural persons, paid in the form of tax cards	-	0%	0%	0%	-	0%	0%	0%
	income tax from individuals	34%	34%	36%	41%	37%	36%	37%	42%
	corporate tax	4%	2%	2%	2%	4%	3%	3%	3%

Source: own study based on data from Bank Danych Lokalnych GUS

Table 4

Structure of the share of grants in the revenues of communes of the Świętokrzyskie voivodship and Poland in selected years

Grants	Świętokrzyskie				Poland			
	2009	2012	2015	2018	2009	2012	2015	2018
earmarked grants from the state budget for government administration tasks	31%	29%	27%	60%	18%	17%	15%	38%
earmarked grants from the state budget for own tasks	12%	10%	13%	12%	6%	6%	7%	6%
grants §§ 200, 620	10%	18%	15%	1%	3%	13%	10%	1%
grants §§ 205, 625	-	-	0%	1%	-	-	0%	8%

Source: own study based on data from Bank Danych Lokalnych GUS

¹⁴ A. Rączaszek, W. Pietrowski, *Wydatki społeczne w budżetach Jednostek Samorządu Terytorialnego województwa śląskiego w latach 2002-2017*, [in:], *Problemy finansów w obliczu nowych wyzwań gospodarki* (red.) M. Sosnowski, UE we Wrocławiu, Wrocław 2019, p. 56.

¹⁵ Rozporządzenie Ministra Finansów z dnia 16 grudnia 2014 roku zmieniające rozporządzenie w sprawie szczegółowej klasyfikacji dochodów, wydatków, przychodów i rozchodów oraz środków pochodzących ze źródeł zagranicznych (Dz.U. 2014, poz. 1952), par. 1, ust. 2, lit. i, l.

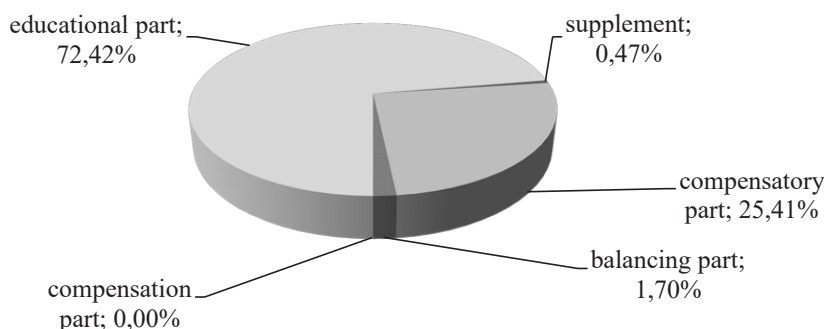


Figure 3. Structure of the general subsidy of communes of the Świętokrzyskie voivodship (on average from 2009-2018)

Source: own study

lack of legal regulations. However, it has an impact on the uniform nature of the economic policy pursued throughout the country¹⁶.

The last of the analyzed categories of municipal revenues is the general subsidy. The average subsidy structure over the period considered is shown in Figure 3.

The general subsidy in over 70% consists of the educational part, the next element is the compensatory part over 25%. However, the share of balancing, supplementing and compensating parts is negligible. It can therefore be said that the general subsidy mainly covers the maintenance of educational establishments in communes.

4. Conclusions

The data presented illustrate the structure of own revenues, subsidies and general subsidies, as well as their

changes during the period considered. Differentiation of particular categories of income is visible. Comparing the data at the country and region level, the deviations are not large. However, by looking at the data of individual units, one can see their diversity under this account. Despite the presentation in the main three areas (own revenues, subsidies and general subsidy) of their detailed elements, large differences in the share between individual taxes and subsidies can be seen. The average income structure in communes in the Świętokrzyskie voivodship does not differ significantly from the national trend. In communes with the highest share of own revenues, their amount is determined by property tax. The structure presented in this way, its diversity in the Świętokrzyskie region is a premise for comparing the analyzed data on individual municipalities with indicators from other areas.

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¹⁶ K. Owsiak, *Kontrowersje wokół dotacji...*, op. cit., p. 347.

QUALITY OF LIFE IN THE POLISH URBAN CENTRES. AN ATTEMPT TO EVALUATE LARGE CITIES

Piotr Hajduga¹, Małgorzata Rogowska²

Abstract. The article presents current and, from the point of view of the Authors, important problems of quality of life in the large Polish cities. In contemporary concepts of socio-economic development, improving the quality of life is considered one of the main strategic goals and a key element of sustainable development. Quality of life is one of the factors affecting the city's attractiveness for potential investors and residents. One of the most important perspectives of thinking about development is to ensure the highest standard of living for all residents of a given territorial unit. This is to lead to stability of the socio-economic system and maximum expansion of the group of beneficiaries of economic development. There were analysed eighteen largest urban centres. The subjects of the study are provincial cities. The presented comparison is a static approach, taking into account only one year. The purpose of this article is an attempt to evaluate the quality of life in selected Polish cities in 2018. The employed research methods are primarily a comparative analysis method and simple statistical methods that have allowed to compare and aggregate selected indicators on the quality of life in urban centres. On this basis, cities were ranked with the assumption that the cities with the highest indicator values (assuming that the given feature is a stimulant) are at the top of the ranking. An additional objective of the study is to present the condition of Polish cities in terms of population and their area, taking into account the situation in Polish regions. Finally, the study presents an analysis of the quality of life of the large Polish cities based on selected 13 indicators. The best results were achieved not only by large economically significant cities, attracting investments and residents, but also those located on the eastern wall of the country, which can be described as "more intimate" in terms of area and population, such as Rzeszów, Lublin or Olsztyn.

Key words: quality of life, city, attractiveness, competitiveness, creativity, entrepreneurship.

JEL Classification: J17, R11

1. Introduction

The attractiveness and competitiveness of urban centres in Poland are not an accident. Basic local government units bring together the most talented people and the most innovative businesses, as well as extremely interesting social and cultural projects. Polish cities are centres of activity and socio-economic development. It should be noted, however, that urban development is not a linear process. Territorial units compete with one another for talents and resources, fighting for primacy at the local, regional, national, and eventually at the global level. The result of this competition depends on many factors, including national policy, global trends (globalisation, technological changes), decisions of enterprises

concerning location, as well as the efficiency of local politicians (Wałachowski, 2019).

Cities are currently perceived and evaluated as centres of varying degrees of attractiveness and competitiveness, as well as creativity and entrepreneurship due to (Klasik, 2008):

- successive replacement of the "descending" generation of human capital with a new qualitatively better generation "entering" the age of professional activity;
- renovation and enrichment of equipment and institutions as well as infra-structure networks, specialised and high-level equipped;
- natural and cultural environment, historic urban and industrial structures, nurtured and enriched with new functions;

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- offers of places and spaces for creative and enterprising people or for creative businesses in the fields of culture and science;
- the potential of the “creative class” and creative environments, as well as the entrepreneurial capital of the inhabitants of a territorial unit mobilised by the innovative policy of public authorities;
- permanent investment in culture, science and education infrastructure, thus obtaining unique assets “instrumenting” creative environments and creative types of activity.

New businesses and institutions, innovations in existing companies and institutions, innovative creative types of activity, as well as existing creative industries generating local and global effects create the vital basis and the foundation of the prosperity of urban centres, as well as the well-being of their residents. They are the lever for their sustainable development. Each territorial unit, depending on its size and rank and depending on the phase of the life cycle, is attractive and competitive, creative and entrepreneurial as far as four fundamental components are present and cooperating in it, i.e., space, people, infrastructure, and activity (Klasik, 2008).

The above-mentioned basic components of creative and attractive cities are the bearers of concepts, content, procedures, and interactions related to a certain scope either with the creativity or with the attractiveness of urban centres. It is vitally important that all key components taken together and in mutual interaction decide that territorial units are or are just becoming or can be shaped as creative and attractive cities. It is determined by the relations of partnership, coordination, and cooperation of various entities operating in urban centres and agglomerations (Klasik, 2008).

The main purpose of this article is an attempt to evaluate the quality of life in selected Polish cities. One of the most important perspectives of thinking about development is to ensure the highest standard of living for all residents of a given territorial unit. This is to lead to stability of the socio-economic system and maximum expansion of the group of beneficiaries of economic development. From this point of view, development is understood as improving living conditions in the following areas: communication, housing, health protection, ecology, access to green areas, and security (Wałachowski, 2019).

The subjects of the study are provincial cities. This article compares selected indicators, which are often listed in the literature on the subject and which may reflect selected elements related to the quality of life in the city in 2018. The data for analysis stems from the Local Data Bank are created by the Central Statistical Office.

2. Quality of life in urban centres

In contemporary concepts of socio-economic development, improving the quality of life is considered

one of the main strategic goals and a key element of sustainable development (Borys, 2003; Brol, 2001; Szewczuk, 2011, 33; Throsby, 2010). This is also reflected in the local development strategies of numerous Polish territorial units, where increasing the quality of the residents' lives is emphasized mostly in visions and missions formulated in documents as well as for strategic and operational goals. Interest in the quality of life is not only related to the definition of the city authorities' obligations to the community as creating the best conditions for living and working, but also to the fact that the quality of life is becoming one of the strategic determinants of decisions on the location of business activities and new investments. The justification for this thesis can be found, among others, in work by R.J. Rogerson (1999), which deals with competitive struggle between urban centres, and distinguishes quality of life as one of the factors affecting the city's attractiveness for potential investors and residents. The quality of life also appears in the works of R. Florida (2010) and his creative class theory (Sanetra-Szeliga, 2017).

The quality of life is the subject of numerous studies within various research disciplines, i.e., economics, political sciences, psychology, philosophy or medical sciences (Panek and Zwierzchowski, 2019). In the colloquial sense, the term is a subjective category, depending, among others, on attitudes and lifestyle, values, cultural circle, as well as tradition (Królikowska-Tomczak, 2016). The concept of quality of life appeared in the 1960s as an alternative to the dominant goal of social development, which was the increase in the material standard of living, or the increase in well-being. In economic sciences, the term prosperity is identified with economic well-being (*welfare*) and means the usefulness of a specific set of goods and services. In practice, welfare is understood as the usefulness of income necessary to purchase these goods and services (Kot, 2004).

There are numerous different definitions of quality of life in the literature. In the broadest sense, this concept is identified with welfare, well-being, or life satisfaction (Yuan, Yuen and Low, 1999). This term is often equated with such terms as “standard of living”, sometimes also called “level of living”. The standard of living is related to the needs met by the consumption of material goods and services. Therefore, it can be called an “objective level of quality of life” or “objective quality of life” (Borys, 2003), and its estimation should take into account such elements as: health, nutrition, education, employment and working conditions, housing, social security, clothing, recreation, and human freedom. A background for assessing the standard of living should be to describe aggregate consumption, savings, and the transport system, as well as tele-communications, the postal system, revenues and expenses, as well as the population and labour force. The standard of living

Table 1

Selected indicators for measuring quality of life in Poland according to the Central Statistical Office

Area	Selected indicators
Material living conditions	– Average monthly disposable income – Poor/good assessment of the state of the household budget (expressed in %)
Main type of activity, work	– Employment rate/unemployment rate – Overtime employment – Employed persons under a fixed-term contract – Degree of job satisfaction
Health	– Good / bad health self-assessment indicator – Cancellation of doctor visits due to financial reasons/waiting time
Education	– Number of people who speak foreign languages – Number of people who regularly use the computer and the Internet – Percentage of people with higher education
Free time and social relations	– Lack of free time – Satisfaction with the quantity and quality of free time – Social isolation indicator – Trust in other people
Economic and physical security	– Security at home – Inability to cover unexpected expenses
Rule of law and civic activity	– Trust in the Sejm, Senate, government and local authorities – Turnout in elections to the Sejm – Volunteers
Environmental quality	– Noise level – Environment pollution – Satisfaction with recreational and green areas
Subjective well-being	– Life satisfaction – Indicator of good/bad mood

Source: own study based on CSO data

in this approach was to be measured by means of quantitative, i.e., “objective” indicators (International Definition..., 1961). However, the quality of life can also be determined through qualitative research, and then we speak of a “subjective level of quality of life”, a term often used interchangeably with “level of contentment”, “satisfaction”, “well-being” or “happiness”. This approach explores the subjective approach to the lives of individuals in terms of their hedonistic (positive emotions and feelings) and cognitive (cognitive satisfaction with life) experiences (Diener and Suh, 1997).

From the point of view of the urban centre and its development, attention should be paid to an objective and subjective approach to the quality of life. That is why the present discussion employs a definition, which combines both approaches: quality of life is the extent, to which the objective needs of the individual are met in conjunction with the subjective assessment of their well-being. Quality of life defined in this way can be measured using qualitative and quantitative indicators (Costanza, Fisher, Ali et al., 2008).

The quality of life is analysed by statistical offices, which take into account the objective conditions and subjective well-being of the respondents (Table 1).

The concept of quality of life in territorial units should be supplemented with a spatial perspective. The city has a material dimension: it is its area, infrastructure, number of inhabitants, enterprises, and universities

located in its area. The urban centre is also a network of intangible relationships and opportunities which it creates for its inhabitants. It is the level of satisfying the needs of society that is identified with the quality of life in the city (Yuan et al., 1999). The needs of residents of territorial units are diverse and complex. However, it is economic growth, rational use of resources, and environmental protection, which are indicated as the main directions of the city’s development, having a direct impact on the quality of life of its inhabitants. Parallel monitoring of these areas should lead to sustainable development (Yuan et al., 1999).

3. Demographic conditions for the development of Polish cities

The Polish urban centres are influenced by various factors (endogenous and exogenous), due to which their situation changes. Territorial units are developing, experiencing periods of stagnation, decline, marginalisation, only to develop again. Prosperity cycles are intertwined with periods of stagnation and regression (Cheshire, Nathan and Overman, 2014). The developmental path of each city is, in fact, different, because a given territorial unit is subject to various conditions that affect it. The strength of the impact of these factors in individual periods of city life varies. In urban centres, there are multidimensional relations

between individual elements of the city system, as well as between the city and its surroundings. The complexity and diversity of processes and phenomena occurring in a given territorial unit and its surroundings mean that there is a considerable number of factors affecting the development of cities, both in its strength and pace, and impacting the direction of the development. However, it should be noted that the strength, pace and direction of the impact of individual factors on different elements of urban systems will vary (Boryczka, 2019).

The main challenge currently faced by territorial units is, first and foremost, to ensure economic, social and territorial cohesion (European Commission, 2010). The high quality of city management should lead to the integration of urban areas in spatial and social dimensions. Creating a competitive society, which is reachable for all and taking into account the mobility of the labour market, is important for this purpose. Creating social capital should be based on maintaining and developing social identity by building conditions for social integration, and social inclusion of, among others, the growing group of people aged 60+ (GUS, 2018).

At present, the aging population is a challenge for the social policy implemented in Poland. Today, it is a demographic process of unprecedented scale

and intensity, which is particularly noticeable in urban centres. Unfavourable demographic changes associated with low birth rates lead to an increase in the participation of older people in society. The effects of this phenomenon include changes in the labour market and increased outlays from public funds for the elderly, among others in healthcare, social work and institutional assistance, as well as shaping appropriate living conditions. The challenge for senior policy is to take measures that are planned and purposeful to improve the life situation of this social group (GUS, 2018).

As of January 1, 2019, the Polish settlement network included 16 voivod-ships, 314 land poviats, 66 cities with poviat rights (so-called poviats) and 2477 municipalities: 302 urban municipalities (including 66 municipalities also having poviat status), 1537 rural municipalities and 638 urban-rural municipalities (Figure 1).

940 settlement units covering the area of 22 162 km², i.e., 7.1% of the entire country, had urban status. The level of urbanisation measured by the number of urban population was 60.1%. The Polish settlement network is polycentric in nature, as it is characterised by a regular distribution of cities in terms of size, a developed hierarchy structure of several levels, and a small advantage of the largest city in the capital over other

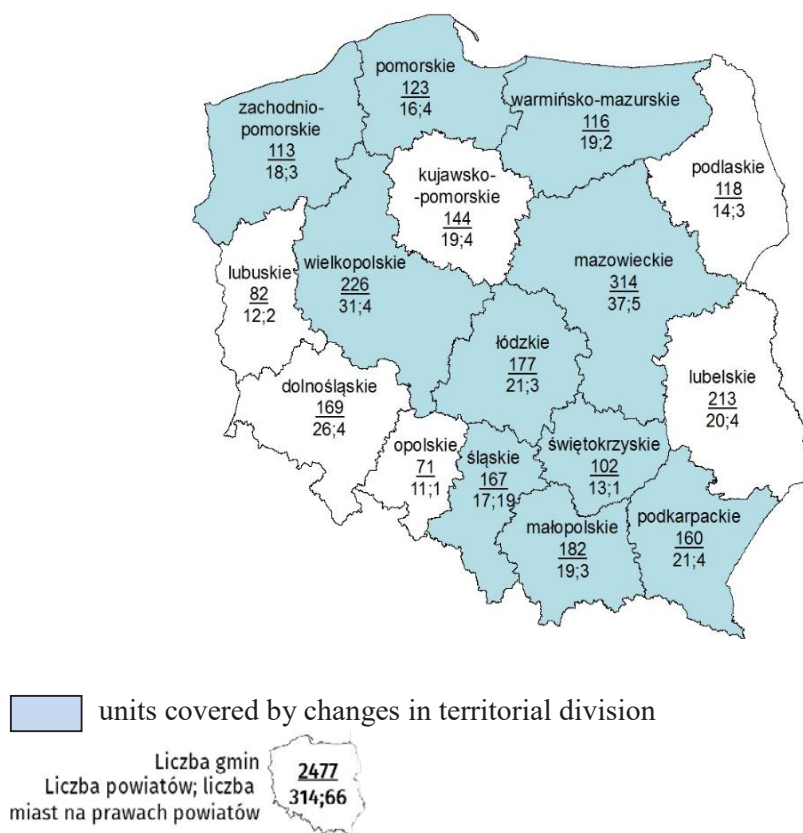


Figure 1. Number of territorial division units by January 1, 2019

Source: (GUS, 2019, p. 11)

regional centres compared to other European countries (KPZK 2030 – MP 2012 item 252, Resolution No. 239 ...; Korcelli, 2007, pp. 87–113).

In the years 1989–2019, the total number of cities in Poland increased from 822 to 940, i.e., by 14.4%. These changes resulted from the granting of municipal rights resulting from the activities of local authorities, a manifestation of increasing self-governance and activity, as well as an expression of rebirth or creation of a new social and cultural identity, especially in the first period of transformation. The acceleration was caused by amendments to the Act on local government carried out in 1992, enabling the granting of city status not only to municipalities, but also to cities that meet the assessed urban criteria (Kosecki and Stawarz, 2005; Zaniewska, 2014).

The formation process is stimulated at the local level. It should be noted that, despite some objective criteria for granting city rights, important factors determining the granting of city rights are political influences and certain decisions of a subjective nature, e.g., the demographic criterion is not always met, as some new cities have fewer than 2000 residents (Konecka-Szydłowska, 2017).

From the data presented in Table 2, it is clear that the majority of cities have been located in Greater Poland voivodship (113, i.e., 12% of all Polish cities), as well as Lower Silesian (91, i.e., 9.7% of all Polish cities) and Masovian (88, i.e., 9.4% of all Polish cities). Of the total number of 722 small cities, i.e., those with fewer than 20 thousand inhabitants, 52.2% were located in the areas of six voivodships: Greater Poland (93), Lower Silesian (72), Masovian (63), West Pomeranian (55), Lesser Poland (49) and Kuyavian-Pomeranian (45).

In the most urbanized Silesian voivodship, there were located 17% of all Polish cities above 20 000 residents.

The highest density of city networks was in the Silesian Voivodship, where there was 173.7 km² of the voivodship's area per city. The density ratio of the network of cities below 300 km² also pertained to the following voivodships: Lower Silesian (219.2 km²), Lesser Poland (244.9 km²), Opole (261.4 km²) and Greater Poland (263.9 km²). The northern and eastern regions of the country had lower network density, and the rarest city network in 2019 concerned the Lublin voivodship, where the value of the index was 523.4 km², as well as the Podlaskie voivodship (504.7 km²).

Territorial differentiation of the urbanisation indicator and the structure of the urban population by the size of the city and the size of the average city are pre-sented in Table 4.

In 2019, urban population amounted to 23 087.87 thousand people, i.e., 60.1% of the population of the whole country. The most urbanized was the Silesian Voivodship, where the population in cities constituted 76.7% of the total population of the Voivodship. The following voivodships had a high urbanisation rate: Lower Silesian (68.6%) and West Pomeranian (68.5%). In four voivodships (Lublin, Lesser Poland, Subcarpathian, Holy Crosse) the urban population constituted less than half of the total population of the given voivodship.

The average Polish city in 2019 covered 23.6 km² of area and had 24.6 thousand residents. The largest, both in terms of area and population, was the average city of the Silesian voivodship. The smallest area was in the average city of the Warmian-Masurian voivodship,

Table 2

Density of city networks and their number by voivodships (as of January 1, 2019)

Specification	Area of voi-vodship per one city in km ²	Number of cities			
		In total	in urban-rural municipalities	below 20 thousand residents	over 20 thousand residents
Poland	332.7	940	638	722	218
Lower Silesian	219.2	91	56	72	19
Kuyavian-Pomeranian	345.6	52	35	45	7
Lublin	523.4	48	28	38	10
Lubusz	325.3	43	34	37	6
Łódź	414.1	44	26	29	15
Lesser Poland	244.9	62	48	49	13
Masovian	404.1	88	53	63	25
Opole	261.4	36	33	30	6
Subcarpathian	349.9	51	35	41	10
Podlaskie	504.7	40	27	32	8
Pomeranian	436.3	42	20	27	15
Silesian	173.7	71	22	34	37
Holy Cross	272.3	43	38	38	5
Warmian-Masurian	483.5	50	34	39	11
Greater Poland	263.9	113	94	93	20
West Pomeranian	347.0	66	55	55	11

Source: own study based on GUS data

Table 3
Structure of cities by size groups (as of January 1, 2019)

Number of cities	Total	940	
	over 1 mln	1	Warszawa
	from 500 000 to 999 999	4	Kraków, Łódź, Wrocław, Poznań
	from 250 000 to 499 999	6	Gdańsk, Szczecin, Bydgoszcz, Lublin, Białystok, Katowice
	from 100 000 to 249 999	27	Gdynia, Częstochowa, Radom, Toruń, Sosnowiec, Kielce, Rzeszów, Gliwice, Zabrze, Olsztyn, Bielsko-Biała, Bytom, Zielona Góra, Rybnik, Ruda Śląska, Opole, Tychy, Gorzów Wielkopolski, Dąbrowa Górnicza, Elbląg, Płock, Wałbrzych, Wrocław, Tarnów, Chorzów, Koszalin, Kalisz
	from 50 000 to 99 999	46	
	from 20 000 to 49 999	134	
	from 10 000 to 19 999	184	
	from 5000 to 9999	184	
	from 2500 to 4999	217	
	from 1000 to 2499	129	
below 1000	8		

Source: own study based on GUS data

Table 4
Area and population of cities by voivodships (as of January 1, 2019)

Specification	Area of cit-ies in km ²	Population in cities in thousands	Urban popu-lation in% of the voivod-ship's popu-lation	Area of cities in km ²	Population in cities in thousands
				per one city	
Poland	22 162	23 087.87	60.1	23.6	24.6
Lower Silesian	2 165	1 990.50	68.6	23.8	21.9
Kuyavian-Pomeranian	829	1 227.85	59.1	15.9	23.6
Lublin	1 019	983.84	46.5	21.2	20.5
Lubusz	876	658.92	64.9	20.4	15.3
Łódź	1 160	1 542.68	62.5	26.4	35.1
Lesser Poland	1 659	1 639.52	48.2	26.8	26.4
Masovian	2 190	3 481.63	64.4	24.9	39.6
Opole	848	525.85	53.3	23.6	14.6
Subcarpathian	1 234	881.88	41.4	24.2	17.3
Podlaskie	925	718.27	60.8	23.1	18.0
Pomeranian	1 072	1 485.79	63.7	25.5	35.4
Silesian	3 790	3 478.79	76.7	53.4	49.0
Holy Cross	775	564.82	45.5	18.0	13.1
Warmian-Masurian	616	846.01	59.2	12.3	16.9
Greater Poland	1 546	1 896.33	54.3	13.7	16.8
West Pomeranian	1 458	1 165.18	68.5	22.1	17.7

Source: own study based on GUS data

and the least population per city was noted in the Holy Cross voivodship.

As of January 1, 2019, there were 1 042 inhabitants per 1 km² of Polish cities (Table 5). The most densely populated cities were Masovian (1,590 people) and Kuyavian-Pomeranian (1,481 people). The cities of the Pomeranian, Warmian-Masurian and Łódź voivodships also had a high population density (1 386, 1 373 and 1 330 people). In contrast, in the cities of the Opole voivodship, the population density rate was the lowest and amounted to 620 people per 1 km². Fewer than 800 people per 1 km² was also noted in the cities of

the following voivodships: Subcarpathian, Holy Cross, Lubusz, Podlaskie and West Pomeranian.

Urban centres play an essential function in the socio-economic system. They constitute areas of concentration of economic activity, i.e., creating added value as well as jobs. Cities are socio-economic structures organised comprehensively, with proper spatial (visual) forms (Jacobs, 1961; Mohan, 1979; Cheshire, Nathan and Overman, 2014). Therefore, a city is considered as an economic, social, and natural system, consisting of numerous functional subsystems open to the external environment. The development of urban centres as

Table 5

Urban population density by voivodships (as of January 1, 2019)

Specification	Area of cities in km ²	Population in cit-ies in thousands	Population per 1 km ²
Poland	22 162	23 087.87	1 042
Lower Silesian	2 165	1 990.50	919
Kuyavian-Pomeranian	829	1 227.85	1,481
Lublin	1 019	983.84	965
Lubusz	876	658.92	752
Łódź	1 160	1 542.68	1 330
Lesser Poland	1 659	1 639.52	988
Masovian	2 190	3 481.63	1,590
Opole	848	525.85	620
Subcarpathian	1 234	881.88	715
Podlaskie	925	718.27	777
Pomeranian	1 072	1 485.79	1,386
Silesian	3 790	3 478.79	918
Holy Cross	775	564.82	729
Warmian-Masurian	616	846.01	1,373
Greater Poland	1 546	1 896.33	1,227
West Pomeranian	1 458	1 165.18	799

Source: own study based on GUS data

a system is governed by laws (Regulski, 1980), which shape the relationships between its individual elements.

4. Quality of life in Polish cities – an attempt at evaluation

As already indicated in the theoretical part of the study, there are numerous available methodologies related to the quality of life in cities. As an example, one can indicate the study “Uciekające metropolie” (*Uciekające...*), which analyses large cities in Poland in a cross-sectional way, extending the analysis to functional areas. For the purposes of the study, several indicators were selected, primarily guided by the availability of statistical data (the main source of information is the Local Data Bank) and their versatility (indicators should best relate to areas related to the quality of life in the city). Thirteen indicators from the social, economic and spatial areas were selected for the study. Table 6 shows the indicators selected for analysis in more detail.

The presented analysis is simplified and presents a static view. This means that data accepted for the study related to a specific point, which was 2018. This does not reflect the scope of changes that may have occurred in a specific time perspective. Nevertheless, the simplified nature of the study presents the levels of indicators representing the quality of life in cities.

Table 7 presents the values of individual indicators adopted for the analysis.

Subsequently, these indicators were ordered according to items from the most favourable to the least favourable value of the indicator, depending on whether the indicator was specified as a stimulant or destimulant (Table 8).

Within the accepted study areas, the city of Rzeszów achieved the best result among the 18 cities surveyed in Poland. It was followed by Warsaw, Kraków, Opole, and Wrocław. Rzeszów, which belongs to the cities of East-ern Poland, occupies high positions in reports on the quality of life in Poland published by various magazines and agencies. It is a city, which, compared to other large cities, has a relatively compact structure and a small population (191 000 inhabitants). In terms of population, the city is comparable to the city of Kielce, and it is not much larger than Opole, Zielona Góra or Gorzów Wielkopolski. Rzeszów was able to develop features that attract primarily new residents. The migration balance for this city in 2018 was 6.72 and was slightly higher than in the capital city of Warsaw. Rzeszów is considered a green and friendly city. In terms of entities operating in the cultural sector related to entertainment and recreation, Rzeszów is comparable with such a large and important centre as Wrocław, it is also a city with an attractive housing offer for residents or newcomers; in 2018, the number of dwellings completed was comparable with the city Kraków. The labour market data related to the number of employed persons per 1 000 population are favourable. The city reached a high level compared to other large cities. According to CSO data, this number is 481 people per 1 000 population, which gives Rzeszów the third position in Poland after Katowice and Warsaw, and it is a better result than one achieved in a given year in Wrocław, Poznań or Kraków. The city of Rzeszów has quite high values if we look at the spatial zone related to the number of bicycle paths per 10 000 population. In this indicator, the city is unparalleled. Rzeszów can be considered a safe city on the basis of data published by

Table 6

List of indicators for evaluating the quality of life in cities

No.	Name of the indicator	Justification for the analysis
x ₁	Balance of migration	Presents the direction of population movement. May reflect the potential attractiveness of the place.
x ₂	Entities operating in the area related to culture, entertainment and recreation per 100 000 population	It presents new elements of the economy related to, among others with creative class.
x ₃	Dwellings completed per 1 000 population	The indicator indirectly represents the situation on the real estate market in the selected city.
x ₄	Employed persons per 1 000 population	Indicator relating to the economic situation of the population, indirectly reflecting the situation on the labour market.
x ₅	Share of the area covered by the applicable local spatial development plans in the area in total %	To some extent, it reflects the spatial order of the area covered by the study. As a rule, a larger area covered by plans can be seen as an element stimulating development.
x ₆	Walking and recreation parks, area in ha per 1000 population	The number of green areas has become an increasingly important element in the making of location decisions and affecting the quality of life in the city in the last decade.
x ₇	Bike paths per 10 000 population	Bike paths, especially well-designed ones, can be an important element of the quality of the location; the indicator can have an impact on the elimination of car flows in major parts of the city, and thus the elimination of traffic jams.
x ₈	Children in kindergartens in total per 1 000 population	Access to educational institutions is an important element affecting the quality of life in the city.
x ₉	Own revenues of municipal budgets per capita	Economic indicator reflecting the financial potential of the city as a local government unit.
x ₁₀	Doctors (total working staff) per 10 000 population	A social indicator, which, to some extent, provides access to basic public services in the form of healthcare.
x ₁₁	Beds in hospitals per 1 000 population	A social indicator, which, to some extent, provides access to basic public services in the form of healthcare.
x ₁₂	Total offenses recorded by the police per 1 000 residents	An indicator reflecting a crucial element affecting the quality of life in the city, which is the level of security. Destimulant.
x ₁₃	Budget expenditure on transport and communication per capita	Economic indicator partly related to the spatial zone, covering transport and communication.

Source: own

Table 7

Value of indicators selected for analysis for large cities in Poland in 2018

	x ₁	x ₂	x ₃	x ₄	x ₅	x ₆	x ₇	x ₈	x ₉	x ₁₀	x ₁₁	x ₁₂	x ₁₃
Wrocław	2.3	286.6	14.7	438	58.1	1.3	4.06	35.3	4 966.37	125.3	8.3	30.63	1 251
Bydgoszcz	-3.01	225.3	3.3	353	37.4	2.5	2.87	31.7	3 462.25	134	9.8	20.6	1 166.5
Toruń	-1.83	344.9	4.9	332	56.2	0.3	5.74	29.1	3 201.89	78	6.4	25.37	967.1
Warszawa	6.16	407.7	13.2	536	37.3	0.5	3.32	39.3	7 236.69	145.4	6.9	26.62	2 538.8
Lublin	-0.46	222.6	8.5	371	53.3	0.5	4.12	36.4	3 309.1	198,2	10.8	19.69	1 780.1
Łódź	-1.74	211	4.1	369	20.5	1	2.31	31.7	3 820.43	121.5	8.6	21.63	907.3
Gorzów Wielkopolski	-0.53	220.3	5.8	328	56	1.4	4.08	36.5	2 851.77	70.9	6.8	32.85	1 056.3
Zielona Góra	4.3	252.3	8.7	337	17.1	0.2	4.7	39.3	3 667.71	74.3	5.9	31.4	1 865.1
Kraków	6.13	328.9	12.5	461	61.8	0.6	2.77	40	4 679.43	166.5	8	23.53	1 231.1
Opole	2.09	318.4	6.2	476	28.7	1.4	7.03	37.1	4 384.55	122.8	9.9	24.78	1 543.2
Rzeszów	6.72	282.9	12	481	16.8	0.4	8.15	44.4	3 376.08	175.1	12.3	16.23	1 657.5
Kielce	-2.96	271.2	4.6	390	17.6	0.4	2.62	33.4	3 401.33	149.7	9.2	26.52	981.5
Białystok	-1.11	206.1	6.5	296	53.6	0.4	4.32	39.3	3 363.97	121.4	8.2	20.66	1 990.2
Poznań	-3.51	321.6	7.5	459	46.4	0.6	4.52	36.2	4 558.96	112.2	10.5	29.39	1 543.5
Szczecin	0.59	263.9	5.7	295	53.6	0.4	3.41	24.8	3 550.5	104.1	8.7	33.88	1 288
Gdańsk	4.23	253.5	14.7	395	65.9	0.5	3.91	32.1	4 733.92	116.1	6.3	23.15	1 471.6
Katowice	-2.55	281.1	3	573	26.3	0.6	2.63	33.1	4 459.19	197.3	12.4	35.06	880.2
Olsztyn	-2.4	301.1	3.8	376	56	0.6	5.05	40.5	3 606.38	104,8	10.2	22.31	1 740.9

Source: own study based on the Local Data Bank

Table 8

Positioning of cities according to the value of the xi indicator adopted for the analysis

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃
Wrocław	6	7	1	7	3	4	10	11	2	10	11	14	11
Bydgoszcz	17	14	17	13	11	1	14	15	12	7	7	3	13
Toruń	13	2	13	15	4	17	3	17	17	16	16	10	16
Warszawa	2	1	3	2	12	10	13	4	1	6	14	12	1
Lublin	9	15	7	11	9	11	8	9	16	1	3	2	4
Łódź	12	17	15	12	15	5	18	16	8	10	10	5	17
Gorzów Wielkopolski	10	16	11	16	5	2	9	8	18	18	15	16	14
Zielona Góra	4	13	6	14	17	18	5	5	9	17	18	15	3
Kraków	3	3	4	5	2	6	15	3	4	4	13	8	12
Opole	7	5	10	4	13	3	2	7	7	9	6	9	8
Rzeszów	1	8	5	3	18	13	1	1	14	3	2	1	6
Kielce	16	10	14	9	16	14	17	12	13	5	8	11	15
Białystok	11	18	9	17	7	15	7	6	15	11	12	4	2
Poznań	18	4	8	6	10	7	6	10	5	13	4	13	7
Szczecin	8	11	12	18	8	16	12	18	11	15	9	17	10
Gdańsk	5	12	2	8	1	12	11	14	3	12	17	7	9
Katowice	15	9	18	1	14	8	16	13	6	2	1	18	18
Olsztyn	14	6	16	10	6	9	4	2	10	14	5	6	5

Source: own study

the Central Statistical Office. In terms of the number of crimes registered by the police, it reaches the lowest rates among the largest Polish cities. In terms of healthcare, the city of Rzeszów also looks favourable. Total number of doctors per 10 000 population is 175, and it is a high value compared to other cities, which gives the city of Rzeszów the second position after Lublin (which reached the value of 198).

Among the analysed cities, Rzeszów was most often above the average value of the xi index, up to ten times. The cities of Kraków, Opole, Warsaw, Poznań, Wrocław, Lublin, and Olsztyn were slightly above average. The cities of Łódź and Kielce were the above average the least number of times, i.e., only twice, while Szczecin was at the end of the ranking.

5. Conclusion

This article presents the issue of quality of life in cities. The research goal set out at the beginning of the study was achieved by analysing selected indicators regarding the quality of life in relation to 18 large Polish cities.

The quality of life in the city has always been an element that directly or indirectly influences its development. Especially in the last decade, one can observe the intensifying tendency of people to live in cities, especially large cities and metropolises. This raises a number of problems regarding how to manage such highly urbanised areas, as well as the escalation of new problems. Therefore, improving the quality of life is becoming one of the main strategic goals of sustainable development, and in practice it is included in numerous Polish strategies for the development of

Table 9

City positions taking into account the highest level of indicators selected for the survey in 2018

Ranking position	City	Frequency of the above-mentioned 13 indicators above average
1	Rzeszów	10
2	Warszawa	8
3	Kraków	9
4	Opole	9
5	Wrocław	7
6	Lublin	7
7	Olsztyn	7
8	Poznań	8
9	Gdańsk	6
10	Białystok	4
11	Katowice	5
12	Bydgoszcz	4
13	Zielona Góra	5
14	Gorzów Wielkopolski	3
15	Toruń	3
16	Łódź	2
17	Kielce	2
18	Szczecin	1

Source: own study

local government units. Quality of life is also becoming one of the most important aspects when making decisions about where to live (access to work is not the only important factor), as well as numerous location decisions for domestic and foreign business entities.

In the last few decades, the Polish cities have undergone a number of changes. One of the

most important is the political transformation or administrative reform of 1999. Cities flexible enough to quickly adapt to changes have been coping with it the best. Flexibility and adaptability are the extremely desirable features in the second decade of the 21st century in the context of challenges created by globalisation or climate change.

The study presents an analysis of the quality of life of the large Polish cities based on selected 13 indicators.

The best results were achieved not only by large economically significant cities, attracting investments and residents, but also those located on the eastern wall of the country, which can be described as “more intimate” in terms of area and population, such as Rzeszów, Lublin or Olsztyn. In this study, an additional goal is a detailed presentation of the demographic situation of the Polish cities, which illustrates the trends in the changes of area and population of the cities.

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INTERNATIONAL EXPERIENCE OF DEVELOPMENT AND SUPPORT OF ENTREPRENEURIAL ACTIVITY OF INCLUSIVE TOURISM

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Abstract. The article considers the state of international tourism for people with disabilities. It has been studied that inclusive tourism area has great potential for development, as more than 15% of the world's population can be defined as inclusive tourists. The volume of inclusive tourism market development is constantly increasing. Taking into account the world experience of development of "tourism for all" and analysis of statistics on the number of people with disabilities and socially disadvantaged people, the prospects for the development of the inclusive tourism market are determined, which is especially important given its social significance. Therefore, it has been expedient to analyze the prospects of creating an effective system of inclusive tourism.

The purpose of the article is to determine the prospects for the formation of an effective system of public administration for the development of inclusive tourism on the basis of international experience in supporting the entrepreneurial activity of inclusive tourism. The authors propose a system of integrated approach to ensure effective public policy in shaping the conditions for the development of inclusive tourism and creating a barrier-free environment for tourism destinations. Harmonization of the mechanisms for improving the effectiveness of public policy in the field of inclusive tourism requires the development of an organizational mechanism for implementing the concepts of "tourism for all" with the identification of practical aspects of its implementation in accordance with international norms and standards.

Given the limited state funding for tourism in Ukraine, the development of inclusive tourism cannot be highly efficient, which is primarily due to the social direction of the area.

The international documents and Ukrainian normative acts and laws regulating tourist activity for people with disabilities are analyzed and studied.

To create an effective system of social protection for all categories of the population, including people with disabilities, it is necessary to take into account the experience of foreign countries, where a resembling system has been operating quite successfully for a long time. From this point of view, firstly, it is necessary to consider the social protection systems that have been introduced in the countries of the European Union, where the disabilities rights movement has been launched. In the countries of the European Union, social policy and the participation of social partners in its formation have undergone significant transformations, and a fundamentally new supranational and suprastate course of social protection and welfare of citizens has emerged. As a country aspiring to join the European Union, Ukraine must take into account the best foreign experience of the world's leading countries in the field of state policy to support persons with disabilities and its implementation.

The European and world experience of adaptation of the tourism industry for people with disabilities (on the example of Slovenia, Israel, Spain and the USA) is analyzed. The problems that hinder the development of international tourism for people with disabilities in Ukraine and measures to solve them are identified.

Key words: person with a disability, inclusive tourism, international tourism, world experience, state tourism agency, state support mechanisms.

JEL Classification: F29, I31, L83, O51, O52

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1. Introduction

The tourism industry has significant potential to increase key performance indicators. Global trends indicate a strong development of the industry, statistics from the World Tourism Organization show steady results in the growth of tourism flows and income from tourism. Tourism is a multiplier industry that provides high returns with low investment. Therefore, one of the key characteristics of the development of the tourism industry will be high competition, which contributes to the further development of tourism, improvement of the quality of tourism services. Recent trends in tourism development indicate the attention of tourism entities to the modernization of inclusive tourism infrastructure, the allocation of inclusive tourism in a particular type of tourist activity, and promotion of its further improvement.

Since inclusive tourism has emerged as one of the branches of social tourism, it is appropriate to highlight the key role of the state in ensuring its further development in order to ensure the state's implementation of social guarantees as an important element of nationhood and civil society. Thus, the article is devoted to the topical issue of determining the role of public policy in creating favorable conditions for the development of inclusive tourism based on international experience.

The international tourism market has undergone many changes in recent years: the segment has attracted people with disabilities, actively creating all the necessary conditions for them and developing special programs of tourism services, taking into account their needs and capabilities.

This type of tourism has many titles, for example, "inclusive tourism", "social tourism", "barrier-free tourism", "paratourism", etc. They all mean the availability of travel for people with disabilities, because this activity integrates this category of population into society, gives them the opportunity to develop, feel healthy, specifically emotionally, and be on par with others.

Inclusive tourism in Ukraine is a fairly new concept and activity. This is due to a number of problems, both social and economic. At present, there are organizations and associations of people with disabilities that provide medical and rehabilitation services throughout the country. Certainly, they arrange entertainment activities, as well as excursions, but usually not over long distances due to the underdeveloped infrastructure, which is not designed for people with disabilities.

2. Methodology of research

Worldwide, more than one billion people (23% of the population) suffer from various forms of disability. According to a research conducted by the World Health Organization, 785 million people aged 15 and older live with disabilities, of whom 110 million suffer from severe

disorders. Among children aged 0 to 14, these figures are 95 million and 13 million, respectively (International Disability Statistics, 2018).

In Ukraine, more than 2.6 million people have the status of a person with a disability, which is 6.25% of the total population. The number of people in this category is growing every year due to many factors, such as environment, living and working conditions (Trunina, Sosnovska, 2019).

Tourism for people with disabilities, including the international one, is a fairly new phenomenon, which has a low level of study and publicity, but nevertheless, it is a necessary type of tourism in every country. Inclusive tourism is developing rapidly today. Experts in this field estimate that 2.5 million people with disabilities travel regularly.

The development of inclusive tourism is closely linked to the demand for this type of service. Statistics show that in the future such demand will grow, so inclusive tourism has significant potential to increase the flow of tourists (Ugodnikova, 2019). According to statistics, more than 2 million people with disabilities live in Ukraine nowadays (Official website of ETAN, 2019). There is a tendency to aging of population, i.e. more people move to the categories in need of social protection and inclusive conditions for tourism development. So, inclusive tourism is becoming increasingly important among the population of different countries.

There are several definitions of "a person with a disability", "disability" in the world. Each state has its own criteria, according to which it grants a person the status of a person with a disability. There are just some of the reasons why disability indicators are difficult to measure and define globally.

Understanding the potential of people with disabilities has initiated the emergence of different concepts of their inclusion in the normal life of society. In the recent history of social policy in the United States and Europe, several approaches have been developed: integration (from Latin: *Integratio* – connection, restoration), inclusion. The same trends can be traced in the domestic social system.

Different countries have individual interpretations of the concept of "disability". For example, if a person has a status of a person with a disability in the United States, it does not mean that his or her status will be recognized in China or Germany.

D. Say determines that this is to some extent due to the fact that the world has not reached a consensus and understanding of what disability is. Fundamentally different terms can be used to denote people with intellectual disabilities, even in countries where a similar language is used (Say, 2013).

There are many definitions of tourism for the people with disabilities. After analyzing the latest research and publications, we highlight the following: "inclusive tourism", "accessible tourism", "tourism for all", "barrier-

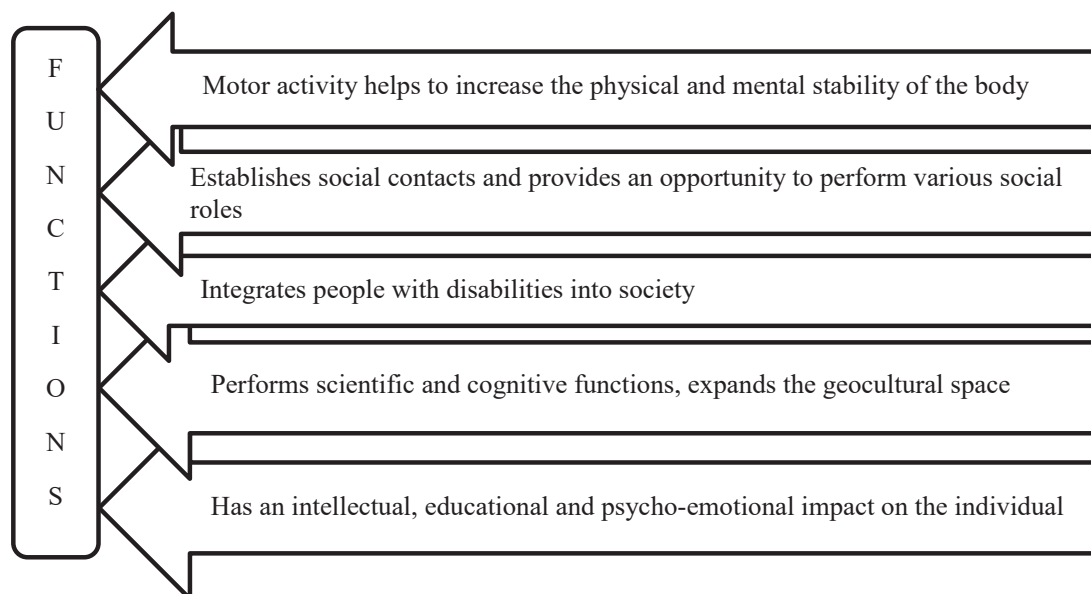


Figure 1. Functions of inclusive tourism

Source: based on (Bulousova, 2017)

free tourism”, “tourism for people with disabilities”, “social tourism”. Their special feature is the ability of persons with disabilities to travel to various tourism facilities and institutions with an accessible and adapted infrastructure for this category of the population. The functions performed by tourism for people with disabilities are shown in Figure 1.

According to international documents in the field of tourism, inclusive tourism is defined as a recreational type of tourism for people with special needs. In 1991, the UNWTO General Assembly defined the concept of inclusive tourism, that is a tourism for all in the Concept “Creating Opportunities for Tourism for People with Disabilities in the 1990s”.

The system of national legislation prescribes only the concept of rehabilitation and provision of rehabilitation services to persons with disabilities, which is directly related to recreational and tourist activities, but does not fully cover the range of services and opportunities for the use of tourism.

The term “accessible tourism for all” was enshrined in 2009 at the 18th session of the UNWTO General Assembly in Astana, Kazakhstan, in the “Declaration on the Facilitation of Tourist Travel”, which called on UNWTO Member States to make their tourist facilities and institutions accessible to people with disabilities, publish clear and detailed information on the reception services available to them and on the problems they may face when traveling (Committee of Ministers of the Council of Europe, 1992; Trunina, Sosnovska, 2019).

In view of the above, it should be noted that today the activities of all national institutions, including public authorities, public associations, etc., should be aimed at creating conditions in which persons with

disabilities can lead independent lives and take an active part in all its aspects.

3. Results and discussion

3.1. International experience in supporting and developing inclusive tourism

There are processes of active institutionalization in the field of tourism for people with disabilities. This is evidenced by the emergence of the international tourism organization SATH, which holds annual congresses, publishes a monthly publication, cooperates with governments. SATH includes non-profit and public organizations from different countries, as well as organizations from various fields of tourism business. SATH is headquartered in New York City, USA, and the number of SATH members is growing steadily. Today, SATH is a member of the World Tourism Organization, which testifies to the integration of tourism for people with disabilities into the global tourism system (International organizing tourism for people with disabilities).

The following elements have been included in the structural components of inclusive tourism by international organizations (Official website of ETAN):

- ensuring the implementation of the concepts of barrier-free architecture by creating an inclusive tourism area, inclusive infrastructure, construction of real estate in accordance with the norms and standards of inclusiveness;
- accessibility of all types of transport for use by people with disabilities;
- providing quality services to accompany tourists by training staff in appropriate qualifications;

- inclusiveness of cultural and entertainment facilities;
- inclusive component of marketing activities, in particular the formation of comfortable booking conditions, presentation of tourist offers, etc.

At the core of the Concept of Inclusive Tourism, which involves travelling around the world, is a universal design, seven principles of which were formulated and implemented more than 30 years ago under the guidance of wheelchair architect Ron Mace and colleagues at North Carolina State University. These principles underlie social rehabilitation, including the development of an inclusive tourism system in the European, Asian and American tourism regions (Mabbett, Bolderson, 2002).

As an example of the organization of international tourism and accessibility of travel for people with disabilities have been taken several countries: Slovenia, Israel, Spain, the USA.

In recent years, Slovenia's tourism infrastructure has been adapted to meet the needs of people with disabilities. At the entrance to public buildings and sights there is a separate parking area for people with disabilities. Almost all shopping centers, public buildings, tourist places are equipped with toilets for people with disabilities. Sidewalks of special configuration have been built in many Slovenian cities.

More and more ATMs are being installed at a lower level than usual for more convenient access for people with visual impairments using Braille. Among the Slovenian cities that improve accessibility for people with disabilities, Ljubljana, Maribor, Ajdovščina and others should be emphasized. People with disabilities are in most cases entitled to free tourist attractions or discounts.

The State Tourism Corporation of Israel, the executive body of the Ministry of Tourism of Israel, has initiated a number of projects in terms of infrastructure, the purpose of which is to make people with disabilities able to visit numerous tourist sites in the country, encourage them to travel in Israel. New facilities are being built, and old ones are being reconstructed to suit their needs. For example, Masada, a rock with a legendary fortification near the Dead Sea, has become accessible to people with disabilities up to the very top. Part of this most important tourist facility has been arranged so that people with visual impairments can perceive ancient stones to the touch (International experience, 2020).

Spain is also developing rapidly to meet the needs of inclusive tourists. Public transport and the central streets of Barcelona are adapted to their needs. The Spanish Tourism Board pays great attention to affordable tourism, and the authorities are also making considerable efforts to involve such people in a full active life. The tourism infrastructure is specially adapted for people with disabilities, specialized catalogs are published, events are held, including the Paralympic Games.

The central streets of the cities are equipped with ramps, all buses are adapted for this category of people, the hotels have special rooms convenient for them. Each new metro station has special equipment for people with disabilities.

In 2019, a special site "Accessible Tourism" was created. It contains all the information about the relevant trips to Catalonia. On the site you can find detailed information about 19 tourist destinations, where the necessary conditions are created for the reception of people with disabilities.

3.2. Determination of state support for entrepreneurial activity for inclusive tourism in Ukraine

Currently, in the world of social policy, one of the most important activities is the integration and social adaptation of people with disabilities, the number of which in Ukraine at the beginning of 2018 has been about 2.6 million, almost 80% of them have been of working age. Children account a significant share in the structure of people with disabilities: more than 167 thousand (2% of the total child population).

However, according to international classifications, this number of people with disabilities is much higher, as disability can be temporary, not necessarily congenital or acquired (Vojtovska, 2018).

Over the last ten years, Ukraine has undergone reforms in almost all areas of social security and safety and health protection. At the present stage, Ukraine is trying to create an effective system of social protection for all categories of the population, including people with disabilities. In the process of its development the experience of foreign countries, where such a system has been operating quite successfully for a long time, should be taken into account. From this point of view, the system of social protection implemented in the countries of the European Union, where the disability rights movement has been launched, may be of concern, especially given Ukraine's interest in the EU membership.

In the countries of the European Union, social policy and the participation of social partners in its formation have undergone not only a significant transformation, but also a fundamentally new supranational and suprastate course of social protection and welfare (The official website of the World Tourism Organization).

In Ukraine, the provision of conditions for the development of inclusive tourism is defined in the following legal documents: the Constitution of Ukraine; Law of Ukraine "On State Social Standards and State Social Guarantees"; Law of Ukraine "On the Basis of Social Protection of the People with Disabilities in Ukraine"; Law of Ukraine "On Social Services"; Law of Ukraine "On Rehabilitation of the Disabled in Ukraine"; "Convention on the Rights of Persons with Disabilities".

These regulations define the main provisions of the state social policy concerning the creation of comfortable living conditions and social security for persons with disabilities. However, there is no separate normative legal act or provisions in the developed documents that would determine the mechanisms of implementation of the functions of state management of the development of an inclusive tourist environment.

The Law of Ukraine "On Tourism", which is the main legal document regulating tourism, does not define the concept of inclusive tourism (Law of Ukraine "On Tourism", 2017).

In Ukraine, the quality of life of people with disabilities, as a rule, is lower than of the rest of the population, which is due to the following: lack of humanism and mercy towards people with special needs in our society; underdevelopment and unadaptability of social infrastructure of cities and rural settlements, taking into account the basic needs of people with disabilities; low level of material security and social services, lack of flexibility; low quality or lack of technical means and devices necessary for the service, movement and work of people with disabilities; the presence of significant difficulties in obtaining professional, especially higher education, in meeting spiritual needs (Bajda, 2011).

Recommendation 1185 to the Rehabilitation Programs of the 44th Session of the Parliamentary Assembly of the Council of Europe dated May 5, 1992 defines disability as a limitation due to physical, psychological, sensory, social, cultural, legislative and other barriers that prevent a person with a disability from being integrated into society and participate in the life of the family or society on the same grounds as other members of society (Ugodnikova, 2019).

Thus, disability is a social phenomenon that no society can avoid, and therefore each state in accordance with its level of development, priorities and opportunities forms a social and economic policy for people with physical and (or) mental disabilities.

Sanatorium and resort business for people with special needs in Ukraine is based on the current Law of Ukraine "On Resorts", adopted on October 5, 2000 (The official website of the World Tourism Organization), and the relevant legal framework governing the activities of this area, ensuring the availability of sanatorium treatment for all citizens, and especially for people with disabilities, children, patients with tuberculosis, etc., economical and rational use of natural healing resources and their protection.

The tourism markets for people with special needs today are the first state sanatorium-resort zone. On December 16, 2009, the Verkhovna Rada adopted the Law of Ukraine "On Ratification of the Convention on the Rights of Persons with Disabilities and its Optional Protocol" (State Employment Service, 2019). The Convention on the Rights of Persons with Disabilities stipulates that member states undertake to ensure

and promote the full realization of all human rights and fundamental freedoms by all persons with special disabilities without any discrimination on grounds of disability. To this end, member states are under obligation to take all appropriate measures to eliminate any discrimination against persons with disabilities, and to promote the availability and use of new technologies, including information and communication technologies, mobility aids, equipment and assistive devices convenient for people with disabilities, giving priority to low-cost technologies.

Thus, inclusive tourism for people with disabilities is a modern type of tourism that allows any person to participate, regardless of his or her physical capabilities, taking into account the peculiarities of his or her physical and psychological condition and it is considered primarily as a powerful means of active rehabilitation, which structurally includes medical, psychological, pedagogical, physical, professional, labor, physical culture and sports, and social activities.

3.3. Prospects for the development of inclusive tourism in Ukraine

Analyzing the prospects for the development of tourism for people with disabilities in Ukraine, we consider the following measures to increase the availability of infrastructure for such tourists:

1. Improvement of the legal and regulatory framework for inclusive rehabilitation and social tourism, consolidating its full functioning. The implementation of this direction will testify to the high social orientation of the state, its care and concern for citizens with disabilities. Study of the conditions of free access to tourist infrastructure and tourist attractions for people with disabilities.

2. Arrangement of tourist facilities with ramps, call buttons and special markings.

3. Information support of projects of public organizations and dissemination of information about opportunities for barrier-free recreation on the territory of Ukraine.

4. Improving inclusive tourism products such as online tours, development of farmsteads in rural areas.

At the regional level, we offer the following practical measures:

- publication and dissemination of methodological recommendations on the arrangement of tourist infrastructure facilities in compliance with the requirements and taking into account the needs of persons with disabilities and the staff of tourist institutions, guides and accompanying persons;
- assessment of compliance of tourist attractive regional objects with the needs of persons with disabilities;
- selection of tourist facilities and attractions in each area, the most interesting and suitable for tourism, recreation of people with disabilities.

Thus, today in Ukraine, tourism for people with disabilities is in great demand, but it is developing mainly due to the ambitions of caring people. Therefore, the most important tasks of the state should be the following:

- social adaptation and socialization of persons with disabilities in society, increasing their rehabilitation potential and quality of life, including with the help of tourism; expansion at the legislative level (in particular, in the Law of Ukraine “On Tourism”), the priority areas of state policy in the field of specialized tourism markets for people with special needs;
- increasing the profitability of tourism for people with disabilities, encouraging national and foreign investment in the development of this tourism industry, attracting charities and other organizations, sponsors, creating new jobs;
- development of tourism for people with disabilities in rural areas, its combination with ecological (green) tourism; creation of favorable conditions for the development of tourism markets for people with special needs by simplifying tax, customs, currency, border and other regulations; expanding international cooperation in the field of tourism for people with disabilities.

Ukraine, which describes itself as a welfare state, needs specialized tourism markets for people with special needs as a social phenomenon and as a form of rehabilitation and integration of people with disabilities into society, for social adaptation and socialization of these people, to increase their rehabilitation potential and quality of life.

4. Conclusions

1. It is investigated that inclusive tourism in the conditions of socialization of economy is a modern “panacea”, which will allow to include in tourist activity any person, irrespective of his or her physical possibilities, taking into account features of his or her physical and psychological condition. Inclusive tourism in terms of socialization of the economy is seen as a powerful tool for active rehabilitation, which structurally includes medical, psychological, pedagogical, physical, professional, labor, physical culture and sports, and social activities, which can significantly affect the development of society. Meeting public needs will bring the economy to a new level of competitiveness.

2. In the studied countries (Slovenia, Israel, Spain and the USA) there is a well-developed infrastructure that allows people with disabilities to travel with minimal inconvenience, which cannot be applied to Ukraine. There has been identified a number of factors that complicate the development of international tourism for people with disabilities in Ukraine. To solve the above problems, the following measures can be proposed:

- a) development of a system of information support on tourism and excursion services that are accessible to people with disabilities;
- b) support of tourist activity of the low-income population, encouragement of travel together with the person accompanying it, by introduction of system of discounts;
- c) adoption of a state program for the development of social tourism, accessible to all;
- d) creation of a separate state department to assist in processing documents and obtaining visas for persons with disabilities;
- e) creation of a special transport infrastructure for inclusive tourism, taking into account re-equipment of vehicles, construction and improvement of roads, simplification of the ticket sales system;
- f) payment for accommodation in hotel establishments in the amount of 50% of the cost, due to the adopted state social programs.

We believe that many Ukrainian regions are ambitious for the development of inclusive tourism in Ukraine, have high economic, social and innovative potential. But on the basis of high economic development, we see a low level of integration and socialization of people with disabilities to a fulfilling life. Accessibility, barrier-free design and employment remain among the main problems of regional socialization of people with disabilities. The economic quality of development (efficiency, profitability) of regions should be combined with the social quality of service provision (high level of education, health care, level of well-being and life expectancy, satisfaction with the nature and working conditions, etc.).

It is analyzed that the number of people with disabilities in Ukraine is increasing every year, only about 5% of the total number of them travel. This is due to a number of reasons: lack of inclusive tourism; websites are not available, or only partially accessible; lack of adapted vehicles, hotel rooms; lack of professional staff capable of solving accessibility problems; lack of reliable information on the level of specific problems that a disabled person may face; lack of available restaurants, bars, and other facilities, adapted toilets; streets and sidewalks are not accessible.

It is substantiated that the solution of these problems is possible by making appropriate amendments to the Laws of Ukraine “On Rehabilitation of the Disabled in Ukraine”, “On Social Services” and “On Tourism”, by consolidating the full functioning of inclusive tourism as a type of social and physical rehabilitation of people with disabilities.

At the regional level, it is necessary to conduct a series of regional training webinars “Improvement of inclusive tourism infrastructure as a guarantee of effective economic development of the region”, involving specialists in this field.

The implementation of the proposed measures will expand the possibility for travel companies to use and provide inclusive tourism services, such as online tours, the development of farmsteads in rural areas.

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INTERNATIONAL LEGAL REGULATIONS AND ISSUES OF CORRUPT ASSETS RECOVERY

Olena Busol¹

Abstract. The article is devoted to the issues of international cooperation of the bodies regarding asset recovery and management with a purpose of combating transnational crime. It emphasizes the main provisions of international treaties on combating crime and provides an analysis of foreign legislation in the given sphere. *The subject* of the study is international legal regulation and problems of corrupt assets recovery, which required the application of interdisciplinary scientific approach in considering its economic, political, philosophical, historical and legal aspects. *The purpose* of the article is to highlight the main issues that arise when the states try to recover corrupt assets, as well as to provide national governments with appropriate recommendations, taking into account international instruments and best practices. The article considers world practice of conducting criminal proceedings and execution of court decisions. It covers the features and problems of specialized government bodies as for the recovery of the assets. The article is based on the application of a set of the following *methodologies*: philosophical, dialectical and synergetic. The study used the method of systematic analysis, which is the most commonly applied in criminological research to combat corruption. To achieve these purposes, the following research *methods* are used: analysis of theoretical sources and scientific literature; abstract-logical method in the process of theoretical generalizations and formation of conclusions; prognostic methods. The author applies the comparative method (i.e. the method of comparative jurisprudence) when comparing international documents with the legal norms of other states. *Results.* Foreign experience shows that development of a modern and effective system of combating organized corruption in any country is possible subject to application of legal norms that meet international standards, as well as the integrated use of advanced computer information technology. The author emphasize the need for OECD (Organization for Economic Co-operation and Development) member states to develop adequate regulations that will allow immediate disclosure and exchange of information on the freeze of assets with foreign jurisdiction, in order to ensure the effectiveness of the asset recovery procedure. *Conclusions.* It is recommended to adopt laws at the national level or to introduce a regulation in the criminal law of the state on illicit enrichment; to develop comprehensive national strategy; as well as to finance measures to recover corrupt assets within the framework of anti-corruption programs at the state level. It emphasizes the need to have a united state register of assets seized in criminal proceedings. In order to recover assets from abroad, states need to have political will and to use the latest technologies.

Key words: corrupt assets, Asset Recovery Offices (ARO), transnational crime, international agreements.

JEL Classification: O10, O17, O50

1. Introduction

The global spread of modern technologies, such as the Internet, mobile communications, and the international banking system has made national borders more vulnerable. Information technology is widely used by organized criminal groups as a means of preparing and arranging economic crimes. The latest information technologies give members of transnational criminal organizations the opportunity to ensure their

anonymity at risk, as well as to involve more people in criminal activities and never be exposed. The large-scale withdrawal of funds by corrupt officials from developing countries has created conditions for budget deficits increase, financial imbalances, depletion of international reserves, deepening internal and external imbalances, and growing social stratification in these countries. Corrupt acts and crimes related to abuse of power or official position are usually accompanied by

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the withdrawal of acquired funds abroad. The inability or lack of interest of the authorities as for the search of such funds in order to recover them for the benefit of the citizens leads to impunity for corruption.

The specifics of corruption crimes imply the need to transfer the criminal proceeds, which is why such crimes often reach international scales, and the recovery of these funds becomes a matter for several states. Therefore, international cooperation in the recovery of funds received from corruption crimes and withdrawn from the state becomes so much important. World experience in the recovery of assets lost by states as a result of corruption crimes shows that a successful recovery of assets requires compliance with a number of conditions set by the International Center for the Recovery of Assets of the Basel Institute on Governance, 2014.

Following the G20 summit in Hangzhou, People's Republic of China, on September 4-5, 2016, the Heads of States adopted a Communiqué (G20 Leaders' Communiqué, 2016) agreeing, *inter alia*, to develop a concept aimed at ensuring sustainable balanced growth of the world economy; to increase cooperation in the fight against corruption, as well as to follow the principles of assistance in the search for corrupt officials and assets recovery. It should be noted that over the past four years, some countries, such as Ukraine, have established special bodies to search for and manage assets, but not all of them show high efficiency. Therefore, the topic of the article is high on the agenda in the context of identifying certain issues that prevent some states to achieve real results in the assets recovery that were withdrawn from the states by oligarchs. At the same time, it is important to analyze international documents that regulate cooperation between states and the process of corrupt assets recovery, which are not always effective. The novelty of the study is to identify the reasons for the ineffectiveness of the above-mentioned process, and provide recommendations for the application of specific practical measures at both national and international levels.

2. Legal and practical issues as for recovering corrupt assets in the world

Criminal-legal issues of illegal enrichment were the subject of research of O. O. Knyzhenko, D. G. Mykhailenko, V. M. Borkov. Such scholars as S. Chernyavsky, V. Nekrasov, A. Titko, L. Gray, K. Hansen, P. Recica-Kirkbride, L. Mills, and others, covered the issues of search for and recovery of corrupt assets in their works. The authors of the article express their sincere gratitude to the scientists and researchers mentioned herein, thanks to whom it became possible to obtain the presented results. However, the problem still has many blind spots. Evidence of this is ongoing criminal proceedings as for the illegal withdrawal of

corrupt assets from developing countries, which have been reviewing by the jurisdictions of the United States and European countries for decades already.

Measures aimed at reducing the level of the shadow economy, protecting social infrastructure from criminal encroachment, are applied in most developed EU countries. For example, in 2011, Switzerland passed the act Federal Restitution of Illicit Assets of Politically Exposed Persons Obtained by Unlawful Means, to overcome a number of barriers that had emerged in high-profile cases (e.g., Mobutu, Duvalier). It governs the freezing, forfeiture, and restitution of the assets of politically exposed persons (PEPs) and their close associates in cases where a request for mutual assistance in criminal matters cannot succeed because of the failure of the judicial system in the requesting state. There is no need for a conviction of the PEP in his or her jurisdiction of origin, and the law provides for a presumption of the illicit nature of assets in cases where the enrichment of the PEP is clearly exorbitant and the degree of corruption of the state or the person in question is notoriously great (Larissa Gray, Kjetil Hansen, Pranvera Recica-Kirkbride, Linnea Mills, 2014). Duvalier Law has radically changed the situation with the issuance of corrupt politicians' funds who keep money in Swiss banks (Antikorruptionser, 2009). According to Duvalier Law, the procedure for issuing money from Switzerland has been significantly simplified. Since then, the account holder, whose money foreign law enforcement agencies require to be issued, must prove the legality of his assets. If the level of corruption in the country of origin of the official is high and the source of his or her income is not established, the Swiss authorities can seize his or her accounts and confiscate the money even without a court decision. The new Duvalier Law was successfully applied in February 2011 against leader and dictator of Libya Muammar Gaddafi incumbent at that time (Butusov, 2011).

There are already glimpses of hope in the world in counteracting corrupt crimes committed by multinational corporations. As an example, one can recall the UK Bribery Act of 2011, as well as the Foreign Corrupt Practices Act of the USA of 1977 (Busol, 2017). This Act applies to all companies located and operating in the United Kingdom of Great Britain. All foreign companies doing business in this country (regardless of their place of official registration) also fall under the application of this Act. Thus, with the entry of the Act into force, British and non-British companies conducting commercial transactions in the United Kingdom that are located in other states will have to demonstrate adequate anti-corruption procedures that meet the requirements of the Act (Bribery Act, 2010).

The experience of states that have dealt with the resonant facts of the withdrawal of assets acquired as a result of abuse of power or commitment of corruption crimes shows that the recovery of such assets is quite

a difficult task. Thus, the states of the Arab region, which got rid of the dictatorship by holding the so-called Arab Spring, had high expectations as for recovery of funds gained as the corrupt revenues of these regimes. The data in Table 1 illustrate the ratio of withdrawn, frozen and recovered assets in Tunisia, Egypt and Nigeria.

Table 1
The ratio of withdrawn, frozen and recovered assets of the states of the Arab region

Country and name of the former leader	Withdrawn assets, billion dollars	Blocked on accounts in foreign banks, billion dollars	Recovered assets, billion dollars
Tunisia, Ben Ali	5	5	0.3
Egypt, Hosni Mubarak	70	1	2
Nigeria, Sani Abacha	4	0.7	0.7

A matter of organization of the use of these recovered funds has become quite a challenging issue. Thus, in Nigeria, the funds were returned directly to the state budget of Nigeria. At the same time, some of the supporters of the previous government were still in power. Therefore, the practice of using corrupt assets remained, while non-governmental organizations did not have a significant impact on the distribution of those funds. As a result, many cases of misuse of recovered funds, purchases from the linked companies, and other abuses were reported.

We can recall the experience of recovering assets by formation of non-governmental funds under the control of the international observers. In this way, the assets were recovered in Angola and Peru. However, the disadvantage of such a system is that it deprives the governments of such states of the opportunity to show political will to recover the money (Analytical note, 2019).

3. Issues of organization of international cooperation of specialized bodies as for recovery and asset management

The following national agencies of the world community on the assets recovery and management derived from corruption and other crimes, cooperate with the Network of Investigations connected with incomes recovery gained via corrupt or criminal ways, or any other criminal income in general: the Stolen Asset Recovery Initiative (StAR) and the Camden Asset Recovery Inter-Agency Network (CARIN). One can also single out the Asset Recovery Inter-Agency Network for Southern Africa (an informal network of South African police and judicial authorities confiscating proceeds of crime, which acts the same as CARIN); Arab

Anti-Corruption and Integrity Network; The Ibero-American Network of International Legal Cooperation (Information Exchange Network); the Organization of American States OAS (verifies and communicates with practitioners through a secure computer system); The European Judicial Network (representatives of national judicial and prosecutorial bodies being contact persons for mutual legal assistance); Eurojust (judges and prosecutors from the EU States assisting national authorities in the investigation and prosecution of serious international crimes (Cherniavskiy, Nekrasov, Tytko, 2017).

The Intergovernmental Authority, which is responsible for developing and promoting a strategy to combat money laundering at both the national and international levels, is the Financial Action Task Force (on Money Laundering) (FATF). The FATF is a strategy formation body. The FATF recommendations are aimed, firstly, at improving the legal system in the country, secondly, at increasing the role of financial and credit institutions in combating money laundering, and thirdly, at intensifying international cooperation in this sphere. The FATF operates two types of the lists of countries that evade countermeasures to protect the global financial system from money laundering risks, namely the gray and black lists.

Without active participation in the process of combating money laundering by law enforcement agencies of the states where such a crime has been committed, it is problematic to identify, freeze and confiscate criminal assets. Therefore, law enforcement agencies should respond to illegal actions immediately. In order to analyze any situation quickly and accurately, they should have a very large volume of information about crime both locally and internationally (Harbovskiy, 2006).

In this context, the Egmont Group, an association of 127 Financial Intelligence Units (FIUs) from around the world, has agreed to provide financial intelligence to help each other investigate criminal proceedings. If domestic law allows, the law enforcement agencies of the Egmont Group member state may have recourse to the financial intelligence of another Member State of the Group through its FIU. Available information may include information on bank accounts, questionnaires on the transfer of cash across borders, criminal information and documents stored in public registers.

Relevant state bodies of financial intelligence of foreign countries are the following: The Financial Crimes Enforcement Network (FinCEN) (USA); Financial Transaction and Report Analysis Center of Canada (FINTRAC) (Canada); Zen-tralstelle für Verdachtsanzeigen (Germany); TRACFIN (French Republic); Internal Revenue Service NCIS / ECU (Kingdom of Great Britain), and others.

Speaking of the organizational structure of such a body as FinCEN, it should be noted that in addition to its full-time employees, the following seconded representatives work in the Office: the representatives of the Customs Service, the Ministry of Finance, the Secret Service, the Federal Bureau of Investigation, the Office for Alcohol, Tobacco and Firearms and Explosives, the Postal Service, the Internal Revenue Service, the Bailiff Service, the Office of Drug Enforcement, and the US Federal Reserve. FinCEN's annual budget is about 300 million USD. The powerful software of artificial intelligence systems AIS FinCEN allows you to automatically scan 60 government and commercial databases and simultaneously analyze disparate information about one object (i.e. organization, individual), located in different US agencies. In addition to processing the financial database, which has had confidential information for almost the last 25 years, FinCEN uses artificial intelligence to prepare reports tentatively titled "Forms as for Criminal Activity". Such forms are drawn up in FinCEN in cases where banks, inspectors of the Ministry of Finance, the tax service and other supervisors find some suspicious transactions in terms of their legality. FinCEN capabilities are now actively used by US law enforcement and intelligence agencies (Nevdashov, 2016).

To further track assets to determine whether an individual or entity or organization has an account with a U.S. financial institution, a foreign jurisdiction may request information from the division of the US Financial Intelligence Unit (FIU) – Financial Crimes Enforcement Network (FinCEN)) – through a procedure known as request 314 (a). Upon receipt of request 314 (a), U.S. financial institutions are required to verify their records and determine whether that institution has opened an account or performed a transaction on behalf of an individual or legal entity or organization that is reasonably suspected by law enforcement, based on reliable information, in involvement in significant money laundering activities. To demonstrate the importance of money laundering, FinCEN requires supporting documents that indicate the following: the decision taken under the case; probable amounts of money withdrawn from the state; country of money origin; type of criminal activity; involvement in a criminal organization and other facts that indicate the importance of the case. The requesting party needs to prove that it cannot obtain relevant information by other traditional methods of investigation and analysis (Derzhavnyi departament SShA, 2012). Only a court that convicts persons accused of committing a criminal act can declare that the money was acquired as a result of criminal activity. Until then, there will be in force a presumption of innocence of a person suspected of embezzlement, money laundering and other financial frauds.

4. System of international agreements on money laundering, search, seizure and confiscation of proceeds of crime

Analysis of foreign legislation in this sphere allows us to identify more than 50 bilateral international agreements on combating crime, which, in particular, provide for the transfer of property. Among them there are the European Convention on the Extradition (European Convention, 1957) and its Additional Protocols (Protocol, 1975) and (Protocol, 1978); the European Convention on Mutual Assistance in Criminal Matters (European Convention, 1959) and its Additional Protocol (Protocol, 1978); European Convention on the Supervision of Conditionally Sentenced or Conditionally Released Offenders (European Convention, 1964); European Convention on the Transfer of Proceedings in Criminal Matters, 1972; Convention on the Transfer of Sentenced Persons (Convention, 1983). The recovery of the assets, which have been obtained criminally, to the state is a fundamental principle of the United Nations Convention against Corruption (United Nations Convention, 2003).

The legislation of developed foreign states stipulates that international search, seizure and confiscation of criminally obtained money and property is an act of inter-national legal assistance carried out in accordance with agreements concluded or adopted on the basis of instructions of competent law enforcement agencies or courts of foreign states by identifying and ensuring the safety of confiscated money, valuables and property obtained by criminal means belonging to the accused, as well as proceeds of crime, their transfer to another state for use in criminal proceedings evidence or for damages compensation (Harbovskiy, 2006).

The Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime (Convention, 1990) is an international legal instrument aimed at pursuing a common criminal policy against serious crimes. The Article 13 of the Convention stipulates that a Party, which has received a request for confiscation of funds or proceeds situated in its territory, shall enforce a decision of the court of the requesting Party to confiscate such funds or proceeds or forward the request to its competent authorities for a decision on confiscation, and in case of receipt of such resolution, shall execute it. Pursuant to the Article 15, the requested Party shall dispose of any confiscated property in accordance with its domestic law, unless the parties concerned agree otherwise.

International instruments for counteracting crimes are also such documents as the General Assembly Resolution 217, according to which everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted to him or her by the constitution or by law

including the protection of the right to own property both individually and together with others; The Declaration of Basic Principles of Justice for Victims of Crime and Abuse of Power dated November 23, 1985, approved by UN General Assembly resolution №40/34 (Declaration, 1985), which defines what is meant by victims of crime; the rights of victims of crime; the rights of offenders and third parties; The UN Standard Minimum Rules for Non-Prison Measures (Tokyo Rules) adopted by UN General Assembly Resolution 45/110 (1990).

UN General Assembly Resolution 45/107 (Resolution, 1990) contains recommendations on international cooperation in crime prevention and criminal justice in the context of development and the new international economic order, which emphasize the adoption of necessary legislative and other measures in order to provide victims of crime with effective means of legal influence.

The Article 13 of the Model Treaty on Extradition, adopted on December 14, 1990 by UN General Assembly Resolution 45/116 (Resolution 1990), stipulates that all property found in the requested State which has been acquired as a result of a crime or which may be required as evidence, shall be transferred, at the request of the requested State, if extradition permits so.

According to paragraph 2d of the Article 1 of the Model Treaty on Mutual Assistance in Criminal Matters of UN General Assembly Resolution 45/117 (Resolution, 1990), mutual legal assistance should be provided in the search and seizure of property. The Article 17 of the same document recommends that law enforcement authorities, within the limits permitted by national law, shall comply with requests for the search, confiscation and transfer to the requesting State of any material for use as evidence, subject to the rights of bona fide third parties. The given Resolution also adopted the Optional Protocol to the Model Agreement on Mutual Legal Assistance in Criminal Matters, which deals with proceeds of crime. The proceeds of crime in paragraph 1 means the property obtained or sold, directly or indirectly, as a result of the offense, or other benefits derived from the offense. Paragraph 2 sets out the procedure for implementing the requested party's requests for the establishment and tracing of such proceeds, according to which the requested state needs to take measures to establish whether the proceeds of the offense are within its jurisdiction. Paragraph 4 stipulates the measures permitted by its legislation in order to prevent any transactions, transfer or use of these revenues until the court of the requested state makes a final decision.

At the International Conference on Preventing and Controlling Money-Laundering and the Use of the Proceeds of Crime, held under the auspices of the United Nations, June 18-20, 1994 in Courmayeur, Italy

(UN Document E, 1994) such measures as confiscation sanctions and the disclosure in course of investigation were listed as the most effective in preventing economic crimes. Prior to its widespread introduction into practice, it is recommended to expand the practice of confiscation of assets and the possibility of using such temporary measures as freezing or seizure of assets, which should also be allowed as for proceeds from crimes committed abroad.

According to the World Conference on Organized Transnational Crime, held at ministerial level on November 21-23, 1994 in Naples, Italy, crimes committed for economic gain can be successfully combated through the confiscation of proceeds or any other property of the involved individuals and organizations. In some legal systems, high importance is attached to the blocking, seizure and confiscation of assets related to illegal activities...; it is necessary that the procedures related to freezing, seizure and confiscation have a wide scope and allow the confiscation of a large number of property of offenders, in order to deprive them of all proceeds of crime; taking into account the existing legal norms and practice of counteracting organized crime, it is expedient to confiscate any property acquired as a result of organized criminal activity and any acquired assets (Report, 1994).

The analysis of international agreements on money laundering, search, seizure and confiscation of proceeds of crime shows a complex, however, well ordered system that can effectively combat corruption and organized crime in this sphere. According to the point of view of author of the article, the effective application of international treaties in practice in some developing countries is hampered by the peculiarities of national legislation and "crisis-type" crime. In such states, corruption is not just an isolated phenomenon, but an organic consequence (and symptom) of the fundamental social crisis in the state, which is the subject of a separate scientific study.

5. Effectiveness of criminal proceedings and issues of execution of court decisions

Taking into account the international agreements concluded by Ukraine, when searching for money and property obtained by criminal means, as well as their arrest and collection of related evidence, all types of procedural actions provided by the criminal procedure legislation of Ukraine, including seizure and search, may be used. Confiscation is carried out on the basis of a court judgment or other court decision and exclusively within the procedures in accordance with the law of the state in the territory of which the property is located. In this case, the party, which confiscated the proceeds or property, shall dispose them in accordance with its national law and administrative procedures.

World practice knows three ways to enforce a foreign court decision. The first method involves the need for a procedure for recognition of a foreign decision, i.e. the so-called “issuance of an exequatur” (French Republic). The second approach involves the need to register the decision of a foreign court in a special register (Kingdom of Great Britain). The third method involves checking the correctness of the decision only from a formal point of view and its verification of compliance with the public order of the state of the court (Germany, Italy, Belarus). This method allows the possibility of refusing to recognize the decision of a foreign court. For example, according to the legislation of the Republic of Belarus, a foreign court decision may not be enforced if it contradicts the sovereignty of the state, threatens its security or contradicts the basic principles of its legislation. In fact, the same grounds are stipulated in paragraph 328 of the Civil Procedure Code of Germany. However, the last of these grounds sounds a bit broader, i.e. if “the recognition and enforcement of a foreign judgment may lead to a violation of the basic principles of public order and the protected rights of individuals in the executing country” (Huban, 2015).

It should be noted that during the recovery of assets obtained as a result of acts of corruption, certain political issues may arise. The states, to which the assets were withdrawn, may be concerned about the possibility of re-division of assets due to the persistence or resumption of corruption in the requesting state, especially when the official is still in office or has a significant power. Also, the requesting state may resist the efforts of the state, to which the assets were transferred, to dictate the terms of use of the confiscated property. In such cases,

in order to facilitate the recovery of assets and their monitoring, international organizations and civil society organizations are being involved (Tykhonova, 2017).

The criminal law of some states does not take into account international norms, which introduces some ambiguity into the issue of adaptability of national legislation. In some countries, the object of confiscation is defined as funds or other property (for example, in Ukraine), but property rights are not taken into account, which excludes from the confiscation of the right to claim certain objects. Similarly, conditions, under which property is no longer considered to be derived from a crime, may not be envisaged. As a result, certain assets, in particular interest on deposits with foreign banks, will not be subject to confiscation under national law. Among the difficulties that arise at the final stage there are the following: the delay of court proceedings by the defendant through the filing of complaints and appeals against court decisions; lack of possibility to obtain evidence due to failure to establish the location of witnesses (Analytical note, 2019).

6. The reasons for inefficiency and conditions for the effective functioning of specialized state bodies for assets recovery

With regard to the management of seized property, in some states, appropriate specialized bodies have been established (for example, the English SOCA, the Czech UOKFK, the French AGRASC, and others; and sometimes it is done by units within ordinary bodies (US Marshals Service within the Department of Justice).

Application 1. Asset Recovery Offices (ARO)¹

Austria designated the Federal Criminal Police (Bundeskriminalamt – Referat “Vermögensabhöpfung”).

Belgium designated L’Organe Central pour la Saisie et la Confiscation (Central Office for Seizure and Confiscation – COSC), established by the law of 26 March 2003.

Bulgaria designated two AROs, the Commission for Establishing Property from Criminal Activity (CEPACA, which subsequently changed its name to CEPALIA), and the Supreme Prosecutor’s office.

Cyprus designated the Unit for Combating Money Laundering (MOKAS-FIU Cyprus).

The **Czech Republic** designated the Unit Combating Corruption and Financial Crimes (UOKFK), International Cooperation Department, and enacted Act no. 273/2008.

Denmark designated the State Prosecutor for Serious Economic Crime (Statsadvokaten for Særlig Økonomisk Kriminalitet)

Estonia designated the V Division, Investigation Department, Central Criminal Police

Finland designated the National Bureau of Investigation, Criminal Intelligence Division/Communications Centre France designated the Central Directorate for Criminal Investigations (Plateforme d’Identification des Avoirs Criminels – PIAC).

France recently designated another ARO, the Agency for the management and recovery of the assets seized and confiscated (AGRASC). The notification to the Commission is under way.

Germany designated two AROs, the Federal Criminal Police (Bundeskriminalamt Referat SO 35 “Vermögensabschöpfung”) and the Ministry of Justice (Bundesamt für Justiz).

Greece designated the Financial and Economic Crime Unit within the Ministry of Finance, according to law no. 3842/2010.

Hungary designated the National Investigation Office (Nemzeti Nyomozó Iroda).

Ireland designated the Criminal Assets Bureau, established by the Criminal Assets Bureau Act of 2005.

Latvia designated the Economic Police Department of the Central Criminal Police Department of the State Police.

Lithuania designated two AROs, the Criminal Police (Lietuvos kriminalines policijos biuras) and the General Prosecutor Office (Lietuvos Respublikos generalinė prokuratūra) Luxembourg designated the Parquet du Tribunal d’Arrondissement de Luxembourg, Section éco-fin.

¹ Report (2011).

The **Netherlands** designated the Criminal Assets Deprivation Bureau Public Prosecution Service (Bureau Ontnemingswetgeving Openbaar Ministerie – BOOM).

Poland designated the Assets Recovery Unit, Criminal Bureau, General Headquarters of Police.

Slovakia designated the Financial Intelligence Unit of the Bureau of Combating Organised Crime of the Presidium of the Police Force.

Spain designated two AROs: the Intelligence Centre against Organised Crime (CICO) and the Anti-drugs Special Prosecution Office (Fiscalia Especial Antidrogas) at the Ministry Of Justice.

Sweden designated two AROs: the National Criminal Intelligence Police Service and the National Economic Crimes Bureau (Ekobrottsmyndigheten).

The **United Kingdom** designated two AROs: the Serious Organised Crime Agency (SOCA) for **England, Wales and Northern Ireland** and the Scottish Crime and Drug Enforcement Agency (SCDEA) for **Scotland**.

The remaining Member States provided the following information on their progress towards designation of an ARO:

Malta indicated that the National Fraud Squad will be designated as the National ARO.

Portugal indicated that a group appointed under the authority of the Minister of Justice has been given the task of establishing the structure of the future ARO.

Romania indicated that an ARO would be established under the responsibility of the Ministry of Justice. The ARO would be multidisciplinary and involve the law enforcement structures that have temporarily acted as the ARO. The relevant personnel, including the CARIN contact point, would be detached to the future ARO.

Slovenia indicated that consideration is being given to establishing an ARO under the responsibility of the Public Prosecution Office.

Italy indicated that consideration is being given to establishing an ARO under the responsibility of the Ministry of Interior. The relevant provisions for internal designation are being drafted.

In some countries, such as Ukraine, where corrupt practices are widespread, the biggest problem today is not about finding the corrupt assets but about recovering them, that is, passing a reasonable court verdict in criminal proceedings. Moreover, if the recovery is planned to be carried out abroad, it is necessary that the verdict is also recognized by the European court at the place of recovery. So far, reports on seizure of accounts abroad are much more common than reports on requests for seizure of the accounts. In addition, the seizure of assets abroad requires a reasonable request from the Ukrainian investigative body, and what is more important – it should be made in accordance with the European standards, not Ukrainian ones (Shemelin, 2015).

Indeed, the EU clearly adheres to the presumption of innocence, so the investigator should act very carefully when preparing the relevant evidence before the European Court. The property owner usually files a lawsuit to lift the seizure of his or her assets, which can result in the EU deciding to pay large compensation to the state that made the mistake. Much depends on whether legislators or local officials understand that if criminal proceedings are instituted against a bank beneficiary in Ukraine and an attempt is made to recognize the case abroad, in the country where it is located, it may not always be very effective. The fact is that the European courts are full of criminal cases and the proceedings against the Ukrainian offender who withdrew the money can be quite long. For example, a Liechtenstein's court, in agreement with the local prosecutor's office, unblocked 13 million Swiss francs on the accounts of a well-known Ukrainian judge because the Ukrainian prosecutor's office failed to provide evidence that the money was illegal (Likhachov, 2018). The situation is complicated also by the fact that Ukraine has not yet

acceded to the international convention on ensuring Ukraine's access to non-residents' accounts, has not signed or ratified the relevant agreement, which will provide access to Ukrainian residents' accounts in foreign banks. And this happens when 101 states and almost all offshore jurisdictions have already signed the relevant convention, which allows the tax authorities of the signatory states to automatically obtain information from the relevant authorities of other states. Along with a large number of banking institutions, there is no unified register of bank accounts in Ukraine, which would make it possible to obtain this information promptly until the money are gone in the event of an investigation. However, today such registers have been established and are successfully operating in Lithuania, France and Germany. In Ukraine, the problem of interdepartmental cooperation is acute, since upon receiving requests from law enforcement agencies from other government agencies information is not provided immediately, as it should be. In addition, it should be noted that there are difficulties in internal cooperation between government agencies, as well as the lack of effective mechanisms for cooperation to combat corruption. The activities of interdepartmental working groups on asset recovery are usually complicated by the poor coordination of the various agencies involved in anti-corruption activities.

In the context of the study, it is worth mentioning the forensic audit service which is in demand by large and medium-sized organizations in developed countries that helps to expose thieves-managers, as well as search for money stolen by ex-managers. At the same time, all internal accounting is checked and the company's transaction links are built. As a result, it becomes possible to establish the companies to which funds are transferred by a certain person. The process of providing this ser-vice involves quite a large number

of staff, namely accountants, detectives, lawyers and economists. It is used in cases where huge amount of money is involved. A forensic auditor should be able not only to find inaccuracies and intentionally formulated errors in transactions, but also to understand the true purpose of the economic transaction. The search is carried out on a computer, in special software, which records and displays a step-by-step scheme of the crime: where the credited money went, to which offshore, where the money goes later to, who stole the money, who currently disposes of it, etc.

There is a cross-border search for the recovery of money from abroad, which, in addition to forensic audits, also includes the work of detectives and economic intelligence. If private detectives found out that the suspicions are serious, they, together with a team of lawyers involved in the cross-border search for assets, apply to the pretrial investigation authorities and to the court with claims, requesting information from certain registers.

When public authorities try to start this process on their own, they are already sending a signal to the other party that something is already happening. And if the special authorities fail to achieve the result, then, of course, they can hire a private company to search for assets, but time will be lost, the assets might be transferred somewhere, which will make it much more difficult to find them afterwards. Assets recovery is a process where each subsequent stage depends much on whether the previous one was carried out properly. Limited operational data complicates or even makes it impossible to conduct a successful investigation. That is, the better the implementation of the previous stages, the better the chances of success. The complexity of asset recovery processes and the lack of technical knowledge of the professionals in developing countries are major obstacles to a successful asset recovery process. It needs, first of all, the possibility of the successful search of the assets. When searching for assets, the investigator determines the ways of obtaining them and identifies the location of criminal proceeds (Cherniavskiy, Nekrasov, Tytko, 2017).

In the context of addressing this issue, the World Bank has made the following recommendations: developed and developing countries should maintain comprehensive statistics on asset recovery cases, including assets frozen or confiscated, reparations or restitution ordered, and assets recovered. Gaps in the data should be identified and their collection addressed. Where possible, countries should gather data on the various means to recover assets, including criminal and non-conviction based confiscation, administrative confiscation, private civil actions, or other forms of direct recovery. Statistics on cases and information on laws and results should be publicly available and accessible at a central location such as a website (Larissa Gray, Kjetil Hansen, Pranvera Recica-Kirkbride, Linnea Mills, 2014).

For example, in order to partially implement this recommendation, in 2020, the President of Ukraine V. Zelenskyi submitted to the Verkhovna Rada of Ukraine a bill on “civil confiscation of corrupt assets of officials”, which also provides for the return of criminal liability for illicit enrichment. According to the norms of the bill submitted for consideration, confiscation of illegal assets by court decisions is envisaged in a civil procedure without a conviction. Illegal enrichment will be prosecuted if the subject of illicit enrichment is assets in excess of significant amounts, as defined in the United Nations Convention against Corruption (United Nations Convention, 2003). Currently, anti-corruption bodies in Ukraine deal only with the most significant corruption threats. Cases involving less than 380,000 EUR but more than 30,000 EUR are dealt with in civil proceedings by recovering unjustified assets to the state revenue. The bill on illegal assets of officials will allow the state to confiscate these assets even under the previously opened cases.

Experts confirm that aid disbursements to the most aid-dependent countries co-incide with significant increases in deposits held in offshore financial centers known for bank secrecy and private wealth management. Aid capture by ruling politicians, bureaucrats and their cronies is consistent with the totality of observed patterns: it can explain why aid does not trigger flows to non-havens, why the capital outflows occur precisely in the same quarter as the aid inflows and why the estimated effects are larger for more corrupt countries. Other explanations are possible but we find them harder to reconcile with all the patterns in the data. It cannot be ruled out that firms benefiting from aid-sponsored spending receive payments in quarters with aid disbursements and deposit the funds with foreign banks; however, this mechanism cannot explain why the money only flows to havens. It seems even less likely that the results reflect profit shifting by multinational firms, the effect of aid on income through aggregate demand and portfolio adjustments by commercial and central banks. World Bank estimates suggest a leakage rate of around 7.5% for the average highly aiddependent country (Jorgen Juel Andersen, Niels Johannesen, Bob Rijkers, 2020).

The positive influence of political will is demonstrated by Indonesia, the government of which after the fall of the Sukarno regime (President of Indonesia in 1945–1967) embodied in the laws on combating legalization (laundering) of criminal proceeds the best world experience and introduced the codification of court cases to prevent the impact on lawsuits for the recovery of assets withdrawn by Sukarno and the persons from among the supporters of this political leader. On the whole, the codification of court cases has had a positive impact on the work of the Indonesian judiciary in general and in anti-corruption cases in particular (Analytical note, 2019).

7. Summary and conclusions

The purpose of recovery of the withdrawn funds from the state, on the one hand, is to promote the stabilization of the domestic economy, and on the other – to set a precedent that demonstrates the inevitability of punishment for corruption crimes as for high-ranking officials.

Our study shows that:

1) The formation of a modern and effective system for combating organized corruption in any country is possible subject to the application of regulations that meet international standards and the integrated use of advanced computer information technology.

2) It is necessary to support the opinion that countries should engage in a do-mestic or international policy debate on how asset returns can be incorporated into settlement agreements in corruption cases and should consider legislative changes necessary to permit the inclusion of third parties in settlement agreements in foreign bribery cases².

3) In order for the asset recovery procedure to be effective, OECD member countries (Organisation for Economic Co-operation and Development, OECD) need to develop adequate regulations that will allow for the immediate disclosure of information and the exchange of information on freezing of accounts by a foreign jurisdiction.

4) The adoption of laws or the introduction of a rule in the criminal law of the state on illicit enrichment

will help to overcome the existing barriers in recovery of assets.

5) All countries of the world should have a comprehensive national strategy and to finance at the state level the measures to recover corrupt assets within the framework of anti-corruption programs; the united state register of assets seized in criminal proceedings.

6) To recover assets from abroad, states need to have political will, to use the latest technologies and modern equipment. Among media representatives and experts investigating and commenting on the economic crimes of the oligarchic regime, the prevailing opinion is that if stolen property and assets are recovered from abroad, such states as Ukraine, for example, practically would not need international financial assistance. However, the recovery of assets is a long process, for example, the case of former Prime Minister of Ukraine P. Lazarenko regarding stolen assets, is considered by US courts for more than 10 years already. Ukraine is now claiming a refund to the budget of 160 million USD from the former prime minister's money that he has withdrawn from the country. Therefore, the efforts of relevant international organizations should be aimed at developing a mechanism and facilitating the acceleration of such proceedings.

7) There is a need for scientists to clarify the mechanism underlying the direct correlation between the payment of international aid to a particular state and the accumulation of assets on the offshore accounts of the economic elite of this state.

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FINTECH INDUSTRY IN UKRAINE: PROBLEMS AND PROSPECTS FOR THE IMPLEMENTATION OF INNOVATIVE SOLUTIONS

Vira Vartsaba¹, Olha Zaslavska²

Abstract. The article considers the issues of development of the financial technology market, its opportunities and obstacles, as well as the need and inevitability of the introduction of fintech solutions in the financial and credit spheres. *The main purpose* of the research is to determine the role of fintech services in the state economy, the prospects for their development, as well as to substantiate the trends of adaptation of classical credit institutions and consumers of financial services to new financial technologies at different stages of their development. Systematization of literature sources and approaches to solving the problem of intensifying activities in the field of innovative finance has shown that fintech is a specific cross-sectoral industry, which lies on the border of financial and IT spheres, consists of companies that use technology to improve the efficiency of financial services and encompasses digital innovations and programs that facilitate the creation and implementation of financial products. The urgency of solving this scientific problem is that the market of financial technologies is one of the fastest growing. That is why it highlights the need for traditional financial institutions to digitize their activities through a radical change in the business model in order to strengthen competitive positions and provide strategic advantages. *The research* of the implementation of financial technologies in the article is carried out in the following logical sequence: systematization of stages of development of the fintech industry; assessment of the development of the fintech sphere in Ukraine in the context of the transition to the stage of integration with the banking system; study of the strengths and weaknesses of domestic banks and fintech companies, outlining obstacles and necessary changes for further digitization of the financial and credit system; research of the process of implementation of fintech services on the example of the technology life cycle model; assessment of the relationship between the level of financial and digital literacy of the population and the depth of promotion of innovative fintech products; identifying ways to increase the financial and digital inclusion of the population of Ukraine. *Methods* of the empirical, experimental and theoretical levels became the methodological tools of the conducted research. *The results* were evaluated and analyzed on the basis of surveys conducted in 2017-2019 by the Ukrainian Association of Fintech and Innovative Companies, the Ministry of Digital Transformation of Ukraine, the Ukrainian division of the British audit and consulting company Ernst & Young, and the US Agency for International Development. The article presents the results of an empirical analysis of the relations and interdependence of classical and innovative financial institutions, which showed the inevitability of the processes of digitization of financial services. The study empirically confirms and theoretically proves that the favorable development of the fintech industry is based on the following: the level of public awareness in the field of finance and information technology; the level of innovative development of financial institutions and the degree of penetration of the fintech companies in the financial market of the country; completeness of the legal framework.

Key words: market of innovative technologies, fintech, fintech services, digitization, technology adoption lifecycle, financial literacy, digital literacy, financial in-clusion.

JEL Classification: G21, G29, G53, O33

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1. Introduction

Digital technology is an integral part of modern life and the financial market is no exception. Over the past twenty years, the world has seen a rapid rise in the development of new models of financial services, including in the sectors of consumer banking and payments, insurance, asset management and more. The need for the development of non-physical service channels, implementation of operational solutions and development of new methods of establishing contacts with potential customers, attracting new and retaining existing clients, is becoming urgent.

The market of financial technologies is one of the fastest growing; it occupies a leading position in the dynamics of its development both in financial terms and in terms of end-user coverage. The revolution in the field of finance is caused by new waves of high-tech startups that work better, faster and cheaper in the areas of lending, payments, capital management compared to traditional banks. The development of the fintech sector promotes the emergence of new financial products that provide more opportunities and convenience for users and require the introduction of new models of functioning and interaction of all participants in financial relations.

The aim of the article is to determine the role of fintech services in the state economy, the prospects for their development, as well as to substantiate the trends of adaptation of classical credit institutions and consumers of financial services to new financial technologies at different stages of their development.

Nowadays, the collaboration of banks and IT-sphere is a key condition for further effective development of the credit system. Digital technologies give the modern economy new essential features, such as open communications, cooperation and constant updating. This highlights the need for traditional financial institutions to digitize their activities through a radical change in the business model in order to strengthen competitive positions and provide strategic advantages.

The research was conducted at the empirical and theoretical levels. In particular, at the empirical level, the main function was the descriptive characterization of phenomena, and its result was a set of scientific facts and empirical generalizations. In turn, at the theoretical level, the task of revealing the essential causes and connections between phenomena and their rational cognition prevailed.

In order to conduct the main part of the research, we have put forward the following initial hypotheses:

H1. The speed of distribution and implementation of fintech services depends on the level of financial and technical literacy of consumers and their perception of innovation.

H2. The speed of distribution and implementation of fintech services depends on the level of development of the state's financial system and HR potential.

In our opinion, an important feature of different scientific researches is their versatility, i.e. the ability to solve problems by different methods and ways. Therefore, the development of hypotheses, their refutation or proof is based on a system of methods and approaches to the study of phenomena and patterns of nature, society and thinking.

In order to study the development of financial technologies, we used the historical method of cognition. This method made it possible to study the formation of the fintech industry in chronological order. In addition, the systematization of the stages of fintech development is based on the analysis and synthesis of the essential features of this system. Since the methods of analysis and synthesis are interconnected and embody the unity of opposites, we used such types as: direct method – in order to identify individual stages of development of financial technologies; elemental and theoretical method – for selection of causal relations between stages; structural and genetic method – in order to identify the main factors that have created a decisive influence on the formation of the modern sphere of financial technologies.

The article assesses the development of the fintech sector in Ukraine, focusing on cooperation and future integration with the banking system. The dialectical and materialist method of cognition was used in this study. In particular, it showed the connection, and interdependence of classical and innovative financial institutions. In the same context, the method of comparison was used to identify differences and characteristics of the Ukrainian fintech companies and banks.

The above techniques belong to the methods of the empirical level, which are used at the stage of formation of a scientific hypothesis.

Another group of methods are techniques of experimental and theoretical level. They help to identify certain reliable facts, carry out their accumulation and cross-check. This group includes methods of induction and deduction. Thus, the inductive method of research made it possible to establish general principles for the existence of all phenomena of a particular area on individual facts. During the deduction, a final conclusion was drawn from several initial statements based on certain patterns. In particular, these methods were used to study the life cycle curve of innovation (in their general sense) and its use in order to implement in the field of financial technology; as well as identifying barriers to the spread of fintech services among potential users. Thus, induction made it possible to prepare the ground for deduction and provide knowledge of factual material, and deduction, in turn, allowed expanding the scope of this knowledge.

The article also uses descriptive research methods, which include questionnaires, surveys and recording of results, in particular, the attitude of the population to

the introduction of fintech innovations in everyday life, as well as the state of banks and fintech companies in the context of their cooperation and vision of financial technology industry in Ukraine. The results were evaluated and analyzed based on the surveys conducted by the Ukrainian Association of Fintech and Innovative Companies (Ukrainian Association of Fintech and Innovative Companies, 2019), the Ministry of Digital Transformation of Ukraine (Ministry of Digital Transformation of Ukraine, 2019), the Ukrainian division of the British audit and consulting company Ernst & Young (Ernst & Young, 2019), and the US Agency for International Development (USAID, 2019).

2. Literature review

A significant contribution to the study of the features of implementation of fintech solutions in financial and banking systems was made by foreign scholars, including: P. Schueffel (Schueffel, 2016), G. Dorfleitner, L. Hornuf, M. Schmitt and M. Weber (Dorfleitner et al., 2016), K. Leong and A. Sang (Leong and Sang, 2018), R. Teigland, C. Ingram, K. Kallstrand and N. Wesley-James (Teigland et al., 2015), N. Morozko and V. Didenko (Morozko and Didenko, 2017), S. Chishti and J. Barberis (Chishti and Barberis, 2016).

The issues of the emergence and functioning of the financial technology industry are reflected in the works of such Ukrainian scientists as: A. Mazaraki and S. Volosovych (Mazaraki and Volosovych, 2018), V. Mishchenko (Mishchenko et al., 2018), M. Tarasyuk and O. Koshcheev (Tarasyuk and Koshcheev, 2017), L. Dudynets (Dudynets, 2018), M. Dyba and Ye. Osadchyy (Dyba and Osadchyy, 2018), H. Pochenchuk (Pochenchuk, 2018).

Thorough researches in the fintech industry is carried out by the International Institute for Management Development (IIMD, 2019), the International Association of Insurance Supervisors (Kawai, 2016), Ernst & Young (Ernst & Young, 2019), Deloitte (Deloitte, 2017), the United States Agency for International Development (USAID, 2019), etc.

Financial technology or fintech is a symbiosis of finance and new technologies using mobile applications and algorithms. The concept of "fintech" is not new, but only in recent years, this kind of business has begun to acquire the features of a separate industry. At the same time, financial technologies are changing extremely rapidly under the influence of different social needs, what causes an ambiguity in the understanding of this concept. Currently, there is no generally accepted interpretation of the term "fintech".

The International Association of Insurance Supervisors, represented by its Secretary General Y. Kawai (Kawai, 2016), provides the following definition: fintech can be described as technologically enabled financial innovation, that is giving rise to new

business models, applications, processes and products, which can have a material effect on financial markets, institutions and the provision of financial services.

Another approach to the interpretation of this concept is demonstrated by the Board of Governors of the US Federal Reserve System (US Federal Reserve, 2016). According to their opinion, fintech is an industry composed of companies that use technology to make financial systems and the delivery of financial services more efficient.

German scientists, authors of the report "The FinTech Market in Germany" (Dorfleitner et al., 2016) believe that it is impossible to define the term "fintech" from a legislative point of view. Fintech companies are subject to differing kinds of legal and regulatory obligations due to their highly various business models and the extremely diverse products and services they offer. In a general sense, fintech encompasses companies that simply provide the technology and software solutions to financial service providers.

In order to generalize the understanding of fintech, British scientists K. Leong and A. Sung (Leong and Sung, 2018) define it as a cross-disciplinary subject that combines finance, technology management and innovation management. According to them, financial technologies are any innovative ideas that improve financial service processes by proposing technology solutions according to different business situations, while the ideas could also lead to new business models.

R. Teigland (Teigland et al., 2015), a researcher at the Stockholm School of Economics, believes that fintech is a rather complex category to define. Based on the name, it is a space where technology is used in the financial industry. This definition is very broad and encompasses the entire finance industry since every area uses technology in some way: from SWIFT as the basis of the global digital transfer system to retail banks operating digital portals to stock exchanges and clearinghouses.

Russian scholars N. Morozko and V. Didenko (Morozko and Didenko, 2017) believe that financial technology space is an industry that includes technologies for banking and corporate finance, capital markets, financial analytics, payments, personal management finance, private and venture capital.

According to the Ukrainian scientists A. Mazaraki and S. Volosovych (Mazaraki and Volosovych, 2018), in the general sense, fintech is an innovative technology used by financial institutions, government agencies, trade organizations to meet the needs of consumers of financial, administrative services and goods in conditions of development of the consumer economy.

Thus, the term "fintech" is used to describe a wide range of innovations in the financial sector. An analysis of the scientific literature allows us to conclude that several approaches should be applied to the interpretation of this concept.

Firstly, fintech is a branch of the economy that consists of companies (mostly startups) that use technology to provide financial services more efficiently.

Secondly, fintech is a set of institutions that implement innovative business models and technologies for expansion and distribution of financial services.

Thirdly, fintech can be defined as computer programs, applications, and other technologies used to support or provide banking and financial services.

And, fourthly, fintech is a service provided by technology companies using special software and focused on the financial needs of customers.

Thus, in our opinion, fintech is a specific cross-sectoral industry, which lies on the border of financial and IT spheres, consists of companies that use technology to improve the efficiency of financial services and encompasses digital innovations and programs that facilitate the creation and implementation of financial products.

3. Stages of development of the fintech industry

Financial technology (fintech) is a relatively new industry. According to various estimates, there are more than 20 000 fintech startups in the world, 40% of which appeared in 2019. This area is the most dynamic in terms of development speed. In particular, fintech investments amounted to 111 billion USD in 2019 (Statista, 2020). The increasing popularity of financial technologies and the number of fintech startups are due to the fact that they are a cheaper alternative to banks in the financial market.

The development of financial technologies has been particularly noticeable over the last ten years. The key factors are the following:

- the loss of customer confidence in the traditional banking sector during the global financial crisis of 2008-2009;
- the growing expectations of society for the provided services, including financial ones. Nowadays consumers are focused on continuous updating and speeding up of processes, higher availability of technology and convenience of services;
- the spread of mobile Internet and social networks. This leads to the fact that the focus of the strategy of attracting bank customers is shifting from the expansion of the branch network to the creation of online services;
- the desire for innovations, the increased requirements for the ease of use of services, the quality and speed of information acquisition which are the features of the largest generation – the millennials (born between 1980 and 2000);
- the success of technology companies in other sectors of the economy (trade in goods, entertainment industry, etc.).

The first stage in the evolution of the fintech-industry is closely related to the development of infrastructure

and the emergence of the first technological solutions. At the beginning of its history, this field remained analogous for a long time. It means that all transceivers used signals that could be transmitted by cable or radio. Therefore, this period is associated with the creation of the telegraph in 1816, which allowed the transmission of text information over a considerable distance and defined the whole era of financial technology. One of the first users to introduce such communications were the brokerage offices, which made it possible to accelerate the transfer of data between commodity and stock exchanges in different cities and to increase the liquidity of trading (Ferderer, 2008).

The next stage is characterized by the creation and implementation of the first computers. In the late 1960s, the development of computer technology gave an impetus to the transformation of the financial sector from analogue to digital industry. In particular, the first electronic payment systems appeared, and the rapid growth in the volume of financial transactions between counterparties of different countries became the driver of the creation of a Society for Worldwide Interbank Financial Telecommunications (SWIFT). In 1967, the British bank Barclays established the first ATM to provide access to liquidity during off-hours. With the development of the Internet technologies in the early 1990s, many large financial institutions began to advertise their products online. In 1995, an American multinational financial services company Wells Fargo added the ability to manage and order online banking services to its site. Later its example was followed by other financial intermediaries (Trunin et al., 2019).

The beginning of the new millennium (2000-2010) can be characterized as the next stage in the evolution of financial technologies. The starting point of a new era of development were two crises at the beginning of the 21st century: the crisis of the dotcoms (the companies whose business models are fully based on the Internet), and the global financial crisis of 2008-2009. The latter, in particular, has undermined the credibility of traditional financial institutions, which suffered severe restrictive measures by regulators. This was the beginning of a new stage in the development of financial technologies, characterized by the emergence of a significant number of startup companies (Arner et al., 2015).

The fourth stage of the development of the fintech industry was in the last decade: 2010-2020. For this period, it was typical to provide financial products and services to individuals and legal entities directly by startups. The introduction of innovative financial technologies led to the formation of a fundamentally new model of banking business, which is accompanied by intensification of the processes of replacement of banking offices by computer programs. During this period, bank-funded innovation centers began to emerge. Gradually, the fintech products began to move from a category of products focused on a narrow

circle of technologically competent customers to society as a whole.

In the future, the fintech industry will have two more stages: partnership with the credit system and integration. In the coming years, there will be a transition from competition to partnership between classic banking institutions and fintech companies. Such a development strategy will allow both of them to cooperate mutually. Banks with many years of experience and positive image enjoy loyalty among customers, but they do not always have time to implement the latest technologies. On the other hand, fintech startups have useful services and products that are difficult for newcomers to promote in the market. One of the major collaboration platforms is Open Banking. It refers to banks opening up their application programming interfaces to third party providers (TPPs), so that the TPPs and fintech providers have access to their data and, based on that, can build new applications and services or create new services together with financial institutions. Based on this open data, startups can create new solutions for banking customers.

The final period – the integration phase – foresees that open marketplaces, API (application programming interface) and complex analytics will emerge in the future. All this will result in the final merger of credit institutions and fintech companies.

4. Cooperation between banks and fintech companies

In this context, it is important to assess the development of the fintech sphere in Ukraine, focusing on cooperation and future integration with the banking system. First of all, it should be noted that more than 70 new fintech companies have appeared in the domestic market during 2019, representing almost 40% of their total. In general, at the beginning of 2020, there were 180 entities in

the fintech industry in Ukraine that is 2.5 times the number of existing banks.

Figure 1 presents the survey results of the most technological banks in Ukraine regarding their partnership with the fintech system.

Among the surveyed Ukrainian banks, 73% of institutions have joint projects with fintech companies, which is much simpler and cheaper than maintaining their own teams of software developers. The same number of banks has their own innovation centers. At the same time, most institutions do not have platforms for incubation and acceleration of fintech projects. Many of such projects are implemented with the help of fintech companies, which enables banks to reduce investment costs and minimize risks. Financing is still a pain point for fintech companies. As we can see, 100% of the studied banking institutions do not invest in fintech companies. Usually, new technological projects in the world are funded by outside capital and, above all, by banking resources. However, in Ukraine, 61% of fintech companies are fully funded from their own sources.

In our opinion, banks and fintech companies are interested in a mutually beneficial partnership, as each has its own strengths and weaknesses. Banks have significant amounts of financial resources and a customer base. But not all of them are willing to invest their own financial, time and human resources in developing innovative products. In addition, the activities of banks are tightly regulated by the central bank. Therefore, they may not always be able to adapt quickly to the growing needs of customers, as this requires an appropriate regulatory framework.

The strength of fintech companies is the high level of qualification and innovative potential of employees. In addition, they have much more information about their potential customers' needs by tracking their activity on social networks, and navigating through geolocation applications. The disadvantage of fintech

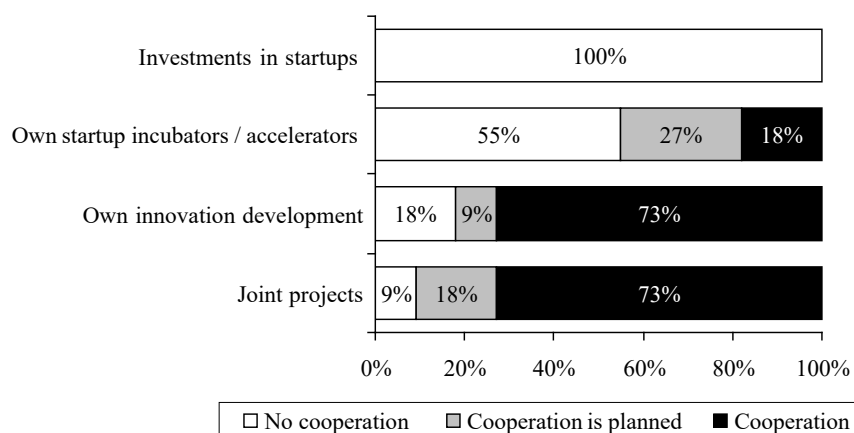


Figure 1. Involvement of the Ukrainian banks in cooperation with fintech companies

Source: built by authors based on (Ukrainian Association of Fintech and Innovative Companies, 2019)

Table 1

Rating of key aspects of the fintech industry development in Ukraine

IMPLEMENTATION OF NON-REPRESENTED OR UNDERREPRESENTED FINTECH SERVICES		
Nº	In terms of fintech companies	In terms of banks
1	Cross-border payments for individuals and small and medium-sized businesses	Online payments directly from a bank account
2	Providing digital financial services to individuals who do not have traditional bank accounts	Providing digital financial services to individuals who do not have traditional bank accounts
3	Electronic invoicing	Online shopping lending
MAJOR OBSTACLES TO FINANCIAL TECHNOLOGY DEVELOPMENT		
1	Outdated and unfavorable legislation	The cost of digital transformation
2	Partnership problems with classic credit institutions	Complexity of core business processes
3	Low level of financial literacy of the population	Outdated and unfavorable legislation
LEGISLATIVE REVIEWS REQUIRED FOR FINTECH INDUSTRY DEVELOPMENT		
1	Remote customer identification	Remote customer identification
2	Electronic money	Digital payments from government agencies and in their favor
3	Licensing AIS (account information services) and PIS (payment initiation services)	P2P lending regulation

Source: built by authors based on (USAID, 2019)

companies is that they mainly specialize in a narrow range of operations. Besides they do not always have enough funding to implement their ideas, as well as the time needed to win customers' trust. Therefore, both for banks and for fintech companies, the smartest strategy is not to compete, but to look for mutually beneficial ways of partnership (Financial Pulse, n.d.).

The options for cooperation between banks and fintech companies can vary from simple use of the services of fintech providers to a full-fledged partnership, investments in the implementation of new systems or the acquisition of implemented projects. In particular, priority areas for cooperation are digital banking, electronic payments, car and travel insurance, P2P lending and B2P lending.

Table 1 presents the perspectives for the development of the fintech industry in Ukraine, the main barriers and the necessary legislative changes in terms of banks and fintech companies.

The above-mentioned rating highlights the obvious differences between the moods of fintech providers and banks. This is due to the fact that only 57% of all domestic fintech companies operate exclusively in Ukraine. Moreover, more than 70% of them plan to enter foreign markets. The reason for this is a weak domestic market with low demand and disposable income within the country [catalog]. That is why a considerable number of companies are influenced by global trends of market changes, which are not felt so strongly in Ukraine. However, both fintech companies and banks emphasize the need for remote identification of customers, in particular, banks. Therefore, they believe that availability of a legal framework for remote customer identification is a necessary factor in the development of the industry. In general, the problem of outdated and unfavorable legislation is a key issue for both groups of institutions. It is also worth noting that fintech companies and

banks see significant potential in future of the financial services for individuals who do not have bank accounts. This niche is considered potentially profitable for startups as well as classic credit institutions (USAID, 2019). However, the biggest problem in Ukraine in this area is the low levels of financial inclusivity and literacy of the population, as well as the rejection of the latest technologies by elders.

According to a study by the United States Agency for International Development (USAID), which took into account the level of financial knowledge, behavior and attitude, the overall index of financial literacy of the Ukrainians was 55%. This is the lowest rate among the 30 countries of the Organization for Economic Co-operation and Development (OECD). By the way, the average index among OECD countries is 63% (USAID, 2019).

5. Lifecycle curve of innovation adoption

One of the most topical issues in the activities of fintech companies is the spread of innovations among potential users. This problem was started in the 1960s. In particular, the American scientist Everett Rogers developed a theory of innovation diffusion that explains how, why, and at what speed new ideas and technologies are distributed to different consumer groups (Rogers, 2003). In 1992, this theory was developed by Geoffrey Moore, an American organizational theorist, management consultant and author, known for his work "Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers" (Moore, 2014). G. Moore's theory is called the technology adoption lifecycle, which is based on the division of consumers into five categories. The highlighted approach is still being taken as a basis for promoting innovative solutions, and in the fintech industry as well. From

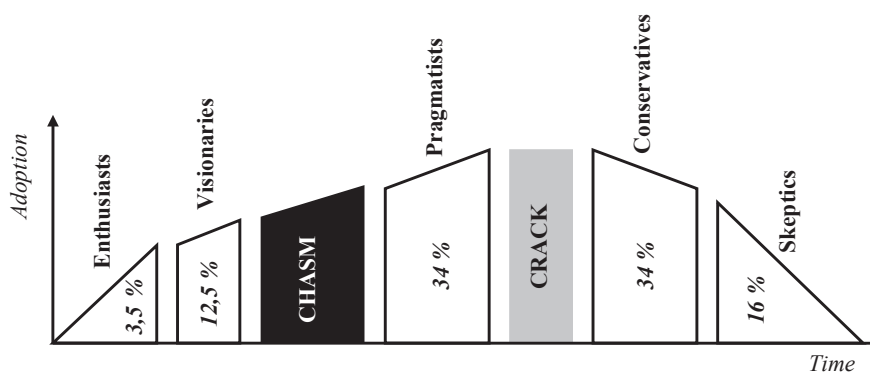


Figure 2. Lifecycle curve of innovation adoption

Source: built by authors based on (Moore, 2014)

this point of view, we believe that this approach quite logically describes the stages of promotion of innovative solutions in the fintech industry (Figure 2).

There are two types of innovations: discontinuous, which require society to change habits, and continuous, which upgrade products but does not change the usual course of action. In the study of the Global FinTech Adoption Index 2019, it is proposed to distinguish two types of fintech services: transformed and invented. Thus, in order to provide the first type of services, which are traditionally offered by classic financial institutions, fintech providers use technology to transform these services, offering consumers a more attractive ones (extended capabilities, greater efficiency, lower rates, etc.). Invented services have not existed before, but they have become possible due to technology (P2P-lending, e-wallets, mobile payments, etc.) (Ernst & Young, 2019).

The chasm theory concerns discontinuous innovations and invented services. Fintech providers have to fight the inertia of potential buyers to convince the majority to change their usual way of life. As we can see, society's acceptance of technological innovations takes time. Due to different attitudes to innovation, this process takes place in stages, moving from one category of consumers to another.

Therefore, the first to accept new products are technical enthusiasts or innovators for whom fintech is a hobby or part of doing business. Later, visionaries or early adopters join, who are interested in the competitive advantages of an innovative product. Consumers of the first two groups form a small primary market, the audience of which is up to 16% of all potential customers. If a product or service proves its effectiveness, enthusiasts and visionaries are joined by pragmatists ("the early majority"), who make up approximately a third of the market. Unlike previous categories of consumers, they do not seek significant changes, but need stable benefits of an innovative product. For fintech companies, pragmatists are able to become extremely loyal customers. So by enlisting

their support, fintech providers gain access to long-term market dominance.

The fourth group – conservatives or "the late majority" – is similar in market coverage to the previous one, but consumers in this segment are suspicious of high technology. They prefer simple and high-quality goods and services, so they are pessimistic about the benefits that technology will bring them. Eventually, conservatives bring fintech products to their lives because they realize that technological innovations are becoming an integral part of life and business and can pass them by.

The last group of consumers is skeptics, who occupy a small market segment that is resistant to the influence of new technologies. Fintech companies often do not take this category into account as customers; on the other hand, they are the biggest critics of innovations and can answer why the product does not meet their expectations (Moore, 2014).

The gap that exists between visionaries and pragmatists is due to innovations that require significant behavioral changes from the consumer. Such products and services fall into the so-called "chasm" that separates the early and main markets. Pragmatists seek consistency and productivity, but try to avoid global innovations. Therefore, the gap arises when an innovative product, from their point of view, can-not be used as something significantly useful that expands opportunities and simplifies life, but is positioned only as a fundamentally new and high-tech product. As a result, the chasm may lead to a refusal to adopt the technology at all.

Another obstacle may be the crack between pragmatists and conservatives. It arises primarily due to insufficient technical and financial literacy of the latter. Therefore, when a product reaches the highest point of development on the market, its application should be as simple as possible so that it continues to be successful among less competent consumers of fintech services. Otherwise, the transition to conservatives may not happen at all (Moore, 2014).

In this context, it is necessary to consider the attitude to innovation of the Ukrainian society through the

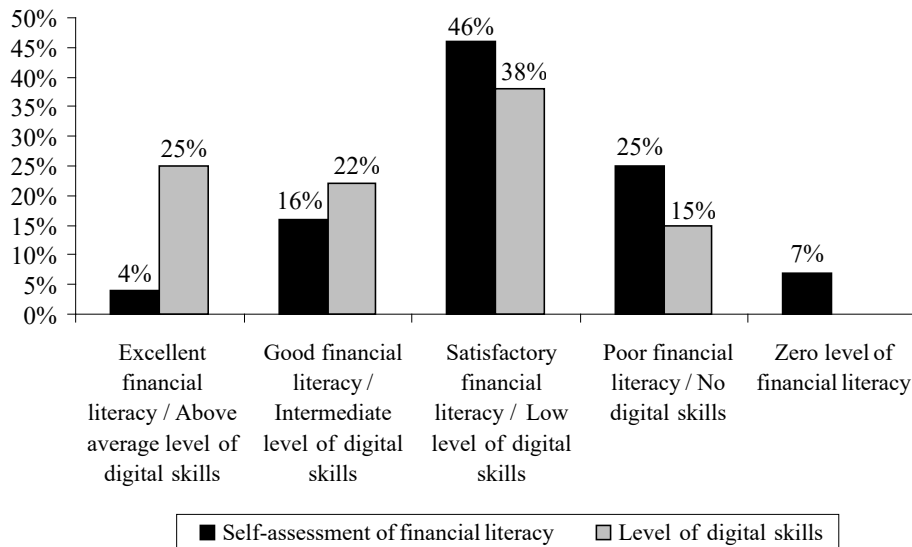


Figure 3. The level of financial and digital literacy of the population of Ukraine

Source: built by authors based on (USAID, 2019; Ministry of Digital Transformation of Ukraine, 2019)

prism of the general level of financial and digital literacy of different groups (Figure 3).

As you can see, the diagram in Figure 3 is similar to the curve of the life cycle of innovation (Figure 2). This confirms the relation between the level of financial and digital literacy and the depth of promotion of innovative fintech products among users.

According to the results of the research, the vast majority of the Ukrainians have only basic knowledge and skills in the financial field and information technology, which allows them to use the simplest services, including payments and settlements. Domestic users do not feel comfortable interacting with financial institutions and are only interested in issues that are of personal importance.

The greatest influence on financial behavior in Ukraine has age and property status of the population. In particular, young people aged 18-34 feel most free in the world of finance and latest technologies. It is important for this group of consumers to be able to obtain reliable information about a financial institution or service in the mode of instant access. Young people will be glad to use any personal financial management tools, if only there was an application for modern gadgets and platforms. Middle-aged Ukrainians are the most experienced users of financial services; they are a socially active category and are used to overcome various difficulties. They are the target audience for the promotion of financial products aimed at long-term planning. As for the older generation, the online space causes them fear. The life experience of consumers in this group has taught them not to trust financial institutions, and being among the victims of Internet frauds increases this distrust and leads to the rejection of even the simplest digital services (USAID, 2019).

In addition, Ukraine is currently experiencing infrastructural unpreparedness to improve the digital skills of the population. The most noticeable is the disparity between cities and villages, which is expressed in unequal access to financial and telecommunications services.

Thus, the study proves that a favorable environment for the development of the financial sector of any country is largely based on four main components:

- 1) level of public awareness in the field of finance and information technology, as well as their trust in financial institutions;
- 2) level of development of financial and credit institutions, their innovativity and qualifications of employees and managers;
- 3) level of development of fintech companies and the degree of their penetration into the financial market of the country;
- 4) completeness of the legislative, regulatory and supervisory framework.

6. Conclusions

Sustainable development of the state and society is the development at the crossing of economic, social and technological efficiency. Financial technologies are a key tool for sustainable development, as they are able not only to increase the efficiency of the financial sector, but also to contribute to the implementation of the strategy of comprehensive development of the state.

In our opinion, the hypotheses put forward at the beginning cannot be refuted or confirmed separately. The study found that the speed of distribution and implementation of fintech services in Ukraine is influenced by many factors, it depends on the level of development of

the country in a range of aspects such as: financial and digital literacy, innovativity of financial institutions, preparedness of financial markets and communication technologies to promote fintech services and the availability of appropriate legal framework.

Considering the conducted research and in order to achieve the goal of developing the fintech industry in Ukraine and increase financial and digital inclusion of the population, the main ways to overcome existing barriers are the following:

– adaptation of communication strategy and digitization to the socio-demographic structure of the population of Ukraine. In particular, if the focus is mainly on online information channels, the level of accessibility to older groups and people living in rural and mountainous areas is reduced. Therefore, it is necessary to actively involve offline channels (television, screens in social institutions and transport) to broadcast short videos about the essence and benefits of fintech services for ordinary citizens;

– improvement of the quality of technical support of government agencies. Often, institutions of social, educational, medical, cultural spheres are the drivers of digital change and habits of society. That is why a sufficient level of hardware and software of such institutions is important;

– permanent and systematic formation of demand for digital skills among the population. The message should focus on convenience, time savings, and ease of use of the latest technologies in the financial sector, as well as the inevitability of the transition of most processes to the virtual space and automation of various services;

– creation of a platform for digital skills training and its advertising support. Such training platforms should be simple, clear, secure and based on intuitive use. Under such conditions, the potential consumer will not only be able to learn how to use online services, but also receive information about the product, its safety and ease of use.

As a result, we should note that the effectiveness of the policy of improvement the level of financial

literacy and digital skills of the population depends on the integrated implementation of various learning mechanisms. Therefore, in order to deepen existing knowledge, emphasis should be placed on online learning. When developing basic skills, offline support at the place of residence is the main one. At the same time, the infrastructural resource here can be libraries, clubs, educational institutions, local governments, social protection institutions, pension funds, etc.

Nowadays the importance of this issue has come to the fore, as the COVID-19 pandemic forced the world to move into the virtual reality of communication, education, financial services, health care and more. The current situation makes it clear that there is a need to accelerate as much as possible all the processes that will contribute to the development of the fintech industry. Unprecedented conditions in all areas of activity have shown that in the forefront now there are the businesses that have been the first ones to move into the digital space.

Taking into account the study, we can note the trend towards the development of virtual customer service channels, implementation of operational solutions and the development of new methods of establishing contacts with potential consumers of financial services. This phenomenon also characterizes the Ukrainian financial system, which leads to the regular implementation of new solutions in the areas of innovation and the development of strategies to overcome obstacles along the way. In general, under the condition of qualitative and quantitative development, the fintech industry in Ukraine is able to radically change the existing organizational and institutional structure of the financial and credit system in the future.

In conclusion, it should be noted that the stabilization of the economy, updating the legal framework and implementation of new technologies in the activities of traditional credit institutions can have a beneficial effect on the rapid growth of financial technology, which already surpasses any other high-tech industry in Ukraine.

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ECONOMIC AND MATHEMATICAL MODELING OF INVESTMENT ATTRACTIVENESS OF CONSTRUCTION ENTERPRISES IN THE SYSTEM OF STAKEHOLDER RELATIONS

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Abstract. The relevance of the process of implementation of economic and mathematical model of investment attractiveness of the construction enterprise in the stakeholder relation system is proved. The results of the analysis of the theoretical provisions for determining investment attractiveness and stakeholders of construction enterprises are presented. An economic and mathematical model for the formation of stakeholder groups in the system of relations with construction enterprises is proposed. A system of information and analytical support for an integrated assessment of the level of stakeholder relations and investment attractiveness of construction enterprises has been formed, which creates the basis for economic and mathematical modeling. The directions, methods, and models for assessing investment attractiveness and the level of stakeholder relations of construction enterprises are proposed. *The practical aspects* of their implementation are determined. The results of economic and mathematical modeling of the investment attractiveness of construction enterprises in the system of stakeholder relations are presented. *The subject* of the research is the directions of formation and realization of economic and mathematical modeling of investment attractiveness of enterprises in the system of stakeholder relations. The formation of the *research methodology* is carried out on the basis of the theoretical and methodological platform for determining the investment attractiveness of enterprises and stakeholders that interact in the relevant field. In addition, a set of methods is used to conduct the study: analytical (to determine indicators of investment attractiveness); expert assessments (to determine the index of stakeholder relations); method of analysis of hierarchies (to assess the importance of the impact of stakeholders (customers of construction products; workers of construction enterprises; top management; managers of various levels of construction enterprises; owners of construction enterprises; government bodies influencing the formation and level of interaction of stakeholders with construction enterprises; public organizations influencing activities in construction and architecture; corporate governance bodies of construction enterprises; the bodies of internal and external control interacting in the construction industry; the competitors of construction enterprises; the suppliers of inventories interacting with construction enterprises; stakeholders interacting in the formation and use of spatial, urban, environmental information and creating investment attractiveness of construction enterprises; the design organizations; other stakeholders interacting with construction enterprises) at the level of stakeholders from noses of enterprises); economic and mathematical modeling (to establish causal links between the level of stakeholder relations and the index of investment attractiveness of enterprises); generalization and systematization (to obtain and interpret research results). *The aim* of the study is to establish causal relationships between the factors that shape the level of stakeholder relations and investment attractiveness of construction companies based on economic and mathematical tools. *The result* of the study is the formation of a quantitative basis for making sound management decisions in the system of stakeholder relations of construction companies to increase their investment attractiveness.

Key words: investment attractiveness, level of stakeholder relations, construction enterprises, economic and mathematical modeling, adequacy criteria, model.

JEL Classification: E62, H20, H50

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1. Introduction

In current conditions, the functioning of the construction sector companies affects the development of the state economy and ensures the activity of other areas. In particular, enterprises in the construction sector determine the directions of more than 30 areas. In the international practice, the importance of areas of interaction between stakeholders that affect the functioning of companies that ensure their investment attractiveness and development is growing. In particular, the areas and features of interaction with stakeholders, their importance in the system of functioning of companies are formed and presented in the Danish Civil Code (1907), the Swiss Code of Obligations (1911), Normative legal documents on collective bargaining regulation of labor relations in Germany (1918), Finland (1924), "The Freedom of Association and Protection of the Right to Organise Convention" (1948, No. 87), The Right to Organise and Collective Bargaining Convention (1949, No. 98), Collective Agreements Recommendation (1951, No. 91), Cooperation at the Level of the Undertaking Recommendation, (1952, No. 94), Collective Bargaining Convention, (1981, No. 154), etc. Therefore, the determination of the influence of stakeholders on the activities of construction enterprises and their investment attractiveness is of particular importance. This study aims to determine the processes of economic and mathematical modeling of investment attractiveness of construction enterprises through the formation and implementation of stakeholder relations by determining the relationship between the integrated systemic of investment attractiveness and the generalizing factor of the level of stakeholder relations based on the application of the method of correlation and regression analysis and model adequacy criteria. This approach allows to develop strategic directions, to determine the promising contours of the construction enterprises development, to carry out their forecasting, considering the types and characteristics of interaction with stakeholders. In recent years, more and more attention has been focused on ensuring the investment attractiveness of companies and accounting for stakeholder relationships, as in many other areas of the economy. In (Parmar et al., 2010; Donaldson and Preston, 1997; Preston, 2004; D'Anselmi, 2011), the directions and peculiarities of stakeholder interaction in the process of enterprise functioning are defined. The importance of determining the investment attractiveness of enterprises is indicated in (Dearden, 1987; Post et al., 2002; Krylova et al., 2003; Sabluk et al., 2005).

Section 2 of the study summarizes the scientific developments to determine the investment attractiveness of construction enterprises and stakeholders that affect them. Section 3 provides information and analytical support for the implementation of economic and

mathematical modeling of investment attractiveness in the system of stakeholder relations, presents the results of the integrated assessment of investment attractiveness and level of stakeholder relations of enterprises in the construction sector. In Section 4, the methods and directions of economic and mathematical modeling are substantiated, the criteria of adequacy are defined. Section 5 is devoted to the results of economic and mathematical modeling of the systemic factor influence of the stakeholder relations level on the investment attractiveness integrated index for construction enterprises. Section 6 presents the results of the study.

2. Literature review

Existing scientific approaches are characterized by various aspects of determining the investment attractiveness of enterprises. In particular, Valinurova and Kazakova (2005) and Krylova et al. (2003) assess investment attractiveness based on indicators of efficiency and effectiveness and form the resulting approach. In developing the presented method, Sabluk et al. (2005) consider the investment attractiveness in terms of its integrated criteria for the validity of investment conditions, which ensure the personal interest of investors to invest capital in multiplying it or obtaining social effect. Burkovets (2012) defines investment attractiveness from the socio-economic feasibility of funding based on the coordination of the interests and capabilities of the investor and the recipient of investments, ensuring the achievement of the goals of each of them with the accepted level of return and investment risk. A similar approach is presented in (Duka, 2008).

In contrast to the previous approach, Korotkova (2013) considers investment attractiveness from the point of view of factors forming and influencing it: external (industry affiliation; geographical position; availability and accessibility of natural resources ecological situation; culture and education of the population; environmental sustainability; socio-political stability; legal and regulatory framework; information field; incentives for investors; developed infrastructure; economic freedom of the enterprise; position in the world market; controlling state bodies in the area of investment; inflation rate; export opportunity; population income level; industry competition); internal (production program; marketing activities; management accounting and controlling; corporative management; staffing potential; legal activity; production technologies; development strategy; competitiveness; the uniqueness of the object; duration of the investment program; company rating in the industry; payment discipline; condition of property and financial resources; expenses; capital structure (Duka, 2008). A similar approach is developed in (Budnikova, 2011; Kuntsevich, 2005; Ovdij et al.,

2009). Representatives of the factor approach (Shportko et al., 2014) distinguish the following groups of factors:

- financial condition (debt to equity ratio, current liquidity, asset turnover, return on equity on net income, return on sales on net income);
- market environment (the investment climate in the region, the investment attractiveness of the industry, the geographic market for the enterprise, the stages of the product life cycle, the degree of competition in the market, the environmental burden on the environment, the development of transport infrastructure);
- corporate governance (government influence on business management, the proportion of shares in free circulation on the secondary market, the amount of remuneration to the board members, financial transparency and disclosure of information, the rights of shareholders, the level of dividend payment) (Ovdiy et al., 2009).

In the framework of the factor approach, factors that form the investment attractiveness of the enterprises are determined (Bilyak, 2006; Yuriy and Hubanova, 2005; Mayorova, 2004; Orlykovsky, 2007; Shiyan and Strochenko, 2003; Vovchak, 2006; Maidanevich, 2004). A comprehensive approach to determining investment attractiveness has been developed in (Rud, 2006; Dudka and Lysenko, 1999; Savchuk et al., 1999; Leshchenko, 2001; Floriko, 2003), which is characterized by financial indicators, market features and characteristics, internal and external factors.

Some authors define the following features and characteristics of the investment attractiveness of the enterprise: its general characteristics, directions and features of the formation and use of the production and technical base, production and economic potential, types, and nomenclature, characteristics of the management system, the company's place in the industry, financial condition, interaction with owners (Malova and Silverstova, 2003).

The representative of the sophisticated approach is Kostyuk (2005), who considers the investment attractiveness in terms of its system characteristics, which are determined by a set of rules and conditions for investing resources in a particular object at a specific time. Laiko (2005) characterizes investment attractiveness as a complex of production and financial quantitative and qualitative conditions and criteria, which characterize their potential opportunities and economic advantages in comparison with other objects of investment. When implementing an integrated approach, Stalinskaya (2003) defines the investment attractiveness as an integrated indicator that combines complex formalized and non-formalized criteria characterizing the advisability of investing in the analyzed potential object of investment. Chervanov (2003) characterizes investment attractiveness as a set of indicators of the financial and economic condition of an enterprise, based on which a potential investor can

make a managerial decision on the feasibility of investing free funds in the development of this enterprise without significant risk of loss or non-receipt of the expected return on invested capital.

Thus, while sharing the provisions of the integrated approach, the study proposed the concept of investment attractiveness of enterprises as a systemic category, which is determined by a combination of factors, characteristics, and features, which define potential opportunities, investment, and economic advantages, form a quantitative basis for making informed management decisions and ensuring the development of enterprises. Based on the scientific provisions (Vlasova and Bezginova, 2006; Kolchkova, 2011; Pilyushenko and Shkrobak, 2000; State Statistics Service of Ukraine, 2011; Zhuvagina, 2013), it is proposed to evaluate the level of investment attractiveness of the enterprises based on an integrated approach.

As a result of the systematization of existing scientific approaches (Yukhimchuk and Suprun, 2003; Zyatkovsky, 2003; Ackoff, 1972; Ackoff and Emery, 2005; Cleland, 2004), the definition of stakeholders of construction enterprises was proposed. Stakeholders are characterized as individuals and (or) legal entities or groups of individuals who interact in the construction sector based on strategic circuits and social trends and are defined by functional, resultant, structural, process, strategic and complex features. The relationships of stakeholders have a certain level of risk and threats, which allows to form contractual relations in capital construction, carry out architectural control, relevant calculations, which are provided by project documentation, material, and labor resources.

The formed groups of stakeholders of construction enterprises as follows:

- customers of construction products (S_1);
- workers of construction enterprises (S_2);
- top management (S_3);
- managers of various levels of construction enterprises (S_4);
- owners of construction enterprises (S_5);
- government bodies influencing the formation and level of interaction of stakeholders with construction enterprises (S_6);
- public organizations influencing activities in construction and architecture (S_7);
- corporate governance bodies of construction enterprises (S_8);
- the bodies of internal and external control interacting in the construction industry (S_9);
- the competitors of construction enterprises (S_{10});
- the suppliers of inventories interacting with construction enterprises (S_{11});
- stakeholders interacting in the formation and use of spatial, urban, environmental information and creating investment attractiveness of construction enterprises;
- the design organizations (S_{13});

– other stakeholders interacting with construction enterprises (S_{14}).

The economic and mathematical model on the formation of stakeholders in the system of relations with construction enterprises is proposed:

$$S = F(S_j), j = \overline{1,14}, \quad (1)$$

where F is the factor of formation of stakeholder groups interacting with construction enterprises; j is the number of types of stakeholders.

3. Data and unit root tests

To conduct the research, a system of information and analytical support for the integrated assessment of the level of stakeholder relations and investment attractiveness of construction enterprises based on accounting and financial reporting, data on contractual obligations, results of strategic management, use of production facilities, technologies and workers, peculiarities of formation and application of material and technical base, directions of relationships between different groups of stakeholders is formed. This provides the opportunity to generate complete and high-quality technical and economic information used in the construction industry and provides the basis for economic and mathematical modeling. Within the framework of information and analytical support, a system of factors is being formed that affects the level of stakeholder relations and the formation of investment attractiveness of construction enterprises, ensuring the development of a multi-level system of indicators. For the creation of information and analytical support and determination of factors, groups of stakeholders are selected based on the implementation of the following steps:

1. Formation of the total number of experts. The study identified 50 people ($n_t = 50$).

2. Definition of criteria (k_i) for the selection of experts. These include:

2.1. The level of theoretical training of experts on the interaction of stakeholders of construction enterprises (k_1).

2.2. Educational qualification level of experts (k_2).

2.3. Experience in working with various stakeholder groups (k_3).

2.4. Experience in the construction industry (k_4).

2.5. Experience in expert groups (k_5).

2.6. The experience of experts in advancing development programs for construction enterprises (k_6).

2.7. Specialized education of experts (k_7).

3. Formation of scale for the assessment criteria for the selection of experts and their characteristics. The scale value ranges from 0 to 10.

4. Construction of a questionnaire for assessing the quality of experts on a specific scale, assessing the average value according to established criteria.

5. The adoption of the decision on the selection of experts from the average value. The expert remains if the average value by the criteria is equal to or more than 5 (meets or exceeds a moderate level).

6. Determination of the minimum number of experts (n_{\min}) necessary for the study by the model:

$$n_{\min} = 0.5 \left(\frac{3}{Dk_t + 5} \right). \quad (2)$$

The minimum number of experts required for the study is set at Level 3.

As a result of the study, 38 experts were identified through the application of the proper steps, the opinions of which will be taken into account to determine the stakeholder indicators and the level of investment attractiveness of construction enterprises.

4. Empirical specification and method

Taking into account the results of systematization of theoretical and methodological provisions, information and analytical, normative and legal provision for determining investment attractiveness, the directions for estimation of its level are proposed:

1. Formation of information and analytical support for determining the investment attractiveness of construction enterprises.

2. Determination of local factors that form the investment attractiveness of construction enterprises.

3. Formation of systemic factors for determining the investment attractiveness of construction enterprises.

4. Development of a multi-level system of indicators of investment attractiveness assessment.

5. Assessment of local factors in the formation of investment attractiveness of construction enterprises.

6. Assessment of systemic factors for determining investment attractiveness.

7. Building an integrated model for assessing the investment attractiveness of construction enterprises.

8. Determination of weight coefficients characterizing the influence of systemic factors on the integrated indicator of investment attractiveness.

9. Assessment of the integrated indicator of investment attractiveness of construction enterprises.

10. Interpretation of the results.

According to the proposed stages, an integrated economic and mathematical model has been built (3):

$$IA = k_{IA_1} x IA_1 + k_{IA_2} x IA_2 + k_{IA_3} x IA_3 + k_{IA_4} x IA_4 + k_{IA_5} x IA_5 + k_{IA_6} x IA_6 + k_{IA_7} x IA_7, \quad (3)$$

where IA is an integrated indicator of the investment attractiveness level of construction enterprises, rel. units; $IA_1, IA_2, IA_3, IA_4, IA_5, IA_6, IA_7$ are systemic indicators of the level of investment attractiveness of construction enterprises, rel. units; $k_{IA_1}, k_{IA_2}, k_{IA_3}, k_{IA_4}, k_{IA_5}, k_{IA_6}, k_{IA_7}$ are weighting factors that determine the influence of external market factors, internal factors, factors of wealth,

financial stability, liquidity, business activity, the level of investment activity of construction enterprises on the formation of their investment attractiveness, rel. units.

The characteristics of the integrated indicator values of the investment attractiveness of construction enterprises are presented in Table 1.

Table 1
The characteristics of the integrated indicator values of investment attractiveness, rel. units

The value of the integrated indicator	Characteristic
0	no investment attractiveness of construction enterprises
0.01 – 1	insignificant
1.01 – 2	low
2.01 – 3	relatively low
3.01 – 7	moderate
7.01 – 8	relatively high
8.01 – 9	high
9.01 – 9.99	significant
10 and more	absolute

For an integrated assessment of the level of stakeholder relations of construction enterprises, a methodological approach scheme has been developed (Figure 1), which includes:

- formation of information and analytical support for providing an integrated assessment of the level of stakeholder relations;
- building an analytical and diagnostic system of indicators for the integrated assessment of the level of stakeholder relations;
- determination of factors of the third level in the integrated assessment system;
- development of models for determining systemic factors of second level;
- assessment of systemic factors of the second level of a multi-level system;
- building an integrated assessment model;
- assessment of weighting coefficients of mutual influence and the impact of systemic factors on an integrated indicator of stakeholder relations level;
- determination of the integrated indicator of stakeholder relations level;
- development of conclusions based on the assessment of stakeholder relations level in the context of the formation of a stakeholder-oriented strategy for managing construction enterprises using economic and mathematical modeling.

It should be noted that the analytical and diagnostic system of indicators for integrated assessment of stakeholder relations includes three levels:

Level 3: Includes local factors that are determined by analytical and expert methods;

Level 2: Formed from systemic factors that are determined by the models presented in the previous

section. In general, systemic factors of second level are determined by:

$$S_1 = \langle S_{11}, S_{12}, \Omega \rangle, (4)$$

$$S_2 = \langle S_{21}, S_{22}, \dots, S_{214}, \Omega \rangle, (5)$$

$$S_3 = \langle S_{31}, S_{32}, \dots, S_{38}, \Omega \rangle, (6)$$

$$S_4 = \langle S_{41}, S_{42}, \dots, S_{4103}, \Omega \rangle, (7)$$

$$S_5 = \langle S_{51}, S_{52}, \dots, S_{571}, \Omega \rangle, (8)$$

$$S_6 = \langle S_{61}, S_{62}, \dots, S_{632}, \Omega \rangle, (9)$$

where S_1 is the systemic factor of quality and level of contractual obligations fulfillment, rel. units; S_2 is the systemic factor of the interaction level of the investigated construction enterprises with different groups of stakeholders, rel. units; S_3 is the systemic factor of formation and realization of corporate management of construction enterprises for ensuring interaction with stakeholders, rel. units; S_4 is a systemic factor, which provides stakeholder engagement in the context of the formation and implementation of strategic directions for the construction enterprises operation, rel. units; S_5 is the systemic factor that determines the socio-economic and innovative level of construction enterprises, which are provided through the interaction of stakeholders, rel. units; S_6 is the systemic factor of the strategic condition of construction enterprises, rel. units.; Ω is a set of relationships and links between factors, which influence the level of formation and implementation of stakeholder relationships.

Level 1: determines the integral indicator of the level of stakeholder relations (I_s), which is formed based on systemic factors.

In general, models for determining the systemic factors influencing the level of formation and implementation of stakeholder relations and the model for determining the integrated factor of the stakeholder relations level are presented in Figure 1. The scale of integrated factor values for the stakeholder relations level is presented in Table 2.

Table 2
The scale of integrated factor values for the stakeholder relations level, rel. units

The value of the integrated indicator	Level
0	there are no stakeholder relations at construction companies
0.01 – 1	insignificant
1.01 – 2	low
2.01 – 3	relatively low
3.01 – 7	moderate
7.01 – 8	relatively high
8.01 – 9	high
9.01 – 9.99	significant
10 and more	absolute

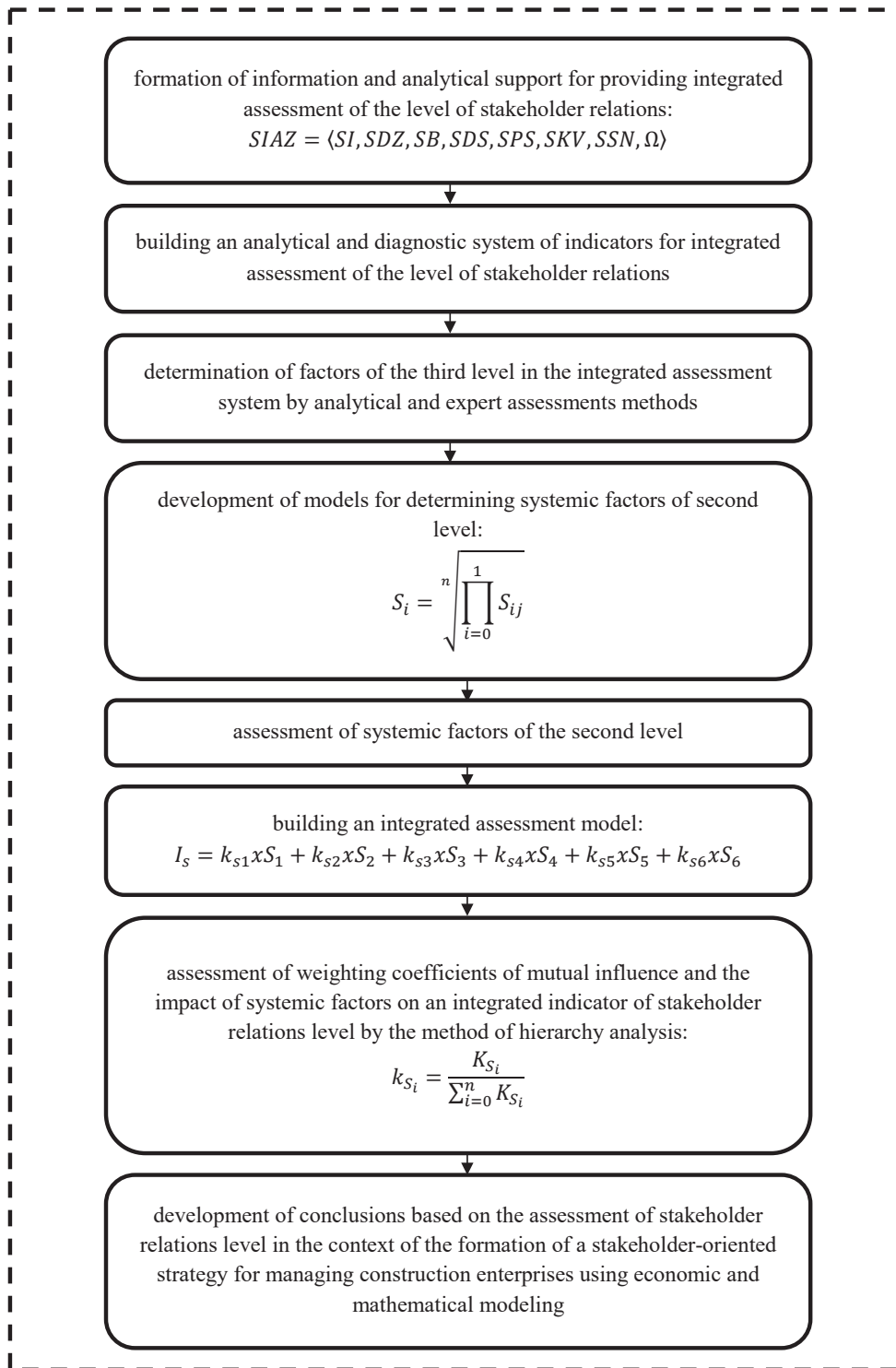


Figure 1. Scheme of methodological approach development for integrated assessment of the stakeholder relations level

A multi-level analytical and diagnostic system of indicators for integrated assessment of stakeholder relations level allows to determine the relationship between indicators, to make the transition from local factors to systemic ones, and makes it possible to consider a significant number of features and characteristics,

which affect stakeholder relations. At the same time, a multi-level system of indicators creates the basis for the formation of a quantitative basis for a stakeholder-oriented strategy for managing construction enterprises.

Thus, a methodological approach to an integrated assessment of the level of stakeholder relations of

construction enterprises has been proposed. This creates a quantitative basis for developing a stakeholder-oriented strategy for construction enterprise management and making managerial decisions aimed at increasing investment attractiveness. The methodological approach includes a system of factors, which consider the quality and level of contractual obligations fulfillment, directions and peculiarities of investigated construction enterprises interaction with different groups of stakeholders, formation, and implementation of corporate management of construction enterprises to ensure interaction with interested parties, strategic directions of their functioning, socio-economic and innovative level of construction enterprises.

To form a quantitative basis for making managerial decisions, it is proposed to establish causal relationships between the integrated indicators of investment attractiveness and the level of stakeholder relations of construction enterprises by constructing an economic and mathematical model. At the same time, criteria for the adequacy of this model, which determines the causal relationships between the integrated indicators of investment attractiveness and the level of stakeholder relations of construction enterprises, are proposed, the characteristics of which are presented in Table 3.

The correlation and determination coefficient defines the level of influence of the independent variable x (the integrated indicator of stakeholder relations level) on the dependent factor y (the integrated indicator of investment attractiveness). The Student's t-test determines the feasibility of the established links between the integrated indicators of stakeholder relations level and the investment attractiveness of construction enterprises. Fisher's F-test criterion determines the level of materiality and significance of the established relationships between integral indicators. The criteria of homo or heteroskedasticity determine the homogeneity degree of the residual indicators of the economic and mathematical model. Durbin-Watson test (DW) criterion is used to determine the autocorrelation of residuals.

The phenomenon of multicollinearity leads to a shift in estimates of the economic and mathematical modeling results, which reduces the effectiveness of the study. The level of multicollinearity is as follows: the correlation coefficient between the independent variables is 0 – no multicollinearity; 0.01 – 0.2 – low multicollinearity; 0.201 – 0.4 – insignificant; 0.401 – 0.6 – moderate; 0.601 – 0.8 – significant; 0.801 – 0.99 – high; 1 – absolute.

Table 3

Criteria for the adequacy of the economic and mathematical model, rel. units

Adequacy criterion	Model
The correlation coefficient (R)	$R = \frac{\sum_{i=1}^n (X_i - \bar{X})x(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2 x \sum_{i=1}^n (Y_i - \bar{Y})^2}}$ <p>where X_i, Y_i are the values between which relationships are established (an integrated indicator of investment attractiveness and an integrated indicator of the level of stakeholder relations of construction enterprises); \bar{X}, \bar{Y} are the average values of integrated indicators</p>
Determination coefficient (R^2)	$R^2 = \sqrt{R}$
Student's t-test	$t = \frac{M_1 - M_2}{\sqrt{m_1^2 + m_2^2}}$ <p>where M_1, M_2 are the arithmetic average values of integrated indicators of the level of stakeholder relations and investment attractiveness of construction enterprises; m_1, m_2 are the values of statistical errors of integrated indicator arithmetic average</p>
Fisher's F-test	$F = \frac{R^2}{1 - R^2} x \frac{(n - m - 1)}{m}$ <p>where n is the number of observations regarding integrated indicators of stakeholder relations and investment attractiveness levels</p>
Homo or heteroskedasticity test criteria	are determined by Goldfeld-Quandt, Glacier models, by μ -criterion
Durbin-Watson test (DW)	<p>the Durbin-Watson test is determined (DW):</p> $DW = \frac{\sum (e_i - e_{i-1})^2}{\sum e_i^2}$ <p>where e_i, e_{i-1} are the remains of integrated indicators of the of stakeholder relations and investment attractiveness levels</p>
Multicollinearity Test Criteria	the level of influence of one independent variable on another independent variable is estimated by the corresponding pair correlation coefficient

5. Empirical results

The results of the integral indicator estimation of the investment attractiveness level are presented in Table 4.

Table 4

The results of the integrated indicator estimation of the investment attractiveness level, rel. units.

Construction enterprises	The value of the integrated indicator of the investment attractiveness level
JSC "Kyivmiskbud"	2.57
Brovarsky Plant of Building Structures	3.12
JSC "KDBK"	2.44
PJSC "Trust Zhitlobud-1"	2.82
LLC Construction Company "Miskzhitlobud"	2.07
PJSC "Capital Real Estate"	4.5
JSC "Zhitlobud-2"	1.87
Ukrainian State Building Corporation "UkrBud"	1.61
Construction group "Fundament"	1.82

Based on the study, the groups of construction companies have been identified by the level of investment attractiveness:

1. Low: JSC "Zhitlobud-2", Ukrainian State Building Corporation "UkrBud", Construction group "Fundament".

2. Insignificant: JSC "Kyivmiskbud", JSC "KDBK", PJSC "Trust Zhitlobud-1", LLC Construction Company "Miskzhitlobud".

3. Moderate: Brovarsky Plant of Building Structures, PJSC "Capital Real Estate".

A quantitative basis for determining the investment attractiveness of construction enterprises has been formed, which allows to make justified management decisions aimed at its growth. The results of the study indicate a low or insignificant level of investment attractiveness of most construction enterprises. Moderate values of the integrated indicator approach the limit of an insignificant level. This requires the formation and implementation of systemic actions to increase investment attractiveness by increasing the effectiveness of interaction with stakeholders of construction enterprises as part of a stakeholder-oriented strategy for their management.

As a result of applying the methodological approach to the integrated assessment of stakeholder relations level, the corresponding integral factor is determined: JSC "Kyivmiskbud": $I_s = 5.84$; Brovarsky Plant of Building Structures: $I_s = 4.85$; JSC "KDBK": $I_s = 4.97$; PJSC "Trust Zhitlobud-1": $I_s = 4.96$; LLC Construction Company "Miskzhitlobud": $I_s = 4.39$; PJSC "Capital Real Estate": $I_s = 4.8$; JSC "Zhitlobud-2": $I_s = 4.82$; Ukrainian State Building Corporation "UkrBud": $I_s = 4.9$; Construction group "Fundament": $I_s = 4.82$.

Thus, as a result of the assessment, an integral indicator of stakeholder relations level has been determined, which allows to establish that JSC "Kyivmiskbud" has been characterized by the highest value of this criterion. However, as at other construction enterprises, it has been determined by a moderate level, which indicates the inconsistency of measures to form and implement contractual obligations, the interaction of stakeholders in the areas of functioning of construction enterprises, the formation and implementation of corporate governance in the system of relationships between interested parties, strategic areas, unsystemic formation and implementation of socio-economic and innovative directions when interacting with interested parties, the lack of a system for the formation and determination of the strategic state indicators of construction enterprises, and ensuring their permanent monitoring.

Using information and analytical support, the economic and mathematical model for the relationship between the generalizing factor of stakeholder relations level and the integral indicator of construction enterprises investment attractiveness has been developed:

$$IA = -0.47 x I_s^2 + 5.06 x I_s - 10.99 . \quad (9)$$

The indicators that determine the degree of relationship between the indicators are as follows: $R = 0.004$, $R^2 = 0.02$.

The values of the correlation and determination coefficients indicate their low interconnection, the generalizing factor of stakeholder relations level determines the change in the integrated indicator of investment attractiveness of construction enterprises only by 2%.

The criteria for the adequacy of the economic and mathematical model of the relationship between the generalizing factor of the level of stakeholder relations of construction enterprises and the integral indicator of their investment attractiveness are presented in Table 5.

Table 5

The results of determining the criteria for the adequacy of the economic and mathematical model, rel. units

Criterion	Calculated values	Normative values
Fisher's F-test (F)	$F_s = 3.6$	$F_n = 3.44$ (at the level of significance = 0.05)
Student's t-test (t)	$t_s = 2.62$ $t_p = 2.37$	$t_n = 2.31$ (at the level of significance = 0.05)
Homo or heteroskedasticity test criteria	$M_{calc} = 1.74$	$M_{norm} = 2.36$
Durbin-Watson test (DW)	$DW_{calc} = 0.16$	$DW_U = 0.68$
Multicollinearity Test Criteria	-	-

The interpretation of the economic and mathematical modeling results indicates the ambiguity of the influence of the generalizing factor of stakeholder relations level on the integral indicator of construction enterprise investment attractiveness. In particular, it was established that most of the adequacy criteria indicate the reliability of the established relationships and the appropriateness of the developed economic and mathematical model. At the same time, as indicated by the value of the calculated Durbin-Watson test, the heterogeneity of the residues is observed. The low level of connection between the generalizing factor of stakeholder relations level and the integral indicator of construction enterprises investment attractiveness indicates the insufficient focus of these enterprises on ensuring effective interaction with stakeholders. Therefore, there is a need to develop and implement a stakeholder-oriented strategy for managing construction enterprises to ensure the growth of their investment attractiveness.

6. Conclusion

As a result of the study, the conceptual apparatus of economic science has been improved, in particular, the concept of “stakeholders of construction enterprises” has been introduced into the functional field of effective enterprise management, which, unlike the established ones, is determined by a combination of operational, resulting,

structural, process, strategic and complex features. The relationships of stakeholders have a certain level of risk and threats, form strategic directions and ensure the efficiency of construction enterprises, form contractual relations in capital construction, carry out architectural control, relevant calculations, which are provided by project documentation, material, and labor resources.

The created topological foundations for the determination of stakeholder groups of construction enterprises based on the essential characteristics of customers of construction products, workers, top management, owners, government bodies, corporate governance bodies, design organizations, other stakeholders, which, unlike the existing ones, allows to form an analytic and diagnostic system of stakeholder indicators for development and implementation of a methodology for the integrated assessment of stakeholder relations level.

The processes of economic and mathematical modeling of the investment attractiveness of construction enterprises through the formation and implementation of stakeholder relations are substantiated by determining the relationship between the investment attractiveness integrated indicator and the generalizing factor of stakeholder relations level based on the application of correlation and regression analysis methods, model adequacy criteria, which allows to develop strategic directions for the development of construction enterprises.

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MANAGEMENT OF ETHICAL BEHAVIOR OF AUDITORS

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Abstract. The *purpose* and *tasks* of the paper are to develop effective tools for the internal control at audit firms, including monitoring and self-assessment, to improve the quality of professional performance. The relevance of this study is determined by the high expectations of society to the quality of audit opinions. The information quality according to the results of the audit is achieved by adhering to strict professional standards and ethical conduct. Audit companies organize control over the implementation of ethical principles, which requires addressing issues of monitoring and self-assessment in the management of ethics. *Methodology.* The authors used deductive and empirical methods. The material for the development of conclusions on the organization of monitoring is collected upon the results of a survey of 150 auditors, accountants and managers of companies. 96 full responses (64% of all respondents) were evaluated by five experts. The questions in the survey are designed to identify the audit experience of the ethics internal control organization in audit companies, and the results of its compliance assessment. Automated application capabilities of analysis and modeling of the program "1-C Accounting 8.0" were used for data processing. *Results.* The authors propose the auditors' compliance with ethical testing standards and calculations of the effectiveness indicators of the ethical values compliance as tools for assessing. The authors see the organization of such an element of internal control in the need to formulate clear ultimate goals for auditors. As goals need to be measured, the following criteria for assessing their achievement are proposed: ethical values are known and adhered to; senior management is aware of the ethical foundations and they serve as an example; staff understands and adheres to the code of conduct; active promotion of ethical principles by senior management. The authors conclude that ensuring leadership of senior management, both by example and in behavior is an important component of the implementation of organizational measures for ethical behavior. If such an ethical manner in the behavior of the company's management is achieved, it is an important positive contribution to the organization of the ethical behavior management: employees trust and feel confident in management decisions. *Practical implications.* Achieving the goals of managing ethical behavior of senior management can be recognized by the following criteria: senior management is recognized by co-workers as an example of high standards of behavior, willingness of senior management to be leaders in these issues and take action on misconduct, understanding individual and collective responsibility for compliance with high ethical standards. The implementation of objectives and organizational measures will achieve the defined criteria by monitoring the behavior of auditors on compliance with ethical standards. Taking into account the experience of audit companies, revealed during the survey, the authors propose to organize the monitoring of ethical behavior as an open, honest and transparent process. The awareness of all employees and ensuring confidence in its conclusions and results are the conditions for its establishment. According to the authors, the abovementioned is achieved through the availability of annual reports, regular assessment of the strengths and weaknesses of audit behavior, dissemination of information on the example of senior management in ethical behavior, staff awareness of the value of monitoring ethical behavior and their participation in annual surveys. *Value/originality.* The authors propose criteria for monitoring and self-assessment: incentives for all employees for good conduct, application of incentives and sanctions to overcome immoral acts, informing employees, effectiveness of incentives taking into account the specifics of

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high ethical culture of the audit company. The proposed measures will strengthen the elements of the internal quality control system and can be used in external evaluation of the quality of the audit company's activities. Implementation of proposals can lead to the organization of audit work on a high quality, responsible basis, which can increase the trust of users in the results of audit activity.

Key words: ethical principles, monitoring of ethical behavior, self-scoring of compliance with ethical norms, internal control of ethical rules, effectiveness of ethical behavior management.

JEL Classification: M14, M42

1. Introduction

Promoting public confidence in auditors and audit firms is based on the introduction of ethical conduct by auditors. It is determined by ethical principles and professional values. They reflect the model of personal development formulated taking into account the requirements of the International Financial Reporting Standards (IFRS) in the framework of the national policy (Gazabon, Cantillo & Alvarez, 2017). Professional ethics is consistent with the values of mankind. The evolution of ethics in the new environment (Lachmann, 2013) requires adjustment of ethical values management in the professional field. Public reporting is based on public trust.

It is developed by users in the community based on regulatory requirements defined by the ethics code of the auditor (Code, 2012). Reliability is deeply based on the independence, impartiality and moral integrity of auditors, who must act in accordance with values and moral principles. Therefore, the audit firm must ensure that the described ethical standards are recognized as professional standards of conduct and are observed in the course of performing audit activities (Bondar, 2017).

In most cases, standards require auditors to act in accordance with the principles of honesty, independence, objectivity, impartiality, confidentiality and competence (Shvets & Pavlik, 2018).

The organizational side of their implementation is based on the following. Each audit company that declares compliance with International Standards on Auditing, which are recognized in Ukraine as national, has the responsibility and obligation:

- to develop their own internal rules of ethics, clarifying ethical concepts based on the principles set out in the International Code of Ethics;
- ethical requirements are mandatory for auditors in the performance of their professional duties and in their personal lives;
- all auditors should be familiar with ethical values and principles;
- active promotion of the ethical conduct in the entire audit firm;
- actions of the top management of the audit firm should be an example of ethical behavior;
- audit firm must be governed by appropriate policies and procedures that guarantee its independence.

- the company's management should ensure the reduction of employees' conflicts of interests in the audit practices;

– prevent the internal conflicts of interest and corruption. These aspects of ethical issues have aroused considerable interest among researchers (Nubia & Díaz Ortega, 2018) and the search for conflict resolution.

2. Materials and methods

The key research question is a comprehensive study of the purpose and mechanisms of the influence of ethical principles on the quality of professional duties and the interaction of monitoring tools, self-assessment in the internal control system of the audit company.

Thus, a deductive approach is applied that is suitable for this type of conceptual research. The literature review was performed using the primary sources, by querying the databases of leading scientific journals via applied methods of analysis, synthesis, generalization and comparison.

The empirical method of data collection was the dominant research method by processing individually written answers to questions in the survey developed by the authors of this study. The questionnaire was evaluated by 5 audit experts. The survey of auditors was conducted in 2018-2019 during the advanced professional training of auditors, state accountants, managers at Taras Shevchenko National University of Kyiv. The purpose of the survey was to study and analyze the existing experience of auditing ethics to develop proposals for the organization of ethical behavior management, methodology and reporting.

The questions were aimed at assessing the situation with ethics management in audit companies, the results of the assessment of compliance with ethical principles. 96 out of 150 respondents (64%) provided written answers to the questionnaire, guided by ideas, values and their own professional experience. The minimum sample size for analysis should be around 90 to 140 respondents (Volkova & Emelyanov, 2012). Data processing was performed using the application program Analysis and Modeling in the audit "1-C Accounting 8.0".

3. Theoretical prerequisites of the study

Strengthening auditors' accountability for their findings is not just about strengthening their control

over professional standards and in-depth knowledge. Here, the task of managing an audit firm includes strengthening, streamlining and consolidating management systems for ethics of business behavior with the development of realistic and practically implemented mechanisms of ethical control. These actions should be supported by auditors in their day-to-day operations (Sunyoto, Lely & Agus, 2019).

The essence of professional ethics, although used by most auditors on a daily basis, is usually featuring a rather vague category of behavior in practice (Montaner & Perozo, 2008).

A high level of ethics in auditing can help to prevent biased evaluations in audits and enhancing the reputation among stakeholders and society as a whole.

Ethics audit is a useful means of internal control of the audit firm compliance with ethical requirements, which ensures the implementation of the responsibility principle for honest and objective conclusions (Bakhtiari & Azimifar, 2013).

However, in domestic auditing practice, ethical conduct is not the norm yet, despite the auditors' declaration of compliance with the ethical principles set out in the International Standards on Auditing. Internal rules and practices in audit firms regarding the management of auditors' ethical values have not become widespread yet.

Some authors (Bondar, 2017) believe that the control of ethical values should be provided by:

- effective legal framework that sets basic standards for ethical conduct;
- effective accountability mechanisms, such as internal control and external audit during quality control;
- law enforcement procedures and mechanisms for implementing and maintaining compliance with ethical standards;
- informing colleagues of the audit company about the facts of response to non-compliance with ethical standards.

Another group of authors (Shvets & Pavlik, 2018) believes that ethics is a conscious choice of a model of behavior that corresponds to certain values and principles. This is confirmed by the Code of Ethics of Auditors (Code, 2012). It declares a system of values and principles that guide the daily work of controllers (auditors).

There are researchers who distinguish the key (basic) ethical principle among all others (Peña & Bastidas, 2007). They believe that honesty is at the heart of all values of any code of ethics. Honesty is measured in terms of accuracy and fairness. Honesty requires auditors to adhere to standards of control and principles of professional ethics both in terms of form and substance. And the internal honesty of auditors is an important aspect, which is understood as not overstepping the authority to make management decisions when consulting the auditee.

Important circumstances of honesty include refusing to accept gifts or tokens of gratitude, avoiding relationships with responsible officials of the control object, not using own official position in personal interests, avoiding relationships that may involve the risk of corruption, not using and not disseminating information, received for the performance of their official duties, in order to obtain benefits for themselves or others.

However, the auditor's compliance with such behavior without internal beliefs, but only due to external circumstances is a rather difficult task (Szafran, 2014). Therefore, the search for tools that would provide constant monitoring of compliance with ethical values in the system of internal control is an important area of looking into the theory and practice of ethical standards in auditing.

4. Results and extended opportunities for systematic assessment

Organizational measures to implement this task are as follows:

- strengthening, streamlining and consolidating the ethics management systems for business conduct in an audit company with the development of realistic and practically implemented mechanisms for ethical control;
 - measures of the audit regulatory bodies to promote the ethics of business behavior at enterprises and institutions.
- The audit community is to ensure that the ethical principles described in the national law are recognized, respected and play an essential role in the quality of the work of auditors and audit firms.
- In this context, it is widely accepted that each audit entity is responsible for:
- establishment and development of norms of ethical behavior;
 - familiarization of auditors with the values and principles contained in the code;
 - organizing the ethics in the company to ensure that senior management and employees act according to ethical standards;
 - implementation of policies and practices in accordance with the Code of Ethics;
 - the adoption of policies and procedures that guarantee independence;
 - consideration of written applications in order to confirm compliance with ethical requirements;
 - prevention of internal conflicts of interest and corruption;
 - implementation of procedures allowing to report of violations of ethical norms timely, as well as taking appropriate measures to resolve them.

The study of ethical behavior management was based on a survey of auditors working in audit firms and in

their practical work to comply with ethical standards. The information received is designed to develop recommendations in action planning to identify ethical frameworks and practices, define best practices, use and disseminate them during ethics training.

In addition to answering the questions posed, auditors provided important information about the experience of managing ethical behavior. The percentages indicated in the following analytical survey results were calculated based on the responses provided by 96 auditors (100%).

Among other documents (question 3), which specify the duties of auditors to comply with ethical principles in audit companies, they mention the Declaration

on financial interests and assets, obligations after termination of office (for the management), the use of official resources and equipment (for the management of the audit company).

The formalization of the obligation to comply with ethical principles (question 4) is implemented in auditing companies in the form of signing the following documents by the auditors: declarations of the Code of Ethics, declarations of compliance with ethical principles, guidance on ethical obligations on a regular basis.

As shown by the survey (question 5), only a small percentage of companies (11.5%) have a special unit

Table 1

Survey results on auditors about situation in the ethical behavior management

No	Questions	Result	
		number	%
1	What documents contain approved ethical values in your audit company?		
	a) general legal norms	75	78.1
	b) specific legal norms (in relation to auditors)	63	65.6
	c) general code of ethics (applicable to all auditors)	48	50.0
	d) code of ethics	47	48.9
	e) strategic documents of the company	51	53.1
	e) rules of conduct	33	34.4
	g) other	13	13.5
2	The documents/provisions mentioned in question 1 include:		
	a) statements about values and principles	93	96.8
	b) explanation of the expected behavior	61	63.5
	c) examples of dilemmas and complex situations	32	33.3
	d) tools to be used	44	45.8
	e) provisions on unlawful actions	89	92.7
	e) specific provisions for managers	27	28.1
	g) other	15	15.6
3	These documents/provisions cover the following issues:		
	a) conflicts of interest	93	96.8
	b) gifts and hospitality	93	96.8
	c) professional secrecy	93	96.8
	d) sexual or moral harassment	29	30.2
	e) other	34	35.4
4	Auditors and/or employees formally sign a commitment to comply with the ethical principles of the audit firm		
	Yes	52	54.2
	No	43	44.7
	No answer	1	1.1
5	Does an Ethics committee/Person/Consultant work in your audit firm?		
	Yes	11	11.5
	No	85	88.5
6	Are there any tools in your auditing company that auditors can use for self-assessment of their ethical values and principles, or to address their ethical dilemmas?		
	Yes	4	4.2
	No	91	94.7
	No answer	1	1.1
7	Are there any (other) ethical issues that are important for an audit firm to manage ethical behavior?		
	If so, please name them.		
	No, all questions are presented in the questionnaire	77	80.2
	Yes, there are other important issues	19	19.8
8	Do you represent an audit company or work as an individual auditor (individual entrepreneur)?		
	a) an audit company	93	96.8
	b) an individual auditor	3	3.2

Source: developed by the authors

or person to provide recommendations and managers of ethical dilemmas and behavior, examples include the Ethics Committee, Ethics Director, Coordinator, Audit Adviser, whose mandate is to consider ethical issues.

Most of the auditors (94.7%) acknowledge that they do not have tools for self-assessment related to ethical behavior (question 6). Those who really have such tools include them in the Code of Ethics and consider such work in the context of personal consultants.

Although only 19% of the surveyed auditors referred to additional topics related to ethical behavior management that were not mentioned in the survey, but they are quite important: specific areas where ethical principles are exposed to higher risks, recruitment, responses to illegal use of enterprise resources, including with elements of fraud, risk management, transparency and accountability for effective management, and ensuring responsibility, division of duties, policies and management procedures in the company as a whole.

These topics were used by the authors in developing proposals for organizing the management of ethical conduct of auditors.

As the study showed, there is a solid progress among practitioners and scholars on tools for implementing ethical values in the company. These tools include: plans for working meetings with employees, training in ethics, recruitment based on criteria for ethical conduct. However, we propose to take into account two other mandatory tools, such as testing and performance indicators for ethical conduct and methods for collecting data on compliance with ethical values. The latter tools will be easier to implement if the clear goals for auditors are being set. Therefore, the first stage in the implementation of the tools for ethical behavior is the clear definition of standards of conduct that would be known and understood by all employees of the audit company. The criteria for assessing achievement of goals are the following:

- ethical values are known and respected;
- senior management is aware of ethical foundations and serves as an example;
- the staff understands and complies with the code of conduct;
- active promotion of ethical principles by senior management.

As evident from these goals, an important part of the implementation of organizational measures for ethical behavior is to provide leadership in these issues of senior management, both in examples and in behavior. If such an ethical tone is achieved in the company's senior officials, then it is an important positive contribution to the management of ethical behavior: employees trust and feel confident in managerial decisions.

Achieving the goals of managing ethical behavior of senior officials can be recognized by the following criteria:

- senior officials are recognized by staff as an example of high standards of conduct;
- the willingness of senior officials to be leaders in these issues and take measures for incompliance.
- understanding the ethical code of individual and collective responsibility for maintaining high ethical standards.

The implementation of goals and organizational measures will achieve the identified goals through monitoring the behavior of auditors and their compliance with ethical standards. The condition for monitoring is an open, honest and transparent process, in which all employees are informed and have confidence in its findings and outcomes. This can be achieved through the following steps:

- annual reports are available to all employees;
- the strengths and weaknesses of the auditor's behavior are regularly evaluated and measured;
- the role of senior officials in matters of ethical behavior is known and understood;
- the staff understands the value of monitoring ethical behavior and participates in annual surveys.

The consequences of organizing internal control on compliance with ethical principles are also the components of the overall process of managing ethical behavior. It was then that the mechanisms of influence on auditors that allowed deviations from ethical principles were perceived as just and efficient, and the rewards system for exemplary behavior was fully understood and recognized.

Therefore, the result of management of ethical behavior can be estimated through the criteria:

- good standards of behavior are encouraged by all employees;
- incentives and sanctions are used to overcome violence and immoral acts;
- incentives and sanctions are known and understood by all employees;
- incentives and sanctions are effective in developing a high ethical culture of the audit firm.

5. Conclusion

Increasing the public and users' confidence in the audit findings regarding the accuracy of financial transactions and reporting of businesses is based on the auditors' compliance with high ethical professional standards. They are the guarantors of independence, objectivity, honesty during the audit activity.

Organization of ethical behavior management involves not only the existence of ethics regulations, but also the monitoring and evaluation of tools for their implementation. The survey conducted by the authors of the study showed that awareness of the need to comply with ethical standards and appropriate ethical behavior is largely implemented in the activities of the audit companies. The practices

of most of them requires organizational measures to monitor and control the ultimate goals of compliance with ethical behavior, lack of conflict of interest, and other unethical cases in audit activities. We suggest the goals, monitoring criteria, self-assessment control tools as part of internal audit quality measures. The implementation of the proposals will help to direct the

audit work organization on a qualitative, responsible basis, which will increase the users' confidence in the results of the audit activity.

Further research is aimed at identifying quality control tools that would facilitate the implementation of the results of internal control of compliance with ethical principles to enhance the reliability of auditors.

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SYSTEMIC COMPONENTS OF ECONOMIC SECURITY OF HIGHER EDUCATION INSTITUTION

Olena Zhukova¹, Volodymyr Parsyak²

Abstract. The *purpose* of the paper is to search for arguments to confirm the working hypothesis about the importance of implementing a systemic approach to using the effective means of ensuring economic security of higher education institutions in terms of their further involvement in market relations. It is necessary to adapt the universal concept of a systemic approach to the peculiarities of the participants' relations in the educational process. *Methodology.* To solve the problems arising from the purpose of the study, methods of generalization and systematization of primary information obtained during the observation of the practice of domestic higher education centers, as well as data from state statistics have been used. *Results.* Modern centers of educational services are going through a period of profound transformation. Along with the strengthening of business requirements for the quality of intellectual capital they produce, the competitive confrontation with Ukrainian and, more recently, foreign providers of educational services has significantly intensified. Moreover, the relevant state policy has changed dramatically, accordingly, it is becoming increasingly difficult to rely on budget funding, and the economic security is becoming a daily affair of the whole academic management. Taking care of the future well-being is becoming a matter for everyone: from the rector to the head of the department, even professors and senior lecturers. The scientific work has examples of how this problem is solved in relations with key stakeholders: applicants, educational institutions operating in common market segments, representatives of the business community, state executive authorities. The subject of special attention is the internal system structure, the important characteristics of which are considered to be flexibility, balance, and economy. For this reason, it is proposed to distinguish key activities of the educational institution: operating, research and development of the institution and administration. The vectors for development are determined: digitalization, personalization of education, project approach to the formation of educational content, a combination of its formal and informal forms.

Key words: economics, economic security, educational services, educational institutions, system, structure, relations, academic management.

JEL Classification: A10, I23, I25

1. Introduction

We have demonstrated our commitment to a systemic approach (Parsyak, Drahomyrova, 2010; Dybach, Zhukova, Parsyak, 2019), the direction of the methodology of cognition, which moves the initiators of scientific research. We will not betray this approach in the future because it establishes the foundation for design of facilities with a complex internal organization. Higher education institutions (HEIs) occupy a prominent place among them. The reflection of reality through a systemic approach involves a movement towards truth making the solution of some interrelated problems. The first of them is the use of the inherent

object of the conceptual and categorical apparatus. To this end, it is desirable:

- a) to define the system as a relatively autonomous set of interconnected elements capable of self-diagnosis, self-assessment, self-adjustment, self-development and continuous exchange of information with each other and environment;
- b) to find dialectical or genuine antagonisms between order of the system elements and disorder, which not only continues to exist in spite of all the efforts of management and dedicated employees, but has the ability to neglect the subordination of elements to each other and to the system in general. Observations show

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that such contradictions usually occur in the internal environment of the system and create a basis for exacerbation of inconsistencies, emergence of personal and industrial conflicts, not always light versions of them. Sometimes they lead to revolutionary changes in the top management of HEIs, heads of faculties, administrative departments, to choosing the alternative strategies for their development.

Experts distinguish conflicts due to the confrontation of social roles played by people (for example, formal and informal leaders), incomparability of the norms of behavior, life experience, values (the sources of which are the persons prone to academic dishonesty and scientific misconduct, supporters of authoritarianism); due to a conflict of expectations (let us say, several candidates for the vacant position of head of department, dean, rector);

c) to establish a rational subordination of subsystems (for example, the order for the managing and managed subsystems, functional units that take care of interconnected fragments of the educational process) and of the higher order system itself.

The second task is to make the management of HEI aware of the integrity of the object that came under control. This requires the following actions:

- to find out its nature¹, to identify features and characteristics that indicate affiliation to the relations formed in the higher education system and enable the development of means to ensure economic security;
- to outline the object's components, to provide their qualitative characteristics, to understand the mutual subordination and identify those key components that allow to reproduce properties inherent in the system;
- to find the resources for ensuring security mobilized by HEI. These are both available sources and carrying out a thorough audit of costs, as some of them may be detrimental;
- to find out the structure of the whole system and the relationship between all its structural units, the circumstances accumulated in the organization and their interconnection;
- to depict the roles played by HEI. The first thing that comes to mind is the formation of professional competencies of educational services' customers and conducting researches. That is what on the surface. Meanwhile, we should not forget about the role to form a self-sufficient, socialized person with a high level of responsibility for the decisions he or she will make when holding some position in the future. The entrepreneurial role becomes increasingly important as HEIs are facing the need to provide themselves with everything necessary for operation;

- to check the history of formation and development of the system to understand its past and current state, the reasons for which we are at the present stage. This is regardless of whether the current events satisfy the organization or, conversely, give rise to concern;
- finally, to predict the development path in the short and long term. This is about the use of non-traditional management technologies in the field of education, because the current tools have exhausted their limit and need to be replaced.

2. Brief literature review

Our colleagues are making a good progress in using a systemic approach to create software products for automation of decision-making for university management and control over the academic, scientific and administrative information flow in the environment (from the moment certain information emerges to its transfer to archives) (Prusty, Patnaik, 2017). This requires an accurate and unambiguous description of business processes that occur in HEI and the relations between them. The systemic approach is indispensable in the design and implementation of quality management systems for educational services.

The employees of the Faculty of the Sea Economics (FSE) of the Admiral Makarov National University of Shipbuilding (NUS) have been ensured of the validity of this statement in practice (Parsiak, Dybach, Parsiak, 2014); here, the quality management system is certified in accordance with the new version of the standard ISO 9001:2015 "Quality Management System – Requirements". Apologists for the application of frugal management in HEI are attentive to the systemic approach. This is discussed, in particular, in the article (Höfer, Naeve, 2017). We are impressed by the scientists' views, as they are directly related to the problem that has been in the spotlight.

3. The purpose of the paper

On the basis of the consideration mentioned above, it has been hypothesized that the concept of "system" still needs to be clarified in the educational services, despite its widespread use in academic management. The sole concept of a systemic approach should be adapted accordingly, given the nature of the relationship between the participants in the educational process. The desire to solve the identified problems determines the purpose of this work.

On the way to it, the authors have used methods of generalization and systematization of primary information obtained during the performance

¹ It is not obvious at all especially in the new unfriendly environment. It is not limited to increasing competition in the market of educational services. Turbulence is increased by government, in particular, promises to reduce the government order. It seems that the official is happy with the mass academic migration and the prospects to provide diplomas to the natives of Ukraine at the expense of foreign taxpayers: Poland, Germany, Norway and other countries.

monitoring of the Ukrainian centers of higher education, as well as data from the State Statistical Service.

4. The essence and external attributes of the system

In comparison with the past, nowadays, the range of use of the term “system” has expanded significantly. Under this concept, researchers and practical managers understand:

- the order caused by the arrangement of elements (groups, parts) provided in advance (Akademichnyi tлумachnyi slovnyk ukrainskoi movy, 2020);
- a set of elements interconnected so closely that they act in relation to the environment and other systems as a whole (Slovnyk osnovnykh filosofskykh terminiv, 2020);
- a combination of organizations (enterprises, institutions, establishments) into an inseparable whole, a form of composition, organization of something (Morozov, Shkaraputa, 2020).

As we can see, in almost all cases, the sign of the system is the presence of components that contain the features of the whole and, at the same time, autonomously perceive their current and future state. Elements of the system can manifest themselves in certain way, experience the results of mutual activity and therefore, as defined, should respond to them adequately, particularly, move in the direction the system is interested in. For example, in 2013, the Faculty of Engineering and Economics of NUS was reorganized into the Faculty of the Sea Economics.

The decision of the Scientific Council taken after a long but rather intense discussion, met the public demands of the maritime economy’s enterprises, their regional clusters and reflected the geoeconomic shifts taking place on the planet. All this can mean only one

thing: the relationship between subsystems differs in mobility and flexibility. Theoretically, each of them should help in solving the problems facing the system.

However, at the same time, we have a number of examples of contradictions between the individual and the whole with some negative consequences for both subsystems and their totality as a whole. For example, the problem of ensuring the economic security of the educational institution cannot but worry the top management of the organization as well as each structural unit. But the admission campaigns of recent years have shown that some of them perform constructive initiative, while others are limited to completely unproductive concerns about reducing the birth rate in the country and increasing academic migration of young people. The consequences of this multi-vector position can be seen in Table 1.

And what next? Along with the destruction of educational and professional programs, there can be liquidation of faculties, unification of departments with insignificant amount of students, reduction of teaching and support staff, deprivation of those who remained, decrease in wage supplement for high achievements in work, intensity of work, performance of especially important tasks. To sum up, it is unpleasant.

The system is able to preserve its identity in a changing and not always predictable environment, which constantly influences it. For example, the effectiveness of the formation of students’ professional competencies significantly depends on the ability of applicants to absorb new knowledge and skills. This is more than relevant in the era of rapid development of technologies and methods of organization of production, which has been called the “fourth industrial revolution”. The basis of a correct attitude to it should logically be shaped by teachers of colleges, lyceums, colleges and other

Table 1

The effect of inconsistency in the attitude of structural units to ensure the economic security of HEI (admission campaign of 2019-2020 academic year)*

Specialities	Amount of involved in receiving educational services, persons	
	Bachelor's degree	Master's degree
Electrical Power Engineering, Electrical Engineering, Electromechanics	158	202
Shipbuilding	191	92
River and Marine Transport	152	-
Computer Sciences	108	48
Law	141	35
Applied Mechanics	68	44
Management	59	81
Physical culture and sports	54	30
Philology	39	15
Power Engineering	38	51
Software Engineering	32	29
Accounting and Taxation	27	18
Heat Power Engineering	16	60

*According to NUS Admission Committee

institutions that perform the tasks assigned to them at previous educational levels.

But the teachers of the graduating departments of FSE, appealing to the accumulated professional experience, do not expect mercy from fate. Guided by the provisions of the created educational and scientific complexes, the developed integrated curricula, the concluded agreements on cooperation, they carry out lessons of economics, financial literacy in schools², give lectures, start thematic contests, academic competitions, tournaments, quests. They also participate in extracurricular activities as coaches, mentors, moderators, and guides.

In another way, HEI positions itself in relations with other stakeholders, as follows:

- competitors with whom they intersect through the provision of similar educational services in common market segments. Signs of intensifying competition are numerous examples of the use of marketing tools by marketing management: advertising, PR, offers of original educational products, forms of communication between teachers and students using modern educational technologies and global information networks;
- with enterprises-, institutions- and organizations- customers of specialists of relevant professions, including coordinated dual education programs, which are becoming increasingly popular as they prove their effectiveness in practice. While studying at the university, students acquire professional skills in future or similar workplaces, significantly reducing the time to adapt to relevant business processes. Individuals of this type have no problems in the labor market. Moreover, there is a real struggle between the HR managers for the right to conclude a contract with them;
- with state bodies that take care of the implementation of policy in the field of education, carry out accreditation,

licensing of educational programs, monitor compliance with educational standards, as well as determine the scope of public procurement. Usually, the Ministry of Education and Science of Ukraine and the National Agency for Higher Education Quality Assurance are mentioned in this context. Meanwhile, we note that part of HEIs in our country is subordinated to other bodies of state executive power with the following number of students, available in Figure 1 (Vyshcha osvita, 2019).

5. Internal organization of HEI system

Another constitutive attribute of the system is its inherent structure. By default, it arranges the internal organization of the system, streamlines the interaction of all its components. The results of multiannual observations of the operation of public and private higher education institutions, conducted by the authors, allowed to make the following conclusions:

1. If the system is unstructured or designed with fundamental flaws (for example, without taking into account the amount of students and teachers, with an exaggerated control over the activities of basic educational units instead of concentrating on monitoring changes and developing strategies to strengthen economic security), there is no system as a whole. Characteristics of the most important academic units of HEI are available in Table 2 (Zakon Ukrainy, 2020).

2. The management should compose the structure in such a way that the interests of the involved personnel at each stratum of the higher education institution are in harmony with its vision and mission. Let us say that for the vast majority of HEIs, it is becoming increasingly important to achieve the best ratio between the quantity and quality of teaching, support and administrative personnel, especially given the growing shortage of

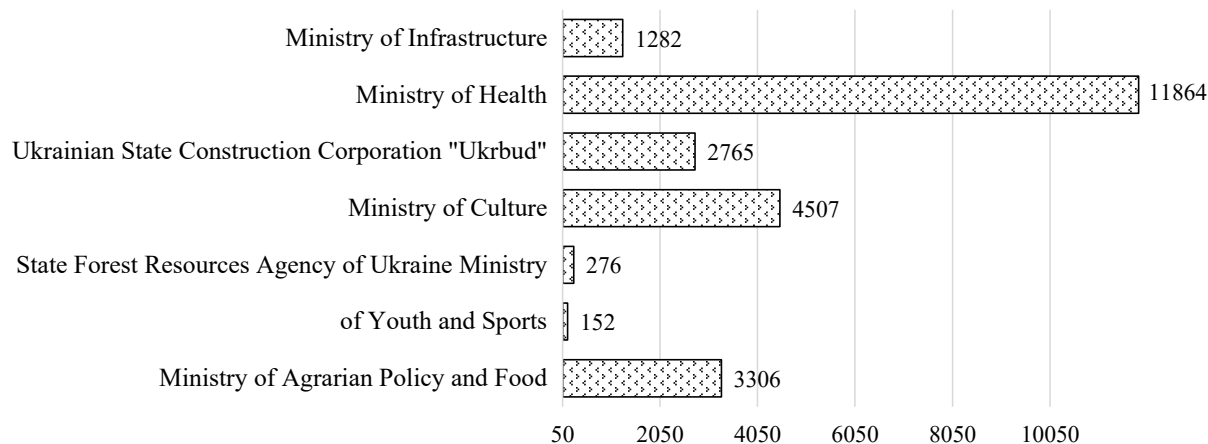


Figure 1. Amount of students at the beginning of the 2017-2018 academic year, in the field of management of ministries (departments) in which HEIs are located, persons

² When Hrynevych L. was the Minister of Education and Science of Ukraine, the corresponding course was introduced as a mandatory part of the school curriculum. Few people were interested in whether the teachers were ready for this.

Table 2

Key elements of higher education institution as a system*

Title	Function
Educational and Scientific Institute	A structural unit of a university, academy, institute that consolidates the relevant departments, laboratories, scientific research centers and experimental laboratories that conduct educational activities and research
Faculty	A structural unit of a higher education institution that consolidates minimum three departments (laboratories), which together provide training of at least 200 full-time graduates in state and municipal higher education institutions
Department	A general structural unit of higher education institution of state (communal) form of ownership (its branches, institutes, faculties), which conducts educational, methodological (scientific) activity in a certain speciality or interdisciplinary group of specialities, which includes at least five academic workers for whom the department is the main place of work, and at least three of whom have a scientific or academic (honorary) title

*Explanation: In addition to faculties and departments of HEI, the same article of the Law includes libraries, i.e. the place where students and teachers get access to paper and electronic media of specialized information.

funds due to the collapse of the national market of higher education services, the consequences of public administration decentralization with a corresponding redistribution of funds between the budgets of the country and local communities. It is considered that they have a better understanding of the personnel needs in the regions and, therefore, should take care of ordering educational services, particularly in universities.

Most rectorates are forced or deliberately thinking about reengineering the educational process, seeking to get rid of units that burden the expenditure side of the budget. For example, in V.O. Sukhomlynskyi Mykolaiv National University in the 2019-2020 academic year, students in tuition-paying and tuition-free bases were divided into different groups, for which they differentiated the amount of class exercises depending on funds received from the relevant sources. Since the state, on average, allocated more for education than the amount, for which HEI undertook to provide education services to students at the expense of individuals and legal entities³, then it was decided to “save” in such a creative way. Someone had no problem with this transformation. Most of the applicants who hoped to receive good education began to oppose the innovation, and with the rest of them went to look for a better fate in the neighbouring HEIs.

Basically, it is difficult to disagree with the desire to respond rationally to the latest threats and challenges (certainly not in the barbaric ways). At the same time, we consider it our duty to pay attention to the need for a thorough analysis of reserves of the administrative services, which often have fairly surplus personnel with the unacceptably blurred job responsibilities. Using phrases from fairytales, some “officials” are required to “go I know not whither and fetch I know not what”. And, it is not surprisingly, but they go and fetch something during the working day for years, although everyone is completely indifferent to them.

They do not fetch it to the same basket, which, unfortunately, also happens. In 2018, the National

Police in Zaporizhzhia oblast exposed a criminal group of employees of state HEI and a private enterprise who, according to forged official documents, accepted foreigners “for training”. They visited Ukraine, but with the sole purpose of settling accounts with those who abused their official position in a timely manner. While executing searches, 110 thousand USD and 70 thousand EUR were seized in addition to the evidence of criminal activity (Na Zaporizhzhzi, 2018);

3. If we resort to a broad interpretation of the essence of the structure, it turns out that it can be used to characterize the connections required for the system to cope with the solution of the enormous number of problems that face it on the way to the defined goal. Without these connections, it would not be able to appear, function, or, moreover, take care of its safety.

6. Organizational structure of HEI

Generalizing the experience of using a systemic approach, academic theorists have opened the relationship discovered to practice managers, the varieties of which are summarized in Figure 2 and Table 3. Analyzing the above data, we found a correlation between what it depicts and the key business processes that make up the operation of higher education institutions. We do not consider it a mistake to use the category of “business process” in this context, as today’s HEIs are increasingly manifesting themselves in two images: on the one hand, a trustee of educational service recipients, and, on the other hand, a market operator concerned with increasing revenues and economic independence.

In this case, the business process is considered as a sequence of ordered actions of the personnel, so that in result, students receive the expected profession. The peculiarities of each of the business processes determine the content of strategies and measures to ensure the economic security of HEI. We took the liberty to cover the process map of a higher education institution, creating a text interpretation of its structural model:

³ This is not a charity, but a marketing tool aimed at increasing the competitiveness of the market offer compared to other universities represented in the regional segment. Households, especially those in rural areas, respond instantly to such a lure, trying to provide education to their children and grandchildren.

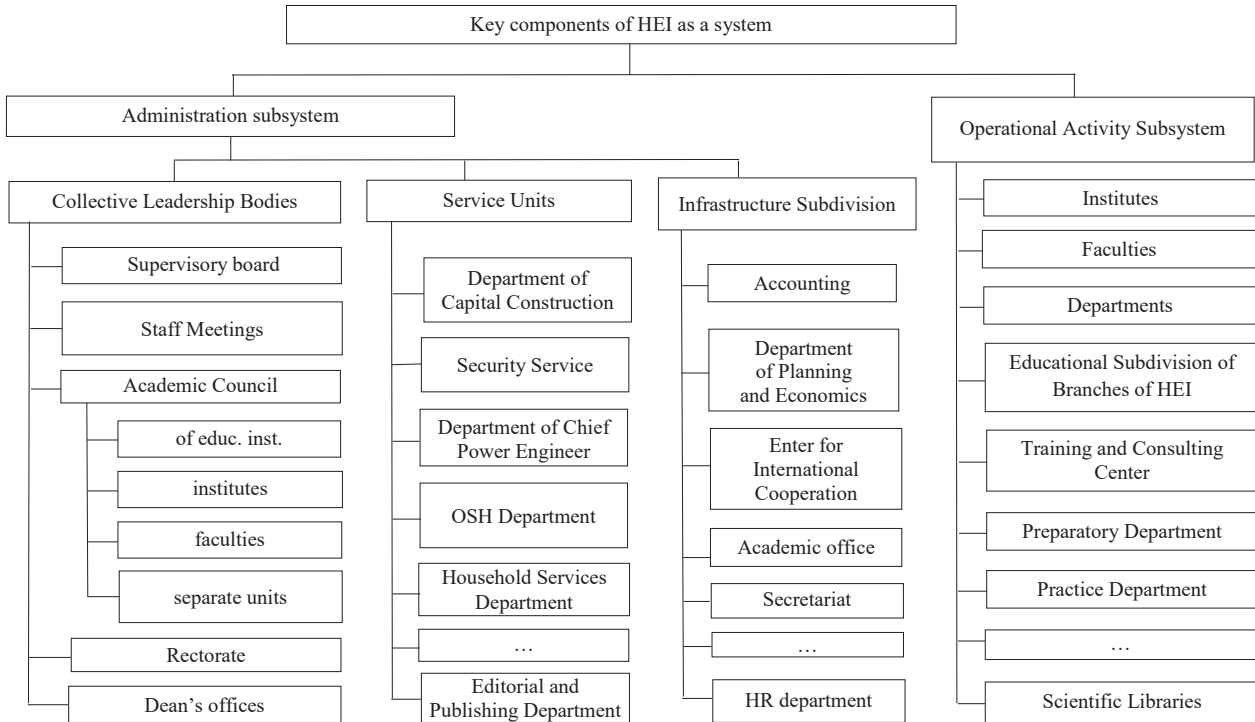


Figure 2. Generalized model of the organizational structure of HEI

Table 3
Varieties of system connections and their characteristics

Title	Characteristics	Example
Between the systems' elements	Determine the degree of interaction of the system's elements, which ultimately affects the qualitative features of its operation. It has an effect on the efficiency of system management and, as a consequence, the performance of the administration	Connections between the Supervisory Board and the administration of HEI; the Academic Council and the Rectorate; the Rectorate and the heads of structural divisions; the Dean's Office (Directorate) and the searching staff and support staff, united in departments, research laboratories, institutes, faculties
System-wide	Preserve the integrity, maintain the system's integrative properties regardless of the quantitative and qualitative composition of its elements. Play a decisive role in creating a synergistic effect	Subordination of all basic educational subdivisions, management bodies and support services, which are a part of HEI, to the general purpose and the chosen strategy of movement to it through reflection of the corresponding tasks in individual plans of teachers, current and perspective tasks to other personnel
Reverse	Come as a signal of the system's response to certain exogenous and endogenous changes, events and disturbances that occur in this regard at the input of the system or its individual elements	Reorientation of preparatory centers to provide services for the preparation of applicants for preliminary examinations to train them for the successful completion of external independent evaluation (EIE)

1. The process of operational activities related to the development and implementation of educational programs. They gather intellectual products, through their implementation HEIs receive income, which is the key to their economic stability and independence. It should be recalled that the Law of Ukraine "On Higher Education" also defines the educational program as a system of educational components at the appropriate level of higher education within the speciality, which determine the requirements for the educational level of persons able to start training in this program, the list of disciplines and their logical sequence, the number of credits for European Credit Transfer and Accumulation

System necessary for the implementation of this program, as well as the expected training results that must be mastered by the applicant of the appropriate degree of higher education (Zakon Ukrainy, 2020);

Operational activities are aimed at creating appropriate conditions for the acquisition of professional competencies required for further work according to the chosen speciality by all the persons who have the desire, vocation and a satisfactory level of prior education. It consists of a number of business functions:

- enrollment of entrants in accordance with the approved conditions and rules of admission to higher education institutions;

– formation of knowledge and skills according to the educational programs of each level of higher education and specialities in demand;

– current management of educational activities (control over the observance of academic discipline, academic integrity, acquired knowledge and skills).

2. The process of research and development in HEI. This means creating and improving the comfortable academic environment, developing new and modernizing existing educational programs that meet the demands of the real and financial sectors of the economy of the country or region. The modern reform of operational activities in the context of the fourth industrial revolution is of particular importance. It is known to differ from the previous ones by a broad appeal to the services of artificial intelligence and the use of the latest information technologies. With regard to educational activities, this means, in particular: digitalization of education (e-learning technology), which provides access to an array of educational resources of leading universities (audiovisual online courses, online exams), libraries (electronic textbooks, abstracts), research centers represented on the World Wide Web, involvement to participate in distributed research and academic groups. The first of them create the prospects for mobilizing the collective mind to improve the professional behavior (actions) of teachers and leaders of HEI to evolve their results. In educational groups, students from different universities (sometimes in other countries or even on continents) arrange discussions on current issues or listen to lectures by representatives of different scientific schools providing further discussion of the information, receptivity and effectiveness of the proposed didactic methods;

– personalization of education (as opposed to unified curricula and standardized approaches to teaching disciplines) with the construction of an individual educational trajectory. Acquisition of skills to deepen knowledge throughout life (as a response to the fast updating of equipment and technology), taking into account the requirements and demands generated in industrial labor markets by employers. The latter are looking for self-sufficient persons among the candidates for vacant positions who are able to identify current problems, form effective professional teams to solve them, properly distribute responsibilities and coordinate the colleagues' activities, evaluate and motivate participants.

Personalization technology is based on the online learning materials prepared by HEI, students search for additional resources and teachers control the progress (learning rate, cognitive capabilities) in real time providing appropriate services to anyone who needs it, on individual requests or in small groups. It is especially useful for people who combine learning with work (and there are more and more of them), those with special

needs, as well as experienced professionals in need of advanced training;

– project approach to the formation of the content and technology of higher education in order to create a layer of professionals who realize their potential as knowledge and skills acquired during learning, to generate innovations in industrial and social spheres (depending on the place of work), ensuring their continuous and gradual progress. For this purpose, students are involved in solving an acute problem that has arisen in the real life of the organization. At the same time, the necessary conditions are created to demonstrate personal abilities to understand the situation and choose effective tools to achieve the goal, visualization of the results obtained through graphs, diagrams, mathematical or physical models, schemes, etc.;

– a combination of formal (within the scope of licensing and accreditation of educational programs, providing a degree, diploma, certificate, recognized by the state) and non-formal education. The latter takes place outside the time regulations established by the schedule of the educational process, the approved schedule of classes and the academic spaces of classrooms, methodics offices and laboratories of universities.

The key characteristics of non-formal education are its voluntariness, independent decision-making by a person who must be capable to study until retirement. An example is the meetings of the Successful Alumni Club of FSE, where there are meetings of current and former students who have achieved great success in their own business, delegated management or have extraordinary professional up rises in their positions. In a relaxed, friendly circle, the participants exchange unique knowledge and life experience, which significantly expands the understanding of young people about career planning in the future.

Excursions to enterprises and organizations, stories of their managers and leading employees about the organization of production, methods of personnel motivation, implementation of innovative projects, technologies of investment attraction, etc. are also useful. There are also courses, workshops, seminars, other forms of education that enrich students with new values, attitudes, knowledge and skills.

3. The process of administration (planning, organization, control, analysis, motivation) of the staff of HEI as a holistic system. It consists of the implementation of accordingly approved procedures, the appointment or election of officials (rector, vice-rectors, deans) and administrating bodies (staff meetings, the academic council, rector, administrative departments, deans).

All of them are organized and subordinated in accordance with the legislation, the charter of HEI, the provisions on structural units, job descriptions of employees, contracts concluded with them (in terms of responsibilities assigned to performance).

The teaching and technical staff must have adequate moral and material incentives in order to perform their duties to add value to the educational service in its creation chain.

We consider it necessary to emphasize that the approaches to the management of HEI in our time are different from the previously accepted. The reason is a radical change in the environment where educational activities take place. Stability (funding, number of entrants, hourly rates of teachers, etc.) is a thing of the past. Therefore, we are convinced that strategic management of universities becomes relevant. In short, its content is a task for the rector's team to find the answers to a number of key questions (Figure 3).

Obviously, these issues are so important and complex that it would be reckless to rely on the vision of top management alone. Strategy development is a joint task of the administration, the heads of departments (they understand the characteristics of market segments that serve their teams) and each teacher who perceives HEI as his or her second home.

It often happens that many of them have received higher education, degrees and titles in this HEI, have devoted the best years of their lives to the development and implementation of scientific and academic projects. That is why the appeal to their experience and professional knowledge is able to encourage constructive initiative, create a synergy of collective vision of the future, accurately outline the vector of movement in an unknown, poorly predicted environment.

4. The process of providing and supporting academic and administrative operation. Its components include:

- procurement of resources necessary for the operational activities of HEI at prices comparable to the budget potential and quality requirements;
- improvement of the university infrastructure (financial, legal, administrative), which supports the reputation of HEI, contributes to improve its image in the minds of the public, customers of educational services, the business community;
- economic activity (maintenance of real estate, including their capital construction and reconstruction,

provision of transport services, provision of all types of communications, safety and labor protection).

The processes in question and the sub-processes that make it up are important. For example, at Odessa National Medical University in 2018, goods and services were purchased for 22.5 million UAH; it is 19% of the total current expenditures. Another amount of 152.5 thousand UAH was spent on the acquisition of fixed assets (Koshtorys vytrat, 2018). It is a great deal of money. Therefore, business management depends on economically feasible use of resources purchased by the organization.

7. Conclusions

It is unlikely that there will be an impartial person who will take the courage to deny the urgency of the problem of ensuring the economic security of higher education institutions in modern realities of Ukraine. It is obvious that the American model is dominating in our area, according to which the finance burden of the initiated programs is on their initiators – higher education institutions. We are not inclined to assess the choice of government, especially since, under the circumstances, more than one generation of state leaders is behind the relevant political decisions. We believe that the search for ways and means to mobilize internal reserves to ensure the stability of the organization in the market of educational services is more constructive.

Along with academic, economic security should be the focus of university management. This statement is increasingly realized by the leaders of HEIs, as well as the heads of structural units, to which, as a rule, the responsibility for non-receipt of funds are delegated “from the top”. In part, this treatment is fair. It is the departments and faculties that determine the attractiveness and quality of educational and professional programs - the main product offered to the market.

We consider the hypothesis about the importance of laying a systemic approach in the basis of decisions to ensure the economic security of HEI to be proved.

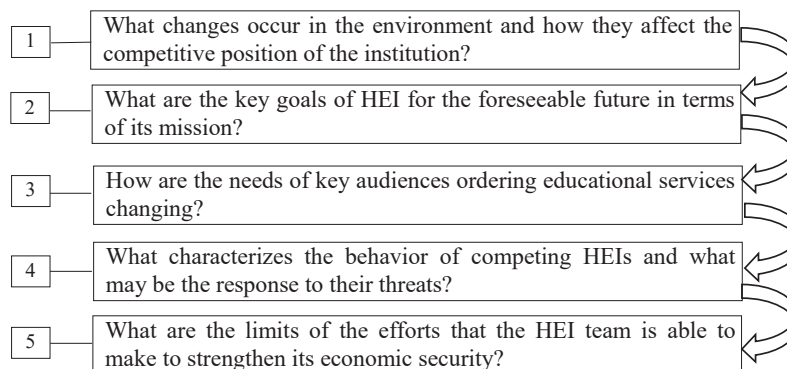


Figure 3. Key issues of HEI's strategic management

Behind the outer shell of the organization, which we are used to seeing in business, there are a number of subsystems. Each of them has a unique purpose, solves problems that are typical to it. Universal tools for the impact of management on staff will not work. The professor of the department differs from the technical worker in all parameters (job responsibilities, “production” technologies). These features must be taken into account, because everyone’s contribution to the common cause is important.

The educational institution is obliged to respond to changes that occur from the outside quickly and effectively, as it is part of the country’s higher education system and an integral part of the economic system. Appropriate educational products are launched at its request and for meeting its needs. Non-compliance with market expectations is a threat to the economic danger of HEI. We hope that the considerations set out in this regard will be useful to our colleagues.

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FOREIGN POLICY IMPERATIVES FOR THE DEVELOPMENT OF THE VISEGRAD GROUP AND UKRAINE

Vitalii Koltsov¹, Yuliia Lomzhets²

Abstract. The article is devoted to the analysis of the main stages of creation and development of the Visegrad Group as a regional grouping, which is successfully developing when being a member of NATO and the European Union. This kind of research is especially relevant in connection with the exacerbation of the economic crisis due to the COVID-19 pandemic. The purpose of the research is to analyze the strategic stages of creation and development of various cooperative aspects of the Visegrad countries; such a format of interaction has not lost its relevance after accession to the European Union. Analytical separation of periodization of the stages of formation, identification of problems and solutions faced by the Visegrad group's countries is important for creating a modern economic and political worldview of cooperation and identifying the main areas of cooperation in Europe. Based on the use of documents, including protocols and declarations as a result of meetings at various levels within the Visegrad Group, the specific stages of its development and interaction with Ukraine in a wide range of components that are the essence of Euro-Atlantic integration are analyzed and identified. Specific examples illustrate that Ukraine has always been in the field of key interests of the Visegrad Four, getting effective assistance and support in various forms from it. There have been identified not only practical issues of regional cooperation and security, but also some aspects of the value and civilization dimension. The member countries of the Visegrad Group, having initiated the format of cooperation "V4 + Ukraine", took an active part in the most important processes that Ukraine went through on its way. The assumption is proved that the experience of the Visegrad countries is relevant and useful for Ukraine on the way to the realization of its Euro-Atlantic integration aspirations. Despite the difficulties within the European Union, between Ukraine and some of the signatories of the 1991 Visegrad Declaration, cooperation with Poland, the Czech Republic, Slovakia and Hungary is the most effective communication platform for intensifying a broad dialogue between Ukraine and the European Union.

Key words: the Visegrad Group, the Visegrad Four (V4), the European Union (EU), NATO, Ukraine, integration.

JEL Classification: F60, O10, O57, R19

1. Introduction

Scientific analysis of the history, theory and practice of cooperation of Central European countries of the "Visegrad Four" in the context of the modern European integration processes is important to develop and implement the foreign and domestic policy of Ukraine at the present stage. At the beginning of the 21st century, given the changing geopolitical situation on the European continent, the countries of Central Europe (full members of the European Union) are building a new system of international relations and accordingly delegate and continue to delegate some powers to EU supranational institutions.

In recent years, 2017-2020, the Visegrad Group countries have been criticized in the EU. Especially,

Poland and Hungary have been criticized for authoritarian and nationalist rhetoric and politics. The EU also accuses the V4 countries of violating Article 7 of the Treaty of Lisbon and the organisation's fundamental values. Slovakia has been at the center of a scandal following the assassination of investigative journalist Jan Kuciak, whose investigation has linked the mafia's ties to the country's leadership.

The 2019 summit of the Visegrad Four and Israel in Jerusalem was canceled due to Poland refused to participate (Zaxid.net, 2019).

Nevertheless, both the EU and the USA are trying to find points of understanding with the Visegrad countries, and 2019 was the example. Firstly, on February 7, 2019, Angela Merkel met with the prime

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ministers of the Visegrad Four to mark the 30th anniversary of the fall of the Iron Curtain, which brought freedom to the countries. And then the US Secretary of State Mike Pompeo paid a visit to three countries of the Visegrad Group: Hungary, Slovakia and Poland (Zaxid.net, 2019).

The “European map” of the Visegrad countries is also open to Ukraine. The urgency of the issue of international relations of the Visegrad Group countries at the regional level is determined by the perspective and logic of European integration development, because an important component of their foreign policy should be intensification of relations at a new level, dynamic development of an effective regional system of international cooperation under new geopolitical conditions.

The purpose of the research is to analyze the strategic stages of development and the format of cooperation of the Visegrad Group countries before they become members of the European Union, and especially after. The tasks determine the separation of periodization and issues of the Visegrad cooperation and the presentation of the main areas of cooperation between the countries in the region.

2. Methodology of research

Today, no one will deny the existence of many real results of the Visegrad Four. Given that 2020 will be the 30th anniversary of the association, we consider it important to consider the history of formation and development of the Visegrad Group, the essence of the crises that have arisen and the problems of overcoming them.

In our opinion, the most valuable achievement is the presence of mutual good will and friendship between four nations. The Visegrad Group has fully ensured the stability and prosperity of the participating countries and has expanded its influence beyond the region. Cultural ties have always been in demand. The creation of the Visegrad Fund, mostly to support them, helped bring the organization closer to society, ordinary citizens. The Visegrad Group remains even more a sphere of not only high politics. In our opinion, this is manifested in the changing socio-cultural and economic level of ordinary citizens. Communications, roads, railways need to be improved, and cross-border cooperation needs to develop at an accelerated pace, creating new economic links. Cultural and other programs supported by the Visegrad Fund are another area where people can see the Visegrad Four in action.

In foreign, European, and Ukrainian literature, there are not so many analytical publications about Visegrad1, their analysis requires a separate article. Today, there are two monographs – edited by the Czech scholar Jiří Vykoukal (*Visegrad: Possibilities and Limits of Central European Cooperation*) (Vykoukal, 2003),

(Kish Yeva, 2008), (Közép-és Kelet-Európában, 2003), Vezel' B. Saakov, 2017.)

But the study of the Central European region remains relevant from the standpoint of regional foreign policy intensification and the possibility of cooperation with Ukraine and other countries of South-Eastern Europe.

The article is based mainly on documents, materials of various events, meetings, declarations and statements within the Visegrad Group and other both Ukrainian and European documents. The works of researchers who studied the development of cooperation between the Visegrad Four and Ukraine were also analyzed: Kudryachenko A. (2010), Snigyr O. (2007), Chorna N. (2017), Latenko V. (2019). Among the researchers who have analyzed the military aspect of the interaction of the format “V4 + Ukraine”, there should be mentioned Shelest, H. (2011). It is also worth mentioning the monograph of Russian scientist L. Shishelina “Visegrad Europe: where from – where to? Twenty Years on the Path of Reforms in Hungary, Poland, Slovakia and the Czech Republic”, where the history of the Visegrad Group is revealed in various aspects (Shishelina, 2010).

Although the official name of the organization is the “Visegrad Group”, at the same time, another title is equally used: “Visegrad Four” (V4). It should be noted that in the beginning it was the “Three”, as Czechoslovakia was the only state entity in the negotiations on the formation of a new association, which took place on February 15, 1991 in Visegrad, Hungary. Poland and Czechoslovakia were represented by the Presidents Lech Wałęsa and Václav Havel, respectively, and Hungary was represented by the Prime Minister József Antall.

It is important to emphasize that the Visegrad Group was not created as an alternative to European integration, which has always been emphasized by the leaders of, firstly, three, and since 1993, by the official representatives of four countries of the Visegrad Group.

The name of the Visegrad Group refers to the historic meeting on November 1, 1335, when, in the Royal Palace of Visegrad, King Robert, the Hungarian, Czech and Polish rulers, in contrast to Austria, made strategic decisions in politics, trade, development and regulation of the northern trade route in order to strengthen trade and economic ties in particular and the role of the region in general.

As of 2019-2020, despite the events of the global crisis that befell the world economy, these countries are gradually becoming the richest in Europe. The level of per capita income, taking into account the real purchasing power of national currencies in 2019 in Poland was 33,991 USD, slightly more than in Portugal (33,665 USD). Poland outperformed Greece four years ago. We also note that according to the IMF forecasts, in 2020, the Portuguese economy will grow at a rate of 1.6 percent against 3.1 percent of the Polish economy.

Portugal, like Poland, was overtaken by Hungary in 2019. The Czech Republic (38.8 thousand USD) approached the level of Italy (40.4 thousand USD). Authorities in Rome have not been able to overcome economic stagnation for four decades, while the Czech economy is developing quite rapidly. However, a bigger challenge for the countries of the region of South-Eastern Europe will be to reach the level of Spain (41.6 thousand USD), which in 2018 became richer than Italy (Express News, 2019). Economies in the countries of the Visegrad Four have already overtaken some Western European countries (the IMF). According to the results of the rating analysis in 2019, Russia (29.6 thousand USD) fell below Greece (30.2 thousand USD), and Belarus (20.6 thousand USD) had already been poorer than Mexico (20.9 thousand USD), Ukraine (9.7 thousand USD) barely surpassed Morocco (9.2 thousand USD) (Express News, 2019).

3. Results and discussion

3.1. Structural periodization of the main stages of the Visegrad Group

The history of the development of the international regional association of Central European countries – the Visegrad Four – can be divided into three separate periods.

Undoubtedly, this classification is not final, but it serves as an attempt to determine, first of all, the milestones in the life of the Visegrad Group countries as an international regional association. Undoubtedly, each of these two main stages has significant features of development, so accordingly, we also note the gradation within them.

The first period, from the time of its formation in 1991 to 2004, can be defined as a period of “Association and Hope”. It starts from the founding of the Visegrad Group on February 15, 1991, the accession of the Republic of Poland, the Republic of Hungary, the Czech Republic and the Slovak Republic to the European Union and including accession to NATO.

The second period has been from 2004-2014 and for the broad perspective of today’s future, when the cooperation of the four countries of the Visegrad Group is already part of the European Union. The second stage can be conditionally defined as the “Time of Hopes and Disappointments”, a way forward and retreat, which is mainly related to internal Ukrainian events. There are two sub-stages: 2004-2010, when during Yushchenko’s presidency Ukraine was declaratively closer to Europe and began negotiations on the preparation of the Association Agreement with the EU, and 2010-2014, when under Yanukovych, an attempt to abandon the planned path and turn the entire foreign policy agenda in the opposite direction to the European – Eastern direction – took place.

The third stage has conditionally begun in 2014 and continues to this day, it can be titled as the “Time of Development and Compromises”. Since the victory of the Revolution of Dignity in Ukraine, it is the period of signing and ratification of the Association Agreement and the gradual path to its implementation in practice. It should be rightly noted that during all this time, the V4 countries, which had not been members of the EU, and especially after their accession to the EU, acted as an engine of changes in Brussels’ perception of Ukraine, trying to promote the importance of Ukraine’s integration into Europe. Especially in this regard, the role of Poland, which has long been called “Ukraine’s lawyer in Europe,” differed.

Undoubtedly, this is not the final classification, it is primarily due to external and internal pragmatic circumstances, namely, the definition of the goal of the countries of international regional unification, both in 1991 (and undoubtedly the fulfillment of this goal – Euro-Atlantic integration) and in 2004, as evidenced by the documents of the founding countries.

Their accession to NATO in 1999 (Slovakia was admitted to NATO only in 2004) were also important events in the Euro-Atlantic integration of Central Europe. In fact, the period 1991-2004 can be divided into several subperiods with a clear separation of the main characteristics and taking into account the differences in the nature of their cooperation, but in the context of a single constant goal: Euro-Atlantic integration of the Visegrad Group.

3.2. Formation of the first stage of development of the Visegrad group “Association and Hopes”

We consider it expedient to divide the period 1991-2004 into several sub-stages with definition of their essential characteristics.

a) 1991–1992 – “Challenge of Time” – the actual creation of the Visegrad Group, when the priority factor was security, and a strong unifying idea was the consolidation of efforts of Central European countries against a possible Soviet threat to accelerate Euro-Atlantic integration. Thus, it was clear that interstate regional integration was a means, not an end, of creating association.

b) 1993–1998 – “Lost Illusions” – the collapse of illusions of the Visegrad Four countries about their rapid, almost automatic European integration of countries, as well as the problems of internal systemic transformations. In general, for other reasons, this period is distinguished as stagnation of regional Visegrad cooperation since 1993, which will actually last until 1999.

Another important event of the year was the change in the structure of the Visegrad association: the configuration of the Visegrad countries from “three” to “four” was formed in connection with the creation of two independent states: the Czech Republic and the

Slovak Republic. It is also important to single out the sub-stage in 1994 as “Primus inter pares”, the beginning of a race within the Visegrad Four on which country to be the first to join the EU. This has clearly identified at least two major fateful events of a strategic nature within the Visegrad association: this is the strengthening of Poland’s ambitions for the status of regional leader, and the fact of self-isolation of the Slovak Republic. Thus, since 1994, to some extent, the first symptoms of confrontation between the members of the Visegrad association have emerged. These problems manifested themselves in organizational terms, because serious meetings began to take place only on security issues, all other issues were of protocol, format nature.

c) 1998–1999 – “Renaissance of Visegrad” – since 1998, there has been an intensification and strengthening of regional, economic cooperation, Atlantic integration of the Visegrad Four. Slovakia’s invitation to cooperate within the Visegrad Group actively, which was officially made by the Prime Minister of the Czech Republic on September 11-12, 1998 at the CEFTA meeting, de facto determined the reorganization of the Visegrad Group, given the Atlantic integration of these countries.

A particularly important event of this period was the support of Slovakia’s Euro-Atlantic integration by the Visegrad Group countries after the change in the domestic political situation of the Slovak Republic. It is since 1999 (Summit on May 14, 1999 in Bratislava) that we can really talk about a kind of revival of the Visegrad Group (The Visegrad Yearbook, 2003).

The security strategy has been changed, and a specified action plan has been developed in eight areas of cooperation, when the joint actions of the countries have already clearly showed dynamism and pragmatism. It is important to emphasize that the Prime Ministers of the Visegrad Four have been taking over the leading role since 1999.

f) 2000–2004. “On the threshold of the European Union” – intensification of actions of the countries of the Visegrad Four in fulfilling the conditions for their membership in the European Union; the dynamism of the systemic transformation in each of the countries of the Visegrad Group and the strengthening of cooperation between the four are particularly characteristic (the experience of systemic transformation and “catching up” European integration of Slovakia is especially instructive for Ukraine). In fact, the completion of a fundamentally important stage in the development of the Visegrad Group is considered as a fulfillment of the goal of the V4 countries in 2004, the acquisition by four countries of full Euro-Atlantic membership in the European Union and NATO.

In particular, in 2001, there have taken place the meetings of heads of the countries (January 2001); heads of government (May of the same year); Ministers of Culture (June); parliamentary delegations in the field of foreign affairs, defense and European integration

(June); Ministers of Transport (October) and many other (Selected events of V4 in 2001). In April 2001, the Visegrad Youth Conference was held in Krakow, which resulted in the signing of a declaration on the following steps (Visegrad Youth Conference, April 19, 2001):

- strengthening the role of student exchange programs between universities;
- promoting the ideas of the Visegrad association;
- sharing of knowledge about culture, economy, society, politics of the Czech Republic, the Republic of Hungary, the Republic of Poland and the Slovak Republic;
- participation in the discussion on the future of Europe;
- the desire to become a bridge of cooperation between East and West;
- striving to create a Central European identity;
- support for the enlargement of the European Union.

All of the above indicates a high level of cooperation between the V4 countries in various aspects. In the following years, the regularity of such meetings and events has only increased. In 2000, the International Visegrad Fund (The official site of the Visegrad Fund, 2019) was established, which aimed to financially support cooperation between the members of the Four and other countries. In 2002, the Visegrad Scholarship Program (2019) was established to encourage educational and scientific exchange between students and researchers in the V4 countries. On April 16, 2003, the Treaty of Accession of the Visegrad Group to the European Union was signed. After that, referendums in support of the EU membership were held in all four countries (Latenko, 2019). Slovakia (92.5%) and Hungary (83.7%) showed the highest rates of support for accession, while in Poland and the Czech Republic the results were almost equally high (77% each) (Shyshelina, 2010).

For the European Union, the interest in enlargement was that, firstly, the inclusion of new members should contribute to strengthening stability, security and prosperity in Europe; secondly, the domestic consumer market would grow, which would create conditions for greater competitiveness of the European companies in the world market; thirdly, by gaining wider borders, the EU has become an even more powerful player in the international arena (Shyshelina, 2010).

3.3. Developments in the second stage of “Hopes and Disappointments”

The second stage can be dated 2004-2014 as a time of hopes and disappointments, the way forward and retreat, which is mainly related to domestic events. There are two sub-stages: 2004-2010, when during Yushchenko’s presidency Ukraine was declaratively closer to Europe and began negotiations on the preparation of the Association Agreement with the EU, and 2010-2014, when under Yanukovych, an attempt to abandon the planned path and turn the

entire foreign policy agenda in the opposite direction to the European – Eastern direction – took place (Preskonferentsiya u Kyievi, 2009).

The enlargement of the European Union on May 1, 2004 was the biggest in its history, with 10 countries joining at the same time. There are members of the Visegrad Four among them. Certainly, this structure did not enter the EU institutionally, but received a new impetus for its activities in the new conditions. Despite the high results in national referendums, significant hopes and expectations, the process of “survival” of new members was not easy. The difference in economic development, the duration of the experience of democratic state-building in the “old” and “new” members, and the peculiarities of the European Union itself as a structure were noticeable. Despite the equality of rights between all participants in the representation in the European institutions and the alternate six-month presidency, the EU has historically developed its own forms of interaction and informal authority. At that time, the relations in the Berlin-Paris-London triangle largely determined the agenda of the whole community. Given the ambition of the newly admitted countries as independent players in the European space, a certain tension and problems in cooperation could not be avoided. However, the experience of overcoming contradictions and reaching compromises in the course of heated discussions ultimately made the EU, as an institution, stronger (Zub, 2018).

On May 12, 2004, a summit of the Heads of Governments of the Visegrad Four countries took place in the Czech city of Kroměříž, which resulted in signing the declaration. In the document, the parties stated the achievement of the key goals set out in the 1991 Visegrad Declaration, and also stated their determination to continue the development of cooperation between the v4 countries as members of the EU and NATO (Declaration of Prime Ministers 12.05.2004).

During 2005-2009, further meetings of Ukrainian authorities with representatives of the Visegrad Group took place. The subject of discussion was Ukraine's integration aspirations towards the EU and NATO. The countries of the Four, especially Poland, have taken on the role of active promoters of Ukraine's involvement in the European context. However, it became increasingly clear that the Ukrainian side was not inclined to radical reforms, but instead limited itself to declarative statements, which created a contrast between the form and content of the “V4 + Ukraine” format. In addition, the Visegrad countries were forced to take into account the conservative position of the “old” EU members, especially France and Germany, on the issue of Ukraine's Euro-Atlantic aspirations.

It is worth mentioning the events of the Bucharest Summit on April 2-4, 2008, where the positions of these countries hindered the submission to Ukraine of the Action Plan for NATO membership (Bucharest Summit,

April 3, 2008). This is despite the consolidated position of the Ukrainian authorities at the time, as evidenced by a joint letter signed by the President Viktor Yushchenko, Prime Minister Yulia Tymoshenko and Parliament Speaker Arsenii Yatseniuk, asking for a MAP to Ukraine at the summit. This issue was actively promoted by the V4 countries, which were also members of NATO. However, France and Germany were able to block this decision, not least under the influence of the Russian factor. Among the new EU members, members of the former socialist camp (including the Visegrad Group) and the Baltic countries, there has always been a more restrained and critical attitude towards the Russian Federation, in contrast to the Franco-German alliance, where the business and economic interests of their representatives often became hindering the adoption of more specific wording in statements and more decisive action when it was absolutely necessary (Shelest, 2011).

The Visegrad Group countries took an active part in the development of the EU's Eastern Partnership policy, which was launched in Prague on May 7, 2009. The idea of the Eastern Partnership was presented by Poland at a meeting of the EU Council in May 2008. Among the six countries to which this form of cooperation was to extend, the leading place belonged to Ukraine (Ofitsiynyi sayt programy YeEs “Shidne partnerstvo”, 2009). The basis of this format was the initiative of the then-Minister of Foreign Affairs of Poland Radoslaw Sikorski. The aim was to deepen the integration between the European Union and Ukraine, in particular in the four main areas cited by N. Chorna in her work: “1) democracy, good governance and stability, including justice, freedom and security; 2) economic integration and approximation to the EU policy; 3) energy security; 4) economic and social development” (Chorna, 2017).

3.4. Prospects for cooperation between the countries of the Visegrad Four and Ukraine

In a declarative manner, during 2010-2013, the Ukrainian authorities demonstrated their readiness to continue moving towards rapprochement with the European Union, which was reflected in the further development and preparation of the Association Agreement with the EU, including its economic part related to the free trade area. In addition, Ukraine has continued to participate in the Eastern Partnership initiative. The Visegrad Four countries played a key role as a communicator between official Kyiv and Brussels. The V4 + Ukraine format continued to be active as an intermediate platform in more global negotiations between Ukraine and the EU. There were also other events where the Ukrainian side was also invited. For example, on February 15, 2011, in addition to the Heads of Governments of Austria and Germany, the Ukrainian delegation headed by the Prime Minister Mykola Azarov was invited to the extended summit

of the Prime Ministers of the V4 countries on the occasion of the 20th anniversary of the Visegrad Group (February 15, 2011).

On September 25, 2012, at a meeting of the Foreign Ministers of the Visegrad Four and the Benelux countries in New York, a Joint Statement on Ukraine was adopted, where participants called on the Ukrainian government to respect basic human rights in the country (Joint Statement by the Visegrad Group, September 25, 2012). Noting Ukraine's European aspirations, the statement pointed to regressive trends in the general state of democracy. Ministers noted the deteriorating situation in the areas of rule of law, human rights, freedom of the media and more. It was emphasized that the lack of progress in these areas could be a serious obstacle to Ukraine's pro-European path, including the signing of the Association Agreement with the EU.

This was the second stage in the development of relations between Ukraine and the Visegrad Group. After the Revolution of Dignity, the annexation of Crimea and the military invasion of the Russian Federation on Ukrainian territory, the third stage of the "V4 + Ukraine" format began, which opened a fundamentally new page in bilateral communication. In 2014 alone, 8 different meetings dedicated to the events in Ukraine took place within the framework of the Visegrad Four. In the midst of the active confrontation between the President Viktor Yanukovich's regime and civil society on the Maidan, on January 29, 2014, the Joint Statement of the Prime Ministers of the countries of the Visegrad Group on Ukraine appeared, where participants expressed the firm belief that the use of force could not help resolve political conflicts.

In general, it can be noted that the Visegrad Group, both the institution and each of its components, did not stay away from any significant and key events that took place in Ukraine. Thus, we can recall the meeting of Foreign Ministers of the countries of V4 in Budapest on February 24, 2014, where in the final statement the parties expressed their condolences to all those killed on the Maidan and welcomed the steps towards a peaceful solution to the conflict (Joint Statement of January 29, 2014). On March 4, 2014, a statement was issued by the Statement of the Prime Ministers of the Visegrad countries regarding Ukraine, stating the inadmissibility of violating the territorial integrity and internationally recognized Ukrainian borders (Statement of March 5, 2014). A day later, on March 5, the EU High Representative for Foreign Affairs and Security Policy C. Ashton and the European Commissioner for Neighbourhood and Enlargement Š. Füle received a joint letter signed by the foreign ministers of all members of the Visegrad Four with a request to support Ukraine with real steps in its aspiration to return to the European integration path of its development (Joint V4 Foreign Ministers' March 4, 2014).

In general, it is a fair assumption to say that since 2014, the countries of the Visegrad Group have been actively helping Ukraine in its aspirations to the EU and NATO. This is noticeable both at the level of statements of various kinds and in specific actions, including the final signing and ratification of the Association Agreement between Ukraine and the European Union and as a consequence – providing Ukrainian citizens with visa-free travel within the EU. A separate block is issues related to the Russian military invasion of Ukrainian territory. Here, the Visegrad Group countries have an unequivocal position in support of the territorial integrity and sovereignty of Ukraine (Text Ugody, 2014).

In connection with the above-mentioned events, in recent years, cooperation in the military field within the V4 + Ukraine format has become increasingly important. Since 2002, regular meetings of the Ministers of Defense of the Visegrad Group have been held to discuss the most pressing issues of defense policy. Since 2005, representatives of the Ukrainian side have often been invited to such meetings (Kaplynskiy, 2009).

In 2019, the regulatory framework, which enshrines the strategic foundations of Ukraine's foreign and security policy, noted some changes. Some of these changes were the result of a previously defined policy, which was formalized in 2019, but at the same time had a certain political twist. The other part was due to the change of the presidential and governmental team after the election, which required a new definition of the system of foreign policy coordinates and tasks. The main event of the year on the strategic consolidation of the state's foreign policy was the adoption by the Verkhovna Rada of the Law of Ukraine "On Amendments to the Constitution of Ukraine (Regarding the Strategic Course of the State for Acquiring Full-Fledged Membership of Ukraine in the European Union and in the North Atlantic Treaty Organization)" in February. The initiative of the President P. Poroshenko to amend the Constitution of Ukraine was proposed in mid-2018. The law provides for amendments to a number of articles of the Constitution, which define the powers of the Verkhovna Rada (Art. 85 of the CU), the President of Ukraine (Art. 102), as well as the CMU (Art. 116). In particular, the parliament is authorized to implement the strategic course for Ukraine's full membership in the EU and NATO, and the government must ensure the implementation of this course. At the same time, this bill and the changes it introduced had a rather political effect (both domestic and in communication with international partners). Cooperation with the EU and NATO has continued, based on agreements, action plans and roadmaps that have been in place for several years. The updated Annual National Program Ukraine-NATO, which changed the methodology of

development to measurement indicators, the results based management has become an important internal complement to external commitments.

V. Zelensky's team declared "economization of foreign policy" a major foreign policy priority, which, in addition to political statements, resulted in a corresponding redistribution of government powers and the assignment of relevant tasks to the Foreign Ministry in O. Honcharuk's government program. During the autumn, the Cabinet of Ministers audited the current opportunities for intensification of foreign economic activity. The intentions to make changes to the Export Strategy of Ukraine adopted at the end of 2017 have been announced. In public statements, the President of Ukraine has repeatedly promised to give priority to the protection of foreign business and investors in Ukraine.

4. Conclusions

The Visegrad Group proved to be a format of regional cooperation, due to the constructive cooperation in which Poland, Hungary, the Czech Republic and Slovakia were able to achieve a number of important tasks, first of all, to join NATO and the EU. Despite the existing forecasts, with the accession to Euro-Atlantic and European structures, the Visegrad Four did not cease its activities, but on the contrary, received new impetus to its continuation. The countries have joined forces to adapt to the new conditions, as well as to develop a common course within the Union institutions. The latest geopolitical challenges that have recently emerged in Europe are forcing the Visegrad participants to work together to find an adequate answer to them.

Undoubtedly, a qualitatively new period of Visegrad's development began in 2004, the accession to the EU as a test of the viability of the system of multilateral international regional project in a new format in the new geopolitical situation. A characteristic, if not the main feature of this period will be the coordination of the interests of the Visegrad Four not only among themselves in order to achieve certain goals, but also in a new format of relations with the EU and separately with EU member states.

We consider it too simplistic to understand the essence of the Visegrad association only as a consolidation of the efforts of the countries of Central Europe for the purpose of "returning to Europe" through Euro-Atlantic integration. That is, the "European map" was priority-oriented, but not comprehensive. This is a much more complex and multifaceted problem than is thinkable. After all, the accession of the Visegrad countries (and this, in our deep conviction, are the countries of Central Europe) in 1999 and 2004, to NATO and the European Union, geopolitically changes the status of the Central European region, transforms bilateral and multilateral relations Europe – full members of the EU with Ukraine.

Moreover, the system of relations within the Visegrad Four is changing, as well as with other member states of the European Community.

The complex mosaic of actions of the Visegrad countries was determined for a certain period of time by choosing between strengthening the interregional integration of the Visegrad countries and creating a strong subregional structure, or using it as a forum to protect and promote their own or common interests.

As a result of radical socio-political transformations in the late 80s – early 90s of the 20th century in Central Europe, there was a radical change in the domestic political system and foreign policy of these countries and the radical transformation of international relations as a global level.

Firstly, the collapse of the bipolar system of international relations has significantly changed the status of the Central European region and each country.

Secondly, all the countries of Central Europe were at the beginning of the period of systemic socio-economic transformations, priority in this context were foreign economic relations aimed at the West. The foreign policy security priorities were somewhat different in the countries of the Three and then the Four. However, during 1991-2000, in all four Visegrad countries, the Euro-Atlantic dimension became the main focus in building and strengthening the European security system in the region.

Thirdly, the "overcoming" of the geopolitical vacuum in the Central European region against the background of general instability, Central European countries saw in joining strong international and regional structures of economic and security nature, in particular, the Euro-Atlantic course and joining the European Community were given priority. The foreign policy strategies of Poland, Hungary and Czechoslovakia were clearly oriented towards the West. That is, the actual formation of the Visegrad association did not serve as any alternative to their earliest accession to the EU and NATO.

It should also be noted that the Visegrad Group, as a regional format of cooperation, has proved its effectiveness and does not lose relevance even after the official achievement of the key aspiration for which this structure was formed: Poland, Czech Republic, Slovakia and Hungary to join the North Atlantic Alliance and the European Union. The experience of almost 15 years in the EU and 20 years in NATO has shown that the Visegrad Four has become an important communication platform, which often serves as a liaison between those countries that either aim to integrate into the structure or also seek to build mutually beneficial good neighborly relations with its member countries.

The V4 + Ukraine format has undoubtedly become the key and most effective among similar projects in Eastern Europe. The Visegrad Four has always helped

our country to realize its Euro-Atlantic aspirations, even in spite of certain difficulties that have arisen in recent years in bilateral relations between certain V4 countries and Ukraine. And although it is not possible to simply use the patterns of the Visegrad experience, given the specifics of Ukraine, nevertheless, many aspects and reforms implemented by the V4 countries are an example for Ukraine. The experience of not only what and how to do to become a member of the EU and NATO, but also what will happen after the accession, as, already being a full member of a union, in search of a common compromise, is important to defend the national interests of the country.

As of the end of 2019, positive results were achieved in the direction of Ukraine's integration with the EU both in the political and security dimension and in financial and economic cooperation. An important document of Ukraine's political support was the Joint Declaration following the Ukraine-EU Summit (July). The EU's political leadership reaffirmed its support for Ukraine's territorial integrity and sovereignty, the progress of reforms, and the European integration course. It is important that the reset of the EU institutions as a result of the elections to the European Parliament in May 2019 did not lead to a change in the position of official Brussels in support of Ukraine.

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WORLD EXPERIENCE OF PROCESS QUALITY MANAGEMENT OF TEACHER TRAINING IN HEI

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Abstract. The quality of higher education is the main feature of HEI. There are several approaches to assessing the performance of educational institutions. One of the leading process approaches is based on the principles of TQM (Total Quality Management) and the requirements for quality management systems of the International Organization for Standardization ISO. The basis for assessing the quality of higher education and training, as well as the quality of HEI's activities are educational standards. The Ukrainian standards include: state standard, industry standards, HEI's standards. The international standards of ENQA education quality guarantees include: standards for internal quality assurance of HEI, standards for external quality assurance of HEI, the European standards for external agencies of quality assurance. There are several models of education quality management systems: model of quality management system according to the international standard ISO 9001:2000 (DSTU ISO 9001:2001); the model of the European Foundation for Quality Management (EFQM) and its modifications for HE; the model of the Center for Higher Education Policy Studies (CHEPS) of the University of Twente (Netherlands); model of the Association of Universities in the Netherlands (VSNU); Belgian-Dutch model (Expertgroep HBO); Malcolm Baldrige National Quality Award in the field of education; benchmarking model for Australian universities and others. According to most researchers, there are some advantages in creating a quality management system of higher education institution in the context of the TQM ideology, which involves the application of process and systemic principles. The comparative characterization of factors influencing the quality of education in comparison with the principles of TQM, EFQM's criteria and the requirements of the international standard ISO 9001:2000 and interdependent business processes. In the universities of the USA, France, Great Britain and other developed countries, the problems of general process quality management are considered in three planes. The study of the positive experience of developed countries, HEIs of which are included in the world rankings, and graduates are in demand in the labor market, allows to form a mechanism for implementing the TQM principles both at the state and regional levels.

Key words: process approach, ISO standards, TQM concept, HEI's quality management models, PDCA Deming cycle, EFQM model, education quality.

JEL Classification: I21, I28, V10, L22

1. Introduction

The quality of education in a modern environment is crucial for the successful development of any country. Revolutionary changes in technologies based on intellectual resources are becoming the most important factor determining the development of the economy.

The decisive role of HEI is precisely in the development of intellectual resources of the country, which are competitive in the modern labor market, i.e. are able to ensure the implementation of innovative projects in the economy.

The search for modern tools to ensure a high level of quality of educational activities has intensified with

increased competition among HEIs. International experience shows that only organizations capable of ensuring world-class product quality and service delivery have achieved leadership. Quality is a priority factor in ensuring the competitiveness of HEIs (Asiyai, 2014).

The Universitas 21, or U21, is the only one ranking in the world to assess national higher education systems and is designed as a benchmark for governments, educational institutions and a variety of individuals. Analyzing the data of the ranking for 2019, which unites 50 countries, we see that in general, Ukraine is in the 39th place and the level of qualification of

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the workforce occupies the 14th position, while the United States occupies the 18th and 6th positions, respectively, the UK in both positions ranks the 8th, Japan is at the 20th place overall and ranks the 3rd in terms of qualification quality, France ranks the 18th and the 6th, respectively, Sweden's place is the 2nd in the overall ranking, while the quality level belongs to the 17th place only, Bulgaria, for example, ranks the 40th in the U21 rankings and the qualification level is at the 28th place (U21, 2019).

As we can see, the level of qualification of the workforce in Ukraine, as a product of HEI, is relatively low compared to developed countries, which confirms the need for modern approaches to quality management of HEI as a producer of highly skilled labor.

The quality of educational services provided is determined by such an effective indicator as the quality of higher education. Monitoring the quality of higher education with the use of modern information technologies makes it possible to analyze the current situation and identify the main problems.

2. Methodology of research

2.1. Determining the basic standards of the model of formation of the process quality management system of HEI

The quality of education is directly associated with the quality of HEI's educational services and the perfection of its quality management system, which is aimed at continuous improvement (Baird, 2006). Most HEIs use the international ISO 9000 series standards (TQM, 2009), improving their quality management systems based on the concepts of total quality management (TQM), which provide continuous improvement of the organization, enhancing the quality of products (services) and meeting the needs of all stakeholders: customers, suppliers, personnel and society.

The approach based on the application of the "Quality Management System" in educational institutions encourages HEIs to analyze customer requirements, identify processes that contribute to the creation and provision of educational services acceptable to the customer, and manage these processes. Implementation of the process approach in the HEI management is one of the main requirements of the Quality Management System (Najm, Najm A., et al., 2017).

According to the analysis of world practice, to create a quality management system in HEI, it is advisable to use universal principles applied in various fields of activity, but adapted to learning activity (TQM, 2012; Aigbomian, 2012; Nwadiani, 2014). That is, the application of international standards of the ISO 9000 series, which are based on the application of TQM principles.

The foundation of this philosophy of quality was laid at the beginning of the last century in the United

States by Frederick Taylor, developed by the American engineer, scientist and philosopher Walter Shewhart in the 1920s (he considered the founder, developer of a control system) and received further development in the works of the American researcher William Deming, Joseph Juran, the Japanese scientists Homer Sarason and Kaoru Ishikawa, etc. (Law of Ukraine of July 1, 2014).

The ideology of TQM is based on a process approach to quality management, which involves constant control on the basis of objective measurement, the joint work of the members as a single team with the involvement of each employee; building a management system based on approved documents governing the operation. When applying TQM principles, it is necessary to identify key processes, manage them and constantly improve them to better the result.

It is important to have a managerial component of the system. It should be noted that educational activity, or rather, the provision of educational services, has certain differences: the long process of providing such services, its complexity (multidisciplinarity), the involvement of a huge number of employees (both academic and others involved in organization of the process of providing educational services), as well as the duration of use of consumers of educational services and their high responsibility (graduates are a major component of the future potential of society) (Nwadiani, 2014). Therefore, using any international standards, it is better to avoid both the application of all requirements without adapting them to the national conditions and characteristics of a particular educational institution, and ignoring the experience gained.

A creative approach to the development of their own provisions with an adequate interpretation of international experience and the existing conditions of the institution is needed.

However, the generally accepted principles of TQM must be used in the development of quality management system of educational institutions. Key principles include (Tricker, 2010; TQM, 2009):

- target orientation of the management on the quality satisfying the consumer, personal participation in performance of the set purposes and creation of conditions for participation of all personnel in activity on increasing the quality;
- systemic managerial influences aimed at improving quality;
- the integral nature of all activities of the organization;
- constant and continuous activities to improve results and quality indicators – gradually, but all the time;
- decision-making based on the analysis of systematic information, rather than random fragmentary data;
- team style of work, including with the participation of partners.

Regarding the concept of "education quality", the modern philosophers and scholars interpret the quality of education as "a social category that determines the

state and effectiveness of the educational process in society, its compliance with the needs and expectations of society (Lukina, Korzhevskaya, 2007)”, "...the ratio of the learning purpose and outcomes, the degree of its achievement, provided that the purpose is set operationally and predicted in the area of potential development of the student" (Tsarenko, 2015).

Thus, the education quality management is the direction of the regulatory body of its activities to increase the value of the educational process in society within its ability to meet the needs of such a society.

For example, education quality management is recognized as a special management, organized and aimed at achieving not any educational outcomes, not accidental, not just better than the previous ones, but well-defined, predicted in advance with a possible degree of accuracy, where the goal (result) should be predicted operationally in the area of potential graduate development (Armand Faganel and Slavko Dolinšek, 2010).

As we can see, education quality management is a fairly broad concept that can be specified at each of the levels and objects of its management, including primary, secondary, vocational or higher education.

In particular, the Law of Ukraine "On Higher Education" dated July 1, 2014 defines the quality of higher education as the level of acquired knowledge, skills, abilities and other competencies, which reflects its competence in accordance with the standards of higher education (Law of Ukraine of July 1, 2014 "On Higher Education"). Therefore, the evidence of receiving a quality education is the provision of the amount of knowledge, skills, abilities and competencies for the graduate determined by the Ministry of Education and Science.

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July 1, 2014 "On Higher Education"). Hence, the evidence of receiving a quality education is the provision of the amount of knowledge, skills, abilities and competencies for the graduate determined by the Ministry of Education and Science.

Undoubtedly, the key factor in choosing the future strategy of the HEI in the field of quality is the current level of institutionalization of its quality system based on different quality models (TQM, ISO standards, ENQA, EFQM, etc.). It should be noted that the principles, on which the above models are based, in the vast majority coincide, and if they differ, it is possible only in the degree of coverage of the completeness and depth of the main and resource processes in the organization.

Analysis of scientific sources on the quality of higher education shows that in the world, there are the following models of higher education quality management (Silonova, Sidliarenko, 2015):

- Quality management of higher education based on ISO 9001 standards;
- Quality management of higher education based on TQM principles;
- Model of the European Foundation for Quality Management (EFQM);
- Model of the Center for Higher Education Policy Studies at the University of Tverte (the Netherlands) – CHEPS;
- Association of Universities in the Netherlands (VSNU);
- Belgian-Dutch model (Expertgroep HBO);
- Model of the Malcolm Baldrige National Quality Award in the field of education;
- Benchmarking model for Australian universities.

In our opinion, the fundamental methodological basis for the application of most modern models of quality of higher education is the methodology of total quality management (TQM). The process approach, consumer orientation are the cornerstones of TQM, which have been further developed in quality models based on the international standards of the ISO series.

Since the principles of another European model – ENQA – are focused only on higher education levels and do not extend to other areas, including research, general management of educational institutions, it is advisable to use them as a supplement to the basic model (Zaggl, 2017).

3. Results and discussion

3.1. Strategic priorities of formation and development of the HEI's process quality management system

The most widely used quality management system is the system that meets the ISO 9000 standard (latest version of 2001 – ISO 9001:2000), which is recognized worldwide as the most effective, flexible,

optimally documented. This system was started in 1979 in Great Britain and was later adapted to the sector of education in Europe and many other countries (Law of Ukraine of July 1, 2014). The requirements of the ISO 9001:2000 standard do not apply to the structure and content of scientific research, it does not operate in the classroom, where the teacher enjoys the academic freedom given to him or her to realize his or her scientific and methodological potential (Baird, 2006).

As practice shows, one of the most common approaches to quality management of higher education services is the model of Total Quality Management (TQM), which involves all staff in creating high quality products or services at all stages of its life cycle from stages of marketing, design, production, operation, maintenance to disposal (Silva, Miranda, Gomes, Paulo, Luís and Zulema, 2014).

The TQM model assumes the presence of a clear mission in the higher education institution, strategic goals, which are formed as a result of a comprehensive study of the needs of the external environment (the needs of society, the region, etc.). The TQM quality management model is also called universal quality management, because it provides a process approach to the activities of higher education institutions and uses effective methods and tools of quality management (Plysenko, 2016).

Every organization needs continuous improvement in order to maintain the existing and achieve newer advantages over competing organizations. One of the methods of continuous improvement is the management of the organization according to the well-known Deming cycle PDCA – Plan, Do, Check, Act. PDCA methodology is a simple algorithm of actions of the head to manage the process and achieve its goals and is applicable to all the above processes of the quality management system of HEI (Lukina, Korzhevskaya, 2007).

The introduction of a process approach to the management of HEI makes it possible to use resources rationally to ensure the HEI's viability and to ensure transparency regarding accountability, decision-making, etc. The peculiarities of the process approach are the purposefulness of any action and process for the end result: meeting the requirements of consumers, compliance with the law, as well as with the requirements established within HEI.

The concept of quality of TQM is based on the following principles:

- involvement of top management and all personnel;
- consumer orientation;
- process and systemic approach;
- constant quality improvement;
- fact-based decision-making;
- establishing partnership with suppliers.

In more detail, the basic principles of quality management for higher education in accordance with TQM are as follows (Figure 1).

In the universities of the USA, France, Great Britain and other developed countries, the problems of general process quality management are considered in three planes:

1. Teaching TQM as an independent discipline in the learning process both in HEI and in the process of postgraduate training.

2. Organization of teaching other disciplines using the TQM principles and methods.

3. Organization of HEI's management based on the TQM principles and methods.

Getting acquainted with TQM begins with a review of the quality concept evolution according to four concepts of quality: compliance with the standard; compliance with use; compliance with costs; compliance with hidden requirements (August-Wilhelm, 2000).

In general, the TQM methodology has been used in higher education since the early 1990s (George, Weimerskirch, 2009). The positive implementation of the TQM principles in the activities of HEIs in developed and developing countries has resulted in increased student performance, improved curriculum quality, improved involvement of the academic staff and personnel of HEI in advancing the quality of demand for graduates (Bologna process, 2000).

3.2. Determining the benefits of using different models of HEI's management in the context of the process approach

According to most researchers, there are some advantages in creating a quality management system of higher education institution in the context of the TQM ideology, which involves the application of process and systemic principles.

In this connection, the system approach is based on the paradigm of quality management, focused on the concept of interconnections and interactions, which is considered as a set of interdependent elements of the external environment and internal structure of the enterprise.

The advantage of the process approach is to ensure continuous monitoring of the links of individual processes within a system of interconnected and interdependent business processes, based on the implementation of the requirements of the standard ISO 9000:2000 (Using PDSA, 2017).

The application of DSTU and ISO 9001:2000 to create a quality management system for the provision of educational services is not a one-time campaign, but a significant and complex innovation. The creation of a quality management system for the task, which sometimes requires non-traditional approaches to its solution involving compliance with the principles of systematization, should take place through the implementation of the objectives of interrelated stages. This requires following certain sequence:

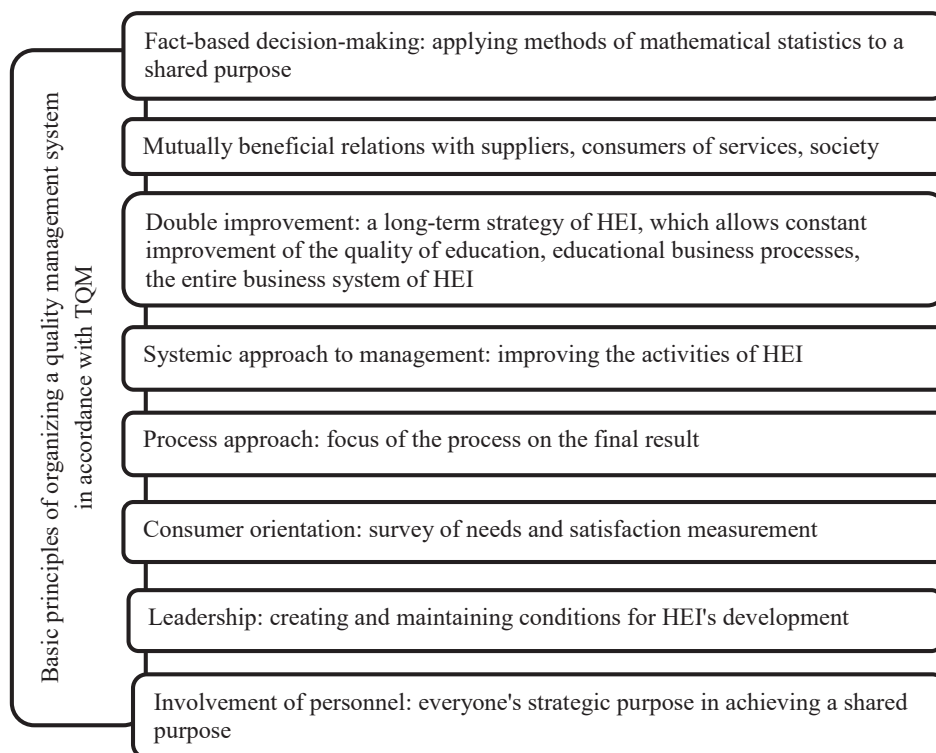


Figure 1. Basic principles of organizing a quality management system according to the TQM concept

Source: compiled on the basis of (George, Weimerskirch, 2009; Tsarenko, 2015)

1. Creating a team to form a quality policy and a description of the main processes in HEI.

2. Training and motivation of the institution's personnel, training of quality representatives, managers and auditors. It is important that the employees are aware of their role, responsibilities and authority within the quality management system. A prerequisite is the involvement of students as the main consumers of educational services.

3. Development (design) of a system that allows you to manage processes, actions and tasks at all levels effectively.

4. Development of an internal audit system that will assess the readiness degree of structural units of universities to work well, in accordance with the requirements of DSTU and ISO 9001:2000.

5. Introduction of a quality management system for the provision of educational services.

One of the main tasks of the third, fourth and fifth stages of the proposed sequence is to create a documentation package governing the implementation of all processes in the quality management system of educational services.

Modern approaches to the creation or modernization of the quality management system of educational services impose each educational institution to create such documents as (EFQM Model criteria, 2014).

1. ECTS information package.
2. Documented quality policies and objectives.
3. Quality manual.

4. Documented methods required by DSTU ISO 9001:2000, which set out the policies, objectives, mechanisms and criteria for the quality of educational services and methods used for this purpose.

Another common approach to managing the quality of higher education services is the introduction of the European Foundation for Quality Management (EFQM) criteria. They are based on nine main criteria (Figure 2) (Model criteria. EFQM, 2014).

Five of these criteria are "Opportunities", and the other four are "Results". "Opportunities" criteria characterize the potential of the organization, and "Results" are for the outcomes achieved (Model criteria. EFQM, 2014).

The model of the European Foundation for Quality Management in higher education was developed by Sheffield Hallam University in Great Britain. Among the main advantages of the model for higher education, there are the following: understanding and anticipation of students' needs and expectations, demonstration of forward-looking leadership; involvement of employees; development of mutually beneficial relations, etc. (Armand Faganel and Slavko Dolinšek, 2010).

The list of factors influencing the quality of education in comparison with the TQM principles, EFQM criteria and the requirements of the international standard ISO 9001 mentioned in Table 1 gives grounds to conclude that these factors are fully embedded in the common ideology of TQM, on which they are based (Armand Faganel and Slavko Dolinšek, 2010).

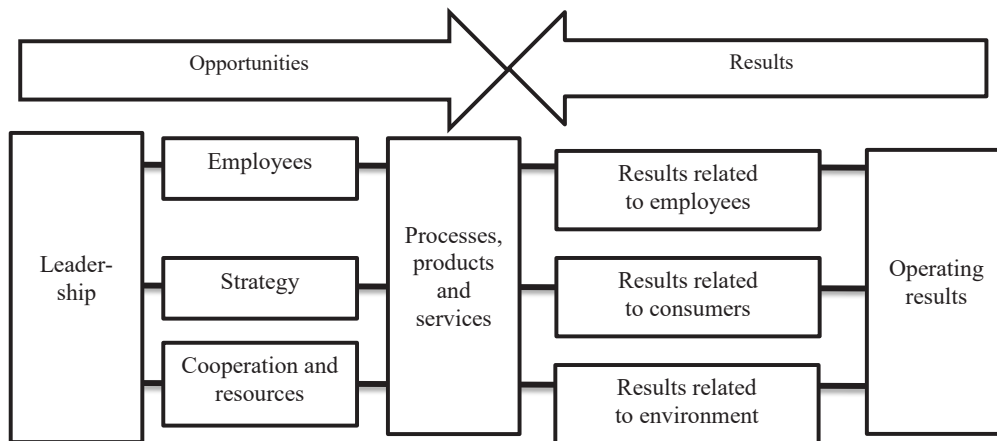


Figure 2. Model of the European Foundation for Quality Management (EFQM)

Source: (Model criteria. EFQM, 2014)

Thus, the current state of quality of higher education is a matter of concern, which leads to the need to manage the quality of educational services provided by domestic HEIs.

The study of positive experience of developed countries, whose HEIs are included in the world rankings, and graduates are in demand in the labor market to implement the principles of General Quality Management, in accordance with the quality system ISO 9001:2000, allows to state the need for these approaches to be implemented by the Ukrainian HEIs to increase the competitiveness of graduates in the labor market in both national and international contexts. As a result, the state regulation should form a clear mechanism for implementing the principles of Total Quality Management (TQM) in the activities of HEIs, create a consulting committee on the implementation of approaches to quality management in education at the Ministry of Education and Science, promote the exchange of positive experience with foreign HEIs through holding roundtable meetings, conferences and seminars at the state level, which as a result, will allow leaders of the Ukrainian universities to learn from foreign experience in strengthening the competitive position of their graduates in the labor market.

4. Conclusions

Creating quality management systems requires educational institutions to attract significant financial and human resources, which the educational institution cannot always afford. In addition, the result of the implementation of such systems will become apparent only in a few years. Therefore, the state can and should initiate and stimulate the development of the process of development and implementation of such HEIs' systems.

In most HEIs in Europe and other regions, to form a quality management system the basic international standard ISO 9001:2000 is used to improve their

quality management systems based on the concepts of total quality management (TQM), which provide for continuous transformation of the organization, modifying the quality of products (services) and meeting the needs of all key parties.

The defined principles of TQM are generally accepted, and must be used in the development of quality management system of educational institutions. The process approach, consumer orientation are the cornerstones of TQM, which have been further developed in quality models based on international standards of the ISO series.

The most widely used quality management system is the system that meets the ISO 9000 standard (latest version of 2001 – ISO 9001:2000), which is recognized worldwide as the most effective, flexible, and optimally documented.

The TQM model assumes that the HEI has a clear mission, strategic goals, which are formed as a result of a comprehensive study of the needs of the external environment (the needs of society, the region, etc.).

In the universities of the USA, France, Great Britain and other developed countries, the problems of general process quality management are considered in three planes: 1. Teaching TQM as an independent discipline in the learning process both in HEI and in the process of postgraduate training. 2. Organization of teaching other disciplines using the TQM principles and methods. 3. Organization of HEI's management based on the TQM principles and methods.

The advantage of the process approach is to ensure continuous monitoring of the links of individual processes within a system of interconnected and interdependent business processes, based on the implementation of the requirements of the standard ISO 9000:2000.

The list of factors influencing the quality of education in comparison with the principles of TQM, EFQM criteria and the requirements of the international standard ISO 9001 presented in Table 1 gives grounds

Table 1

Comparative characteristics of education quality management models in terms of factors influencing the quality of training in HEI

No.	Factors influencing the quality of training in HEI	TQM principles	EFQM criteria	ISO 9001:2000 requirements
	Training level of entrants	Consumer orientation. Establishing mutually beneficial relationships with suppliers.	Use of the potential of employees.	7.3.2. Design and development inputs
	The level of teacher preparation, recruitment, training, level of social protection	The role of top management. Involvement of personnel	The role of top management. Policy and strategy. Satisfaction of the personnel.	6.2. Human resources
	Organization of the educational process, introduction of scientific achievements into the educational process	Process approach	Process management	7.3.2 Design and development inputs 7.5. Production and service provision
	Equipping with training equipment, textbooks, manuals, computers and office equipment, use of information technology	Systemic approach	Rational use of resources	6.3. Infrastructure 6.4. Work environment
	Humanitarization of education, extracurricular educational work	Process approach	Process management	7.3.3. Design and development outputs
	Organization of student's individual work	Involvement of personnel	Use of the potential of employees	7.5. Production and service provision
	Motivation of students to quality education	Involvement of personnel	Use of the potential of employees	7.5. Production and service provision
	Motivation of students to quality education	Involvement of personnel	Consumer satisfaction	7.3.3. Design and development outputs
	Control of students' knowledge, skills and abilities	Fact-based decision-making	Process management. Results.	8.2.4. Monitoring and measurement of product 8.3. Control of nonconforming product
	Assessment of the level of student training by employers, society	Consumer orientation	Satisfaction of consumers and society Results	8.2.1. Customer satisfaction
	Level of self-esteem and improvement	Continual improvement	Results	8.2.2. Internal audit 8.4. Analysis of data 8.5. Improvement
	Level of compliance with state accreditation requirements	Consumer orientation	Satisfaction of consumers and society Results	1.1. General provisions
	Communication with employers and alumni	Consumer orientation	Satisfaction of consumers and society Results	7.2. Customer-related processes 7.2.3. Customer communication
	Organization of continuing education	Continual improvement	Process management Results	8. Measurement, analysis and improvement

Source: (Tsarenko, 2015)

to conclude that these factors are fully embedded in the common ideology of TQM, on which they are based.

Since the quality management system is implicitly related to the quality of HEI, it is indirectly characterized by the next stage of research: the result of self-assessment of the level of development and implementation of quality management system of HEI. Given the adequate and interconnected formulation of goals and tools of these two studies, it is possible to establish a relationship between the level of satisfaction of end users (students of HEI) and the assessment of the developed and

implemented quality management system of HEI in the form of business process maturity.

The use of modern information technologies in the field of education allows for more effective quality monitoring. Information technology is not so much a tool that complements the higher education system, but an imperative to establish a new order of knowledge and its institutional structures. The purpose of the national system for monitoring the quality of education is to provide society with reliable data on the state of the education system for accountability, effective functioning and improving.

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MANAGEMENT CONTROL AND MODERN DECENTRALIZED TECHNOLOGIES

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Abstract. Modern decentralized technologies, such as distributed registries, blockchain, smart contracts and decentralized autonomous organizations (DAO), are becoming more popular every year. Therefore, *the subject of our research*, the results of which are presented in this article, is the processes of digitalization in the field of management control and key technologies that allow to organize an effective system of management control in a decentralized organization. The success of management control is determined not only by its ability to identify and correct undesirable deviations in a timely manner, but also by the presence of a special corporate culture based on trust and fairness. Moreover, a positive corporate culture reduces the need for a number of control procedures designed to compensate for the lack of trust within the company. This effect can also be seriously enhanced by modern digitalization technologies. The *research methodology* included a broad review of literature sources and a comparative analysis of modern concepts of decentralized management, as well as drawing conclusions about promising ways to evolve management control systems. The *aim of the study* is to identify the impact on management control systems of modern technologies such as blockchain, smart contracts and decentralized autonomous organizations. The authors summarized the experience of applying these technologies in management control systems, which are designed to ensure high individual and team performance to achieve the strategic goals of the company. The *conclusion* is that the blockchain-based decentralized autonomous organization (DAO) is changing the forms and methods of management control, increasing the role of collective decisions and opening the way for employee initiative. DAO can significantly reduce internal and external transaction costs, including costs associated with the management and operation of management control systems. Different procedures for approval, confirmation and verification, as well as the adoption of standard management decisions are unified and automated. Accordingly, the time and the total amount of effort spent by managers to perform routine actions related to monitoring and control of employees' actions is reduced. Decentralization of control also reduces the impact of administrative procedures and ensures a higher level of trust within the organization. The decentralized model of management control is relevant for various areas of business and management, but special prospects can be seen in the field of decentralized finance (DeFi), where a wide range of professional controllers and users can be involved in auditing smart contracts and identifying shortcomings in financial services.

Key words: management control, blockchain, smart contracts, digitalization, decentralized autonomous organizations.

JEL Classification: M11, M15, D20

1. Introduction

Management control is one of the categories difficult to be defined clearly. Firstly, it is closely related to the

methods of planning and monitoring the activities of an enterprise, such as budgeting and costing. Secondly, its task is to measure performance and to assess the degree

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of achievement of the set goals, both organizational and individual. Thirdly, management control takes care of the creation of effective levers of motivation, which ensure the maximum effective fulfilment of priorities by employees directly related to the implementation of the organization's strategy.

Such multitasking allows us to consider management control, on the one hand, as a conceptual "umbrella", which combines various activities of managers in the organization, especially those related to the planning of operations and monitoring their results (Euske, 1984), and on the other, as an important element of a corporate culture focused on delivering significant results for the organization (Redchenko, Voronko, 2015).

Management control in its modern sense can be described as a process, in which managers form the prerequisites and the mechanism for ensuring high individual and team performance to achieve the strategic goals of the organization. This definition details and develops the opinion of Robert N. Anthony, according to which management control is to exert managers' influence on other employees of the organization in order to implement its strategy (Anthony, 1988). The success of such control is determined not only by its ability to detect and correct undesirable deviations in a timely manner, but also by the presence of a special corporate culture based on trust and fairness. Moreover, a favourable corporate culture reduces the need for a series of control procedures, which are to compensate for the lack of trust within the company.

2. Analysis of recent research and publications

The concept of trust as the basis of effective management was scientifically developed in the early 1970s by such well-known scientists as C. Clifford, M. Deutsch, D. McGregor. The process of building trust-based relationships is closely linked to the quality of internal communications within the company, the results of employees' individual experience in developing relations with others (Clifford, 1971), and the need to take risks in order to achieve the goals set (Deutsch, 1968). Trust can be seen as an anticipation that the people we depend on will live up to our expectations (Shaw, 2000), as well as a prerequisite for the constructive and productive work of groups and teams.

The balance of control and trust is important in managing business organizations. This problem has been considered in the scientific works of such researchers as L. B. Cardinal, Søren Jagd, Chris P. Long. These authors argue that managers try to strike a certain balance between trust and control, that is, to create a reasonable mix of control measures on the one hand, and efforts to create an atmosphere of trust and justice on the other. Such a balance strongly depends on the organizational context – on internal and external factors

and requirements that exist in certain companies. At the same time, the main task of management control in any company is to create such conditions under which the achievement of the necessary (target) results by executives is ensured with minimal use of the levers of formal power. This allows the managers to reach a level of interaction with employees, when the imperative of coercion is replaced by the imperative of trust, and administrative control gradually evolves towards self-control.

At the same time, the level of trust in business organizations is not always high enough to effectively solve numerous management tasks. With the advent of modern technology, some authors have argued that a lack of confidence in business and society can be offset by tools such as distributed data registers (ledgers) and blockchain (Lansiti, Lakhani, 2017). But the effects of these technologies on modern systems of management control are twofold: on the one hand, new opportunities for human interaction and confirmation of operations occur, and, on the other, threats of over-decentralization of control emerge. These and other problems of the development of management control along with the introduction of new technologies and digitalization remain insufficiently covered in the foreign and domestic scientific literature.

Therefore, the purpose of this article is to investigate the impact on management of modern technologies such as blockchain, smart contracts and decentralized autonomous organizations.

3. Digitalization and blockchain technology

In the recent past, people saw digitalization solely as an opportunity to improve or speed things up: computers had to do the same operations as humans, but more efficiently, better and more accurately. Today, we witness machines, which not only gradually take on those functions traditionally performed by humans, but also demonstrate the capacity for self-learning and development (AI – artificial intelligence) and interaction without human participation (IoT – Internet of Things).

Industrial, household and software work (Internet bots) are being implemented rapidly and they are successfully performing routine operations of varying complexity. According to the International Federation of Robotics (IFR), worldwide sales of robots have increased by an average of 19% annually between 2012 and 2017, peaking in 2017 when sales increased to 30% (Executive Summary World Robotics 2018).

In the field of business, digitalization not only determines the automation and robotization of production processes, but also profoundly alters business procedures, internal communications and managerial decision-making technologies. In addition, digitalization requires a fundamentally different approach to data collection and processing. Even

today, a large number of companies accumulate data not because they have a clear idea of where, how and when they can be used, but simply because the data are “collectable”. The information systems of such companies are full of reports and messages that no one uses to make management decisions. Digitalization does not recognize this approach: the company should collect only the data that are used in the costing process. Sifting through a multitude of information messages, the system selects and leaves only the information that is relevant to the specific goals, and then organizes it, analyzes and converts it into a format of recommendations for managers and other responsible persons. As a result, for corporate management decision-making, companies are progressively using real-time systems that can support the development of detailed scenarios and business forecasts.

With growing volumes and complexity of information used to make managerial decisions, the problems of security and trust are increasingly acute. The more participants are involved in communication processes and in the preparation of business information, the more difficult it is to ensure the protection and accuracy of this information. It is in the use of distributed ledger technology (DLT) and blockchain that today scientists and practitioners are looking for solutions to this contradiction.

Since blockchain technology was first introduced in 2008 by its anonymous developer, hiding under the pseudonym of Satoshi Nakamoto, and then used to create the first cryptocurrency, the bitcoin, a number of progressive solutions for business, finance, government and etc. have already been created on its basis. The attention paid to this technology is largely due to the fact that the participants of the blockchain-based network do not necessarily trust each other. The distributed ledger technologies, on which the blockchain is based, allows transactions to be made, with almost absolute certainty that no one will be able to tamper with records or make any unauthorized corrections.

This dramatically alters traditional approaches to verifying electronic documents: for example, when dealing with asset transactions, blockchain allows a full, automated audit of all transactions to recognize an entity's control over an asset. Such verification is accomplished by building and storing the source information of any asset in the blocks when each digital transaction leaves a unique record in the database, creating the ability to audit any digital event in the past. Such a record is made in all registers associated with the asset and each company can access the relevant information in a copy of such register, knowing the necessary key (Melnychenko, Hartinher, 2016).

According to a global survey conducted by Deloitte, an international auditing firm, 53% of executives in large companies from around the world said that in 2019, blockchain technology would be “crucial” for their

organization. In the previous year, the same answer was given by 43% of respondents (Deloitte, 2019). Among the benefits of the technology, respondents noted, in particular, that blockchain is “democratizing” access to information and contributing to increased trust within organizations.

4. Smart contracts: a basis for the development of decentralized autonomous organizations (DAO)

Another innovation that significantly affects the quality of interaction between people in organizations are blockchain-based programs that are self-executing and do not require human involvement (or considerably reduce such participation) – the so-called smart contracts.

In general, a smart contract is not “smart” in the literal interpretation of its name. Rather, it is an algorithm, a program written in one of the programming languages (for example, in the object-oriented programming language named Solidity, specially developed for the Ethereum platform), which makes the process of fixing calculations automated and independent of the parties after the smart contract was uploaded to the system. Thus, the technology solves the problem of lack of trust between the parties to the contract when a person – an independent arbitrator – becomes unnecessary (Yakunin, 2018).

The scope of smart contracts is constantly expanding to cover a wide variety of areas. For example, the US government is considering implementing a blockchain-based system that supports smart contracts and can improve government contract management (Higgins, 2017). Smart contracts have been recognized at the state level in Belarus and are used in municipal institutions (e.g. Hamburg, Germany) and many private companies.

Distributed ledger technology and smart contracts are at the heart of the so-called *decentralized autonomous organizations* (DAOs). Their emergence is interpreted by some researchers as the result of (to some extent, idealized) crypto-technological revolution (Mougayar, 2015).

DAOs are based on a set of rules and algorithms by which business transactions are executed. The content and terms of transactions are set using smart contracts and their execution is automatic. Information about each completed transaction is entered in a decentralized registry, which facilitates the interaction of participants and provides high information reliability of the system.

From a technical point of view, DAO is a computer program that runs a distributed chain of independent users and establishes a single set of corporate rules of conduct. The DAO program code presupposes a certain decision-making process, just as in traditional legal entities. These virtual organizations can be programmed for fully autonomous operation or manual mode when

users control the assets with varying degrees of intensity (Ivanov, 2017).

5. Convergence of DAO and management control systems

The benefits of DAOs are, first and foremost, a significant reduction in internal and external transaction costs, including costs associated with the management and maintenance of management control systems. The various procedures of coordination, confirmation, verification and approval, as well as the adoption of typical (standard) management decisions are unified and automated. Accordingly, the time and overall effort of managers to perform routine actions related to monitoring and controlling the actions of their subordinates is reduced. Some processes, such as the payment of remuneration, can be completely autonomous with the help of DAOs: smart contracts simply state the conditions that must be fulfilled by employees to receive the appropriate amounts, and then, if they are fulfilled, payroll calculations are automatically run.

The application of DAOs is quite possible in many traditional companies, where it enables to transform the vertical management structures of any division. For example, implementing DAO in the finance department can help to avoid budget fraud and resolve controversial payroll situations. In addition, the DAO “breaks” the usual patterns of interaction between people in the organization and displaces unproductive management approaches.

If, in a traditional management system, company executives directly determine the actions of subordinates (for example, the subordinates may be forced to attend unproductive meetings or gatherings on a regular basis), in a decentralized structure, the decisive factor is whether or not a given action can create value (achieve success at work). If performing a particular procedure makes no sense to the DAO members’ opinion, they do not vote for it and, accordingly, do not do so, devoting their time to issues that they consider more relevant. Thus, the command methods of leadership in DAO do not work – in this case, more important issues are the principles of operation and internal policies, which are agreed and consented by the participants of the decentralized organization.

Accordingly, management control in terms of DAO use takes on forms other than in traditional administrative structures. If the latter give the key role to the manager, who must determine the rules and conditions of the team, in decentralized autonomous organizations decisions are taken collectively. This minimizes such phenomena as subjectivism and personal sympathy on the part of traditional company executives towards individual employees. On the other hand, the absence of a formal hierarchy in DAO opens a direct path for

innovation and employee initiative, an important factor for business development in terms of the technological revolution.

At the same time, management control in the conditions of implementation of DAO can face some difficulties. This is due to the nature of the distributed registries, ledgers and the blockchain in particular, which contain transaction records made by DAO members. The trust model implemented in blockchain technology involves performing sophisticated mathematical calculations to add to the chain the next block with the next batch of transaction records. Such calculations require special equipment which helps the network members to try to calculate the correct number to open the next block of transactions and receive rewards. However, the security of records in a global or public blockchain is guaranteed, first and foremost, by a large number of network members (“miners”) who work in a decentralized manner, and therefore it is highly unlikely for some of them to obtain control of most of the network resources.

But in a particular company, bank, or government organization, it is more appropriate to use a private, non-public, blockchain record that can be viewed by any external user. The difference is that the creation of blocks in a private blockchain is centralized and carried out according to the rules defined by the company itself. Only trusted internal users have access to private blockchain records. However, individual outsiders (such as auditors) may also, as an exception, be entitled to view information or use separate applications.

Private blockchain is almost completely controlled by the company, which causes both opportunities and threats. On the one hand, a company can develop and update blockchain functionality more quickly, and on the other hand, it may face the challenge of ensuring the necessary level of security and trust between different groups of participants. To avoid problems, a private blockchain should have well-designed protocols that allow managers and network owners to effectively control all its members (add and remove members, increase or decrease their rights and authority, define consensus-based decision-making rules, etc.). At the same time, network owners should bear in mind that excessive control can negate the benefits of blockchain that are associated with its autonomy, decentralization and security.

6. Conclusions

The technological component of modern management control systems is becoming increasingly important to ensure the expected level of performance of such systems. The interaction of managers and employees is increasingly conditioned by the use of new technologies such as blockchain, smart contracts, the Internet of Things, and artificial intelligence. In this regard, when considering management control systems,

it is worth remembering the effects of emergence, that is, the manifestation of completely new qualities (decentralization, , autonomization, etc.).

It is also important to overcome the lack of trust in the relationships between the participants in the management processes in companies. Without overestimating the role of modern technologies, we note that they are one of the main drivers of high personal and team performance today. The tools of human interaction in organizations, such as smart contracts and decentralized autonomous organizations, bring management control to a new level of development, when the main role is played not by administrative procedures but by reaching consensus and providing a high level of trust between employees and management.

A promising area for the development of decentralization of management control is the area of finance. Many projects are now being implemented

in the field of decentralized finance (DeFi), which is a decentralized, public and unreliable ecosystem that combines various financial services based on public blockchains, mainly Ethereum. DeFi does not have centralized management structures: the rules for conducting business operations are written in a smart contract. Once the smart contract is running, the DeFi application can run autonomously with minimal or zero human intervention.

The openness of the source code of DeFi applications for external audit, which allows users to study the features of the contract or identify errors, is of great interest. Audits can be performed by both independent professionals and users directly. This allows you to build an eco-system of management control on completely different principles, providing for the broad involvement of all members of the organization in the implementation of control and risk management.

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SEARCHING OF STATISTICALLY APPROVED CRITERIA OF MONEY LAUNDERING RISK IDENTIFICATION

Olesia Lebid¹, Oleksandr Veits²

Abstract. The article is devoted to theoretical justification, identification of theoretic foundations of using statistical criteria for money laundering risk as an instrument for preventing and counteracting the legalization of bank clients' proceeds. *The object* of the study is the system of preventing and counteracting the legalization of income of bank customers. *The subject* of the study is theoretical provisions, methodological approaches, tools, practical recommendations for the formation, evaluation and improvement of the system of prevention and counteraction to legalization of income of bank customers. The hypothesis is that the coefficient of variation can be appropriately used as money laundering risk identifier. In order to prove this hypothesis authors used special methodology: generalization, grouping, statistical analysis of time series, correlation analysis – to identify and analyze the hidden signs of legalization of customer income in the financial activities of the bank; mathematical statistics and scaling – to determine the quantitative values of risk levels for the use of bank services for legalizing customer income. The analysis of financial activity of 32 Ukrainian banks aiming at identifying the money-laundering risks, showed that banks, where National Bank of Ukraine revealed suspicious transactions with money-laundering features (16 operating banks), had much higher coefficients of variation in cash flow volume, in cash flow for on-demand accounts of economic entities, in cash flow of on-demand accounts for individuals, compared with the banks where the violations of legislation in the field of financial monitoring were disclosed (8 banks), and with the banks where violations were not found (8 banks). This proves that sudden changes in clients' transaction volume can be the signs of money laundering risk. *The practical importance* of the obtained results is supported by notes about implementation by "Praveks Bank" PJSC (note № 3419-NF/02 of 14.12.2018), "MEGABANK" PJSC (note № 112-9841 of 18.12.2018), and the note about implementation into the educational process of Alfred Nobel University (note № 913 of 11.12.2019).

Key words: money laundering, money laundering risk, risk-oriented approach, coefficient of variation, criteria of money laundering risk.

JEL Classification: G21, O17

1. Introduction

Legalization of proceeds of crime is a significant threat to the stability of any country's economy; it significantly reduces the financial security of the state and increases the risk of global socio-economic and political instability. Awareness of it encourages the international community to develop and implement appropriate measures to limit and prevent money laundering. In Ukraine, such aspirations are enshrined in the "Strategy for the Development of the System of Prevention and Counteraction to Legalization (Laundering) of the Proceeds of Crime, Financing of Terrorism

and Financing of Proliferation of Weapons of Mass Destruction until 2020" [34] and in terms of measures to implement this strategy [18]. However, the rapid development of information technology, increasing the mobility of financial resources, virtualization of certain types of business activities require constant improvement of processes and tools to prevent and combat money laundering. Leading professionals, specialists and experts on money laundering realize that most counteraction mechanisms are performed ex post facto, i.e. after identifying and defining typological schemes and methods of legalization, and often after

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a series of specially conducted investigations and relevant court decisions. In this regard, it is almost impossible to talk about the existence of effective and well-functioning precautionary or preventive measures: when the general public becomes aware of an improved or new scheme or method of money laundering, criminals find new ways to withdraw funds from the shadow economy. The process of combating money laundering is further complicated by the fact that criminal money laundering schemes usually involve a significant number of participants subordinate to various agencies, ministries, and often states. Therefore, the state system of financial monitoring, which is designed to combat money laundering, coordinate the activities of various entities, includes public authorities of various branches and a wide range of primary level entities in its structure.

One of the leading roles among the subjects of primary financial monitoring belongs to banking institutions, which carry out the vast majority of cash transactions within Ukraine and provide 96% or more of information on suspicious financial transactions. In 2017-2018 alone, 33.26 billion UAH was legalized using the bank's services. For these reasons, the issue of preventing and counteracting the legalization of income of bank customers is constantly relevant, and for the proper implementation of the functions of internal financial monitoring it is necessary to create effective systems to prevent and combat money laundering.

The theoretical, methodological and practical aspects of preventing and combating money laundering at different levels of the financial system and in various public authorities are devoted to the works of leading domestic and foreign scientists, such as Vnukova N. [45], Hlushchenko O. [5], Honcharenko I. [6; 33], Dmytrov S. [8], Zhang Yan-Hua [46], Kolodiziev O. [11], Kordik M. and Kurilovska L. [34], Kuzmenko O. [35; 38], Xue Yao-Wen [46], Lieonov S. [38], Malyarets L. [39], Ponomarenko V. S. [40], Samorodov B. [29], Chmutova I. [36]. Paying tribute to the work of leading and young scientists, it should be emphasized that the analysis of their work has shown that there are a number of issues remaining unaddressed, and certain issues need further research. These should include issues of unity of interpretation of the concept of money laundering, prevention, counteraction to money laundering, the ratio of the concepts of prevention and counteraction to money laundering and financial monitoring; issues of structuring and assessment of income legalization factors, issues of methodological support for the formation and evaluation of the system of prevention and counteraction to money laundering of bank customers, customer risk assessment, risk assessment of using bank services for money laundering. The need to find scientifically sound and practically effective answers to these questions has led to the choice of research topic, its purpose, objectives, object and subject.

2. Literature review

As the authors rightly point out [37, p. 310], in terms of evaluation, the ideal result should be the amount of money that is laundered over a period of time. However, no official document at either the international or national level contains such information. In this regard, the risk-oriented approach is used to counter money laundering, i.e. to determine a certain probability that the funds received as a result of illegal activities will be legalized in a certain way. The team of authors led by Dmytrov S. O. [8, p. 51] in the study of risk assessment and management of the use of services to legalize criminal proceeds or financing of terrorism in the bank found that the risk of using the bank's services to legalize proceeds of crime includes two main components [8, p. 51]: the risk of suspicious transactions; the risk of violating the requirements of relevant legislation.

According to the law [24], the level of risk of using the bank for money laundering is determined by the bank itself. In accordance with these components of the methodology for assessing such risk, banks can focus on the risk of violating the law more than on the risk of suspicious transactions. In addition, the high level of risk of using the bank's services to legalize proceeds of crime may be grounds for including the bank in the plan of on-site inspections of the NBU, so banks can consciously develop risk assessment techniques that will not give high results, and therefore may be not adequate. Consequently, there is a need to develop methods of objective assessment and risk analysis of the use of bank services for money laundering.

3. Data and methodology

The theoretical and methodological basis of the study are the fundamental provisions of economic theory, finance theory, systems theory, research results of domestic and foreign scientists on combating money laundering, preventing and counteracting money laundering, functioning of the financial monitoring systems, as well as general and special methods of cognition, identification, formation and evaluation of processes and systems related to anti-money laundering. In particular, the following methods have been used to solve the tasks set in the work: *methods of statistical and coefficient analysis* – to determine the status and dynamics of macroeconomic factors in the legalization of bank customers' proceeds of crime; *generalization, grouping, statistical analysis of time series, correlation analysis* – to identify and analyze the hidden signs of legalization of customer income in the financial activities of the bank.

4. Results

According to the Report on the National Risk Assessment in the Sphere of Prevention and Counteraction to Legalization (Laundering) of the Proceeds of Crime

and Financing of Terrorism [10], in the total number of notifications registered by the SFSMU from banks during the period of validity of the Law No. 2258 (from 21.08.2010 to 05.02.2015), the largest share was created by financial transactions with cash (67%), during the period of validity of the Law No. 1702 (from 06.02.2015 to 31.12.2015) – financial transactions with cash (41%) and financial transactions conducted by persons at high risk (politically exposed persons) (41%). According to the Report, from the point of view of money laundering, the most risky are financial transactions related to the receipt or provision of financial assistance and cash financial transactions. In April 2019, I. Priazhentseva, Head of the Compliance Department of the Financial Monitoring Department of the NBU [27] also noted in her presentation that, firstly, among the main national risks of money laundering is the high cash flow in Ukraine, and, secondly, the focus of the risk-oriented approach is: cash and scheme operations, fictitious entrepreneurship, politically exposed persons, identification of ultimate beneficial owners and financing of terrorism.

Thus, in the process of analyzing the risk of money laundering through banking institutions in Ukraine, it is

advisable to pay attention to the banks' cash transactions.

In order to assess the money laundering risk using the bank's services, in particular cash transactions, the amounts of depositing and withdrawing cash, as well as the volume of transactions with the on-demand accounts (with the meaning of demand accounts of individuals and accounts of funds at the request of business entities) in the banks of Ukraine, which at the time of the NBU inspection had significant deficiencies, were analyzed. Inspections carried out by the NBU during 2016-2019 revealed banks violating the legislation on financial monitoring (Table 1), as well as identified the most vulnerable components operating in banks with systems of preventing and countering money laundering.

The results from Table 1 show that during the last four years the most vulnerable components of the system of prevention and counteraction to legalization clients' proceeds of the Ukrainian banks were: analysis, detection, registration of financial transactions subject to financial monitoring; identification, verification and study of clients; risk management. There are a total of 96 banks with non-compliances in their activities aimed

Table 1

Generalized information on NBU inspections of banks and enforcement measures applied to them for violation of legal requirements on financial monitoring

Parameter	Parameters' values by years			
	2016	2017	2018	2019 ²
1	2	3	4	5
Number of violating banks	21 ¹	40	24	11
Number of cautions	28	37	23	11
Number of penalties	28	15	13	9
Amount of penalties, million UAH	9.3	67.6	114.9	27.9
Number of restrictions on certain types of bank's transactions	1	0	0	0
Number of shutdowns of certain bank's transactions	1	1	0	0
Number of persons temporarily suspended from office	2	0	3	0
Number of decisions on revocation of banking license and liquidation of banks	4	0	0	0
Number of violations of legal requirements by types, pcs.				
Failure to comply with legal requirements for public figures, including improper identification of politically exposed persons	3	15	19	6
Violation of the procedure for analysis, detection, registration of financial transactions subject to financial monitoring	2	12	16	5
Violation of certain requirements for customer identification, verification and study	2	9	16	3
Failure to refuse to serve customers in cases provided by the legislation on financial monitoring	N/A	N/A	1	1
Non-compliance of internal bank documents with the requirements of the legislation on financial monitoring, including improper fulfillment of the obligation to develop, implement and constantly update internal documents on financial monitoring	2	5	8	3
Violation of the order of suspension of financial transactions	N/A	2	5	1
Violation of the procedure for submitting information/documents to a specially authorized body and at the request of the NBU, including the submission of unreliable statistical reporting on financial monitoring	N/A	9	8	4
Implementation of risky activities in the field of financial monitoring	N/A	8	12	5
Lack of proper functioning of the risk management system, including improper fulfillment of the obligation to ensure risk management and reassessment of customer risks	N/A	7	8	3
Use of software that does not provide automatic detection and stopping in cases of a financial transaction established by law before its implementation	N/A	3	1	0

1 – data starting from August 2016; 2 – data as of May 2019.

at preventing and combating money laundering in 2016-2019. Some banks were inspected for several years in a row, and some banks were liquidated. Therefore, for the set of substantiation of banks, the operations of which should be analyzed in depth, it is advisable to identify those that had the most significant shortcomings or signs of money laundering.

The names of banks inspected by the NBU in 2016 are not detailed in the report. Banks violating the requirements of the legislation on financial monitoring in 2017 with the most significant shortcomings of the system of prevention and counteraction to legalization clients' proceeds are presented in Table 2.

It should be noted that the data in Table 2 are incomplete, as the NBU began to report monthly on the enforcement measures applied to banks based on the results of inspections, starting in August 2016, and to disclose the titles of banks to which enforcement measures were applied only in December 2017.

Most information (Table 2) on the violations were found in the bank PJSC "JSB "PIVDENNYI", because the NBU provided additional clarifications on this case a year later [12]. JSC "VTB BANK" has ceased its activities and is in the process of liquidation, so further analysis of its data is impractical. Data on banks, in the systems of prevention and counteraction to legalization clients' proceeds of which significant shortcomings of 2018 have been revealed, are given in Table 3.

The results from Table 3 show that 12 banks out of 23 audited by the NBU in 2018 have signs of significant shortcomings in preventing and combating money laundering, including 3 banks, JSC "UKRSIBBANK", JSC "IBOX BANK" and JSC "RAIFFEISEN BANK AVAL" paid fines of 400, 4 thousand UAH, 622.45 thousand UAH and 450 thousand UAH, respectively, and 9 banks carried out operations with signs of money laundering including: JSC "TASCOMBANK", JSC "BANK SICH", JSC "JOINT-STOCK COMMERCIAL BANK "CONCORD", JSC "BANK "UKRAINIAN CAPITAL", JC "BANK FO INVESTMENTS AND SAVINGS", JSC "MISTO BANK", JSC "UKRSOTSBANK", JSC "CB "GLOBUS", JSC "SBERBANK". These banks need

in-depth analysis of transactions in order to identify hidden signs of legalization of customer proceeds in their financial activities.

Data for the first four months of 2019 show (Table 4) that among the banks inspected by the NBU, the most significant shortcomings have been identified in JSC "UNIVERSAL BANK", JSC "MEGABANK», JSC "OTP BANK», JSC "ALPARI BANK», JSC "MTB BANK», JSC "RWS BANK».

In the activity of JSC "PRAVEXBANK", PJSC "BANK VOSTOK», PJSC "SETTLEMENT CENTER FOR SERVICING CONTRACTS IN THE FINANCIAL MARKETS" (Table 4) during the first quarter of 2019, no scheme operations were detected, but these banks had other significant violations, for which they paid the corresponding fines in the amount of 200 thousand UAH, 300 thousand UAH and 300 thousand UAH, respectively.

Thus, the total sample of banks with problems in preventing and combating money laundering of their customers (Table 5) is 39 banks (a total of 41 banks was checked, but JSC "TASKOMBANK" i JSC "MTB BANK» are listed twice).

The final sample of banks for in-depth analysis of cash transactions, as a priority in terms of minimizing the risk of money laundering, is 16 banks or 20.78% of the total number of operating banks, which from a statistical point of view is a representative sample. The National Bank of Ukraine has started to provide extended data on the amounts of withdrawals and credits to various accounts of the Ukrainian banks [13] from August 2017, so the amount of data available for analysis as of May 2019 is 20 periods (monthly data).

The standardized measure of risk is the coefficient of variation of a random variable. The statistics prove [1; 7; 31] that the risk is low if the coefficient of variation does not exceed 0.1, moderate – from 0.1 to 0.25 and high – more than 0.25 [21, p. 305]. In addition, a certain predictability of turnover, and, accordingly, the controllability of this process, can be determined by the correspondence of the distribution of the time series to normal. It is believed that the normal distribution

Table 2

Banks with detected shortcomings in the functioning of systems (divisions) of prevention and counteraction to legalization clients' proceeds in 2017

Date	Bank	Number of detected violations	The presence of scheme operations with signs of legalization	Penalty, thousand UAH
1	2	3	4	5
07.2017	PJSC "JSB "PIVDENNYI"	5	Use of fictional currency conversion rates in customer transactions	4 880.16
12.2017	JSC "SEB CORPORATE BANK"	4	Not detected	0.00
12.2017	JSC "TASCOMBANK"	5	Not detected	0.00
12.2017	JSC "BANK 3/4"	4	Not detected	35.00
12.2017	PJSC "VERNUM BANK"	2	Not detected	0.00
12.2017	JSC "OSCHADBANK"	4	Not detected	0.00
12.2017	JSC "VTB BANK"	1	Not detected	0.00

Table 3

**Banks with identified shortcomings in the functioning of systems (divisions)
of prevention and counteraction to legalization clients' proceeds in 2018**

Date	Bank	Number of detected violations	The presence of scheme operations with signs of legalization	Penalty, thousand UAH
1	2	3	4	5
02.2018	JSC "ASVIO BANK"	3	Не виявлені	0.00
02.2018	JSC "TASKOMBANK"	2	Conversion of cash in hand, transactions related to tax evasion	6 080.00
03.2018	JSC "UKRAINIAN CONSTRUCTION INVESTMENT BANK"	2	Not detected	0.00
03.2018	JSC "BANK SICH"	6	Detected, but not detailed	1 284.00
03.2018	JSC "JOINT-STOCK COMMERCIAL BANK "CONCORD"	6	Operations related to the withdrawal of capital, legalization of criminal proceeds, conversion of non-cash funds into cash, the implementation of fictitious business, tax avoidance	1 550.00
03.2018	JSC "BANK "UKRAINIAN CAPITAL"	7	Detected, but not detailed	1 207.21
05.2018	JSC "UKRSIBBANK"	4	Not detected	400.00
05.2018	JSC "MTB BANK"	9	Not detected	0.00
05.2018	JSC "KREDOBANK"	1	Not detected	0.00
05.2018	PSC "PROMINVESTBANK"	2	Not detected	0.00
06.2018	JSC "BANK FOR INVESTMENTS AND SAVINGS"	7	Carrying out large-scale (more than 7 billion UAH) financial transactions on the accounts of related clients-legal entities containing signs of fictitious entrepreneurship	5 000.00
08.2018	JSC "IBOX COMPANY"	6	Not detected	4 622.45
10.2018	JSC "UNEX BANK»	1	Not detected	0.00
10.2018	JSC "IDEA BANK»	2	Not detected	0.00
10.2018	JSC "ALTBANK»	4	Not detected	0.00
10.2018	PJSC "COMMERCIAL BANK "CENTER»	4	Not detected	0.00
11.2018	JSC "RAIFFEISEN BANK AVAL"	1	Not detected	0.00
11.2018	JSC "MISTO BANK"	2	Cash withdrawn from their accounts by clients for amounts tens of times higher than the amounts of their declared income, as well as in the transfer from the client's account in favor of legal entities with signs of fictitious funds for the purchase and sale of "junk" securities	4 226.10
11.2018	JSC "UKSOTSBANK"	6	Withdrawal of cash in the amount of over 1 billion UAH on the basis of documents with signs of fictitiousness or in the absence of any supporting documents from customer accounts, which, in particular, belong to socially vulnerable groups and are unable to own or dispose of such assets	30 454.93
12.2018	JSC "RAIFFEISEN BANK AVAL"	2	Not detected	450.00
12.2018	JSC "FIRST UKRAINIAN INTERNATIONAL BANK"	3	Not detected	0.00
12.2018	JSC "CB "GLOBUS"	2	Purchase operations at the expense of funds received on the basis of documents containing inaccurate information, "junk" securities	3 000.00
12.2018	PJSC "BANK FAMILNY"	2	Not detected	0.00
12.2018	JSC "SBERBANK"	6	Operations on withdrawal of cash from accounts of clients-legal entities, which contain signs of fictitious entrepreneurship	94 737.50

Table 4

Banks with identified shortcomings in the functioning of systems (divisions) of prevention and counteraction to legalization clients' proceeds in May 2019

Date	Bank	Number of detected violations	The presence of scheme operations with signs of legalization	Penalty, thousand UAH
1	2	3	4	5
01.2019	JSC "PRAVEX BANK"	4	Not detected	200.00
01.2019	JSC "UNEX BANK"	3	Not detected	0.00
01.2019	JSC "UNIVERSAL BANK"	4	Transactions based on documents containing inaccurate information or in the absence of any supporting documents for the purpose of redistribution of financial flows received from counterparties for one type of goods (services) for further transfer of funds to other counterparties for completely different goods	14382.47
02.2019	JSC "MEGABANK»	2	Cash withdrawal transactions related to conversion	6200.00
02.2019	JSC "COMMERCIAL BANK "ZEMELNY CAPITAL"	2	Not detected	0.00
03.2019	JSC "OTP BANK»	6	Cash withdrawal transactions related to conversion	7142.13
04.2019	PJSC "BANK VOSTOK»	2	Not detected	300.00
04.2019	JSC "MTB BANK»	1	Cash withdrawal transactions related to its conversion	4 350.00
04.2019	JSC "ALPARI BANK»	2	Financial transactions for the transfer of non-cash funds to two other banks in accordance with contracts for collection services. These funds have been delivered by cash collection of other banks to other financial institutions for settlements on the basis of surety agreements with individuals who sold agricultural products and/or scrap metal	2 000.00
04.2019	JSC "RWS BANK»	1	Cyclical financial transactions with securities, in particular internal governmental bonds, as a result of which such individuals constantly received a significant amount of investment income (respectively, legal entities of clients of other banks constantly received investment loss).	3 000.39
04.2019	PJSC "SETTLEMENT CENTER FOR SERVICING CONTRACTS IN THE FINANCIAL MARKETS»	1	Not detected	200.00

indicates that the random variable depends on the systematic action of certain factors that can be detected and evaluated, and statistical procedures are the most developed for the normal distribution of the random variable. To verify the compliance of data on cash turnover and current accounts of customers with normal law, the coefficients of excess, asymmetry and the value of the Shapiro-Wilk test are analyzed, which have been chosen due to the fact that the sample size for each indicator does not exceed 20. All calculations have been performed in the Statistica software package. Analysis of the obtained statistical characteristics of the time series on the amounts of deposits and withdrawals of cash and non-cash funds from the accounts of bank customers allows to identify an increased risk of money laundering. Detailed information on the statistical indicators of JSC "JSCB "CONCORD" is given in Table 5.

The results from Table 6 indicate a high risk of money laundering by customers of JSC "JSCB "CONCORD", as the value of the coefficient of variation for the entire

analyzed period in all respects was not less than 0.28, and variation is more than 0.75 on the accounts of individuals in foreign currency. The asymmetry is positive for all values, which indicates the location of most of the data to the right of the mathematical expectation. The statistics consider [1; 7] that "phenomena, for which the kurtosis is maximum, are burdened with minimal risk". For JSC "JSCB "CONCORD" (Table 5), this means that the lowest risk of money laundering have transactions related to withdrawal (or write-off) and crediting funds in foreign currency to the accounts of economic entities. To compare the calculated values (Table 5) of the Shapiro-Wilk test with tabular ones, the appropriate calculations have been performed, the results of which are given in Table 6.

If the calculated value of the criterion is greater than the value from the table (Table 6), it is considered that the analyzed value is normally distributed. Thus, according to the Shapiro-Wilk test, the values of cash and non-

Table 5

Statistical characteristics of dynamics of cash turnover and funds on the on-demand accounts from 01.09.2017 to 01.04.2019 of JSC “JSCB “CONCORD”

Parameter	Cash				Funds on demand of economic entities	
	Deposition		Withdrawal		Crediting funds	
	NC	FC	NC	FC	NC	FC
Average value	386271	133077	382655	128806	1843766	449892
Median	357635	96336	356903	94313	1728895	343768
Minimum value	245716.5	20529.0	255489,0	21681,3	955925.1	237911.7
Maximum value	743074	485005	677605	428716	2967277	1276587
Standard deviation	123292.0	125477.2	110547.1	117684.9	624436.6	257171.8
Coefficient of variation	0.3192	0.9429	0.2889	0.9137	0.3387	0.5716
Coefficient of asymmetry	2.08	1.70	1.94	1.50	0.39	1.98
Standard asymmetric error	0.51	0.51	0.51	0.51	0.51	0.51
Kurtosis	4.35	2.48	3.76	1.50	-1.16	4.70
Standard error of kurtosis	0.99	0.99	0.99	0.99	0.99	0.99
Shapiro-Wilk test	0.74995	0.79438	0.76486	0.80685	0.93057	0.78332
P-value of the Shapiro-Wilk test	0.00017	0.00071	0.00027	0.0011	0.15835	0.00049
Parameter	Funds on demand of economic entities		Funds on demand of individuals			
	Deposition		Withdrawal		Crediting funds	
	NC	FC	NC	FC	NC	FC
Average value	1849656	451068	136572	55410	138458	58249
Median	1709254	345769	128810	43129	129269	47689
Minimum value	978754.6	220542.9	68190.2	7051.1	67401.2	8037.5
Maximum value	2934153	1287751	242675	169643	242746	185532
Standard deviation	622486.7	257164.0	47929.4	41669.2	48603.7	45571.5
Coefficient of variation	0.3365	0.5701	0.3509	0.7520	0.3510	0.7824
Coefficient of asymmetry	0.41	2.05	0.47	1.44	0.41	1.66
Standard asymmetric error	0.51	0.51	0.51	0.51	0.51	0.51
Kurtosis	-1.17	5.08	-0.25	1.97	-0.20	2.69
Standard error of kurtosis	0.99	0.99	0.99	0.99	0.99	0.99
Shapiro-Wilk test	0.92551	0.78482	0.96059	0.86482	0.96072	0.8294
P-value of the Shapiro-Wilk test	0.12654	0.00052	0.55573	0.00954	0.55831	0.00245

Table 6

The value of the Shapiro-Wilk test for 20 observations

Parameter	Test significance		
	0.01	0.05	0.1
Shapiro-Wilk test for 20 observations	0.2167	0.4230	0.5422

cash turnover of clients of JSC “JSCB “CONCORD” are normally distributed, which allows to apply parametric methods of analysis for the bank's data. To check the closeness of the relationship between depositing funds to accounts and withdrawals, the coefficient of pairwise correlation between the amounts of depositing funds to the respective accounts and the amounts of withdrawals from the accounts of clients of JSC “JSCB “CONCORD” is used, the results of calculations are made by the author and presented in Table 7.

The results from Table 7 show that depositing and withdrawing funds are closely related, because the

pairwise correlation coefficients between the indicators of one group are 0.99 or more. In addition, the data from Table 7 allow us to see that the cash flow in JSC “JSCB “CONCORD” is linked with the accounts of individuals much more closely than with the cash flow of enterprises and organizations.

The author's calculations of statistical characteristics of the series of dynamics of cash turnover and funds in the accounts of bank customers – economic entities and individuals – showed that banks, in which the scheme operations are detected, have mostly high values of the coefficient of variation (average 25%). To confirm

Table 7

Coefficients of pairwise correlation between indicators of cash and non-cash flows of clients of JSC “JSCB “CONCORD”

Parameter	Cash deposit	Cash withdrawal	Depositing funds to accounts on demand of economic entities	Withdrawal of funds from accounts on demand of economic entities	Depositing funds to accounts on demand of individuals	Withdrawal of funds from accounts on demand of individuals
1	2	3	4	5	6	7
Cash deposit	1.0000	0.9940	0.5756	0.5769	0.7983	0.8368
Cash withdrawal	0.9940	1.0000	0.5910	0.5944	0.7887	0.8278
Depositing funds to accounts on demand of economic entities	0.5756	0.5910	1.0000	0.9980	0.4793	0.4881
Withdrawal of funds from accounts on demand of economic entities	0.5769	0.5944	0.9980	1.0000	0.4823	0.4922
Depositing funds to accounts on demand of individuals	0.7983	0.7887	0.4793	0.4823	1.0000	0.9900
Withdrawal of funds from accounts on demand of individuals	0.8368	0.8278	0.4881	0.4922	0.9900	1.0000

the hypothesis that banks with a higher risk of money laundering have higher values of the coefficient of variation of data, statistical characteristics of the series of dynamics of cash flows in bank accounts are calculated, which in their activities have shortcomings in the system of prevention and counteraction to legalization clients' proceeds, however, which are not observed in scheme operations. The second group of banks – banks, to which the NBU applied enforcement measures for non-compliance with the requirements in the field of financial monitoring, except for those in the activities of which scheme operations were identified – starts with JSC “ASVIO BANK” (Table 8).

The results from Table 8 confirm that according to all analyzed accounts JSC “ASVIO BANK” has either a high or moderate level of risk of exposure to non-systemic factors, including money laundering. The highest values of the coefficients of variation are withdrawals in foreign currency and withdrawals from accounts on demand of individuals. All deposits and withdrawals in foreign currency have a right-wing asymmetry in the distribution of data, so deviations of further revenues in the direction of increase from the mathematical expectation will be the most probable. Interestingly, the asymmetry of data on the deposit and withdrawal of cash and accounts on demand of economic entities is negative. This indicates a more likely decrease in the inflow of funds on these accounts. The Shapiro-Wilk test shows that the data on the accounts of JSC “ASVIO BANK” are distributed according to the normal law. This is also evidenced by the values of the kurtosis, which, under conditions of normal distribution or close to it, have values in the range from 2 to 4. Although the coefficients of asymmetry for all foreign currency accounts are higher than 0.5, which indicates a significant asymmetry that cannot be ignored in further calculations.

If we compare the results of calculations of JSC “JSCB “CONCORD” (Table 5) as a representative of a group of banks in the activities of which scheme operations have been identified, and JSC “ASVIO BANK” (Table 8), as a representative of a group of banks with shortcomings in the system of prevention and counteraction to legalization clients' proceeds without scheme operations, it becomes clear that the risk of money laundering in terms of data variation is much higher in the first group of banks. In order for the conclusions to be justified, similar calculations of statistical characteristics of time series have been performed for all analyzed banks – 32 banks for 20 periods, from August 2017 to April 2019, and the summarized data are presented in Table 9.

Table 9 summarizes the results of the analysis of statistical characteristics of data on cash flows through cash registers and accounts on demand of bank customers. The results from Table 9 show that the average values of the coefficient of variation are much higher among the banks in whose activities the scheme operations are detected. Thus, according to the cash flow in the national currency (Table 9), the coefficient of variation averages 24.68%, the movement of funds of economic entities – 27, 69%, and the movement of funds on accounts on demand of individuals in the national currency – 38.63%. Regarding the movement of funds in foreign currency, the value of the coefficient of variation is slightly higher – 33.00% for cash transactions, 22.44% for transactions of economic entities, 57.97% for transactions on accounts of individuals.

Thus, for a group of banks with identified scheme operations, the coefficient of variation indicates the presence of a high risk of exposure to non-systemic factors, including money laundering using the operations of these banks.

The group of banks with shortcomings in the financial monitoring system identified by the NBU has

Table 8

Statistical characteristics of dynamics of cash turnover and funds on the on-demand accounts from 01.09.2017 to 01.04.2019 of JSC "ASVIO BANK"

Parameter	Cash				Funds on demand of economic entities	
	Deposition		Withdrawal		Crediting funds	
	NC	FC	NC	FC	NC	FC
1	2	3	4	5	6	7
Average value	232140.45	17681.96	231539.90	17306.83	1558490.31	101542.07
Median	223377.82	16394.74	226386.22	14409.18	1550831.67	92828.88
Minimum value	132207.42	4411.97	131745.85	6619.59	1104658.53	67382.77
Maximum value	307204.14	46196.55	304301.92	38761.60	1938814.81	202916.94
Standard deviation	41497.45	10214.76	41455.32	9691.99	222117.19	32045.35
Coefficient of variation	0.1788	0.5777	0.1790	0.5600	0.1425	0.3156
Coefficient of asymmetry	-0.1821	1.3010	-0.2036	0.8837	-0.1009	2.1317
Standard asymmetric error	0.5121	0.5121	0.5121	0.5121	0.5121	0.5121
Kurtosis	0.5067	2.1187	0.6235	-0.3497	-0.2279	5.1622
Standard error of kurtosis	0.9924	0.9924	0.9924	0.9924	0.9924	0.9924
Shapiro-Wilk test	0.9507	0.9006	0.9702	0.8875	0.9812	0.7692
P-value of the Shapiro-Wilk test	0.3780	0.0424	0.7580	0.0242	0.9481	0.0003
Parameter	Funds on demand of economic entities		Funds on demand of individuals			
	Deposition		Withdrawal		Crediting funds	
	HB	IB	HB	IB	HB	IB
Average value	1559145.58	102204.58	212894.56	12114.80	209448.65	12453.98
Median	1527437.72	93191.15	169512.92	9052.87	168520.84	10400.32
Minimum value	1082025.79	66650.62	119268.16	3515.87	109443.71	3661.16
Maximum value	1906785.16	206787.91	502074.21	29864.90	544904.63	29204.32
Standard deviation	210277.53	33334.49	107106.70	8225.95	108694.06	7855.12
Coefficient of variation	0.1349	0.3262	0.5031	0.6790	0.5190	0.6307
Coefficient of asymmetry	-0.1625	2.0775	1.4937	1.0719	1.7346	1.0929
Standard asymmetric error	0.5121	0.5121	0.5121	0.5121	0.5121	0.5121
Kurtosis	0.0754	4.9145	1.6275	0.0203	3.5824	0.1870
Standard error of kurtosis	0.9924	0.9924	0.9924	0.9924	0.9924	0.9924
Shapiro-Wilk test	0.9711	0.7766	0.8104	0.8567	0.8165	0.8637
P-value of the Shapiro-Wilk test	0.7782	0.0004	0.0012	0.0069	0.0015	0.0091

a coefficient of variation, which indicates the average risk of money laundering: in most cases in the range from 16.00% to 35.00% in cash flows in UAH, and in the range of 29-58% on the movement of funds in foreign currency.

The third group of banks includes banks that have not had any comments from the NBU on the functioning of their systems to prevent and combat money laundering. The calculated values of the coefficients of variation of cash flows on the accounts of these banks confirm this in most cases, and the average values according to this group are the lowest: 14.18% in cash flows in national currency and 33.43% in foreign currency; coefficient of variation of 22.29% on the movement of funds on the accounts of economic entities in the national currency, and 25.83% in foreign currency; the coefficient of variation is 26.92% on the movement of funds on the accounts of individuals in the national currency, and 46.60% in foreign currency.

The analysis has showed that the coefficient of variation of cash flows in bank accounts and cash can be used as an indicator of the money laundering risk.

5. Conclusion

An important group of factors in the legalization of income and the processes of prevention and counteraction to it are the operations of bank customers with cash and non-cash funds. The analyzed turnover of 32 banks on cash accounts and on demand accounts of individuals and businesses proved that the coefficient of variation of these indicators can be used to identify an increased risk of legalization of customer income. Banks are divided into three groups in order to reduce the risk of using their services for money laundering: the first group includes banks, in which the NBU has identified scheme operations with signs of legalization (16 banks), the second group is for banks, to which the NBU has applied enforcement

Table 9
Generalized results of calculation of the coefficient of variation of cash flow through cash registers
and accounts on demand of bank customers for the period from 01.09.2017 to 01.04.2019

Category of banks	Bank	Coefficient of variation, %																Correspondence of data distribution to the normal law according to the Shapiro-Wilk test
		Cash				Funds on demand of economic entities				Funds on demand of individuals				Withdrawal	FC			
		Deposition		Withdrawal		Crediting		Withdrawal		Crediting		Withdrawal						
NC	FC	NC	FC	NC	FC	NC	FC	NC	FC	NC	FC	NC	FC	NC	FC			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
Banks, in the activities of which the NBU found scheme operations with signs of legalization of income	ALPARI BANK	341.66	104.21	342.42	117.45	61.74	126.85	61.30	128.77	198.75	306.64	197.18	211.49	Partially				
	BANK FOR INVESTMENT AND SAVINGS	33.76	27.28	33.84	25.55	26.24	47.10	26.30	47.27	17.41	29.73	17.80	30.42	Compliant				
	BANK SICH	22.54	41.52	22.22	41.67	27.21	96.13	27.04	97.17	26.63	59.21	26.15	76.09	Compliant				
	GLOBUS	15.18	31.56	15.22	31.39	13.60	16.26	14.40	15.99	27.99	55.92	28.37	52.45	Compliant				
	CONCORD	31.92	94.29	28.89	9.37	33.87	57.16	33.65	57.01	35.09	75.20	35.10	78.24	Compliant				
	MEGABANK	17.04	13.26	17.02	12.27	24.09	23.38	23.77	22.72	14.91	22.93	15.98	19.23	Compliant				
	MISTO BANK	89.22	60.44	88.99	64.67	55.76	87.66	56.64	85.95	83.35	119.99	84.51	124.53	Compliant				
	MTB BANK	7.45	19.99	7.85	20.03	20.18	21.66	20.25	21.52	19.26	25.79	19.16	23.01	Compliant				
	OTP BANK	10.33	18.53	10.67	17.47	11.06	14.29	11.35	13.67	20.90	23.57	21.13	21.44	Compliant				
	PIVDENNYI	11.47	9.82	11.36	9.68	14.00	16.44	14.27	16.98	23.46	28.56	22.54	25.50	Compliant				
	RWS BANK	53.28	65.75	52.41	65.91	53.77	70.42	52.90	70.80	96.12	95.54	95.77	100.28	Compliant				
	SBERBANK	7.78	21.84	7.79	19.89	12.85	21.55	12.96	20.48	16.98	32.98	17.58	30.72	Compliant				
	TASKOMBANK	16.29	41.53	16.50	41.76	11.03	25.29	11.13	25.57	26.02	41.68	27.89	39.52	Compliant				
UKRAINIAN CAPITAL	17.85	17.26	17.75	17.70	41.74	42.72	41.64	41.88	31.02	64.58	30.11	70.99	Compliant					
UKRSOTSBANK	15.95	32.58	15.83	32.50	50.66	56.41	51.15	57.70	61.87	58.60	63.92	65.16	Compliant					
UNIVERSAL BANK	21.85	29.24	22.01	30.03	18.30	20.04	18.99	19.26	75.45	40.09	76.29	46.22	Compliant					
Average values by group (excluding data from Alpari Bank)		24.79	34.99	24.56	34.79	27.62	41.10	27.76	40.93	38.43	51.62	38.82	53.59					

(End of Table 8)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Banks, to which the NBU applied enforcement measures for non-compliance with the requirements in the field of financial monitoring, except for those, in the activity of which scheme operations have been revealed	ASVIO BANK	17.88	57.77	17.90	56.00	14.25	31.56	13.49	32.62	50.31	67.90	51.90	63.07	Compliant
	BANK 3/4	41.23	59.56	41.23	59.65	19.22	57.29	19.25	57.73	64.49	110.52	65.65	103.25	Compliant
	OSCHADBANK	10.01	9.55	9.97	9.16	13.95	13.59	14.01	11.31	18.45	32.13	18.62	32.93	Compliant
	KREDOBANK	7.18	16.82	7.40	16.84	9.69	11.57	10.08	11.51	23.04	34.15	22.30	32.45	Compliant
	PROMINVESTBANK	10.75	23.26	10.65	22.92	28.37	34.24	27.07	37.89	27.22	35.31	28.12	35.93	Compliant
	SEB CB	102.02	204.91	165.86	163.28	22.14	19.40	24.62	19.44	27.65	0.00	32.18	0.00	Partially
	UKRCONSTINVESTBANK	32.33	52.08	32.38	53.51	23.47	47.28	25.23	43.94	35.08	103.83	35.21	112.92	Compliant
	UKRSOBBANK	7.02	12.32	7.01	12.50	9.22	10.48	9.55	11.08	20.08	23.61	20.01	23.55	Compliant
	Average values of indicators by group of banks (excluding data from SEB CB)	18.06	33.05	18.08	32.94	16.88	29.43	16.95	29.44	34.10	58.21	34.54	57.73	
	BANK ALLIANCE	26.76	82.89	26.88	83.14	74.51	56.73	75.45	54.83	74.89	62.15	74.33	63.47	63.47
GRANT	18.68	65.86	19.14	69.32	12.07	13.38	12.38	13.05	26.96	128.47	25.83	114.77	114.77	Compliant
CREDIT AGRICOLE BANK	8.30	18.74	8.67	17.79	14.81	23.08	14.80	22.80	19.95	30.15	19.72	23.05	23.05	Compliant
POLICOMBANK	13.38	21.08	13.77	20.93	15.37	39.97	15.46	40.81	27.18	62.92	30.02	55.83	55.83	Compliant
PRAVEX BANK	10.46	18.29	10.20	20.24	11.88	26.25	12.90	26.95	13.46	26.84	14.12	28.64	28.64	Compliant
RAIFFEISEN BANK AVAL	7.18	22.31	6.91	20.53	9.01	16.00	9.25	16.47	16.78	23.62	16.55	27.22	27.22	Compliant
UKRGAZBANK	21.84	20.24	22.00	19.76	26.42	18.78	26.63	15.69	19.25	20.51	20.84	20.84	20.95	Compliant
UKREXIMBANK	6.37	17.96	6.23	15.87	12.63	15.23	12.93	13.22	15.28	29.67	15.58	27.33	27.33	Compliant
Average values by group of banks	14.12	33.42	14.23	33.45	22.09	26.18	22.48	25.48	26.72	48.04	27.12	45.16	45.16	
Banks, to which the NBU did not apply enforcement measures for non-compliance with financial monitoring requirements														

measures in the field of financial monitoring, except for those, in which scheme operations are detected (8 banks); the third group is for banks, to which the NBU did not apply enforcement measures for non-compliance with financial monitoring requirements, i.e. banks with the lowest risk of legalization (8 banks). The article proves that the first group of banks with the highest (actually detected) risk of legalization has the

highest values of coefficients of variation – up to 120%; the second group of banks with an average risk of using their services for money laundering has significantly lower values of coefficients of variation – on average 18-58%; The group of banks without remarks from the NBU has the lowest values of coefficients of variation of turnover of cash and non-cash funds of clients – on average from 14 to 48%.

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IMPROVEMENT OF THE SYSTEM OF MANAGEMENT OF PROFESSIONAL DEVELOPMENT OF PERSONNEL: THE CASE OF UKRAINE

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Abstract. Theoretical and methodical aspects of rating performance appraisal of sci-entific and pedagogical workers of educational institutions are object of research. The purpose of the article is to study the factors of influence and provide recommendations for improving the system of management of professional development of personnel of educational institutions. The results are obtained through the use of methods: expert method is used to identify the impact of qualitative and quantitative indicators on the efficiency of use of labor resources; economic and mathematical method is performed to determine the integral indicator of the assessment of the efficiency of the use of labor resources; abstract-logical method is executed for theoretical generalization and formulation of conclusions. It has been revealed that the lack of a sound methodological approach to employee rating and appropriate means of motivation for professional development can lead to the loss of existing intellectual potential and competitive positions of educational institutions in the market of educational services in general. It has been found that in order to introduce an effective model of personnel management in educational institutions, it is very important to provide the main criteria for evaluating its effectiveness at the stage of formation. It was found that special attention should be paid to development of substantiated scientific and methodological approaches to the assessment of professional qualifications level of employees in the testing group and in the dynamics, determining the limit load and development model of a motivation model for professional development. When assessing the level of professional qualification of teaching staff, it is proposed to take into account not only their own property to scientific and pedagogical industry, but also the results of their pupils' work. In determining the integral indicator of the assessment of the efficiency of the use of labor resources, the method of taxonomic analysis was used with additional consideration of the specific weight of influence of each factor on an integral indicator. It is substantiated that the definition of the boundary load will not only establish an effective bonus system, but also increase the level of job satisfaction among subordinates. The mechanism of determining the coefficient of competence of experts involved in the evaluation of staff, taking into account their work experience, the scale of management activity, and the level of education, deserves further study.

Key words: management, educational institution, labor resources, professional development, integral indicator.

JEL Classification: M12, M54

1. Introduction

Today's conditions of constant growth of the level of competition between educational institutions are the key part of success for the permanent increase of professional competences of pedagogical and scientific and pedagogical employees as a basis for providing qualitative educational services.

Research and solutions of current problems, which constraint the staff development, are one of the most urgent tasks not only for the management of educational institutions, but also for society as a whole. Modern economic and social situation in Ukraine has not only dramatically changed the ideas and values, but also has given rise to an uncertain, very often groundlessness,

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attitude to many values and norms, including the needs for a constant personal development. The most important component of the professional development of staff became the superficial material aspect, according to which the employee is engaged, the improvement of professional skills only in case of urgent need for retention in a position of employment or as component to increase the amount of pay work in the short term perspective. And that is not taking into account the fact that the most important part of professional development is the intellectual personal development and additional professional competencies. Only because of the necessary qualification level of pedagogical and scientific and pedagogical worker, he or she will be able to realize himself or herself on labor market as a successful specialist and get a decent salary in budget and private spheres of economic activity in the future.

The results of the research conducted by Redko S., Panchenko A. (2015) show that a significant amount of intangible motivation that leaders of educational institutions have used in the past (awarding certificates, audits, etc.), do not bring the desired changes in significant numbers of teachers today. And if they lead to change, then these changes have a short duration. Therefore, the head of the school has to constantly look for new opportunities to intensify the process of improvement of teaching staff, first of all, at the expense of the internal resources of your institution, and build a dynamic and flexible system of motivation of teaching staff on the basis of research peculiarities of their motivational sphere.

According to Mokin B. I., Marymonchyk Yu. V. (2004), an effective system of stimulating teaching staff provide the encouragement preparation of highly qualified scientific and pedagogical staff (motivation of relations) and achievement of scientific works of various way (process orientation) in the form of a salary supplement.

Obmok O. H. (2014) proposes to use the rating of results of the work of teaching staff as an element of their motivation to high-performance activities that enhance the collective interest of scientific and pedagogical staff to improve the final results of institutions activities of higher education, obtaining higher positions in intercollegiate ratings.

Despite the considerable experience, there are questions that need to be addressed to additional scientific analysis, especially with regard to improve the management system for professional development of personality. Every head of an educational institution, who is striving to ensure effective functioning in the short and long term prospect, must constantly explain the need for permanent improvement, but some additional measures aimed on encouraging the employees to update their knowledge and improve it professional competence are also required. This is especially true in today's context of financial and other material resources,

insufficient financing of expenses for the maintenance of pedagogical and scientific pedagogical staff. The above is determined by the relevance of the research topic, its tasks and content.

The purpose of the article is to study the factors of influence and provide recommendations for improving the system of management of professional development of personnel of educational institutions.

2. Research methodology

The methodological basis of the research was made by the scientific works of domestic, foreign scientists and leading experts, statistical and analytical materials of public authorities. As a method of data collection for the research the questionnaire was chosen. The survey was conducted among top executives of educational institutions (Kherson State University, School of Liberal Arts), local state executive bodies (Department of Economic and Regional Development of Kherson Regional State Administration), Kherson Regional Intersectoral Council of Trade Unions. The results are obtained through the use of methods: expert method is used to identify the impact of qualitative and quantitative indicators on the efficiency of use of labor resources; economic and mathematical method is performed to determine the integral indicator of the assessment of the efficiency of the use of labor resources; abstract-logical method is executed for theoretical generalization and formulation of conclusions.

The following formula was used to transform a particular set of indicators with different units of measurement into a single scale of evaluation (Tyukhtenko, Makarenko, 2016):

$$\bullet K_j = \frac{\sum_{i=1}^n \frac{X_{\max} - X_{ij}}{X_{\max} - X_{\min}} + \sum_{i=1}^n \frac{X_{ij} - X_{\min}}{X_{\max} - X_{\min}}}{2}, \quad (1)$$

where K_j – the coefficient for each of the indicators characterizing a particular component of activity;

X_{ij} – the value of the i -th indicator of the j -th group

X_{\max} – the maximum value of the i -th indicator in the middle of the testing group;

X_{\min} – the minimum value of the i -th indicator in the middle of the examined group.

The first part of the formula is used to evaluate indicators, the growth of which has a positive impact, the second part is to evaluate indicators, the increase of which has a negative effect (e.g., number of conflicts, number of absences, etc.).

The best is the classroom, the arithmetic mean of the sum of the ratings of which is the lowest.

To determine the integral indicator of labor resources competitiveness, the method of taxonomic analysis was used, with additional consideration of the specific impact of each factor on the integral indicator of labor resources competitiveness. This method is to perform

the calculation of the integral evaluation in several stages (Makarenko, Oliinyk, Danko, Kaplina, 2020):

Stage 1 – formation of the system of information space of evaluation – matrix of initial data $X=(x_{ij})$.

Stage 2 – formation of a matrix of standardized values of attributes by changing the matrix X to the matrix Z . The elements of the matrix Z are calculated by the formula:

$$Z_{ij} = \frac{x_{ij} - x_{av,j}}{\delta_j}, \quad (2)$$

where $x_{av,j}$ – the average value of the j -th indicator;

δ_j – rms deviation of j -th index.

Stage 3 – formation of “point-standard” with coordinates $Z_{01}, Z_{02}, \dots, Z_{0n}$.

Stage 4 – Euclidean distance (C_{i0}) calculation by the formula:

$$C_{i0} = \sqrt{P_j * \sum_{j=1}^n (Z_{ij} - Z_{0j})^2}, \quad (3)$$

where P_j – the share of the impact of the j -th indicator of labor resources competitiveness index.

The distances obtained are the initial values used in the calculation of the integral index.

Stage 5 – calculation of values of integral index (d_i) using the formulas:

$$d_i = 1 - \frac{C_{i0}}{C_0}, \quad (4)$$

where

$$C_0 = C_{av.0} + 2 * S_0, \quad (5)$$

$$C_{av.0} = \frac{1}{m} * \sum_{i=1}^m C_{i0}, \quad (6)$$

$$S_0 = \sqrt{\frac{1}{m} * \sum_{i=1}^m (C_{i0} - C_{av.0})^2}, \quad (7)$$

In determining the specific impact of the j -th indicator on the integral indicator of the competitiveness of labor resources, a survey was conducted among certain institutions of higher education, local government bodies and trade union organizations. Given that each of the experts involved in the survey has a different level of qualifications, it was suggested to use the methodological approaches developed by the authors (Tyukhtenko, Makarenko, 2016; Makarenko, Oliinyk, Kazakova, 2018) with additional consideration of the level of fluctuations of the corresponding qualification competences in the middle of the testing group.

3. Features comprehensive evaluation of the results of the testing group

Professional activity of pedagogical and scientific and pedagogical staff has its own specifics that are directly displayed in the management system of professional development of the personality. One of the basic conditions of increasing the competitiveness

of educational institutions is improving the quality of education provided the educational services by ensuring the continuous updating of staff knowledge in an unstable business environment. Improvement of the management system of professional development of pedagogical and scientific and pedagogical staff should take into account the modern aspects of the functioning of educational institutions and realize the potential of staff in the relevant market of segment services. Special attention should be paid to the development of substantiated scientific and methodological approaches to the assessment of professional qualifications level of staff in the testing group and in the dynamics, determining the capacity limit and development a motivation model for professional development.

When assessing the level of professional qualification of teaching staff, it is necessary to consider not only their own property in the scientific and pedagogical branch, but the results of their ward pupils' work. This is especially true when as-sessing the effectiveness of the teaching staff who is also the form master at the part-time.

The methodological approach introduced by the School of Liberal Arts (Kherson, Ukraine) is noteworthy; it is determined by the total efficiency of each educational class within each quarter. This approach assumes summation of points results by 12 groups of indicators: image of the class (A_1); lack of the school uniforms (A_2); sanitary condition of the class (A_3); delay (A_4); faster, higher, stronger (A_5); educational achievements, competitions (A_6); participation in thematic weeks (A_7); participation in the competitions “Spike”, “Kangaroo”, “Olympus”, “Sunflower” / self-government (A_8); talented and creative (A_9); library: events, rating, reading (A_{10}); theater festival / total number of points of preliminary checks (A_{11}); the success of the quarter (A_{12}) (Table 1). The best is the class with the highest score in the testing group.

At the same time, the methodological approach does not fully allow to examine the current situation in the class and identify possible changes in the rhythm of preparation of pupils compared to the neighboring classes of a particular group.

There are also questions about the objectivity of general evaluation results of the testing classes. This is due to the fact that two groups of indicators A_7 and A_{12} determine the future leading class. At the same time, there are questions arising on the expediency of using the groups of indicators $A_2, A_3, A_4, A_5, A_6, A_{11}$, because their impact is almost unremarkable, or has a single character.

It should be noticed that the most important task of any technique of evaluation is not only an incentive for the testing group (pupils, students, hearer, pedagogical and scientific and pedagogical staff) to maximize the results of activity, but also to ensure the maximization to the total of metrics, but not exclusively in two or three groups.

Table 1

The evaluation results of each testing classes (IV quarter of 2018-2019)

Class	Groups of indicators												Amount	Place
	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂		
5A	40	0	-9	0	0	40	17	7	40	5	0	61	201	4
5B	40	0	-6	0	3	0	48	20	3	48	0	77	233	2
6A	40	-4	-4	0	4	0	59	14	33	23	0	80	245	1
6B	40	-12	-4	0	5	0	0	25	50	5	0	50	159	6
7A	40	0	-6	0	5	30	31	23	15	17	0	48	203	3
7B	40	-6	-13	0	2	0	8	22	9	4	0	35	101	7
8A	40	-12	-10	0	0	0	5	19	0	0	0	26	68	8
8B	40	-2	-14	0	0	0	22	18	40	17	0	42	163	5

Source: authors' own work

Table 2

Comprehensive evaluation of the results of each class, give the possible level of oscillation within the analysis group

Class	Metrics group coefficients												Amount	Place
	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂		
5A	0	0	0.5	0	1	0	0.712	1	0.2	0.896	0	0.352	4.66	5
5B	0	0	0.2	0	0.4	1	0.186	0.278	0.94	0	0	0.056	3.06	3
6A	0	0.333	0	0	0.2	1	0	0.611	0.34	0.521	0	0	3.005	2
6B	0	1	0	0	0	1	1	0	0	0.896	0	0.556	4.451	4
7A	0	0	0.2	0	0	0.25	0.475	0.111	0.7	0.646	0	0.593	2.974	1
7B	0	0.5	0.9	0	0.6	1	0.864	0.167	0.82	0.917	0	0.833	6.601	7
8A	0	1	0.6	0	1	1	0.915	0.333	1	1	0	1	7.849	8
8B	0	0.167	1	0	1	1	0.627	0.389	0.2	0.646	0	0.704	5.732	6

Source: authors' own work

Using the formula 1 for the Table 2, the complex evaluation of the results of each class was carried out, considering the possible level of fluctuations in the middle of the testing group.

The results show that considering the level of oscillation in the middle of the testing groups, there were insignificant changes in the rating. However, for full use of the specified methodological approach in evaluation complex of the performance of each class should be further determined the proportion of the impact of each of the proposed groups of indicators on the overall performance indicator.

To evaluate the level of pedagogical professional qualifications of staff in terms of evaluating the results of their pupils' work it is necessary to determine, how

the complex coefficient of the testing group during the course of recent reporting periods has changes.

Table 3 shows the results of a comprehensive appraisal of Grades 6-A (7-A) of the School of Liberal Arts (Kherson, Ukraine), based on three reporting periods.

The calculations show that maximizing the results of group work of pupils of the study class is observed in the fourth quarter of 2018-2019. Deterioration of the complex coefficient based on the results of the II quarter of 2019-2020 connected to mainly with the hormonal changes that occur at pupils of 12-13 years, and, as a result, their low motivation for self-improvement. Also worsening the level of the complex coefficient was the result of personnel changes that occurred in educational and pupil's educational activities of the educational

Table 3

Comprehensive appraisal of Grades 6-A (7-A) of the School of Liberal Arts (Kherson, Ukraine)

Reporting periods	Metrics group coefficients												Amount
	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂	
II quarter of 2018-2019 (6-A)	0	0	0	1	1	1	0	0	0.097	0.083	0	0	3.18
IV quarter of 2018-2019 (6-A)	0	0.333	0	0	0.2	1	0	0.611	0.34	0.521	0	0	3.005
II quarter of 2019-2020 (7-A)	0	0.125	0.667	0.333	1	0.938	0	0.25	0	0.842	0	0	4.155

Source: authors' own work

institution. However, the testing class continues to take first place in the overall grade of 5-8 forms of School of Liberal Arts. Therefore, to formulate more valid conclusions about it is advisable to carry out the results of the work of the form master for the results of the 2019-2020 academic year (adjusted for obliged on-line education in March-May 2020 in connection with COVID-19).

4. Assessment of the personal level of professional competence of personnel

To assess the personal level of professional competence of the form master of the School of Liberal Arts mentioned above, formulas 2-7 and the individual integral index of competitiveness were executed using the method taxonomic analysis with additional consideration of the specific influence of each factor to the integral indicator. To identify the key metrics, on which the realization of an objective assessment of the level of professional qualification of form master is possible, the working group was created, which included the leading experts of the industry (Kherson State University, School of Liberal Arts, Department of Economic and Regional Development of the Kherson Regional State Administration, Kherson Regional Intersectoral Trade Unions Council).

Considering the level of competence of the involved experts, on the basis of the questionnaire conducted, the main indicators and the level of their significance when assessing the level of professional competence of the form master of School of Liberal Arts were identified, namely: average number of students, persons (B_1 , significance - 10%); hours of classroom workload, hours / week (B_2 , 25%); preparation of competition winners, points (B_3 , 15%); publication of educational and methodical works, other sheets (B_4 , 10%); individual consultations during off-hours, hours / week (B_5 , 22%); organizational and administrative work, hours / week (B_6 , 18%).

Table 4 presents the general system of information for calculation of the integral index of competitiveness of the form master of testing class of the School of Liberal Arts.

Table 5 shows the calculation of the mean value and standard deviation for the group of indicators characterizing the level of competitiveness.

Standardized values of indicators, intermediate values of point-standard, Euclidean distance and integral indicator are shown in Table 6.

The obtained results of calculation of the integral index of the competitiveness of the form master of the School of Liberal Arts in Table 6 show that efficiency of his or her work during 2017-2018 and 2018-2019 academic years significantly increased compared to the

Table 4
Information space system for calculating the integral indicator of competitive-ness assessment

Indicator	Academic years		
	2016-2017	2017-2018	2018-2019
B_1	15	18	20
B_2	36	47	40
B_3	44	55	59
B_4	1.7	1.25	1.15
B_5	12	18	15
B_6	4	3	5

Source: authors' own work

Table 5
Calculation of mean and standard deviation

Indicators	Academic years			\bar{A}	δ
	2016-2017	2017-2018	2018-2019		
B_1	15	18	20	17.67	2.055
B_2	36	47	40	41.00	4.546
B_3	44	55	59	52.67	6.342
B_4	1.7	1.25	1.15	1.37	0.239
B_5	12	18	15	15.00	2.449
B_6	4	3	5	4.00	0.816

Source: authors' own work

Table 6
Standardized values of indicators, intermediate values of point-standard, Euclidean distance and integral index

Indicators	Weight ratio	Academic years			Point of reference	\bar{C}_0	S_0	C_0
		2016-2017	2017-2018	2018-2019				
B_1	0.1	-1.298	0.162	1.136	1.136			
B_2	0.25	-1.1	1.32	-0.22	1.32			
B_3	0.15	-1.367	0.368	0.999	0.999			
B_4	0.1	1.393	-0.488	-0.906	1.393			
B_5	0.22	-1.225	1.225	0	1.225			
B_6	0.18	0	-1.225	1.225	1.225			
Euclidean distance		2.118	1.260	1.205		1.528	0.418	2.363
Competitive Capacity Integral indicator		0.1	0.47	0.49				

Source: authors' own work

2016-2017 academic year. Notation is also confirmed by the results of an earlier study on comprehensive evaluation of the results of work of 6-A form on the results of II and IV quarters of the 2018-2019 academic year. At the same time, there is a decrease of scientific and research activity of the subject, more than 60 hours for a week the specific form master spends on the implementation of the assigned functional responsibilities.

At the same time, the management of educational institutions should consider that essential increasing of workloads during working hours and out of work hours can lead to professional burnout of pedagogical worker and decrease the level of satisfaction with the fulfillment of functional duties and the desire to professional improvement. This is partially confirmed by the decrease of efficiency of the testing class for the results of the II quarter 2019-2020 academic year by 1.15 conditional units, which may be associated with a decrease of educational workload, the duration of individual consultations in out of work-hours and increasing volume of organizational and administrative work for a form master.

The developed model of stimulation to professional improvement should provide that the pedagogical staff will be provided payroll the cash back up to 50% if the planned targets of scientific and pedagogical activities in the out of work-hours are achieved. This will allow to view the load level of pedagogical staff in terms of reducing the amount of additional organizational and administrative work, and devote free time to relaxation and personal needs.

During the development of evaluation indicators and implementation of the appropriate model of staff incentives for professional development should also be taken into account that the permanent labor activity and the fulfillment of the set tasks will contribute to the formation of the justification of the chosen life and pedagogical activities in the personality, eliminating the negative thoughts and increasing levels of satisfaction and happiness from the chosen activity.

5. Conclusions and recommendations for further research

The results of the research indicate the need of improvement of the system of management of professional development of pedagogical and scientific and pedagogical workers, taking into account modern functioning aspects of educational institutions. Special attention should be emphasized on the development of

scientific and methodological approaches to assessment of the level of professional qualification of employees in the testing group and in dynamics, determination of limit load and development of motivation model to professional improvement.

Rating the level of professional qualification of teaching staff it is proposed to take into account not only their own heritage to scientific and pedagogical industry, but also the results of their ward pupil's work. The above is particularly relevant in assessing the effectiveness of teaching staff who are concurrently form masters.

Given that the most important task of any evaluation methodology is not only the motivation of the testing group (pupils, students, hearer, teaching staff) to maximize the results, but also providing the specified maximization for the whole set of indicators is proposed to carry out the complex assessment of the results of the activity of the educational forms from the considering possible level of oscillation in the amidst of the testing group.

The management of educational institutions should consider that significant growth of workloads during working hours and out of work hours can lead to professional burnout of pedagogical worker and decrease the level of satisfaction with fulfillment of functional duties and desire to professional improve. This is partially confirmed by the decrease of performance activities of the testing class of School of Liberal Arts according to the results of the II quarter 2019-2020 academic year at 1.15 conventional unit of measure, that may be associated with a decrease of educational load, duration of individual consultations during out of work hours and increasing organizational and administrative work with a form master.

During the development of evaluation indicators and implementation of the appropriate model of staff stimulating to professional development should be taken into account that continuous labor activity and the fulfillment set of tasks will facilitate the formation in the personality of the validity of the chosen life and pedagogical activities, eliminating the negative thoughts and increasing the levels of satisfaction and happiness from chosen activity.

The mechanism of determining the coefficient of competence of experts involved in the evaluation of staff, taking into account their work experience, the scale of management activity, and the level of education, deserves further study. This will maximize the effectiveness of the rating and coordinate the efforts and resources of employees to improve defined and relevant for the educational institutions.

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MEDICAL REFORM UNDER DECENTRALIZATION: CONTEMPORARY PROBLEMS AND PROSPECTS FOR RESOLUTION

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Abstract. The *purpose* of the paper is to identify the main prerequisites and ways of the medical reform in Ukraine under decentralization, and the emergency of fee-for-service medicine in particular. *Methodology.* The survey is based on the study of legally enforceable enactments which regulate medical sphere and the process of decentralization of power. *Results.* The article outlines the main prerequisites and ways to solve the issue of the implementation of medical reform in Ukraine under decentralization, including the emergence of fee-for-service-medicine. The problem related to health care reform in general in order to improve the availability and quality of health care have been identified. Statistical data on the main healthcare indicators in Ukraine have been presented. National healthcare accounts of Ukraine have been presented and healthcare expenditures per capita in other countries of the world has been demonstrated. *Practical implications.* The main steps that are necessary to undertake for implementing changes in the medical field have been determined in the article. They are the following: involvement of communities, development of social infrastructure, transportation of patients and women in labor to hospitals, involvement of social workers, support of medical institutions, and assistance by the communities in public control. It is determined that the biggest challenge for the medical sector is the reorientation to a new level of medical services. The main directions in medicine under decentralization on the implementation of material, organizational and financial conditions to provide local authorities with own and delegated powers have been emphasized. *Value/originality.* An approach to implementing medical reform that meets the needs of the community is developed and its essence has been explained. The complex of actions on introduction of medical reform under decentralization of the power, which has been explained as an increase in powers and financial possibilities of territorial communities has been generalized.

Key words: community needs, medical facilities, rural physician, medical reform, national health policy.

JEL Classification: M38, I11

1. Introduction

According to Article 3 of the Constitution of Ukraine, the main priority is a human, his/her life and health, honor and dignity, inviolability and security, which are recognized in Ukraine as the highest social value. A significant shift in the medical system of Ukraine was the implementation of the decentralization reform. Decentralization became the key aspect in the healthcare system reform process in general in order to increase the availability and quality of the medical aid. We should not forget that there are certain imbalances, especially in understanding of the following: “The role of the State in healthcare reform should be moderate and balanced, implementing the needs of the community”.

The process of continuing the implementation of changes in medical system of Ukraine faces ambiguous

challenges, they are the following – attempts are being made to introduce a fee-for-service medicine at the patients’ expense, thus violating the Constitutional guarantees on the right for healthcare. Ukraine must find means of regulatory influence of the State on the healthcare system, levers of influence on the national healthcare policy under decentralization, revealing the following areas: quality of management (goals, principles, methods, structures, organization); organization of the process of providing medical car and its resource maintenance and provision (materiel and technical (logistics support), methodical, personnel, financial etc.) implementation of the application of the technology.

As the issue of medical reform requires is of great interest under decentralization, especially fee-for-

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service medicine, special attention should be given to the regulatory influence of the State on the medical activity under decentralization, so the scientific works of the following scientists should be of special attention: A. O. Harkusha, Z. S. Hladun, E. A. Hrekov, R. A. Maidanyk, A. O. Olefir, I. Ya. Seniuta, S. H. Stejsenko and others. Theoretical and practical aspects of the problem of financing the medicine are demonstrated in the scientific papers of domestic and foreign scientists: R. Bacho, Ya. Buzduhan, S. Honcharuka, V. Demianyshyna, D. Dolbnievoi, N. Karpysshyn, M. Lytvynenko, Ye. Malik, A. Mokrytskoi, S. Onyshko, H. Rozhkova, M. Savelievoi, Yu. Shevchuk and others. The following scientists paid attention to the consideration of theoretical basis of pricing on medical services under reform: A. Yiakhovchenko, L. Bondareva, V. Dolot, B. Koretskyi, V. Martyniuk, Ya. Radysh, M. Yatsiuk and others. However the issues of medical reform in Ukraine under decentralization, especially the existence of fee-for-service medicine, require further research.

2. The current state of healthcare sphere

The current state of healthcare sphere in Ukraine is unsatisfactory. During the years of independence the medicine has not undergone significant positive changes. Only those fee-based medical services have improved. Thus, at the end of 2018, the number of doctors of all specialties was 186 thousand people, while in 2010, this indicator was 225 thousand people (it can be explained by not taking into account statistical data on Donetsk and Luhansk Regions and the Republic of Crimea).

However, with regard to the mid-level medical professionals (nursing staff), there is a significant decrease, even compared to 2014 (34 thousand people less, that is 9% less), which indicates the presence of other factors of influence besides the mentioned above.

Compared to 2014, the number of hospital beds also significantly decreased (34 thousand beds less that is 10.1 % less), Table 1. This state of affairs is associated with the following factors such as general economic crisis, lack of system analysis of medical problems, public expectations.

One of the most significant problems, which impede the development of the medical sphere, is lack of funding. It should be noted that Ukraine is currently ranked 89th in the world (out of 184 countries) in terms of healthcare expenditures per capita, and 108th in terms of life time (life expectancy). This situation in healthcare threatens national security (Hnydiuk, 2015).

Studies of the National Accounts of Healthcare of Ukraine show that despite the fact that total healthcare expenditures per capita in 2016 in UAH increased (compared to 2005 – by 3659 UAH, that is 7.04 times more, however, compared to 2012 there is a significant decrease of 6528.3 UAH by 91.9 %) (Table 2). In 2016, total healthcare expenditure per capita in USD was just 166.9 USD. This indicator is much higher in other countries of the world (Figure 1).

The lowest level of expenditures is observed in India – 209 USD, but in the developed countries of the world this indicator is ten times higher. Thus, in the USA healthcare expenditures per capita are 10 583 USD (which is 63.4 times more than in Ukraine), in Switzerland – 7317 USD (which is 43.8 times more than in Ukraine). As we can see, in the structure of distribution of total expenditures by source of funding in 2016 financing from households prevails (52.8 %), while in 2005 funding by this source was carried out only by 37.8%, while at the expense of State firms – 59.1%. State firms finance 44.8% in 2016 compared to 2005, which is 14.3% less.

Study of the foreign experience shows that public funding supports healthcare in Norway (85 %), Great Britain (79 %), and Canada (68 %), and in the USA (26 %). Funding is usually provided by compulsory

Table 1

Basic health care indicators

Years	Number of doctors of all specialties, thousand people	Number of mid-level health professional (nursing staff) thousand people	Number of hospitals, thousand units	Number of hospital beds, thousand units	Number of outpatient clinics, thousand units
2000	226	541	3.3	466	7.4
2005	224	496	2.9	445	7.8
2010	225	467	2.8	429	9.0
2013	217	441	2.2	398	10.8
2014	186	379	1.8	336	9.8
2015	186	372	1.8	333	10.0
2016	187	367	1.7	315	10.2
2017	186	360	1.7	309	10.4
2018	186	345	1.7	302	10.5
Changes (2018/2000)	-40	-196	-1.6	-164	+3.1

Source: (Statistical Yearbook of Ukraine for 2018, for 2019)

Table 2

National accounts of healthcare of Ukraine

	2005	2010	2012	2014	2016	Changes (2016-2005)
Total population, million people	46.9	45.8	45.6	42.9	42.6	-4.3
Exchange rate 1 USD to UAH	5.12	7.94	7.99	11.89	25.55	+20.43
Total healthcare expenditures, million USD	5545.0	10673.1	13635.4	9903.7	7107.1	+1562.1
Total healthcare per capita expenditures, UAH.	605.3	1850.3	2391.7	2743.0	4264.3	+3659.0
Total healthcare expenditures, as % from GDP	118.22 \$	233.04 \$	299.34 \$	230.70 \$	166.90 \$	+48.68 \$
Distribution of total cost by sources of funding, including:						
- State firms;	59.1	56.3	57.2	51.7	44.8	-14.3
- Private firms;	2.8	2.6	2.4	2.1	1.7	-1.1
- Households;	37.8	40.8	40.2	46.0	52.8	15.0
- Donors.	0.3	0.3	0.2	0.2	0.7	+0.4

Source: (National Accounts of Healthcare of Ukraine in 2016, in 2017)

insurance of the citizens: the USA (58 %), Japan (75 %), Estonia (64 %), Poland (59 %), and China (39 %) (Figure 2). Ukraine has not yet adopted the Law on Compulsory Medical Insurance.

Some countries provide with funding through voluntary insurance China (36 %), Brazil (27 %).

3. Realization (carrying out) of the medical reform in Ukraine

Concerning the medical field, the decentralization process reflected in changes in the funding system. Thus, a number of regulations were issued on

concerning the provision of medical subvention from the State budget to local budgets. One of the first regulations was the Resolution of the Cabinet of Ministers of Ukraine dated January 23, 2015 “Some issues on medical subvention from the State budget to local budgets”, which provided subventions for the payment of current expenditures of the healthcare institutions and programs in this fields (Resolution of the Cabinet of Ministers of Ukraine “Some issues on medical subvention from the State budget to local budgets”, 2015).

In August of the same year, the formulas for allocating the amount of medical subvention from the State

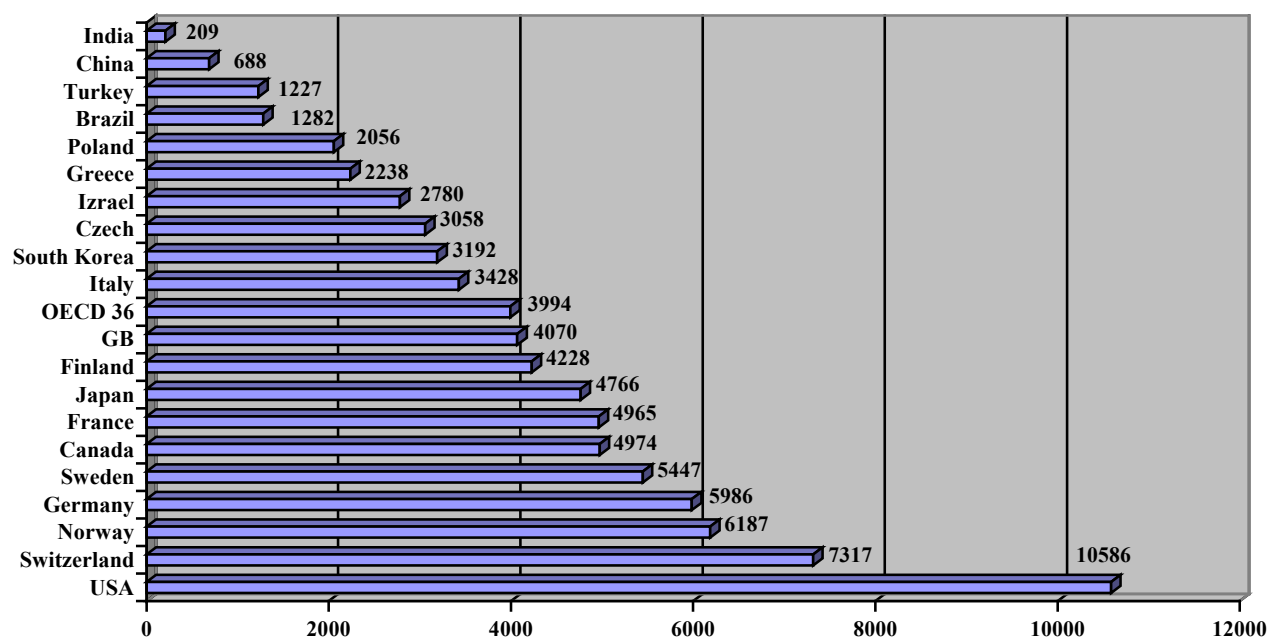


Figure 1. Health care protection expenditures per capita in 2018, USD

Source: (We count other people's money: where are the cheapest healthcare services and where are the most expensive?, 2019)

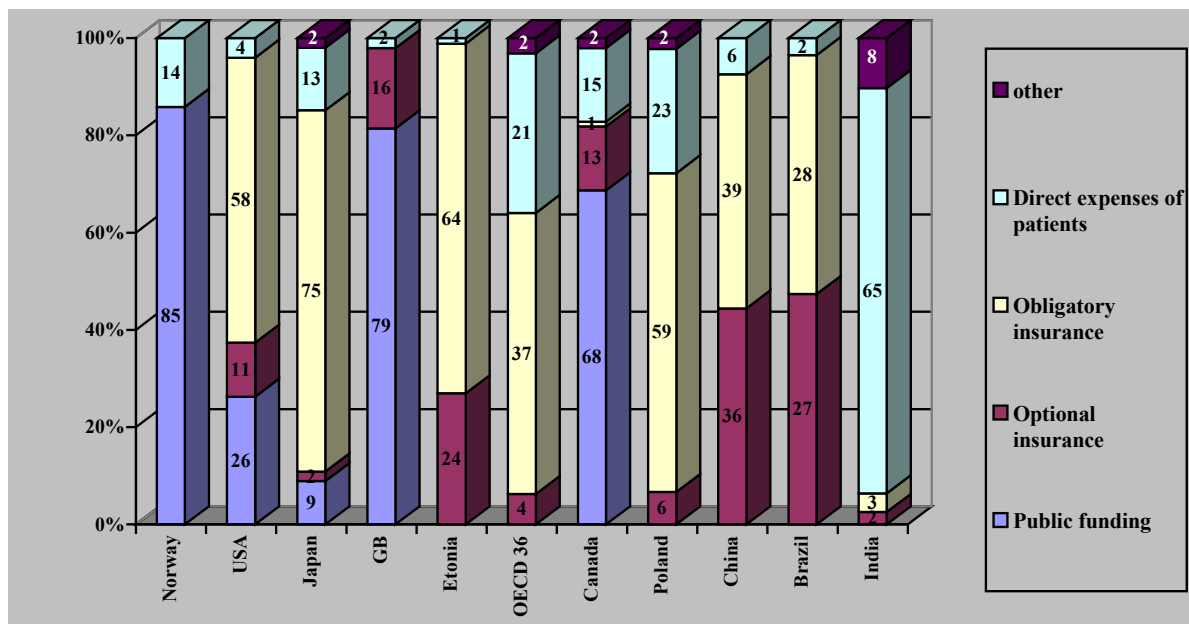


Figure 2. Basic financing mechanisms, %

Source: (We count other people's money: where are the cheapest healthcare services and where are the most expensive?, 2019)

budget to local budgets were approved and confirmed. The formulas included the following: the financial standard of the budget provision of the medical subvention for the Regional budget; the general indicator of the amount of medical subvention for local budgets for the planned budget period; general indicator of the amount of medical subvention for mountainous populated localities; the coefficient of adjustment of the share of the volume of medical subvention which is applied to determine its volume for emergency medical care (the Resolution of the Cabinet of Ministers of Ukraine "On approval the formula for allocating the amount of medical subvention from the State budget to local budgets", 2015).

An important financial document, which made significant adjustments to the funding procedure, was the approval of the Concept of the healthcare financing reform. Its objectives were the following: introduction of the State-guaranteed package of medical care; creation of a single national customer of medical services; creation of new opportunities for local authorities to carry out their legal power in the field of healthcare; autonomy of healthcare providers (introduction of the Principle of "money follows the patient"); development of the contemporary system of medical information management. The Concept was supposed to promote: a more effective and fair allocation/distribution of public resources in the healthcare system; the emergence of competition among the suppliers of all types of ownership in the market of medical services; bringing the network of healthcare institutions in line with the population need; improving the quality of medical services (Order of the Cabinet of Ministers of

Ukraine "On approval of the Concept of the healthcare financing reform", 2016).

In order to enable the implementation of modern and efficient procurements of medical products with the framework of the reform of healthcare financing, which is patient-oriented, the Concept of healthcare financing reform for the period up to 2020 was approved. Such procurement should ensure the following: decrease of corruption risks; rational use of budget funds; reduction of bureaucratic burden; carrying out transparent procurement; patient-oriented approach (Order of the Cabinet of Ministers of Ukraine "On approval of the action plan on the implementation of the Concept of healthcare financing reform for the period up to 2020", 2017).

A very important normative-legal act, which regulates the medical sphere under decentralization and promotes the regulation of financial relations between medical institutions and patients, is the Law of Ukraine "On State financial guarantees of medical care of the population". This Law defines: the rights and obligations of patients in the sphere of the state financial guarantees; peculiarities of signing agreements on medical care of the population; procedure for obtaining medical services and medicine under this program; procedure of functioning of healthcare electronic system; obtaining access to the data about a patient contained in the healthcare electronic system; prosecution for violation the legislation on the state financial guarantees on medical care (The Law of Ukraine "On State financial guarantees of medical care of the population", 2017).

In November 2017, a significant attention was paid to the support of the rural residents in improving the access

and quality of medical care, as adopted by the relevant Law. This Law provided for: promoting development of medical institutions of all types of ownership in rural area; introduction of modern technologies for medical care (performing of appropriate resource allocation for introducing medical care with the use of telemedicine); development and realization of the programs on diagnostics, treatment, rehabilitation and preventive treatment of the population; development of the necessary telecommunication and transport infrastructure; attracting investment into the development of medical care; promoting effective educational work among the population on healthy way of life, active social orientation (The Law of Ukraine "On improving the availability and quality of medical care in rural areas", 2017).

In January 2020, a lot of attention was paid to the issue of the development of the system of emergency medical assistance (medical care). As a result, the relevant Concept was approved. The following was provided with the framework of the Concept: develop and approve Regulations on volunteer activity organization in the system of emergency medical assistance (medical care); the process of interaction of the centers of emergency medical aid and medicine of catastrophes and healthcare institutions, which provide for primary emergency medical assistance; approve criteria for the effectiveness of the network of emergency medical assistance, requirements for the acquisition, storage, and use of medical kits; approval of a United classifier of provisional diagnosis for emergency medical service team, etc. (Order of the Cabinet of Ministers of Ukraine "On approval of the action plan for the implementation of the Concept of development of the emergency medical assistance system", 2020).

Besides, within the framework of the reform National Health Service of Ukraine (NHSU) was created using the British National Health Service. A number of positive steps were undertaken during the period of its existence:

1. The management of the institutions was given autonomy to make decisions.
2. Doctors and nurses started to get a decent level of wages.
3. For patients – this means the improvement of service and quality of medical care.
4. Institutions of different types of ownership obtained equal rights and equal conditions of cooperation with the State (Hrubliak, Chopenko, 2019).

It is necessary to understand that while maintaining the budget system of financing and the existing structure of state and local budgets revenues, and under the conditions of absence of the established sectoral interest groups, determining the real impact on the processes of approval of the State budget and interstate transfers is hardly probable. Medical insurance is a certain guarantee which should be determined as a healthcare

tax; it is possible to define the amount of contribution by Law (for example, Poland), or it can be defined independently by certain health insurance funds or organizations (for example, Germany). Health insurance funds are much less subject to political bargaining than budget allocations, and therefore a health care system, which is financed by health insurance contributions can be considered more independent of the political situation and more predictable in terms of cash receipts (Aarva, 2020).

4. Directions of medical reform realization in Ukraine

The main direction in medical sphere under decentralization is the implementation of economic, organizational, and what is more important – financial conditions to provide local governments with their own and delegated powers (authorities) (official website of the Cabinet of Ministers of Ukraine). That is why local authorities face new challenges and tasks: regional policy development, realization of the set local programs, and the key issue is provision of services.

It is necessary to undertake the following steps in order to make changes in medical sphere:

1. Involvement of the community population in the promotion of a healthy lifestyle; creating conditions for the consolidation of medical personnel in rural areas.
2. Development of social infrastructure to ensure access to health care services.
3. Ensuring the transportation of patients and women in labor to hospitals (or hospital institutions).
4. Involvement of social workers in providing assistance to certain vulnerable groups.
5. Support the functioning of medical institutions, which are situated on the territory of the Community, through the improvement of adjacent territories, support for the work of supporting services.
6. Assistance in the organization of control by the population of the community over the observance of the rights of citizens in receiving medical services (Danylyshyn, 2014).

The main challenge for medicine in Ukraine became reorientation to a new level of medical services, which lasts from 2017–2020, and as a result, there is a decrease in the number of hospital beds, optimization of existing infrastructure, the new formation of primary care setting.

According the plan of medical reform in 2018 the following was declared: the model of financing according to the principle of "separation of customer and supplier", selective contracting, and payment for results and autonomy of institutions as well. Medical reform undergoes three stages: creation of the basic level at the level of united territorial communities; creation of the network of the second level, which consists in the formation of hospital districts at the level of future

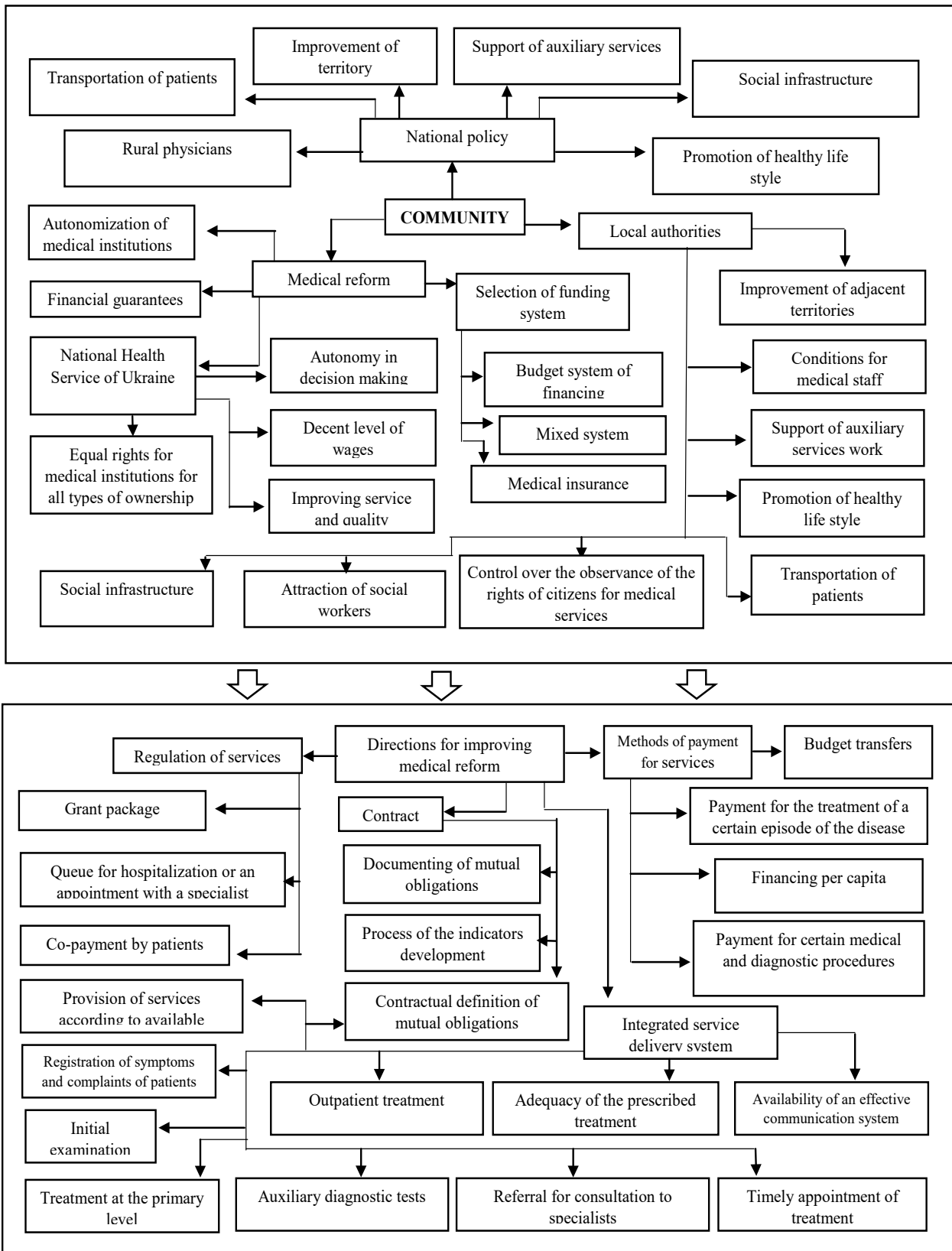


Figure 3. Approach to implementing medical reform that meets the needs of the community

enlarged districts; creation of a united medical area at the State level, where a patient can receive a service in any city of Ukraine (Decentralization).

The results of financial decentralization such as annual growth of the resources of local budgets, their share in the structure of the consolidated budget of Ukraine, the ability of local authorities to direct and allocate funds to the development and realization of infrastructure projects became one of the important indicators. For example, the growth of own resources of local budgets in 2016 – 146.6 billion UAH, and in 2017 – 170.7 billion UAH, which is 16% more than in 2016 and 65% more than in 2015. Financial resources of local budgets allow citizens in the medical reform sphere to organize medical first aid and to finance secondary care (Zakhidna, Mydlyk, 2017).

It is necessary to note that for each contract the doctor will receive a certain amount per year on his account. But, according to Yamnenko T. M., even the rigid introduction of treatment protocols and regulatory funding based on them can significantly limit the doctor's ability to make flexible decisions about patient treatment and turn him or her from a logically thinking specialist to a purely technical executor (Yamnenko, 2018).

The approach to medical reform implementation which meets the needs of the community is presented in the format of two composite blocks as following (Figure 3).

The first block contains the current trends in the development of the relation of the authorities to medicine under decentralization which provide modern community needs. Such as: local authorities fulfill the following obligations – support of auxiliary services work, improvement of adjacent territories, attraction of social workers, transportation of patients, social infrastructure, conditions for medical staff, promotion of healthy life style, control over the observance of the rights of citizens for medical services; national policy – promotion of healthy life style, improvement of territories, transportation of patients, social infrastructure, medical staff in rural area, support of auxiliary services.

The other block is presented as directions for medicine improvement: regulation and standardization of services

(co-payment by patients, queue for hospitalization or an appointment with a specialist, guaranteed package), methods of payment for services (payment for the treatment of a certain episode of the disease, payment for certain medical and diagnostic procedures, and financing per capita, budget transfer), integrated service delivery system (outpatient treatment, availability of an effective communication system, adequacy of the prescribed treatment, timely appointment of treatment, referral for consultation to specialists, auxiliary diagnostic tests, treatment at the primary level, initial examination, registration of symptoms and complaints of patients according to the resources available).

5. Conclusions

Thus, the study of the statistical data on the main healthcare indicators in Ukraine is presented, which indicates a significant decrease of 6528.3 UAH, 91.9 % of total healthcare expenditures per capita in recent years. In the structure of distribution of total expenditures by sources of financing, the advantage of financing at the expense of households (52.8%) has been established.

The main steps that are necessary to undertake to implement changes in the medical field are the following: involvement of communities, development of social infrastructure, transportation of patients and women in labor to hospitals, involvement of social workers, support of medical institutions, and assistance by the communities in public control. It is determined that the biggest challenge for the medical sector is the reorientation to a new level of medical services.

The main directions in medicine under decentralization on the implementation of material, organizational and financial conditions to provide local authorities with own and delegated powers are emphasized. An approach to implementing medical reform that meets the needs of the community is developed and its essence is explained. The complex of actions on introduction of medical reform under decentralization of the power, which is explained as an increase in powers and financial possibilities of territorial communities, is generalized.

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THE APEC INTEGRATED COMPETITIVE FORCE INDEX

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Abstract. The number of actors that affect the distribution of the competitive force in the global economy is growing, and the spheres of economic competition or cooperation are expanding to build up the competitive force. The article emphasizes the significant impact of international economic integration on the sustainable economic development of the world economy. It also shows that the study of the competitive force of interstate integration groupings is highly relevant today, as international economic integration plays a fundamental role in the development of trade and competitive relations between countries. The paper offers the methodology for competitiveness grouping of Member States of the international integration groupings in order to assess the global competitive force of trade and economic groupings in the world economy. *The purpose* is to investigate the Integrated Competitive Force Index of Asia-Pacific Economic Cooperation (APEC) 2019 in order to analyze the attractiveness of APEC in terms of the global competitive force. It is also important to determine the attractiveness of APEC competitive environment according to 12 criteria on the basis of the research, which, in turn, allows for a better understanding and ranking of interstate integration groupings according to their competitive forces. *Result.* Based on the data of the Global Competitiveness Report 2019 on the competitiveness of Asia-Pacific Economic Cooperation Member States (APEC), the Integrated Competitive Force Index of APEC as an interstate integration grouping has been calculated. The Index will help to assess economic integration or disintegration processes in the global economy. The article proves the necessity of the annual integrated competitive force ranking of international integration groupings. *Practical implications.* The introduction of the new Integrated Competitive Force Index of interstate integration groupings will help competition policymakers to decide which processes of economic integration or disintegration should be preferred in order to build up their competitive force in the global economy.

Key words: the Global Competitiveness Index of a country, APEC Member States, international economic integration, the competitive force of an interstate integration grouping, the APEC competitive status in the global economy.

JEL Classification: F00, F01, F02, F15

1. Introduction

The competitiveness of commodity, enterprise, industry, country and geographical regions of the world economy has been given wide coverage in the contemporary international economic literature. However, when examining the competitiveness of participants in global competition, we noticed that the issues of the integrated competitive force of international integration groupings are not covered at all by modern scholars. There is no definition of the competitiveness of interstate integration groupings. The Integrated Competitive Force Index of these groupings, which would characterize and evaluate the state, effectiveness of cooperation between the Member

States and dynamics of economic integration and disintegration processes, has not been calculated. In our view, it is necessary to investigate the competitive force of international integration groupings, since they are important actors of the global economy and significantly affect the international competitive environment and the results obtained will have theoretical and practical value.

This study will enhance knowledge in this field of economics by grouping the 21 APEC Member States' global competitiveness indices according to 12 criteria and identifying the new quantitative and qualitative Integrated Competitive Force Index of an international integration grouping. To reach this objective, we will

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define the Integrated Competitive Force Index as the average of the individual points of APEC Member States in 2019.

2. Identification of unexplored parts of the general problem

Despite considerable attention of scholars (Porter, 1990; Krugman, 1994, 1996; Aiginger, 2006, 2015; Hellwig, 2019; Wolf, 2020), governments (Council on Competitiveness USA, 2020), international and non-governmental organizations (World Economic Forum, 2019; World Bank Group, 2020; International Institute for Management Development – IMD, 2020) and a variety of the competitive force criteria and indices for ranking national economies, the existing studies consider only the indices of the global competitive force in terms of countries and geographical regions. However, they do not calculate the index of the global competitive force of international integration groupings. Meanwhile, it is extremely relevant given the current globalization processes in competitive relations between all actors in the world economy. The novelty of our study lies in the comparative analysis of the five largest interstate integration groupings from the perspective of their competitive force.

3. Results

3.1. Competitive force of an international integration grouping

Given the development of contemporary globalization, transnationalization, regionalization, it could be argued that the interstate borders are becoming more transparent. American theorist R. Folk (1999) says that states, under the influence of border blurring, will no longer be the dominant force on the world stage.

N. Reznikova (2013), after a thorough analysis, proves that globalization brings about a new version of reality, in which countries gradually lose the right to determine their place in the economic arena, being prisoners of ready-made rules that are coordinated by international economic organizations and institutions initiated by the world's leading powers. Globalization as an economic process involves all national economies and international integration groupings. Not only countries but also regional integration groupings play a leading role in the globalization processes (EU, USMCA, APEC, ASEAN, MERCOSUR etc.). This is attributed to the fact that the globalization of the economic activity requires the reduction or elimination of restrictions on international trade, foreign investment and international financial transactions.

Interstate integration groupings were established primarily at the initiative of the most powerful countries in the world, in order to increase their economic and competitive power and force in the

global economy. Therefore, the competitive force of interstate integration groupings in the current context of globalization of competitive relations gains a great theoretical and practical significance. Understanding the role of an international integration grouping in competition on the international market will be equally valuable both for the Member State of the interstate integration grouping and for the competition policy of the respective grouping as a whole, since it would determine how the competitive force of an international integration grouping is established and maintained.

The strengthening of the competitive position of the international integration groupings was relatively recent. However, today they not only mediate relations between Member States and interstate economic relations, but also act as full actors of the global economy. In this regard, it is necessary to emphasize the significant changes in the global competitive environment of the world economy, which is directly related to the transformational nature of today's driving competitive processes. We argue that the study of the competitive force limiting to a country in the global economy does not fully correspond to the current development of the world economy, its challenges and trends. It is necessary to measure the competitive force of international integration groupings, as international economic integration has historically helped countries to achieve common goals. Through cooperation, countries enhanced the integration of the economy and changed their competitive force in the global economy. Today, many countries view themselves as outsiders and face uncertainty about economic integration or disintegration. Others doubt whether they can meet the goals of sustainable economic development of interstate integration groupings.

The current market economy is accompanied by building up the competitive force, which is one of the main goals not only of individual entities, countries, but also of the international integration groupings. Why we focus on the competitive force of the largest international integration groupings? Because they unite countries and jointly cooperate with the global competitive forces of Member States. They also play an important role in shaping the global economy and international competition, intensively affect the development of the world economic relations both among the Member States of the international integration groupings and among the groupings as a whole and countries that are not members of international integration groupings.

The use of the term “global competitive force” regarding the interstate integration grouping is related to its perception as a subject of the world market environment; therefore, the national competitive force of a Member State is an object. We consider the asymmetric distribution of the competitive potential of the Member States as the source of the global competitive force of the interstate integration groupings.

The competitive force of an international integration grouping is the main criterion of its economic efficiency as a subject of a global competitive economy, which is provided by the joint competitive advantages of Member States in the struggle for markets, resources, for a place in the world market, customers, and for profit, which determines the output growth and the ability to develop on an innovative basis and win in global competition.

The competitive force of an international integration grouping can act as an impetus to increase the global competitive force of a country that is planning to integrate into the grouping. In each case, the timely response of a global competitor to changes will be important for the competition policy of the country or interstate integration grouping. The challenges of the economic turbulence of 2020 caused by the COVID-19 pandemic are likely to shake the foundations of global economic structures and national economies will undergo significant changes. Under such conditions, almost all actors in the global economy face a fundamental question: will the COVID-19 pandemic affect economic and competitive reforms in international integration groupings, which in turn may lead to changes of the world's facade?

Currently, interstate integration groupings are regaining their resilience and continue to be geoeconomic leaders. Through joint activities of Member States, they work to strengthen cooperation and develop joint strategies for the recovery of both national economies and the economies of international integration groupings; therefore, they significantly affect the global competitive environment. In our view, the special role of international integration groupings in the process of distribution of global competitive force between countries and, accordingly, their positioning in international rankings cannot be disputed. It highlights the need to monitor and rank interstate integration groupings according to the competitive force the same way as national economies of individual countries.

3.2. The global competitive force of APEC Member States

Before proceeding directly to the calculation of the APEC Integrated Competitive Force Index, we need to consider the place of the Member States in the global competitiveness ranking according to the World Economic Forum 2019.

We will calculate the APEC Integrated Competitive Force Index based on the Member States data of The Global Competitiveness Report 2019 (Table 1).

The table shows that APEC Member States differ significantly in terms of global competitive forces. It should be noted that the best results in terms of the competitiveness of all Member States are presented according to the criterion of macroeconomic

stability. According to this indicator, their points are virtually identical, and are closer to the maximum than most of all the criteria of the global competitive force. If we consider the indicators of the Global Competitiveness Index of the APEC Member States in general, the Member States are placed in the following order: Singapore – 1 (1/141), the United States – 2 (2/141), Hong Kong, China – 3 (3/141), Japan – 4 (6/141), Taiwan, China – 5 (12/141), Republic of Korea – 6 (13/141), Canada – 7 (14/141), Australia – 8 (16/141), New Zealand – 9 (19/141), Malaysia – 10 (27/141), China – 11 (28/141), Chile – 12 (33/141), Thailand – 13 (40/141), Russia – 14 (43/141), Mexico – 15 (48/141), Indonesia – 16 (50/141), Brunei Darussalam – 17 (56/141), the Philippines – 18 (64/141), Peru – 19 (65/141), Viet Nam – 20 (67/141), Papua New Guinea – 21 (122/141).

Among the countries of the said international integration grouping there are world leaders: Singapore, which tops the ranking, and the United States, which in 2019 ranked second, although in 2018 the United States topped the ranking of competitive economic development of the world economy. It should be noted that the difference between the positions of the United States and Singapore is insignificant: Singapore – 84.8 points, the USA – 83.7 points. In 2018, the United States (85.6) ranked first among 140 countries, and Singapore (83.5) ranked second (World Economic Forum 2018, 2019).

No country in the world is competitive in all sectors of the economy. Cooperation of countries within international integration groupings contributes to the differentiation of the global competitive force of Member States, as we can see in the case of APEC. In this regard, it is possible to assert that assessment of the competitive force is relevant for determining the development areas of Member States of the international integration grouping's Member States, the establishment of common competition policy and initiating the interstate and interunion dialogue. Basing research on Member States' Global Competitiveness Index of the international integration groupings, there are possible risks of taking the wrong path. On the other hand, we consider that such an approach will deepen the understanding of international economic integration.

3.3. The APEC Integrated Competitive Force Index

The development of the Integrated Competitive Force Index of international integration groupings will provide a basis for the establishment of the competition policy of the international integration groupings and will identify their further actions to build up the competitive force of the grouping as well as strategic decisions of Member States regarding participation in the international economic integration and disintegration.

Table 1

APEC MEMBER-STATES	Institutions	Infrastructure	ICT adoption	Macroeconomic stability	Health	Skills	Product market	Labour market	Financial system	Market size	Business dynamism	Innovation capability	Overall score
Australia	74	78	73	100	99	81	70	69	86	72	75	70	79
Brunei Darussalam	58	71	76	74	86	66	61	64	51	37	59	34	61
Canada	75	81	69	100	97	81	65	77	86	77	76	75	80
Chile	64	75	61	100	93	70	68	63	80	63	64	41	70
China	55	78	71	98	87	64	57	59	72	100	65	64	73
Hong Kong, China	77	94	88	100	100	77	79	74	90	71	75	62	82
Indonesia	58	67	61	90	72	64	58	58	64	82	69	37	65
Japan	71	91	87	94	100	74	73	71	86	87	76	79	82
Republic of Korea	66	92	93	100	99	74	56	63	84	79	70	79	80
Malaysia	69	78	72	100	81	73	65	70	85	73	75	55	75
Mexico	48	72	55	98	82	58	58	56	62	81	66	44	65
New Zealand	79	76	78	100	91	82	72	77	77	54	76	61	77
Papua New Guinea	46	42	29	66	40	37	55	57	54	36	58	35	46
Peru	49	62	46	100	95	60	57	59	61	62	56	33	62
Philippines	50	58	50	90	66	64	58	65	68	71	66	38	62
Russia	53	74	77	90	69	68	53	61	56	84	63	53	67
Singapore	80	95	87	100	100	79	81	81	91	72	76	75	85
Taiwan, China	69	87	82	100	94	76	66	73	88	75	73	80	80
Thailand	55	68	60	90	89	62	53	63	85	76	72	44	68
United States	71	88	74	100	83	82	69	78	91	100	84	84	84
Viet Nam	50	66	69	75	81	57	54	58	64	72	57	37	62

Source: Compiled by the author based on *The Global Competitiveness Report 2019* by the World Economic Forum

To calculate the APEC Integrated Competitive Force Index, we will analyze the Member States according to 12 global competitive force criteria. The value of the Integrated Competitive Force Index of the interstate integration grouping will be defined as the average value of individual points of APEC 2019 Member States. Despite the methodological simplicity, the proposed calculation of the competitive force of international integration groupings is a comprehensive assessment of the results of the Member States' international economic integration. According to our calculations, the APEC Integrated Competitive Force Index is 72 points out of 100 possible (Figure 1).

The results of a comprehensive integrated assessment of the competitive force of 21 APEC Member States demonstrate a high overall competitive force index of the grouping, indicating the APEC's impact on global competitive processes. The APEC Integrated Competitive Force Index can be used both as an indicator of the separate international integration grouping's development and as a global criterion for the effectiveness of interstate integration groupings in the transformation of international competitive relations.

3.4. APEC in the ranking of the largest interstate integration groupings according to their competitive force. The proposed method of measuring the competitive force of international integration groupings

points to the obvious need to form a rating of trade and competitive groupings on its basis to compare them in terms of the competitive force. We believe that the quantitative assessment of the integrated competitive force of integration groupings should be determined annually for the purpose of monitoring and analyzing the processes of economic integration and disintegration. Given the diversity and uniqueness of each international integration grouping, finding a universal comparison indicator that would cover all factors, criteria and the degree of their impact on the competitive force of an international integration grouping is simply not possible.

The ranking of the integrated competitive force of the largest integration groupings will be based on a comparison of the integrated competitive force indices of USMCA, EU, APEC, ASEAN and MERCOSUR. Thus, it will be appropriate to compare not only the general assessment of competitive force, but also to assess in terms of the ranking criteria of countries and, accordingly, the interstate integration groupings that unite them (Table 2).

The best results of all five international integration groupings are presented according to the criterion of macroeconomic stability; on this indicator, their points are closer to the maximum than all criteria of the competitive force. The table shows that international

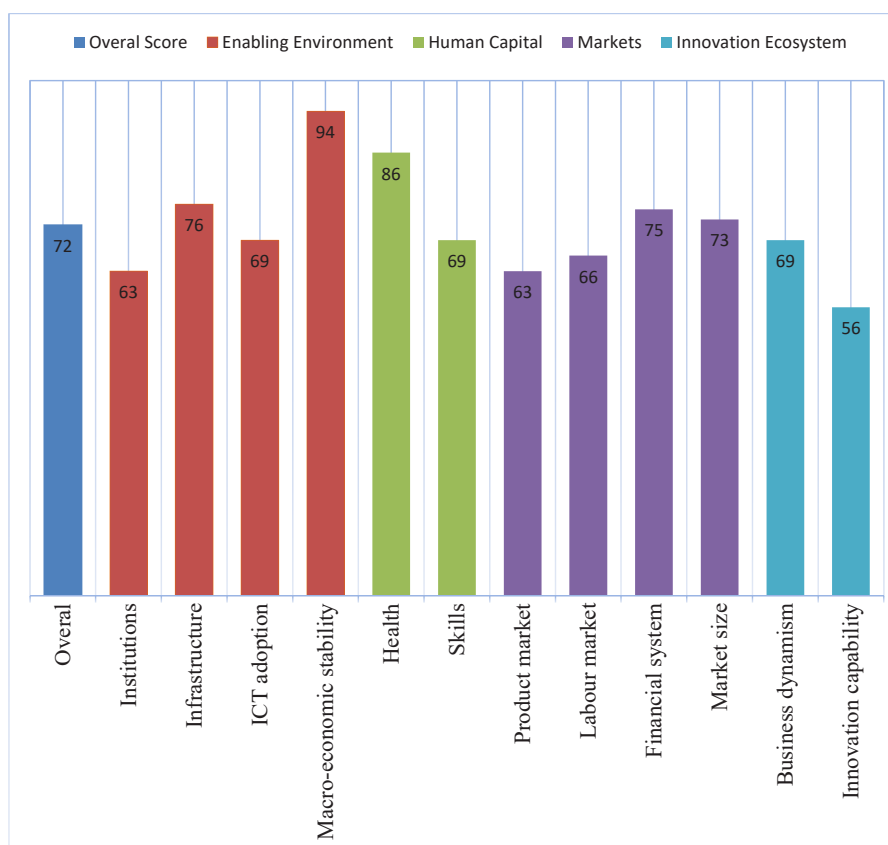


Figure 1. The APEC Integrated Competitive Force Index, 2019

Source: Calculated by the author based on The Global Competitiveness Report 2019 by the World Economic Forum

Table 2
Competitive force of international integration groupings, 2019

INTEGRATION GROUPING	USMCA		EU		APEC		ASEAN		MERCOSUR	
	Rank 2019	Score	Rank 2019	Score	Rank 2019	Score	Rank 2019	Score	Rank 2019	Score
ENABLING ENVIRONMENT										
Institutions	2	64	1	65	3	63	5	51	4	56
Infrastructure	2	80	1	82	3	76	5	66	4	69
ICT adoption	3	66	1	72	2	69	5	60	4	63
Macro-economic stability	1	99	2	96	3	94	5	66	4	85
HUMAN CAPITAL										
Health	2	88	1	90	3	86	4	82	5	77
Skills	2	74	1	75	3	69	4	62	5	62
MARKETS										
Product market	1	64	3	61	2	63	5	51	4	59
Labour market	1	70	2	66	3	66	5	55	4	64
Financial system	1	80	3	70	2	75	5	58	4	69
Market size	1	86	5	61	2	73	3	73	4	64
INNOVATION ECOSYSTEM										
Business dynamism	1	76	3	66	2	69	5	57	4	62
Innovation capability	1	67	2	59	3	56	5	38	4	43
GLOBAL COMPETITIVENESS INDEX 2019										
2019	1	76	2	72	3	72	4	65	5	59

Source: Calculated by the author based on The Global Competitiveness Report 2019 by the World Economic Forum

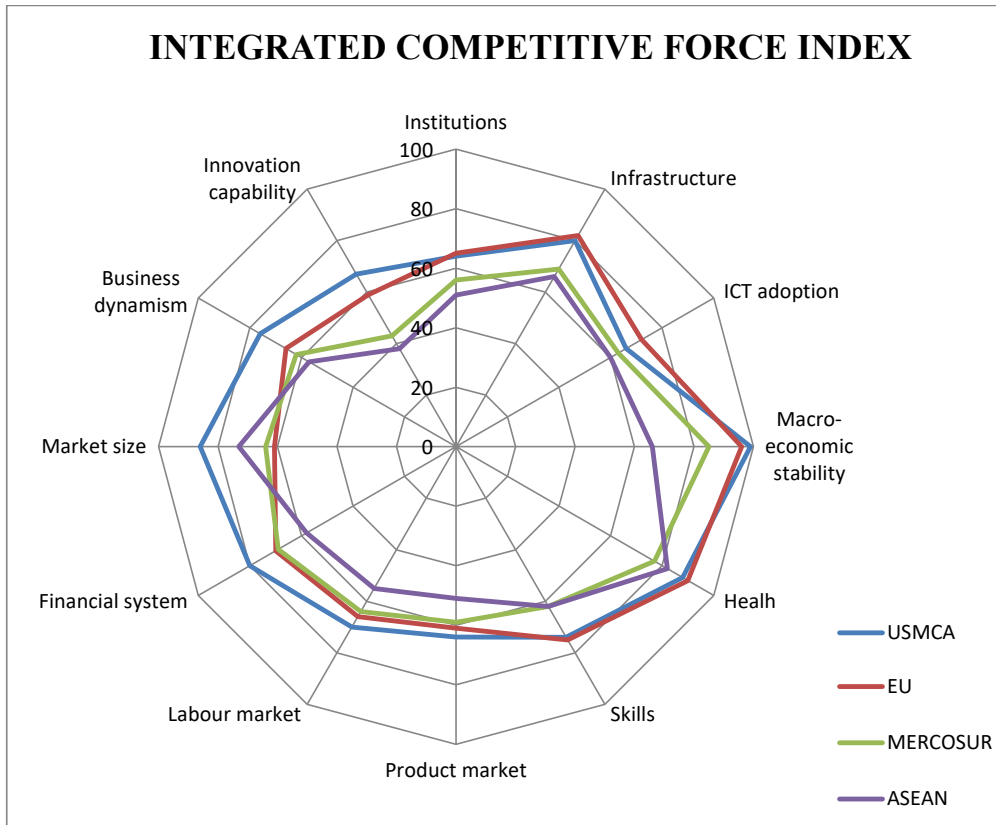


Figure 2. Integrated Competitive Force Index USMCA, EU, APEC, ASEAN, MERCOSUR

Source: Calculated by the author based on The Global Competitiveness Report 2019 by the World Economic Forum

integration groupings differ in their level of the competitive force. It should be noted that a comparison of the assessments of the integrated competitive force of USMCA, the European Union, the Association of Southeast Asian Nations, APEC and MERCOSUR gives us ground to conclude that USMCA is a leader among interstate integration groupings in the global economy in terms of the competitive force.

However, according to the criteria of the institution, infrastructure, implementation of information technologies, health and qualifications, the European Union has the highest points compared to USMCA, APEC, ASEAN and MERCOSUR. Thus, USMCA has the highest overall points, but not by all criteria of the competitive force. APEC, the Association of Southeast Asian Nations and MERCOSUR do not hold leadership positions by any of the criteria.

The data of the Integrated Competitive Force Index in general show that interstate integration groupings are placed in the following order: USMCA – ranks first among 5 groupings, EU – 2/5, APEC – 3/5, ASEAN – 4/5 and MERCOSUR – 5/5 (Figure 2).

4. Conclusions

Firstly, at the present stage of development of the world economy it is insufficient to measure the global competitive force only in terms of a country and geographical region. Despite the variety of methods of intercountry comparisons according to the level of the global competitive force, there is no distinguishing of competitive forces of other equally important actors of the global economy, such as interstate integration groupings. As of 2020, the scholars do not single out or measure the competitive force of interstate integration groupings.

Secondly, by identifying the objective and most compelling reasons for the necessity to calculate the Integrated Competitive Force Index of interstate integration groupings, we quantified the competitive force of Asia-Pacific Economic Cooperation, and compared the data in terms of 12 criteria.

Thirdly, according to the Integrated Competitive Force Index, the world leader among the investigated interstate integration groupings is USMCA – 76 out of 100 possible points; EU – 72/100; APEC – 72/100; ASEAN – 65/100; MERCOSUR – 59/100.

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FEATURES OF PUBLIC ADMINISTRATION IN SHAPING STRATEGY OF VENTURE INVESTMENT OF BUSINESS ENTERPRISES

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Abstract. The *purpose* of this study is to define the content of the category “venture investment”, and to establish the relationship between the concepts of “venture investment” and “venture capital”, to analyze the state of venture investment in Ukraine and determine its role in innovative development of the economy, to systematize international experience consider the possibility of its adaptation in Ukraine. *Object of research:* venture capital in the system of financing innovation processes in the modern economy. The *methodological basis* of the study is a set of general scientific and special methods of cognition. *Methods* of analysis and synthesis, generalization and scientific abstraction were used in the formation of the conceptual and categorical apparatus. The analysis of approaches to understanding the essence of venture investment, its components was carried out using dialectical and systemic-structural methods. The application of the historical and logical method, induction and deduction made it possible to study the genesis of the theory of economics and enterprise management, the factors of the strategy of development of venture investment of business entities. Within the framework of the study of the current state of venture investment, calculation and analytical methods of observation, measurement, analysis and comparison are used. *Conclusions.* Based on the above study, we can assume that venture capital is a combination of financial, human and intellectual resources, which with a high level of risk is invested in the development and implementation of high-tech products of companies that are in their infancy and initial development and are not listed on the stock market and in case of success brings its owner a profit that is much higher than the industry average. Despite the riskiness of investments, venture investments have a number of attractive prospects and advantages. As world experience shows, venture-backed companies are better prepared to innovate, grow faster and create more jobs in the future.

Key words: venture investment, venture capital, innovations, investment fund, investments, association, financial institutions, company, startups.

JEL Classification: E22, G24, H83

1. Introduction

A characteristic feature of the modern economic space of Ukraine is the formation of a multi-stage model of innovation. Its structuring and institutionalization with the separation of functions, tasks between different business entities allows to reflect the attitude of different types of people to the risk and activities associated with it. The construction of this model and its application in the system of public administration is an urgent and important task today.

It is quite difficult for an innovative business entity to function and develop in conditions of turbulence (uncertainty), much more difficult than in a developed

market economy. Increasingly, the use of modern innovation management brings a huge economic effect to the business entity at relatively minimal cost. But the potential of science and the possibility of its practical implementation are completely different things. Economic conditions in Ukraine today differ from those of developed economies, so the use of the potential of innovation management should take into account the characteristics, traditions and specifics of the country as a whole, each region or individual entity.

In the conditions of unstable macroeconomic and political situation, and as a result, strengthening of deficit of investment resources, which would allow

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to increase indicators of efficiency of activity of the enterprises of Ukraine, one of long-term tools of realization of financial mechanisms could become venture investment providing financing of new, risky projects or unprofitable companies in order to increase their capitalization.

A significant contribution to the development of theoretical and practical principles of venture capital, the functioning of venture capital and its forms, corporate finance was made by foreign scientists: O. Ardishvili, D. Arom, V. Benevolensky, O. Dagaev, P. Drucker, R. Clark, A. Karzhauv, E. Lebedeva, J. Rivkina, O. Rogova, I. Rudakova, E. Ruzavina, O. Tkachenko, E. Fiixel, D. Frear, R. Hofat, N. Shekhovtsova and others.

World economic studies the problems of venture capital in a developed market economy, particularly, the knowledge economy. In Ukraine, the conditions for the development of venture capital are just being formed. Theoretical and methodological problems of its formation are reflected in the works of famous domestic economists, among which there are the works of V. Andriychuk, O. Amosov, V. Bondarenko, O. Borodina, O. Bugrov, M. Butko, V. Varena, I. Goncharenko, I. Grishova, A. Guley, A. Dagaeva, M. Demyanenko, I. Dvorak, O. Zalotov, V. Onegina, I. Dakhno, O. Ivanytska, O. Krasnorutsky, M. Klapkiv, Y. Lupenko, O. Mityai, V. Martynenko, V. Margasova, L. Naumova, A. Peresada, P. Sabluk, O. Ulyanchenko, O. Chechelyuk, L. Chernyuk, S. Shkarlet and others. However, the problems of formation and use of venture investment in the process of transition of processing enterprises to investment and innovation model of development require further research and finding ways to solve them.

2. Research of the content of the category “venture investment”, by establishing the interdependencies between the concepts of “venture investment”, “venture capital”

The term “venture” means “risk”, “risky business”, “dare”, in general, all its definitions are somehow related to courage and adventure. The concept of venture capital can be interpreted in different ways. Some understand it as only a high-risk investment aimed at financing risky innovative high-yield projects in promising industries for an average of 3 to 5 years or even business ideas. Others prefer a broader interpretation, which includes any financing for the company’s rapid growth. Thus, in this case, venture capital finances not only the formation of start-up capital, but also the next stages of formation of an innovative enterprise. Venture capital is a link between investment and innovation as components of economic growth, a source of capital for companies whose rapid growth and development constantly requires additional foreign investment (usually small

and medium-sized enterprises). The main difference from traditional investing is that financial assets are provided to the company without any guarantee of provision of movable or immovable property or savings. The only guarantee is the relevant part of the shares, less than the controlling stake of the existing or just created company, scilicet venture capital is provided to the company for a promising idea.

Internal venture refers to specialized units created by large corporations, whose function is to select and implement risky ideas and projects. The purpose of an internal venture is to find new ideas, technologies, objects and inventions. The corporation, as a rule, gives internal ventures legal and budgetary independence, the right to form staff (Vashchenko, Kuzmich, Syzov, 2010).

An external venture is considered to be small independent science-intensive firms founded by the authors of the idea – scientists, engineers, inventors – and a venture entrepreneur who try to implement new advances in science and technology with the expectation of material gain (Velyka, 2012).

The peculiarity of venture investing, which distinguishes it from other strategic investors, is also that the venture capitalist does not seek to acquire a controlling stake in the company, and therefore does not seek to control the company that falls within his or her interests. The venture investor hopes that the company will use his or her money as a financial instrument to ensure the rapid growth and development of the business, realizing that the implementation of science-intensive projects for various reasons does not always end with the expected end results. Well-known venture capitalist Tim Draper noted: “Venture business is when 10 companies invest, half of them go bankrupt, three return, one gives a 10-fold increase, and another profit is 100 times higher than the investment” (Zinchenko, Ilchuk, et al., 2004). The expectation of making very high profits also forces the venture capitalist to take exorbitant economic risks.

By studying the economic literature, one can obtain numerical definitions of venture capital. Each author gives his or her own interpretation of this concept, the term “venture capital” in each country has its own characteristics, associated primarily with the lack of strict state regulation of venture capital.

Venture capital, as defined by the European Private Equity and Venture Capital Association (EVCA), is equity capital provided by professional financial companies that is invested in start-up innovative enterprises that develop and demonstrate the potential for significant growth (The BVCA Private equity and Venture Capital Report on Investment Activity, 2012).

The Canadian Venture Capital and Private Equity Association (CVCA) proposes the following definition: “private equity” is a general term that reflects the totality of all forms of equity and quasi-equity investments in the market. In a mature (developed) equity market,

there are usually three main segments: buyout capital, mezzanine capital and venture capital. In turn, venture capital is defined as a specialized form of private equity, which is characterized mainly by high-risk investments in new or young companies seeking to grow in technology and other industries that create high added value (Weiss, 2000).

The Australian Private Equity and Venture Capital Association Limited (AVCAL) interprets the concept of venture capital as capital that has independent management and is invested in private companies with high growth rates.

Experts of the British Private Equity and Venture Capital Association justify the essence of venture capital as an investment in the share capital of unregistered companies, which are in both initial and later stages of development, when the acquisition of the company requires significant financial resources.

The Russian Federal Agency for Science and Innovation believes that venture capital is a long-term investment, which is realized during the sale of its share in the company through an IPO (initial public offering of shares on the stock market), scilicet the main thing to increase the price of the newly created company and sell it profitably in 3-5 years (All about marketing, 2000).

I. Dvorak, J. Kochyshova and P. Prokhazka emphasize the orientation of venture capital to high risk and the implementation of scientific and technological innovations, based on empirical analysis of venture capital in the Anglo-Saxon model countries (the USA, Canada, the UK) and innovation-oriented capital in Western Europe (Krasovskaya, 2013).

A. Lapko reviewed the role and functions of venture capital in solving problems of formation of infrastructure of innovative economy and the acceleration of structural changes in favor of high-tech industries, paying special attention to the peculiarities of the establishment and functioning of venture companies in Ukraine and factors that hinder its development, justified ways to speed up the formation of venture capital (Lapko, 1999).

Based on the above study, we can assume that venture capital is a combination of financial, human and intellectual resources, which with a high level of risk is invested in the development and implementation of high-tech products of companies that are in their infancy and initial development and are not listed on the stock market and in case of success brings its owner a profit that is much higher than the industry average.

Like any activity related to stocks, venture capital investments carry a certain risk, which is manifested, first of all, in the following:

1. This type of investment is directed to enterprises whose shares are not listed on the stock exchange. That is, investments are not directed to those companies that are already profitable in the market, having a certain customer base, and young but promising companies

that are potentially able to increase the money invested in them.

2. Venture capital investments are invested for a long time, and the investor has no opportunity to return their money before its completion.

3. Typically, such investments are directed to companies that have some "highlight", an innovation that will either bring a profit, or fail miserably.

Despite the riskiness of investments, venture investments have a number of attractive prospects and advantages. According to world experience, venture-backed companies are better prepared to innovate, grow faster and create more jobs in the future.

3. Trends in venture business development in Ukraine, its dynamic characteristics

In order to establish an innovative model of economic development and ensure the expanded reproduction of innovation processes, systemic problems must be solved, including those related to the financial support of innovation processes, a key place among which should be occupied by venture investments and venture capital market development.

According to the Decree of the President of Ukraine "On Investment Funds and Investment Companies" dated February 19, 1994, the first domestic venture fund was the Ukraine Fund, managed by Clafin Capital Management (Boston, USA). A large share of investment in this fund was made by the European Bank for Reconstruction and Development.

Since the beginning of its activity in Ukraine, the bank has invested more than 22.5 million USD in 31 Ukrainian enterprises. It was formed for 10 years in the amount of 40 million USD especially for investments in Ukraine. Among the largest investors of the fund there have been EBRD, IFS, BankBoston, Commercial Capital-Athens, Creditanstalt-Vienna. The fund invests in private enterprises operating in the field of production of consumer goods and services in the domestic market. The investment strategy provides an initial contribution of 250-400 thousand dollars with an increase in investment, if successful, to 1 million USD. The return on investment in the fund is about 40% per annum (Public administration, 2002).

The beginning of international venture investment in Ukraine is considered to be 1993, when the Tokyo Summit between the governments of the G7 and the European Union adopted an Agreement to support newly privatized enterprises under the State Program of Mass Privatization, under which about 15,000 small and medium enterprises worked.

The creation of venture funds in Ukraine can be divided into several stages. The first period is considered to be 1992-2001, which is characterized by the creation and operation of 7 venture funds in Ukraine through foreign investment. For the period up to 2004, the total

investments of these funds amounted to more than 127.5 million USD in more than 106 companies.

In 1994, mass privatization began in Ukraine. To service this process, investment companies and funds were actively created, which, according to the Decree of the President of Ukraine "On Investment Funds and Investment Companies", could attract only privatization property certificates, which were later invested in auctions of the State Property Fund of Ukraine. 1994 is considered the beginning of the development of mutual investment institutions.

Since 1994, another venture fund "Western Nis Enterprise Fund" with a capital of 150 million USD has been operating in Ukraine, and in 1998, it began to operate on the Black Sea Fund. These two funds are still operating successfully. A large share of funding from these funds is provided by the European Bank for Reconstruction and Development. In the same year, Euroventures Ukraine (capitalization 30 million USD) was established and began operations in 1999.

Between 1994 and 1996, 11 regional venture funds were gradually established in partnership with the European Bank for Reconstruction and Development (EBRD), which provided 310 million USD. US equity financing in Kyiv, and donor countries (France, Germany, Italy, Japan, USA, Finland, Norway and Sweden), which provided 207 million USD in unpaid loans.

Thus, in Ukraine until 2005, only three financial institutions (Western NIS Enterprise Fund, Euro-Ventures, and Ukraine Fund) operated on a permanent basis in the field of venture financing, which almost completely ruled out the possibility of competition between them.

Venture funds in Ukraine became more active after the adoption of the Law of Ukraine "On Joint Investment Institutions" by the Verkhovna Rada in 2001.

The second stage of development of venture funds is considered to be 2001.

According to the Ukrainian Investment Business Association, in 2004-2010, the number of venture funds increased 13.9 times and the value of net assets increased 63.1 times, the growth rate of these indicators slowed more than 2 times during this period, the largest slowdown was observed after the global financial crisis in 2008.

The concept of "venture business" is included in the Laws and acts of Ukraine, namely – in the Decisions of the State Commission on Securities and Stock Market No. 8 and 9 dated January 8, 2002, in the resolution of the Verkhovna Rada "On compliance with legislation on scientific and technical development potential and innovation activity in Ukraine" dated June 16, 2006, however, the essence, functions, principles of activity of venture funds and venture firms have not been defined yet. Relations in this area are also partially regulated by the Laws of Ukraine "On Investment Activity",

"On Innovation Activity", "On Scientific and Scientific Technical Activity", "On Scientific and Scientific Technical Expertise".

In December 2005, Draper Fisher Jurvetson (DFJ), which includes 20 funds with a total investment capital of more than 3 billion USD, opened the DFJ Nexus technology venture fund in Ukraine. Over the next 10 years, the fund plans to raise from 50 to 100 million USD for the development of high-tech companies in the countries of the former USSR.

We consider the period up to 2008 to be the third stage of venture business development in Ukraine.

In 2008, the State Agency for Investment developed a draft Law of Ukraine "On Venture Funds for Innovative Development". For the first time in Ukraine, the bill attempts to define the legal basis for the creation of a new financial instrument that would ensure the direction of investment flows into innovative sectors of the economy.

This document states the following: the founders and participants (shareholders) of the venture fund of innovative development may be individuals and legal entities, residents and non-residents, as well as the state and local communities; venture capital funds can invest in corporate rights and debt obligations of innovative enterprises; joint ventures established to implement technology parks and science parks; Venture capital assets of innovative development may consist of corporate rights, debt obligations, real estate and intellectual property rights; venture funds of innovative development invest in innovative programs and projects, new knowledge and intellectual products, production equipment and processes, infrastructure of production and entrepreneurship, etc.

The fourth stage is the post-crisis year of 2009, which is characterized by a slowdown in the growth rate of Joint Investment Institution assets.

The next period of venture investment development from 2010 to 2013 was unfavorable for the Ukrainian stock market and asset management activities. The realities were the general deterioration of the investment climate in the country, the lack of clear and stable rules of the game, the shortage of reliable financial instruments, unequal conditions for taxation of investment funds and bank deposits, tighter regulations and increased fiscal pressure.

2014 was one of the most difficult years for the Ukrainian sector of asset management of institutional investors, as well as for the whole country, in the previous history, political instability, annexation of Crimea, military actions in the east, devaluation of assets, numerous attempts to fill the budget and change mechanisms for taxing the activities of collective investment institutions, the outflow of investors, but even such negative factors were not as destructive as might be expected. At the end of 2014, the assets of venture companies amounted to 202.85 billion UAH.

Since 2014, the Ukrainian Venture and Private Capital Association (UVCA) has been creating a positive image of Ukraine in the world and promoting Ukrainian startups, uniting about 50 venture funds, direct investment funds, accelerators, incubators and non-profit institutions.

The next stage of venture business development is 2017, which became a record in the history of Ukrainian venture business – startups raised 258.6 million USD, which is three times more than in 2016. This confirms the fact that Ukrainian startups create highly competitive products that can meet the needs of consumers around the world. A striking example is the Grammarly application, an online grammar checker service that raised 110 million USD. It should be noted that in 2017, the venture market had 16 sales, while in 2016 there were only 6. This is a positive sign for investors.

In recent years, we have seen a steady growth of the Ukrainian investment market. Although the COVID-19 outbreak has made some adjustments to investor plans and startup development, understanding the trends of 2019 will be useful for investment market players to manage expectations, support and grow their business in the new reality.

For the first time, the volume of investments in Ukrainian startups and IT companies reached half a billion a year. The total amount of venture investments in Ukrainian IT companies reached 510 million USD, which is one and a half times higher than the maximum in 2018. The number of transactions in 2019 was almost the same as in 2018: 111 transactions compared to 115 in 2018. In 2019, the volume of M&A operations (mergers and acquisitions) increased 18 times. 15 M&A deals amounted to 460 million USD, while in 2018 there were 7 deals worth 25.2 million USD. Despite the fact that in 2019 the country went through elections, investment in a number of industries continued to grow. In particular, in areas related to software development, hardware products and online services. And although 2020 makes its adjustments, the report shows that Ukraine really has significant potential for investment. As soon as the economic situation in the world stabilizes, Ukraine will be able to boast of new investment growth.

The analysis of venture activity of the above-mentioned foreign companies in Ukraine showed that, firstly, they do not adhere to the main goal of venture business – investing in the search and implementation of “new, innovative idea”, but reduce their activities to investing in profitable and almost risk-free economy. Secondly, all possible surplus profits created in Ukraine are outside it, because there is not even a share of Ukrainian money in these funds (Deineko, Tsymbalyuk, Romanchuk, 2000).

In Ukraine, there are a number of factors that can contribute to the development of venture capital, namely – the availability of cheap highly qualified

and creative staff; convenient geographical location; large reserves of raw materials; powerful assets abroad owned by residents of Ukraine, etc. Even the best of the investment projects offered in Ukraine today are not ready for venture investment. Attracting funds from Ukrainian sources is extremely difficult. Looking at traditional sources, we can note either a very weak development of this sector of the economy, or unfavorable legislation and lack of commercial interest due to high risk.

4. Evaluation of international experience in developing, supporting and stimulating venture investment and the possibility of its adaptation to the conditions of the Ukrainian economy

Venture capital is one of the oldest types of capital. It comes from the moment when a person who came up with an innovative business idea asked his or her relatives or friends to invest a certain amount of money in his or her business, offering part of the profits in the future. Americans jokingly say that “sources of investment in a new business can be three “f”: family, friends, fools (Oliver, 1996).

Significant venture capital has been used to finance high-risk projects since the Middle Ages. During the Great Geographical Discoveries, the owners of large capitals provided money to travelers and resourceful entrepreneurs.

Today there are 2 markets for venture capital: the first – the US and Canadian markets, the second – Europe. Of course, the European market is understood as the market of Western Europe. The markets of Southeast Asia, Israel, Brazil, India and Australia are also considered promising. Experts differ on China’s potential, but we believe it is promising and needs more in-depth analysis and research. Their differences can be traced in the following areas: first of all, in the role of the state in innovation processes; by sectors of the economy in which venture funds invest; by venture capital objects.

In Europe, venture entrepreneurship began to develop actively in the early 80s of the twentieth century, although, of course, the practice of risky investing in European countries existed before. The dynamic development of this industry is largely due to the presence of more than twenty years of experience in American venture business. In particular, the main stages of infrastructural development of the European venture business largely repeat the American experience.

In Europe, the state takes an active position in the venture business, it is expressed in the following: the state acts as a direct investor in small venture companies; with the help of tax policy instruments a favorable climate is created for the operation of venture firms. Thus, in the UK for venture firms reduce income tax (25%), there is a system of insurance, written off the

cost of research and development work on the cost of production (in any amount).

In Germany, there is a tax rebate on private investment in research and development (up to 7.5%). In France, funds invested in risky projects are not taxed. Financing of scientific and technical works was carried out at the expense of the state budget at the level of 0.74% of the gross domestic product in 2010.

For comparison, in Ukraine the funding of scientific and scientific-technical works is about twice less, which is only 0.34% of gross domestic product (European Venture Capital Association). In Europe, venture financing emerged in the 1970s and 1980s and, with rare exceptions, is a purely national phenomenon. Only British venture capital funds have branch networks across Europe. Other European venture capital funds that have opened offices outside their home country consider it appropriate to work with either the United States or Asia.

The European Venture Capital Association (EAOC), established in 1983, publishes annual reports describing the activities of national venture capital in different countries. Venture capital in Europe, based on EWC data, is most developed in the United Kingdom, Germany and France. Quantitative data on a slight decrease in venture capital due to the saturation of the Internet market.

In the UK, several regimes of tax benefits have been developed (NVCA Yearbook, 2016):

- The Enterprise Investment Scheme provides for a reduction in the investor's income tax by an amount equivalent to 20.0% of the investment. The company must be paid at least 500.0 GBP, and the maximum amount of investment, for which a tax benefit is possible, which is 500.0 thousand GBP. Income from the sale of shares or stakes in the company is also not subject to capital gains tax. There is a tax mechanism to compensate for investor losses. Income from the sale of shares after the expiration of five years is also not taxable;
- Reinvestment Relief (reinvestment tax benefits)
- deferrals of tax payments are provided subject to reinvestment of income received by the investor within three years from the date of investing in shares of companies not listed on stock exchanges;
- Regional Venture Capital Funds (RVCF) – providing small and medium enterprises with venture financing in the amount of up to 500.0 thousand GBP on a commercial basis. Each such fund is managed by a management company that has experience in the private sector and has been rigorously selected. The volume of funds averages 30.0 million GBP. About 50.0% of the funds of each regional fund belong to the state or the European Investment Fund (a division of the European Investment Bank). Regarding payments, the “first victim” rule applies in favor of the fund's private investor.

In Finland, the catalyst for the development of venture capital was the state seed investment fund SITRA. The average annual investment is 30.0 million EUR. There is also a “fund of funds” Finnish Industry Investment in Finland. The catalyst for the development of venture capital in Israel was the state fund Yozma, which co-invested in private-state venture funds under the management of private management companies (usually foreign). Yozma's share in the fund reaches 40.0%.

In 1995, Germany developed a scheme called Beteiligungskapital für Kleine Technologieunternehmen, which financed small firms producing innovative products or services together with private sector companies. Austria is also setting up an “Investment Innovation Fund” to increase funding for start-ups by providing funds to private funds. The European Investment Fund, established in 1994 with the financial support of the European Commission, invests in stocks of small and medium-sized enterprises with high growth potential. Loans offered by governments, often unavailable from other sources, are often provided on more attractive terms than private loans. They may have lower interest rates or longer payback periods. They can even be irreversible. The government-funded Vaekstfonden (Business Development Credit Financing Program) in Denmark, for example, provides loans to small firms to develop technology-oriented projects. In this case, in case of failure, the cancellation of debts is provided. In the Netherlands, the technical development credit scheme provides for the issuance of ten-year loans to small companies, which may not be repaid in the event of technical or commercial failure. In Sweden, the government is the largest shareholder in AlmiForetagspartner AB, which provides 6-10-year interest-free loans to start-ups for the first two years.

In the European countries, the state is the driving force of venture business and a stimulus, in contrast to private capital, which dominates in North America. Currently, the venture financing mechanism is the most developed in the United States, due to the large number of small high-tech firms in this country and the development of the stock market. An important feature of venture investment in the United States is that significant amounts of money are invested in the development of high-tech companies in the early stages of development (up to 30%), while in Europe this figure is twice lower. It is worth noting that a characteristic feature of business in the United States is its focus on innovative enterprises in the field of high technology. Statistics show that suppliers of more than 60% of major innovations of the 20th century are venture firms. This is how the personal laptop, color photo paper, electrography, vacuum lamps, microprocessor, etc. appeared. The world leaders in the computer industry – Microsoft, Intel, Apple Computers, Compaq – gained their current position largely due to venture capital in the early stages of its development.

In the United States, at the initial stage of development of the national venture system, specialized small business investment companies (SBIC) were established. SBIC's private investors have been given significant tax breaks, as well as certain government guarantees and relatively cheap loans. Several billion dollars are received annually in "sowing" projects under the state support programs SBIR and STTR.

In the American model of venture financing, the main purpose of the state is to integrate and promote the interaction of industrial and scientific sectors. The state is assigned the role of a "night watchman", which does not significantly interfere in the promotion of the venture project and performs legislative regulation of venture processes, as well as stimulates the development of the venture industry.

Consider the main means of stimulating the development of venture business in the United States: 1) preferential taxation of venture firms; 2) no rental tax; 3) guaranteed return of private capital invested in venture business by the Small Business Administration; 4) mandatory involvement of venture firms in the implementation of major innovation projects in accordance with US law.

Obviously, the venture capital industry in Europe differs from its American counterpart in two main respects. Firstly, unlike the United States, which invests in venture capital in new technologies, in Europe, venture capital is invested mainly in developed industries, transport and communications. Secondly, the main institutional investors in the European venture capital (excluding the United Kingdom and Poland) are banks. And in the United States – it is the pension funds, insurance companies, sponsors and individuals. In the regional aspect, the ratio of venture capital in the US and Western Europe is about the same. However, Western Europe is represented by 17 countries with a population one and a half times the population of the United States, and if we compare the two regions in terms of venture capital per capita, the leadership of the United States is unconditional.

There is an urgent need for Ukraine to develop a competent state policy to stimulate venture business, taking into account the leading foreign experience. The state should share the risks of innovation with business and improve legislation to stimulate innovation, modes of operation of technology parks, the autonomy of the Ukrainian universities. Today, the development of the venture industry in Ukraine is constrained by a weak legal framework, underdeveloped stock market, non-transparency of financial activities of companies, lack of guarantees for investors. While the decisive role in the development of the venture industry in the United States and Europe was played by public policy measures to create favorable conditions for the development of venture funds.

It makes sense for the state to actively promote the development of venture business, because the benefits

that society receives from venture capital support programs are not limited to the profits of venture investors. Venture investments: 1) contribute to the development of new leading scientific and technical developments to create competitive high-tech products and technologies; 2) create new jobs, helping to reduce unemployment and increase welfare in society, which is of strategic importance for long-term growth of the national economy.

5. Conclusions

Analysis of the main trends of venture investment, as well as the study of the current state of venture processes in Ukraine and in the world provides an opportunity to draw meaningful conclusions. Venture capital investment plays a special role in ensuring the attraction of long-term, high-risk capital, which has a predominant focus on the intensification of scientific, technical and innovative activities, which is the key to economic development of the country.

For Ukraine, the development of venture investment is an opportunity not only to stabilize the economy, but also to provide it with significant growth rates. Ukraine has rather low volumes of investment, which is caused by the lack of trust in investment funds in the population, the instability of the economic situation, in which it is very difficult to predict the future outcome of investment. Systematization of venture capital functions allowed to highlight the following features of its formation in Ukraine: 1) the need to accumulate financial resources, which allows to attract sufficient investment in knowledge-intensive innovative entrepreneurs and promising innovative projects that, according to the venture investor, will pay for itself investment; 2) increasing the rate of return in the venture business compared to the average in the economy allows to attract foreign venture capital in this area, which acts more prudently and aggressively, helping selected innovative enterprises to increase capitalization and create a positive image in the market; 3) the formation of a more progressive production structure by increasing the share of enterprises with a high level of value added, and, accordingly, additional revenues to the budget; 4) providing financial resources to small and medium-sized innovative enterprises, which in the current geopolitical situation is necessary and vital, because, given the severe budget deficit and lack of own funds to develop and implement their results, access to other sources of financial resources for them almost impossible.

Prominent examples for the country are the United States and Europe, where this type of financing for enterprise development is very common. The United States is characterized by a growing trend of venture capital investment in the economy, and in this sector there are many types of investors and investment objects.

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INVESTOR RELATIONS TOOLS FOR BUSINESS IN SMART SPECIALIZATION STRATEGY

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Abstract. Communication with investors is an important component in the activities of SMEs and large companies. Facing the new changes (development of digital technologies, COVID-19, smart specialization) the search for optimal tools of communication with investors becomes a priority for all key stakeholders of the investment process (business, academia, civil society, local authorities). The *aim* of the article is to identify effective communication tools for business and develop recommendations for their use in the context of smart specialization. *Subject of research:* investor relations of large, medium and small companies in the context of smart specialization. The main *research methods* are systemic (to build a system of investor relations tools) and analytical (to determine the IR tools among the studied companies; to analyze the tools of investor relations by using social media). As a result of the study, it is determined that the promotion of the Ukrainian companies through social networks is inactive (Facebook – 13%, Instagram and Twitter – 4%, YouTube – 5% and LinkedIn – 1%). More than half of the surveyed companies indicate that the most common investor relations tools are news releases and presentations (71.4%), answers to questions (61.1%) and annual reports (52.7%). In this article, smart specialization is considered as a common tool for communication between key stakeholders. It was determined that in the conditions of COVID-19, they used the following tools: online dialogues, online conferences, online sessions, online workshops, online presentations, world cafes, annual lectures, online consultations, webinars (partner webinars). *This study set out* to explore investor relations tools in the context of smart specialization. In addition, such global tendencies were revealed as: IR boosting startups' transformation into large companies; increasing both the investors' interest to the companies and the requirements to corporate transparency promote using of IR tools; investor meetings via online platforms; impact of regional specifics on choosing IR tools of different companies. *The results* of the investigation show that Ukrainian companies have different IR politics. The main reasons why they use IR tools actively are their own internal requirements to the quality management and the need in external funding. Moreover, new legislation demands to the super advisory boards of public companies are reflected in using IR tools.

Key words: investor relations, smart specialization, large business, IPO, SMEs.

JEL Classification: G02, G11, M31

1. Introduction

The smart specialization approach involves the active communication of key participants in the innovation process: representatives of business, academia, civil society and local authorities. The implementation of the regional strategy, which is built on the principles of smart specialization, can bring the region to a new, more competitive level on a global scale. Smart specialization helps to connect

the interests of investors who are focused on finding and implementing innovations with representatives of business and academia, which are essentially the main producers of innovation.

The problem of effective communication between these stakeholders is important and need to be solved immediately. Very often investors cannot find attractive projects in the regions, businesses and academics are not able to properly present

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their projects and also their performance in general. Representatives of civil society can also do effective promotion of their localities. Effective communication with investors is also needed while public-private partnerships, where key players are local authorities and investors.

The need for IR research in the context of smart specialization is sharp to the rapid development of digital technologies as well. This helps to speed up communication processes and attract more investors and full the economy with additional financial resources.

The situation around COVID-19 also forces to find the latest methods of communication. They are aimed not only at finding new investors, but also strengthening partnerships with other investors. All this is a prerequisite for researching investor relations, identifying best practices and applying their tools to promote different companies (big business and SMEs) at the regional, national and global levels.

The aim of the article is to identify effective communication tools for business and develop recommendations for their use in the context of smart specialization. Research questions are formulated around the issue of smart specialization and effective communication with various stakeholders in the regional context.

2. Literature review

IR is considered as a component of corporate transparency (Esterhuysen, 2019) and it is indissolubly related to online performance with company's investors. Here the author proposes to use legitimacy theory and voluntary disclosure theory in order to improve relations between investors and the enterprise.

It is also proved on the example of regression analysis of Islamic banks in the United Arab Emirates that actors with the higher index of information transparency have better indicators of operation activities (Tabash, 2019). At the same time the paper does not answer the question so long as it is possible to apply this methodology to the countries with emergency markets.

In the other paper it is assumed that effective IR via Internet resources leads to the optimal stock prices and increasing liquidity (Esterhuysen & Wingard, 2016), while it needs to be specified what exact instruments should be used for reaching the mentioned indicators. Alves & Silva (2020) regarded corporative communications via IR and related it to abnormal returns of the Portuguese companies. Very similar idea is in the article of Klagge B., Greiner C., Greven D., & Nweke-Eze C. (2020), where they stress on importance of IR between investors and communities on the examples of Kenya. They prove that such relationship may enforce the utility of public-private partnership projects. In furtherance of the cross-country peculiarities there is also research on IR in Indo-Nepal region (Taneja,

Prakash, Bimal, Garg, & Roy, 2020), where authors claim about friendly and warm relationship between Indian and Nepali business. However, there is no reason to generalize all the relationship between companies and investors, because problems happen in every business. Some researchers consider financial reporting documents as a formal IR tools, in addition, they reveal non-formal financial tools (Grigoraş-Ichim et al., 2018).

Some studies on IR are related to corporate social responsibility. For instance, Murashima (2020) finds that CSR-related news influence investors' behaviors differently based on their goals, ability and access information. Other research tends to conclude that IR domain is the specifics of IPO process as a large business peculiarity (Chahine, Colak, Hasan, & Mazboudi, 2020). Moreover, Shkarlet & Dubyna (2017) relate financial trust to investor attractiveness of the companies at different levels (micro-, meso-, macro).

Nel & Brummer (2016) designed a methodic, which allows to measure IR strategy and its effectiveness, was proved by assessment of the listed companies. Then they continue to research IR issues (Nel, Smit and Brummer, 2018) and confirm that there is a correlation between well-designed Internet IR strategy and decreasing of financial asymmetry. Later, the scientists considering the data of the Johannesburg Stock Exchange reveal the correlation between implemented IR Strategy and the cost of capital (Nel, Smit and Brummer, 2019).

A relationship exists between using of IR resources by traders of the stock market and the likelihood of contract conclusion (Upton, 2018), at the same time author sums up that IR companies make an impact on market reactions, and their presence can lengthen the process of M&A.

There is a certain number of researches where modern skills and knowledge for IR-managers are regarded. It is revealed that today IR manager is considered as a person who builds confidential relations between investors and companies, sets up two-way communication, responds to requested information, ensures adjusting the interests and expectations of investors (Hašček, 2017). In additions, the researcher claims that modern IR manager should have knowledge in finance, law and marketing area. The attention is also paid to the issue of social media usage (Twitter and Fb), whereas the IR instruments, which should be used, are slightly mentioned.

Continuing the topic of the IR professional skills there is a need to mention the paper of Camiciottoli (2020). The author proves the importance of good command of English in international business. Here she measures the effectiveness of such IR specialists on the finance international deals. Karolyi, Kim & Liao (2020) studied a set of companies from different countries and revealed other additional IR functions (the firm's interactions with brokers and investors, the formulation of its disclosure policies, and its global outreach efforts).

From recent time IR is considered on communicational approach in modern economy (Gackowski, 2017). The idea of mentioned research is to represent reputational approach of IR, which includes financial and non-financial features. Despite the theoretical character of the article, the author describes the difference between investor relations and public relations, but the study should be filled up by the empirical data.

The opportunities, risks, and tensions of IR are regarded by scientists in PR and finance (Doan and McKie, 2018). Here the authors offer to regard IR as an instrument of risk management during equity crowdfunding (ECF). They state obvious to begin to work with IR-instruments, however it is not enough to satisfy the information requirements of investors and they admit the increasing potential of IR in order to improve corporate dialog between investors and companies.

Among scientific research in IR area, the attention should be paid to the paper, where four-dimensional framework is offered to evaluate the extent of IR on the

Web (Halim, Basiruddin and Ali, 2015). At the same time, the paper suffers from the lack of explanation how they propose to improve the communication with investors using integrated platform.

3. Methods and data research

The research strategy is related to examining of IR specifics of the Ukrainian companies and its applicability for business in the context of smart specialization. The systemic and analytical methods are used for building investor relations system tools and to reveal the most often used tools of IR in the Ukrainian companies. Research was conducted based on the latest studies and processes taking place in the field of investment over the last 3 years. The base of the issuers was selected as the basis for research. Analysis of securities issuers according to data published by the National Commission on Securities and Stock Market of Ukraine was provided. Then every chosen issuer's IR online tools were studied. As a result, the base of issuers with the most popular IR tools was formed.

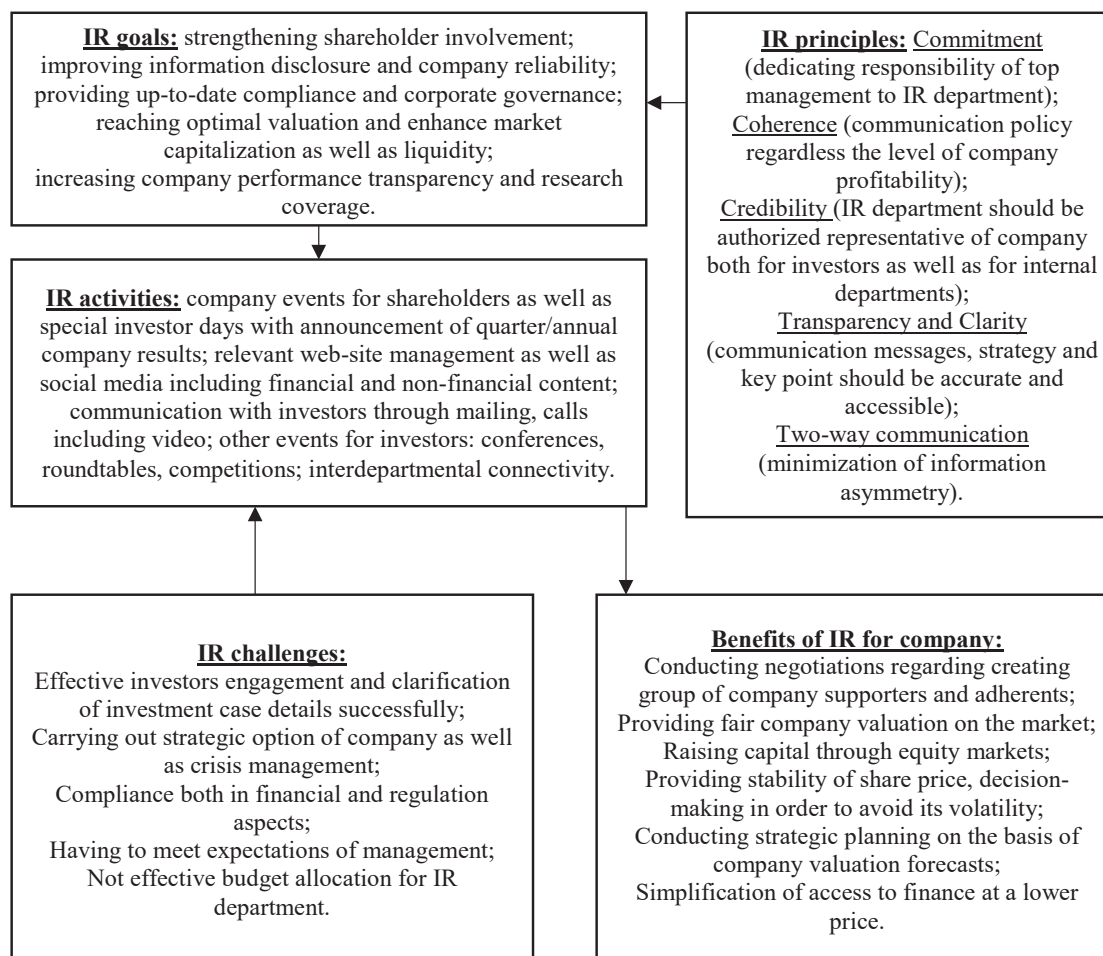


Figure 1. IR as interface between company and financial market

Source: based on Crockett, T. (2011), Nel, G. F., & Brummer, L. M. (2016), Hoffmann, C. P., Tietz, S., & Hammann, K. (2018)

4. Results

4.1. Investor relations enabler as mediation between company and investors

Investor relations (IR) could be considered as the specified channel aimed at providing two-way interaction between a company and financial markets as well as providing feedback loop from investors regarding company performance, strategic priorities, prospects, etc., which could be beneficial to decision-making processes and their adaptation to the market conditions and responses as well as improving communication effectiveness.

It should be emphasized that IR is not similar to public relations (PR) and marketing with aim to make company presentation in as such a positive way as possible, while IR is directed to strengthen investors understanding the specifics of business and some strategic and financial indicators as well as to provide fair awareness about company to all investor groups.

The fundamentals of effective IR policy with detailed explanation of the main goals, principles, conducted activities, possible benefits and challenges could be faced, are analyzed in Figure 1.

It is understood from Figure 1 that IR is a system and a huge instrument, which helps to struggle with different challenges face to modern companies. Therefore, the

company receives some benefits from using of the IR toolkit.

Essential tools for effective IR regarding information disclosure are shown on Figure 2.

There are formal and informal requirements to disclosure of a company performance information. Those described at Figure 2 are commonly recognized and used by the companies. It is worth mentioning that these tools are suitable for large corporations and SMEs as well. At the same time, large companies websites have more functions (data base, analytics, webinars possibilities), however, SMEs look like digital visit-card and is more simply in using and searching information.

4.2. Global trend and a place for development of IR in Ukraine in the context of smart specialization

Due to the research of consulting organizations, there are several modern global trends in IR:

Investor relations help to develop not only big business, as it was before, but also startups and SMEs. Thus, startups actively use investor relations tools when entering an IPO.

MIFID 2 increases the burden on investor departments, as the role of intermediaries (brokers) is eroded. Investors are increasingly expressing a desire to

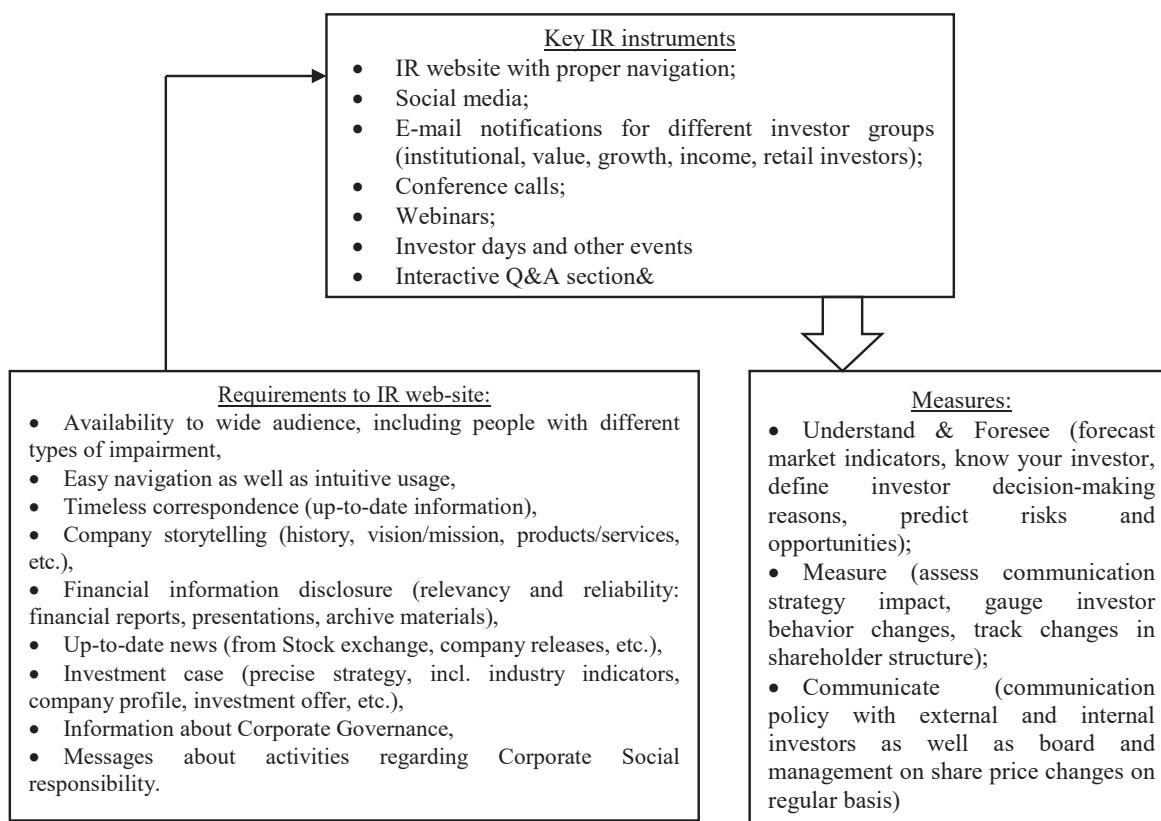


Figure 2. IR toolkit for company performance disclosure

Source: based on Crockett, T. (2011), Nel, G. F., & Brummer, L. M. (2016), Hoffmann, C. P., Tietz, S., & Hammann, K. (2018)

communicate directly with investors. Because of this, the role of investor relations office is growing.

There is a need to develop digital tools (robo-advising); there are digital platforms for meetings with investors.

In recent years, there has been an increasing interest in investor relations in Ukraine. It is very important for Ukraine to develop investor relation and attract investments for financing perspective industry because Ukraine is a ground floor investment opportunity located in Europe, offering a highly skilled and productive workforce, low-cost manufacturing platforms and attractive entry valuations. Ukraine, located at the European Union's frontier, has a pro-Western, pro-business government focused on implementing reforms and strengthening the national economy and institutions. It is on its way to becoming an economic turnaround success account.

There are a few published researches on investor relations in Ukraine. However, with the educational system's strong focus on technical disciplines, Ukraine is home to the largest IT engineering force in CEE. International companies operating and expanding in Ukraine demand highly skilled workers and set high standards for the entire labour market. Over the last 10 years, use of English language has become more widespread, becoming an integral part of the education system and a key focus for the individual personal development.

However, there is the Ukrainian Association of Investor Relations that develops investor relation in Ukraine. The main goals of the Association are:

– Formation and development of the Investor Relations market in Ukraine;

- Introduction of the world practice of investor communication in the Ukrainian companies;
- Harmonization of the Ukrainian and international corporate disclosure standards;
- Assistance to the Ukrainian companies in obtaining foreign and domestic investments;
- Promoting professional development of IR professionals in Ukraine.

For a detailed analysis of IR trends among the Ukrainian companies, a sample of 262 non-financial companies was selected and grouped according to the ownership criterion.

The State-Owned group includes companies whose ultimate beneficiary is the government. Holdings group includes companies that are part of the large domestic holdings. The Domestic ownership group consists of companies owned by local owners. The Foreign ownership group includes companies that have foreign investments or are subsidiaries of international corporations.

The distribution of the sample is presented in Figure 3.

In addition, 9 IR tools were identified and used in analysis:

1. News releases and presentations
2. Meetings with investors
3. Annual report on the website
4. Responding to queries
5. Investor Roadshow
6. Informal Meetings with Analysts & Journalists
7. Analytic days, Trip to the factories
8. Conference participation
9. Separate subpage on Investor relations
10. Data source: sites of the surveyed companies.

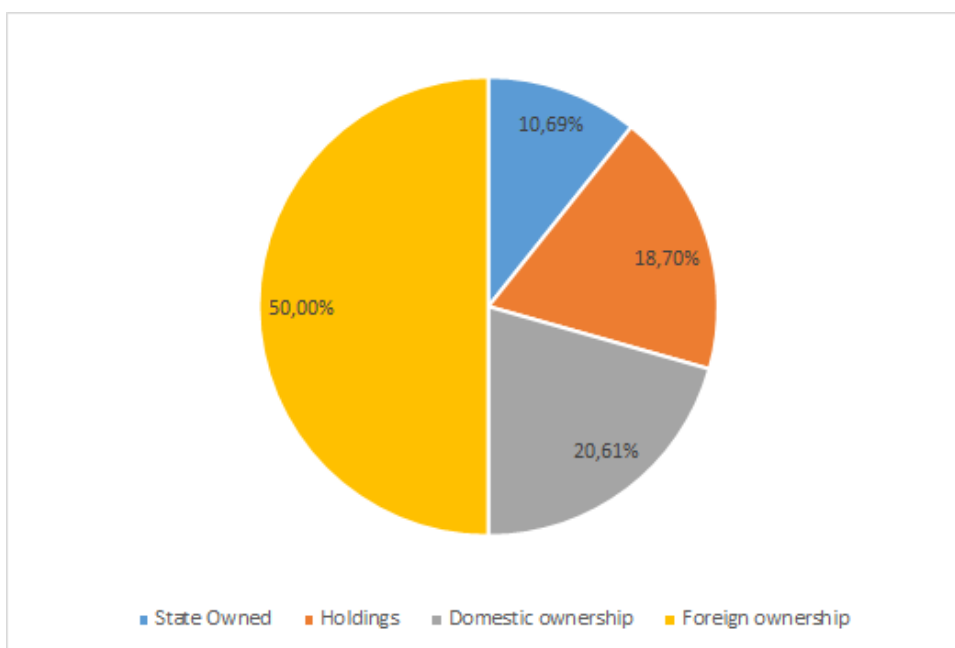


Figure 3. Companies distribution in the sample

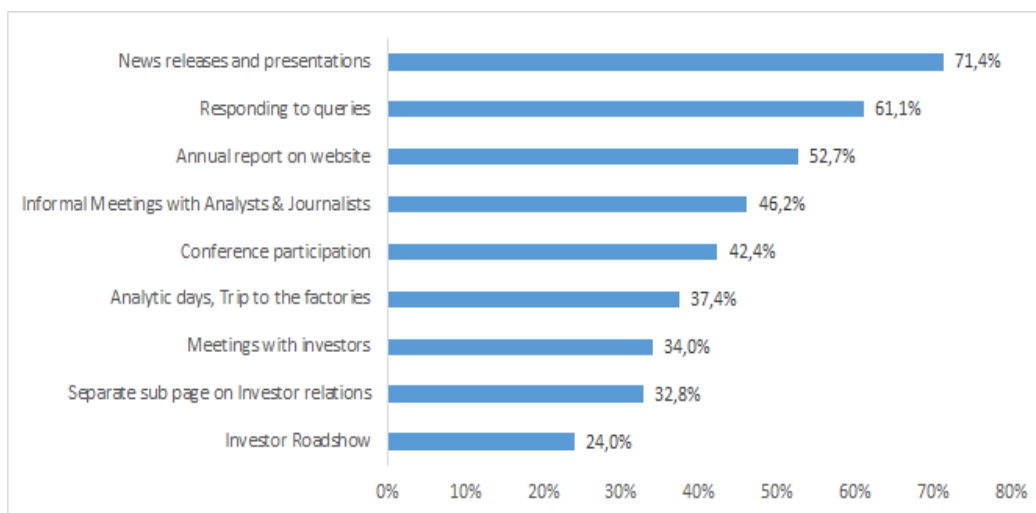


Figure 4. Distribution of IR tools among the studied companies

The study of the popularity of IR instruments among the Ukrainian-based companies was conducted in two directions. Firstly, the identification of the most popular tools among the 4 groups of companies. Secondly, determining the completeness used IR tools. An analysis of the distribution of IR tools shows that the most widespread are mainly information-oriented ones: publishing news about the company and responding to inquiries. Only a third part of companies have a separate page on the investor relations website.

The data from Figure 4 show that two groups of companies pay the most attention to IR: state-owned companies and companies that are part of domestic holdings. For example, they lead in publishing annual reports and responding to queries.

Local private companies, which have a limited number of owners, tend to disclose the least information.

Significant attention to IR tools by state-owned companies can be explained by the recent reform

of corporate governance in the public sector, which was designed to make the work of such companies more transparent to society. The obtained results are additional evidence of the success of this reform.

Holding companies are either IPO companies or tend to attract resources from foreign financial markets through the issuing bonds or attracting debt from IFIs. Accordingly, the transparency of such companies will directly affect the cost and volume of financing obtained.

Since local private companies often have only a few owners, therefore, their relationship with the final beneficiaries is mostly non-public. The same is with foreign companies. As they mainly report to the parent company abroad, the disclosure requirements in the country of operating activities are not high (Table 1).

On average, the company uses only 4 of the 9 IR tools (Table 2). At the same time, local private companies and foreign companies are the least diversified: for them, the

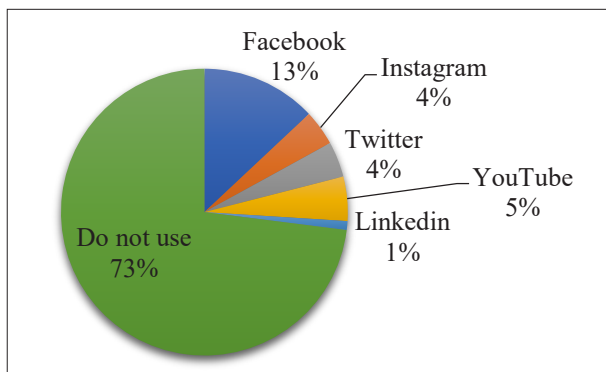
Table 1
Distribution of IR tools among the studied companies

Type of ownership	News releases and presentations	Meetings with investors	Annual report, website	Responding to queries	Investor Roadshow	Informal Meetings with Analysts & Journalists	Analytic days, Trip to the factories	Conference participation	Separate sub page on Investor relations
State Owned	75.0%	39.3%	75.0%	64.3%	25.0%	50.0%	42.9%	64.3%	39.3%
Domestic Holdings	65.3%	44.9%	65.3%	59.2%	26.5%	51.0%	49.0%	44.9%	49.0%
Domestic private ownership	66.7%	27.8%	53.7%	61.1%	22.2%	42.6%	33.3%	27.8%	18.5%
Foreign ownership	74.8%	31.3%	42.7%	61.1%	23.7%	45.0%	33.6%	42.7%	31.3%
Sample	71.4%	34.0%	52.7%	61.1%	24.0%	46.2%	37.4%	42.4%	32.8%

Table 2

Distribution of IR tools used

Type of ownership	Number of IR instruments used									
	0	1	2	3	4	5	6	7	8	9
State Owned	17.9%	14.3%	0.0%	3.6%	3.6%	17.9%	14.3%	21.4%	3.6%	3.6%
Domestic Holdings	16.3%	6.1%	2.0%	12.2%	20.4%	6.1%	6.1%	14.3%	6.1%	10.2%
Domestic private ownership	14.8%	7.4%	13.0%	14.8%	20.4%	7.4%	9.3%	5.6%	3.7%	3.7%
Foreign ownership	16.0%	9.9%	13.0%	13.0%	16.8%	7.6%	6.9%	7.6%	5.3%	3.8%
Sample	16.0%	9.2%	9.5%	12.2%	16.8%	8.4%	8.0%	9.9%	5.0%	5.0%

**Figure 5. Distribution of companies by using social media**

median values are 3.5 and 3, respectively. The median value for state-owned companies is 5.

Among the most used social networks are: Facebook – 13%, Instagram and Twitter – 4%, YouTube – 5% and LinkedIn – 1%. On average, social networks use only 25% of the total sample.

4.3. Smart specialization and investor relations

For the effectiveness of communications between different stakeholders involved in the investment process, you can use different tools of investor relations. Smart specialization, providing various communication activities promotes cooperation between the above participants in the investment process. Analyzing the data of the European Commission on activities that take place in the framework of smart specialization, we can identify the following key tools investor relations: online dialogues, online conferences, online sessions, online workshops, online presentations, world cafes, annual lectures, online consultations, webinars (partner webinars). It should be noted that the organizers of such meetings are either local authorities or representatives of civil society (this determines their role in the investment process). Smart specialization activities are essentially

communication platforms for innovative businesses and inventors.

5. Conclusions

The research shows that there are several global trends in investor relations: 1) investor relations contribute to the transformation of startups and SMEs into large companies; 2) growing interest on the part of investors in direct communication with business, where they will invest (the institution of intermediation has weakened); 3) the emergence of online platforms for meetings with investors; 4) growing demand for alternative data from institutional investors (credit card sales, web scraping, web traffic, email scraping, social sentiment, satellite data); 5) increasing requirements for transparency of companies by investors, as well as the environmental and social components of their activities; 6) regional specifics and types of investors play huge role in choosing of investor relations tools.

The analysis of individual companies in Ukraine shows that different groups of companies apply investor relations policies differently. In our opinion, the determining factors of this process are the quality of corporate governance, the need for access to external financing markets and the number of shareholders. Thus, the recent reform of public sector enterprises has led to the strengthening of their supervisory boards, increased transparency, which is reflected in the strengthening of IR. On the other hand, companies that have one (or only several) owners do not need to increase IR.

Although investor relations of different companies are different, but the methods and tools of policy are the same. Smart specialization of regions, acting as a meeting place for investors, is also a tool for investor relations. And here it operates as a common tool for all key stakeholders involved in this process.

Further research should focus on different communication tools with different stakeholders.

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PRINCIPLES AND PROBLEMS OF FINANCIAL PROVISION OF EDUCATION TO PERSONS SENTENCED TO IMPRISONMENT

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Abstract. *The purpose of the article* is to study the economic and legal problems of financing the education of persons sentenced to imprisonment, realization of their constitutional right and to propose to eliminate existing gaps in the legislation. *Methodology.* The survey is based on an analysis of the principles of financing education, including prison education, on the procedure and problems of financing education for persons sentenced to imprisonment. The principles, good practice and problems of providing educational services in Singapore, Japan, Hong Kong, South Korea, Finland, the Netherlands, Canada, Poland, Germany, Ireland, Great Britain, the USA, Estonia, Kazakhstan, Ukraine, the Russian Federation are considered. Sourcing of education (state, non-state and mixed) are investigated. The analysis of macro indicators of social and economic development of the countries, in which certain system of financing of education operates, is carried out. Emphasis is placed on the fact that the country's development largely depends on the share of gross domestic product spent on research. Only if the cost of science exceeds 0.9% of gross domestic product, it can be said about the impact of science on the development of the state economy. It is concluded that most European countries use the so-called principle of "funding formula", according to which the state allocates financial resources to higher education institutions in amounts determined by special indicators, such as high quality of education, number of students, labor intensity and material consumption of the education process. *Results.* In the process of studying the state policy on financing the educational system, it has been concluded that the most developed countries with a sufficiently high level of gross domestic product per capita have the state system of financing higher education. The main positive feature of penitentiary educational systems is their focus on the prisoner as an individual to provide his or her needs, the opportunity to acquire professional skills and, in the future, to integrate into society and restore his or her social status easily. The authors also conclude that due to certain difficulties in obtaining education by prisoners, namely, most of these persons cannot get an education because they are in isolation from society, their attendance at school is impossible, the way out of this situation is distance learning. *Practical implications.* Proposals have been made, according to which higher education for persons sentenced to imprisonment should be regarded as paid activity along with work, and the possibility of obtaining distance education should be enshrined in law. *Value/originality.* The article provides proposals for amendments to the legislation in the field of education for persons sentenced to imprisonment in some post-Soviet countries for the harmonization of regulations.

Key words: right to education, system of education, sourcing, budgetary facilities, imprisonments, realization of right to education.

JEL Classification: A12, A13, D63, H52

1. Introduction

Persons sentenced to imprisonment remain citizens of their state, and, accordingly, they are subject to all rights, legitimate interests and legal obligations of human and citizen, except for restrictions related to the fact of their imprisonment.

One of the purposes of imprisonment of a person who has committed a crime is his or her correction and

resocialization. Correction is the process of positive changes that occur in the personality of the offender and create his or her readiness for self-directed law-abiding behavior. In turn, resocialization is a conscious restoration of a prisoner in the social status of a full member of society, his or her return to an independent generally accepted social normative life in society (Criminal Executive Code of Ukraine, 2004).

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The Constitution of each developed country provides the rights and responsibilities of human and citizen, including the right to education. In most European countries, the country ensures a complete general secondary education accessible to everyone. There is also state funding not only for preschool, complete secondary education, but also vocational and higher education (Maklakov, 1999).

In view of the above, it can be argued that persons sentenced to imprisonment have the right to education, as well as any other citizen of the country.

The following scientists devoted their scientific works to the study of problems related to ensuring the right to education of persons sentenced to imprisonment: H. A. Avanesov, M. L. Ahranovych, Yu. M. Antonian, V. A. Badyra, A. V. Bailov, O. I. Bohatyrova, V. O. Boniak, O. V. Vakulenko, O. V. Haltsova, A. V. Hradetskyi, O. V. Honcharenko, D. V. Zahula, Ya. S. Ivashenko, O. M. Kozhevnykova, Yu. O. Matvieieva, O. V. Poletaiev, A. Kh. Stepaniuk, S. V. Siur, A. V. Fadieieva, etc. When representing significant scientific value, most studies lack the implementation of the right to education by persons sentenced to imprisonment and the problems of its sourcing.

The purpose of the article is to study the economic and legal problems of financing the education of persons sentenced to imprisonment, realization of their constitutional right and to propose to eliminate existing gaps in the legislation.

2. Modern principles and problems of sourcing the educational system

Effective education of the population of any country acts not only as a driving force of political, economic, technical progress, but also as a basis of national consciousness, patriotism, desire of constant self-improvement and increase of the country's potential. Knowledge, information and the ability to use them correctly are the greatest resource and factor of economic growth. Education performs one of the most important functions: to provide the state with the necessary qualifications (Kozarezenko, 2010).

World experience shows that most of the country's development largely depends on the share of gross domestic product (hereinafter referred to as GDP), which is spent on research, and only if the cost of science exceeds 0.9% of GDP, it can be said about the impact of science on development of economics (Malitskyi, 2004). However, not every state is able to create the necessary conditions for the development of science and sufficient funding for education.

Given the above, it is worth paying attention to the principles of financing the educational process in countries with the best educational systems, including the United Kingdom, Hong Kong, Ireland, Canada, the Netherlands, Germany, South Korea, Poland, Singapore, Finland, Japan and some others.

According to the official world ranking of education, we currently have the following situation. The first place is occupied by Singapore, then: 2. Hong Kong; 3. South Korea; 4. Japan; 5. Taiwan; 6. Finland; 7. Estonia; 8. Switzerland; 9. the Netherlands; 10. Canada; 11. Poland; 12. Vietnam; 13. Germany; 14. Australia; 15. Ireland; 16. Belgium; 17. New Zealand; 18. Slovenia; 19. Austria; 20. the United Kingdom; 21. the Czech Republic; 22. Denmark; 23. France; 24. Latvia; 25. Norway; 26. Luxembourg; 27. Spain; 28. Italy; 29. the USA; 30. Portugal; 31. Lithuania; 32. Hungary; 33. Iceland; 34. Russia; 35. Sweden; 36. Croatia; 37. Slovakia; 38. Ukraine; 39. Israel; 40. Greece, etc. The states of Africa were the last (Kohlman, 2015).

This result is particularly surprising, given that until the 1960s, Singapore had one of the highest levels of illiteracy. It is safe to say that an effective educational system plays a key role in the country's success. The Singapore government does not spare funds for the education of its citizens. Every year, 12.1 billion USD is invested in this area (Kohlman, 2015).

In general, in many Asian countries, schools expect high results from each student. There is a lot of impulse, focus and consistency, as these countries are able to attract the most talented teachers, which accordingly implies a high level of sourcing for the educational system (Kohlman, 2015). For example, Japan, a country with the highest level of technology, has such potential, not least due to reforms in the educational system. In this country, the educational model has been completely changed and an effective system of quality control has been created. The literacy rate in Japan is 99.9%, despite the fact that only primary education is compulsory (The best Educational Systems in the World, 2018).

The people of Hong Kong have the highest IQ on the planet. This country is characterized by high achievements in the field of technology due to the excellent educational system. Education in Hong Kong is built on the same model as in the United Kingdom. It is under the control of the Bureau of Education and the Department of Social Security. 12-year education is compulsory in the state. The government encourages private primary and secondary schools that have achieved a fairly high standard of education. Such schools are awarded a subsidy, which is provided according to the number of students (The best educational systems in the world, 2018).

South Korea's educational system is developing rapidly. The country is the leader in the number of people obtained higher education. Education is the main life position of the country's population. The schools have the most comfortable conditions for learning, in particular, each student is provided with a personal locker, primary classes are taught separately from secondary and high school, each class of primary school has a special place for recreation and a creativity

area. Elder students study in rooms equipped with a TV, blackboard and, in some cases, an interactive screen. Schools have a football field, a sports field, and in addition, there may be a swimming pool, archery and golf court, a small garden or a mini-arboretum, which is cared for by children. The annual budget for education in South Korea is 11.3 billion USD (Khshanovych, 2018).

Finland implements a special approach to the educational process, which is expressed in the fact that schoolchildren and students are given maximum freedom. Education is free, food is also provided if the student is present at school full time. The country pays great attention to attracting applicants to higher education institutions. Finland has a fairly large budget for education: 11.1 billion EUR per year (Yurchenko, 2019).

The educational system of the Netherlands is efficient. Firstly, educational institutions in this country are divided into religious and public. Education is free at all levels. In some cases, private schools still require tuition fees, including for additional educational services. A feature of the educational system in the Netherlands is that students under the age of sixteen are required to devote a full day to education. In the future, they have the right to choose the opportunity to receive higher education and, accordingly, to study full or part time freely (The best educational systems in the world, 2018).

In Canada, the quality of education is quite high, as the government pays great attention to its standards. Education is mainly funded by the government of each individual province. The Canadian educational system is unique as it integrates materials from different cultures into the curriculum, so students have the opportunity to perceive the world from different perspectives from childhood (Yurchenko, 2019).

Poland is the first country in the world to have its own Ministry of Education. This state has high literacy rates. Compulsory education lasts 9 years. After graduation, a person has the opportunity to enter a lyceum or college. Polish higher education is recognized in many countries due to its consistently high quality. The European system of higher education is practiced in the country. There are two admission campaigns per year to higher education institutions, which avoids the loss of a student for the entire academic year. 70% of Polish students are taught in English (The best educational systems in the world, 2018).

The German educational system is deservedly considered one of the best in the world. Compulsory education in the state lasts 9 years. As for the German higher educational system, it is funded by the state and belongs to the institutions of public administration. The number of private higher education institutions is about 10% of the total. They are, in most cases, related to legal and economic specialties. 10% of the budget of German higher education institutions comes from the

federal government, and 90% - from the federal lands. The German government is also making significant investments in the development of domestic science. Thus, in 2005, an additional 6 billion EUR was allocated for the government's Best of the Best program (Otroshchenko, 2018).

Ireland's educational system is also considered one of the best, as education in this country is absolutely free at all levels, including higher education and colleges. Currently, the emphasis in education is on learning and teaching in Irish. In the state, education is compulsory for all children. All educational institutions, including private ones, are fully funded by the government in order to provide free and quality education at all levels and to all residents of the country (The best educational systems in the world, 2018).

The UK is well known around the world for the quality of its education not only at the school level but also at the higher education level. University of Oxford is the number one university in the world. In the UK, education is largely funded by the state. There is also a form of sourcing such as a grant, which is issued taking into account the government's priorities for the development of science and education. The award of the grant mainly depends on the indicators of the number of students, the complexity and material intensity of their education. Also, significant financial resources are allocated to support talented youth (Malik, 2014).

The United States ranked 29th in the above ranking, behind successful European countries in terms of schooling, indicating the need to improve the quality of education in the country, especially given that according to a study by the National Center for Quality of Personnel Education increasing the level of education of employees by 10% improves their productivity by 8.6%, while increasing the same amount of investment in technical equipment leads to the development of productivity by only 3.4% (First Findings from the EQW National Employer Survey, 2017).

Among the countries of the post-Soviet space, the Estonian educational system is the most effective, which ranks seventh in the world education ranking. According to the results of PISA in 2015, this country is among the ten countries that have shown the greatest success in mathematics, science and reading, ahead of Finland. The Estonian educational system is characterized by such a feature that it strives for the maximum equality of its citizens, in particular with regard to ensuring the right to education. Education in Estonia, as in other Nordic and Baltic countries, is financed from the state budget. Private funding amounts a small share (Yurchenko, 2019).

In a post-Soviet state such as Kazakhstan, despite the financial crisis of the last 10 years, significant financial resources have been allocated for education. Budget funding for education increased by 10.7% and amounted to 627.3 billion KZT (Tuimebaiev, 2019).

It is concluded that most European countries use the so-called principle of "funding formula", according to which the state allocates financial resources to higher education institutions in amounts determined by special indicators, such as high quality of education, number of students, labor intensity and material consumption of the education process, etc. (Yashchuk, 2019).

Thus, the effective provision of education of the population determines the rapid development and strengthening of the countries' economic position. However, if the provision of full general secondary education to the population, in civilized countries, is the responsibility of the state, the sources of funding for education, especially higher education, can be different, namely: public, private and mixed.

Public funding is possible in the form of: direct funding; additional allocations for certain categorical programs or activities; grants or subventions; targeted allocation of special material resources; granting benefits; granting a place in a higher educational institution by competition; implementation of specific programs for financing education (lending, voucher education, providing food for low-income children, etc.); according to a formula that takes into account certain quantitative and qualitative indicators

of educational activities of a particular educational institution (Urusova, 2013). The system of public funding of higher education is effective, for example, in Germany, Norway, France, Sweden.

Implementation of non-public funding is possible as follows: funding for training in accordance with the concluded agreement on retraining; providing subsidies from local budgets; allocation of funds received by the educational institution for research or other work performed on behalf of organizations, enterprises, institutions or citizens; receiving income from the sale of products of training and production workshops, laboratories of enterprises; receiving funds from the lease of premises, buildings, equipment of the educational institution; payment for the provision of additional educational services or services to provide greater comfort during training; lending and lending by banks; receipt of dividends from securities and income from placement on time deposits of temporarily free funds; receiving by the educational institution from enterprises, institutions, organizations or citizens of voluntary monetary contributions or material values, in the order of sponsorship (Urusova, 2013). Such a system of financing higher education exists, in particular, in Australia, South Korea, the United States, and Japan.

Table 1

Macro indicators of socio-economic development of states with a state system of sourcing higher education

Country	Population	GDP (mln USD face value)	GDP (mln USD per capita)	Public expenditure on education (% of GDP)	Government spending per 1 student (USD)
Germany	82800000	3466639	48111	4.81	6872.53
Norway	5258317	370449	69249	7.55	13811.01
France	67013000	2463222	42314	5.46	6590.46
Sweden	10053200	511397	49836	7.55	14280.05

Table 2

Macro indicators of socio-economic development of states with a non-public system of sourcing higher education

Country	Population	GDP (mln USD face value)	GDP (mln USD per capita)	Public expenditure on education (% of GDP)	Government spending per 1 student (USD)
Australia	24458800	1258978	48899	5.32	5948.92
South Korea	51446201	1411246	37740	5.25	7289.88
USA	324973000	18569100	57436	4.99	6522.3
Japan	126790000	4938644	41275	3.47	3047.7

Table 3

Macro indicators of socio-economic development of states with a mixed system of sourcing higher education

Country	Population	GDP (mln USD face value)	GDP (mln USD per capita)	Public expenditure on education (% of GDP)	Government spending per 1 student (USD)
Great Britain	65110000	2629188	42481	5.54	4120.21
Canada	36539100	1529224	46437	7.1	15004.05
Ispaña	46812000	1232597	36416	4.28	4076.34
Italy	60599936	1850735	36833	4.08	5396.7

The mixed system of financing higher education is typical, for example, for Great Britain, Canada, Spain, Italy, and the post-Soviet states.

If we pay attention to the dependence of the types of financing of higher education on the macroeconomic indicators of socio-economic development of a particular state (in% of GDP) (Zhuravel, Shynkaryk, 2020), we see the following result.

Expenditures on financing education at the expense of the state are provided by a separate item of the state budget. It is clear that the level of funding for education directly depends on the state budget. Therefore, the state system of financing higher education has the most developed countries with a fairly high level of GDP per capita. Unfortunately, not all countries have the ability to provide adequate funding for the educational system. In many cases, public funding is insufficient to implement all necessary educational programs, and attracting private investors makes educational institutions dependent on the latter. If we pay attention to the problems of financing higher education, for example, Ukraine, we can note the following. Despite the fact that the state has a fairly extensive and powerful system of higher education institutions of all forms of ownership, the share of their funding from the state is insignificant, and this percentage decreases every year. Over the last five years, budget funding for higher education in Ukraine has decreased (in% of GDP) from 9 to 5.4%. And this is not surprising, especially considering that, for example, in 2016, Ukraine ranked 138th out of 189 countries in terms of GDP per capita (Kononenko, 2017).

In financing education, the state sees a socio-political component rather than investing in human potential, which threatens the country's development. Therefore, in order to ensure sufficient funding for education, in addition to budget funds, it is necessary to attract more funds from other sources of funding (lending, loans, grants, etc.).

And, for example, the main problems of the educational system of the Russian Federation (hereinafter referred to as Russia) are the lack of independence of recipients of budget funds and low managerial and financial and economic qualifications of managers of the educational system (Kaleniuk, 2017).

Based on the above, we can conclude that education is an important factor in economic and technological progress of any state. Each country has its own educational system, which is consistent with the national system of budget policy and its traditions.

3. Principles and problems of sourcing education for persons sentenced to imprisonment

As noted above, persons sentenced to imprisonment have equal rights with other citizens of the state, except

for those rights that are limited by a court decision or by law. Therefore, like other citizens, such persons have the right to education. For the most part, such a right is explicitly stipulated in the relevant legislation of the country. For example, in accordance with Art. 8 of the Criminal Executive Code of Ukraine "Basic rights of convicts", convicts have the right: in penitentiaries, in accordance with the laws of Ukraine "On Education" and "On General Secondary Education", to ensure the availability and free of charge of full secondary education. General education and vocational training of convicts is carried out to promote the development of the individual, in order to correct and resocialize the person. In addition, it provides a system of knowledge, skills and abilities in the field of a particular speciality, which will be needed by a person after release (Criminal Executive Code of Ukraine, 2004). Convicts who wish to improve their general education level, regardless of age, are provided with conditions for self-education, given the opportunity to study in general educational institutions of colonies created by local executive bodies and local governments in accordance with their needs and with the necessary logistical and scientific methodical base, pedagogical staff in the manner prescribed by the Cabinet of Ministers of Ukraine (Part 2 of Art. 125 of the Criminal Executive Code of Ukraine). In addition, secondary schools of three levels are formed in educational colonies. Textbooks, notebooks and stationery are provided free of charge for convicts who study in these schools. For convicts who do not have a vocational profession for which they can be employed in this colony, it is possible to train in vocational training courses for workers in the workplace (Criminal Executive Code of Ukraine, 2004).

It can be noted that in this part the norms of the penitentiary legislation of Ukraine generally correspond to the European penitentiary rules, according to para. 28.1 of which each penitentiary institution should strive to provide all prisoners with access to educational programs which should be as comprehensive and meet individual needs of the prisoners and their aspirations. Para. 28.3 emphasizes that special attention should be paid to the education of young prisoners as well as prisoners with special needs (European Penitentiary Rules, 1987). And, according to the Standard Minimum Rules for the Treatment of Prisoners, "Prisoners who are able to benefit from this should be provided with the opportunity for further education, including religious education, in countries where this is permitted. Education of illiterate persons and young people should be considered compulsory, and prison authorities should pay special attention to it; the education of convicts should, as far as possible, be linked to the country's educational system so that released prisoners can continue their studies without complications" (para. 77) (Chechyn, 2016).

In the case of training of convicts not only the constitutional right to education is realized, but also the horizons of the latter are expanded, it is possible to see and assess the existing reality, new needs of persons are formed, which can contribute to further correction and resocialization of the prisoners, which has a positive effect on increasing their employment. But the education of convicts has its own specifics, which concerns not only the process of its actual implementation but also funding. The main problem with such training is that the person is isolated from society. In addition, on the one hand, giving convicts the opportunity to receive education is a manifestation of humane treatment (humanization of the penitentiary system), on the other hand, often the need to receive education is perceived by prisoners as an additional punishment (Chechyn, 2016). In addition, in countries with insufficient budget support for the educational system, prisoner education is funded on a "residual basis". Therefore, the experience of those countries in which the level of GDP per capita is quite high, and at the same time, whose policy in the field of realization of the right to education of persons sentenced to imprisonment, has certain call points and standards may be useful. For example, in Finland a lot of attention is paid to the re-education and resocialization of convicts, significant funds are allocated for their training, various forms and methods of training are used, and special training courses are developed. Prisoners have the opportunity, if necessary, to study during working hours. External educational institutions are involved in cooperation (Yunkari, 2004). The main purpose of education in Finland, for the further resocialization of convicts, is to increase or improve their vocational skills. Convicts receive general education in this country, as in many other countries of the world, free of charge. In prison, they also have the opportunity to prepare for university entrance exams and, if successful, to continue their education there, even while in prison. If the prison library does not have the necessary literature to prepare for admission, prisoners can buy books in educational institutions or public libraries. In some cases, convicts may be allowed to study or work outside the prison without additional supervision (Shevchenko, 2015).

In German prisons, a large percentage of prisoners do not even have compulsory basic education. In order to remedy this situation in prisons, convicts are provided with education using an individual approach to each, which involves the development of a number of educational programs. General education is free. Convicts also have the opportunity to receive higher education. The end of a prisoner's vocational training occurs at the same time as the end of his sentence, so that a person can, immediately after release, integrate normally into public life. The organization of professional training of convicts and their professional development in places of imprisonment in Germany is carried out

jointly by the administration of these institutions and a special trade union (Pshenychka, 2019).

Swedish prisons have all the necessary conditions for convicts to receive education. Vocational education is provided to prisoners at their request and is paid for from the budget. Distance learning and individual approach are used. A personal training program is developed for each prisoner, taking into account his or her needs, which can be continued after release. If a convict wishes to continue his or her education after release, he or she must inform the prison administration in advance in order to organize his or her admission to the relevant educational institution (Shevchenko, 2015).

In France, secondary education is compulsory, including for prisoners. The French penitentiary system is part of the Ministry of Justice and reports to the Prison Administration. It consists of 9 regional directorates, one mission dealing with overseas departments and territories, and one National School of Prison Administration. 186 institutions are subordinated to the prison administration, of which 119 are remand prisons, 55 are institutions for serving criminal sentences, 12 are autonomous centers of semi-free regime and one public institution of national health care (Aleksandrov, 2004). Much attention in French prisons is paid to the training of prisoners. Ensuring this opportunity is mainly entrusted to the organization of the GRETA system of National Education (Alexandrov, 2005). The main task of this organization is to ensure lifelong learning.

In the United States, the educational system in prisons is provided in a decentralized manner, which, in addition to federal prisons in the states, provides for local and private prisons. In order to adapt and resocialize convicts, they are provided with psychological services, education is provided in accordance with school and university curricula, the process of professional training is organized, they are given the opportunity to participate in religious groups, industrial production and agricultural work. Scholarships are paid to convicts during their studies at vocational training centers. Convicted persons who have not been prosecuted for a long time have the right to request free vocational training through the administration of the departments (Pshenychka, 2019).

The main positive feature of penitentiary educational systems is their focus on the prisoner as an individual to provide his or her needs, the opportunity to acquire professional skills and, in the future, to integrate into society and restore his or her social status easily. The most effective for places of imprisonment is the training of a convict by distance learning. The advantages of this method of education, first of all, are: providing prisoners with equal opportunities with other citizens to obtain education, ie the realization of their constitutional right; providing prisoners with an additional guarantee of choosing a profession after release; opportunity to practice at a convenient time and in a convenient place

and mode; providing an unregulated period of time for the study of the discipline, which in the conditions of places of imprisonment is very relevant and so on (Hradetskyi, 2015). But such training requires the provision of appropriate information technology, which involves the allocation of significant financial resources. The budgets of many states cannot even afford to fund the education of prisoners. Therefore, it can be assumed that it is necessary to look for other sources of funding for education in prisons. Thus, if a person works in prison and receives a salary, a person could provide funding for his or her own education. However, if we draw a parallel in this area between the penitentiary system, for example, France and Russia, we can see that the latter prisoners are deprived of such an opportunity. The salary of French prisoners is about 300 USD a month, while in Russia it is about 10 USD. In addition, in French prisons, prisoners do not pay for food, while in Russia the state takes a significant portion of food from the salaries of convicts.

But when financing the penitentiary system of education, problems arise not only due to insufficient funds, but also due to inconsistencies in legislation in this area. Thus, for example, according to the Order of the Ministry of Justice of Ukraine No. 2823/5 dated August 28, 2018 "On approval of the Rules of Procedure of penitentiary institutions", convicts have the right to receive education in accordance with the legislation on education (para. 2). At the same time, the Ukrainian legislation (Criminal Executive Code of Ukraine, 2004) deals only with the types and forms of education, but there is no indication of the procedure and methods of education. According to the law, the only way to obtain higher education in places of imprisonment in Ukraine is distance learning, given the lack of financial capacity to provide all the necessary technical base. Therefore, the legislation of Ukraine requires clearly defined rules for the education of persons sentenced to imprisonment.

There are other difficulties in obtaining education for prisoners. Most people sentenced to imprisonment cannot get an education because they are in isolation from society, and therefore it is impossible for them to attend school, because convicts are obliged to adhere to the regime of the penitentiary institution. Distance learning is a way out of this situation. But it not only needs funding, it also takes a long time. Therefore, attention should be paid to the experience of Finland, where prisoners have the opportunity to study during

working hours. The European Penitentiary Rules also state: "Under the internal regime, the status of education must not be lower than the status of work, and prisoners must not be financially oppressed or otherwise involved in educational programs" (para. 28.4) (European Penitentiary rules, 1987). If the planned regime for convicts provides for their participation in educational or other programs during working hours, they should receive a monetary reward for it, as for work (para. 105.4.) (European Penitentiary Rules, 1987). That is, obtaining higher education by persons sentenced to imprisonment should be regarded as paid activity along with work, and the possibility of distance education should be enshrined in law, in connection with which the current criminal executive legislation of Ukraine needs to be amended.

4. Conclusions

The state policy on financing education, in particular, persons sentenced to imprisonment and exercising this constitutional right has been studied. The general characteristic of principles of financing of system of education in such countries as: Singapore, Japan, Hong Kong, South Korea, Finland, the Netherlands, Canada, Poland, Germany, Ireland, Great Britain, the USA, Estonia, Kazakhstan, Ukraine, the Russian Federation is given. Sourcing of education (state, non-state and mixed) are investigated. The analysis of macro indicators of social and economic development of the countries, in which certain system of financing of education operates, is carried out. The positive experience of providing educational services to persons sentenced to imprisonment in Finland, Germany, Sweden, France, and the USA is analyzed. Problems and peculiarities of providing educational services to persons sentenced to imprisonment in some post-Soviet states have been studied. In the course of the research it was concluded that the most developed countries with a sufficiently high level of GDP per capita have a state system of financing higher education. The main positive feature of penitentiary educational systems is their focus on the prisoner as an individual to provide his or her needs, the opportunity to acquire professional skills and, in the future, to integrate into society and restore his or her social status easily. The most effective for places of imprisonment is the training of a convict by distance learning.

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A SOCIAL STATE IN THE COUNTRIES OF CENTRAL EASTERN EUROPE AND IN UKRAINE: ECONOMIC AND POLITICAL FACTORS

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Abstract. The subject of the research is the economic and political factors of the welfare state in the countries of Central and Eastern Europe and in Ukraine. *Methodology.* The work used a comparative approach, which made it possible to study the development of social states in Central and Eastern Europe, in Ukraine, to identify their similarities and differences. The institutional approach made it possible to consider the problem as a multidimensional socio-political phenomenon, to highlight functionally and systemically important elements and to study their mutual influence. *Results.* The purpose of the article is to analyze the prospects of the welfare state in the countries of Central and Eastern Europe and Ukraine, the influence of political and economic factors on its development. To achieve this goal, the following research tasks were set: to consider the issue of the influence of democracy on economic and social development; analyze the role of the state in socio-economic processes; to study the experience of socio-economic reforms in the countries of Central and Eastern Europe, which began their reforms almost simultaneously with Ukraine, and to find out why the success of their reforms is much higher than those achieved in Ukraine; clarify the reasons for the failure of reforms in Ukraine. It is shown that democracy does not affect economic growth; at the same time, democracy is the guardian of economic and social stability. It is substantiated that the welfare state provides citizens with protection that they will never receive from the state: the “night watchman”. As world experience has shown, the market does not guarantee the protection of the economy from crises and is not a panacea for eliminating the consequences. Sometimes, the market can even pose a threat to society, for example in the field of ecology. Thus, the actions of market forces and the interests of society do not always coincide. It is argued that the idea of a stable causal relationship between the reduction in the state’s participation in the redistribution of national income and an increase in economic growth is erroneous. Failures of economic and social reforms in Ukraine are explained by the fact that their liberal version was chosen, the consequences of which can be characterized as catastrophic. The low level of professionalism of reformers and corruption also played a negative role.

Key words: welfare state, liberal politics, social and economic reforms, democracy.

JEL Classification: H53, I31

1. Introduction

The relevance of the article is due to the fact that the economic situation in Ukraine continues to deteriorate. This condemns millions of Ukrainian families to a miserable existence. Thus, according to the forecasts of the United Nations Children’s Fund (UNICEF), the poverty level in Ukraine may grow from 27 to 44%. (Combating COVID-19...). The Ministry

of Social Policy of Ukraine has denied the UNICEF forecast, which, in its opinion, is based on an incorrect methodology. However, the Ministry’s statement that “38.5% of Ukrainian residents in 2019 lived on less than 2,000 UAH per month and in 2020, there will be 45% of them” does not cause optimism (UNICEF: it actions are not taken...). This means that the social programs implemented in Ukraine do not fulfill their

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main task – to protect vulnerable segments of the population from economic difficulties.

In this regard, the purpose of the article is to analyze the prospects of the welfare state in the countries of Central and Eastern Europe and in Ukraine, the impact on its development of political and economic factors. To achieve this goal, the following research tasks were set: to consider the issue of the influence of democracy on economic and social development; analyze the role of the state in socio-economic processes; to study the experience of socio-economic reforms in the countries of Central and Eastern Europe, which began their reforms almost simultaneously with Ukraine, and to find out why the success of their reforms is much higher than those achieved in Ukraine; clarify the reasons for the failure of reforms in Ukraine.

Foreign scientists have made a great contribution to the development of political and economic aspects of the welfare state, such as R. Dahrendorf, J. Rawls, E. Harms, F. Neumann, G. von Haferkamp, G.-G. Hartwig, W. Abendroth, K. Lenk, G. Brown, M. Niehaus, G. Ehrenberg, A. Fuchs, M. Speaker, G. Vilensky, C. Lebeau, R. Titmus, A. Evers, I. Svetlik, P. Baldwin, J. Barnes, B. Wattenberg, K. Espin-Andersen, A. Hicks, J. Misra, Tang Nah Ng and many others.

2. Democracy – a consequence or a condition of socio-economic development?

Scientists have long wondered whether political freedom is a consequence or a condition for a high level of economic and social development. Some of them note that “political pluralism and democratic regulation of markets are far from indicators of automatic success in meeting certain human needs” (Deacon, Hulse, Stubbs, 1999). And this is clearly seen in countries such as South Korea, China and Cuba. Despite the fact that these countries lack stable democratic institutions and guarantees of some human rights, they have made great strides in improving human development. The experience of these countries allowed researchers to conclude that the key to their success was state management of socio-economic development, and not socialist ideology. Also, examples of a high level of economic freedom without democracy are Hong Kong and Singapore, which topped the world ranking “Economic Freedom of the World – 2020” (In the Economic Freedom of the World rating...).

As B. Deacon and others point out, the results of such studies depend on what is meant by human needs. When it comes to the right to political pluralism and freedom of speech, the successes of political regimes have a different meaning than under the condition that human needs mean the need for health (longevity), and personal freedom means access to profit and mastery of

writing. In the latter case, “the democracy of political pluralism in developing countries is not a prerequisite for meeting human needs” (Deacon, Hulse, Stubbs, 1999). Thus, the question of the relationship between democracy and social development is very controversial, and, perhaps, this can be considered one of the reasons for its popularity among scientific researchers who have devoted many of their works to this problem.

J. Healey and M. Robinson in their well-known work “Democracy, Governance and Economic Policy” note that “there is no evidence that for (developing) countries that achieve economic growth faster or reduce income inequality, the most important factors are effective management, clear understanding of decisions and political stability” (Deacon, Hulse, Stubbs, 1999).

The famous economic growth theorist R. Barro also studied the influence of democracy on economic growth. In his opinion, “...the idea that democracy in terms of suffrage is necessary for economic growth is just as wrong as the statement that poor countries definitely need a dictatorship to break out of poverty... For a country with weak institutions, weak democracy and lack of rule of law, developing democracy is less important than strengthening the rule of law to stimulate growth and investment. Moreover, democracy does not appear to have a significant direct impact on strengthening the rule of law. Therefore, it cannot be argued that democracy is a key condition for growth, because it is necessary for the rule of law” (Barro, 2000).

Historical experience shows that sometimes autocratic rule can lead to deep economic reform and social welfare. But it is also known from this experience that, over time, high levels of economic growth and human development are complemented by greater political freedom. And this is understandable, since an economically independent person thinks independently. Research findings confirm that countries with a high human development rate are also generally characterized by a high level of political freedom. As F. Fukuyama writes, the development of a market economy is not the cause of stable democracy, but rather depends on the social capital that has been formed earlier. “If public capital is abundant, both markets and a democratic political system will develop successfully, and then the market will really be able to play the role of a school of public behavior and help strengthen democratic institutions” (Fukuyama, 1999).

So, the question of the dependence of democracy and economic growth continues to be controversial. Proponents and opponents of the idea that democracy affects economic growth have strong arguments. We would venture to suggest that, nevertheless, democracy has a beneficial effect on economic development. This argument is supported by the fact that virtually all economically developed countries are liberal democracies.

3. Economic reforms and prospects for the welfare state in Central and Eastern Europe

B. Deacon, M. Hulse and P. Stubbs, examining the situation in the countries of Central and Eastern Europe, believed that, probably, in these countries, economic, cultural and historical reasons would be an obstacle to achieving the ideal combination of democratic politics and meeting human needs so, as happened, for example, in Sweden. Therefore, the choice between democracy and human development can always exist (Deacon, Hulse, Stubbs, 1999).

F. Fukuyama considered one of the problems of the CEE countries that they tried to create democratic political institutions without an efficiently functioning capitalist economy, including private enterprise, the market and competition. The result of this may be an increase in the level of poverty and the emergence of difficulties with the formation of various forms of public support, without which the normal functioning of democratic institutions is impossible (Fukuyama, 1999). The common thing in the history of democratization of the CEE countries and Ukraine is that the liberal Western democracy imposed their democratic institutions on them without taking into account national, sociocultural specifics. As a result, the adaptation to Western democratic models has not been completed yet.

The countries of Central and Eastern Europe (CEE), despite the lack of experience in reforming the command-administrative system, due to successful socio-economic policies, were able to make their economies a market economy. This success is due to the fact that with the help of democratization of state administration, it was possible to preserve the capacity and power of the authorities as such. The results of socio-economic reforms are especially successful in the Visegrad Four countries, which are considered the driver of effective changes in the region.

Having chosen the path of socio-economic reform of the country in the end of the twentieth century, the CEE countries had a strong motivation to become members of the European Union. In their economic development, they had a choice between two models: liberal and social-market.

The liberal model based on radical measures, the so-called "shock therapy", was chosen by Poland, the Czech Republic, Bulgaria, and Romania. The roadmap for liberal reforms has become the task of creating a market economy, total privatization and cutting social programs. However, practice has shown that the observance of the principle of "privatize as much as possible" in economic policy is not the best way to form real market actors and often leads to the emergence of an extremely irrational corporate governance system. It is necessary to create favorable conditions for the functioning of the private

sector, but at the same time, attention should be paid to the property that remains in the management of the state. Otherwise, the likelihood of criminalization of the entire economy of the country increases.

The liberalization of economic activity is an important condition for the formation of an effective market mechanism, but this alone is not enough. An analysis of the practice of reforms indicates a significant role of institutional transformations, including the real provision of property rights, existing antimonopoly legislation, etc. In the absence of institutional transformations, the scale of the development of the shadow economy and the criminalization of the economic sphere are growing. This explains the fact that in these states of the region, which have chosen the liberal model according to the principle of "state – night watchman", the growth of social injustice and social conflicts has increased.

Thus, since 1989, the countries of Central and Eastern Europe have tried to make a sharp leap into unregulated pluralistic democratically liberal capitalism. However, none of these countries managed to avoid an economic downturn, which negatively affected subsequent development. Liberal policies led to a drop in the level of production, an increase in income inequality, high unemployment, a fall in living standards, and a significant increase in mortality in most of these countries.

Under the influence of international financial organizations in the CEE countries (Poland, the Czech Republic, Slovakia), systemic political and institutional and economic reforms took place, which had a very painful effect on the social sphere. The market entered the education and health care systems, which could not but affect the well-being of the population. Wages have dropped significantly. In 1991, wages remained relatively high in Poland. In Hungary, Czechoslovakia, Bulgaria, Romania and Yugoslavia, it was 10-50% lower than the Polish one. (Iazhborovskaia, 2009). A tight monetary and tax policy was pursued.

In the context of the current Ukrainian situation, it is interesting that the CEE countries have been subjected to severe pressure from the European Union, which established external management in the CEE countries. Liberal democracy and market economy were proclaimed as the goals of political and economic reform. Obsessed with their desire to join the European Union as soon as possible, the CEE countries initially willingly imported democratic institutions and economic development models. The citizens of the CEE countries associated membership in the European Union with social well-being. However, the ensuing global economic crisis reduced the possibilities of the welfare state in these countries. This necessitated the intervention of a democratic state in socio-economic processes, which is one of the basic principles of the functioning of the social state. The ideological basis of the "welfare state" was the views of the English

economist J. Keynes, who substantiated the need for government intervention in the socio-economic sphere in order to prevent economic crises, unemployment, and improve the well-being of the population through the redistribution of income between different social strata (Keynes, 1993).

Lorenz von Stein, the founder of the theory of the welfare state, believed that “the welfare state is obliged to contribute to the economic and social progress of all its citizens, so the development of one is a condition for the development of the other, and it is in this sense that the welfare state is spoken of” (Von Stein, 1850).

The equality of citizens’ rights to participate in government is one of the ascertaining signs of democracy. This means that the social conditions that are created for citizens enable them to exercise their political rights. It is the social state that can create such conditions, the structure of which, along with the state, includes voluntary associations, non-governmental organizations, religious and private educational institutions, etc. The type of state depends on the degree of state intervention in the sphere of civil society. If we are talking about a “strong state”, it means that the government has agreed to take on greater responsibility for the welfare of citizens. If this responsibility lies with non-state bodies, then in this case we are talking about a “strong civil society”.

Supporters of strengthening the role of the state in socio-economic processes have a fairly weighty argument. The hopes for an unrestrained market have led to many negative consequences. As it turned out, the market is not omnipotent, especially during crises and downturns in production. It also became clear that in industries dominated by natural monopolies, the operation of the free market contradicts the criteria of the highest economic efficiency. I. Wallerstein wittily remarked about the attempt to turn the “market” into an idol capable of creating a common paradise on Earth: “all over the world, pretending to be a panacea for all social diseases. You do not have enough food, you are tired of officials and politicians, you are oppressed by thoughts about your own future, are you worried about a recent divorce? Try the market! Have you lost the peace of mind that your grandfathers had? Try the market.” It has long been no secret that the sphere of social security is not included in the range of interests of private business, and this is fraught with social tension and political instability (Andrain, 2000).

This explains the motivation of those CEE countries that preferred the social market model. It provides for the development of the social sphere: education, medicine, poverty alleviation, support of low-income groups of the population through a developed social protection system, etc. The Scandinavian countries and Germany have become a striking example of the success of the social market model.

The social market model became a reference point for the development of Hungary, for which it was very important to maintain economic and political stability. The roadmap for Hungarian reforms included measures to gradually create a mixed economy and a social market economy. As a result of this policy, Hungary was able to receive about 50% of the total volume of foreign investment placed in the CEE countries.

The 2008 economic crisis was a difficult test for all the CEE countries. It was understood that without the regulatory role of the state in the socio-economic sphere, the consequences of the crisis would become even worse. The countries of the region have launched various social programs to support the population. Special attention was paid to preserving employment, supporting pensioners, single mothers, and families with children, etc. As a result of socio-economic and political stability, economic growth began. Today, despite the pressure of international organizations, primarily the European Union, the countries of Central and Eastern Europe basically manage to balance between the recipes of the Washington consensus and the needs of the population of their countries.

In one of the latest regional reports of the IMF “Regional Economic Issues” it is noted that economic growth in the CEE countries is on the upward trend. At the same time, it is hampered by a shrinking workforce and low productivity. All of this slows down the rate at which these countries reach Western European income levels (Central and Eastern Europe...).

Due to objective economic and political problems, the CEE countries cannot hope to occupy a place among the economically developed countries in the foreseeable future. Nevertheless, the population of these countries can count on the welfare state to continue to protect them from difficult economic situations.

4. Economic reforms and prospects of the welfare state in Ukraine

As shown by the reforms carried out in Ukraine, the departure of the state from the economy led to the loss of the main protective and system-forming functions of serving the state to society. The characteristic features are an excessive increase in the bureaucratic apparatus, an increase in lobbying for the interests of certain groups of officials and associated economic structures in the economic and socio-political spheres. And this, in turn, has increased the level of corruption, which has penetrated all spheres of the Ukrainian society.

Reforms in all spheres of life in Ukraine took place at about the same time as in the CEE countries. After 1991, there was some euphoria in Ukraine about its prospects for future economic prosperity. A popular thesis was that Ukraine was the breadwinner of the entire Soviet Union, and now, having removed this burden, Ukraine

will be able to achieve its own socio-economic success. However, the real economic condition of the Ukrainian state in 1992 forced the country to become a member of the IMF and begin systemic borrowing from this organization. In exchange for financial assistance, the IMF gained control not only over economic policy, but also over the political sphere of Ukraine.

Unsuccessful economic reforms, a decline in production, as a result, a decrease in incomes led to a narrowing of the state's social responsibility to citizens, who were left alone with their problems. CEE countries in the process of reforms also faced such problems, but unlike Ukraine, they were able to cope with them. Already in the second half of the 1990s, the level of well-being in some countries (the Czech Republic, Poland, Slovakia) began to rise.

The social consequences of the reforms in Ukraine turned out to be heavy because Ukraine, like a number of countries of Central and Eastern Europe, chose the liberal version of socio-economic reform.

The spontaneous liberation of the market was not accompanied either by the formation of an efficient social protection system, or by a consistent industrial policy and employment policy that stimulated the efficient sale of labor resources. The consequence of this was, for example, a contradiction that arose and continues to gain strength between the still sufficiently high educational and professional-qualification potential of the population, on the one hand, and the deterioration of the conditions and quality of employment, on the other. The inevitable growth of social problems in these conditions is largely due to the growing underutilization of labor potential, its devaluation and gradual degradation.

The period of reform was characterized by the narrowing of opportunities for effective employment. In parallel with the growth of open and latent unemployment, there is an outflow of labor from the industries that ensure the preservation and development of the labor force, innovation and saturation of the consumer market. The expansion of the non-production sphere is due to the influx of workers into trade, public administration and the financial and credit sector.

The fall in the level of income and living standards of a significant part of the population as a result of the depreciation of labor potential is the most important criterion of social disadvantage. However, reducing the social costs of reforms to lost income lays the methodological basis for limiting social policy to the redistribution of a part of GDP in favor of the poorest strata. At the same time, attention should be paid to other aspects of this problem. Time has shown that a sharp decline in social protection of the population, for which Ukrainians were not ready, had a destructive effect on labor potential. The unpreparedness of the processes of privatization of the social sphere also played a significant role here, when the appearance of

paid services instead of free ones was not accompanied by a corresponding increase in wages.

It did not take into account the fact that freeing the market alone is not enough to form a new economy. The noted disparities in employment are generated by various factors and, first of all, the deinstitutionalization of the labor market, the weakness of the legislative framework, insufficient development of productive forces, and only as a result of this, the presence of monopolistic non-market elements. It seems that the normal functioning of the labor market is possible today only with a developed institutional infrastructure.

Almost 30 years after the beginning of the reforms, it can be stated that Ukraine has not managed to achieve the level of socio-economic success that was achieved by the CEE countries. The welfare state, which it proclaimed itself in Ukraine in Article 1 of the Constitution of Ukraine, did not take place. Throughout this period, the Ukrainian political elite was busy only with increasing their own well-being. All spheres of life in Ukraine turned out to be riddled with corruption. This is confirmed by the 126th place out of 180 countries in the ranking of the Corruption Perceptions Index-2019 (The Corruption Perceptions Index).

Low level of salaries and pensions, which does not correspond to prices for goods and services, commercialization of social services, high level of unemployment, and social insecurity of citizens – that is the situation in which Ukraine finds itself today.

In the rating "Economic Freedom in the World – 2020" Ukraine took the last place in Europe. Despite the fact that Ukraine has moved from 138th to 131st place, it is still the only European country in the group of the most economically not free countries. According to this rating, Ukraine has never managed to leave this group throughout its history (Economic Freedom Ranking 2018...).

Today, the total public debt of Ukraine is 85 billion USD. In 2015, after the crisis in a difficult financial situation on the verge of default, Ukraine on unfavorable terms restructured its debt in the amount of 19.3 billion USD, 20% of which was written off. For this, Ukraine issued new securities (GDP warrants) for the holders of Eurobonds in the amount of 3.8 billion USD economic growth rate (GDP-warrant payments...).

Some commentators explain the failures in economic and social policy with the loss of Donbass and Crimea, the need to conduct hostilities in Donbass. Of course, this could not but affect the country's economic policy. But, unfortunately, even before the war, Ukraine could not boast of socio-economic achievements. The Ukrainian-Russian conflict has exposed the fact that Ukraine has always been economically dependent on Russia. Ukrainian enterprises were mainly focused only on the Russian sales market. Europe, despite the promise

of support for Ukraine, which has chosen the European path of development, has not opened its markets for Ukraine. Those quotas that Europe provided to Ukraine for the sale of products turned out to be too small in order to positively influence the state of the country's economy.

An objective analysis shows that the establishment of a welfare state in our country continues to be a matter of the future. The path to a welfare state is complicated by the fact that we have to simultaneously address issues of economic development and urgent current problems associated, for example, with the search for new models of social protection for a significant part of the population of Ukraine. The existing system of social protection needs to be revised, since its mechanisms are not able to solve the problems of material provision of those who need help. Therefore, the main characteristics of new models of social protection should be both social and economic efficiency.

5. Conclusion

1. Consideration of the issue of the influence of democracy on economic and social development has shown that democracy does not affect economic growth; at the same time, democracy is the guardian of economic and social stability. Political freedom helps to attract investment, develop small and medium-sized businesses, and guarantees private property, which generally reduces the likelihood of social instability. On the other hand, economic growth helps to strengthen democracy. In addition, in a democratic country, the political class through elections is responsible to the voters for the economic course and its results. As for the relationship between the welfare state and economic growth, the first is a factor of the second. In turn, economic growth ensures the effectiveness of the welfare state.

2. Analysis of the role of the state in socio-economic processes has shown that the welfare state provides citizens with protection that they will never receive from the state: the "night watchman". Liberal politicians and economists are skeptical about the strengthening of the role of the state in the socio-economic sphere, since the market is considered the most perfect or even ideal institution capable of independently resolving any complex problems of the economy. However, this is precisely the case when theory diverged from practice. As world experience has shown, the market does not guarantee the protection of the economy from crises and is not a panacea for eliminating the consequences. Sometimes the market can even pose a threat to society, for example in the field of ecology. Thus, the actions of market forces and the interests of society do not always coincide.

The idea of strengthening the state should not be replaced by the idea of strengthening the bureaucratic

apparatus. The real strength of the state as a public institution depends on its support from society, on how adequately it expresses public ideas and priorities.

3. The experience of reforming in the countries of Central and Eastern Europe shows that the idea of a stable causal relationship between a reduction in state participation in the redistribution of national income and an increase in economic growth is erroneous. Another myth turned out to be the assertion of a direct relationship between the scale of the private sector and the rate of economic growth. In the reformed countries, the greatest economic effect was achieved already at the stage of commercialization of the activities of state enterprises.

4. Failures of economic and social reforms in Ukraine are explained by the fact that their liberal version was chosen, the consequences of which can be characterized as catastrophic. The stagnation of the economy, the continuous outflow of capital abroad, the aggravation of the social situation – this is an incomplete list of conditions in which the population of Ukraine found itself as a result of the reforms in the direction of liberalism. The low level of professionalism of reformers and corruption also played a negative role.

The experience of reforming in the countries of Central and Eastern Europe shows that decentralization has played an important role in socio-economic development, which is not yet fully functional in Ukraine. But without close interconnection and cooperation between the state and civil society, one cannot count on successful reforming of the country's economy and implementation of effective economic policy. Institutions of civil society and local self-government, that is, organizations that reflect the interests of the widest sections of the population, should be able to participate in solving the most important political and socio-economic problems. Given this, it is advisable to change the priorities of state policy towards greater socialization of the Ukrainian state, as established by Art. 1 of the Constitution of Ukraine.

It should be noted that the scientific study of the essence, functions, formation of the welfare state in Ukraine has been going on for at least two decades. However, answers to questions have not been given yet, such as determining the boundaries of state intervention in the socio-economic sphere; elimination of sharp differences in the material status of individuals; the consequences of managerial decisions in the field of social policy for the population; dependence of the degree of increase in social spending on the level of professionalism in the legislative and executive authorities and many other problems, the development of which will give an impetus to the further development of the theoretical basis for the practical implementation of the principles of the welfare state in Ukraine.

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ANALYSIS OF THE DYNAMICS OF THE EUROPEAN BANKING SYSTEM

Marianna Stehnei¹, Maryna Korol²

Abstract. *Relevance of research.* Existence of global financial crises points to the fact that in the world there is no perfect banking system and therefore the efficiency of the banking system requires a detailed study, including major performance indicators. *The aim of the study* is to summarize and characterize the existing trends of banking system evolution in the European Union. *Methodological basis of the study* – is based on the analysis of the study of the dynamics of such indicators as the number of banking institutions, the volume of assets and liabilities, asset quality, as well as the profitability of the banking sector of the European Union. A systematic analysis of the quantitative and qualitative composition of the above-mentioned banking indicators, synthesis and generalization were used to generalize and formulate conclusions. *Scientific results.* This article is devoted to the study of the dynamics of the main indicators of the European banking system during the period from 2000 to 2019 inclusive. It is argued that the number of commercial banks has decreased over the last decade, including in the European Union. Bank branches are no exception, the negative dynamics of the number of which was followed by the global financial crisis of 2008-2009. At the same time, it was found that the volume of bank assets shows a positive trend. Regarding the geographical distribution of assets, in 2019 the leading position was taken by France, Germany, Italy and Spain. At the same time, the volumes of liabilities of the financial sector of the European Union for the studied period also show a positive trend. The structure of loans is characterized and it is emphasized that the vast majority of loans are issued to non-financial corporations and households, which is an evidence of the business orientation of banks to provide loans to the real sector of the economy. It has been established that one of the key problems facing European banks is profitability, which today still could be on a better level than in 2007, the year of the financial surge. This situation distances European banks from competitors in the United States, which have shown positive dynamics of their profits. However, it is encouraging that the quality of assets of the European Union banks has significantly improved over the last 4 years. *The practical significance of the study* is to rate the strengths and weaknesses of the European banking system. *Significance/originality.* The results achieved from an integrated view of the functioning of the banking system of the European Union, which will allow the authors to further build a model for verifying the stability of the banking system.

Key words: banks, European banking system, assets and liabilities of commercial banks, financial sector, distressed loans.

JEL Classification: E51, E59, G21, G34

1. Introduction

The key to a successful economy in any country is an efficient banking system. After all, it is well-functioning banking systems that are able to mobilize and efficiently allocate resources so that the country's "blood vessels" function effectively. As hundreds of years ago, today's bankers seek to expand their activities in all possible aspects, offering both traditional and non-traditional banking services.

The growing interest to the financial problems of the European Union can be argued by the fact that the European banking system has survived the global financial crisis, which has resulted in significant problems that need to be resolved in order to continue further effective functioning. Undoubtedly, the European banking system is extremely important in the world market economy, as its component are the central banks of the European Union.

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Professor Mishkin (Mishkin, 2008) of Columbia University, who studied the impact of monetary policy on financial markets and financial institutions, made a significant contribution to the development of the theory and practice of banking systems, in particular to the study of the banking system of the European Union.

We share the views of scientists who argue that the European banking markets have become increasingly integrated in recent years, but obstacles to full integration, especially in retail, still remain. European integration can have consequences for systemic risk and can create various challenges for the current supervisory system. It affects competition in banking markets, the nature of long-term borrower-lender relations, as well as the links between ownership structure, technological change and bank efficiency (Goddard, Molyneux, Wilson & Tavakoli, 2007).

In his work, Dermine J. (Dermine, 2006) confirms the progress of the European banking integration over the past twenty years and rates the current system of banking supervision and deposit insurance, based on the control of “countries-countries”.

The statement by Altunbaş Y., Chakravarty S. (Altunbaş, Chakravarty, 1998) is of particular note, it compares the performance of European Union banks across national borders involves studying the differences between countries in the institutional structure of the banking system.

The works of the above-mentioned scientists and many other works prompted us to study the dynamics of the main indicators of the European banking system in order to further construction of a model of its stability.

2. Quantity of banks, assets and liabilities dynamics

The downward trend in the number of credit institutions (CIs) of the EU-28, which began in 2009, continued in 2018, although at a slower pace, their number decreased to 6,088 (-2.6%) compared to 2017. One in four CIs ceased to exist after the 2008-2009 financial crisis.

2019 was no exception: the number of CIs in the EU decreased by 1.8% to 5,982, of which 4,472 were CIs in the Eurozone.

Rationalization in the EU banking sector has also affected **banking branches**. In 2019, their number was 163,265 units, down 6% compared to 2018. It should be noted that before the financial crisis of 2008-2009, there was a positive dynamics of the number of branches, and a negative one after it (Figure 2).

The downward trend in the number of branches continues to reflect the increasing use of internet banking by consumers, as more than half of the EU users – 54%, used it in 2018, compared to 51% in 2017 and 25% in 2007. The countries that experienced the largest decrease in absolute terms in 2018 were Germany (- 2,185 units), Italy (- 1,920) and Spain (- 1,314). Only Bulgaria opened new branches (+82 units) (European Banking Federation, 2019 c, p. 11).

The **assets** volumes of EU banks increased in 2018, amounting to 43.35 trillion EUR, 30.9 billion EUR of which are in the Eurozone and 12.5 billion EUR in the non-Eurozone. The expansion was mainly due to the growth of total assets in the Eurozone countries (1.6%) (European Banking Federation, 2019 d).

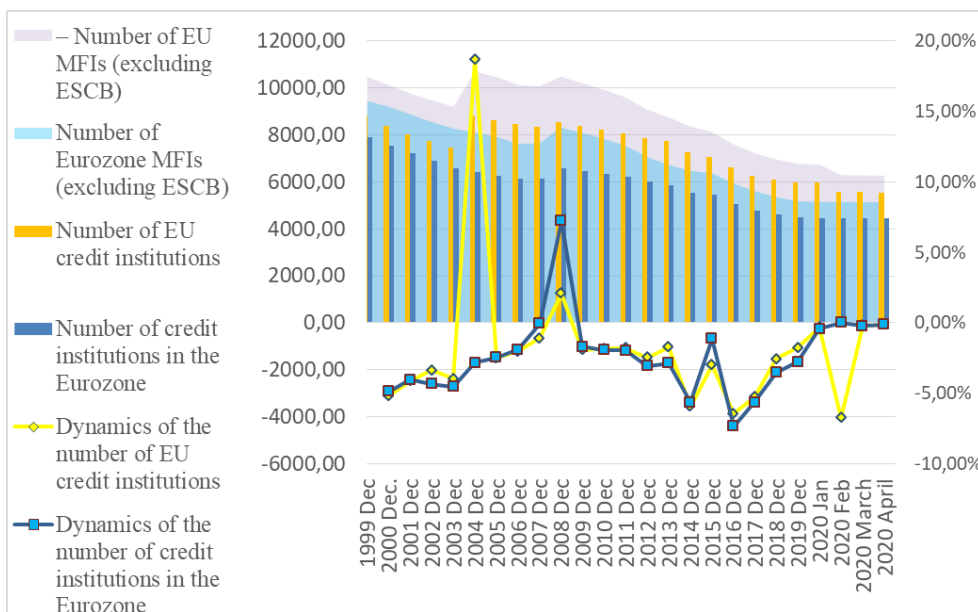


Figure 1. Number of EU credit institutions, 2000-03.2020

Source: compiled by authors based on the European central bank, 2000-03.2020 (European central bank, 2020 c)

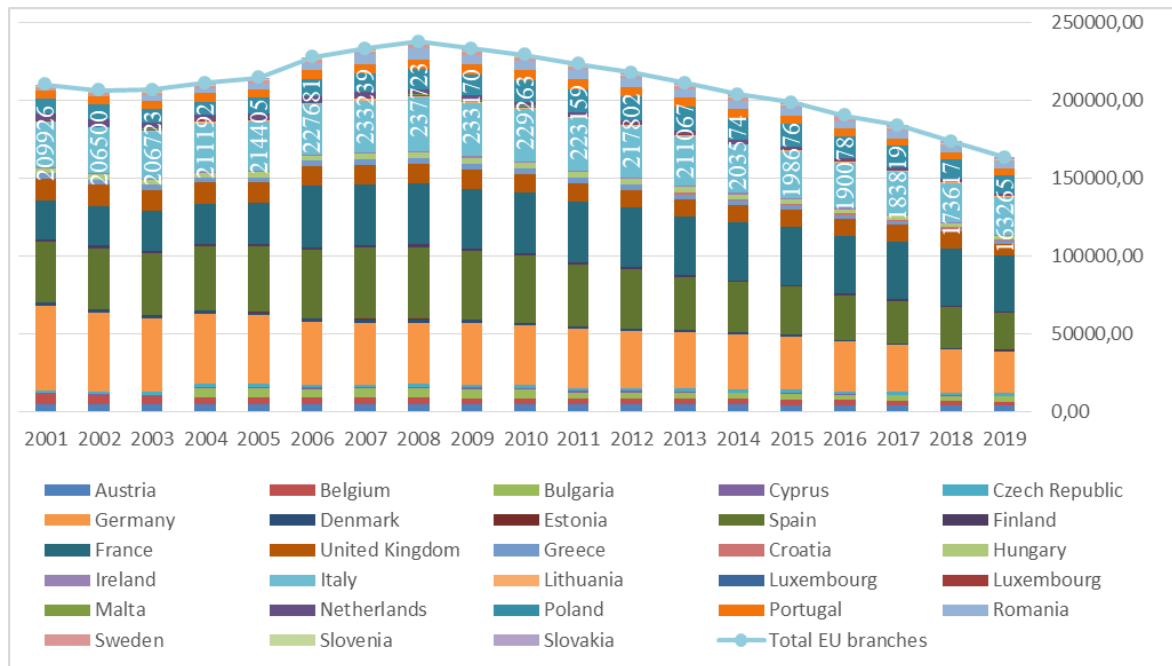


Figure 2. Dynamics of the number of branches of the European banking sector, 2001-2019

Source: compiled by authors based on the European central bank, 2000-03.2020 (European central bank, 2020 m)

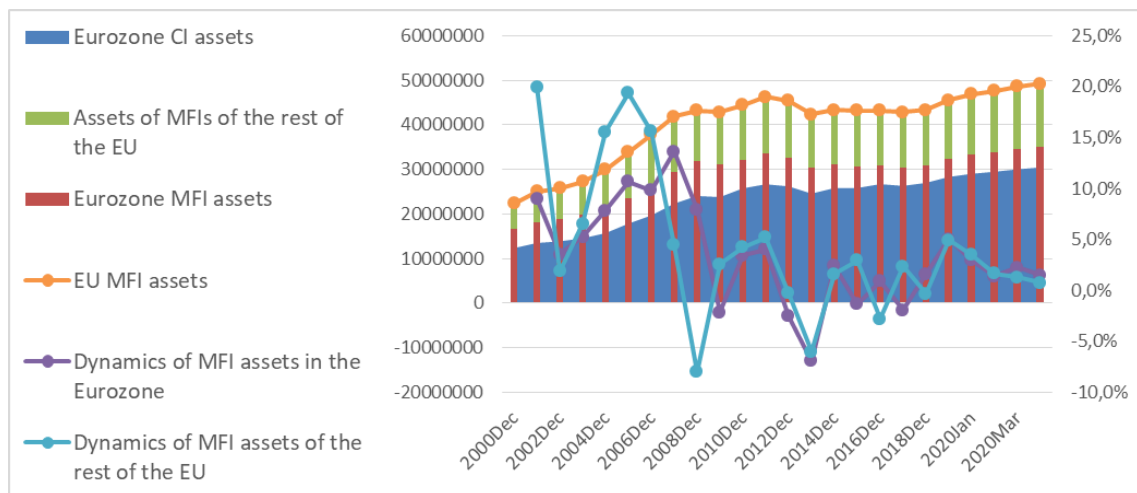


Figure 3. Assets of the banking sector, 2000-03.2020

Note: The European Banking Association (EBA) uses data on credit institutions (CIs) and Monetary Financial Institutions (MFIs) in its reports, however, the ECB does not have “pure” data on banks. As banks account for 75-80% of the entire financial system in the EU, the EBA considers it appropriate to analyze the banking sector on the basis of CI and MFI data.

Credit institution (CI) – any institution that is (i) a business entity that has deposits or funds from individuals (on terms of repayment) and provides loans, or (ii) an enterprise or any other legal entity other than those who comply with subparagraph (i) who issue means of payment in the form of electronic money.

Monetary financial institutions (MFIs) – Financial institutions that together form the sector sector which issues money to the Eurozone. These include: the Eurosystem, resident credit institutions (as defined by the EU legislation) and all other resident financial institutions whose activities are to attract deposits and / or closed substitutes for deposits from entities other than IFIs, lending and / or investment in securities (the latter group consists mainly of money market funds).

Source: compiled by authors based on the European central bank, 2000-03.2020 (European central bank 2020 g, 2020 j, 2020 e)

Thus, according to Figure 3, 2019 is no exception. The total assets of MFIs amounted to 45.52 trillion EUR, 32.4 trillion EUR of which account for MFIs in the euro area and 13.1 trillion EUR to the MFIs of other EU member states. In general, this indicator continues to show positive dynamics: the volume of total assets increased by 5%.

In the geographical distribution in 2018, the highest increase was shown by Finland – 176 billion EUR (39.1%). Among the four largest European countries, only France recorded a significant positive result in terms of assets of the banking sector, which increased by 4.2%, Italy and Spain – by 1.3% and 2.9%, respectively. The countries with the most significant decrease in assets were Cyprus (-13.1%) and Latvia (-19.5%) (European Banking Federation, 2019 d).

In 2019, among the Eurozone member states, the largest share in the total assets of the banking sector was: France – 29% (9.32 trillion EUR), Germany – 26% (8.31 trillion EUR), Italy – 11% (3.72 trillion EUR) and Spain – 8% (2.68 trillion EUR). All the abovementioned countries in 2019 showed a positive trend, the largest increase was in Germany – 7%. Among the Eurozone countries, the largest growth occurred in Ireland – 14% (4% of total assets), and a decrease in Malta – 9% (0,13% of assets) (European central bank, 2020 g).

For the seventh year in a row, HSBC Holding PLC is the largest bank in Europe in terms of assets. At the

end of 2018, the UK-based financial institution had assets totaling 2.2 trillion EUR. French BNP Paribas SA, with 2.04 trillion EUR, is the second largest bank, and another French bank, Crédit Agricole Group, ranks third with 1.9 trillion EUR. These three occupy the highest positions in the Top largest European banks in terms of assets according to S&P Global Market Intelligence (Ali, 2020).

German flagship bank Deutsche Bank with assets of 1.6 trillion EUR fell from 4th to 5th place with assets of 1.4 trillion EUR. The Spanish company Banco Santander SA took this 4th position, but a possible merger between Deutsche and its competitor Commerzbank AG could lead to the formation of a bank with total assets of 1.8 trillion EUR, which will be the fourth largest in Europe (Ali, 2020).

Seven of Europe’s 50 largest banks are headquartered in Germany, and together they have 3.1 trillion EUR in assets. In France and the United Kingdom, there are six banks in the ranking, which together have 7.6 trillion EUR and 6 trillion EUR in assets, respectively (Ali, 2020).

Regarding the total liabilities of the financial sector, as of March 2020, they amounted to 30.03 trillion, an increase over the period under review by 41.2%.

The importance of bank lending is a specific characteristic of the European economy. Proof of this is the positive dynamics of loans.

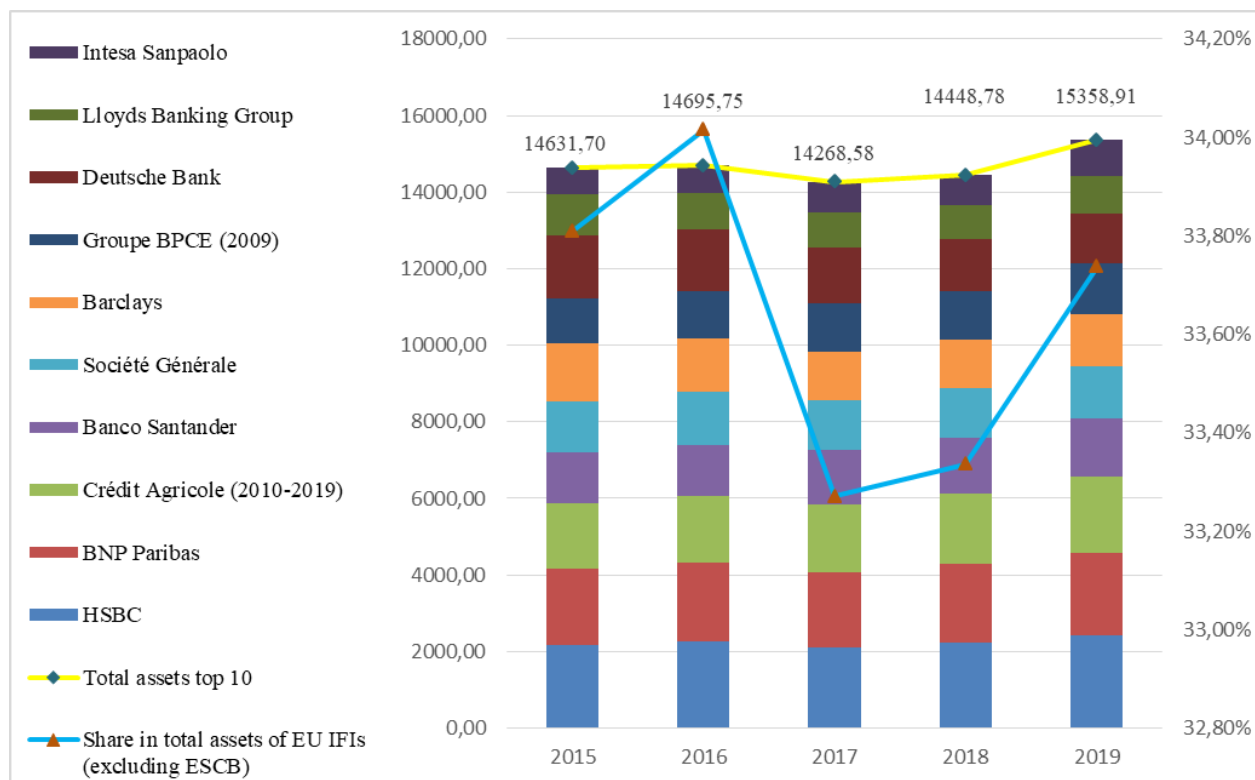


Figure 4. Top 10 EU banks with the largest assets, 2015-2019

Source: compiled by authors based on the European central bank, 2015-2019 (European central bank 2020 h, 2020 f)

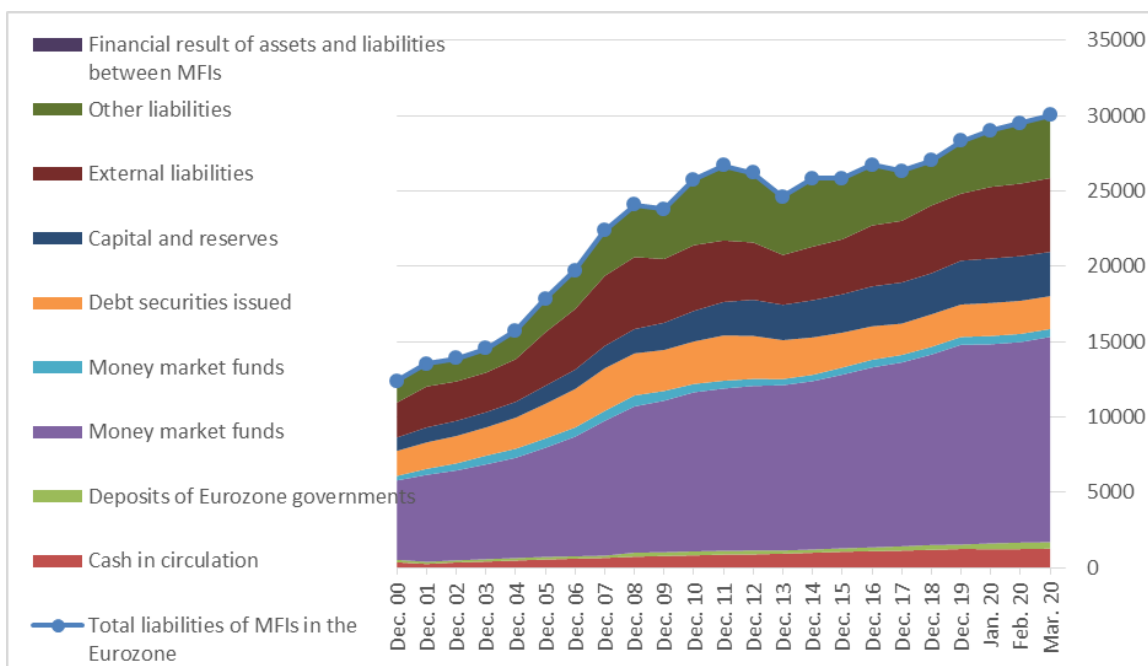


Figure 5. Structure of liabilities of Eurozone MFIs (excluding ESCB)

Source: compiled by authors based on the Oesterreichische Nationalbank, European central bank 2000-03.2020 (Oesterreichische National bank, 2020, European central bank, 2020 g)

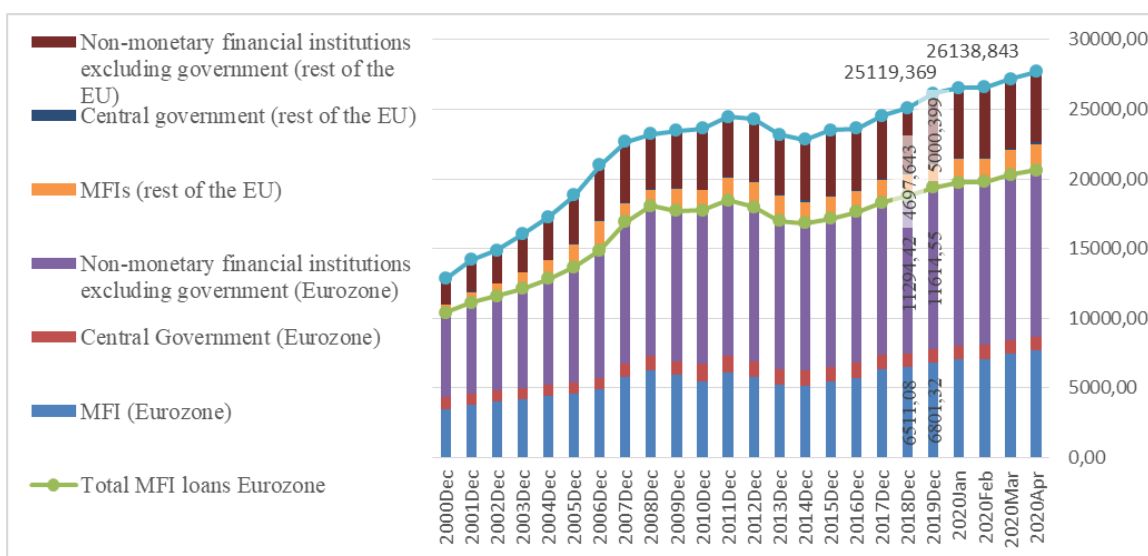


Figure 6. Structure of EU MFI loans (without ESCB)

Source: compiled by authors based on the European central bank, 2000- 04.2020 (European central bank, 2020 g)

Thus, the total amount of **loans** issued to EU MFIs increased by 2.5% in 2018 and reached more than 25.1 trillion EUR. The growth was mainly due to the growth of loans to non-financial institutions, without government loans, which increased by 3.4% in year calculations to more than 15.5 trillion EUR (European Banking Federation, 2019 c, p. 19).

Household loans in the Eurozone have been showing positive dynamics for the fourth year in a row, rising

by almost 540 billion EUR since 2015. Loans to non-financial corporations (the non-financial corporations sector includes all private and public enterprises that produce goods or provide non-financial services) in the EU increased by 3.8% in 2018 to almost 5.5 trillion EUR (this is the highest figure since 2012) (European Banking Federation, 2019 c, p. 19).

If we talk about the structure of the credit line, it can be seen from the following figure that the vast majority

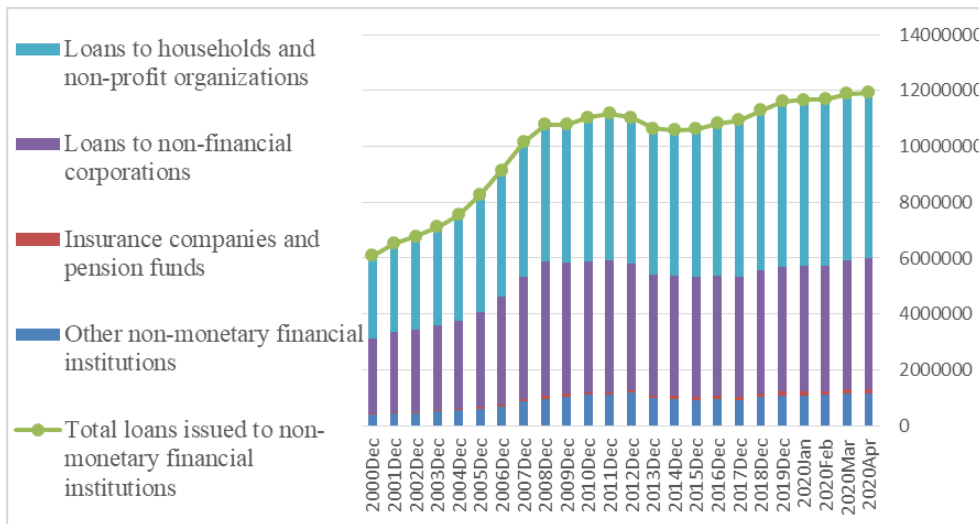


Figure 7. Structure of Eurozone MFI loans to non-monetary financial institutions

Source: compiled by authors based on the European Central Bank, 2000-04.2020 (European Central Bank, 2020 a)

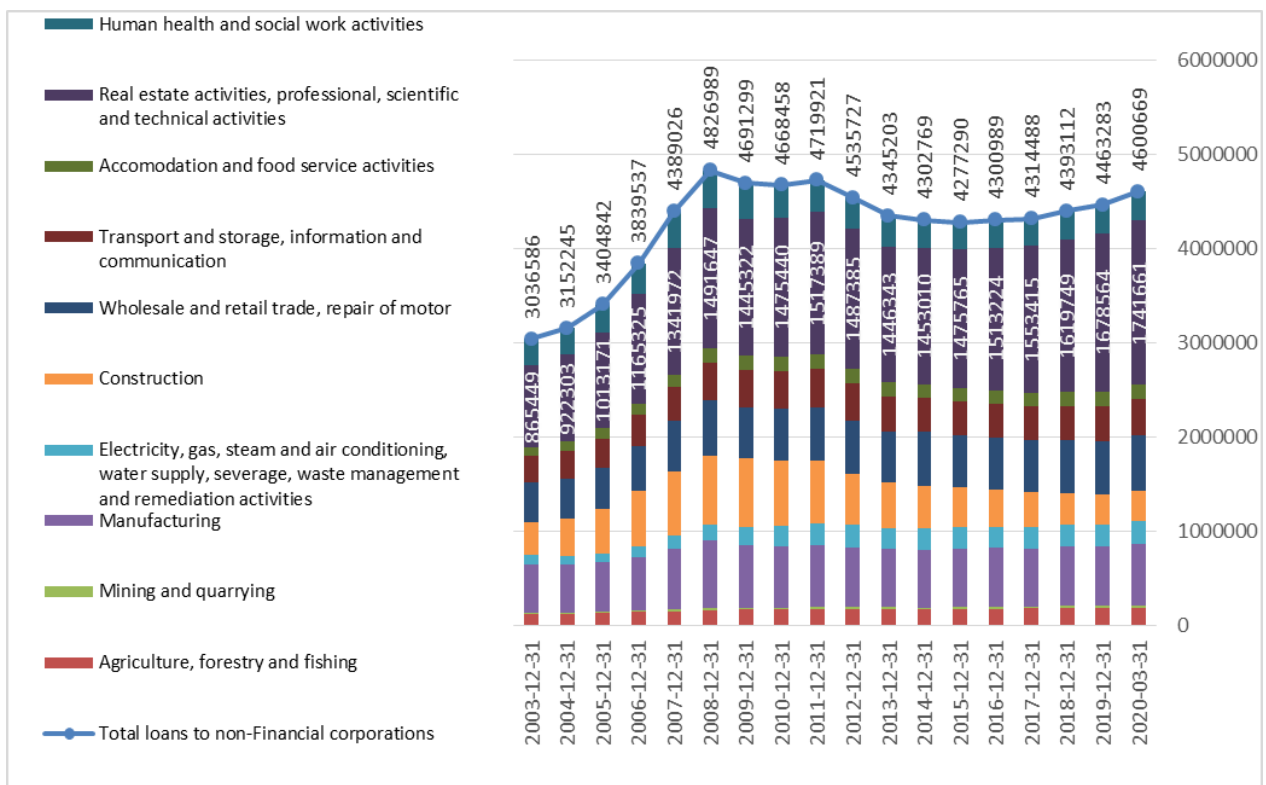


Figure 8. The structure of Eurozone MFI loans to non-financial corporations by economic sector

Source: compiled by authors based on the European Central Bank, 2003-03.2020 (European Central Bank, 2020 b)

of bank loans are issued to non-financial corporations (NFCs) and households. These figures, in particular, demonstrate the strong business orientation of banks in lending to the real economy.

Regarding the structure of loans to non-financial corporations, it should be noted that real estate activities, professional, scientific-technical and administrative and

support services accounted for more than a third (36.9%) of loans issued at the end of 2018, and more than 30.8% in IV quarter of 2008, in 2019 – 37.6%. Production, as well as wholesale and retail trade – 14.1% and 12.9%, respectively (European Banking Federation, 2019 c, p. 21).

As already mentioned, the largest share in issued loans is occupied by loans to households and non-profit

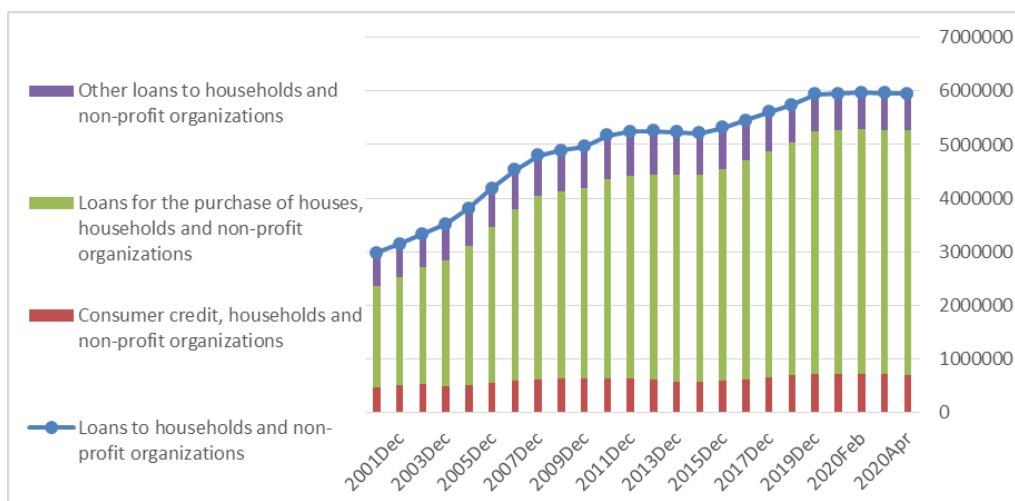


Figure 9. The structure of Eurozone MFI loans (excluding the ESCB) provided to households and non-profit institutions serving them

Source: compiled by authors based on the European Central Bank, 2001-03.2020 (European Central Bank, 2020 g, European Central Bank, 2020 d)

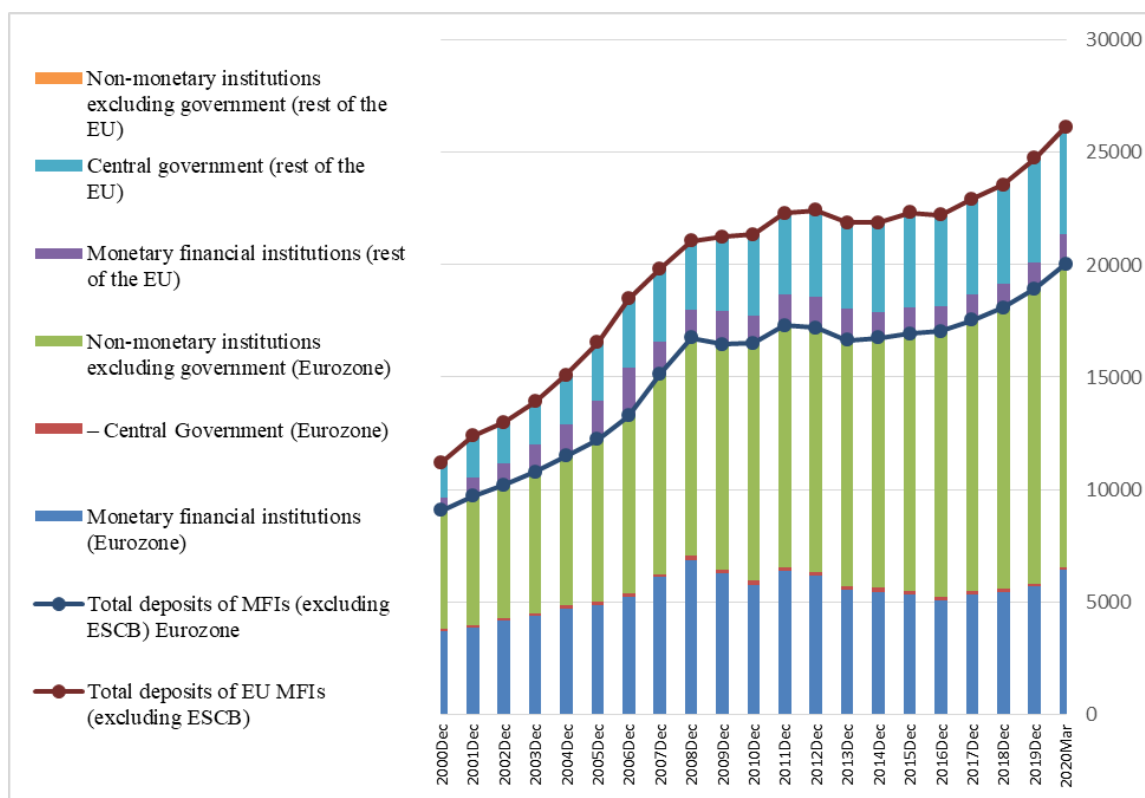


Figure 10. Structure of deposits of EU MFIs, 2001-03.2020

Source: compiled by authors based on the European Central Bank, 2000-03.2020 (European Central Bank, 2020 i, European Central Bank, 2020 k)

organizations that serve them. In 2019, this figure in the Eurozone was 5.94 trillion EUR, of which the lion's share are loans for housing 4.53 trillion EUR, which has been showing positive dynamics since 2015.

In 2018, the amount of deposits attracted to the EU banking sector increased by 2.8% and amounted

to 23.6 trillion EUR. France accounted for more than half of the increase in deposits – 346 billion EUR. MFI deposits in France in 2018 increased by almost 185 billion EUR. Deposits by non-government institutions excluding government increased by 162 billion EUR in France, 109 billion EUR in

Germany and 113 billion EUR in the UK (European Banking Federation, 2019 c, p. 18).

3. Profitability, quality development of loan portfolios

One of the important indicators of the state of the banking system – the return on equity of banks **ROE** – a key indicator for assessing the attractiveness of the banking sector for investors. Unfortunately, the profitability of the European banks remains low, which is a consequence of the difficult economic situation in the EU in recent years.

In 2008, three EU countries had a negative ROE value in the Eurozone: Belgium – 44.6%, the Netherlands – 11.9% and Germany – 11.4%. In 2011, the number of countries with a negative value of ROE banking systems doubled: Cyprus – 102.8%, Italy – 14.3%, Slovenia – 16.9%, Ireland – 15.4%, Portugal – 5.4%, Greece – 2.1%. Of those countries that are not part of the euro area, in 2008, the negative value of ROE were in the United Kingdom (– 12.2%) and Denmark (– 5.0%) (Valverde, S., Fernández, F, 2018, pp. 19–20).

As the ECB maintains its ultra-low interest rates, **profitability** remains a key challenge facing European banks. The profitability of European banks in 2018 was 6.1% for the EU–28, compared to 5.8% in 2017. Although it is still far from the 10.02% registered in the outbreak of the financial crisis, it is the highest since 2007 (European Banking Federation, 2019 c, p. 27).

Probably the most common response to the difficulty of increasing profits was to reduce costs. Not surprisingly, most major European banking sectors had higher efficiencies (lower cost-to-income ratios) than at the beginning of the crisis. In 2008, Spain had the lowest cost-to-income ratio of the analyzed countries,

which was also observed in the third quarter of 2017: 51.76%, Spanish banks were even more efficient than Dutch banks (55.99%) and French (71,70%), German (71.01%) and Italian (62.41%) banks (Valverde, S., Fernández, F, 2018, p. 19–20).

Given that many of these countries are already experiencing intense reductions in branch numbers and staff reductions, the digitalization phenomenon may require more complex work on this front, requiring banks to maintain even lower cost-to-income ratios. Despite rising inflation, the European banks continued to face negative real interest rates. This makes it difficult to profit from the main activity of mediation, in other words, the spread between the profitability of borrowed funds and financing costs.

The banking system of the Eurozone has entered a coronavirus crisis in a weak state, and the profitability of the sector fell for the first time in three years in 2019, according to the European Central Bank's data. Thus, the slowdown in economic growth and falling interest rates resulted in the fact that the return on equity in 113 banks controlled by the ECB in 2019 decreased from 6.2% to 5.2%. The least profitable banks by country were German ones, where 21 ECB-controlled banks had an average return on equity of only 0.08%. This was far below the profitability of Italian banks, which are generally considered the weakest sector, with an average return on equity of 4.85% last year.

The decline in the profitability of Eurozone banks distances the European banks from their competitors in the United States, which last year reported on average return on equity more than twice as high. It is also worth noting the growing vulnerability of Europe's banking sector to the economic and financial turmoil caused by measures to contain the coronavirus pandemic, which are forcing a large number of companies and employees to seek government assistance. Credit margins in the

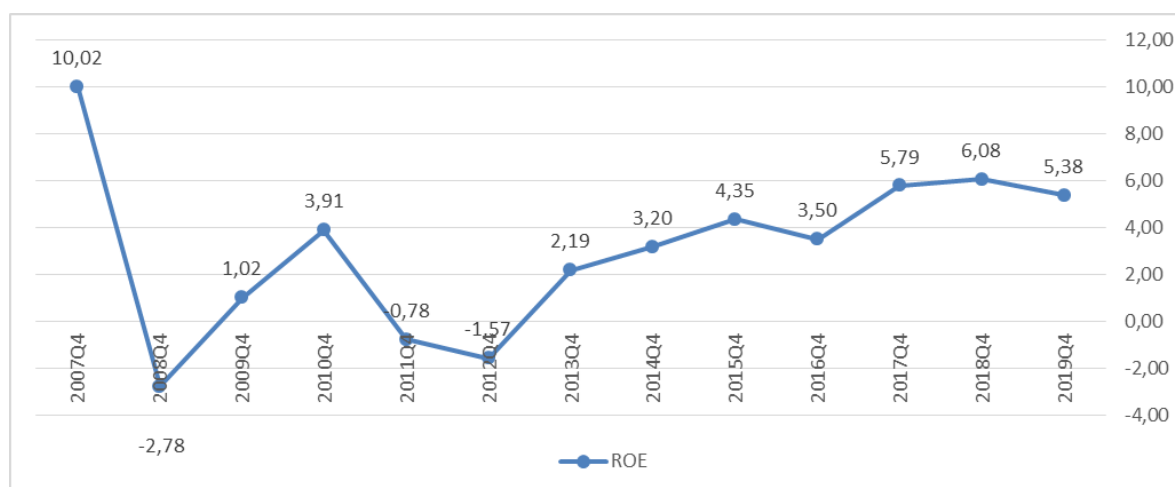


Figure 11. Dynamics of the return on equity of the EU banks, 2007-2019

Source: compiled by authors based on the European Central Bank, 2007–2019 (European Banking Federation, 2019 c)

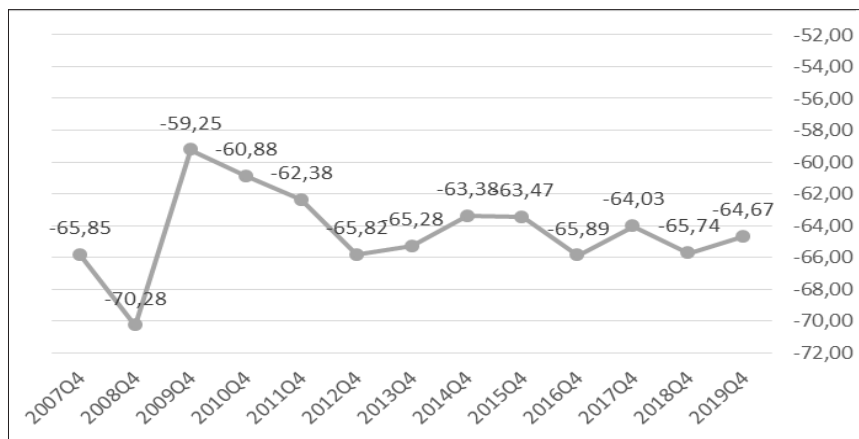


Figure 12 Cost-to-income ratio in the European banking sector, 2007–2019

Source: compiled by authors based on the European Central Bank, 2007–2019 (European Banking Federation, 2019 e)

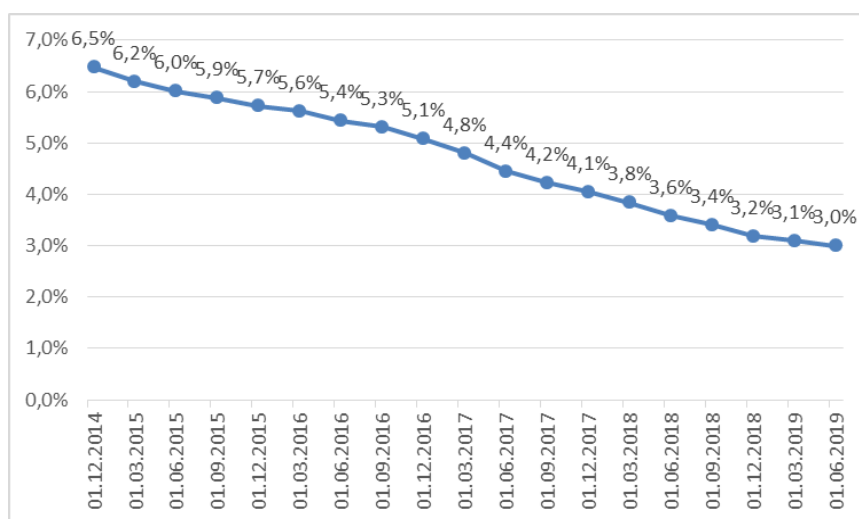


Figure 13. Weighted average ratio of non-performing loans

Source: compiled by authors based on the European Central Bank, 2014–2019 (European Banking Federation, 2019 b)

sector also declined due to lower ECB interest rates to a record low of minus 0.5%. Economists predict that the Eurozone economy may shrink by about 10% in the second quarter of 2020, as the world faces its deepest recession since the Great Depression of the 1930s (Arnold, 2020).

Regarding the quality of the EU banks assets, they have improved significantly over the past 4 years. As of June 2019, the weighted average loan loss ratio was 3%, for example, in June 2015 – 6%. This is the lowest indicator since the EBA introduced a harmonized definition of this indicator in all European countries in 2014. On average, it improves annually by 0.75 percentage points (European Banking Federation, 2019 a, p. 8).

The total volume of non-performing loans as of June 2019 amounted to 636 billion EUR, which is almost 50% less than in June 2015. The decrease in non-performing

loans can be explained by the sale and securitization of credit resources. Despite the fact that the quality of the loan portfolio is improving in all countries, this figure remains uneven in those with higher starting ratios (from less than 1% in Sweden to 39% in Greece).

Italy recorded the largest decrease in non-performing loans (145 billion EUR) between June 2015 and June 2019, as well as reductions in Spain (81 billion EUR), the United Kingdom (60 billion EUR) and Germany (43 billion EUR). All four countries recorded a reduction of at least 50%. These countries are followed by Ireland (a decrease of 35 billion EUR or 80%) and Portugal (a decrease of 20 billion EUR). Greek and Cypriot banks, which reported high ratios, reduced non-performing loans by 35 billion EUR (-30%) and 17 billion EUR (-73%), respectively (European Banking Federation, 2019 a, p. 15).

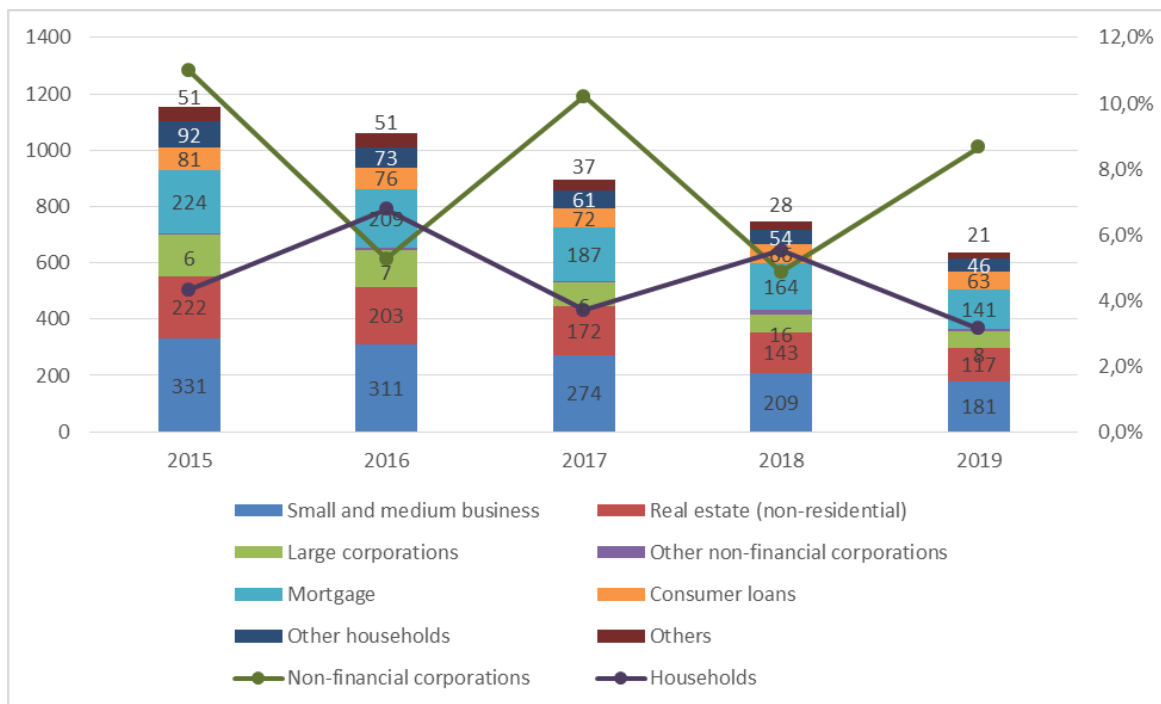


Figure 14. Total problem loans of the European banking sector, 2015-2019 billion EUR

Source: compiled by authors based on the European Central Bank, 2015-2019 (European Banking Federation, 2019 a)

This improvement in the quality of the loan portfolio was preceded by the following:

- efforts of banks to improve the management of non-performing loans, by improving monitoring and restructuring strategies, by investing in information technology and management;
- economic growth, lowering of unemployment level, low interest rates and dynamic development of the real estate market in the EU over the past 4 years. All these factors together increased the interest of investors.

In March 2018, the European Commission presented a package of measures to overcome the high rates of bad loans. The proposed measures are aimed at accelerating the progress already made in reducing the ratio and preventing its recovery. The package included (European Commission, 2019):

- a proposal for a resolution on amendments to the regulation of capital requirements and the introduction of general minimum levels of coverage for new loans that become bad. This measure will force banks to allocate funds to cover the risks associated with such problems;
- a proposal for a directive on those who service loans and their buyers, as well as on the procedure for collecting collateral. This measure will provide banks with an effective mechanism for out-of-court reimbursement of secured loans and will promote the development of secondary markets, in which banks can offer bad loans, and other specialized credit services to investors.

The Commission's working document on the drafting of National Asset Management Companies (AMCs) provides guidance to national authorities on how they can set up National Asset Management Companies (AMCs) to address bad loans.

Following the postponement of the national stress test to 2021, the Board of Supervisors agreed to conduct an additional transparency procedure to provide up-to-date information on banking risks and the quality of market participants' assets.

Unlike stress tests, this procedure is a pure disclosure, where only data on each bank are published. The spring procedure of 2020 covers 127 banks from 27 countries of the European Economic Area, and the data are disclosed at the highest level of consolidation as of September 2019 and December 2019 (Moody's Analytics, 2020).

4. Conclusion

Thus, summarizing all the above-mentioned facts we can state that the number of credit institutions and their branches in the EU during the study period has a negative trend. At the same time, the total assets of the banking sector have a positive dynamic, and the expansion was mainly due to increased assets in the Eurozone. Similar to assets, the volume of bank liabilities also has a positive trend, increasing over the period under review by 41.2%. Also encouraging is the fact that the quality of assets is improving every year, which indicates a balanced, well-structured policy of banks and the Central Bank in general.

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PROTECTION OF PROPERTY RIGHTS: SIDE EFFECTS OF ECONOMIC CRIME INVESTIGATION

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Abstract. In the democratic countries, one of the main properties of public policy is to ensure the functioning of a stable economy; it requires special attention to the investigation and prevention of economic crime. However, the economic crime investigation can cause certain side effects, such as restriction or deprivation of property rights of individuals and legal entities. That is why the analysis of the peculiarities of the protection of property rights in the economic crimes investigation is particularly relevant. *The purpose* of the research is to generalize approaches for understanding the economic crime's nature and structure, analysing effective ways to protect property in the economic crimes investigation, as well as the specifics of releasing property from arrest as a way to protect third party property violated in the economic crimes investigation. *Materials and methods:* a set of general and special scientific methods was used in a study, in particular, the dialectical method; comparative legal method; methods of analysis and synthesis; formal logical (dogmatic) method; statistical method and generalization method. The empirical basis of the study is the cases of the Supreme Court (Ukraine) and the European Court of Human Rights, statistics of the State Judicial Administration of Ukraine for 2017-2019, as well as the authors' own experience as judge of the Supreme Court and the High Specialized Court of Ukraine for Civil and Criminal Cases. *Results:* there are two main approaches to understanding the essence of the concept of "economic crime" defined, its main features are identified and the system of economic crimes in Ukraine is characterized. It is argued that the application of such types of punishment for serious and especially serious profit-motivated crimes as special confiscation and confiscation of property is consistent with the practice of the ECHR. The case law of the Grand Chamber of the Supreme Court on determining the jurisdiction of legal disputes on the release of distrained property, used in the investigation of economic crimes, is summarized. *Conclusions:* for correct protection of the property rights of individuals and legal entities violated during the investigation of economic crimes, the state must ensure the proper functioning of effective legal means of protection of property rights.

Key words: economic crime, protection of property rights, special confiscation, confiscation of property, seizure of property, release of distrained property.

JEL Classification: K14, K38, D73

1. Introduction

A stable economy is a fundamental basis for the existence and development of a modern democratic state. That is why one of the most important tasks of the state is to form an effective system of economic relations, resistant to negative external influences and integrated into the international economic space simultaneously. At the same time, economic security can be achieved by combining the development of national

and international economic relations and ensuring the systematic economic crime prevention. Thus, the economic crime prevention remains one of the priorities of national policy, as the criminalization of the economy slows down the development of entrepreneurship, the formation of a real market environment, as well as affects the filling of state and local budgets. However, the variety of ways to commit crimes in the economic sphere, the use of various technologies and operations

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by the criminals, as well as other factors that contribute to the commission of illegal acts in the economic sphere, lead to the fact that the economic crimes investigation may cause certain side effects, such as restriction or deprivation of property rights of individuals and legal entities. This is unacceptable in a democratic state, and, therefore, in the legal system of the respective state, there must be effective mechanisms for the property rights protection of the specified entities. Thus, the information mentioned above is of scientific interest and determines the relevance of the chosen topic.

The following domestic and foreign scientists devoted their works to the problem of defining the economic crime essence: H. Mannheim (1965), C. Mills (1951), V. Packard (1959), Herbert A. Bloch and Geis Gilbert (1962), (1982), A. V. Andrushko, S. V. Lohin, V. M. Popovych and P. A. Trachuk (2009), A. M. Boyko (2008), B. M. Holovkin (2013), A. L. Dudnikov (2013), A. P. Zakalyuk (2007), Ye. V. Nevmezhenskyy (2005), O. V. Skvortsova (2012) and others.

At the same time, the issue of side effects of the economic crimes investigation, in particular, restrictions or deprivation of property rights, and ways to protect the property rights of third parties, violated during the investigation of economic crimes, have not been adequately covered in the specialized scientific literature yet.

The purpose of the article is to generalize approaches for understanding the economic crime's nature and structure, analysing effective ways to protect property in the economic crimes investigation, as well as the specifics of releasing of distrained property as a way to protect the property of third parties violated in the economic crimes investigation.

To achieve this goal and ensure the scientific validity of the results of the study, there were used the following methods of scientific knowledge: the dialectical method; comparative legal method; methods of analysis and synthesis; formal logical (dogmatic) method; statistical method and generalization method. The empirical basis of the study is the cases of the Supreme Court (Ukraine) and the European Court of Human Rights (hereinafter referred to as ECHP), statistics of the State Judicial Administration of Ukraine for 2017-2019, as well as the authors' own experience as judge of the Supreme Court and the High Specialized Court of Ukraine for Civil and Criminal Cases.

2. Economic crime: essence and structure

Due to the lack of a generally accepted concept of "economic crime" in the national legislation of both Ukraine and foreign countries, scientific discussions on the essence and structure of this concept in legal doctrine continue to this day.

Meanwhile, the analysis of professional sources gives grounds to conclude that, as a rule, two main approaches

in defining the concept of "economic crime" are used, namely: criminal legal and criminological.

For understanding the essence of economic crime, the representatives of the criminal legal approach, first of all, emphasize that the relevant composition of economic crime should be provided by the law on criminal liability.

In that way, A. V. Andrushko, S. V. Lohin, V. M. Popovych and P. A. Trachuk consider that the economic criminality is a set of the economic crimes under the Criminal Code of Ukraine, committed in the field of civil traffic of things, rights and actions for a certain period of time with the illegal use of legitimate technological and accounting transactions, financial, economic and civil instruments, organizational and regulatory, control and management rights and powers (Andrushko, Lohin, Popovych, Trachuk, 2009).

However, supporters of the criminological approach emphasize the form and focus of the intent, motive, sphere of commission, subjects of crime and determinants of economic crime.

For example, E. V. Nevmezhenskyy argues that the economic criminality (crimes in the field of economics) is primarily all acts, in which the direct reason is the economic benefit of the subject, i.e. have a profit motivation, and the purpose of such criminal encroachments is to appropriate the illegal. In order for a crime to be considered economic, it must be long-lasting, repeated, and committed systematically and within imprimitive economic or business activities (Nevmezhenskyy, 2005).

B.M. Holovkin defines economic crime as a profit-motivated criminal activity of officials and other participants of economic relations, aimed at causing material damage to enterprises, institutions, organizations of various forms of ownership or business entities (Holovkin, 2013).

O. V. Skvortsova considers crimes in the economic sphere as a type of socially dangerous, illegal, subject to criminal penalties, guilty acts that encroach on homogeneous economic relations, harm the economic interests of the state, protected by law, the interests of individuals and legal entities due to crimes against property, crimes in the economic field, as well as crimes in the sphere of official activity in legal entities of private law and professional activity related to the provision of public services (Skvortsova, 2012).

Investigating the essence of economic crime, it is impossible to avoid the question of the characteristics inherent in this type of crime. Research contains many approaches and positions on the typical features of economic crime. At the same time, using the generalization method, we will try to outline the main features. Thus, among the main features of economic crime, it is common to highlight (Dement'yeva, 1996; Holovkin, 2013; Zakalyuk, 2007; Matusovskiy, 1999; Boyko, 2008) the following ones: 1) common generic object of encroachment, i.e. economic relations; 2) the

presence of profit motivation and the goal of obtaining economic benefits of property and non-property nature common for all crimes; 3) determinism by the same social factors that are part of the identifying complex of economic crime; 4) crimes that are committed in the course of professional activity, as a rule within and under the guise of lawful economic activity; 5) crimes which have a selfish character; 6) crimes that are characterized by long-term systematic development and a high degree of latency; 7) for this category, the subjects of committing crimes are most often the following: direct participants in economic activity; persons who do not take part in economic activities but encroach on economic relations; representatives of the regulatory sphere of economic activity, endowed with permitting and control powers; 8) socially dangerous consequences of economic crimes cause material damage to the state and business entities, undermining their business reputation, as well as doing harm to the interests of consumers.

Given the lack of common approaches to understanding the nature and content of economic crime, at the level of legal doctrine, there is no single approach to the criteria for classifying economic crime. At the same time, having analyzed a number of scientific achievements on this issue, we believe that the most complete and exhaustive system of economic crimes, taking into account the provisions of the current Criminal Code of Ukraine, has been developed by A.L. Dudnikov (Dudnikov, 2013), who refers to the system of economic crimes as the following types of crimes under the current Criminal Code of Ukraine (hereinafter referred to as the CC of Ukraine) (Criminal Code, 2001): 1) crimes against property (Art. 190, 191 of the CC of Ukraine); 2) crimes in the field of the financial system (Art. 199, 200, 201, 204, 212, 212-1, 222, 224 of the CC of Ukraine); 3) crimes in the field of budget execution (Art. 210, 211 of the CC of Ukraine); 4) crimes in the field of entrepreneurship (Art. 203-1, 206, 209, 213, 218-1, 219 of the CC of Ukraine); 5) crimes in the field of free competition (Art. 229, 231, 232, 232-1 of the CC of Ukraine); 6) crimes in the field of privatization (Art. 233 of the CC of Ukraine); 7) crimes in the field consumer rights (Art. 227 of the CC of Ukraine); 8) service-related crimes (with material damage) (Art. 364, 364-1, 365-2, 367, 368, 368-3, 368-4, 368-5, 369, 369-2, 370 of the CC of Ukraine); 9) crimes in the field of computer activity (Art. 361, 361-1, 361-2, 362, 363 of the CC of Ukraine).

3. Special confiscation and confiscation of property as a form of punishment for profit-motivated crimes: the case law of ECHR

Most of the crimes mentioned above (in particular, serious and especially serious profit-motivated crimes) are characterized by the use of such types of punishment

as special confiscation and confiscation of property. Thus, the punishment in the form of confiscation of property is the forced gratuitous confiscation of all or part of the convict's property. However, given the European integration aspirations of Ukraine, according to the framework of the study, it is important to note that, in general, the use of such types of punishment as special confiscation and confiscation of property is compliant with the case law of the ECHR.

In particular, the case law of ECHR has developed a number of procedural safeguards that must be provided by national law and judicial authorities in cases involving confiscation of property, namely: the adversarial and public nature of proceedings (case "Grayson and Barnham v. the United Kingdom", para. 45, 2008); full and comprehensive access of the party to the relevant proceedings (case "Denisova and Moiseyeva v. Russia", para. 59, 2010); the right to use the legal assistance of a lawyer chosen at one's own discretion (cases "Butler v. the United Kingdom", 2002; "Grayson and Barnham v. the United Kingdom", para. 45, 2008); reasonable opportunity for the party to present its arguments in the domestic courts (cases "Veits v. Estonia", para. 72, 74, 2015; "Jokela v. Finland", para. 45, 2002), including written and oral evidence (case "Butler v. the United Kingdom", 2002); a reasonable opportunity for the party to rebut the assumption of the criminal (illegal) nature of the assets (case "Geerings v. Netherlands", para. 44, 2007); a discretion of the judge not to apply the assumption if he or she considered that applying it would give rise to a serious risk of injustice (case "Phillips v. the United Kingdom", para. 43, 2001).

It is also recognized in the decisions of the cases concerning various forms of confiscation or fiscal repression of assets of ECHR that the assumption of criminal (illegal) nature of assets is in line with Article 6 of the Convention for the Protection of Human Rights and Fundamental Freedoms (hereinafter referred to as the Convention) (European Convention, 1950), namely the presumption of innocence. In particular, the application of the assumption of criminal (illegal) nature of assets, if a party has a real opportunity to rebut that assumption, it is compatible with the assumption of innocence, and conversely, a violation of paragraph 2 Article 6 of the Convention has been recognized in the case, when the order on the goods' confiscation has been released, although the owner was acquitted in criminal proceedings concerning the crime from which the proceeds allegedly arose (case "Geerings v. Netherlands", paras. 43-51, 2007). This approach is applied by ECHR in the context of presumptive complaints under Article 1 Protocol 1 to the European Convention (Protocol, 1952) (case "Cacucci and Sabatelli v. Italy", para. 43, 2014), as well as under Article 6 of the Convention on transfer to the applicant of the burden to prove the lawful nature of the acquisition of assets (cases "Grayson and Barnham

v. the United Kingdom”, para. 45, 2008; “Phillips v. the United Kingdom”, para. 43, 2001).

4. Protection of property rights as the basis of economic stability of the state

In order to temporarily deprive the right to alienate, dispose of and / or use property that is subject to special confiscation and confiscation of property, the relevant property is seized in criminal proceedings. Seizure of property is one of the most common measures to ensure criminal proceedings. In particular, this applies to serious and especially serious profit-motivated crimes committed in the economic sphere. The procedure for imposing and revoking of property seized is regulated by Chapter 17 of the Criminal Procedure Code of Ukraine (hereinafter referred to as the CPC of Ukraine) (Criminal Procedure Code, 2012).

However, despite the effectiveness of arrest as a measure of criminal proceedings and confiscation of property as a form of punishment, their use may violate or limit the property rights of third parties (both individuals and legal entities, who are bona fide owners or purchasers of the relevant property). However, property rights are fundamental, guaranteed and protected by the provisions of national law, taking into account the requirements of Protocol No. 1 to the Convention for the Protection of Human Rights and Fundamental Freedoms.

Under Article 1 of Protocol No. 1 to the Convention, every individual or legal entity is entitled to the peaceful enjoyment of his or her possessions. No one shall be deprived of his or her possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law. The preceding provisions shall not, however, in any way impair the right of a state to enforce such laws as it deems necessary to control the use of property in accordance with the general interest or to secure the payment of taxes or other contributions or penalties.

As a rule, when deciding on various forms of confiscation or fiscal repression, ECHR is guided by three rules of the provisions of Article 1 of Protocol No. 1 to the Convention: 1) the first rule is general and proclaims the principle of peaceful possession of property; 2) the second rule concerns the deprivation of property and determines certain conditions for recognizing interference with the right to peaceful possession of property as lawful; 3) the third rule recognizes the right of states to control the use of property in the presence of certain conditions (cases “The Former King of Greece and Others v. Greece”, para. 50, 2000; “Bruncrona v. Finland”, para. 65, 2005; “Anheuser-Busch Inc. v. Portugal”, para. 62, 2007).

The outlined rules are interrelated and should not be applied separately, they should be interpreted in the light of the general principle of peaceful possession of

property, however, the second and third rules concern important discretionary powers of the state, namely: the right to seize property in public interest and establish taxation system.

In its practice, ECHR has formulated three main criteria to be taken into account when determining whether an interference with a person's right to peaceful possession of property is compatible with the guarantees of Article 1 of Protocol No. 1 to the Convention, namely: 1) whether it is lawful; 2) whether it is due to the public interest; 3) whether it is proportionate to the defined purposes. If at least one of the above criteria is not met, ECHR confirms that the state has violated Article 1 of Protocol No. 1 to the Convention.

As a general guide, it should also be noted that ECHR has established the approach that confiscation is defined as control measure over the use of property under Rule 2 of Article 1 of Protocol No. 1 to the Convention, although de facto such a sanction involves deprivation of “property” (cases “Agosi v. the United Kingdom”, para. 51, 1986; “Raimondo v. Italy”, para. 29, 1994; “Silickiene v. Lithuania”, para. 62, 2012).

Therefore, the certain state, including Ukraine, is obliged to respect the right of everyone to peaceful possession of property, and its proper and effective legal protection is an important component of the stability of the state economy and one of the fundamentals of democracy.

5. Release of distrained property: a matter of jurisdiction

In criminal proceedings, one of the most effective ways to protect the property rights of third parties, violated during the investigation of economic crimes, is to appeal to the court to release the distrained property. The effectiveness and efficiency of this method of protection of property rights in criminal proceedings are evidenced by court statistics. Hence, in 2017, investigating judges in Ukraine considered 16,610 requests to lift the seizure of property, of which 8,147 were satisfied (Report, 2017); in 2018, 18,130 requests were considered, of which 9,451 were satisfied (Report, 2018); in 2019, considered 22,430 requests, 11,553 of them were satisfied (Report, 2019).

In practice, there are many problematic issues related to the procedural features of releasing distrained property. In our opinion, one of the most problematic aspects of the release of distrained property is the correct definition of the jurisdiction of legal disputes on the release of distrained property, used in the investigation of economic crimes. Accordingly, within the limits of this article we consider it necessary to investigate this problematic aspect.

Unfortunately, the current legislation of Ukraine does not contain a clear answer to this question, unlike case law. In this way, the Grand Chamber of the

Supreme Court has developed rules that determine the jurisdiction of legal disputes over the release of distrained property used in the investigation of economic crimes. Therefore, in determining the jurisdiction of the legal issues outlined above, the following rules should be followed:

- 1) the request of a natural person who is not a debtor in enforcement proceedings to lift the seizure of his or her property and to exclude the latter from the act of description and seizure, the court considers the rules of civil proceedings (Judgment of Grand Chamber of Supreme Court case № 658/715/16-ц, 22.08.2018);
- 2) a dispute on the debtor's claim to the body of the State Executive Service of Ukraine on cancellation of the bailiff's decision on seizure of property and announcement of a ban on the alienation of this property is public law, if the bailiff has issued the mentioned decision in consolidated enforcement proceedings on the enforcement of court decisions of various jurisdictions. The Administrative Court has jurisdiction to consider this claim even when there is no forced execution of decision made by the rules of administrative legal proceedings in the consolidated enforcement proceedings (Judgment of Grand Chamber of Supreme Court case № 808/2265/16, 13.02.2019);
- 3) appeals against decisions on seizure of property in the execution procedure of the court decision, which satisfied a civil claim in criminal proceedings, must take place according to the rules of the Civil Procedure Code of Ukraine (Judgments of Grand Chamber of Supreme Court case № 752/14248/18, 27.11.2019; case № 320/247/19, 22.01.2020);
- 4) if the seizure is imposed on the property of a person who was not a party to the criminal proceedings initiated under the CPC of Ukraine dated 1960 and completed in the manner prescribed by law (sentence, decision on the termination of the proceedings), the dispute over the release of distrained law is private law. Depending on the parties of this dispute, it should be considered according to the rules of civil or economic proceedings (Judgments of Grand Chamber of Supreme Court case № 2-3392/11, 24.04.2019; case № 372/2904/17-ц, 15.05.2019);
- 5) if the seizure is imposed on the property of a person against whom a criminal case has been initiated under the rules of the CPC of Ukraine dated 1960, but further the decision to initiate a criminal case under the same procedural law has been revoked by the court without resolving the issue of termination of the proceedings, the dispute on release of the distrained property should be considered according to the rules of civil procedure (Judgment of Grand Chamber of Supreme Court case № 766/21865/17, 12.06.2019);
- 6) if the seizure is imposed on the property of a person who is not a part of a criminal proceeding initiated during the continuance of the CPC of Ukraine dated

1960 and ongoing, and the criminal proceedings are not submitted to court at the time of entry into force of the CPC of Ukraine dated 2012, the decision on termination of the property seizure and appeal of relevant actions or inaction of the investigator in criminal proceedings is carried out under the rules of the CPC of Ukraine dated 2012 (Judgments of Grand Chamber of Supreme Court case № 461/233/1717, 10.2018; case № 296/8586/16-ц, 07.11.2018);

7) if the seizure is imposed on the property of a person who is not a party to criminal proceedings under the rules of the CPC of Ukraine dated 2012, the decision to terminate the seizure and appeal the relevant actions or inaction of the investigator in criminal proceedings is carried out under the rules of the CPC of Ukraine dated 2012 (Judgments of Grand Chamber of Supreme Court case № 202/1452/18, 27.03.2019; case № 504/1306/15-ц, 11.09.2019).

6. Conclusions

The issue of combating economic criminality and ensuring the effective investigation of the economic crimes has been and remains extremely relevant. As a rule, in defining the concept of "economic crime" two main approaches are used, namely: criminal legal (the relevant composition of economic crime should be provided by the law on criminal liability) and criminological (attention focuses on the form and direction of intent, motive, subjects and determinants of economic crime). According to its structure, economic crime is branched and covers a significant number of corpus delicti, which can be classified depending on the object of criminal activity into the following groups: 1) crimes against property; 2) crimes in the field of the financial system; 3) crimes in the field of budget execution; 4) crimes in the field of entrepreneurial activity; 5) crimes in the field of free competition; 6) crimes in the field of privatization; 7) crimes in the field of consumer rights; 8) service-related crimes (in the presence of material damage); 9) crimes in the field of computer activity. However, even a full, comprehensive and objective investigation of economic crimes can cause certain side effects, such as restriction or deprivation of property rights of individuals and legal entities. In criminal proceedings, such restrictions on the right of ownership are due to the seizure of the property, as well as the use of special confiscation and confiscation of property as a form of punishment for serious and especially serious profit-motivated crimes. At the same time, property rights are fundamental and must be guaranteed and protected by the state. After all, proper and effective legal protection of property rights is an important component of the stability of the state economy and one of the democracy's fundamentals. In Ukraine, the system of legal protection of property rights violated

during the investigation of economic crimes includes such effective jurisdictional protection mechanisms as criminal legal, administrative legal and civil legal. In criminal proceedings, one of the most effective ways to protect the property rights of third parties violated during the investigation of economic crimes is to apply

to the court for the release the distrained property. Thus, in our opinion, the key task of the state within the outlined issues is to create and guarantee the proper functioning of effective legal means of protection of property rights violated during the investigation of economic crimes.

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