“Assessment of the level of local budget financial decentralization: Case of Ukraine”

AUTHORS	Nadiya Dekhtyar https://orcid.org/0000-0001-7932-8620 http://www.researcherid.com/rid/N-6285-2018 Katarina Valaskova https://orcid.org/0000-0003-4223-7519 https://publons.com/researcher/1628011/katarina-valaskova/ Olga Deyneka https://orcid.org/0000-0001-5852-4163 https://publons.com/researcher/2454570/olga-deyneka/ Nataliya Pihul https://orcid.org/0000-0002-9090-1763 https://publons.com/researcher/1834756/pihul-nataliya/

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Nadiya Dekhtyar (Ukraine), **Katarina Valaskova**, (Slovakia) **Olga Deyneka** (Ukraine), **Nataliya Pihul** (Ukraine)

ASSESSMENT OF THE LEVEL OF LOCAL BUDGET FINANCIAL DECENTRALIZATION: CASE OF UKRAINE

Abstract

Further improvement of financial relations at the local level and the development of local budgets take place in the context of financial decentralization. This implies strengthening the role of local governments in attracting necessary financial resources to ensure socio-economic development of territories. The purpose of this paper is to identify the impact of decentralization on the state of local budgets and to develop a scientific and methodological approach to assessing the level of financial decentralization of local budgets using the example of Ukraine for 2010–2019. The developed methodology consists of six successive stages. A comparative analysis of the dynamics of indicators of local budget execution in Ukraine in terms of revenues, expenditures and transfers using an integrated index obtained through taxonomic analysis is conducted. As a result of evaluating the effectiveness of the basic principles of financial decentralization, the expediency of calculating the integrated index of local budget financial decentralization is substantiated. This index is formed using intermediate indicators of autonomy to cover expenses and generate income both on the basis of own sources and taking into account the received state transfers for the implementation of their own and delegated powers of local governments. The implementation of the proposed method allow one to assess the levels of financial decentralization of local budgets to establish the degree of financial autonomy and financial self-sufficiency of the territories. The results obtained should be considered when determining the effectiveness of financial support for local budgets in the process of socio-economic development of regions.

Keywords local finance, revenue, expenditure, transfers, local government bodies

JEL Classification H72, H79

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Nadiya Dekhtyar, Ph.D., Associate Professor, Department of Finance, Banking and Insurance, Sumy State University, Ukraine. (Correspondent author)

Katarina Valaskova, Ph.D.,Faculty of Operation and Economics of Transport and Communications, University of Zilina, Zilina, Slovakia

Olga Deyneka, Ph.D., Associate Professor, Department of Finance, Banking and Insurance, Sumy State University, Ukraine.

Nataliya Pihul, Ph.D., Associate Professor, Department of Finance, Banking and Insurance, Sumy State University, Ukraine.

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INTRODUCTION

Reforming the local finance system at the present stage of economic development in Ukraine is taking place in the context of financial decentralization. The implementation of this development vector of economic relations is associated, first of all, with the processes of Ukraine's integration into the European space and the implementation of certain provisions and principles of the EU regional policy. This leads to a change in priorities and standards of socio-economic development of territories by improving the system of organizing local budgets. Financial decentralization aims to provide local governments with sufficient financial resources to exercise their expanded rights and powers, which is associated with the transfer of some functions from the central government to local governments. This increases the interest of local governments in providing sufficient sources of funding for their own powers and those delegated by the state, the use of modern instruments to increase cash inflows to local budgets, the efficient allocation and rational use of financial resources to meet the diverse needs of local communities. Effective organization of local budgets in Ukraine involves assessing the level of financial decentralization for further development of the territories' economies and ensuring social standards of living.

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1. LITERATURE REVIEW

The organization of financial relations at the level of state and local budgets is influenced by factors of financial decentralization.

Shevchuk and Martynenko (2020) consider and propose to evaluate the level of financial decentralization of the state on the basis of an integrated index of the level of financial decentralization as the geometric mean of three sub-indices formed by its main components, namely: decentralization of the process of generating local budget revenues, decentralization of the local budget structure, and decentralization of intergovernmental budget relations.

M. Halásková and R. Halásková (2014) focus on theoretical issues of fiscal decentralization, explore methodological approaches to assessing its level and determine the impact of fiscal decentralization on financing the needs of local governments using the European Union as an example. The research carried out by these authors made it possible to establish the extent of decentralization of expenditures in European countries for 2001–2012. The conclusions were substantiated using a system of indicators, in particular, the share of local budget expenditures in total expenditures of national budgets and as a percentage of GDP. M. Halásková and R. Halásková (2015) continued to study the impact of fiscal decentralization on local budgeting. They analyzed the indicators of fiscal decentralization of local budget revenues and expenditures using the method of multidimensional modeling and established the degree of decentralization in the EU countries that were the objects of analysis.

Hryhorash et al. (2018) analyzed the development of small business and its impact on the formation of local budget revenues in Ukraine

Huayang et al. (2018) examined the establishment of the level of financial decentralization influence on the formation of local governments' debt policies. They revealed a close relationship between the indicators of financial autonomy of local budgets and the ability to attract financial resources through debt financing instruments. They also noted that an increase in debt affected the ability to obtain additional financial resources as a result of their efficient use.

Profiroiu et al. (2016) investigated the peculiarities of the formation of local budgets in European countries, in particular in Romania. They focused on the specifics of generating local budget revenues and analyzed the state of local finances in Romania. That allowed them to assess the impact of decentralization on the efficiency of local budgets and offer many practical recommendations for generating local budgets taking into account the state structure of a country.

Davulis (2013) examined the specifics of fiscal decentralization in the Baltic states, in particular Lithuania, which allowed determining the compliance of the local budget framework with the principles of the European Charter of Local Self-Government. The author paid much attention to the analysis of local budget execution indicators and the level of fiscal decentralization in terms of expenditures.

Dvorak and Žernytė (2018) conducted an in-depth analysis of the indicators of the state of local budgets in Lithuania from the standpoint of ensuring the performance of the functions assigned to local governments and the level of their financial support from local budgets. Based on the evaluation of empirical data on local budgets of Lithuania for 1994–2016, the authors concluded that, despite the expansion of local government functions, their powers would remain limited due to lack of financial resources. Studying the indicators of financial decentralization, the researchers paid attention to the insignificant share of local expenditures in national expenditures and GDP, which led to the attraction of public transfers to ensure the effective fulfillment of local governments' tasks and functions.

Shiyi and Jun (2009) suggested using the nonparametric DEA method and the limited Tobit model to estimate the level of financial decentralization of provinces. They assessed the efficiency of public spending at the local level after the introduction of the financial decentralization principles and determined the influence of factors on the quantitative and qualitative indicators of the formation of local budget expenditures.

Research on this problem in Ukraine is becoming more and more relevant since today there is a search for mechanisms for effectively building links in the system of budgetary relations at the local level. Lunina et al. (2016) focused on the problematic issues of the division of powers in the local self-government system in order to ensure the responsible performance of functions by regulatory agencies at various levels. In addition, a system of criteria for assessing the state of financial decentralization in Ukraine has been formed, which includes: the expenditure decentralization coefficient, the modified coefficient of expenditure decentralization, the income decentralization coefficient, the coefficient of decentralization of tax revenues, and the coefficient of financial dependence.

Radelytskyi (2018) has studied the experience of the European Union in relation to the organizational and economic foundations of local budget development in the context of changes in the territorial organization of power in a country. The author has improved the methodological principles of formation and use of local budgets in the context of financial decentralization, taking into account the peculiarities of their impact on the socio-economic development of territorial communities. This allowed objectively and comprehensively assessing changes and identifying possible risks in the implementation of financial policy at the local level. It is also worth noting the importance of the methodological tools proposed by the author for assessing the level of budget decentralization of administrative-territorial units, which includes the calculation of a group of indicators, namely: budget decentralization according to revenues and expenditures and financial stability of local budgets according to transfers. The research results are based on the application of the methodology for constructing integrated indices. When determining the revenue base of local budgets, the author noted that, first of all, it is necessary to pay attention to the possibility of financial autonomy and financial capabilities of regions; as for the orientation of the expenditure side of local budgets, it is aimed at social use of funds.

Boiarko et al. (2012) developed a methodology for determining the level of financial sustainability of local budgets and substantiated recommendations on strategic directions for increasing the sustainability of regions. To improve the functioning of local finance, Liuta et al. (2012) proposed a methodology for assessing the financial capacity of local budgets by calculating an integrated index consisting of three components: financial capacity, financial autonomy and financial adequacy. The calculation of this indicator allows determining the problems of local budgets, the reasons for their occurrence, as well as determining ways to improve the efficiency of financial relations between the territories.

Shkolnyk et al. (2018) proposed a scientific and methodological approach to assessing the level of financial decentralization in Ukraine for 2014–2017, which allowed them to draw conclusions about positive trends in managing financial resources of local budgets. They also focused on the peculiarities of using transparent and open data on the execution of local budgets in terms of revenues and expenditures.

Liuta and Mershchii (2019) focused on budget transparency of local budgets. They noted that the introduction of the principles of transparency in the formation and use of local finances would contribute to the effective solution of problems at the regional level. The authors concluded that the transparency of local finances of administrative-territorial units in Ukraine was characterized by insufficient public disclosure, which led to the impossibility of a qualitative assessment of local budgets.

Boiarko et al, (2013), studying the problems of public expenditures and their impact on socio-economic development in Ukraine and the European Union, focused on the specifics of building the basic principles of fiscal policy in the studied countries. They conducted a comparative analysis of the state of local budgets and proposed criteria for assessing the impact of public spending on economic growth.

Fabus et al. (2019) proposed a conceptual approach to modeling the effectiveness of the implementation of financial decentralization mechanisms. They assessed the relationship between the level of economic development and the degree of decentralization of countries and identified groups of countries with a "reference" model of development

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according to the level of decentralization, as well as countries with a significant level of public finance centralization or financial decentralization.

Osypenko et al. (2019) proposed a methodology for assessing the level of financial decentralization based on estimating the autonomy of local budgets according to the criteria of budgetary and tax components. They substantiated that financial decentralization was designed to ensure the development of territories and increase the level of their financial autonomy to fulfill the tasks and functions assigned to local governments.

2. AIM

The purpose of the study is to identify the impact of the decentralization process on the state of local budgets and develop a scientific and methodological approach to assessing the level of financial decentralization of local budgets in Ukraine for 2010–2019.

3. DATA AND METHODOLOGY

The study was conducted on the basis of official indicators of the state and development of local budgets in Ukraine and generalized data of the European Union using the following methods: statistical analysis, index analysis, comparative analysis, economic analysis and synthesis, grouping, ranking, economic and mathematical modeling and generalization.

The analysis of financial decentralization indicators, which show the level of balance between the needs and capabilities of local budgets, is based on generally accepted indicators used in most of the methods both in Ukraine and in different countries (Table 1).

To determine the role of local budgets in territorial socio-economic development, it is advisable to use a system of specific indicators that take into account the characteristics of the formation and use of financial resources of local budgets and generally determine the level of financial decentralization. Indicators of the level of local budgets' financial decentralization are divided into components, which are grouped into the following categories:

- financial decentralization of revenues;
- financial decentralization of expenditures; and
- financial sustainability of local budgets by transfers (Figure 1).

To assess the performance indicators of the local budget system, it is proposed to use an algorithm that provides for the calculation of an integrated indicator of financial decentralization based on the above sets of indicators (Figure 2).

Determining the generalized integrated index of the level of local budget financial decentralization involves calculating intermediate integrated indices, including both common indicators characterizing the level of local budget decentralization, and indicators reflecting the specifics of local budget decentralization by groups: expenditures, revenues, and transfers.

Intermediate indices reflecting the levels of decentralization for each criteria set are proposed to be calculated using the geometric weighted average formula:

$$^{2}{}_{з} = \sqrt[n]{\prod_{1}^{n} X_i}$$

Table 1. Generally accepted indicators of the state and development of local budgets

Indicator	Description
The share of local budget revenues in the total amount of state budget revenues	Reflects the share of cash receipts of local budgets in the total revenues of the state
The share of local budget expenditures in the total amount of state budget expenditures	Shows the level of financial support for local budget expenditures
The share of local budget revenues in GDP	Characterizes the level of decentralization of revenue sources at the level of local budgets in the country's GDP
The share of local budget expenditures in GDP	Determines the share of GDP that is redistributed in favor of local governments to finance their tasks and functions

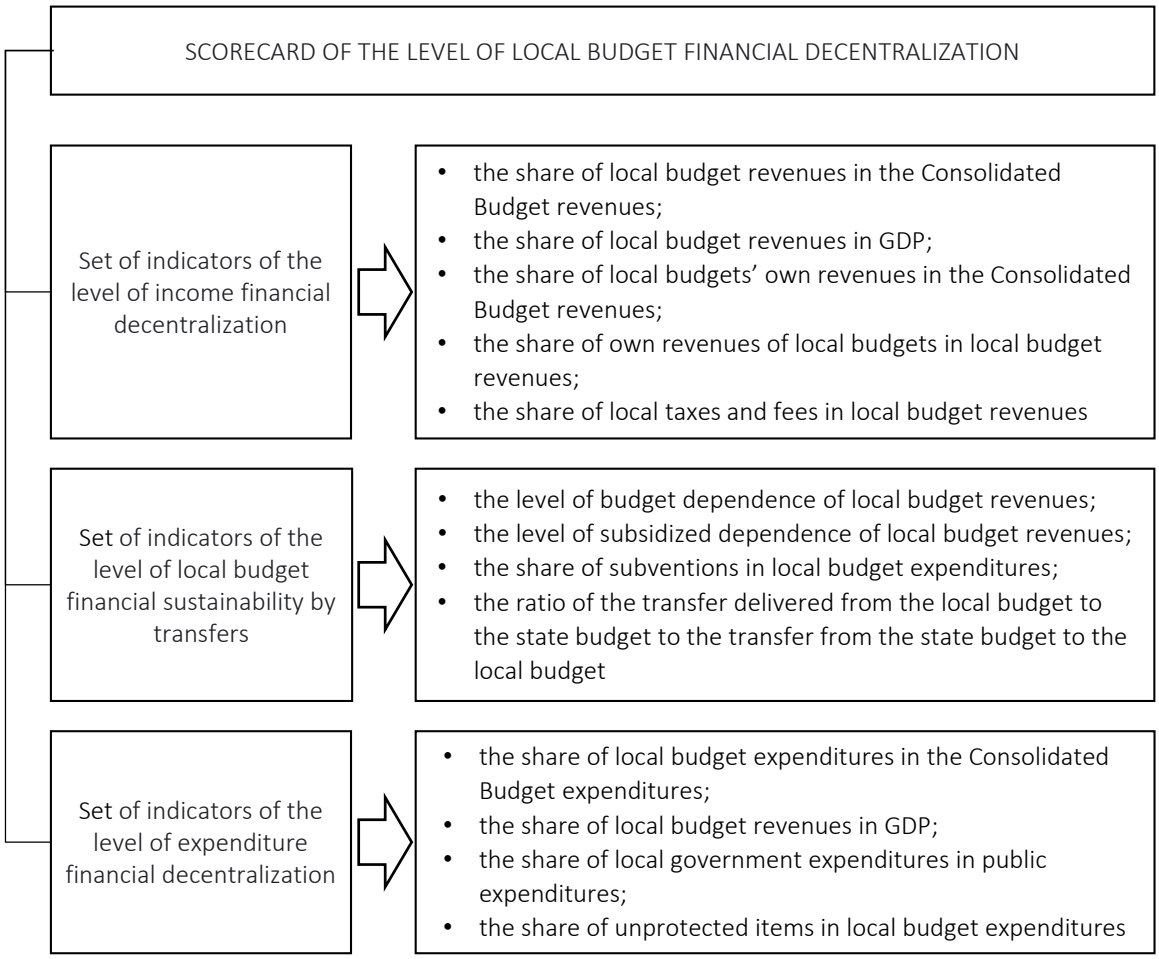

Figure 1. A scorecard of local budget financial decentralization

where I_i is an intermediate financial decentralization indicator for the *i*-th group, %; X is the value of the *i*-th indicator included in the corresponding indicator set, %; and *n* is the number of indicators that form the relevant criterion, units.

Normalization of intermediate indicators of financial decentralization, taking into account the degree of their impact on the performance indicator, is measured using positive (stimulants) or negative (disincentives) indicators by determining the maximum (for stimulants) and minimum (for disincentives) values. If there is a positive dynamics of indicators compared to the standard, this is a stimulant indicator contributing to an increase in the performance indicator, if it decreases, than it is a disincentive.

The Fishburne rule was chosen to establish weight values for generalized indicators of local budget financial decentralization. For this purpose, the criteria for the formation of an integrated indicator of the level of local budget financial decentralization are ranked according to the degree of their influence on the formation and use of financial resources of local governments.

Depending on the calculated value of the integrated indicator, the level of local budget financial decentralization can be assessed as critical, low, medium and high. The recommended value of the financial decentralization indicator at the level of the local budget can be considered such at which the integral coefficient approaches 1.

4. RESULTS

To determine the adequacy of local government revenues and their compliance with the resource needs of regions and to establish the degree of dependence of local budgets on the central budget

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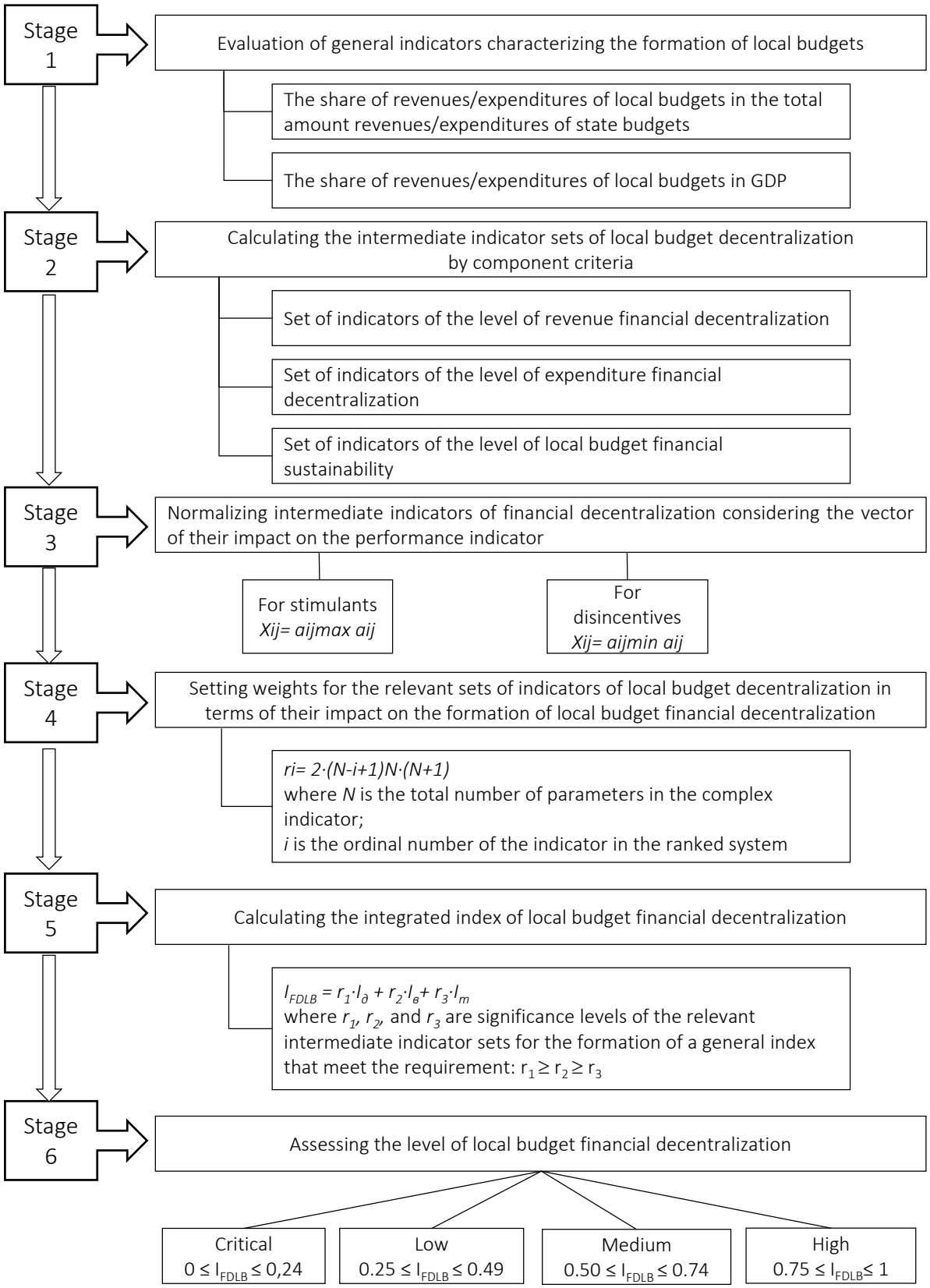

Figure 2. Algorithm for determining the level of local budget financial decentralization

Source: Authors' calculations based on data from the Ministry of Finance of Ukraine and Eurostat.

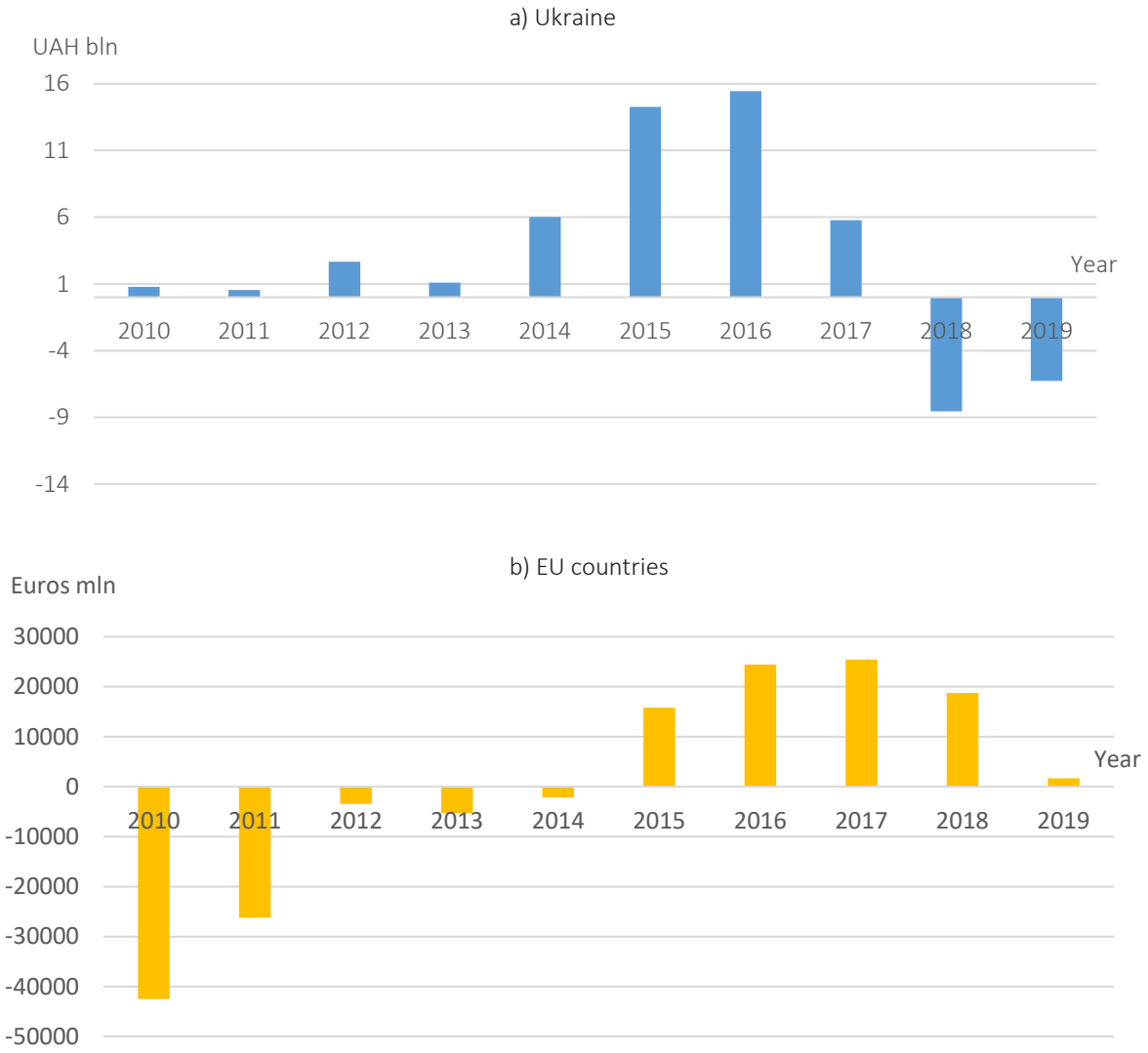

Figure 3. Comparison of local budget revenues and expenditures in Ukraine and the EU for the period 2010–2019 (surplus (+) / deficit (–))

in the implementation of European principles of financial resource decentralization, the study will consider the dynamics of local budgets in Ukraine and EU member states (Figure 3).

Evaluating the comparison dynamics of local budget revenues and expenditures in Ukraine for 2010–2019, it should be noted that during 2010–2017, local budget revenues were characterized by sufficient financial resources to ensure the functioning of local governments. At the same time, the highest level of local budget surplus was observed in 2015–2016 and amounted to UAH 14.27 and 15.45 billion, respectively. Meanwhile, despite the active implementation of the basic principles of financial decentralization and financial autonomy at the local level, the results of the formation of local budgets for 2018–2019 show their scarcity.

Analysis of trends in local budgets in the European Union shows that the local budget deficit observed in 2010–2014 has been covered since 2015 by optimizing the expenditure side of budgets in some European countries.

The implementation of the principles of financial decentralization is associated with the best European practices of financial independence, which contribute to improving the efficiency of local authorities, ensuring macroeconomic balance

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and achieving sustainable development at the regional and national levels.

The effectiveness of the local finance system depends on the level of decentralization components as a basis for the formation and implementation of budget policy. It should be borne in mind that the distribution of functional powers between central and local authorities is determined by the specifics of building a budget system in a particular country and the nature of the organization of inter-budget relations.

Figure 4 shows the dynamic pattern of the general indicators of local budgets in Ukraine and the European Union.

The study of general indicators of local budget decentralization, namely, the share of local budget revenues and expenditures in GDP and the Consolidated Budget, is quite informative in terms of assessing socio-economic development, political stability and government and makes it possible to determine the independence and activities of local authorities in solving priority tasks of territorial development.

A comparison of the general indicators of local budget decentralization in Ukraine and the European Union shows that the share of local budget revenues (excluding transfers) in the Consolidated Budget revenues of Ukraine fluctuated over years and averaged 22.43%. In the EU countries, this in-

Source: Authors' calculations based on data from the Ministry of Finance of Ukraine and Eurostat.

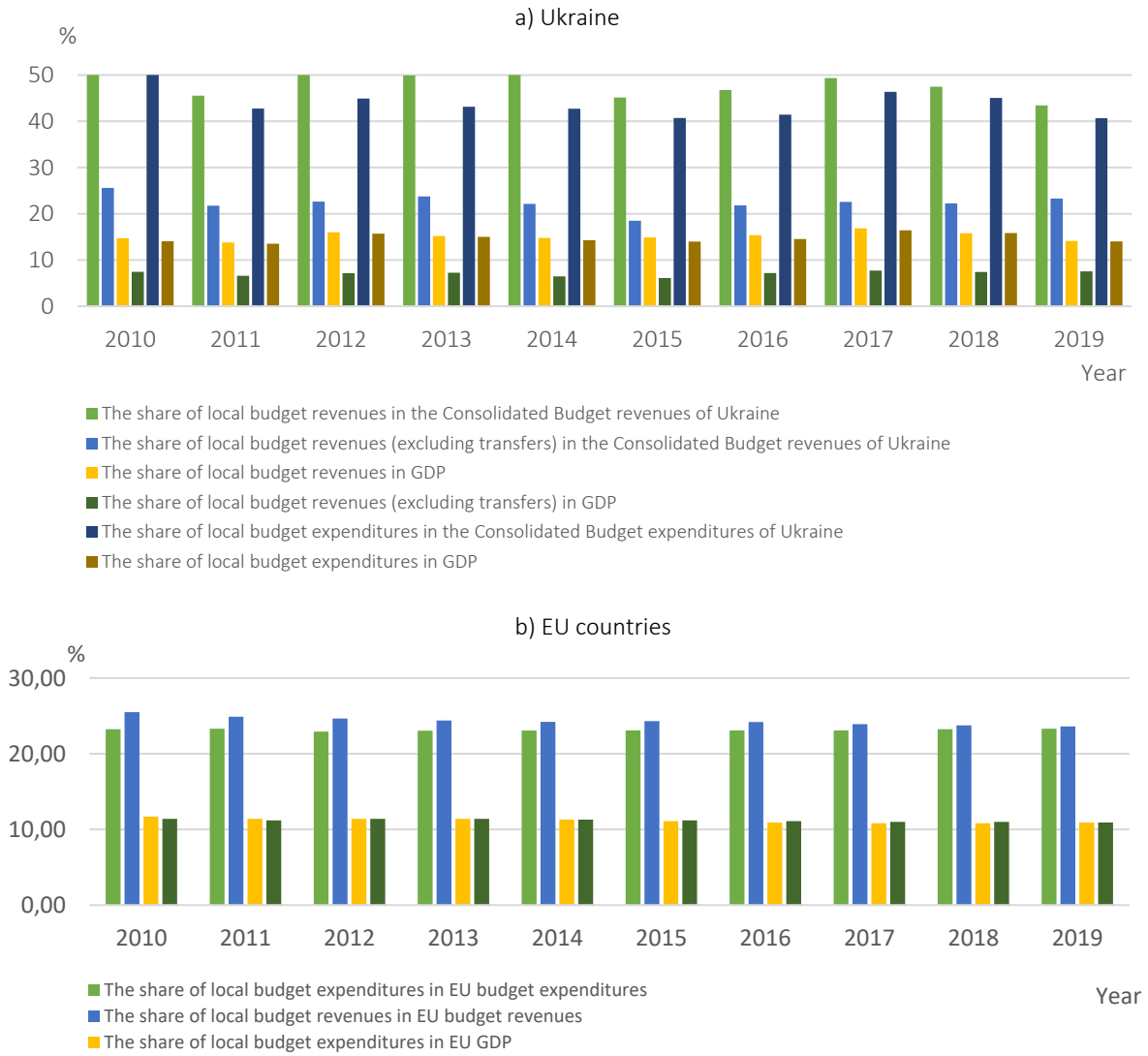

Figure 4. Dynamics of general indices of local budget decentralization in Ukraine and EU countries for 2010–2019

Source: Authors' calculations based on data from the Ministry of Finance of Ukraine and the State Treasury Service of Ukraine.

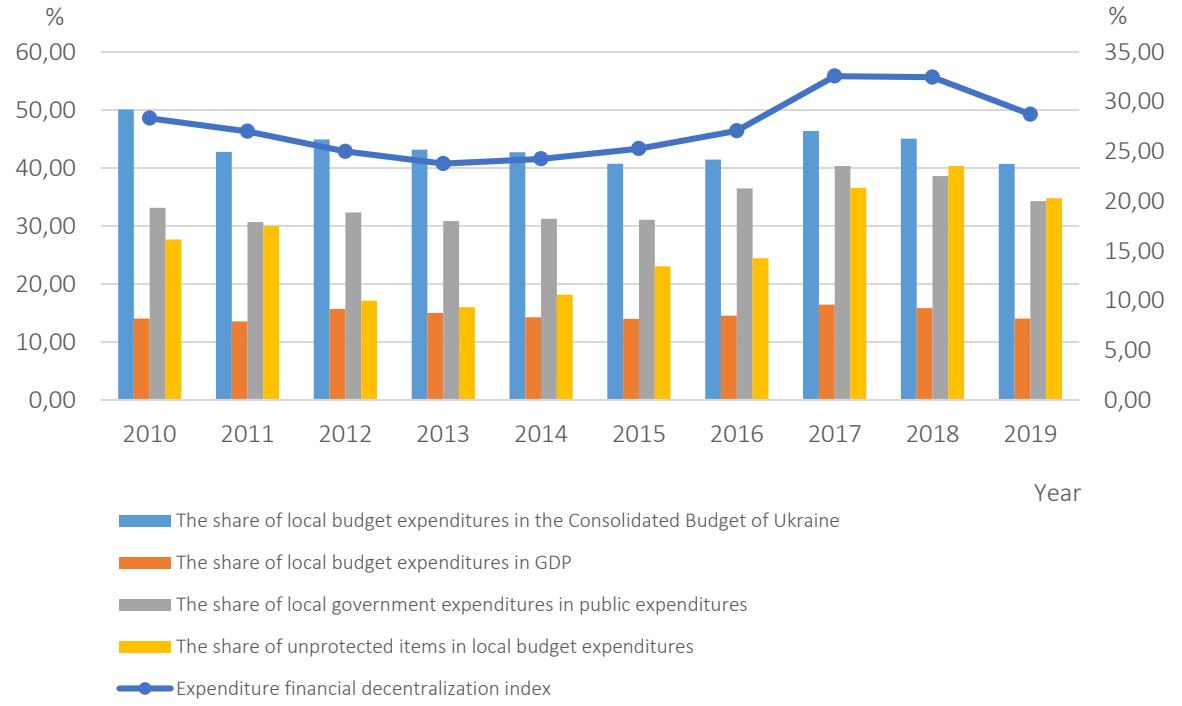

Figure 5. Dynamics of the decentralization index of local budget expenditures in Ukraine for 2010–2019

dicator did not exceed 25.5%, and the average value for 2010–2019 was 24.34%. That is, the accumulation of local budget revenues amounted to about 1/4 of the total financial resources concentrated in the budgets of these countries.

However, the share of local budget expenditures in the structure of the Consolidated Budget of Ukraine is almost twice as high as in the European Union, and ranges from 40.69 to 50.07%. The ratio between the indicators of the revenue and expenditure structure in the European Union does not differ significantly from the indicators, in contrast to the situation of Ukraine's local budgets. This indicates the irrational formation of the revenue and expenditure structure at the local level in Ukraine.

On average, for the analyzed period, the level of decentralization of local revenues in Ukraine's GDP is 7.08%. In the EU, this figure is 11.19% of GDP. The indicator of redistribution of local expenditures in GDP also shows a similar trend. This is confirmed by the average annual value of spending decentralization at 14.74% of Ukraine's GDP, and in the EU – 11.17% of GDP. This trends are primarily due to the specifics of building the state structure of individual EU countries. Therefore, Ukraine needs to increase the share of local budgets in the Consolidated Budget to the average European level.

It should be noted that there is a direct relationship between the share of local budgets in GDP and the level of financial decentralization: an increase in the level of redistribution of local budget revenues and expenditures in GDP is accompanied by increased financial autonomy of local governments and the provision of better quality public services.

Let us conduct a deeper analysis of the effective implementation of the conceptual foundations of local budget financial decentralization in Ukraine using the author's approach to calculating the integrated indicator of financial decentralization. Given that the indicators of local budget expenditure decentralization characterize the potential financial opportunities for obtaining their own sources of revenue to cover expenditures and attracting government transfers to finance delegated powers of local authorities, this indicator set plays a key role in shaping financial independence at the local level and ranks first in the ranking.

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Source: Authors' calculations based on data from the Ministry of Finance of Ukraine and the State Treasury Service of Ukraine.

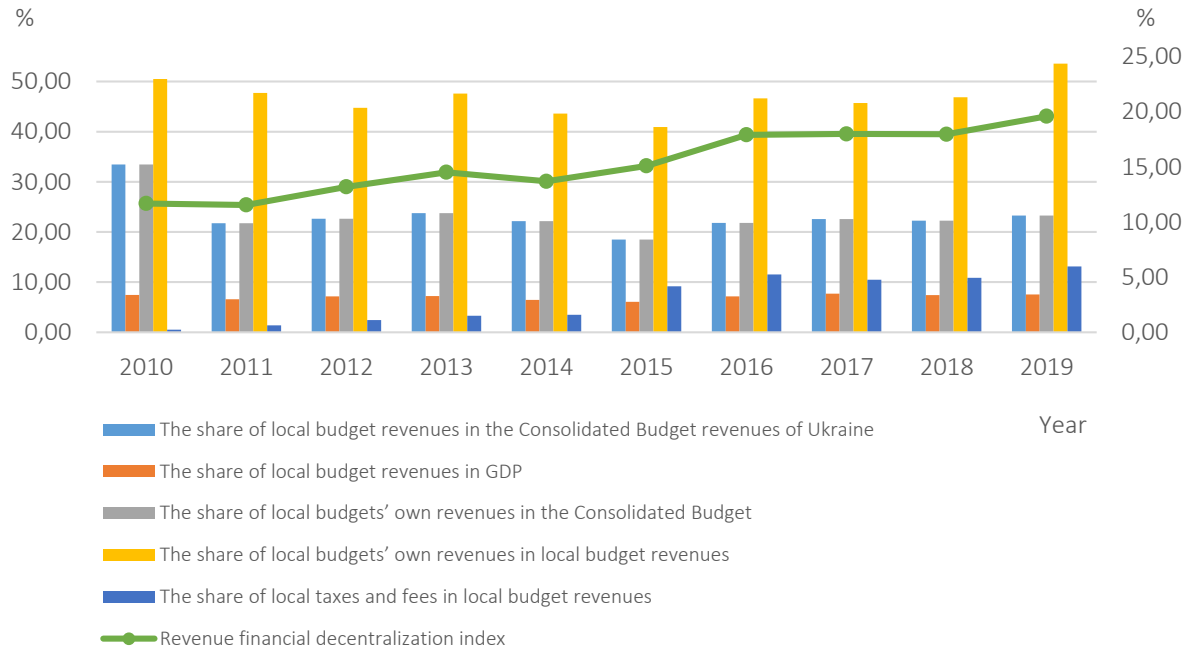

Figure 6. Dynamics of the index of local budget revenue decentralization in Ukraine for 2010–2019

The dynamics of key indicators shaping the index of expenditure financial decentralization is shown in Figure 5.

According to calculations, the highest value of the index of financial decentralization of expenditures is observed in 2017 and 2018 – 32.57 and 32.47%, respectively. This indicates an increase in the level of local budget financial decentralization according to this criterion in the analyzed period. Meanwhile, the lowest value – 23.77% – is observed in 2013, which indicates the growing dependence of local governments on state financial resources.

It should be noted that the adequacy of financial support for the implementation of the functions and tasks assigned to local governments directly depends on the types and specifics of the accumulation of local budget revenues. Calculations of the index of financial decentralization of local budget revenues, which ranks second in the formation of the generalizing criterion, are summarized in Figure 6.

As Figure 6 shows, during the study period, there is a steady trend towards an increase in the index of local budget revenue financial decentralization. This indicates a further increase in the revenue side of local budgets in terms of own revenues and, accordingly, a decrease in the need to attract external resources in the form of transfers. This, in turn, testifies to the effectiveness of the introduction in Ukraine in 2015 of the financial decentralization mechanism in terms of forming the resource component of local governments through the mechanism of redistribution of the corporate income tax and personal income tax for certain communities.

The Ukrainian practice of inter-budget relations shows that the effective implementation of delegated functions of the state at the local level, in the absence of its own resources, is possible only if additional financial resources are attracted in the form of state transfers. Indicators characterizing the dynamics of the components of the integrated index of local budget financial sustainability for transfers are shown in Figure 7.

Analyzing the set of indicators characterizing the financial sustainability of local budgets, it should be noted that the share of inter-budgetary transfers in local budget revenues is quite significant and, during the study period, ranges from 46.44 to 59.08%. It should also be noted that most local budgets are subsidized, which is confirmed by the

Source: Authors' calculations based on data from the Ministry of Finance of Ukraine and the State Treasury Service of Ukraine.

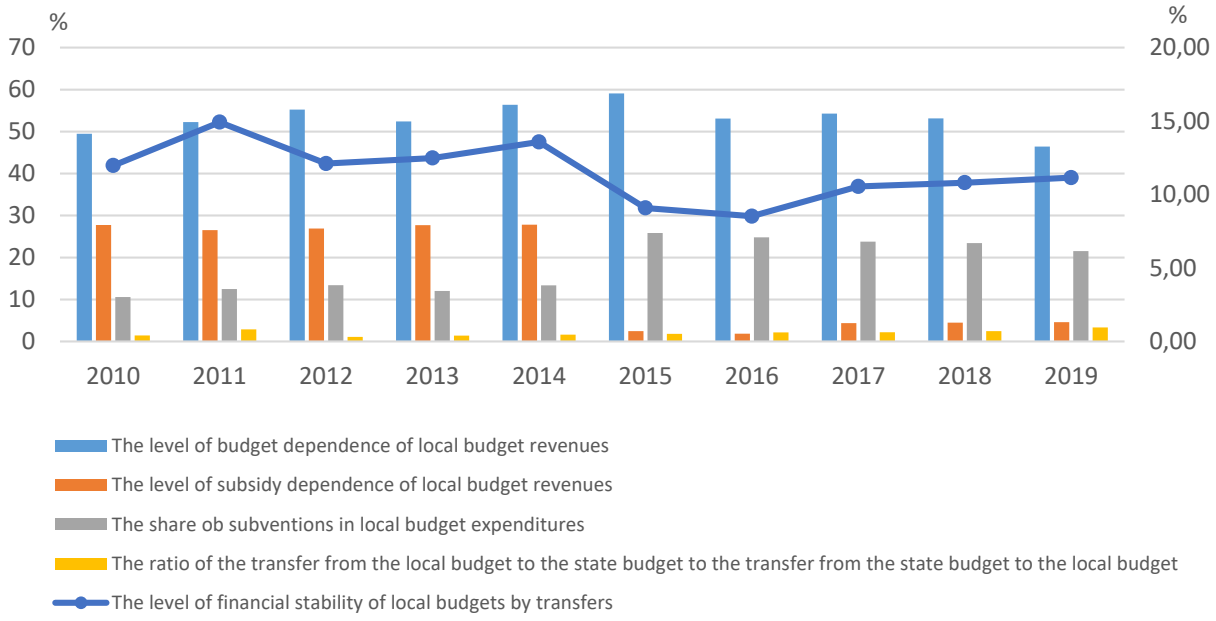

Figure 7. Dynamics of the level of local budgets' financial sustainability in Ukraine by transfers for 2010–2019

low ratio of provided and received inter-budgetary transfers, that is, basic subsidies and subventions prevail in the structure of inter-budgetary transfers.

In general, the level of local budget financial sustainability for transfers averages 11.52% and confirms the significant dependence of the formation of the revenue side of local budgets on state funding, which negatively affects the financial independence of administrative-territorial units.

Determining the influence vector of intermediate indices of financial decentralization, it should be noted that the expenditure indicator acts as a stimulant in relation to the general index of local budget financial decentralization, since it determines the level of financing of current and capital needs of a region. The financial decentralization index by income helps to increase financial autonomy in the accumulation of financial resources at the local level. This is due to the ability to generate income from own financial sources, and therefore acts as an incentive in relation to the general parameter. It should be borne in mind that financial dependence on state transfers is an inverse indicator of financial decentralization, since the growth of subsidy dependence of local budgets indicates a decrease in local budgets' financial solvency, and, accordingly, an increase in the impact of public funding and acts as a disincentive in relation to the general integrated indicator of financial decentralization. Given the direction of influence of these intermediate indicator sets, they were normalized according to the scheme shown in Figure 2.

Calculations of normalized intermediate indices of financial decentralization of expenditures, revenues and transfers were summarized taking into account the level of their impact on the financial decentralization of local budgets (Table 2).

According to the calculations, the local expenditure policy has the greatest influence on the formation of the local budget decentralization index. This is due to the need to perform the functions assigned to local governments to ensure the development of the regions' economies, increase the level of material support for citizens and provide social guarantees to the population. It should be borne in mind that the specifics of determining the directions of spending financial resources at the local level directly depends on the methods of mobilization, composition and structure

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Table 2. The level of local budget financial decentralization in Ukraine for 2010–2019, %

Source: Authors' calculations.

Indicator	Weight	Year									
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Normalized value of the index of expenditure financial decentralization	0.50	0.870	0.830	0.768	0.730	0.745	0.776	0.831	1.000	0.997	0.882
Normalized value of the index of revenue financial decentralization	0.33	0.596	0.589	0.673	0.741	0.699	0.770	0.914	0.918	0.917	1.000
Normalized value of the index of local budget financial sustainability by transfers	0.17	0.712	0.571	0.704	0.683	0.628	0.938	1.000	0.808	0.789	0.764
Index of local budget financial decentralization	1.00	0.753	0.706	0.726	0.725	0.710	0.802	0.887	0.940	0.935	0.901
The level of local budget financial decentralization	–	High	Medium				High				

of local budget revenues. The ability to meet the current needs of regional significance and strategic intentions for the development of territories from their own income sources helps to reduce financial dependence on state transfer resources. It should be noted that the decrease in the level of local budget financial decentralization during 2011–2014 was caused by the negative consequences of the financial and economic crisis, as a result of which the possibility of forming and financing the needs of regional development at their own expense decreased. The achievement of a consistently high level of financial decentralization since 2015 is primarily the result of the effective implementation of certain provisions and principles of financial decentralization at the local level. At the same time, the need to search for reserves for further growth of the regions' financial potential is important for the effective functioning of local budgets. This will ensure stable development and financial independence of the territories from the central authorities in the strategic period.

CONCLUSION

The state and development of local budgets directly depend on the effective and high-quality implementation of the foundations of financial decentralization. The peculiarities of implementing the basic principles of financial decentralization in the formation of the regions' financial resources imply the expansion of local governments' budgetary powers regarding the completeness and stability of budget revenues for their successful implementation; improvement of inter-budgetary relations in order to ensure the financial and economic self-sufficiency of territories to solve local problems and provide citizens with high-quality public services.

In the paper, an algorithm for calculating the integrated index of local budget financial decentralization has been built, which provides for the assessment of general indicators characterizing the formation of local budgets; intermediate sets of indicators of local budget decentralization were calculated according to component criteria, and the vector of their influence on the effective indicator was defined; intermediate indicators of financial decentralization were normalized taking into account the vector of their influence on the performance indicator; for the respective sets of indicators of local budget decentralization, weights were established taking into account their influence on the formation of local budget financial decentralization, and the level of local budget financial decentralization was determined.

It is proposed to rank the integrated indicator of the level of local budget financial decentralization into four sets: critical, low, medium and high. The range of characteristic values of the aggregate indicator is measured from 0 to 1. The recommended value of the indicator of the level of local budget financial

decentralization should be close to 1. Thanks to the proposed methodology for determining the level of local budget financial decentralization, it is possible to achieve objective results of assessing the state of local finances of administrative-territorial units and to determine the factors affecting this state.

AUTHOR CONTRIBUTIONS

Conceptualization: Nadiya Dekhtyar, Katarina Valaskova, Olga Deyneka, Nataliya Pihul.
Data curation: Nadiya Dekhtyar, Olga Deyneka, Nataliya Pihul.
Formal analysis: Nadiya Dekhtyar, Katarina Valaskova, Olga Deyneka, Nataliya Pihul.
Investigation: Nadiya Dekhtyar, Olga Deyneka, Nataliya Pihul.
Methodology: Nadiya Dekhtyar, Olga Deyneka, Nataliya Pihul.
Project administration: Nadiya Dekhtyar, Olga Deyneka.
Resources: Nadiya Dekhtyar, Olga Deyneka, Nataliya Pihul.
Software: Nadiya Dekhtyar, Katarina Valaskova, Olga Deyneka, Nataliya Pihul.
Supervision: Nadiya Dekhtyar, Olga Deyneka, Nataliya Pihul.
Visualization: Nadiya Dekhtyar, Katarina Valaskova, Olga Deyneka, Nataliya Pihul.
Writing – original draft: Nadiya Dekhtyar, Olga Deyneka, Nataliya Pihul.
Writing – review & editing: Nadiya Dekhtyar, Katarina Valaskova, Olga Deyneka, Nataliya Pihul.

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