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# STATISTICAL ESTIMATION OF REGIONAL DISPROPORTIONS IN BANK LENDING IN UKRAINE

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The article examines the processes of regional differentiation in bank lending. The creation of a special fund with mandatory involvement of bank representatives in management has been justified for the first time. The purpose of creating such a fund is to create more favorable conditions for lending in the regions. Based on statistical analysis, the conclusion is drawn that the type of regional development of bank lending in Ukraine, according to the studied parameters, can be unequivocally characterized as asymmetric. The main problem of interregional disparities in lending in Ukraine is the large volume of lending in Kyiv and several other industrial centers, coupled with the slow development of the provinces. Regional asymmetry in banking lending poses a serious threat and a critical challenge that Ukraine is already facing. Disparities in banking lending create several problems for the country, including a slowdown in national economic growth rates due to the need to allocate funds to reduce regional asymmetry, rather than stimulating development; the withdrawal and redistribution of financial resources; the emergence of depressed areas; an increase in social tension in the country; the intensification of disintegration processes, and so on. The study found that significant amounts of credit resources in Kyiv are used for trading and intermediation activities (trade financing, real estate transactions). However, the intensification of interregional differentiation in banking lending does not promote the transition of the economy to an innovative type of development. To overcome negative trends, it is necessary to ensure an inflow of credit resources to regions with a weakened resource base, which will contribute to accelerating their socio-economic development. To activate banking lending in other regions, it is proposed to create a special fund, which will provide economic incentives for lending activation. This will contribute to the redistribution of credit resources in other regions, which will help reduce asymmetry in regional development.

**Keywords:** bank lending, asymmetry, gross value added, coefficient of variation.

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### Introduction and formulation of the problem

Due to various economic, social, natural-geographical, and demographic factors, there has been an increase in territorial disparities in the levels of economic development, including banking and lending, in the regions of Ukraine. This has led to significant negative consequences. Disparities in bank lending contribute to the perpetuation and

exacerbation of regional economic differentiation. And in recent years, they have become even more serious. The main problems that generate disproportionality in regional economic development include the slowdown of economic growth, the emergence of depressed regions, and the increase of social tension in society. It should be noted that the problem of disparities in banking and lending to

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regions of the country is a long-standing problem that has not yet been solved. Moreover, one of the reasons for this situation is the lack of effective mechanisms for regulating territorial proportions, including banking and lending. The inconsistency of the NBU policy, as well as the inability to develop effective mechanisms for regulating regional disparities, has become one of the important reasons for accelerating regional disparities in lending to businesses and the population, and increasing the role of credit as a factor of macroeconomic instability. In particular, the role of credit as a factor in stimulating the import of consumer goods, reducing production in the processing industry, and increasing prices for real estate has increased.

# Analysis and research of publications

In recent years, the problem of regional differentiation of bank lending has not gained widespread attention in economic literature. It should be noted that in many works devoted to the development of the banking system and credit market, regional disparities in lending remain overlooked or are studied fragmentarily [1-4]. While investigating regional peculiarities of lending, D. Gladkykh noted that in Ukraine there is a "disproportion in the structure of lending to legal entities and the population" [5, p. 4]. According to many researchers, excessive disparities in economic development between industrialized and other regions remain a systemic-structural flaw of the national economy. "Moreover, as N. Ruchishina pointed out, this situation is supported by the banking system, which is negative" [6, p. 221]. It should be noted that the EU's regional policy is aimed at preventing regional divergence and promoting their convergence. Overall, "the EU's regional policy is aimed at reducing social and economic disparities in the development of particular territories" [7].

It should be noted that researchers do not evaluate regional disparities in terms of their impact on the dynamics and proportions of economic growth. Many authors studying regional peculiarities of lending limit themselves to calculating the structure of loans issued by region. However, such calculations do not fully allow assessing the differentiation of bank lending, the intensity and direction of this process. Moreover, there is no development of specific measures to eliminate disparities in regional development of bank lending in these works.

# Purpose of the article

The aim of the article is to provide a statistical assessment of regional differentiation of bank lending in Ukraine, as well as to develop the main directions

for improving regional policy in terms of redistributing credit resources towards strengthening the impact of credit on economic development.

#### Presentation of the main material

An important condition for ensuring sustainable economic growth is the formation of optimal proportions in the distribution of material, labor, and financial resources of the country. Bank lending in all of its functions plays an important role in maintaining economic proportions.

Regional economic policy of the state is aimed at overcoming disparities in economic development. For example, in the Presidential Decree of May 25, 2001 No. 341/2001 "On the Concept of State Regional Policy", it is stated that the main goal of state regional policy is to gradually reduce the level of territorial differentiation of economic development of regions and social security of citizens.

The concept of asymmetric (convergence) and symmetric (divergence) types of regional development has gained wide popularity in the assessment of regional disparities among domestic (I. Storonyanska, V. Chuzhykov, O. Kremen, et al.) and foreign scientists (R. Barro, X. Sala-i-Martin). Regional asymmetry is the lack of symmetry in the levels of development of regions, which is manifested in their non-correspondence. Regional symmetry (convergence) implies the convergence of levels of economic development, and regional asymmetry (divergence) implies an increase in unevenness.

Various indicators of mathematical statistics are used to assess the type of regional development: variation indicators (variation range, variance, standard deviation); concentration indicators (Gini coefficient, Taylor index); structure indicators, etc. If the coefficient of variation or the mean linear deviation decreases over a certain period, this means that convergence is taking place. When these indicators are increasing, it means that divergence is occurring in the development of the studied objects.

As known from the theory of statistics, the range of variation characterizes the limits of deviation of variable characteristics, but it does not allow us to determine the degree of fluctuation of characteristics within the population. Therefore, in order to assess disparities in regional lending, we calculated coefficients of variation, which allow us to assess the degree of fluctuation of bank lending by individual regions. The advantage of the correlation coefficient is that it characterizes the statistical population in terms of the degree of dispersion  $(x_i)$  around its mean value (x) [10, p. 308]. The coefficient of correlation is most commonly used to assess regional

differentiation of bank lending. The calculation was performed using the formula

$$V_{\sigma} = \frac{\sigma_{x}}{\overline{x}} \cdot 100\%, \tag{1}$$

where  $\sigma_x$  — the standard deviation of regional indicators of bank lending from the average level;  $\bar{x}$  — the average amount of loans provided across all regions of the country.

The correlation coefficient is used not only for comparative evaluation but also as a characteristic of a homogeneous population. A population is considered homogeneous if the value of the correlation coefficient exceeds 33%. In addition to indicators that characterize the degree of deviation of features from the mean level, a range of indicators such as the disproportionality coefficient, extreme and mean values are used to assess regional differentiation of economic development [9, p. 15-27].

Despite the crisis phenomena, the development of the banking system in Ukraine is characterized by an increase in lending volumes. The volume of loans provided by deposit corporations increased from 971.9 million UAH in 2019 to 1007.6 million UAH in 2022. Over the last three decades, the dominant trend in the development of the country's banking system has been the strengthening of unevenness in lending to individual regions. This significantly affects the country's economic growth. Table 1 provides data

on the dynamics of the coefficient of variation for a range of lending objects.

According to Table 1, banking lending is characterized by significant asymmetry of development. The coefficient of variation has reached threatening levels and has shown a stable trend towards growth. The gap in banking lending to non-financial corporations is increasing particularly quickly. The correlation coefficient of the volume of loans provided by financial corporations has increased from 253.6% in 2019 to 297.6% in 2022.

The indicators that characterize the variation of banking lending suggest a critical challenge that the Ukrainian economy is facing in modern conditions. The differentiation of banking lending to enterprises by individual types of activity is increasing. This is confirmed by the data in Table 2.

Significant regional differences are observed, especially in lending to trade enterprises and real estate operations. The deviation of the volume of loans provided from the average by regions was 370% and 410.7% in 2022, respectively. The increase in lending to the processing industry and agriculture was also accompanied by regional differentiation, albeit to a lesser extent.

Thus, the increase in lending volumes occurred simultaneously with the processes of regional asymmetry. The increasing scale of bank lending concentration is confirmed by the following data. Three regions (Kyiv, Dnipropetrovsk, and Lviv regions) accounted for 65-90% of all credit resources (Table 3).

Table 1 Coefficient of variation, standard deviation, mean absolute deviation, all regions of Ukraine

Metric	Year							
Ivieti ic	2019	2020	2021	2022				
Total amount of loans								
Standard deviation, mln UAH	102699.5 125050.0		130100.4	124962.6				
Coefficient of variation, %	253.6	316.6	299.1	297.6				
Mean absolute deviation, mln UAH	52797.3	51112.1	53660.5	50623.4				
Loans provided to non-financial corporations								
Standard deviation, mln UAH	84174.6	104167.7	100470.9	99308.6				
Coefficient of variation, %	271.3	345.2	320.5	315.9				
Mean absolute deviation, mln UAH	44184.4	41898.3	40805.5	31988.6				
	Loans provided	d to individuals						
Standard deviation, mln UAH	17285.3	18418.6	23765.8	20281.1				
Coefficient of variation, %	195.2	214.5	223.6	216.4				
Mean absolute deviation, mln UAH	8052.4	8483.6	10691.8	9396.6				

Calculated from: Loans provided by deposit corporations, by economic sectors / State Statistics Committee of Ukraine. URL: http://www.ukrstat.gov.ua

 $Table\ 2$  Statistical indicators of regional differentiation of bank lending by specific types of economic activity

Matria	Year							
Metric	2019	2020	2021	2022				
Processing sector								
Standard deviation, mln UAH	22953.6	20704.6	14569.2	12720.2				
Coefficient of variation, %	310.9	281.1	238.5	242.1				
Mean absolute deviation, mln UAH	9561.4 8615.1 6		6819.4	6038.2				
Agriculture								
Standard deviation, mln UAH	3752.7	5041.6	4971.1	7035.7				
Coefficient of variation, %	146.5	171.6	144.4	145.7				
Mean absolute deviation, mln UAH	2152.5	2696.7	2705.3	4808.8				
Construction								
Standard deviation, mln UAH	3994.7	3317.9	3415.7	3073.6				
Coefficient of variation, %	297.2	400.7	362.0	356.0				
Mean absolute deviation, mln UAH	2184.0	1324.2	1411.1	3852.4				
Real estate transactions								
Standard deviation, mln UAH	8490.4	8116.4	3415.7	9641.4				
Coefficient of variation, %	335.2	387.8	362.0	410.7				
Mean absolute deviation, mln UAH	4128.4	3331.7	1411.1	3852.4				
Trade								
Standard deviation, mln UAH	32520.6	42127.4	45298.8	43323.0				
Coefficient of variation, %	293.3	389.2	371.6	370.0				
Mean absolute deviation, mln UAH	17288.4	16807.0	18058.8	17273.4				

Calculated from: Loans provided by deposit corporations, by economic sectors / State Statistics Committee of Ukraine. URL: http://www.ukrstat.gov.ua

 $Table \ 3$  Share of certain regions of Ukraine in loans issued by deposit corporations in 2022, %

Number of regions Total		Including						
	Total	Agriculture	Mining	Processing Construction	Trade	Transportation,	_	
			ındustry	ındustry			warehousing	transactions
1	67.0	30.9	92.1	51.2	79.0	77.9	70.8	86.0
3	75.4	42.8	95.4	65.0	84.4	84.3	70.8	90.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1 – Kyiv city and Kyiv region; 3 – Kyiv city and Kyiv region, Dnipropetrovsk region, Lviv region. Calculated from: Loans provided by deposit corporations, by economic sectors / State Statistics Service of Ukraine. [Online resource]: Access mode: http://www.ukrstat.gov.ua.

Especially high concentration of credit resources is observed in construction, real estate operations, and trade. For example, in trade in Kyiv and the Kyiv region, 77.9% of the total loan volume was accounted for in 2022, and in real estate operations, 86.0%. A similar situation was observed in consumer lending, where the share of three regions was 61.2%. A significant portion of trade credit resources services turnover from the sale of primarily imported cars and household appliances. According to the State Statistics Service of Ukraine, in 2021, the turnover from the sale of cars in Kyiv amounted

to UAH 18.1 billion, including domestic production — UAH 0.2 billion. which is 1.1%. A similar situation is observed with consumer lending for household appliances. The majority of consumer loans are also directed at purchasing real estate, movable property, and household appliances.

Such a direction of redistribution of credit resources could be considered acceptable if in regions with an extraordinary level of credit resource concentration: 1) the volume of high-tech economic activity grew at an accelerated pace; 2) labor productivity was tens and hundreds of times higher than in other regions; 3) the economic efficiency of investment activities of non-financial corporations was significantly higher. However, this is not happening.

Firstly, the lending structure in regions with a high concentration of credit resources is focused on the priority development of trade, real estate operations, and other service sectors. Such a lending structure does not create conditions for innovative economic growth.

Secondly, labor productivity does not have such significant differences. Indirect evidence of this situation is the following data. According to the State Statistics Service of Ukraine, the gross regional product per capita in the Zhytomyr region is 66.2 thousand UAH, which is only 4.4 times less than in Kyiv (297.6 thousand UAH), while the volume is smaller by as much as 73 times!

A paradoxical situation has arisen in Ukraine with bank lending. On the one hand, agglomerations of bank lending have been formed, where credit is actively used to finance all types of economic activity, primarily in the circulation sector. On the other hand, there are all other regions where bank lending does not have any significant importance for the development of the regional economy.

The high concentration of bank lending does not lead to accelerated economic development of the country, since the growth of production in credit centers is accompanied by a slowdown in growth in other regions. The following data (Table 4) indicate a high concentration of bank lending.

According to calculations, the volume of loans provided to non-financial corporations in Kyiv for

Table 4
Volume of loans provided to non-financial corporations
per 1 UAH of gross value added by individual regions,
in kop

Metric	Year			
Wietric	2019	2020		
Overall in Ukraine	18.7	17.2		
Including:				
Kyiv city and Kyiv region	32.9	42.0		
Zhytomyr region	3.2	2.7		
Rivne region	3.5	3.1		
Zaporizhzhia region	9.4	9.3		
Chernivtsi region	2.4	2.2		

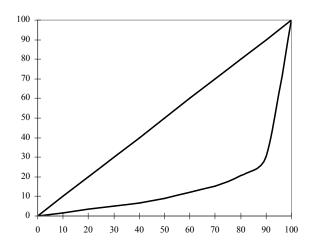
Calculated from: Loans provided by deposit corporations by economic sectors / State Statistics Committee of Ukraine. URL: http://www.ukrstat.gov.ua; Gross value added by regions of Ukraine. State Statistics Committee of Ukraine. URL: http://www.ukrstat.gov.ua.

every 1 UAH of gross value added is only 3.0-10.0 times higher than the indicators of the regions taken for comparison. However, the volume of lending is characterized by divergences in hundreds and thousands of times. For example, the amount of loans provided to the Zhytomyr region in 2020 was only UAH 2,448.3 million, which is 216.5 times less than in Kyiv and the Kyiv region. This means that the overwhelming majority of the country's regions have an excessively high concentration of credit resources in just three regions, which is a result of the asymmetry of banking lending. Significant volumes of banking lending do not contribute to sustainable economic growth and the transition to an innovative type of economic development. Moreover, lending stimulates the growth of the consumer model of economic development, rapid growth in the import of industrial and consumer goods.

To confirm the conclusions regarding the strengthening of differentiation of banking lending, the concentration index (Lorenz) will be considered, which characterizes the cumulative growth of two values plotted on one graph and shows the degree of concentration of individual elements of the population by groups [11]. The procedure for calculating the data for constructing the Lorenz curve is presented in Table 5.

By plotting the data from columns 7 and 8 on the graph, we depict the concentration curve, the deviation of which from the line of uniform distribution will characterize the degree of concentration. The Lorenz curve is shown in Figure.

The data shows that only 9.0% of bank loans were allocated to 50% of the regions in Ukraine.



Concentration curve of bank lending (Lorenz concentration curve)

Source: authors' development

Building the Lorenz curve

Table 5

Range Frequency m <sub>i</sub>	Frequency	Middle of		-	ency (percentage) ne total	Cumulative relative numbers (as percentages of the total)	
	the Range x <sub>i</sub>	m <sub>i</sub> x <sub>i</sub>	$w_i = \frac{m_i}{\sum m_i} \cdot 100$	$R_i = \frac{m_i x_i}{\sum m_i x_i} \cdot 100$	$\sum_1^i w_i$	$\sum_{1}^{i} R_{i}$	
A	1	2	3	4	5	6	7
Up to 10	11	7049.8	77548.1	45.83	7.70	45.83	7.70
10-20	7	13279.9	92959.2	29.17	9.23	75.00	16.92
10-40	2	31331.8	62663.7	8.33	6.22	83.33	23.14
40-100	3	45557.6	136672.7	12.50	13.56	95.83	36.70
100-700	1	637798.6	637798.6	4.17	63.30	100.00	100.00
Total	24		1007642.3				

Source: calculated by the authors

Furthermore, 90% of the country's regions received only 30.4% of the bank loans, while the remaining 10% of regions received 69.6% of all loans. This situation may be effective only if the GDP volume in loan concentration centers exceeds the GDP volume in other regions by several times, but this is not the case. The lack of development in high-tech sectors such as machine building, chemical, pharmaceutical, and others, contributes to this problem. Lending resources are mainly used for financing trade, real estate transactions, and consumer demand.

It is important to note that the high cost of credit severely limits the demand for credit resources by companies in the material production sector, especially the processing industry. In contrast, trade and real estate operations are characterized by high profitability and capital turnover, allowing them to pay high interest rates without significant financial risks. As a result, credit resources are redistributed from industry financing to trade and real estate financing.

Financing speculative operations in the real estate market in Kyiv has led to the price of 1 square meter of housing being higher than even in developed EU countries. Meanwhile, companies in the real sector, primarily the processing industry, in the regions struggle with a shortage and high cost of bank loans. This leads to a decrease in lending opportunities and slows down the modernization of the technical base of companies in the regions.

It should be noted that such a situation with regional disparities in lending has been observed for more than 30 years. In our own research, we have shown that increasing consumer demand leads to an increase in production not in Ukraine, but abroad.

The products of domestic manufacturers, especially in the industrial sector, are aimed at satisfying intermediate consumption and exports [12, p. 62]. Unfortunately, this situation has not changed. The NBU has not taken any significant measures to regulate regional disparities in bank lending over a 30-year period.

Therefore, in our opinion, it is possible to correct the situation with the disproportionality of bank lending. However, it has deteriorated to such an extent that it poses a serious threat and is a critical challenge for the economy of Ukraine. This should be taken into account when developing corrective measures. A comprehensive approach is needed here. Because there are reasons to believe that measures applied in certain depressed regions will not be able to correct the situation. Therefore, a special program needs to be introduced at the national level.

The analysis of differentiation in bank lending in Ukraine and scientific opinion, in particular [13, 14], make it possible to outline the following directions for solving this problem:

a) creation of a fund to promote economic development of regions. Banks should be involved in the fund as participants, and they should be involved in managing the fund's resources. The government's participation in the fund and its management should be completely excluded to prevent possible abuses and corruption and ensure the fund's efficient operation. The fund's promising direction of work should be the compensation of part of the interest rates on loans issued by participant banks in regions with a low level of lending. This will balance the economic interests of the participant banks and provide a comprehensive solution to the problem. The participation of banks in managing

the fund is mandatory and ensures transparency in the use of accumulated resources. Lowering the cost of lending creates incentives for economic growth in territories, promotes business activity and further increases the demand for loans.

b) promoting the development of the nonbanking part of the financial sector in regions, primarily through credit unions, as well as small and medium-sized businesses.

The NBU's strong vector towards increasing bank capitalization has contributed to greater stability in the banking system. However, this also increases financial requirements for banks, causing them to close their branches in regions. As a result, loans become less accessible for clients outside of major urban areas. Non-banking financial sector representatives are fully capable of creating a competitive proposal for them. Moreover, small and medium-sized businesses tend to operate directly in their places of residence. This will also contribute to improving the socio-economic situation locally, increasing business activity, and as a result, increasing demand for loans and balancing disparities.

The role of the state in this process is to make the work of small and medium-sized businesses as comfortable as possible at the local level, to prevent tax raiding and to ensure maximum protection of private investments.

The mentioned measures will create conditions for innovative development based on the principles of sustainable development. Their comprehensive nature will allow balancing the interests of banks and their borrowers in regions that require acceleration of economic development. The development of the non-banking sector of the financial sector will provide access to financial resources for borrowers who are outside the coverage of banking lending due to their territorial remoteness or other reasons. In general, this will contribute to increasing business activity and the development of regions as a whole. Moreover, it will allow creating points of economic growth there through the development of local businesses, the creation of new jobs, and increasing the incomes of the local population. However, all of this is only possible with a constructive position from state representatives.

#### **Conclusions**

The strengthening of regional asymmetry in bank lending poses a serious threat to the economic development of Ukraine. In recent years, there has been an increase in regional asymmetry in bank lending in Ukraine, as evidenced by critically high values of variation and concentration indicators. The biggest fluctuations were typical for lending to trade,

construction, and real estate operations. The situation has reached alarming proportions, posing a potential danger to the stability of Ukraine's economy and the revival of economic growth in most regions.

It has been proven that significant disparities lead to a substantial gap in the levels of lending and loans support for economic growth. Economic growth in Kyiv is largely achieved through bank loans, reaching over 40 kop. per 1 UAH of gross value added. At the same time, in other regions, the share of loans to non-financial corporations in gross value added is insignificant and does not exceed 3-4 kop. Under such conditions, the possibility of updating the material base of production industries in the regions is lost. As a result, stagnation intensifies in the regions and the technical condition of such industries deteriorates.

The solution lies in the formation of powerful socio-economic conditions for the development of underdeveloped territories. This can be achieved through the creation of a special fund that would be formed and controlled by banks, as well as through the development of the small and medium-sized business entities, primarily in the financial sector. At the state level, conditions must be created to provide maximum protection for private investments from tax raiding and other political threats.

#### REFERENCES

- 1. Karcheva, H. T., Smovzhenko, T. S., Mischenko, V. I., et al. (2016). *Efektyvnist ta konkurentospromozhnist bankivskoi systemy Ukrainy* [*Effectiveness and competitiveness of the banking system of Ukraine*]. Kyiv: State higher educational institution "University of banking" [in Ukrainian].
- 2. Rushchyshyn, N. M. (2021). Realizatsiya potentsialu bankivskoi systemy v zabezpechenni strukturnoho reformuvannia ekonomiky Ukrainy [Implementation of the potential of the banking system in ensuring the structural reform of the economy of Ukraine]. *Doctor's thesis*. Lviv University of Trade and Economics [in Ukrainian].
- 3. Koval, Y. S. (2020). Mekhanizmy derzhavnoho rehuliuvannia antykyrizovym upravlinniam ekonomichnoyu bezpekoyu bankivskyh ustanov Ukrainy [Mechanisms of state regulation through crisis management of the economic security of Ukrainian banking institutions]. Kyiv: University of Economics and Law "KROK" [in Ukrainian].
- 4. Dziubliuk, O. V. (Ed.). (2014). Hroshovo-kredytne rehuliuvannia u mekhanizmi zabezpechennia makroekonomichnoi stabilizatsii i efektyvnosti funktsionuvannia bankivs'koi systemy Ukrainy [Monetary and credit regulation in the mechanism of ensuring macroeconomic stabilization and efficiency of the banking system of Ukraine]. Ternopil: Ternopil National Economic

University [in Ukrainian].

- 5. Hladkykh, D. M. (2020). *Prioritety aktyvizatsiyi bankivskoho kredytuvannia v Ukraini* [*Priorities for activating bank lending in Ukraine*] National Institute for Strategic Studies [in Ukrainian].
- 6. Rushchyshyn, N. M. (2021). Realizatsiia potentsialu bankivskoi systemy v zabezpechenni strukturnoho reformuvannia ekonomiky Ukrainy [Implementation of the potential of the banking system in ensuring the structural reform of the economy of Ukraine]. Doctoral dissertation. Lviv University of Trade and Economics [in Ukrainian].
- 7. Tretyak. Y., & Mrinska, O. (2013). *Polityka rehionalnoho rozvytku: dosvid YES ta uroky dlia Ukrainy* [*Regional development policy: Experience of the EU and lessons for Ukraine*]. Support to Ukraine's Regional Development Policy. Funded by the European Union. [in Ukrainian].
- 8. The President of Ukraine (2001). *Pro Kontseptsiiu derzhavnoi rehionalnoi polityky* [*On the Concept of State Regional Policy*]. Decree of the President of Ukraine No. 341/2001 [in Ukrainian].
- 9. Raievneva. O. V., & Bobkova, O. Y. (2014). Dysproportsiynist sotsialno-ekonomichnoho rozvytku rehioniv Ukrayiny: instrumentariy otsinyuvannya ta rehulyuvannya [Disproportionality of socio-economic development of regions of Ukraine: Assessment and regulation toolkit]. Kharkiv: INZHEK [in Ukrainian].
- 10. Nepran. A. V., & Dmitriev, I. A. (Ed.) (2022). *Zahalna teoriya statystyky* [*General theory of statistics*]. Kharkiv: PP Ivanchenko [in Ukrainian].
- 11. Osaulenko, O. G.. Vasiechko, O. O.. Pugachova, M. V., & others. (2012). *Statystychnyy slovnyk* [*Statistical dictionary*]. Kiev: DP "Inform-analyt. agency" [in Ukrainian].
- 12. Nepran. A. V., Khalin. V. P., & Novikova, K. I. (2013). Rozvytok spozhyvchoho kredytu v Ukrayini [Development of consumer credit in Ukraine]. *Naukovi zapysky Kharkivskoho ekonomiko-pravovoho universytetu. Pravo. Ekonomika. Humanitarni nauky Scientific Notes of Kharkiv University of Economics and Law. Law. Economics. Humanities, 1* [in Ukrainian].
- 13. Wright, Glendal & Slukhai, Sergii & Yakymchuk, Bohdan. (2022). Amalgamation and Local Finance: A Case Study of Ukraine. *Central European Public Administration Review*, *20*, 147-168. DOI:10.17573/cepar.2022.2.07 [in English].
- 14. Ahunov, Muzaffar & Van Hove, Leo & Jegers, Marc. (2010). Banking Market Structure, Institutions, and SMEs' Access to Finance in Transition Economies: The Case of Ukraine. *SSRN Electronic Journal*. DOI: 10.2139/ssrn.1692734 [in English].

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#### СТАТИСТИЧНА ОЦІНКА РЕГІОНАЛЬНИХ ДИСПРОПОРЦІЙ БАНКІВСЬКОГО КРЕДИТУВАННЯ В УКРАЇНІ

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В статті досліджуються процеси регіональної диференціації банківського кредитування. Вперше обґрунтовано створення спеціального фонду із обов'язковим залученням до управління представників банків. Метою створення такого фонду  $\epsilon$ створення більш сприятливих умов для кредитування в регіонах. На основі статистичного аналізу зроблено висновок, що тип регіонального розвитку банківського кредитування в Україні за досліджуваними параметрами може однозначно бути охарактеризований як асиметричний. Головною проблемою міжрегіональних диспропорцій кредитування в Україні є великі обсяги кредитування м. Києва та кількох інших промислових центрів при повільному розвитку провінцій. Регіональна асиметрія банківського кредитування становить серйозну загрозу і є критичним викликом, з яким Україні доводиться стикатися уже зараз. Диспропорції в банківському кредитуванні породжує низку проблем для держави, а саме: уповільнення загальнонаціональних темпів економічного зростання, пов'язане з необхідністю виділення коштів для зменшення регіональної асиметрії, а не на стимулювання розвитку; вилученням і перерозподілом фінансових ресурсів; виникнення депресивних територій; підвищення соціальної напруженості в країні; посилення дезінтеграційних процесів та інше. Встановлено, що значні обсяги кредитних ресурсів в м. Києві використовуються для торговельно-посередницької діяльності (кредитування торгівлі, операцій з нерухомістю). Разом з тим посилення міжрегіональної диференијації банківського кредитування не забезпечує перехід економіки на інноваційний тип розвитку. Для подолання негативних тенденцій необхідно забезпечити приплив кредитних ресурсів в регіони з ослабленою ресурсною базою, що буде сприяти прискоренню їх соціально-економічного розвитку. З метою активізації банківського кредитування в інших регіонах запропоновано створити спеціальний фонд, за рахунок якого будуть надані економічні стимули для активізації кредитування. Це буде сприяти перерозподілу кредитних ресурсів в інші області, що дозволить знизити асиметрію в регіональному роз-

**Ключові слова:** банківське кредитування, асиметрія, валова додана вартість, коефіцієнт варіації.

# STATISTICAL ESTIMATION OF REGIONAL DISPROPORTIONS IN BANK LENDING IN UKRAINE

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The article examines the processes of regional differentiation in bank lending. The creation of a special fund with mandatory involvement of bank representatives in management has been justified for the first time. The purpose of creating such a fund is to create more favorable conditions for lending in the regions. Based on statistical analysis, the conclusion is drawn that the type of regional development of bank lending in Ukraine, according to the studied parameters, can be unequivocally characterized as asymmetric. The main problem of interregional disparities in lending in Ukraine is the large volume of lending in Kyiv and several other industrial centers, coupled with the slow development of the provinces. Regional asymmetry in banking lending poses a serious threat and a critical challenge that Ukraine is already facing. Disparities in banking lending create several problems for the country, including a slowdown in national economic growth rates due to the need to allocate funds to reduce regional asymmetry, rather than stimulating development; the withdrawal and redistribution of financial resources; the emergence of depressed areas; an increase in social tension in the country; the intensification of disintegration processes, and so on. The study found that significant amounts of credit resources in Kyiv are used for trading and intermediation activities (trade financing, real estate transactions). However, the intensification of interregional differentiation in banking lending does not promote the transition of the economy to an innovative type of development. To overcome negative trends, it is necessary to ensure an inflow of credit resources to regions with a weakened resource base, which will contribute to accelerating their socio-economic development. To activate banking lending in other regions, it is proposed to create a special fund, which will provide economic incentives for lending activation. This will contribute to the redistribution of credit resources in other regions, which will help reduce asymmetry in regional development.

**Keywords:** bank lending, asymmetry, gross value added, coefficient of variation.

#### REFERENCES

- 1. Karcheva, H. T., Smovzhenko, T. S., Mischenko, V. I., et al. (2016). *Efektyvnist ta konkurentospromozhnist bankivskoi systemy Ukrainy* [*Effectiveness and competitiveness of the banking system of Ukraine*]. Kyiv: State higher educational institution "University of banking" [in Ukrainian].
- 2. Rushchyshyn, N. M. (2021). Realizatsiya potentsialu bankivskoi systemy v zabezpechenni strukturnoho reformuvannia ekonomiky Ukrainy [Implementation of the potential of the banking system in ensuring the structural reform of the economy of Ukraine]. *Doctor's thesis*. Lviv University of Trade and Economics [in Ukrainian].
- 3. Koval, Y. S. (2020). Mekhanizmy derzhavnoho rehuliuvannia antykyrizovym upravlinniam ekonomichnoyu bezpekoyu bankivskyh ustanov Ukrainy [Mechanisms of state regulation through crisis management of the economic security of Ukrainian banking institutions]. Kyiv: University of Economics and Law "KROK" [in Ukrainian].

- 4. Dziubliuk, O. V. (Ed.). (2014). *Hroshovo-kredytne rehuliuvannia u mekhanizmi zabezpechennia makroekonomichnoi stabilizatsii i efektyvnosti funktsionuvannia bankivs'koi systemy Ukrainy* [Monetary and credit regulation in the mechanism of ensuring macroeconomic stabilization and efficiency of the banking system of Ukraine]. Ternopil: Ternopil National Economic University [in Ukrainian].
- 5. Hladkykh, D. M. (2020). *Prioritety aktyvizatsiyi bankivskoho kredytuvannia v Ukraini* [*Priorities for activating bank lending in Ukraine*] National Institute for Strategic Studies [in Ukrainian].
- 6. Rushchyshyn, N. M. (2021). Realizatsiia potentsialu bankivskoi systemy v zabezpechenni strukturnoho reformuvannia ekonomiky Ukrainy [Implementation of the potential of the banking system in ensuring the structural reform of the economy of Ukraine]. Doctoral dissertation. Lviv University of Trade and Economics [in Ukrainian].
- 7. Tretyak. Y., & Mrinska, O. (2013). *Polityka rehionalnoho rozvytku: dosvid YES ta uroky dlia Ukrainy* [*Regional development policy: Experience of the EU and lessons for Ukraine*]. Support to Ukraine's Regional Development Policy. Funded by the European Union. [in Ukrainian].
- 8. The President of Ukraine (2001). *Pro Kontseptsiiu derzhavnoi rehionalnoi polityky* [*On the Concept of State Regional Policy*]. Decree of the President of Ukraine No. 341/2001 [in Ukrainian].
- 9. Raievneva. O. V., & Bobkova, O. Y. (2014). Dysproportsiynist sotsialno-ekonomichnoho rozvytku rehioniv Ukrayiny: instrumentariy otsinyuvannya ta rehulyuvannya [Disproportionality of socio-economic development of regions of Ukraine: Assessment and regulation toolkit]. Kharkiv: INZHEK [in Ukrainian].
- 10. Nepran. A. V., & Dmitriev, I. A. (Ed.) (2022). *Zahalna teoriya statystyky* [*General theory of statistics*]. Kharkiv: PP Ivanchenko [in Ukrainian].
- 11. Osaulenko, O. G.. Vasiechko, O. O.. Pugachova, M. V., & others. (2012). *Statystychnyy slovnyk* [*Statistical dictionary*]. Kiev: DP "Inform-analyt. agency" [in Ukrainian].
- 12. Nepran. A. V., Khalin. V. P., & Novikova, K. I. (2013). Rozvytok spozhyvchoho kredytu v Ukrayini [Development of consumer credit in Ukraine]. Naukovi zapysky Kharkivskoho ekonomiko-pravovoho universytetu. Pravo. Ekonomika. Humanitarni nauky Scientific Notes of Kharkiv University of Economics and Law. Law. Economics. Humanities, 1 [in Ukrainian].
- 13. Wright, Glendal & Slukhai, Sergii & Yakymchuk, Bohdan. (2022). Amalgamation and Local Finance: A Case Study of Ukraine. *Central European Public Administration Review, 20*, 147-168. DOI:10.17573/cepar.2022.2.07 [in English].
- 14. Ahunov, Muzaffar & Van Hove, Leo & Jegers, Marc. (2010). Banking Market Structure, Institutions, and SMEs' Access to Finance in Transition Economies: The Case of Ukraine. SSRN Electronic Journal. DOI: 10.2139/ssrn.1692734 [in English].