STRUCTURAL ASYMMETRIES IN THE DISTRIBUTION OF LOAN CAPITAL IN THE ECONOMY

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Abstract. The efficiency of the loan capital market is largely determined by the nature of the distribution of credit resources across individual sectors of the economy. Disruptions to the balance of this process give rise to structural asymmetries, which gradually weaken the performance of the financial intermediation function of financial institutions, restrict business entities' access to financial resources, and adversely affect economic development. *The subject of the study* is the process through which structural asymmetries emerge during the redistribution of loan capital in Ukraine's economy. *The purpose of the study* is to develop the theoretical and methodological foundations for examining structural asymmetries in the distribution of loan capital in the economy, as well as to identify, analyse, and determine approaches to mitigating them. The study follows the logic of a sequential transition from the theoretical substantiation of the nature of structural asymmetries to the assessment of their manifestations in Ukraine's loan capital market and the identification of measures for their prevention and mitigation. The theoretical foundations of the functioning of the loan capital market are examined, and approaches to interpreting the causes of structural imbalances arising in the course of its functioning are systematised. The authors' approach to defining the essence of structural asymmetries in the distribution of loan capital is substantiated, and a conceptual framework explaining the mechanism of their emergence and manifestation is developed. The study analyses the dynamics of bank lending to the corporate sector, households, and the general government

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sector, as well as indicators of the adequacy of credit support for Ukraine's economy, the structure of banks' asset portfolios, and trends in the allocation of resources to government debt securities. The study finds that structural asymmetries in the distribution of loan capital are predominantly latent and cannot always be identified on the basis of individual indicators of lending activity. It is demonstrated that their comprehensive assessment requires the simultaneous analysis of credit penetration indicators, the structure of banks' asset portfolios, the dynamics of lending to different categories of borrowers, and manifestations of the financial intermediation paradox. It is substantiated that the increasing concentration of banks' resources in government debt securities creates conditions for the formation of structural asymmetries manifested in insufficient credit support for the corporate sector, the emergence of investment and fiscal crowding-out effects, constraints on private investment, and the slowing of technological modernisation and innovation-driven economic development. *The scientific novelty* of the study lies in the development of a methodological approach to identifying structural asymmetries in the distribution of loan capital, which combines the conceptual substantiation of the mechanism of their emergence with a system of quantitative assessment indicators and enables the comprehensive detection of latent imbalances in the functioning of the loan capital market. A system of measures is proposed, grouped according to the areas of addressing the mechanisms underlying the emergence of structural asymmetries and mitigating their adverse economic consequences. The practical significance of the findings lies in their potential application to the formulation of public policy aimed at developing the credit market, improving loan capital allocation mechanisms, and strengthening the financial intermediation function of Ukraine's credit institutions.

INTRODUCTION

The distribution of loan capital is one of the key mechanisms underpinning the functioning of the economic system, as it determines the mobilisation and allocation of financial resources across individual sectors of the economy. The efficiency of such distribution largely determines the intensity of investment processes, the structural modernisation of production, the development of innovation activities, and the long-term pace of economic growth.

The state plays a pivotal role in shaping the distribution of loan capital through budgetary, debt, monetary, fiscal, and investment policy instruments that influence the concentration and allocation of financial resources across different sectors of the economy. The extent of such intervention determines the capacity to finance priority areas of economic development, support strategic industries, stimulate innovation activities, and implement investment projects.

At the same time, individual sectors of the economy differ in their capacity to generate gross value added, foster innovation potential, promote technological modernisation of production, and enhance the overall competitiveness of the economy. Under such conditions, ensuring the efficient allocation of loan capital across sectors in accordance with their economic significance and their potential to generate multiplier effects on economic growth becomes particularly important.

Highly developed economies are typically characterised by a diversified system of financing sources for the corporate sector, ensuring adequate access to loan capital for enterprises operating in the real economy. In contrast, the current configuration of Ukraine's loan capital markets does not fully ensure the efficient redistribution of financial resources, with the result that productive sectors of the economy frequently face constrained access to financing.

The causes of such structural asymmetries are both objective and subjective in nature. Objective factors are associated with the effects of global economic crises, wartime risks, macroeconomic instability, and other external shocks, whereas subjective factors stem from imperfections in the institutional environment, government regulatory mechanisms, and the instruments used to mitigate structural asymmetries in the distribution of loan capital.

These processes result in the insufficient mobilisation of available financial resources, their inefficient allocation across sectors of the economy, and the emergence of structural asymmetries manifested in various segments of the financial market. One of the most prominent manifestations of these asymmetries is the crowding-out effect, particularly investment and fiscal crowding out, whereby financing opportunities for the private sector are reduced as an increasing share of loan capital is concentrated on meeting the financing needs of the state.

The specific features of the formation and manifestation of structural asymmetries in the distribution of loan capital in Ukraine are shaped by the characteristics of the domestic financial market, the structure of government borrowing, and the mechanisms of economic financing. This underscores the need for comprehensive scientific research into these asymmetries in order to develop theoretical foundations and practical recommendations aimed at improving the efficiency of loan capital distribution and ensuring adequate financing for the sectors that constitute the foundation of long-term economic growth.

The subject of the study is the process through which structural asymmetries emerge during the redistribution of loan capital in Ukraine's economy.

The purpose of the study is to develop the theoretical and methodological foundations for investigating structural asymmetries in the distribution of loan capital in the economy, as well as to identify, analyse, and determine approaches to mitigating them. To achieve this purpose, the following objectives are addressed: (1) to substantiate the essence of structural asymmetries in the distribution of loan capital; (2) to assess the dynamics of indicators reflecting the adequacy of credit provision to the economy; and (3) to develop a methodological approach to identifying and assessing structural asymmetries and to propose measures for their mitigation.

To accomplish these objectives, the study is structured around a sequential progression from the theoretical substantiation of the nature of structural asymmetries in the distribution of loan capital to the assessment of their manifestations in Ukraine's credit market and the identification of practical measures for their mitigation. The first stage examines the theoretical foundations underlying the emergence of structural asymmetries in the process of loan capital allocation and develops a conceptual framework explaining the mechanism of their emergence and manifestation. The second stage evaluates the adequacy of credit support for Ukraine's economy as a prerequisite for identifying structural imbalances in the distribution of loan capital. The final stage is devoted to the analysis of crowding-out effects as the principal consequences of structural asymmetries, their quantitative identification, and the substantiation of a comprehensive set of measures aimed at preventing their occurrence and minimising their adverse impact on the economy.

1. Theoretical Foundations of the Emergence of Structural Asymmetries in the Distribution of Loan Capital in the Economy

The primary function of the financial market is to ensure the efficient redistribution of financial resources among economic agents in accordance with their financing needs and their capacity to generate economic value added. Through the mobilisation, transformation, and allocation of financial capital, the financial market creates the conditions necessary for investment activity, the structural modernisation of the economy, entrepreneurial development, and the adoption of innovations.

At the same time, contemporary economic research increasingly emphasises not the absolute volume of financing available to the economy, but rather the efficiency of the allocation of financial resources across individual sectors and business entities. Under such conditions, the quality of loan capital distribution becomes a key determinant of the productivity of its use, the pace of economic growth, and the long-term competitiveness of the national economy.

Contemporary research demonstrates that inefficient capital allocation significantly reduces the productive potential of the economy, constrains income growth, and adversely affects financial stability. In this context, what matters is not only the overall volume of lending but also the allocation of loan capital across individual sectors of the economy and enterprises. Analysing the functioning of the financial systems of euro area countries, Desislava Andreeva, Vasco Botelho, and their co-authors conclude that an inefficient distribution of credit resources among firms reduces aggregate economic productivity, whereas directing financing towards more productive companies promotes economic growth and strengthens financial stability. At the same time, the authors emphasise that banks do not always ensure the optimal allocation of credit resources, as their lending decisions are primarily driven by credit risk assessments rather than by the productivity-enhancing potential of firms [1].

Therefore, the efficiency of loan capital distribution should be assessed not only in terms of lending volumes or the pace of financial market development, but also by its ability to ensure adequate financing for those sectors of the economy that generate the highest gross value added, drive innovation, accelerate the technological modernisation of production, and create the foundations for long-term economic growth.

An important prerequisite for the efficient distribution of loan capital is the minimisation of information asymmetry between lenders and borrowers. A study by D. Aristei and G. Angori, based on firm-level data from eleven euro area countries, confirmed that the accumulation of borrower-specific information through long-term lending relationships significantly reduces firms' informational opacity and lowers the likelihood of credit rationing [2]. This suggests that improving the efficiency of loan capital distribution depends not only on increasing the supply of credit resources but also on developing institutional mechanisms that enable a more accurate assessment of borrowers' creditworthiness.

Innovation activity is one of the key drivers of long-term economic growth, the structural modernisation of the economy, and the enhancement of its international competitiveness. Contemporary economic theory widely recognises that extensive growth factors have limited potential, whereas sustainable long-term economic growth is determined primarily by the accumulation of knowledge, technological innovation, and scientific and technological progress. It is innovation that drives growth in total factor productivity, creates new competitive advantages, and enhances the overall efficiency of the economic system [3; 4].

The development of an innovation-driven economy is impossible without establishing an effective system of financial support for innovation activities. This necessitates the creation of conditions that ensure adequate financing for enterprises engaged in research and development (R&D), the adoption of new technologies, and the implementation of high-tech investment projects. Consequently, contemporary public policy is increasingly focused not only on expanding the volume of financing but also on improving the efficiency of its allocation across those sectors of the economy that have the greatest potential to enhance productivity, stimulate innovation, and foster long-term economic growth [5].

Bank lending plays a crucial role in the financial support of innovation. As noted by M. Arnone, A. Costantiello, and A. Leogrande, enterprises' access to bank credit provides the financial foundation for implementing innovation projects, advancing research activities, adopting new technologies, and enhancing the competitiveness of the economy. The economic impact of bank lending, however, largely depends on the extent to which it supports innovation activities and the technological

development of enterprises [6]. Nevertheless, bank lending alone is not sufficient to foster the development of innovation-oriented enterprises; this requires the effective functioning of a comprehensive financial and economic support mechanism. The combined effect of grants, bank lending, and investment activity substantially enhances firms' capacity to expand high-technology exports [7, p. 119].

Loan capital markets perform a range of interrelated functions, the most important of which include the mobilisation of temporarily available financial resources, their transformation into loan capital, their efficient redistribution among economic agents, the continuity of the investment process, the promotion of economic growth, and the facilitation of the economy's structural modernisation. The effective fulfilment of these functions is possible only through the efficient allocation of loan capital in accordance with economic efficiency, the productivity of its use, and the risk characteristics of borrowers.

At the same time, the presence of structural asymmetries in loan capital markets distorts the mechanisms of financial intermediation [8]. As a result, financial resources are not always channelled to those sectors and business entities capable of using them most productively, thereby reducing the effectiveness of the financial market's intermediation, distribution, and investment functions. Such a situation may be regarded as a manifestation of financial intermediation dysfunction, whereby the formal performance of financial institutions' functions fails to fulfil their underlying economic purpose.

An important cause of distortions in the credit market is not only information asymmetry and institutional imperfections but also the deviation of banking institutions from economically sound lending criteria under the influence of inadequate information, distorted economic incentives, and other institutional factors. Under such conditions, banks' pursuit of profit maximisation does not always coincide with the efficient allocation of credit resources, thereby weakening one of the banking system's core functions, namely the provision of financing to the most productive areas of economic activity. Consequently, regulatory mechanisms aimed at improving the quality of lending decisions, minimising market distortions, and creating conditions for a more rational allocation of credit financing

become increasingly important, thereby contributing to higher economic productivity [9, p. 39].

Structural asymmetries in the distribution of loan capital are persistent imbalances in the allocation of credit resources, whereby the mechanisms of financial intermediation fail to ensure their efficient redistribution to economic agents and areas of economic activity with the greatest potential to generate value added, foster innovation, and promote economic growth. Such asymmetries result in a reduction of the multiplier effect of lending, a distortion of the functional role of the loan capital market, and the emergence of adverse structural effects on the national economy.

Further development of the theoretical understanding of the essence of structural asymmetries in the distribution of loan capital requires a systematic synthesis of the cause-and-effect relationships between the mechanisms underlying their formation and their economic consequences. To this end, Figure 1 presents a conceptual framework illustrating the logic of the emergence of structural asymmetries, their impact on the performance of financial intermediaries' functions, and their subsequent implications for economic development.

As illustrated in Figure 1, structural asymmetries in the distribution of loan capital arise when banking institutions deviate from economically sound lending criteria, resulting in the inefficient allocation of credit resources and their uneven distribution across sectors of the economy, regions, and borrower groups. Under such conditions, credit financing becomes concentrated in areas that fail to generate the greatest economic benefits, thereby weakening the financial intermediation function performed by financial market participants.

At the same time, the consequences of structural asymmetries extend far beyond changes in the functioning of financial intermediaries. Distortions in the mechanisms governing the efficient distribution of loan capital give rise to a range of macroeconomic effects, including a reduction in the multiplier effect of lending, manifestations of investment and fiscal crowding out, weakened innovation activity, uneven development across sectors of the economy, and constraints on long-term economic growth. Structural asymmetries in the distribution of loan capital should therefore be regarded as a multidimensional economic phenomenon whose consequences are manifested sequentially at the levels of financial intermediation, the functioning of the loan capital market, and the economy as a whole.

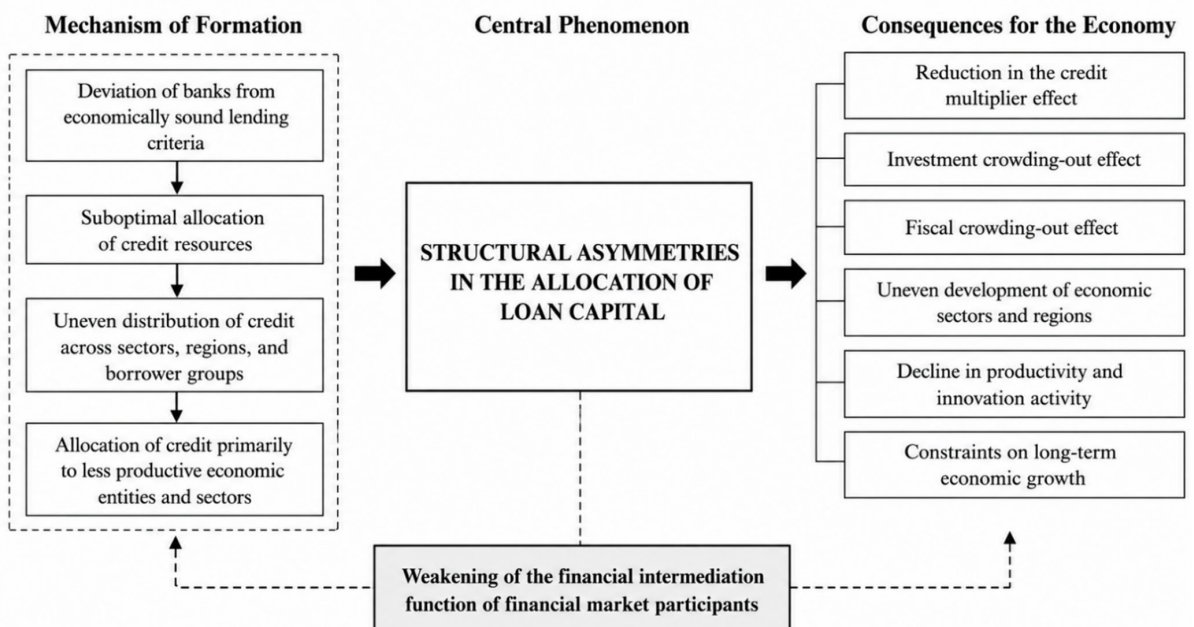


Figure 1. Conceptual Framework for the Formation and Manifestation of Structural Asymmetries in the Distribution of Loan Capital in the Economy

Source: Developed by the authors

2. Assessment of the Adequacy of Credit Support for Ukraine's Economy

In an environment where access to loan capital through the capital market remains constrained owing to its insufficient development, the limited availability of debt instruments for the corporate sector, low market capitalisation, limited liquidity, and weak investor confidence [10], bank lending assumes an increasingly important role in the redistribution of credit resources. Moreover, Ukrainian business entities continue to face a shortage of financing, particularly of internally generated funds, and are therefore compelled to seek external sources of finance. Lending remains one of the key mechanisms supporting sustainable economic development, financial stability, and the strengthening of Ukraine's economic potential, both during periods of military, political, and economic instability and throughout the post-war recovery [11]. Figure 2 illustrates the dynamics of lending to the corporate sector, households, and the general government sector.

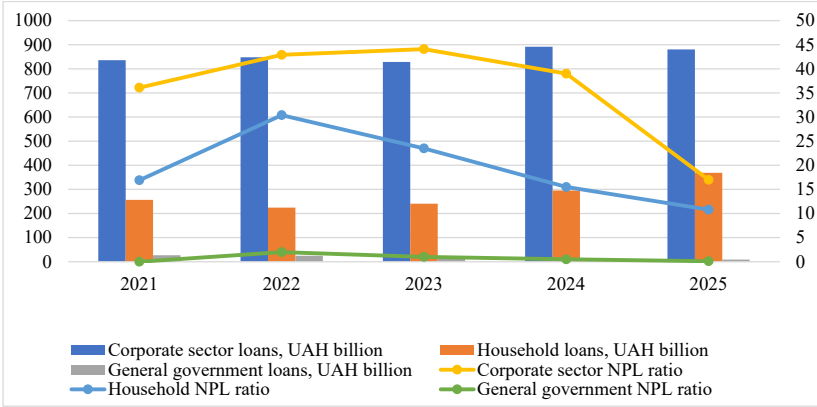


Figure 2. Indicators of Bank Lending to the Economy by Borrower Category, 2021–2025

Source: Developed by the authors based on [12]

The trends shown in Figure 2 indicate that lending to the corporate sector, measured on a cumulative basis, did not reflect a substantial expansion of banks' lending activity during the period under analysis.

In 2023, the growth rate of the corporate loan portfolio declined to 97.7%, indicating a contraction of the portfolio. In the remaining years, the corporate loan portfolio continued to expand, albeit at a modest pace, suggesting only a limited increase in the volume of newly issued bank loans.

The share of non-performing loans (NPLs) in the corporate sector remained high, reflecting elevated credit risk and limiting banks' willingness to extend credit to borrowers with weaker creditworthiness. Although the corporate sector NPL ratio declined significantly in 2025 (from 39% in 2024 to 17% in 2025), this should not be interpreted as evidence of an improvement in the creditworthiness of Ukrainian corporate borrowers. Rather, during January–March 2026, the National Bank of Ukraine implemented a number of measures aimed at resolving non-performing loans, particularly within state-owned banks [13].

An analysis of household lending by Ukrainian banks indicates that the expansion of lending to households was more pronounced than that of corporate lending. Between 2021 and 2025, the average growth rate of the household loan portfolio amounted to 112.7%. However, in 2022, household lending experienced a sharp decline, with the portfolio growth rate falling from 123% in 2021 to 87.5%.

Bank lending to central and local government authorities (the general government sector) remains negligible compared with lending to households and non-financial corporations. The corresponding bars in Figure 2 illustrate the limited volume of such lending. At the same time, the NPL ratio for loans to the general government sector also remains low.

The analysis of these indicators allows for broader conclusions regarding the functioning of Ukraine's loan capital market. Although the corporate sector accounted for the largest share of bank lending, the growth of the corporate loan portfolio remained modest throughout the period under analysis, indicating restrained lending activity by banks in financing enterprises in the real economy. At the same time, the high level of non-performing corporate loans generated additional credit risks, limiting banks' capacity to expand lending and prompting a reorientation of their lending policies towards lower-risk borrowers.

Although the volumes of lending to households and the general government sector remained substantially lower than those extended to the corporate sector, the overall configuration of banks' loan portfolios

indicates the presence of structural asymmetries in the distribution of loan capital. In particular, the pace of growth in lending to enterprises that generate a significant share of gross value added, investment activity, and technological development remained insufficient. Under such conditions, credit risk becomes a determining factor in banks' lending decisions, which is consistent with the proposed mechanism underlying the formation of structural asymmetries in the distribution of loan capital (Figure 1). As a result, the ability of financial intermediaries to ensure the efficient redistribution of credit resources in line with the needs of the economy's structural development is weakened.

These trends indicate that a high level of non-performing corporate loans not only limits banks' capacity to expand lending but also weakens the performance of their financial intermediation function. A synthesis of findings from recent studies confirms that the accumulation of non-performing loans constrains lending to the real economy, adversely affects banks' profitability, capitalisation, and financial resilience, and consequently impairs the allocation of loan capital in line with the needs of the economy's structural development [14].

An important direction for mitigating structural asymmetries in the financial market is to ensure an adequate level of bank lending to the corporate sector. Corporate lending creates the conditions for expanding production, modernising fixed capital, and fostering innovation, thereby transforming financial resources into long-term economic growth. In this context, not only the overall volume of lending but also its maturity structure is of crucial importance. Empirical evidence suggests that extending the maturity of bank loans makes a statistically significant contribution to stimulating corporate investment, whereas the predominance of short-term financing increases refinancing risks and constrains the implementation of long-term investment projects [15].

While short-term loans are primarily used to finance working capital and support firms' day-to-day operations, medium- and especially long-term loans provide the financial foundation for production modernisation, the renewal of fixed assets, and the enhancement of the corporate sector's competitiveness. Therefore, analysing the maturity structure of bank lending to corporate borrowers makes it possible to assess the investment orientation of banks' lending activities and their potential to reduce structural asymmetries in the financial market (Table 1).

Table 1

Corporate Sector Lending by Ukrainian Banks by Loan Maturity, 2021–2025

Years / Indicators	Short-term loans, UAH billion / Share, %	Medium-term loans, UAH billion / Share, %	Long-term loans, UAH billion / Share, %
2021	415,5 / 55	242,4 / 32	94,4 / 13
2022	412,6 / 55	241,0 / 32	100,8 / 13
2023	379,6 / 52	252,5 / 34	103,1 / 14
2024	391,3 / 50	286,9 / 37	103,9 / 13
2025	294,0 / 38	379,1 / 49	102,8 / 13

Source: Developed by the authors based on [16]

The results of the analysis indicate that throughout 2021–2025, short-term loans consistently accounted for the largest share of corporate lending, although their proportion gradually declined from 55% in 2021–2022 to 38% in 2025. At the same time, the share of medium-term loans increased from 32% to 49%, indicating a gradual extension of the maturity profile of bank lending to the corporate sector. In contrast, the share of long-term loans remained virtually unchanged throughout the entire period under review, fluctuating between 13% and 14%, while their outstanding volume ranged from UAH 94.4 billion to UAH 103.9 billion. This suggests that investment lending to enterprises did not expand substantially, despite the gradual recovery of the banking system.

Despite the decline in the share of short-term loans, the maturity structure of corporate lending remains primarily oriented towards financing firms' current business operations. The persistently low share of long-term loans limits opportunities for production modernisation, the implementation of capital-intensive investment projects, and structural transformation of the economy, thereby reducing the banking sector's capacity to mitigate financial asymmetries and support long-term economic development.

Although Ukraine's banking sector, like other sectors of the economy, operates under adverse macroeconomic conditions, where maintaining macroeconomic stability requires substantial policy efforts, it has paradoxically continued to demonstrate high levels of profitability and returns. A significant share of banks' income is generated by interest

earnings, with lending remaining one of their principal sources of revenue. However, other major income-generating assets, such as National Bank of Ukraine certificates of deposit and domestic government bonds, have also made a substantial contribution to banks' earnings [17]. Even under wartime conditions, the National Bank of Ukraine faces the challenging task of creating an enabling environment for banks to perform their core functions while mitigating the adverse effects of military aggression on the banking system [18].

Given the opportunity to earn record levels of returns and profitability, the National Bank of Ukraine has created highly favourable conditions for banks to invest in these financial instruments. However, the trends discussed above, which reflect banks' financial intermediation activity, indicate a weakening of this function and, consequently, a decline in the functional effectiveness of the banking system as a whole.

At the same time, the findings suggest that the banking system possesses sufficient financial resources to expand lending to the economy. Nevertheless, banks' asset allocation priorities have shifted markedly towards lower-risk financial instruments offering attractive returns. This is particularly evident in the case of domestic government bonds, which, alongside lending, remain one of the principal destinations for banks' asset allocation (Table 2).

Table 2

Selected Indicators Reflecting Banks' Asset Allocation Priorities, 2021–2025

Years / Indicators	2021	2022	2023	2024	2025
Bank loans, UAH billion	1065,3	1036,2	1024,7	1138,0	1220,3
Share of total assets, %	52,0	44,1	34,8	33,3	30,5
Weighted average interest rate, %	12,2	16,2	16,8	18,4	18,4
Domestic government bonds, UAH billion	605,2	532,7	734,5	990,8	1036,3
Share of total assets, %	29,5	22,7	24,9	28,9	25,9
Weighted average interest rate, %	11,3	18,3	18,7	15,9	16,04

Source: Developed by the authors based on [19; 20]

The data presented in Table 2 indicate that between 2021 and 2025, the total volume of bank loans increased from UAH 1,065.3 billion to UAH 1,220.3 billion. However, their share in banks' total assets declined from 52.0% to 30.5%, representing a decrease of more than 21 percentage points. This indicates a diminishing role of lending as the principal channel for banks' asset allocation.

At the same time, banks' holdings of domestic government bonds increased from UAH 605.2 billion to UAH 1,036.3 billion, while their share in total assets remained consistently high, ranging between 22.7% and 29.5% and amounting to 25.9% in 2025. Over the same period, the weighted average lending rate increased from 12.2% to 18.4%, whereas the average yield on domestic government bonds fluctuated between 11.3% and 18.7%. This suggests that banks' growing preference for investing in government securities is driven not so much by differences in yields as by the substantially lower credit risk, high liquidity, and stable interest income associated with these instruments.

Thus, despite possessing sufficient financial resources, the banking system has become increasingly oriented towards financing the public sector, while lending to corporate borrowers has gradually lost its dominant position within the structure of banks' assets. This trend reinforces structural asymmetries in the financial market and constrains investment support for the real economy.

Given the limited intensity of bank lending to the economy alongside the substantial share of domestic government bonds in banks' asset portfolios, a financial intermediation paradox emerges, whereby banks increasingly channel the financial resources they mobilise towards financing the public sector rather than providing credit support to business entities [21]. This trend does not imply that banks have abandoned their financial intermediation function; rather, it reflects a shift in loan capital allocation priorities, whereby lending to the real economy is gradually being displaced by investments in government debt securities.

The causes of this phenomenon should be examined through the prism of both objective and subjective factors. Objective factors include high levels of credit risk, a substantial share of non-performing loans, macroeconomic uncertainty, and the deterioration of the financial condition of certain categories of borrowers, all of which constrain banks' capacity to

expand lending. In contrast, subjective factors are associated with the state's creation of favourable conditions for investment in domestic government bonds, the expansion of opportunities for their use in banking operations, and banks' investment policies, under which government debt securities are regarded as a more predictable and less risky alternative to corporate lending. The combined effect of these factors reinforces structural asymmetries in the distribution of loan capital and limits the financial support available to the productive sectors of the economy.

3. Crowding-Out Effects as the Principal Consequences of Structural Asymmetries in the Credit Market

The financial intermediation paradox is not limited to changes in the composition of banks' asset portfolios or shifts in loan capital allocation priorities. Its economic consequences are far broader and are manifested in the emergence of effects that disrupt the balance between public and private demand for financial resources. Within the context of structural asymmetries in the distribution of loan capital, crowding-out effects represent one of the clearest manifestations of distortions in the financial intermediation mechanism, as they reflect the reallocation of financial resources in favour of financing the public sector at the expense of reducing the availability of credit for economic activity.

The issue of crowding-out effects occupies an important place in both classical and contemporary economic literature examining the implications of government borrowing for the functioning of financial markets and economic development. The literature generally distinguishes between two closely related forms of crowding out: investment crowding out and fiscal crowding out.

Investment crowding out occurs when an increase in government borrowing alters the allocation of financial resources, redirecting them from lending to the corporate sector towards financing public debt. As a result, business entities face reduced access to loan capital, adversely affecting investment activity, production modernisation, and economic growth.

Fiscal crowding out is primarily manifested over the long term and is associated with an increasing debt burden on public finances. The need to service and repay public debt necessitates either higher tax burdens or a

reallocation of government expenditure, thereby reducing incentives for private investment and overall economic activity.

Despite differences in their transmission mechanisms, both forms of crowding out share a common economic nature, as they arise from the reallocation of financial resources in favour of financing the public sector. Their principal distinction lies in the time horizon over which they materialise: while investment crowding out occurs directly through the reallocation of loan capital within the financial market, fiscal crowding out emerges indirectly through the future fiscal consequences of accumulating public debt.

Investment crowding out has traditionally been associated with an expansion of government borrowing, which alters the balance between the demand for and the supply of loan capital. According to the classical approach, an increase in government borrowing raises the demand for financial resources, which, all else being equal, leads to a higher cost of credit. As a result, access to loan capital for the private sector becomes more constrained, and some potential investment projects cease to be economically viable because of the higher cost of financing. At the same time, the contemporary mechanism of investment crowding out is considerably more complex than its classical interpretation, as it is determined not only by changes in interest rates but also by the structure of the financial market, the characteristics of financial intermediation, regulatory policies, and the institutional environment.

An empirical study by V. B. Nguyen, based on a sample of 98 developing countries, provides statistically significant evidence of the negative impact of public debt on private investment. The author demonstrates that government borrowing intensifies competition between the public and private sectors for available financial resources, while improvements in the institutional environment, in themselves, stimulate private investment activity [22]. However, when government borrowing reaches high levels, even a stronger institutional environment does not eliminate the crowding-out effect, as it enables the government to mobilise additional financial resources, thereby reducing their availability to private investors.

When banks increasingly reallocate loan capital in favour of financing the public sector, the consequences extend beyond the classical investment crowding-out effect. Under such circumstances, financial stability and

the banking system's capacity to provide credit to the economy become increasingly dependent on the parameters of the government's fiscal and debt policies. This is no longer merely a matter of reallocating financial resources between the public and private sectors; rather, it reflects the growing influence of public finances on the functioning of financial intermediation, the domestic credit market, and the effectiveness of monetary policy. The less sustainable the government's debt trajectory, the higher the refinancing risks associated with public debt, and the more expansionary its fiscal policy, the more the concentration of sovereign debt securities on banks' balance sheets constrains their capacity to provide credit support to the real economy [23].

These trends are also supported by contemporary empirical research. For example, L. Zherdetska and L. Ivanenko argue that stronger fiscal pressure and a growing share of government debt securities in banks' asset portfolios are associated with a decline in private sector lending as a result of the crowding-out effect. According to the authors, banks' increasing preference for lower-risk sovereign debt securities reduces the availability of financial resources for business entities and further strengthens the bank–sovereign nexus, thereby increasing the sensitivity of the financial system to the government's fiscal policy [24].

At the same time, assessing the implications of the expanding role of the state in the capital market should not be reduced to a straightforward interpretation based solely on the crowding-out effect. The impact of government expenditure and public financing on private investment activity depends on the configuration of capital markets, the quality of the institutional environment, the level of financial development, and the debt conditions under which the economy operates. In particular, J. N. Francois, M. Konte, and F. U. Ruch, analysing a sample of 109 developing countries over the period 1980–2019, demonstrate that public investment may not crowd out private investment; on the contrary, it can stimulate private investment when it enhances the marginal productivity of private capital. According to their estimates, each additional dollar of public investment increases private investment by approximately USD 1.6 on average, with this effect being stronger in countries characterised by lower levels of financial development and more effective control of corruption [25].

Therefore, the issue lies not merely in the expanding presence of the state in the loan capital market, but in the functional orientation of that presence. When government borrowing and banks' investments in sovereign debt securities are used primarily to finance current budgetary needs, they may reinforce structural asymmetries and constrain lending to the private sector. By contrast, public investment directed towards infrastructure development, the correction of market failures, and the enhancement of the productivity of private capital may, under certain conditions, complement rather than crowd out private investment.

At the same time, the economic conditions prevailing in Ukraine during the full-scale war differ fundamentally from those under which government borrowing may generate a complementary effect on private investment. Since 2022, the structure of public expenditure has been substantially reoriented towards financing the security and defence sector, resulting in an unprecedented increase in budgetary allocations for these purposes. While defence expenditure accounted for 2.3% of GDP in 2021, it increased to 21.8% of GDP in 2022 and reached 34.8% of GDP in 2025 [26, p. 34]. Under these circumstances, government borrowing is used primarily to finance defence needs and maintain the state's macro-financial stability, whereas its potential to stimulate productive investment and mitigate the adverse effects of crowding out remains substantially constrained.

Therefore, under Ukraine's current circumstances, government borrowing primarily serves to finance national defence and ensure the uninterrupted performance of the state's essential functions, rather than to stimulate investment-led economic development. Consequently, the mechanisms through which public investment in some countries is able to offset the adverse effects of crowding out can operate only to a limited extent within the context of Ukraine's wartime economy.

Given the absence of established methodological approaches to the quantitative assessment of crowding-out effects in the loan capital market arising from the dominance of particular categories of borrowers, it is appropriate to employ a system of interrelated indicators that capture different aspects of the functioning of the bank lending market. In our view, the identification of these effects should not rely on a single indicator but rather on a comprehensive analysis of the credit penetration ratio, the authors' financial intermediation paradox indicator, the growth rate of banks'

holdings of domestic government bonds, and the growth rates of lending to the corporate sector and households. Taken together, these indicators make it possible to assess both the overall level of credit provision to the economy and the structural changes in the allocation of bank resources between the public and private sectors. The results of the calculations for these indicators are presented in Table 3.

The credit penetration ratio characterises the overall level of loan capital provision to the economy, whereas the authors' financial intermediation paradox indicator reflects the extent to which banks' deposit resources are redirected towards financing public debt. Complementing the analysis with indicators of the growth in banks' holdings of domestic government bonds and the growth rates of loan portfolios across different categories of borrowers makes it possible to provide a comprehensive assessment of the nature of structural changes in the loan capital market.

Table 3

Indicators for Identifying Crowding-Out Effects in Ukraine's Loan Capital Market, 2021–2025

Indicators / Years	2021	2022	2023	2024	2025
Credit penetration ratio, %	19,5	19,9	15,7	14,9	13,7
Financial intermediation paradox indicator, %	40,2	28,1	30,7	35,7	32,0
Growth rate of banks' holdings of domestic government bonds, %	102,9	88,0	137,9	134,9	104,6
Growth rate of corporate sector loans, %	105,1	101,4	97,7	107,6	98,7
Growth rate of household loans, %	123,0	87,5	107,4	122,8	124,7

Source: Calculated by the authors based on [27; 28]

The findings indicate that, during 2021–2025, conditions conducive to the strengthening of structural asymmetries in the allocation of financial resources emerged in Ukraine's loan capital market. Despite the gradual decline in the credit penetration ratio from 19.9% in 2022 to 13.7% in 2025, indicating a reduction in the level of credit provision to the economy, the financial intermediation paradox indicator remained at approximately one-third of the banking system's deposit base throughout the period under analysis. This suggests that a substantial share of banks' deposit resources

was concentrated in holdings of domestic government bonds rather than being channelled into lending to the economy.

Additional evidence supporting these trends is provided by the relative growth rates of individual components of banks' asset portfolios. In 2023 and 2024, banks' holdings of domestic government bonds expanded at the highest rates (137.9% and 134.9%, respectively), whereas lending to the corporate sector remained virtually stagnant (97.7% and 107.6%), despite the substantial financing needs of the economy under martial law. At the same time, household lending exhibited considerably stronger growth (122.8–124.7% in 2024–2025), indicating an uneven allocation of loan capital across different categories of borrowers.

Taken together, these indicators do not permit an unequivocal quantitative assessment of the magnitude of crowding-out effects. Nevertheless, they enable the identification of persistent structural changes in the functioning of the loan capital market, whereby the public sector absorbs an increasingly larger share of banks' financial resources, while credit support for the corporate sector remains insufficient.

The proposed system of indicators is not intended to provide a universal method for the quantitative measurement of crowding-out effects. Nevertheless, it enables a comprehensive assessment of their potential manifestations through the simultaneous analysis of the credit penetration ratio, the structure of banks' asset portfolios, and the dynamics of lending to different categories of borrowers. The findings of this study provide grounds for concluding that the identified trends represent one of the manifestations of structural asymmetries in the distribution of loan capital, the conceptual framework of which is presented in Figure 1.

Although external creditors account for the largest share of Ukraine's public debt, the domestic government borrowing segment also remains highly active [29], primarily through the domestic government bond market. Banking institutions continue to play a key role in financing public debt by allocating substantial volumes of financial resources to sovereign debt securities. At the same time, the current structure of banks' asset portfolios does not indicate the absolute dominance of holdings of domestic government bonds over other asset classes. Nevertheless, the scale of banks' resource concentration in government debt securities already provides sufficient grounds to identify the existence of a financial intermediation

paradox, which influences the pattern of loan capital allocation within the economy.

The formation of such a configuration of the loan capital market is largely determined by the interaction of the state's monetary, debt, and fiscal policies, which shape the profitability and attractiveness of individual financial instruments. In the context of mitigating structural asymmetries, the coherence and synergy of these key areas of financial policy constitute a fundamental prerequisite, as their coordinated implementation underpins the development of the economy's financial resilience [30]. Under the current macro-financial conditions, investments in domestic government bonds offer banks a combination of high liquidity, minimal credit risk, and competitive returns, thereby objectively reducing incentives to expand lending to the real economy. As a consequence, banks' financial intermediation function is increasingly realised through the financing of public sector needs, while the provision of loan capital to the economy gradually becomes a secondary priority, creating conditions for the further deepening of structural asymmetries in the distribution of loan capital.

Ensuring the efficient distribution of loan capital requires a systemic approach aimed not only at mitigating the adverse consequences of structural asymmetries but also at addressing their underlying causes. Even under force majeure circumstances, particularly during martial law, a key objective of the state's financial policy should remain the preservation and strengthening of the financial intermediation function performed by financial market participants. This function ensures the efficient transformation of savings into credit resources and their allocation to those sectors of the economy with the greatest potential for generating value added. Within this context, two interrelated groups of policy measures can be identified (Table 4).

The proposed measures should not be viewed as mutually exclusive or alternative approaches. On the contrary, their practical implementation should be comprehensive and well-coordinated, taking into account the stage of development of structural asymmetries in the distribution of loan capital. While the first group of measures is primarily aimed at addressing the underlying causes of these imbalances through improving loan capital allocation mechanisms and enhancing the effectiveness of public regulation, the second group focuses on restoring the financial intermediation function of the financial market, expanding credit support

for the economy, and strengthening financial resilience under conditions where structural imbalances have already emerged. Only a combination of preventive and corrective measures can establish a comprehensive mechanism for mitigating structural asymmetries in the distribution of loan capital, thereby enabling the market to perform its financial intermediation function effectively even under conditions of heightened macroeconomic uncertainty.

Table 4

Policy Measures to Mitigate Structural Asymmetries in the Distribution of Loan Capital in the Economy

Measures Aimed at Addressing the Causes of Structural Asymmetries	Measures Aimed at Mitigating the Adverse Economic Effects of Structural Asymmetries
Improving the mechanisms for the efficient allocation of loan capital	Expanding credit support for the real economy
Enhancing the coordination of monetary, fiscal, debt, and regulatory policies	Limiting the effects of investment and fiscal crowding out
Creating economic incentives for lending to productive sectors of the economy	Improving access to loan capital for business entities
Diversifying the sources and channels of financing the economy	Strengthening the financial intermediation function of financial market participants
Reducing information asymmetry and credit risk	Improving the efficiency of the distribution of loan capital
Strengthening the institutional capacity of financial market regulators	Enhancing the financial resilience of the economy

Source: Developed by the authors

Addressing the underlying causes of structural asymmetries represents a more effective direction of public policy, as such measures are preventive and risk-oriented in nature. Unlike measures aimed at mitigating the adverse consequences of already established structural imbalances, they enable the timely identification of potential sources of imbalance and limit their spread before they evolve into systemic problems. This approach is consistent with the contemporary concept of macroprudential regulation, according to which financial stability should be based on the early identification of systemic risks, the timely implementation of corrective measures, and the prevention of local imbalances from evolving into systemic crises [31].

CONCLUSIONS

The findings of this study confirm that the distribution of loan capital is one of the key determinants of structural asymmetries in the financial market. Although these asymmetries are not always directly observable through quantitative indicators, they gradually alter the manner in which financial institutions perform their financial intermediation function. The proposed methodological approach enabled the identification of structural asymmetries within the current model of Ukraine's loan capital market. These asymmetries are manifested in insufficient credit support for the corporate sector, the strengthening of the financial intermediation paradox, the emergence of conditions conducive to investment crowding out, constraints on private investment, and the slowing of technological modernisation and innovation-driven economic development. The proposed conceptual framework explaining the emergence of structural asymmetries, supported by the results of their quantitative assessment, confirms the appropriateness of implementing a comprehensive set of preventive and corrective measures aimed at improving the allocation of loan capital, mitigating structural imbalances, and strengthening the financial intermediation function of credit institutions as an essential prerequisite for the balanced development of the financial market, the expansion of credit support for the economy, and the achievement of Ukraine's long-term economic growth.

The scientific novelty of the findings lies in the further development of the theoretical and methodological foundations for the study of structural asymmetries in the distribution of loan capital through substantiating their economic essence, developing a conceptual framework explaining the mechanism of their emergence and manifestation, and proposing a methodological approach to their identification based on the integrated analysis of indicators reflecting the adequacy of credit support for the economy, the structure of banks' asset portfolios, manifestations of the financial intermediation paradox, and crowding-out effects.

The practical significance of the findings lies in their potential application by public authorities, the National Bank of Ukraine, and other financial market regulators in the formulation of debt, monetary, and regulatory policies aimed at improving the allocation of loan capital. The proposed system of indicators and the comprehensive set of measures for preventing and mitigating structural asymmetries may be applied to monitor the

condition of the loan capital market, identify potential structural imbalances in a timely manner, improve regulatory mechanisms, and develop economic incentives aimed at strengthening the financial intermediation function of credit institutions, expanding access to credit resources for the real economy, and stimulating investment activity.

The findings provide a foundation for the further development of both theoretical and applied research on structural asymmetries in the distribution of loan capital and may serve as a basis for improving the methodological toolkit for assessing the efficiency of the loan capital market under conditions of structural economic transformation, increasing debt-related risks, and the growing role of the state in financial intermediation.

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