DOI: https://doi.org/10.30525/978-9934-26-540-2-15

Nataliia Pohorelenko
Doctor of Economic Science, Professor,
Professor at the Department of Banking Business and Financial Technologies
Educational and Scientific Institute "Karazin Banking Institute" of the
V.N. Karazin Kharkiv National University

DETERMINANTS OF THE FUNCTIONING OF UKRAINIAN BANKS IN MODERN CONDITIONS

Summary
Risks that shape the working conditions of banks in the current environment are a determining factor in their operations. The martial law slows down the development of the financial and banking system and the financial sector, but the situation in the banking sector is quite stable, and banks continue to perform their functions, provide services and serve legal entities and individuals. The study examines the components and content of banking regulation aimed at modernizing it to adapt to the current conditions. The author identifies the measures taken by the National Bank of Ukraine to stabilize the banking system, which allowed banking institutions to maintain their ability to perform their functions and avoid significant financial shocks. The study also analyzes the performance indicators of Ukrainian banks in the context of relevant research on risks, funding, and assets. These components today largely shape the ability of the banking system to fulfill its obligations to depositors and borrowers, as well as to ensure an appropriate level of financial stability. Martial law, high level of macroeconomic uncertainty, influence of global financial markets, and constant changes in the legislative framework determine the ability of banks to be ready to quickly adapt and develop adaptive and effective strategies for banking activities.

Introduction

The problems in the development of Ukraine's economy that it has faced since the beginning of the full-scale invasion have set new challenges for the financial and credit system, the realization of which is largely the result of post-war development. These include: reducing the number of inefficient banks, increasing the level of financial stability and reliability of banks, reducing the growing volume of non-performing loans, and others.

The regulatory system for the banking sector plays a key role in maintaining economic stability and ensuring the efficient functioning of all banking institutions. The main objective of the regulatory system is to ensure stability, transparency and fairness of the financial environment, which helps to protect the rights of investors, depositors and consumers of financial services.

This is the reason for the need to conduct a study aimed at determining the list of problems faced by the Ukrainian banking system since the beginning of the war, as well as outlining the anti-crisis measures that resulted from the interaction of both the

National Bank of Ukraine and commercial banks aimed at minimizing banking risks and ensuring financial stability.

Risks, funding, and asset quality are an integral part of banking operations. The military aggression has led to a significant increase in banking risks, which adversely affect the financial stability and ability to meet its obligations to depositors and borrowers. Due to the high level of macroeconomic uncertainty, the impact of global financial markets, and constant changes in the legal framework, banking institutions must be prepared to quickly adapt and develop effective risk management strategies. Continuous monitoring, revision of strategies, and appropriate response to current challenges will remain an important task in ensuring the stability of Ukraine's financial system – now and in the post-war period.

All of this necessitates a study aimed at identifying the list of problems faced by the Ukrainian banking system since the beginning of the war, in order to further define a list of anti-crisis measures aimed at minimizing banking risks and ensuring financial stability.

Chapter 1. Banking regulation anti-crisis approaches for minimizing risks in banking in the main minds

The Ukrainian banking system faced unprecedented challenges during the war, including liquidity risks, a significant increase in non-performing loans, physical destruction of infrastructure, and a decline in public confidence. To stabilize the situation, the National Bank of Ukraine has taken a number of measures, including regulating the foreign exchange market, supporting banks' liquidity, temporarily relaxing regulatory requirements and capital restrictions. Commercial banks, in turn, have adapted their operating models, expanding online services, supporting clients through debt restructuring and financing humanitarian initiatives.

The regulatory system in the financial sector of Ukraine has a multi-level structure that allows for effective control over both the activities of banking institutions and other financial market participants. The main tasks of the regulatory authorities are to supervise compliance with legislation, implement regulations and ensure transparency of financial institutions [1].

Through banking regulation, the state primarily oversees the following:

− capitalization level (by setting minimum equity capital requirements, which helps to reduce bankruptcy risks and increase banks' resilience to possible losses);

− solvency and liquidity of banks (through liquidity provision, which is critical for banks to fulfill their obligations to customers. Regulators require banks to maintain a certain level of reserves and liquid assets);

− financial transparency (through regulatory requirements that promote greater reporting, which helps to increase customer confidence in banks).

The main instruments and methods of banking regulation that ensure the stability of the banking system, which are divided into: direct, indirect, and methods of micro- and macroprudential regulation [2]. Table 1 summarizes the main instruments and methods of banking regulation, broken down by characteristics and application:

Table 1

Comparative characteristics of the main instruments and methods of banking regulation

Control tool title	Tool characteristics	Features of the application	Advantages	Disadvantages
1	2	3	4	5
Direct methods of regulation				
Bank licensing and operation	Issuing a banking license after assessing compliance with the NBU's requirements	It is used to control access to the market for new banks, checking financial reliability	Protects consumers and improves the quality of banking services	May restrict competition
Capital and reserve requirements	Establishing minimum capital requirements to ensure the stability of banks	Requires banks to maintain capital to cover risks	Increases banks' resilience to financial crises	May limit investment opportunities
Liquidity standards	Minimum requirements for banks' liquid assets to cover short-term liabilities	It is used to ensure that banks are able to fulfill their obligations	Prevents liquidity crises, increases confidence	Restricts banks' activity, reduces profitability
Interest rate policy	Regulating interest rates to influence lending and economic activity	Affects the cost of loans and savings	Controls inflation, stimulates the economy	The impact may be slow, depending on external factors
Indirect methods of regulation				
Establishing mandatory reserves	Requirement to keep a portion of deposits in a liquidity reserve	Ensures stability and control over the money supply	Reduces the risk of bankruptcy of banks	Limits the ability of banks to lend
Foreign exchange market interventions	Direct operations of the NBU to buy or sell foreign currency to regulate the hryvnia exchange rate	It is used to stabilize the exchange rate in crisis situations	Helps reduce inflation and stabilize the market	Requires significant reserves, may result in costs
Micro and macro prudential regulation				
Micro-prudential regulation	Controlling risks and resilience of individual banks through capital and liquidity	Supervising the financial stability of individual banking institutions	Ensures the stability of individual banks	Requires a lot of resources, does not prevent systemic crises
Macro-prudential regulation	Impact on the stability of the entire financial system through control of systemic risks	Identifying and preventing risks that threaten the economy as a whole	Prevents systemic crises and ensures stability	It can be difficult to foresee all possible risks

End of Table 1

1	2	3	4	5
Systemic stress testing	Assessment of the banking system's resilience to negative scenarios	It is used to determine the readiness of banks to shock situations	Allows to identify weaknesses in the financial system	Results depend on assumptions and modeling
Counter-cyclical capital buffer	Additional capital requirements during the economic upturn to prepare for a possible downturn	Ensures banks' resilience to cyclical changes in the economy	Reduces the risk of systemic crises, stabilizes the economy	Reduces profitability during periods of economic growth

Source: formed based on [3; 4; 5; 6; 7]

The purpose of the government regulation of banking activities is not only to protect the interests of depositors and creditors, but also to comprehensively promote the stability of the banking system as the main mechanism for redistributing financial resources in the economy. Through the effective use of these approaches, the NBU can control credit, liquidity, and operational risks of banks, promote stability of the hryvnia exchange rate, and ensure the resilience of the financial system even in times of economic uncertainty.

Since the outbreak of war, the banking system has faced new complex challenges that require urgent response and adaptation. These challenges, including financial losses, reduced liquidity, and insolvency risks, require revised strategies and management approaches. Let's take a closer look at these challenges and determine how the banking sector can cope with them in a time of war.

First and foremost, the war has brought significant financial challenges to Ukraine's banking sector, which negatively impact its stability and ability to provide liquidity.

Banks have suffered significant financial losses due to a decrease in asset yields and an increase in bad loans. As a result of the hostilities, many businesses suspended operations or lost their facilities, which reduced their solvency. This led to a rapid increase in the level of non-performing loans in banks' portfolios [8]. Banks were forced to create additional provisions for doubtful loans, which significantly reduced their profitability and limited their lending opportunities.

The volume of service transactions, such as card account servicing, international transfers and foreign exchange transactions, also declined. During the war, the decline in bank revenues was due to restrictions on foreign exchange transactions, loss of clients and the closure of bank branches in the war zone [9].

Liquidity issues became critical as the war led to an outflow of funds from deposits, especially from local currency accounts [10]. Individuals and companies are withdrawing funds in the face of uncertainty to secure cash in case the banking system escalates or is blocked. This outflow of funds reduces the amount of resources available to banks to support current operations and lending.

In addition, due to the unstable economic situation and restrictions on foreign exchange transactions, banks are losing access to international capital markets [11].

This exacerbates the liquidity problem, as the need to raise foreign currency funds to support international payments and loan servicing is growing.

Insolvency posed a serious threat to many banks, especially those that had a significant number of clients in the war zones or were closely associated with the industries most affected by the war (agriculture, metallurgy, and machine building). Clients of such banks were unable to meet their loan obligations on time, which increased the risk of default [12]. As a result, some banks were threatened with insolvency and needed recapitalization or support from the National Bank of Ukraine.

Many banks have lost access to their assets in the regions affected by the hostilities. Due to the active hostilities in the eastern and southern regions of Ukraine, banks have faced the physical loss of their branches, ATMs, self-service terminals, and other infrastructure. This means not only a loss of capital, but also a reduction in the availability of banking services to the local population. Security systems may not always protect banking facilities from destruction, resulting in losses in the form of physical assets.

In addition, banks have significant assets related to companies located in the combat zone and cannot assess the condition of these assets, which complicates risk management [13]. Some of these assets are investments in real estate, equipment and other long-lived assets that become unavailable for maintenance and valuation.

Blocking financial flows is another serious consequence of the war for banks. Delays and interruptions in payment processing are caused by logistical difficulties and problems in communication systems. In some cases, access to bank accounts for clients in the areas of active hostilities is restricted or even blocked.

Banks are forced to impose restrictions on transactions, especially on international payments, to avoid capital outflows. At the same time, special measures are being introduced for humanitarian aid transfers and defense financing. In many cases, Ukraine's banking system has to operate with limited capacity to service payments in the war zones or occupied territories [14].

The ongoing hostilities in the respective regions have a significant impact on the physical condition of customers (which is on the verge of constant stress) and the resulting financial decisions (often wrong). Uncertainty and fear for the future encourage people to keep their money in cash and make transfers abroad, and some customers switch to foreign banks. People who have lost their jobs or income due to the war are often unable to service their loans, which further creates risks for banks.

In addition, many customers are still experiencing a loss of confidence in the banking system, as the war creates a risk of physical loss of their funds and restricted access to services [15]. This leads to massive account closures and the transfer of funds to safer assets, such as gold or real estate, or to storing funds in dollars and euros abroad.

By the way, bank staff working in a war zone are also under psychological pressure. In many regions, bank employees are forced to work in unsafe conditions, and some have lost their homes or had to change their place of residence and work. In addition, bank employees face an additional emotional burden in connection with servicing customers under stress [16]. This also puts a significant strain on the psychological state of the staff and reduces their work efficiency.

To support employees, banks offer psychological assistance, stress management training, and flexible working conditions. Some banks also support their employees financially by providing one-time payments or reimbursing evacuation and relocation costs.

The main challenges faced by banks during the war are summarized in Table 2.

The war in Ukraine creates complex and multidimensional challenges for the banking sector. Crisis conditions require banking institutions to take adaptive measures and pay special attention to supporting both customers and their own staff, as well as to further develop mechanisms that will help minimize risks and, accordingly, ensure financial stability and reliability of the banking system in times of war.

Table 2

The main challenges for Ukrainian banks during the war

Challenge type	**Characteristics**	**Key aspects**	**Impact on banks' operations**
Financial challenges	Reduced liquidity, increased risk of insolvency, non-performing loans	Reduced liquidity, non-performing loans, additional stabilization costs	Complication of core operations, rising interest rates, lower bank revenues
Operational challenges	Closure of branches in combat zones, problems with infrastructure and access to services	Security of branches and staff, relocation of ATMs, service failures	Decreased customer confidence, limited access to financial services, possible loss of customer base
Technological challenges	Increased risks of cyberattacks, the need to strengthen cybersecurity	Cybercrime, customer data protection, problems with digital infrastructure	Loss of trust, increased security costs, difficult access to online banking
Staffing challenges	Evacuation and support of staff, remote work, loss of motivation	Evacuation and remote work, psychological support, staff retention	Reduced productivity, possible loss of professional staff, increased operating costs
Social challenges	Support for affected customers, cooperation with charitable organizations, social responsibility	Financial support for victims, social initiatives, maintaining trust and reputation	Increased burden on the system, risk of losing financial stability due to social obligations
Regulatory challenges	Compliance with new requirements introduced by the central bank, control of foreign exchange transactions	Compliance with NBU requirements, control of currency transactions, adaptation to policy changes	Increased operating costs, complicated decision-making, impact on operational flexibility

Source: formed based on [17; 18; 19]

The NBU's stabilization efforts proved to be effective, as it developed and implemented a number of measures aimed at stabilizing the banking system in times of war. The main steps were aimed at ensuring financial stability, maintaining bank liquidity, and protecting the interests of depositors and creditors. The NBU introduced anti-crisis regulatory solutions to help banks preserve liquidity and maintain their ability to serve customers (Table 3).

Table 3

Stabilization measures of the national bank of Ukraine in the time of war

Measures name			
Measures characteristics	**Examples of use**	**Advantages**	**Disadvantages**
1	2	3	4
1. Reduced reserve requirements			
Reduced mandatory reserve requirements, allowing banks to retain more liquidity for operating activities	Banks reduce the amount of mandatory reserves to use additional funds for current customer needs	Provides additional liquidity for banks	Could reduce the stability of banks, limiting the possibility of returning to normal standards
2. Refinancing on beneficial terms			
Providing banks with long-term loans on favorable terms to maintain liquidity and fulfill their obligations to depositors	The NBU provides commercial banks with concessional loans to maintain their solvency in the face of deposit outflows	Allows banks to meet their obligations while maintaining stability	Dependence on the NBU may pose risks to the financial autonomy of banks
3. Implementation of currency restrictions			
Restrictions on foreign exchange transactions to protect the country's foreign exchange reserves and prevent sharp exchange rate fluctuations	Restrictions on the withdrawal of capital abroad, restrictions on the purchase of foreign currency	Contributes to the stability of the national currency and protects foreign exchange reserves	May create difficulties for businesses and investors that depend on imports or foreign exchange transactions
4. Simplification of the procedure for obtaining refinancing			
Simplifying the requirements for banks to receive funds from the NBU, which contributes to the banks' operational liquidity and effective customer support	Banks can receive financial support from the NBU more quickly to meet their needs during the crisis	Increases the speed of response to financial challenges	May lead to reduced control over banks' credit risk
5. Supporting the stability of the hryvnia			
Measures to support the hryvnia exchange rate, including foreign exchange interventions and restrictions to stabilize the national currency	Conducting foreign exchange interventions in the market to stabilize the hryvnia exchange rate and introducing currency restrictions	Maintains price stability and reduces the risk of inflation	Requires significant reserves and can be effective only in the short term

End of Table 3

1	2	3	4
6. Cooperation with international organizations			
Increasing external financing to support the liquidity of the banking sector and stabilize the economy	Obtaining loans from the IMF, the EU and other organizations to stabilize foreign exchange reserves and the banking system	Provides additional funding to support the economy	Increases the country's external debt and dependence on international financial institutions
7. Special programs for banks in combat zones			
Implementation of special conditions and relaxation of regulatory requirements for banks operating in the regions affected by the hostilities	Reduced reporting requirements for banks in eastern and southern Ukraine that have limited access to their assets	Reduces the administrative burden on banks in conflict zones	May create additional risks for banks operating in these regions due to lower reporting standards
8. Simplifying reporting requirements			
Introducing reporting privileges for banks operating in difficult war conditions, allowing them to focus on their operational activities	Reduced frequency of reporting for banks operating in combat zones or serving clients from these regions	Allows banks to focus more on supporting customers in times of crisis	May lead to a decrease in the quality and accuracy of financial statements
9. Providing technical assistance			
Supporting banks through training, advisory and technical assistance programs to reduce risks and increase efficiency in war time	Conducting trainings for bank staff on risk management during the crisis	Improves the professional competence of bank employees	Requires additional training resources and may distract staff from core business
10. Protection of depositors' interests			
Introducing measures to guarantee the safety of household deposits to prevent a massive outflow of funds from the banking system	Guarantees of security of deposits for households, strengthening information about the stability of the banking system	Strengthens confidence in the banking sector and prevents panic among depositors	May require significant reserves and resources to compensate depositors in case of emergency

Source: formed based on [20; 21; 22]

In particular, the NBU lowered reserve requirements for banks, which allowed them to retain more liquidity and use the funds to support their operations. In addition, it actively cooperated with international financial organizations to attract external funding to support the banking sector and provide stabilization loans.

The NBU also decided to introduce currency restrictions aimed at protecting international reserves and stabilizing the hryvnia. In particular, the NBU restricted the withdrawal of foreign currency abroad and introduced control over exchange rate fluctuations. These measures were aimed at curbing currency speculation and maintaining the stability of the hryvnia, which is especially important in the context of military aggression.

The NBU provided banks with the opportunity to obtain refinancing on favorable terms, which allowed them to improve their liquidity and continue to serve their customers. Some banks were provided with preferential financing, in particular in the form of long-term loans. The NBU also introduced measures to simplify the refinancing procedure, which allowed banks to quickly raise funds in the face of growing risks. In addition, the NBU intensified communication with banks on risk management and stability. Special support programs were introduced for banks that suffered significant losses as a result of the hostilities, and eased reporting and regulatory requirements were introduced for banks operating in the war zones or with clients from these regions.

Ukrainian banks have adapted to the new environment by implementing measures aimed at reducing the financial burden on clients and maintaining their solvency in the war. The main measures included debt restructuring, deferred payments, and temporary loan freezes. Let us consider them in more detail (Table 4).

Table 4

Actions of commercial banks in war conditions

Action characteristics	**Usage**	**Advantages**	**Disadvantages**
1	2	3	4
1. Debt restructuring			
Providing borrowers with the opportunity to change loan terms (terms, rates) to ease their financial burden	Restructuring of loans for businesses affected by the hostilities	Reduces the financial burden on customers and helps to avoid insolvency	Decrease in the bank's income, possible risks of debt default
2. Temporary freezing of loans			
Suspension of interest and loan payments for customers in the combat zone	Freezing loans for individuals in the conflict zone	Helps customers maintain financial stability in times of war	Reduces the bank's income, may lead to the accumulation of problem assets
3. Supporting defense capabilities			
Development and implementation of special products aimed at supporting the country's defense measures	Opening special accounts to raise funds to support the army	Supports the country's defense capability and promotes social responsibility of banks	Does not always bring direct financial income to the bank
4. Opening charitable foundations			
Establishment of charitable funds to help victims of hostilities	Creating funds to support displaced people and military families	Increases the bank's social responsibility and improves its reputation	Additional costs that cannot always be covered without external assistance
5. Support for small and medium-sized businesses			
Providing special loan programs for small and medium-sized enterprises in need of support during the war	Introduction of preferential loans for small businesses in the agricultural sector	Promotes economic stability and business recovery	Risk of loan default, reduced liquidity of the bank

End of Table 4

1	2	3	4
6. Digitalization of banking services			
Expanding access to online banking and contactless payments so that customers can use services from a distance	Implementation of additional functions on mobile applications, contactless cards	Increases convenience and accessibility of services for customers, reduces dependence on physical branches	May require significant investment in technology and cybersecurity
7. Developing crisis plans			
Implementation of anti-crisis measures to respond quickly to threats and maintain the bank's stability	Developing plans to resume operations in the event of an escalation of the conflict	Reduces risks for the bank and ensures emergency preparedness	Requires additional costs to develop and implement plans
8. Implementation of staff support programs			
Introduction to psychological assistance programs, insurance and social benefits for employees	Life insurance for employees, psychological support for the team	Improves employee well-being and productivity, increases loyalty	Requires additional financial resources
9. Postponement of payments on deposits			
Offering customers the opportunity to postpone deposit withdrawals without losing interest	Deferred deposit withdrawal programs for individuals	Helps to preserve the bank's liquidity and maintain financial stability	May lead to a decrease in confidence in the bank if customers experience difficulties in accessing funds
10. Expanding remote customer support			
Introducing additional channels for remote customer service, including hotlines and chatbots	Launch of hotlines for consultations, introduction of chatbots	Improves the availability and quality of customer service, reduces the burden on physical branches	Requires investment in technical support and staff training

Source: formed based on [23; 24; 25]

Many banks have implemented loan restructuring programs for individuals and businesses that have lost stable sources of income due to the war. The restructuring allowed borrowers to change the terms of their loan agreement, including extending the maturity of the loan, reducing interest rates, or (even) temporarily deferring payments. As a result of these measures, borrowers can continue to service their loans without exposing themselves to the risk of bankruptcy or insolvency.

Some banks temporarily froze loan payments for the most affected categories of clients, including individuals who lost their jobs due to the military operations or businesses that suffered significant losses. In these circumstances, banks gave customers the option of not making regular payments for a certain period of time without incurring additional fines or penalties.

Loan freezes were also made available to mobilized military personnel and other categories of citizens directly involved in the defense of the country. This helps to reduce the financial burden on those who are temporarily unable to earn money due to participation in the war.

In addition to customer support measures and loan restructuring, banks are also actively working on new financial products to help raise funds for the country's defense. Some of the new products include special bonds, charitable contribution programs, and defense loans.

Banks have started offering their clients investment instruments aimed at supporting state defense programs. For example, wartime domestic government bonds (OVDPs) were introduced, which can be purchased by citizens and businesses to finance the armed forces. These bonds have a guaranteed return and are becoming a popular vehicle for those who want to not only preserve their savings but also contribute to strengthening the country's defense capabilities.

Many banks have established programs that allow customers to make charitable contributions to support the army and humanitarian initiatives. In particular, special accounts have been set up to raise funds for the treatment of victims, assistance to refugees, and the provision of military equipment and medicines. Banks have been actively supporting these initiatives by providing incentives for such transfers or reducing fees.

Some banks have also introduced crowdfunding programs that allow citizens to join forces to support specific initiatives. For example, bank customers can make regular transfers to the army, as well as make voluntary contributions through the banks' mobile applications.

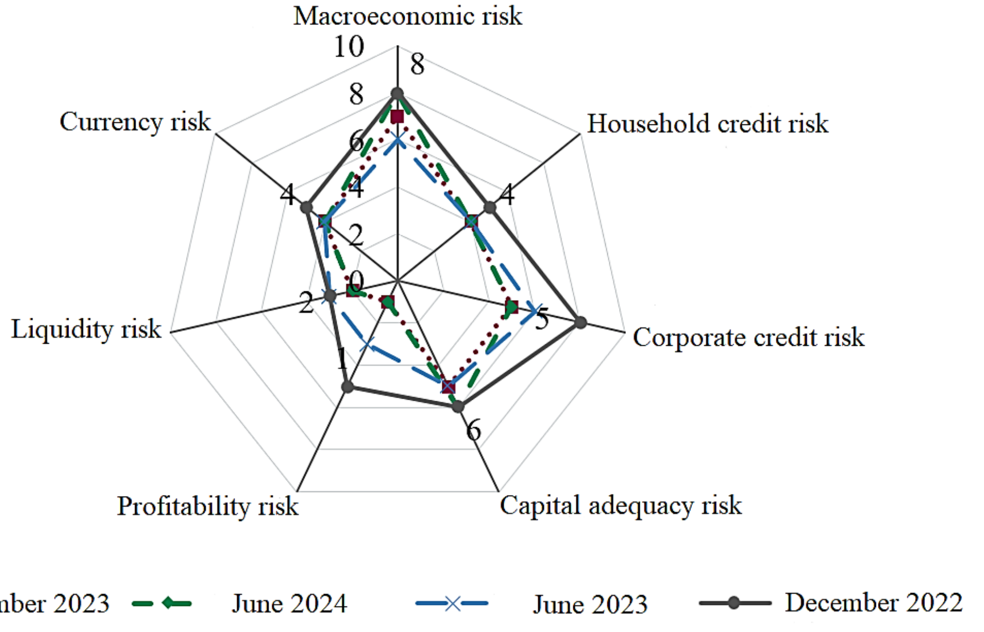
In addition to private initiatives, banks also support the state by lending to businesses working to meet the country's defense needs. Loan programs for businesses engaged in the production or supply of equipment for the armed forces often have preferential terms and simplified procedures for obtaining financing. Such loans allow businesses to quickly increase production and provide the armed forces with the necessary resources.

Overall, Ukraine's commercial banks demonstrate high flexibility and responsiveness to the challenges of war, actively implementing initiatives that help stabilize the financial system, support customers, and contribute to the country's defense capabilities. With the support of the NBU and international partners, the banking sector continues to adapt to the new conditions, contributing to the stability of the economy and supporting citizens in times of war.

Chapter 2. Analysis of the performance of Ukrainian banks in times of war: risks, funding, assets

The relevance of banking risk analysis is growing in the face of increased market competition, technological transformation, and cybercrime threats. A bank's ability to manage risks directly affects its profitability, reliability and reputation. Failure to take into account or incorrectly assess risks can lead to significant financial losses, loss of liquidity, and even bankruptcy of banking institutions.

When analyzing risks, banking activities should not be considered separately, but as an element of the financial system. A generalized map of financial sector risks is shown in Figure1, which shows that macroeconomic risks have increased and remain the most critical factor for the financial sector. The economic recovery has slowed down, mainly due to disruptions in the energy sector.



Explanation:

1.	Macroeconomic risk	reflects the level of threats arising in the real economy or fiscal sphere
2.	Credit risk of households and corporate sector	reflects the prospects for changes in the level of non-performing loans in banks' portfolios and the need for additional provisioning for such loans
3.	Capital adequacy risk	assesses the ability of banks to ensure a sufficient level of capital
4.	Profitability risk	assesses the banks' ability to generate net profit
5.	Liquidity risk	reflects the ability of banks to fully and timely fulfill their obligations to depositors and creditors
6.	Currency risk	shows the extent to which foreign exchange market trends may affect the stability of banks

Figure 1. Financial sector risk map according to the NBU methodology, where 1 is the lowest risk level and 10 is the highest

Source: formed based on [20]

The state budget deficit and the external debt-to-GDP ratio are still high. Moreover, the widening current account deficit and rising public debt-to-GDP ratio increase risks. Significant international financial assistance mitigates these risks.

Household credit risk remains almost unchanged and is moderate. The share of significantly overdue loans continues to decline. In addition, banks have improved their expectations for the quality of their retail portfolios. At the same time, households' expectations about economic development deteriorated slightly.

The level of corporate defaults in the period under review shows a decline in this indicator. The banks' own assessment of the quality of the future corporate loan portfolio shows positive dynamics.

The quality of the corporate loan portfolio has also improved. The financial position of companies is good, and their debt burden is acceptable, but the prospects for future changes in business activity have deteriorated.

The capital ratios of Ukrainian banks declined due to stricter capital requirements, including full coverage of operational risk. At the same time, banks' capital buffers remain strong due to high profitability and profit distribution mechanisms. As a result, capital risk is still moderate.

Profitability risk remains at historically low levels. Banks remain profitable due to high net interest income, low loan loss provisions, and high operating efficiency. Risks to banks' profitability remain low, despite the decline in interest rates.

Liquidity risk remains largely unchanged and low. Customer funds continue to flow into the bank; the LCR ratio is more than three times the benchmark. According to NBU surveys, banks continue to assess liquidity risk as moderate.

The level of currency risk is moderate. At the same time, the volatility of the hryvnia-US dollar exchange rate increased, which led to a deterioration in banks' assessment of currency risk.

The level of currency risk is moderate. At the same time, the volatility of the hryvnia-US dollar exchange rate increased, which led to a deterioration in banks' assessment of currency risk.

At the same time, the banks' risks were mitigated by a reduction in their net foreign currency position. In addition, an increase in foreign exchange reserves provided some relief to the situation in the foreign exchange market.

Next, we will elaborate on the main risks in banking, as banking is associated with various risks, each of which has its own characteristics and requires a specific approach to management [26]. A comparative characterization of banking risks is presented in Table 5.

Credit risk is characterized by problems with loan repayment by borrowers. The high level of non-performing loans (NPLs) is one of the main threats to the Ukrainian banking sector. The financial stability of banks is based on the volume of risks, the most important of which is credit risk, in which the volume of NPL plays a significant role.

A bank's liquidity determines its ability to meet its obligations to customers in a timely manner and in full. Insufficient liquid assets may result in the bank's inability to make payments on deposits or other obligations, which in turn undermines confidence in the bank [29].

Table 5

Comparative analysis of banking risks

Risk type	Characteristics	Consequences of risk realization	Examples of how Ukrainian banks operate	Reduction methods
Credit risk	The risk of borrowers' failure to repay the loans received	Losses from non-performing loans, reduced liquidity	Increase in the share of non-performing loans during financial crises	Improving credit score, collateral requirements, debt restructuring
Liquidity risk	Lack of liquid assets to cover liabilities	Non-payment of deposits, loss of trust, bankruptcy	In 2014, many banks failed to fulfill their obligations to customers.	Asset and liability management, maintenance of liquidity reserves, access to interbank markets
Interest rate risk	Impact of interest rate changes on the bank's income and expenses.	Losses due to unfavorable changes in loan and deposit rates.	Changes in the NBU discount rate may affect loan margins	Interest rate hedging, loan portfolio diversification
Currency risk	Currency fluctuations affecting the bank's balance sheet	Losses due to unfavorable changes in foreign exchange rates	Hryvnia to dollar fluctuations in times of economic instability	Hedging currency risks, using currency swaps
Operational risk	Management errors, technical failures or fraudulent activities	Financial losses, reputational damage	Cybercrime as an attack on PrivatBank in 2020	Investing in cybersecurity, automating processes, and strengthening internal controls
Regulatory risk	Changes in legislation and NBU requirements	Losses from non-compliance with new regulations, fines	NBU requirements for bank capitalization after the 2014-2015 crisis	Adapting to new regulatory standards, monitoring legislative changes
Reputationa l risk	Negative impact on the bank's image due to various factors	Loss of customers, decline in share prices	Public scandals around PrivatBank after nationalization	Transparency of operations, communication strategies to protect reputation
Cyber risk	Threat of loss of data or funds due to cyberattacks	Financial losses, leakage of customer data	The Petya.A virus, which blocked access to computer systems, encrypted files and demanded a ransom to unlock them.	Use of multi-level security systems, regular cybersecurity audits

Source: formed based on [27; 28]

Interest rate risk arises from changes in market interest rates. Banks make loans and accept deposits at certain interest rates, and changes in these rates could adversely affect the bank's income. Interest rate risk management is particularly important in countries with unstable economies and frequent changes in monetary policy.

Since Ukrainian banks operate not only with the national currency but also with foreign currencies, exchange rate fluctuations pose significant risks to banking activities. Sharp changes in the hryvnia exchange rate against the US dollar or the euro can cause significant losses for both banks and their customers.

Operational risk is associated with internal management errors, technical failures, human factors or fraudulent activities. Operational risks can have a significant impact on the bank's stability and lead to losses in financial and reputational resources [28].

Changes in legislation and regulatory requirements may also have a significant impact on banks' operations. In particular, new capitalization, reporting, or risk management standards may create additional challenges for banking institutions, especially in a rapidly changing regulatory environment.

Managing these risks is one of the main tasks for Ukrainian banks, as their effectiveness depends not only on external factors but also on the ability of the bank's management to predict and minimize negative consequences.

Next, we will analyze the funding indicators of Ukrainian banks.

Bank funding is a key component of the stable operation of the banking system, as it determines the ability of banks to attract and efficiently use resources to maintain their liquidity and financial stability. The main sources of funding are deposits from individuals and legal entities, loans from international organizations, market instruments, and funding from the central bank. Below, we will analyze in more detail the main sources of funding for Ukrainian banks and the dynamics of their changes in recent years.

One of the most important sources of funding for Ukrainian banks is retail and corporate deposits. The deposit base provides banks with the ability to issue loans, invest in various assets, and maintain liquidity. Retail deposits are highly stable, as individuals traditionally keep their savings in banking institutions, even in times of economic instability. Corporate deposits, on the other hand, often depend on business activity and the overall economic climate in the country.

In the funding structure of Ukrainian banks, retail deposits typically account for about 50-60% of total liabilities. Corporate deposits also play a significant role, but they are more sensitive to changes in the economic environment. During economic crises or rising inflation, some corporate clients may withdraw their funds to use for internal business or due to a lack of confidence in the financial system. As of April 2024, customer accounts (individuals and legal entities) in banks' liabilities exceeded 93% (Figure 2).

Loans received by Ukrainian banks from international financial institutions, such as the International Monetary Fund (IMF) or the European Bank for Reconstruction and Development (EBRD), are an important source of long-term funding. These loans are usually provided on preferential terms for the purpose of maintaining the stability of the banking system or to finance specific projects. Attracting such loans depends on the macroeconomic situation in the country and the degree of its integration into the global financial system. At the same time, the share of loans from international organizations in the banking sector's liabilities decreased to 1.5% this year.

Ukrainian banks also use market instruments to raise capital, in particular through the issuance of bonds. Bonds are an important instrument for long-term funding, allowing banks to raise large amounts of funds from the capital markets for a long period of time [30]. This is an important alternative to deposit funding, especially when banks need stable resources to invest in large projects or to maintain liquidity in times of crisis.

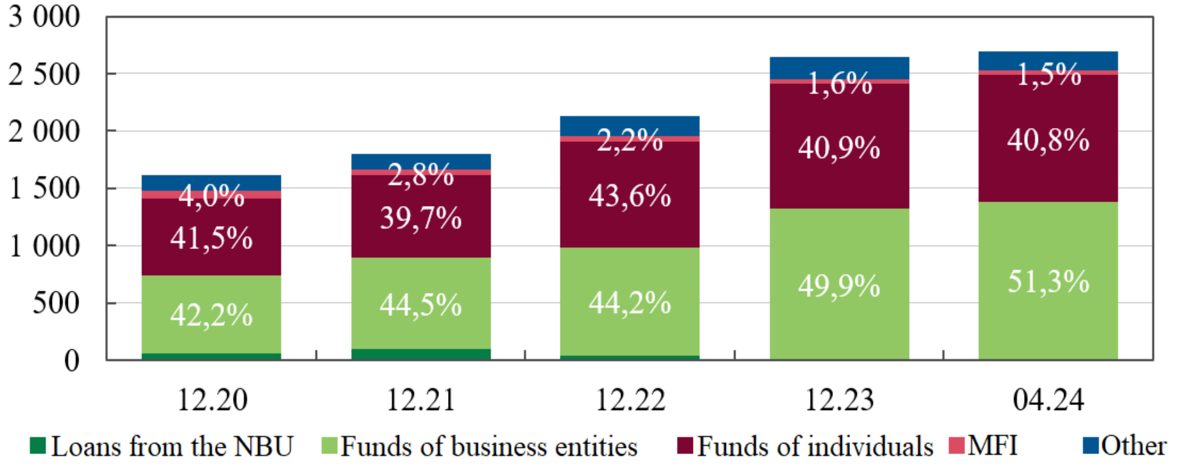


Figure 2. Structure of liabilities of Ukrainian banks in 2020-2024, UAH billion

Source: formed based on [20]

Over the past few years, the funding structure of Ukrainian banks has undergone certain changes due to economic and political factors. In the aftermath of the 2014-2015 economic crisis, there was a significant outflow of deposits, especially corporate deposits, due to a decline in confidence in the banking system. However, the situation began to stabilize in 2017, which contributed to the growth of the deposit base [31].

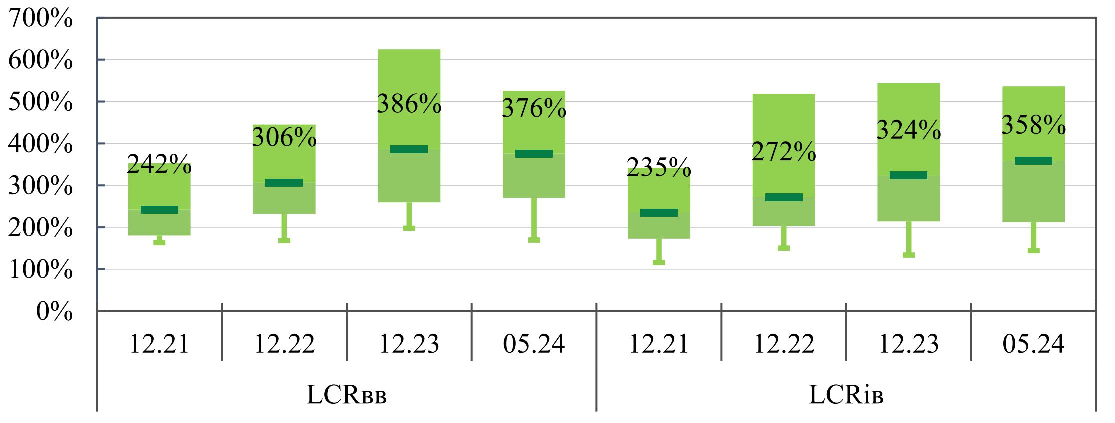
Since 2020, during the COVID-19 pandemic, the banking system has faced renewed challenges due to deposit outflows and the need to attract external financing. At the same time, international financial institutions such as the IMF and EBRD continued to support Ukrainian banks through loans and technical assistance [32; 33].

In 2022, amid the war, the funding structure changed again, with households and businesses partially withdrawing funds, but banks began to more actively attract loans from the NBU and other government programs to maintain liquidity.

The Ukrainian banking system maintains a high level of liquidity. This is facilitated by regular inflows of funds to customers' accounts, as well as a favorable (for liquidity) asset structure.

Most banks' LCR ratios (liquidity coverage ratio, which measures a bank's ability to maintain a sufficient level of high-quality liquid assets to cover short-term liabilities) exceed the minimum required level by three times (Figure 3).

In early 2024, banks transferred significant amounts of funds to fulfill their budgets, which led to a short-term decrease in liquidity in the banking system. Banks paid record profit tax at high rates, and state-owned banks also paid large dividends: in total, banks paid about UAH 77 billion in profit tax in 2023. Most of these funds were paid at the beginning of the year. Dividends paid by state-owned banks amounted to about UAH 32 billion [34].



The edges of the rectangle are the 1st and 3rd quartiles of the distribution.
The line inside the rectangle is the median.
The lower lines outside the rectangle are the minimum.

Figure 3. Liquidity coverage rations in all currencies (LCR ac) and in foreign currencies (LCR fc). The normative value is 100%

Sourse: formed based on [20]

The share of liquid assets in banks' net assets remains high at 42%. Banks maintain sufficient safety margins to withstand liquidity risks that may arise in wartime. The largest liquidity reserves are held by foreign banks, where this figure reaches half of net assets, while the share of state-owned and private banks is close to 40%. The structure of liquid assets remains largely unchanged: hryvnia liquid assets are dominated by government bonds and NBU certificates of deposit, while foreign currency assets are dominated by funds on correspondent accounts with foreign banks. The share of the latter is decreasing, as correspondent accounts with banks are gradually being removed from the list of highly liquid assets in accordance with European standards (currently, this share should not exceed 60% of total highly liquid assets).

Deposits from individuals and legal entities are the main source of liquidity for banks. They provide the necessary resources for daily operations, including lending, payments, and investments. In a stable economic environment, banks are able to use deposits as a stable instrument to maintain their liquidity, as household deposits are generally less sensitive to external factors than other sources of funding.

Thanks to their large deposit base, banks can avoid using more expensive and less stable sources of funding, such as interbank loans or bonds. However, in times of crisis, when confidence in the banking system is declining, deposit outflows are likely, reducing banks' liquidity and increasing their need for external funding.

An analysis of the situation in 2022-2024 shows that, despite the war, funds are accumulating in companies' accounts (Figure 4).

The rapid inflow of hryvnia deposits to banks continues. Companies' funds are growing faster than those of individuals. Businesses are also investing more in foreign currency. The accumulation of funds on accounts reflects the high profits of most companies and the limited use of funds, with modest working capital needs and no investment projects [20; 21; 22].

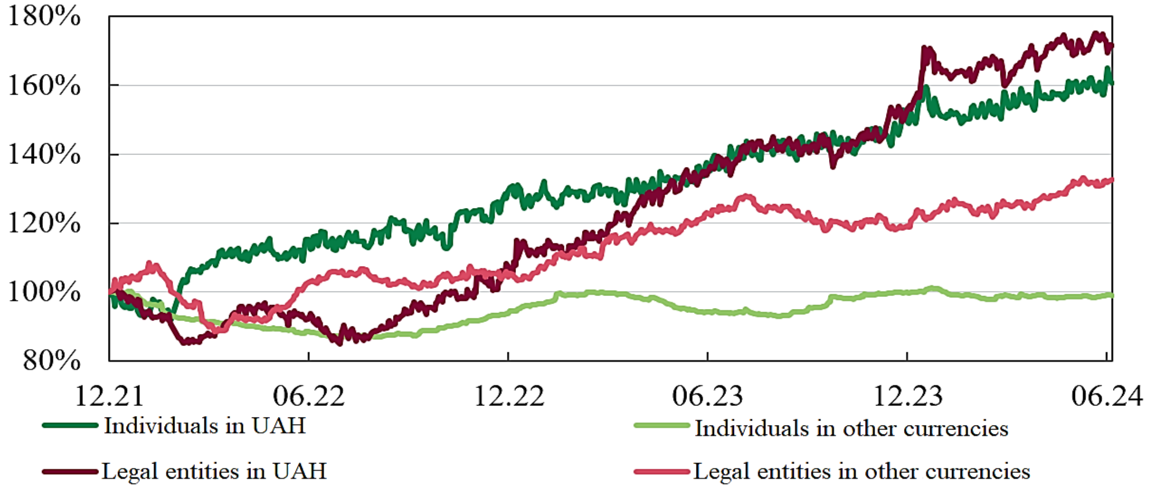


Figure 4. Due to individuals and legal entities, January 1, 2022 = 100%

Source: formed based on [20]

Businesses traditionally keep almost all of their funds on current accounts, and with the NBU's recent currency liberalization, it is expected that some of the accumulated funds will be used for external payments (in particular, loan repayments and dividends). At the same time, these outflows will be offset by corporate earnings and thus will not put pressure on bank liquidity.

Individual deposits are the largest source of funding for banks, as they provide a stable inflow of funds, especially through long-term deposit programs. Legal entities also actively use bank deposits to store temporarily available funds, but these deposits are more prone to fluctuations depending on economic activity. Public confidence in the banking system is a key factor in the stability of the deposit base. During periods of crisis or political instability, deposit volumes decline as depositors begin to convert their funds into cash or other assets.

In the analyzed period, despite the war, retail deposits continued to grow. Households' hryvnia savings continue to grow steadily, despite normal seasonal fluctuations. This growth was driven by a rapid increase in nominal household incomes and continued confidence in Ukrainian banks. Both deposit balances and average deposit amounts increased. The average deposit amount increased by 18% since April last year, reaching around UAH 12,000. At the same time, large deposits are growing much faster than small ones, which increases the concentration of households' funds: hryvnia deposits over UAH 600,000 have increased by more than 40% over the past year and account for about a third of the total deposit portfolio. Overall, such deposits account for only 0.2%.

The volume of household time deposits in hryvnia has been growing, albeit somewhat slower than total retail deposits. When the key policy rate was raised, this resulted in a limited adjustment of the cost of term deposits of this client group. The reason: an attempt to preserve regulatory incentives to attract term deposits, such as reserve requirements and higher interest rates on 3-month certificates of deposit. As a result, the share of time deposits remains at around 36%.

Dollar withdrawals from deposits slowed (Figure 5).

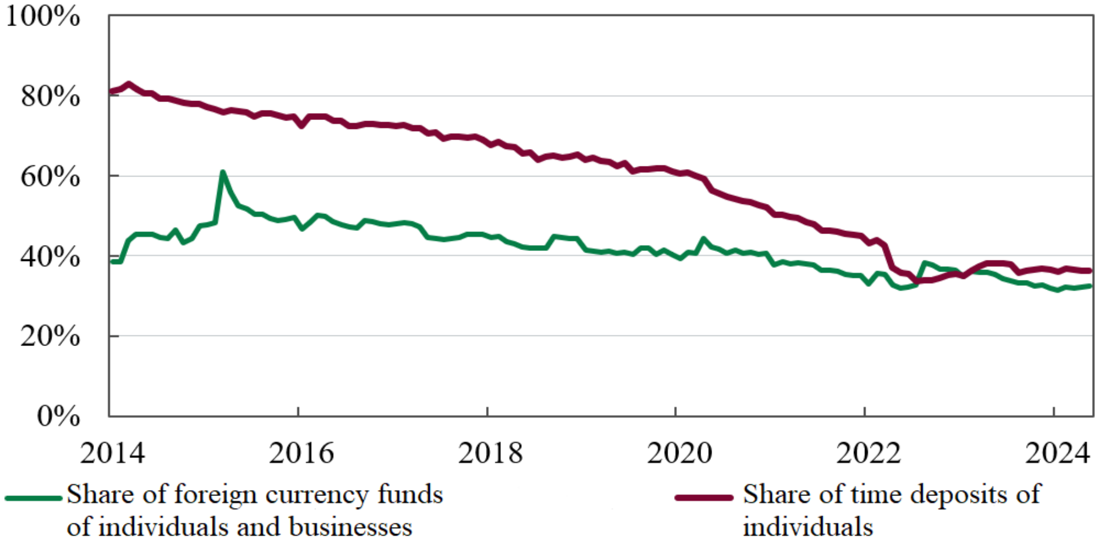


Figure 5. Level of dollarization of funds of individuals and legal entities in 2014-2024

Source: formed based on [20]

The easing of currency restrictions meant that the service of converting hryvnia into foreign currency and placing it on deposit was no longer in demand. As a result, households' time deposits in foreign currency declined. In recent months, the statistical effects of the hryvnia depreciation and the increase in foreign currency holdings by businesses have reversed the downward trend in the share of foreign currency holdings. Since the beginning of 2024, the share of these funds in customer deposits has been around 32%, which is low in retrospective comparison. Banks are still unable to actively attract foreign currency deposits due to extremely limited investment opportunities. Given the high interest rates on foreign currency assets, banks can temporarily generate additional income by keeping these funds in low-risk instruments, such as deposits with foreign banks and investment-grade bonds. In the long run, however, these opportunities will be undermined by the expected decline in key interest rates in developed countries. Thus, banks will continue to have little incentive to encourage their clients to invest in foreign currency.

Non-deposit sources of funding include interbank loans, market instruments, external financing from international financial organizations and borrowings from the National Bank of Ukraine [35]. These sources are important, especially in times of increased liquidity needs or during a crisis, when the deposit base is unable to provide the required level of funding.

Interbank loans play an important role in short-term financing of banks, especially in cases of temporary liquidity shortages. On the interbank market, banks can quickly raise the necessary funds to cover temporary liquidity gaps or to finance operations.

However, the cost of such loans can vary significantly depending on the overall market situation, the level of trust between banks, and the NBU's monetary policy.

Market instruments, such as bonds, are also used by banks for funding purposes, but their main advantage is the ability to raise long-term capital. Banks can issue bonds on the domestic and foreign markets to raise funds from investors to finance their operations and investment projects. Issuing bonds may be particularly important in times when deposit funding is insufficient or unstable.

The NBU is a key player in the market for supporting the liquidity of the banking system. One of the main instruments for attracting funds from the NBU is refinancing programs, which provide banks with access to loans to support their liquidity in the short and medium term [36].

Refinancing programs offered by the NBU allow banks to raise funds to maintain liquidity in the event of deposit outflows or insufficient liquidity in the interbank market. These programs are particularly important in times of crisis, when access to external funding may be limited or too expensive.

The NBU refinancing can be provided for different terms, ranging from short to medium-term. The terms of refinancing may depend on the NBU's overall monetary policy, inflation, and the needs of the banking system. During crises, such as the 2014 financial crisis or the COVID-19 pandemic, the NBU actively used refinancing programs to stabilize the banking system [37].

The hostilities of 2022 again led to the need to support banks through refinancing programs, which allowed banks to maintain their functionality even in extraordinary conditions [38].

A comprehensive analysis of the activities of Ukrainian banks during the war will be incomplete without an appropriate analysis of assets, which is a key aspect of both assessing the financial stability of the banking system and selecting effective methods of managing it.

Figure6 shows a positive trend in the growth of total net assets of banks over the period under review. A more detailed analysis by bank group shows a steady increase in the net assets of state-owned banks throughout the period. This is primarily due to the active policy of the state to support such banks and their participation in financing government programs.

The dynamics of Privatbank's net assets demonstrates insignificant fluctuations, which are caused by both the impact of external economic and regulatory conditions and changes in internal credit policy. The net assets of foreign banks are also growing, but at a slower pace than those of state-owned banks.

This can be explained by a more cautious policy of foreign banks to expand their presence in the Ukrainian market due to the war.

The analysis of the dynamics of net assets of private banks also revealed fluctuations in the overall upward trend, which may be due to the diversity of strategies of individual banks, their response to changes in macroeconomic conditions and regulatory requirements. Total net assets for the second quarter of 2024 increased from UAH 2,986 billion to UAH 3,126 billion, i.e. by 4.7%, of which 1% increase was due to changes in the exchange rate (Figure 7).

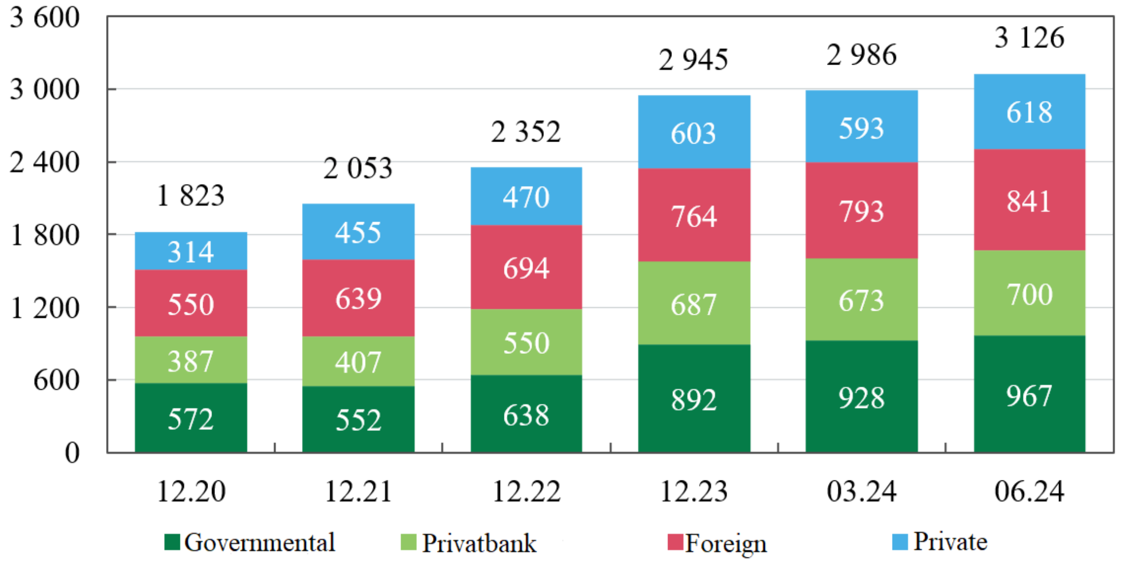


Figure 6. Net assets by bank groups, UAH billion

Source: formed based on [39]

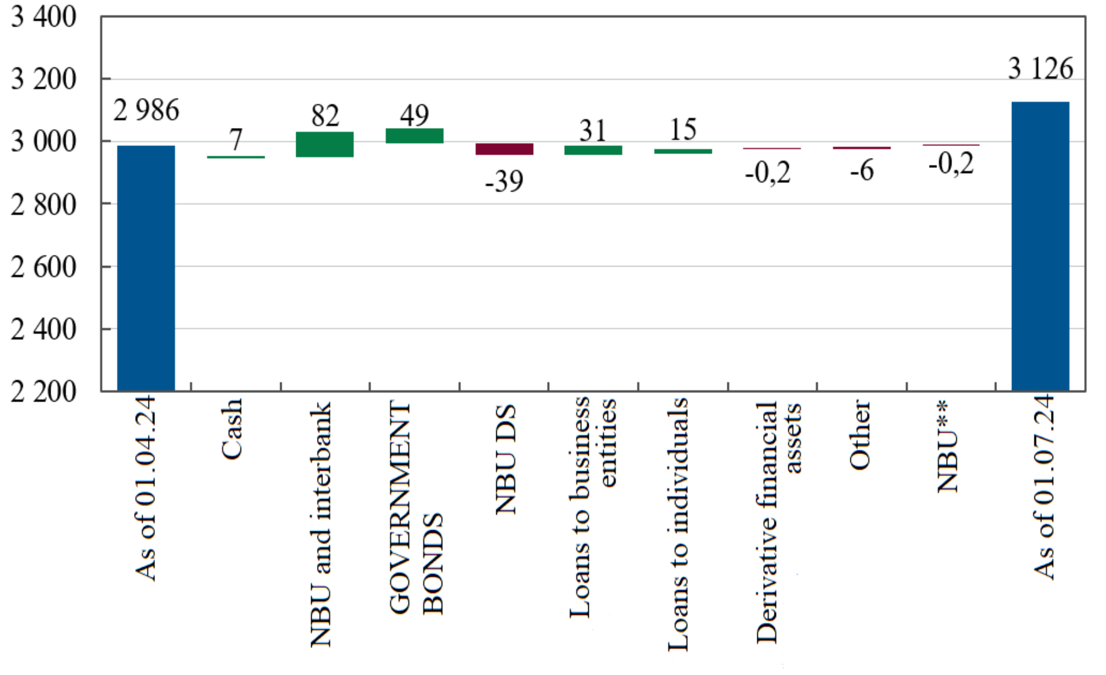


Figure 7. Changes in the structure of net assets in Q2 2024, UAH billion

Source: formed based on [39]

First and foremost, there was an increase in funds with the NBU and in the portfolio of domestic government bonds. In contrast, the volume of NBU certificates of deposit continues to decline. At the same time, the portfolio of loans to customers increased by 19.1% compared to the corresponding data of the previous year.

Thus, there is an overall positive trend in the banking system's net assets, which indicates that the banking sector is active and contributes to the country's economic growth.

The published results of the NBU's review of the banking sector confirm that gross hryvnia loans have been growing for more than a year. During the second quarter of 2024, the growth rate of business loans increased to 5.3%, and that of retail loans to individuals to 6.7% compared to the previous quarter. At the same time, the share of real estate loans increased by 0.8% in the structure of retail loans, but the share of loans for current needs decreased by 0.6%.

Figure 8 shows that loans traditionally account for the largest share in the structure of net assets. An increase in the share of loans to legal entities and individuals indicates a certain intensification of economic processes in the country and, accordingly, an increase in the role of banks in financing economic activity.

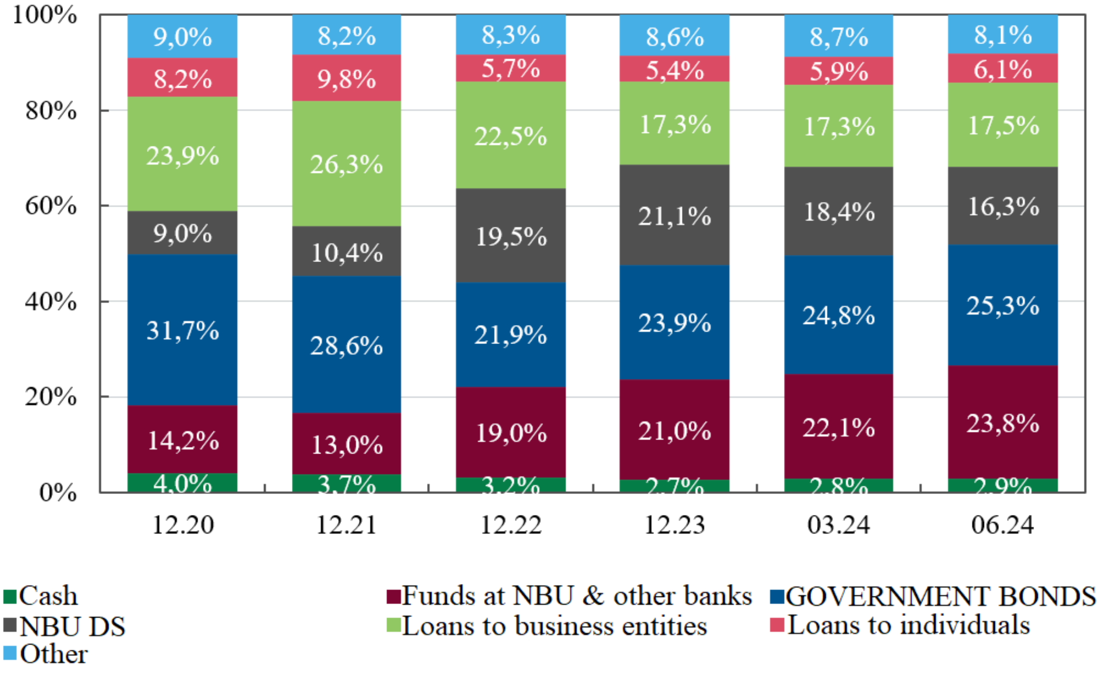


Figure 8. Structure of net assets of the banking system of Ukraine

Source: formed based on [39]

Another significant component of banks' assets is due from the NBU. An increase in their share contributes to the banks' liquidity, which is an important factor in their sustainability.

Ukrainian government bonds are a significant component of Ukrainian banks' assets. Investments in domestic government bonds allow banks to earn stable income and diversify their risks.

The share of cash in banks' assets is smaller compared to other assets. Its dynamics reflects the general trend toward non-cash payments.

It is also worth noting the positive dynamics in reducing the share of NPLs in banks' portfolios (Figure 9).

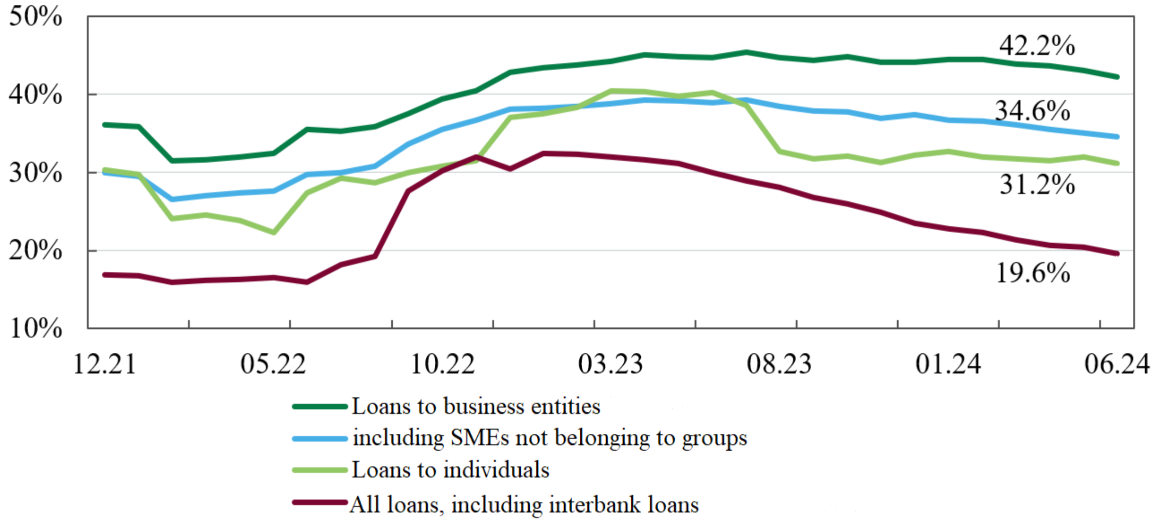


Figure 9. Share of non-performing loans in banks' portfolios

Source: formed based on [39]

Non-performing loans (NPLs) are loans for which the borrower has stopped making timely payments of principal or interest. The percentage of such loans is an important indicator of the quality of the loan portfolio of both an individual bank and the banking system as a whole.

Figure9 shows the dynamics of the share of NPLs in banks' portfolios by different categories of loans during the period under review and indicates that their quality has improved. At the same time, the highest level of NPLs is observed in the category of "Loans to business entities". This indicates that the business sector was most affected by the economic difficulties, which led to an increase in the number of insolvent debtors.

Other categories of NPLs studied are almost back to their pre-war levels. Thus, during the second quarter of 2024, the share of NPLs decreased for all groups of banks, which was facilitated by an active increase in new loans and write-offs of those recognized as non-performing.

When analyzing banks' assets, it is necessary to consider the level of NPL coverage by bank reserves (Figure 10).

In general, there is an almost constant trend in the volume of non-performing assets during the analyzed period. The level of provisioning coverage also fluctuates insignificantly and demonstrates a sufficient level to cover possible losses from non-performing assets.

The analysis of the ratio of net assets to interest income is also worthy of attention (Figure 11).

The largest component of interest income during the entire period under review is related to loans to business entities and demonstrates a stable share with insignificant fluctuations.

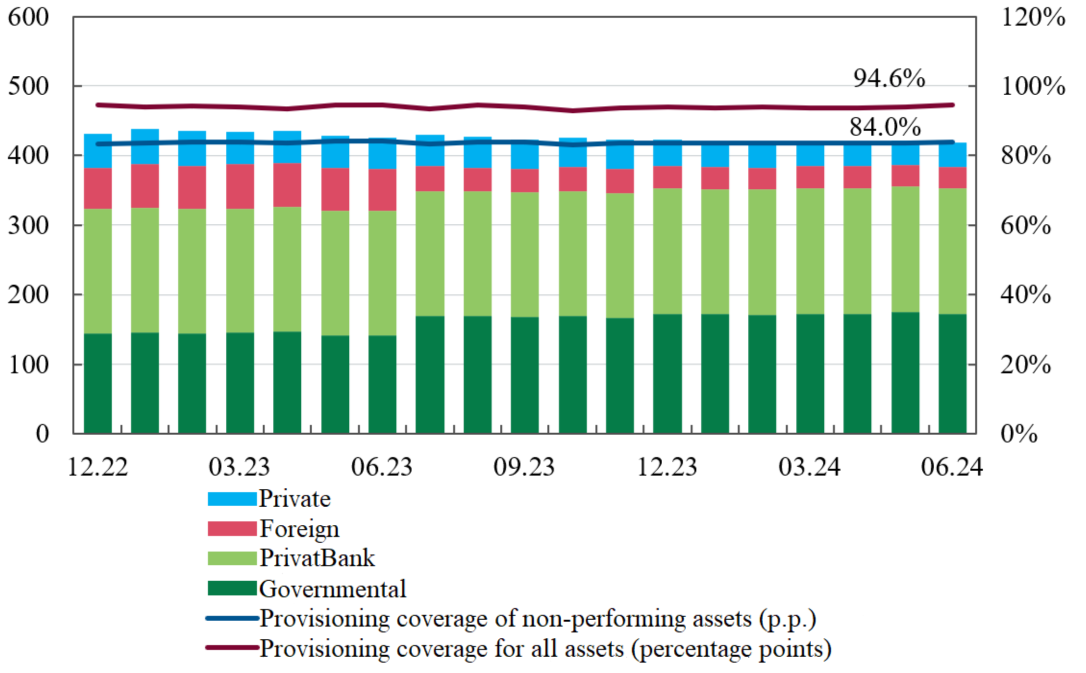


Figure 10. NPL volume (UAH billion)
and level of provisioning coverage for active operations

Source: formed based on [39]

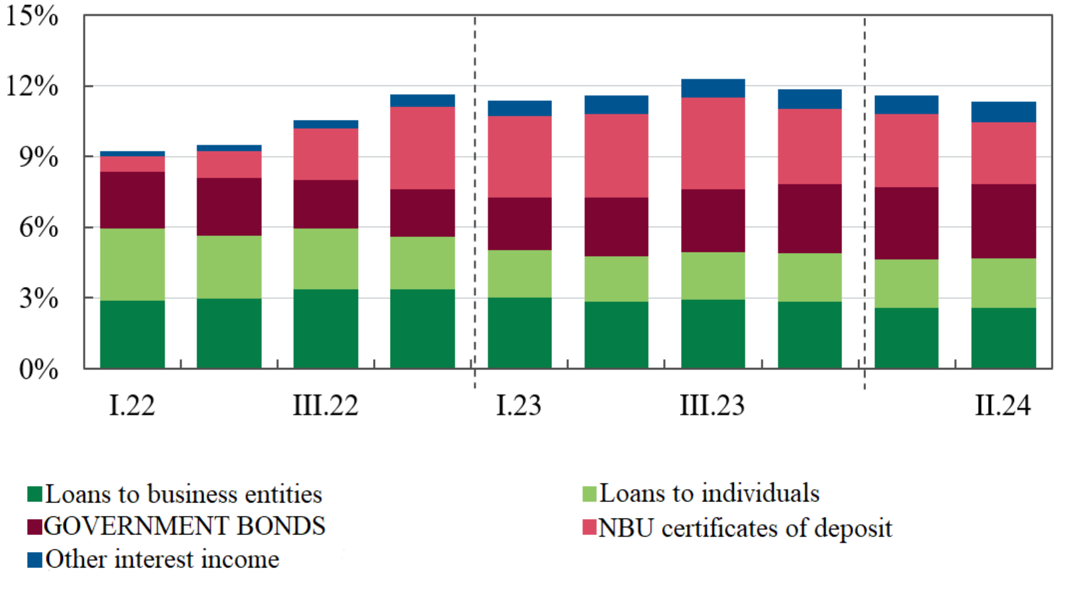


Figure 11. Ratio of net asset components to interest income

Source: formed based on [39]

Interest income from loans to individuals also shows stable dynamics, but their share is slightly lower compared to income from loans to business entities and fluctuates slightly from quarter to quarter.

Interest income from domestic government debt securities accounted for a relatively stable share during the period, gradually increasing from the end of 2022 and remaining stable thereafter. Income from NBU certificates of deposit increased significantly in the second half of 2022 and maintained a significant share throughout 2023, but their share slightly decreased in Q2 2024. Other interest income remains the smallest component and makes an insignificant contribution to banks' total income relative to net assets.

This trend is due to the fact that the pandemic and the economic crisis caused by the war have affected lending to both individuals and businesses. In response, banks increased their investments in government bonds and NBU certificates of deposit, which provide stable income with low risk.

Changes in the NBU discount rate affected the yield on NBU certificates of deposit, making them attractive to banks, especially in the face of uncertainty in the credit market. In recent years, the demand for loans among business entities and individuals has remained relatively stable, which ensures that banks receive an appropriate level of lending income. The slight fluctuation is due to changes in economic activity.

Overall, the chart shows that banks have gradually adapted to the new environment, optimizing their asset structure to minimize risks and maximize stable income, focusing on investments in government instruments and NBU certificates of deposit, and maintaining stable lending to businesses and households.

Figure 12 shows the ratio of interest expense components of Ukrainian banks to net assets from Q1 2022 to Q2 2024.

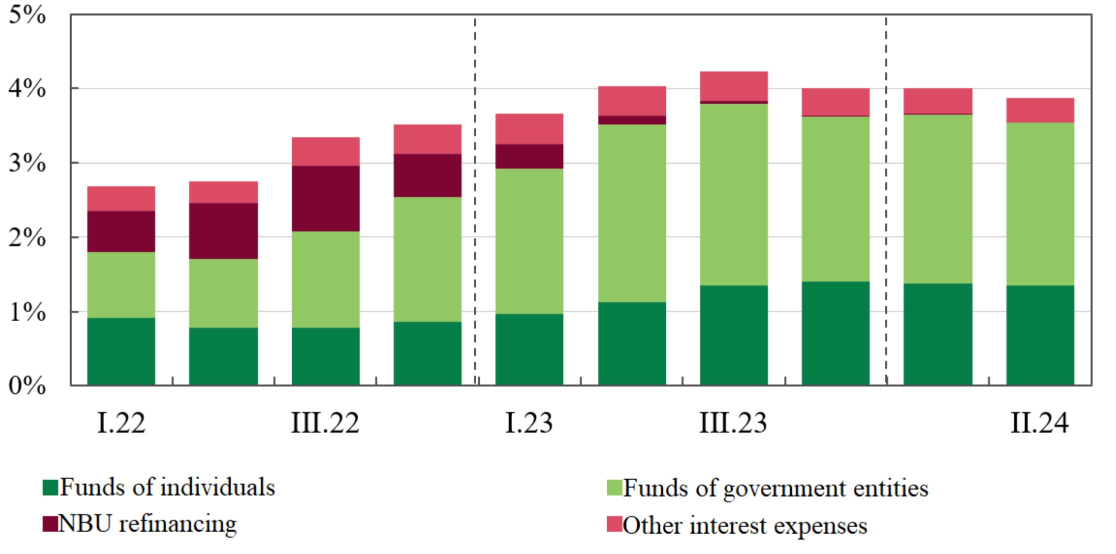


Figure 12. Ratio of net asset components to interest expense

Source: formed based on [39]

Interest expense from retail customers accounts for a significant portion of interest expense, showing a stable share throughout the period. However, there was a slight decline in the third quarter of 2022, after which the level of expenses stabilized at a high level. Interest expense from funds of business entities has been gradually increasing since the first quarter of 2022, and starting in the first quarter of 2023, it accounts for the majority of interest expense relative to net assets, peaking in the third quarter of 2023 and then slightly decreasing in the second quarter of 2024.

The NBU refinancing has an unstable dynamic. In the third quarter of 2022 and the first quarter of 2023, there is a slight increase in the share of refinancing costs, but then it remains stable or even slightly decreases in the last quarters. Other interest expense increases in the second half of 2022 and remains at a significant level throughout 2023, but declines slightly in the second quarter of 2024.

The above dynamics is due to the fact that inflation and economic instability caused an increase in the cost of borrowed funds, which forced banks to increase interest expenses on retail and corporate deposits. The NBU's refinancing policy, which includes changes in the key policy rate and support for banks' liquidity, affected interest expenses related to refinancing. This dynamic was also affected by changes in demand for deposits among individuals and businesses. Banks tried to attract funds by raising deposit rates, which led to an increase in interest expenses, especially during times of economic uncertainty. In general, the chart shows a trend of increasing costs of raising funds from individuals and businesses amid economic instability and rising interest rates. However, in the first half of 2024, there was a positive trend in reducing interest expenses, which demonstrates the effectiveness of banks' adaptation policy to the changing environment.

Conclusions

Banking activities are the foundation of economic development, ensuring the mobilization of resources, their efficient redistribution and stimulating investment activity. Banks play a key role in ensuring financial stability by maintaining the continuity of money circulation and lending. Their activities contribute to business development, job creation and economic growth. In the current environment, given the dynamic changes in the economic environment, the banking system remains an important element of Ukraine's integration into the global economy. The importance of banks is enhanced in times of crisis, when they become the leaders of stabilization measures.

Ukraine's banking system has significant potential and demonstrates resilience in a challenging environment. In recent years, it has adapted to rapid changes by introducing innovative technologies and developing digital services. However, since the outbreak of war, banks have faced numerous challenges, such as reduced liquidity and insolvency risks. During the war, many banks were forced to revise their strategies to maintain stability and support their customers. Despite these difficulties, the banking system remains an important player in economic recovery and ensuring the financial stability of the country.

Ukraine's banking system has significant potential and demonstrates resilience in a challenging environment. In recent years, it has adapted to rapid changes by introducing innovative technologies and developing digital services. However, since the outbreak of war, banks have faced numerous challenges, such as reduced liquidity and insolvency risks. During the war, many banks were forced to revise their strategies to maintain stability and support their customers. Despite these difficulties, the banking system remains a crucial contributor to economic recovery and financial stability of the country.

Strengthening Ukraine's banking sector and developing its capital markets will be an integral part of post-war reconstruction and development. Very large amounts of domestic and external funds need to be mobilized. This funding should be quickly deployed to ensure overall financial and banking stability. Despite the transition of banks to a new capital structure, the accumulated structural problems remain relevant. The banking system will face increased risks after the war. The short- and medium-term risk will be ensured by its independent efforts to formulate and implement the components of the Strategy for the Postwar Development of the Ukrainian Banking System. The long-term risk will remain for a long period and can be ensured by the support of the EU, international partners, and multilateral development banks.

Ukraine's further financial development will largely depend on risk-sharing arrangements with the European Union, bilateral donors, and multilateral development institutions.

References:

1. Muzyka-Stefanchuk O. A., Dubko A. S. (2024) Stala bankivska diialnist yak predmet finansovo-pravovoho rehuliuvannia [Stable banking activity has become a subject of financial and legal regulation]. *New Ukrainian Law – New Ukrainian Law,* no. 2, pp. 80-87. DOI: https://doi.org/10.51989/nul.2024.2.10 [in Ukrainian].

2. Lomachynska I., Krukhmal O., Ananiev M., Rudevska V., Zatonatskyi D., Pohorila O. (2023) Udoskonalennia kontseptsii derzhavnoho rehuliuvannia bankivskoi systemy ta modeliuvannia yoho vplyvu na natsionalnu ekonomiku [Improving the concept of state regulation of the banking system and modeling its impact on the national economy]. *Finansovo-kredytna diialnist: problemy teorii ta praktyky – Financial and Credit Activity. Problems of Theory and Practic,* no. 2(49), pp. 8-23. DOI: https://doi.org/10.55643/fcaptp.2.49.2023.4030 [in Ukrainian].

3. Drachevska O. O. (2020) Derzhavne rehuliuvannia bankivskoi diialnosti v Ukraini [State regulation of banking activities in Ukraine]. *Mizhnarodnyi naukovyi zhurnal «Internauka». Seriia: «Yurydychni nauky» – International scientific journal "Internauka". Series: "Legal Sciences",* no. 11. Available at: https://www.inter-nauka.com/issues/law2020/11/6535 [in Ukrainian].

4. Shcherbatykh D., Tseben R., Valkova N., Jereleiko S., Nagorny P. (2022) Regulatory policy and institutional transformation of the banking system of Ukraine in the conditions of digitalization. *Cuestiones Políticas,* vol. 40, no. 75. pp. 64-78. DOI: https://doi.org/10.46398/cuestpol.4075.03 [in English].

5. Vovchak O. D., Bednenko V. M. (2017) Bankivske rehuliuvannia i bankivskyi nahliad yak skladovi systemy derzhavnoho rehuliuvannia bankivskoi diialnosti [Banking regulation and banking supervision as components of the system of state regulation of banking activities]. *Visnyk Universytetu bankivskoi spravy – Bulletin of the University of Banking,* no. 2(29), pp. 21-26. DOI: https://doi.org/10.18371/2221-755x2(29)2017120613 [in Ukrainian].

6. Furman O.M. (2019) Derzhavne rehuliuvannia diialnosti bankiv [State regulation of banking activities]. *Derzhava ta rehiony. Seriia: Ekonomika ta pidpryiemnytstvo – State and Regions. Series: Economy and Entrepreneurship,* no. 1 (106), pp. 56-62. Available at: http://www.econom.stateandregions.zp.ua/journal/2019/1_2019/10.pdf [in Ukrainian].

7. Lobova O., Moskaluk M. (2023) Praktyka vykorystannia instrumentiv rehuliuvannia bankivskoi diialnosti v Ukraini [Practice of using banking regulation tools in Ukraine]. *Ekonomika ta suspilstvo – Economy and society,* no. 50. DOI: https://doi.org/10.32782/2524-0072/2023-50-4 [in Ukrainian].

8. Doroshenko N., Romanchuk S. (2022) Vplyv viiny na bankivskyi sektor Ukrainy [The impact of the war on the banking sector of Ukraine]. *Features and trends of socio-economic development in global and local dimensions.* DOI: https://doi.org/10.30525/978-9934-26-244-9-38 [in Ukrainian].

9. Stoika V. (2023) The impact of the war on banking in Ukraine. *Central European Review of Economics & Finance,* vol. 43, no. 2, pp. 52-64. DOI: https://doi.org/10.24136/ceref.2023.009 [in English].

10. Havrylko T., Domanska O. (2024) Bankivska systema Ukrainy v umovakh povnomasshtabnoi ahresii [The banking system of Ukraine in conditions of full-scale aggression]. *Nauka i tekhnika sohodni – Science and technology today,* no. 9(37). DOI: https://doi.org/10.52058/2786-6025-2024-9(37)-146-159 [in Ukrainian].

11. Hudz T., Herchikov M. (2023) Bankivska systema Ukrainy v umovakh viiny [The banking system of Ukraine in times of war]. *Naukovyi visnyk Odeskoho natsionalnoho ekonomichnoho universytetu – Scientific Bulletin of the Odesa National Economic University,* no. 1-2 (302-303), pp. 53-58. DOI: https://doi.org/10.32680/2409-9260-2023-1-2-302-303-53-58 [in Ukrainian].

12. Erkes O., Kalyta O., Sunduk T. (2022) Bankivska systema Ukrainy v umovakh viiny [The banking system of Ukraine in times of war]. *Naukovyi zhurnal «Scientia fructuosa» – Scientific journal "Scientia fructuosa",* vol. 144, no. 4, pp. 122–133. DOI: https://doi.org/10.31617/1.2022(144)09 [in Ukrainian].

13. Kotik B., Smolinska S. (2023) Funktsionuvannia bankivskoho sektoru Ukrainy v period voiennoho stanu [Functioning of the banking sector of Ukraine during martial law]. *Molodyi vchenyi – Young scientist,* no. 10 (122), pp. 213–217. DOI: https://doi.org/10.32839/2304-5809/2023-10-122-42 [in Ukrainian].

14. Sadura O., Pidhayna A. (2023) Finansova stiykist bankivskoi systemy Ukrainy v umovakh viyny [Financial stability of the banking system of Ukraine in the conditions of war]. *Ukrainskyi zhurnal prykladnoi ekonomiky ta tekhniky- Ukrainian Journal of Applied Economics and Technology,* vol. 8, no. 4, pp. 24-29. DOI: https://doi.org/10.36887/2415-8453-2023-4-3 [in Ukrainian].

15. Drobiazko A. O. (2024) The banking system of Ukraine as a factor of social stability in the war. *Forum for Economic and Financial Studies,* vol. 2, no. 2, p. 399. DOI: https://doi.org/ 10.59400/fefs.v2i2.399 [in English].

16. Kravchuk I. (2023) The banking system of Ukraine in wartime. *Humanities and Social Sciences quarterly,* vol. 30, no. 3, pp. 37–47. DOI: https://doi.org/10.7862/rz.2023.hss.25 [in English].

17. Antoniuk O., Nianko L. (2022) Bankivska systema Ukrainy: vyklyky sohodennia ta tendentsii rozvytku [The banking system of Ukraine: current challenges and development trends]. *Instytut bukhhalterskoho obliku, kontrol ta analiz v umovakh hlobalizatsii – Institute of Accounting, Control and Analysis in Globalization,* vol. 3-4, pp. 36-43. DOI: https://doi.org/10.35774/ibo2022.03-04.036 [in Ukrainian].

18. Sytnyk N., Pritsak Ya. (2023) Bankivska systema Ukrainy v umovakh viiny: ryzyky ta otsinka bezpeky [The banking system of Ukraine in wartime: risks and security assessment]. *Molodyi vchenyi – Young scientist,* no. 6 (118), pp. 94-98. DOI: https://doi.org/10.32839/2304-5809/2023-6-118-19 [in Ukrainian].

19. Medynska T.V., Bondariuk I.L., Kropelnytska S.O. (2017) Bankivska systema Ukrainy: terytorialna struktura ta vyklyky sohodennia [Banking system of Ukraine: territorial structure and current challenges]. *Aktualni problemy rozvytku ekonomiky rehionu – Current problems of economic development in the region,* vol. 2, no. 13, pp. 80-89. DOI: https://doi.org/10.15330/apred.2.13.80-89 [in Ukrainian].

20. Zvit pro finansovu stabilnist NBU. Cherven 2023 [Financial Stability Report, June 2023]. Available at: https://bank.gov.ua/ua/news/all/zvit-pro-finansovu-stabilnist-cherven-2023-roku [in Ukrainian].

21. Zvit pro finansovu stabilnist NBU. Cherven 2024 [Financial Stability Report, June 2024]. Available at: https://bank.gov.ua/ua/news/all/zvit-pro-finansovu-stabilnist-cherven-2024-roku [in Ukrainian].

22. Zvit pro finansovu stabilnist NBU. Cherven 2022 [Financial Stability Report, June 2022]. Available at: https://bank.gov.ua/ua/news/all/zvit-pro-finansovu-stabilnist-cherven-2022-roku [in Ukrainian].

23. Shumilo O., Zaika O., Hrechko S. (2023) Analiz suchasnoho stanu bankivskoi systemy Ukrainy [Analysis of the current state of the banking system of Ukraine]. *Ekonomichnyi prostir – Economic space,* no. 188, pp. 195-199. DOI: https://doi.org/10.32782/2224-6282/188-32 [in Ukrainian].

24. Matuzka Ya. (2022) Shcho vidbuvaietsia z ukrainskymy bankamy pid chas viiny [What happens to Ukrainian banks during the war]. *Ofitsiinyi sait NABU.* Available at: https://nabu.ua/ua/yaroslav-matuzka.html [in Ukrainian].

25. Prykaziuk N., Myronchuk A. (2024) Priority directions of transformation of the banking system of Ukraine in the crisis conditions. *Grundlagen der modernen wissenschaftlichen forschung.* DOI: https://doi.org/10.36074/logos-24.05.2024.007 [in English].

26. Tshonkovski K. (2023) Bankivska diialnist v umovakh ekonomichnoi kryzy natsionalnyi ta mizhnarodnyi dosvid [Banking activities in conditions of economic crisis: national and international experience]. *Investytsii: praktyka ta dosvid – Investments: practice and experience*, no. 22, pp. 17-22. DOI: https://doi.org/10.32702/2306-6814.2023.22.17 [in Ukrainian].

27. Zabchuk H., Ivashchuk O. (2022) Ryzyky bankivskoi systemy Ukrainy v umovakh voiennoho stanu [Risks of the banking system of Ukraine under martial law]. *Instytut bukhhalterskoho obliku, kontrol ta analiz v umovakh hlobalizatsii – Institute of Accounting, Control and Analysis in Globalization,* vol. 1-2, pp. 50-61. DOI: https://doi.org/10.35774/ibo2022.01-02.050 [in Ukrainian].

28. Sarakhman O., Shurpenkova R., Kalaitan T. (2023) Ryzyk operatsiinoi diialnosti bankivskoho sektoru v umovakh povnomasshtabnoi viiny v Ukraini [Risk of banking sector operations in the context of a full-scale war in Ukraine]. *Ekonomichni horyzonty – Economic horizons,* no. 3(25), pp. 79-94. DOI: https://doi.org/10.31499/2616-5236.3(25).2023.286937 [in Ukrainian].

29. Khrystoforova O.M., Minasian M.T. (2019) Likvidnist bankivskoi systemy ta praktychni aspekty yii zabezpechennia v suchasnykh umovakh Ukrainy [Liquidity of the banking system and practical aspects of its provision in modern conditions of Ukraine]. *Naukovyi visnyk Khersonskoho natsionalnoho universytetu. Seriia "Ekonomichni nauky". – Scientific Bulletin of Kherson National University. Economic Sciences Series,* no. 36, pp. 109-114. DOI: https://doi.org/10.32999/ksu2307-8030/2019-36-20 [in Ukrainian].

30. Myronenko M., Polova O., Khaietska O., Koval N. (2018) Capitalization of banks: theory, practice and directions of ensuring. *Banks and Bank Systems,* no. 13(1), pp. 173-183. DOI: https://doi.org/10.21511/bbs.13(1).2018.16 [in English].

31. Shchurevych O., Stakhiv I. (2020) Pidvyshchennia doviry do bankivskoi systemy Ukrainy [Increasing trust in the banking system of Ukraine]. *Svit finansiv – World of Finance,* no. 2(63), pp. 2435. DOI: https://doi.org/10.35774/sf2020.02.024 [in Ukrainian].

32. Avramchuk L., Melnyk T. (2022) Bankivska diialnist Ukrainy v period pandemii COVID-19 [Banking activities in Ukraine during the COVID-19 pandemic]. *InterConf – InterConf*, no. 15(117), pp. 28-34. DOI: https://doi.org/10.51582/interconf.19-20.07.2022.003 [in Ukrainian].

33. Dziubliuk O.V. (2020) Ekonomichnyi rozvytok i bankivskyi sektor v umovakh hlobalnoi pandemichnoi kryzy [Economic development and the banking sector in the context of the global pandemic crisis]. *Finansy Ukrainy – Finance of Ukraine,* no. 6 (295), pp. 25-55. Available at: http://dspace.wunu.edu.ua/handle/316497/42125 [in Ukrainian].

34. Meshcheriakov A. A., Berezovyk V. M., Kirieieva K. O. (2024) Finansova stabilnist ta bankivska systema Ukrainy: vyklyky ta mozhlyvosti rozvytku [Financial stability and the banking system of Ukraine: challenges and opportunities for development]. *Efektyvna ekonomika – Effective economy,* no. 7. DOI: https://doi.org/10.32702/2307-2105.2024.7.12 [in Ukrainian].

35. Korol M. M., Spivak V. O., Kulikovska I. V. (2023) Suchasnyi stan pokaznykiv ukrainskoi bankivskoi systemy [Current state of indicators of the Ukrainian banking system]. *Naukovyi visnyk Uzhhorodskoho natsionalnoho universytetu. Seriia «Mizhnarodni ekonomichni vidnosyny ta svitove hospodarstvo» – Bulletin of Uzhhorod National University. Series "International Economic*

Relations and World Economy", no. 47, pp. 41-47. DOI: https://doi.org/10.32782/2413-9971/2023-47-8 [in Ukrainian].

36. Blashchuk-Deviatkina N. (2023) Zabezpechennia efektyvnosti funktsionuvannia bankivskoho sektoru Ukrainy v umovakh ekonomichnoi nestabilnosti [Ensuring the Effective Functioning of the Banking Sector of Ukraine in Conditions of Economic Instability]. *Molodyi vchenyi. Seriia «Ekonomichni nauky» – Young Scientist. Series "Economic Sciences",* no. 9 (121), pp. 13-17. DOI: https://doi.org/10.32839/2304-5809/2023-9-121-3 [in Ukrainian].

37. Komar M., Zomchak L., Peshko B. (2023) Bankivska systema Ukrainy v umovakh pandemii ta viiny: symultatyvna ekonometrychna model [The Banking System of Ukraine in the Conditions of Pandemic and War: A Simulation Econometric Model]. *Ekonomika ta suspilstvo – Economy and Society,* no. 52. DOI: https://doi.org/10.32782/2524-0072/2023-52-15 [in Ukrainian].

38. Petryshyn H. (2023) Funktsionuvannia bankivskoi systemy Ukrainy pid chas viiny [Functioning of the banking system of Ukraine during the war]. *Zbirnyk naukovykh prats «Istoriia narodnoho hospodarstva ta ekonomichnoi dumky Ukrainy» – Journal "History of economics and economic thought of Ukraine",* no. 56, pp. 189-207. DOI:-https://doi.org/10.15407/ingedu 2023.56.189 [in English].

39. Ohliad bankivskoho sektoru. Serpen 2024 [Banking sector review. August 2024.]. Ofitsiinyi sait Natsionalnyi bank Ukrainy. Available at: https://bank.gov.ua/admin_uploads/article/Banking_Sector_Review_2024-08.pdf?v=9 [in Ukrainian].