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THE IMPACT OF THE BANKING SYSTEM LIQUIDITY ON THE VOLUME OF LENDING AND INVESTMENT IN GOVERNMENT SECURITIES DURING THE WAR

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ABSTRACT

In the context of escalating military and political uncertainties, a crucial component of banking system stability is the establishment of an adequate level of resource provision – liquidity. The research aims to analyze the transmission impact of the banking system's liquidity and its structure on the volumes of financing for the real sector of the economy in the second year of the war in Ukraine. In the conditions of war and the corresponding intensification of military-political threats and uncertainties, the regulator has made numerous complex decisions and restrictions aimed at balancing the challenges with the current situation in financial markets.

The research found that the banking sector of Ukraine currently accumulates a significant amount of excess liquidity and demonstrates high profitability. However, in the conditions of war, the transmission mechanism works improperly, requiring constant intervention from the regulator to balance the liquidity of the banking sector and state finances, which, in turn, affects the behavior of commercial banks and changes the structure of their asset portfolios. An analysis of the structure of active operations portfolios of the banking, corporate, and private sectors provide grounds to assert that there is no reason to expect a change in investment behavior from these groups in the perspective of the next year due to the specificity of the conditions imposed by the Ministry of Finance and the regulator. To maintain macroeconomic stability in the national economy in the conditions of martial law it is necessary to introduce conditions to reduce demand for foreign currency and, as an alternative, offer the preservation of savings solvency through simplifying access to investments in government securities for households. The low financial literacy of the population and the underdeveloped stock market in Ukraine, as well as the more complex mechanism of purchasing government bonds or military bonds compared to deposit services, make such investments by the population insignificant and limited in demand.

Keywords: liquidity, transmission mechanism, regulator, government bonds, NBU, lending, banking system

JEL Classification: E02, E58, E42

INTRODUCTION

In the context of the extremely difficult state of the Ukrainian financial system, which is under pressure from the continuation of hostilities on the territory of the state, it is important to ensure the stable functioning of the banking system. However, it also faced several challenges that affected the performance of banking institutions.

Today, Ukraine is gaining unique experience in managing economic challenges in the state of war that has been ongoing for almost 2 years. This experience cannot be compared with short-term conflicts that occurred in the last 50-60 years. The Ukrainian economy, over such an extended period, has not only adapted to shocks in the first year of the war but has also formulated a new development strategy, taking into account that the longer the war lasts, the greater the losses will be due to destruction.

The temporary occupation of part of the territory of Ukraine by the Russian aggressor, the decrease in the solvency of citizens, and the growth of unemployment in the country led to the fact that a large share of customers could not continue servicing their obligations. As a result, there was an increase in the volume of non-performing loans in the banks' portfolios and, accordingly, interest income decreased. At the same time, the cost of additional provisioning of previously issued loans increased significantly due to the deterioration of customer classes.

At the same time, taking into account the growth of credit risks, a significant drop in the Ukrainian gross domestic product, as well as the acceleration of inflationary and devaluation processes, the formation of a sufficient level of resource provision – liquidity – is a necessary component for the full functioning of the Ukrainian banking system. It is a sufficient amount of financial resources that can ensure a more stable functioning of the system in conditions of uncertainty, but not only this aspect is important.

To end the war and preserve sovereignty, Ukraine will require significant external support. Despite this, it is evident that maximizing the internal resources of the Ukrainian state is crucial, considering current challenges and risks. Expanding credit, guaranteeing, and granting support from the state, attracting international aid for recovery and business development, and using tax incentives to stimulate investments must be conditions for accessing the financing of the economy. Equally important are the sources of liquidity formation for the banking sector and the areas where the banking sector directs available resources in fulfilling its role as a mediator of financing as a financial intermediary institution. The qualitative combination of these two components not only shapes the results of the banking sector's activities but also creates conditions for the sustainable functioning of the national economy.

LITERATURE REVIEW

In recent years, more and more attention has been paid to issues related to bank liquidity and financial stability in the scientific literature. Theoretical issues and practical problems of this phenomenon were taken into account by many well-known researchers, including O.I. Lavrushin, O.V. Dziublyuk [6], V. Rudevskaya, N. Shvets, M. Shkvaryliuk, V.Tanase [18], P. Ilchuk, O. Kots, D. Martyniuk, E. Rak-Młynarska [16].

At the same time, the study of theoretical and practical issues related to the issue and placement of domestic and external government bonds as a source of covering the state budget deficit was paid a lot of attention by such domestic specialists and scientists as S. Claessens, K. Klingebiel [19], Sheludko V.M., Malska M.P., Mandyuk N.L., Zanko Y.S., Bazylevych V.D., and others. D. Gros [20] considered banks as buyers of last resort for government bonds. Measurement of the macroeconomic impact on the banking system has become the object of research by the following scientists: E. Argov, B. Bernardet, A. Blinder, L. Gambacort, M. Labonte, and J. S. Tolkien. Stiglitz, J. S. Smith. A great contribution to the research on the effects of government bonds on liquidity risk and bank profitability зробили J.C. Teixeira, C. Vieira, P. Ferreira [21]. Scientists A. Kuznetsova and O. Petryk devoted their research to macroprudential policy in crisis conditions, in which they focused on the role of the regulator's prudential policy from the standpoint of achieving macroeconomic goals in crisis conditions. The results of the study turned out to be especially relevant in the current economic situation in Ukraine due to the strengthening of the crisis conditions for the functioning of the banking sector during martial law [15].

In the scientific literature, the following main approaches to the definition of the concept of "bank liquidity" within the banking system are distinguished:

- the "fulfillment of obligations" approach – indicates the bank's ability to fulfill its obligations promptly and in full;
- the "ratio of assets and liabilities" approach – considers the liquidity of a banking institution as a ratio of assets and liabilities or liabilities and means by which they can be fulfilled;
- the "asset conversion" approach – interprets the bank's liquidity as the process, possibility, or degree of ease of transforming an asset into a means by which it will be possible to fulfil obligations [13].

The decomposition of common approaches of scientists to the definition of the concept of liquidity is studied by the authors and presented in Table 1.

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Table 1. Decomposition of Bank Liquidity Determination. *(Source: compiled by the authors at the indicated links)*

The "fulfillment of obligations" approach	Asset-liability ratio approach	Asset Transformation Approach
The bank's liquidity is the ability to fulfill its obligations to depositors and creditors in a timely manner and without losses (V. I. Vartsaba, O. I. Zaslavska [1]	The liquidity of the bank is the ability to ensure the timely fulfillment of its monetary obligations, which is determined by the balance between the terms and amounts of repayment of the placed assets and the terms and amounts of the fulfillment of the bank's obligations (NBU [2])	The liquidity of the bank means that the institution either already has the necessary amount of liquid funds, or can quickly obtain them through loans or the sale of assets (O. A. Kryklii, N. H Maslak, O. M. Pozhar [3])
The liquidity of a bank is its ability to fulfill obligations on passive operations without losses or with minimal losses in accordance with their maturity (O.V. Dziublyuk [6])	A bank's liquidity is the ratio between the assets and liabilities of the bank's balance sheet over certain periods (A.H. Zahorodnii, H.L. Vozniuk [4])	Bank liquidity is the ability to quickly and cost-effectively convert bank assets into money to meet emerging obligations (L.V. Kuznetsova [5])

As for the liquidity of the central bank, the concept of "central bank liquidity" is practically not found in both national and international professional literature, and the economic category itself is almost not studied.

The vast majority of authors agree that the concept of central bank liquidity should be considered in two aspects: the liquidity of the central bank as a bank of banks, i. e. internal liquidity and the liquidity of the central bank, as a body of state regulation – external liquidity.

Since the central bank lends to banks, holds deposits of banking institutions, and provides settlement and financial services in the domestic market, the central bank's internal liquidity should be understood as the ability to meet its obligations to the government and commercial banks by financing and meeting the demand for credit without negative consequences for the growth of the country's economy.

External liquidity of the central bank is the ability to fulfill obligations quickly and fully to international monetary and financial organizations in order to ensure the stability of the national currency and a minimum negative balance of payments [6].

AIMS AND OBJECTIVES

The aim of the research is to analyze the transmission impact of the liquidity of the banking system and its structure on the volumes of lending to individuals and legal entities in the context of balancing the macroeconomic state and government expenses in the conditions of war and the corresponding escalation of military-political threats and uncertainty. The analysis should highlight the impact of the regulator's macroeconomic policy on the liquidity of the banking sector in the post-shock period: one year after the start of the full-scale invasion and over the next year.

METHODS

Primary data were collected, systematized, and analyzed from official open sources of statistical information, including the official websites of the Ministry of Finance and the National Bank of Ukraine. Clear time constraints were set from the beginning of 2022 to November 2023 for the information used in the analytical part of the research. Secondary data was collected by reviewing relevant materials, including articles, theses, and other documents available on the Internet. Documents were identified using a combination of search queries, keywords, and terms related to the research. There were no date restrictions for the search in the theoretical part of the study, as priority was given to the relevance of materials in terms of their significant contribution to the current discussion regardless of the material's age. The research utilized analysis, synthesis, scientific abstraction (in refining and developing the categorical-conceptual apparatus); comparative and statistical analyses, logical generalization and grouping; graphical and trend analyses using Microsoft Office Excel software (for analyzing analytical and statistical data presented in the study); deduction, logical sequences, and extrapolation for formulating conclusions.

RESULTS

Based on the two-tier structure of the banking system in Ukraine, the research logic began with an analysis of the liquidity of commercial banks, expanding the scope of the study to the liquidity of the entire banking system and the causes and consequences of its formation in conditions of martial law and uncertainty.

Ensuring the liquidity of the central bank, along with supporting the liquidity of commercial banks, creates conditions for the entire banking system to fulfill its functions in the economy. The low liquidity of one of the systemic participants in the banking sector can weaken the liquidity of other financial institutions. In this context, the central bank, using regulatory mechanisms, can create conditions to maintain liquidity at both the level of individual banks and the overall liquidity of the entire banking sector.

Understanding the key factors influencing the liquidity of the banking system allows each market participant to approach the forecasting and management of their liquidity more prudently, providing objective benchmarks for planning operations on the interbank market and determining optimal needs for participation in regulatory operations conducted by the National Bank of Ukraine.

Monetary operations of the National Bank of Ukraine include those operations of the central bank that are carried out to directly regulate the state of the money market in the context of achieving the operational goals of monetary policy. These include always-on access tools; tenders, including tenders to support the liquidity of banks, transactions with certificates of deposit of the National Bank; other monetary transactions, which include: REPO transactions, transactions for the purchase and sale of government bonds of Ukraine with commercial banks, interventions in the foreign exchange market, provision of stabilization loans, purchase and sale of foreign currency on swap terms.

Since the beginning of the full-scale invasion by Russia, the liquidity of the banking sector instead of decreasing has significantly increased. At the start of the study period, we observed that banks held approximately UAH 806 billion in NBU deposit certificates and government bonds (OVDP), and on the corresponding account – UAH 271 billion. By November 2023, these figures had risen to UAH 1250 billion and over UAH 325 billion, respectively (Figure 1). This trend indicates high liquidity in the banking sector and a reduction in liquidity risk in the second year of the full-scale invasion. In the report on financial stability for the first half of 2023, the regulator assigns the liquidity risk the lowest rating of 3, confirming the thesis that the liquidity of the banking sector does not cause concern for the regulator [11].

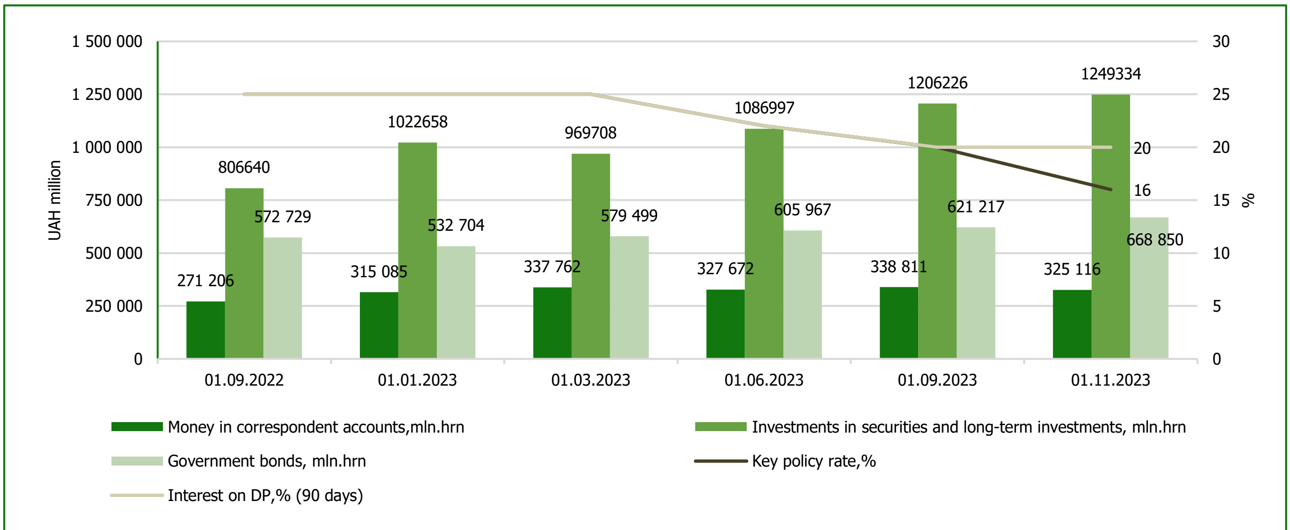

Figure 1. Dynamics of liquidity in the banking system and the cost of active and passive operations of its regulation for the period from September 2022 to October 2023. *(Source: calculated based on [7])*

One of the important reasons for the growth of the highly liquid money supply at the disposal of the banking sector over the past year is that the central bank was forced to return to the practice of direct purchase of domestic government bonds from the government to finance part of the state budget deficit. As of the end of September 2023, the regulator financed the state budget in this way for more than UAH 690 billion [7].

The funds that the NBU transfers for repurchased government bonds initially end up in the government's account, but do not stay there for long. Through the financing of state budget expenditures, they enter the banking system. Since the banking system of Ukraine is two-tiered, this operation, according to Figure 2, is displayed twice. At the first level, it is the transfer of government funds to bank accounts. At the second level, banking institutions reflect these funds as liabilities, making appropriate transfers to citizens' bank cards.

Before the start of the full-scale invasion, commercial banks used their liquidity to buy government bonds from the government. That is, there was a similar circulation of funds, but without the monetary participation of the National Bank.

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However, martial law has significantly increased the state budget deficit, which the banking sector would not be able to finance on its own.

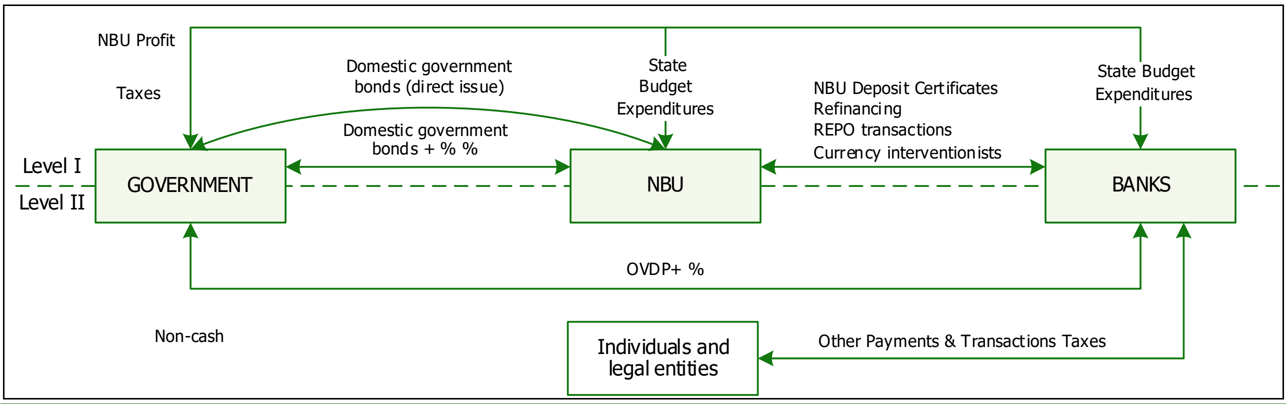

Figure 2. Liquidity turnover in the two-tier banking system of Ukraine.

However, in the second year of the war, the financial market stabilized, and from March 2023, the regulator began to reduce the share in government bonds and increase the volume of interventions. This process should manifest itself in a more contrasting way next year against the backdrop of steps taken by the regulator towards exchange rate liberalization. Thus, in order to balance the exchange rate within a certain corridor, the regulator will need to reduce foreign exchange reserves and increase interventions even more actively (Figure 3).

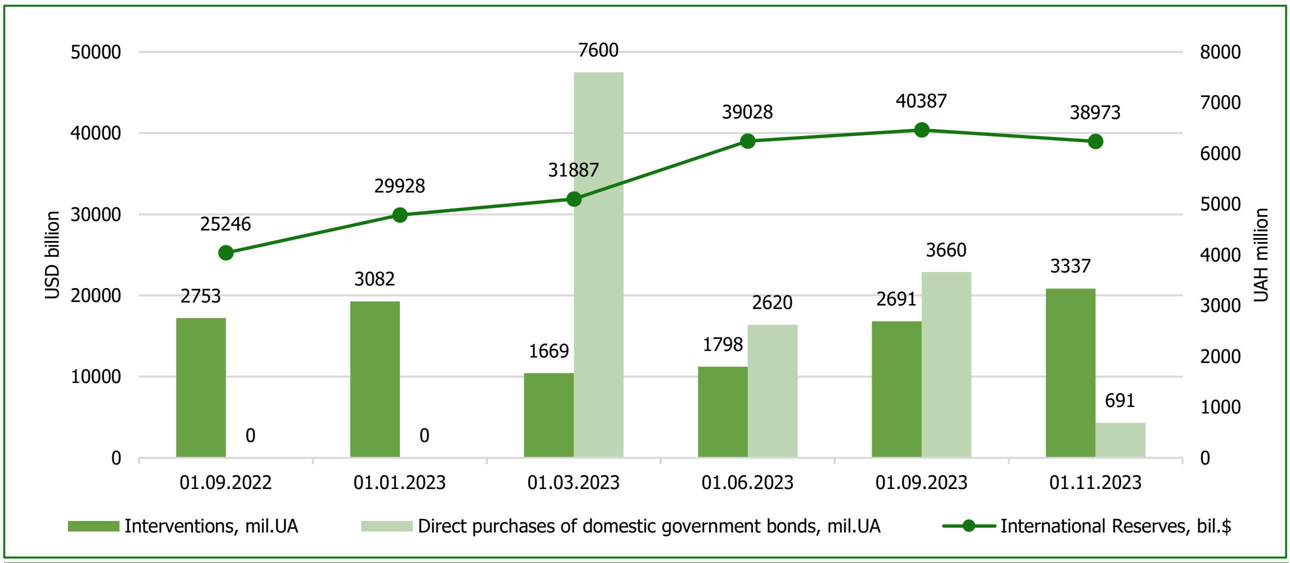

Figure 3. Dynamics of the volume of direct purchases of domestic government bonds, interventions, and gold and foreign exchange reserves of Ukraine, UAH million. *(Source: calculated based on [7])*

In the second year of hostilities, it can be noted that the regulator managed to stabilize the financial market through timely decisions and imposed restrictions. The accumulated strength contributes to financial stability, enhances banks' resilience to further challenges in the prolonged war, and prepares for a full-fledged recovery of lending. It cannot be asserted that such a situation will last long: the country's foreign exchange reserves are decreasing for three consecutive months. Since the beginning of this year, the NBU has begun step-by-step liberalization, which indicates the regulator's confidence in the stability of the market. The reduction of the key policy rate and the liberalization of the exchange rate have changed the landscape for the banking sector in the context of liquidity management (Figure 4).

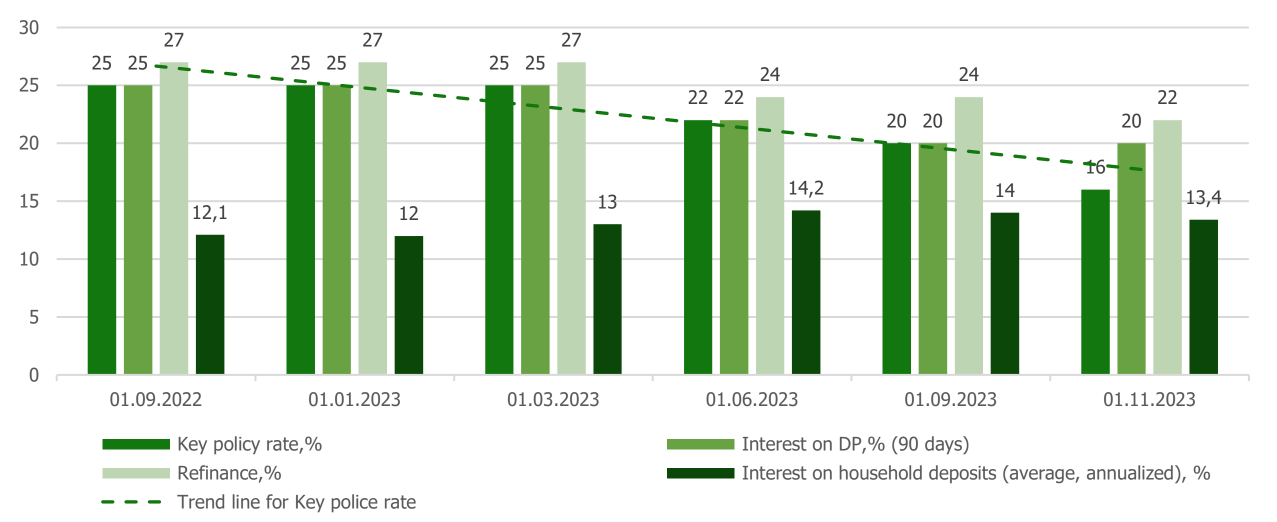

Figure 4. Dynamics of interest changes by the main channels of attraction/placement for the banking sector from September 2022 to October 2023, %. *(Source: formed by the authors based on [7])*

As visible from the data above, the refinancing rates for commercial banks have decreased in line with changes in the accounting rate, and the average pricing offers for deposit attraction are once again declining after a brief increase, increasingly corresponding to the change in the key rate. Additionally, the pricing offer for deposit certificates remains more attractive than the coupon on government bonds, albeit with a very short circulation period. The regulator reports that the financial indicators of business activity are improving, despite still low production volumes. However, the demand for credit funds by enterprises is moderate.

In theory, after the announcement of a tight monetary policy by the central bank, banks should raise interest rates on hryvnia deposits and then place them on certificates of deposit, earning on the difference in rates minus deductions to the Deposit Guarantee Fund, and the population should reduce the demand for foreign currency, respectively.

Table 2. Hryvnia deposit rates for individuals and legal entities in the banking sector of Ukraine in 2023. *(Source: formed by the authors based on [7])*

Term	Ukrainian Forward Index of Interest Rates on Hryvnia Deposits of Individuals (UIRD), %				Ukrainian Forward Index of Interest Rates on Hryvnia Deposits of Corporate (UIRD), %			
	August	September	October	November	August	September	October	November
3 months	14,5	14	13,8	13,4	11	10,8	10,7	11
6 months	15	14,7	14,33	14,2	10,7	10,5	10,4	10,6
12 months	14,5	14,2	13,8	13,6	11	10,8	10,7	10,8

In practice, in wartime, the transmission does not work as well as we would like. Since the beginning of the invasion, banks were the first to raise deposit rates, actively using previously inexpensive refinancing, which increased significantly after the revision of the key policy rate. Therefore, their motivation is clear: it is necessary to raise funds to quickly repay their obligations to the central bank. At the same time, resource-stable banks (whose business models were not built based on of systematic funding through refinancing) are rather slow to revise their deposit policies. However, the transmission mechanism works slowly during the war, so as of today, the annual return on hryvnia assets mainly covers half of this year's projected inflation.

We assume that resource-stable banks are in no hurry to attract funds from the population at higher rates for the long term since the only instrument where banking institutions will then be able to invest funds are certificates of deposit for a period of one day. Previously, the National Bank also offered banks to invest existing liquidity for a longer period (two weeks), but in March 2022, the regulator abandoned this tool for regulating short-term Liquidity.

A further increase in government rates on domestic government bonds helped to improve transmission and reduce demand for foreign currency. The Ministry of Finance is rather slow in reviewing the yield on government securities, explaining that this will significantly increase state budget expenditures on domestic debt servicing, yet this year the government has revised the yield on government bonds upwards. Coupon income on government securities with a maturity of three to five years increased especially significantly.

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In contrast, the National Bank has changed the rules for buying bonds from the government. If earlier this was done at general market rates, now at the average annual discount rate. That is, if we take into account that the regulator reduced the discount rate three times a year to 16%, then it will be able to continue financing the government at an acceptable rate. At the same time, other market participants, including commercial banks, were able to buy domestic government bonds at much lower rates in 2022, so they were not very attractive to them. Namely, as of the end of September 2022, the Ministry of Finance offered a yield of 12% per annum on 6 monthly securities, 14% per annum on annual securities, and 16% per annum on one-and-a-half-year securities [8]. However, in 2023, the situation has changed somewhat. The Ministry of Finance raised the yield on war bonds to almost 17% on 6-month securities and 18.5% on one-and-a-half-year issues, and the regulator lowered the discount rate, which in a chain manner reduced the rates on certificates of deposit and the banks' rates on deposits for households. The dynamics of domestic government bond placements in terms of maturity are shown in Figure 5. The presented data indicate that the government prefers borrowing with a term of up to 5 years and even is ready to offer increased yields on securities with a long circulation period. Thus, it was possible to improve transmission and reduce the demand for foreign currency, although this will significantly increase state budget expenditures on domestic debt servicing.

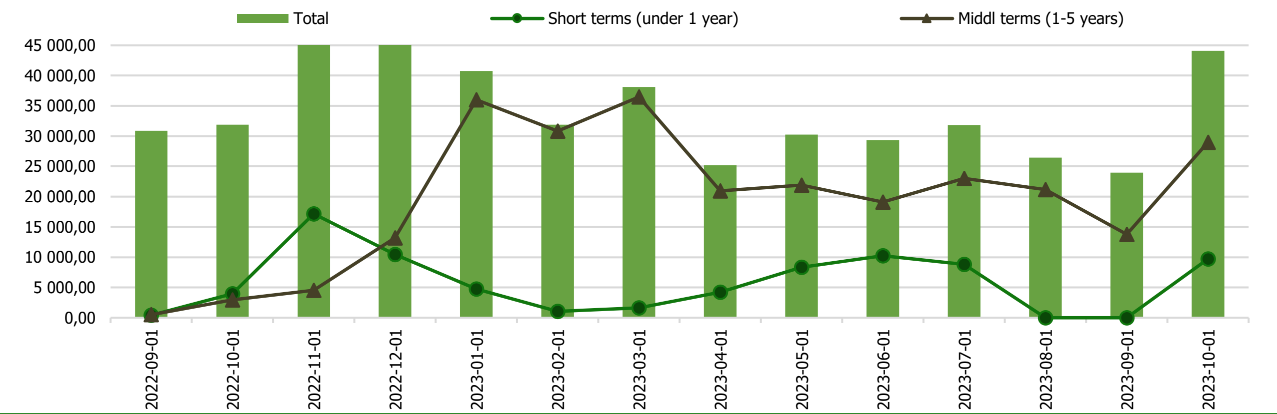

Figure 5. Dynamics of placement on the primary market of hryvnia-denominated domestic government bonds in Ukraine in terms of maturity for the period from January to October 2023, UAH million. *(Source: formed by the authors based on [7])*

The data presented in Figure 5 indicates that the government, represented by the Ministry of Finance, in conditions where a reduction in grant assistance from partners is anticipated, aiming to reduce external sources of funding, and seeking to enhance the attractiveness of military securities for domestic market borrowing, has chosen an option where increased returns are offered for long-term maturity government bonds (1-5 years). This step is intended to ensure long-term financing for state programs and expenditures and reduce the burden on the government budget for redemption and coupon income.

The presented data in Figure 6 allows for tracing the dynamics and structure of the holders of government bonds in the years 2022-2023.

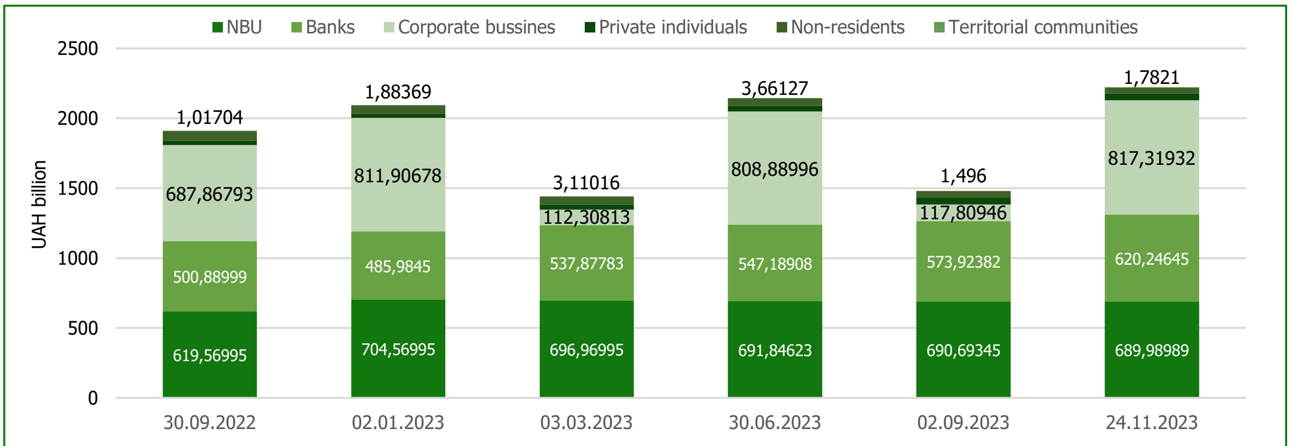

Figure 6. Structure of placements of domestic government bonds in circulation in Ukraine for the period September 2022-November 2023, UAH billion. *(Source: formed by the authors based on [7])*

According to the data from the Ministry of Finance of Ukraine, the National Bank of Ukraine (NBU) financed the state budget in 2022 with a total amount of UAH 400 billion, which is approximately USD 12.477 billion. This exceeds the assistance from the United States in the same year by 4%. In 2023, the regulator gradually reduces its share in government bonds (OVDP), but the decrease does not exceed 2.5% per year, which is not critical and keeps the NBU among the largest holders of government securities in the market.

Commercial banks, up until February 2022, were the owners of the largest share of government bonds in the market, and during the first year of the war, they reduced their holdings by UAH 56 billion (by 10%). However, in 2023, the declining trend changed, with a noticeable increase in the banking sector's interest in government debt securities. Since the beginning of 2023, banks have purchased OVDP for UAH 135 billion, increasing their portfolio by 28%. The total amount of government bonds sold by the government and those in circulation is UAH 2,221.145 billion (approximately USD 60 billion). By the end of November 2023, the largest holder of government bonds became the corporate sector.

The growth in demand for government military securities was influenced by several factors, including:

1. *Risk-Return Ratio:* The relationship between profitability and risk provides an opportunity to earn with minimal risk for investments.
2. *Uncertain Situation Due to Military Actions*: The situation of uncertainty in the context of ongoing military actions in the country significantly increased the risk of lending to economic entities.
3. *The margin between Household Deposits and Government Securities*: The margin between the cost of attracting funds in the form of household deposits and the cost of placing in government debt securities, approximately 3.5-4%, explains the profitable activity of the banking sector in 2023.
4. *Regulatory Measures*: In 2023, the regulator allowed banks to cover up to 50% of the total mandatory reserves through benchmark government bonds from the specified NBU list, which is continuously expanding.
5. *Permission for Non-Residents*: Non-residents were allowed to transfer funds received from the payment of interest on government bonds abroad after April 1, 2023.
6. *Government Raised Government Bonds Rates*: The government increased the rates for OVDP to market levels: in June, the maximum yield for government bonds placed at auctions was 19.75% per annum in UAH, 4.80% per annum in USD, and 3.25% per annum in EUR [7].

The actions taken by the government and the National Bank of Ukraine are aimed at strengthening monetary transmission and activating the domestic debt market without additional monetary issuance. The permission granted by the NBU to form mandatory reserves using benchmark OVDP further increases the high liquidity of the banking sector. In this context, mandatory reserves serve as one of the traditional instruments of central banks with the direct purpose of restricting a portion of the banking system's free liquidity.

At the same time, the banking system has accumulated enormous amounts of free liquidity (over UAH 700 billion), with banks holding over USD 10 billion in accounts with foreign banks. Additionally, around USD 117 billion is in non-banking circulation. These funds are largely not being utilized in the productive economic turnover of the country. These examples highlight the irrational use of available resources and artificial constraints on domestic sources of funding for the budget. In contrast, the state's net borrowing from banks for the first 11 months of 2023 amounted to only UAH 133 billion, or USD 3.6 billion, and from individuals — UAH 17.9 billion, or USD 0.5 billion [14].

However, such a market landscape does not contribute to active lending to citizens and businesses. In the face of high inflation and military risks, banks have significantly increased not only the cost of lending but also the requirements for potential borrowers. Considering this, practically since the beginning of the full-scale Russian military invasion, lending has mainly taken place through the state program "5-7-9%." During the state of war in Ukraine, within the framework of the State program "Affordable Loans 5-7-9%," 42,520 loan agreements were concluded for a total amount of 168.8 billion UAH (including 31.886 loans by state sector banks totaling UAH 86 billion) [12]. Outside of state programs, commercial banks almost do not provide loans to businesses. The total volume of loans granted by banks to businesses is about 7% of GDP, which is the lowest indicator among emerging market countries. Enterprises cannot use credit resources for the recovery and expansion of both military and civilian production due to high-interest rates and credit risks.

Moreover, according to the data presented in Figure 7, the volume of lending to businesses decreased by UAH 85 billion. This means that, excluding the presence of the state program, the volume of loans to legal entities in the banks' portfolios is gradually decreasing, and the proportion of non-performing loans is increasing, reaching a critical level of nearly half (44.7%) of the total credit portfolio for corporate clients. The situation with lending to the private sector by banks is

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somewhat better in 2023: the overall volume is decreasing at a slower pace, and the proportion of non-performing loans is gradually decreasing, stabilizing at 26.7% in October 2023. The labor market and population incomes are slowly recovering, leading to an increased willingness to consume. This reinforces the demand for bank loans, especially private credit cards.

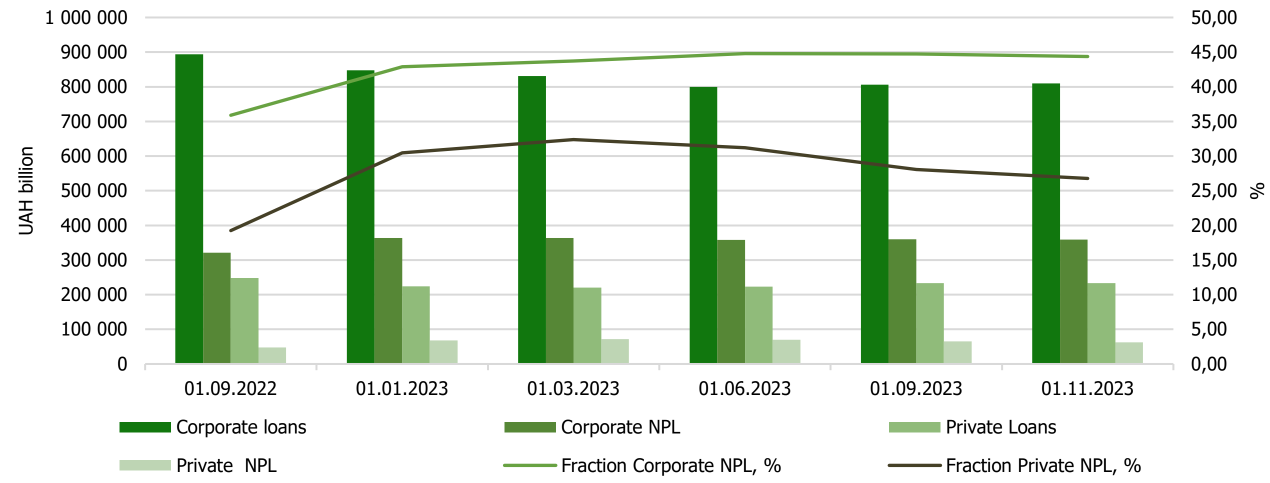

Figure 7. Dynamics of the volume of the loan portfolio and NPLs of individuals and legal entities of the banking sector of Ukraine for September 2022-October 2023, UAH billion. *(Source: formed by the authors based on [7])*

At the same time, in addition to the increase in non-performing loans and the deterioration of the quality of the banking sector's credit portfolio, the reluctance of banks to invest in the real sector of the economy is explained by the lower profitability of lending compared to the returns on government securities (Figure 8).

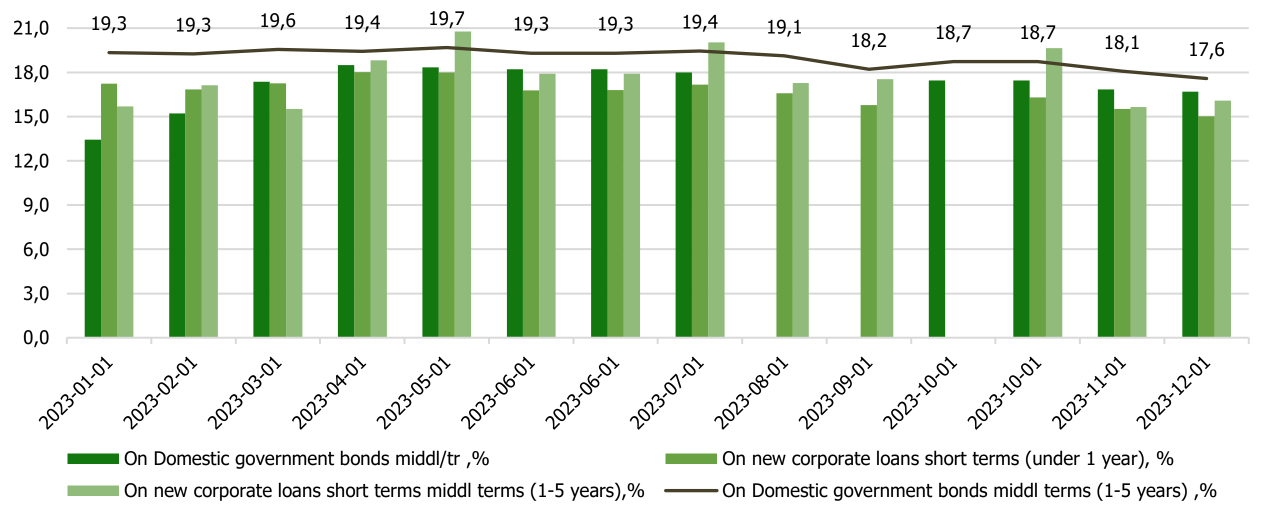

Figure 8. Comparative dynamics of changes in yields on domestic government bonds and corporate loans in January-August 2023 by maturity, %. *(Source: compiled by the authors based on [7,8])*

It may create a misconception that if the National Bank reduces the returns on deposit certificates or lowers the coupon on purchased government securities, it will somehow force banks to redirect their available liquidity to active lending. In reality, this step is unlikely to lead to positive outcomes. In response, banks will be forced to reduce the returns on hryvnia assets (deposits), and as a result, the population will likely increase the demand for foreign currency, trying to preserve their savings from inflation in some way.

The introduced credit holidays and restructuring procedures, coupled with increased spending on increased provisioning due to the worsening class of clients, led to the banking sector being in deficit despite high liquidity from March to June 2022. According to the data presented in Figure 9, positive asset and capital profitability began to be observed in July

2022 and reached impressive results in the second half of 2023. This means that the banking sector has already overcome the main challenges and threats it faced at the beginning of the full-scale aggression, and it is successfully adapting to the market conditions that have emerged in the second year of the war. The capital profitability of 55%, demonstrated by the banking sector, has led lawmakers to consider the need to establish an individual corporate income tax rate that exceeds the current rate by 2 times.

However, to maintain macroeconomic stability in the national economy amid a state of war, the National Bank needs to continue curbing inflationary and devaluation processes, which pose a risk of further escalation in Ukraine. To achieve this, it is necessary to contribute to reducing the population's demand for purchasing foreign currency. This can be done either through a direct prohibition on individuals freely buying foreign currency or by offering citizens an alternative way to preserve the purchasing power of their savings through increased returns on hryvnia assets. Primarily, this refers to hryvnia bank term deposits and investments in government domestic loan bonds.

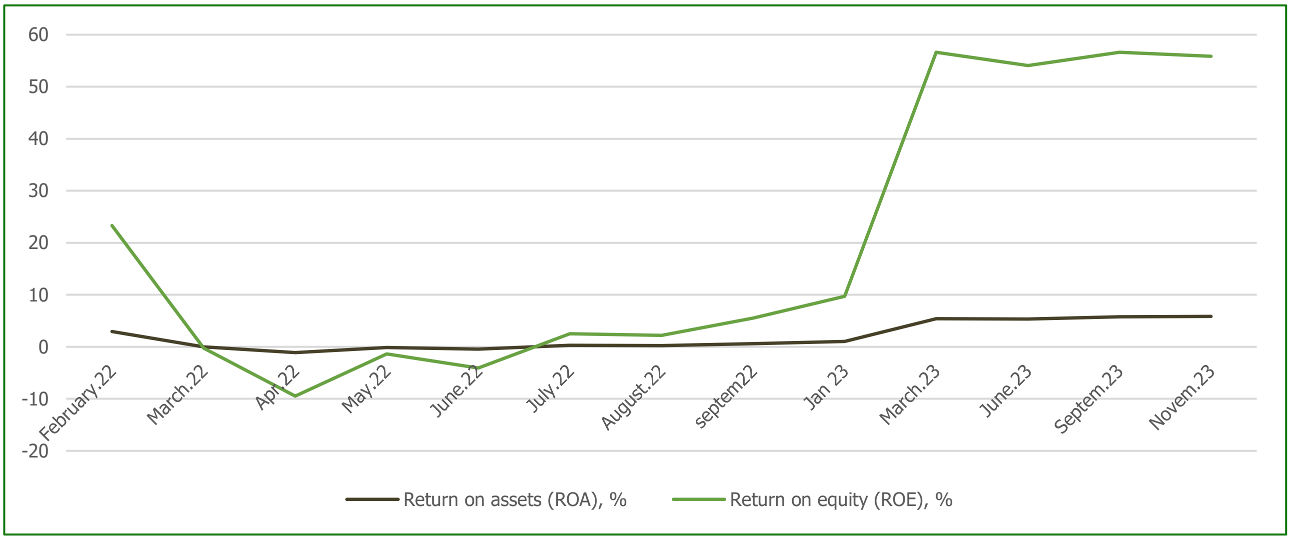

Figure 9. Profitability of the banking sector of Ukraine in 2022-2023, %. *(Source: formed by the authors based on [7])*

An alternative to the National Bank's direct purchase of government domestic loan bonds is to increase the volume of selling these securities to commercial banks, as well as to individual and legal entities. Under such circumstances, no additional money supply would be created, and the funds of the banking sector would be used for these purposes.

Despite significant efforts by the government to popularize and simplify the process of purchasing military bonds for the general population, this financial instrument is still not widespread for objective reasons. Low financial literacy about government securities as an investment instrument and the necessity to open accounts in securities at institutions offered through the "Diya" app contribute to this. Clarification regarding the taxation of income from securities transactions for individuals also requires separate educational efforts. The weak informational campaign by the government about the main purpose of issuing military bonds, which is to finance the state's military needs and curb inflation, hinders the full realization of patriotic sentiments among the population.

At the same time, when it comes to individuals and legal entities, it can be noted that the demand for government bonds among them is low and has significant potential for growth even without a substantial increase in their yield. This is because the average deposit rates offered to citizens and businesses are lower than the returns on government bonds. This is noteworthy since, according to current legislation, OVDP is not subject to personal income tax (18%), unlike bank deposits, from which both income tax and a military levy (1.5%) are deducted.

In total, since the beginning of 2023, the portfolio of war bonds owned by individuals and legal entities has increased by 71% to the equivalent of UAH 59.2 billion [7].

Among the main reasons for this situation are the low liquidity of certificates of deposit in the secondary market due to the underdevelopment of the stock market of Ukraine, as well as a more complex mechanism for issuing a product compared to the deposit service.

As for attracting banks to increase the volume of government bond purchases, at a minimum, it is worth standardizing the discrepancy between interest rates. The current situation does not contribute to balancing state revenues and expenditures

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with the interests of private and commercial banks. In 2023, the banking sector showed profitability, prompting the government to gradually increase the tax rate for banks. While this decision is understandable, it is conflicting from the perspective of equal rules for all market participants. In this way, the government aims to recover the income paid for OVDP coupons to the budget, but such a step forces banks to seek ways to reduce taxable income. Furthermore, in our opinion, the yield conditions for government bonds should be the same for all market participants: individuals, legal entities, commercial banks, and the regulator, who, in the conditions of martial law, are also participants in this process.

In times of high risks and uncertainty, active expansion of lending without guarantees from the government can lead to a significant increase in non-performing loans in the system. That's why representatives of the banking sector, despite high liquidity, adopt a cautious and balanced credit policy. Even an increase in the corporate income tax will not compel banks to actively increase lending to individuals and businesses against significant risks. It will only result in the regulator losing leverage over the cost of money in the economy, exacerbating inflationary and devaluation risks in the future.

Banks will return to widespread, market-based lending when their risk management policies allow it. This should happen when the war ends in our favor or, at a minimum, when the situation stabilizes on the front. Expectations for inflation indicators and the value of the national currency should also stabilize at least in the medium term. Until then, mass long-term lending is only possible through the mechanism of government compensation and guarantees, as well as external international preferential programs through co-financing mechanisms.

DISCUSSION

The debate remains contentious regarding the regulatory actions of the National Bank of Ukraine in balancing the liquidity of the banking system and directing excess liquidity toward financing the real sector of the economy, especially the defence sector. Further research is needed to explore the tasks of the regulatory policy of the National Bank in the context of decreasing gold and foreign exchange reserves, the introduction of steps towards currency liberalization, and weak transmission. Specifically, the regulator slows down the depreciation of the hryvnia through direct restrictions on currency transactions for individuals and legal entities, reducing the demand for foreign currency. However, the introduction of a currency corridor by the National Bank will impact the size of international reserves.

Currency interventions to curb exchange rate fluctuations and the country's debt payments have decreased the size of international reserves for three consecutive months. NBU interventions in selling currency in November 2023 were almost 10% lower than in September, before the abandonment of the fixed exchange rate. However, as the budget for 2024 anticipates a devaluation of the national currency by approximately 10%, further reductions in reserves and restrained demand for holding in hryvnia can be expected. These inflationary expectations will not contribute to increased demand for investments in the national currency, posing a danger to the financing of budget expenditures and the military needs of the state. The posed question requires an adequate and effective policy from the government and the regulator, as well as scientific approaches to solving the problem in a situation where it is challenging to predict the scenarios of further development of military aggression from Russia and its consequences.

CONCLUSIONS

1. *Non-industrial Lending*: Despite regulatory efforts to curb banks from seeking higher returns in the market for government securities, the level of non-industrial lending does not motivate banks to make decisions to increase lending to retail and corporate sectors. This situation is likely to persist until the end of the war or a decrease in the intensity of military actions.

2. *Liquidity Increase:* Since the full-scale invasion of Russia, the liquidity of Ukraine's banking sector has demonstrated growth amid military actions and the occupation of Ukrainian territories. This can be attributed to the increase in highly liquid money supply at the disposal of the banking sector and the direct purchase of government bonds by the National Bank to finance the budget deficit.

3. *Transmission Mechanism Challenges:* In times of war, the transmission mechanism operates improperly, requiring constant intervention from the regulator to balance the liquidity of the banking sector and government finances. This, in turn, influences the behavior of commercial banks and alters the structure of their active portfolios.

4. *Maintaining Macroeconomic Stability*: To preserve macroeconomic stability in the national economy and curb inflation in times of war, measures should be taken to reduce the demand for foreign currency. Alternatively, offering citizens avenues to preserve their purchasing power through increased returns on hryvnia deposits or simplified accessibility to investments in government bonds is essential.
5. *Reducing the Influx of Unproductive Hryvnia*: To diminish the influx of unproductive Hryvnia into Ukraine's banking system, the National Bank and the government should limit the use of the emission tool to cover the budget deficit. Grant and credit financing from Western partners, combined with selling government bonds to individuals and legal entities, can significantly reduce the need for direct issuance.

These conclusions provide insights into the current challenges faced by Ukraine's financial system amid war conditions and suggest potential strategies for maintaining financial stability and managing economic risks.

Also, one can talk about the insufficient popularization of government bonds among the population, leading to low awareness among citizens about this investment opportunity. A more active state policy to involve citizens in buying government bonds for individuals and legal entities, can significantly reduce the need for direct issuance would help increase the volume of domestic borrowing through this instrument, reduce the need for direct emission financing from the National Bank, and as a result, curb further escalation of inflationary and devaluation processes in the country. This direction should become key in the context of the current reduction in financial assistance from partner countries, dynamic changes in the political landscape in partner countries, and open obstruction to providing financing to Ukraine by disloyal political forces abroad.

Expanding credit, guaranteeing, and granting support from the government, attracting international aid for business recovery and development, and using tax instruments to stimulate investments should be conditions for access to financing for the real sector of Ukraine's economy.

ADDITIONAL INFORMATION

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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ВПЛИВ ЛІКВІДНОСТІ БАНКІВСЬКОЇ СИСТЕМИ УКРАЇНИ НА ОБСЯГИ КРЕДИТУВАННЯ ТА ІНВЕСТУВАННЯ В ДЕРЖАВНІ ЦІННІ ПАПЕРИ В УМОВАХ ВІЙНИ

В умовах посилення воєнно-політичних чинників невизначеності необхідною складовою стабільності банківської системи є формування достатнього рівня ресурсного забезпечення – ліквідності. Метою дослідження є аналіз трансмісійного впливу ліквідності банківської системи та її структури на об'єми кредитування реального сектора економіки на другому році перебування країни в стані війни. В умовах війни та відповідного посилення воєнно-політичних загроз і невизначеності регулятором ухвалено багато непростих рішень та запроваджено багато обмежень, покликаних збалансувати виклики з поточною ситуацією на фінансових ринках.

У ході дослідження встановлено, що банківський сектор України наразі накопичує велику масу надлишкової ліквідності та демонструє високу прибутковість. Проте в умовах війни трансмісійний механізм працює некоректно та вимагає постійного втручання з боку регулятора для балансування ліквідності банківського сектора й державних фінансів, що в свою чергу впиває на поведінку комерційних банків і змінює структуру портфелів їхніх активів. Проведений аналіз структури портфелів активних операцій банківського, корпоративного та приватного секторів дає підстави стверджувати, що в перспективі наступного року немає підстав очікувати зміну інвестиційної поведінки з боку зазначених груп через специфіку запроваджених умов з боку міністерства фінансів та регулятора. Для збереження макроекономічної стабільності національної економіки й стримування інфляції в умовах воєнного стану та зниження фінансової підтримки з боку країн-партнерів необхідно запроваджувати умови для зниження попиту на іноземну валюту та як альтернативу запропонувати збереження платоспроможності заощаджень через спрощення доступності інвестування в державні боргові цінні папери для домогосподарств. Низька фінансова грамотність населення та недостатній розвиток фондового ринку України, а також більш складний механізм оформлення контракту купівлі ОВДП або воєнних облігацій порівняно з депозитною послугою роблять такі інвестицій з боку населення несуттєвими й обмежено запитаними.

Ключові слова: ліквідність, механізм трансмісії, регулятор, державні облігації, НБУ, кредитування, банківська система

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