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MONETARY ANTI-CRISIS MEASURES IN THE CONDITIONS OF MARTIAL LAW IN UKRAINE

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ABSTRACT

With the invasion of Russian troops on the territory of Ukraine, the NBU faced the task of preventing the depreciation of the national currency, avoiding panic, and ensuring the stability of the banking system. This was achieved, in particular, due to anti-crisis monetary measures. The regulator was promptly making the necessary decisions, the review of which and the assessment of their effectiveness in the paradigm of the economy of war this study is devoted to. The set of tools of anti-crisis monetary management, prerequisites, factors and features of their application in the conditions of a full-scale military invasion are reviewed. A comparative-dynamic analysis of the main monetary indicators was conducted, which showed their manageability and relative stability. It's proved that the main inflationary trend in Ukraine is characterized by uncertainty, formed under the influence of non-monetary factors of a subjective nature, which are outside the influence of monetary policy. These and other non-market factors provoked a reduction in international reserves and instability in the foreign exchange market. NBU reacted by introducing pre-emptive currency restrictions. It was determined that in order to avoid panic in the foreign exchange market, the NBU made such important and prompt decisions as fixing the exchange rate, introducing the necessary restrictions on the purchase of foreign currency and cross-border currency transactions, restricting withdrawal of funds from foreign currency accounts, providing the possibility of exchanging cash hryvnias abroad. To avoid uncontrolled devaluation and capital outflow, the NBU supported the foreign exchange market with interventions. Anti-crisis measures aimed at maintaining the liquidity of the banking system were analysed, including operations with certificates of deposit and government bonds, which in the conditions of martial law don't always achieve the goals of ensuring financial stability. These and other measures helped the regulator maintain the banking system's overall stability and uninterrupted operation.

Keywords: monetary policy, anti-crisis management, refinancing, inflation, exchange rate, international reserves, central bank, banks, liquidity, economy, financial stability

JEL Classification: E52, E58, G28, H12

INTRODUCTION

In 2020, the economy of Ukraine, like the whole world, found itself in a new system of risks associated with the global pandemic the COVID-19 coronavirus. In 2020, the GDP of Ukraine decreased by 4%. And already February 24, 2022, became a point of bifurcation (a turning point), radically changing the course of events in the country, which will have significant and long-term consequences for all spheres of social life, primarily the economy. Economic entities faced unforeseen challenges caused by the full-scale Russian invasion of Ukraine and the introduction of martial law, which, none of the European and many other countries of the world had experienced during the last decade. The decline in economic activity will have a long-term negative impact on the standard of living of the population, the level of employment, and, as a result, on the incomes of businesses, the population, and the state. Definitely, Ukrainian business has suffered great financial losses caused by the COVID-19 pandemic but mentioned above losses cannot be compared to the huge losses from the full-scale war that is currently still ongoing in Ukraine. At the same time, thanks to the accumulated practical experience of functioning in crisis conditions, the systematic work of the regulator (NBU) and financial market participants, the financial sector turned out to be the most prepared for such

a development in 2022. During this period, there were neither surges in defaults nor mass bank failures. This happened due to the combined influence of many factors: accumulation of safety margin by banks, in particular, liquid funds; measures to reform the financial sector in previous years; an increase in the capitalization level; an adequate, timely response of the NBU to external challenges as well as the preparation of banks for crisis scenarios of the development of events, which was started in the fall of 2021.

Under the war conditions, the monetary authorities and financial institutions of Ukraine faced new challenges and tasks related to the need of ensuring the smooth operation of banks, including making payments, preserving public trust in banks, and taking balanced actions aimed at maintaining financial stability. The financial sector quickly modified its activities in accordance with the conditions of martial law. That is why the study of anti-crisis monetary instruments and the consequences of a full-scale invasion for maintaining financial stability arouses certain scientific interest, primarily due to the lack of such studies.

LITERATURE REVIEW

Despite the certain novelty of the proposed direction of research, the disclosure of the peculiarities of anti-crisis monetary regulation and the functioning of the financial sector of Ukraine in conditions of uncertainty and martial law has already become widespread among analysts [27, 33] and experts [24]. Research on financial stability support tools is presented on the websites of state institutions, in particular, the NBU [19, 20] and the Ministry of Finance of Ukraine [17]. Among scientists, this question was studied by Danylyshyn B [5], Didenko C. [7], Makarov O. and Arzhevitin S. [16], Strilchuk Yu and others [32], Chernyshova O., Chornovol A., Myronchuk V. [3].

The problems faced by the banking sector of Ukraine as a result of a full-scale military invasion of the country, the analysis of trends in the indicators of the banking sector are revealed by the research of Prokopenko et al. (2022) [28], Tymoshchuk N. et al. (2022) [34]. In addition to highlighting the problems, the authors propose several measures to stabilize the situation in the banking sector. Ways to preserve the reliable functioning of the Ukrainian banking system after the start of combat operations, in particular through the development of digitalization, are considered in the work of Shkolnyk et al. (2022) [31]. Drugov and Drugova (2022) [8] reveal the operational actions taken by the NBU immediately after the declaration of martial law in Ukraine.

A certain part of scientists (Hasanov, S. et.al (2014) [12], Sharov, O. (2022) [30]) focused on the analysis of anti-crisis management standards. O. Sharov, researching the international experience of monetary policy in wartime, emphasizes that "the choice of the strategic direction of monetary policy, its institutional support and the degree of consistency with economic policy (primarily its fiscal component) are important elements of national security that affect the interests not only economic agents but also individual citizens" [30].

The experience of the COVID-19 pandemic forced scholars from around the world to focus on the study of anti-crisis policies, and the war presented new challenges and problems to the monetary authorities. In addition, the results of studies of the financial effect of a full-scale russian invasion of Ukraine mostly focused on the cost of economic sanctions for russia (Garicano, L. (2022) [9]) as well as on the impact on the world economy of rising oil and gas prices (Vaitilingam, R. (2022) [35]).

The issue of the geopolitical consequences of the war in Ukraine and its impact on the monetary policy of other countries is currently becoming relevant. In particular, T.Jordan (2022), the head of the Swiss National Bank, noted that with the beginning of the russian invasion, there were significant increases in inflationary pressure (or inflationary dynamics) around the world, in the impact on the real economy, as well as in the level of uncertainty, which will also affect (reflect, affect) behaviour of economic agents. All of the mentioned above poses new challenges for monetary policy [11]. The war, according to Gita Gopinath (2022), subjected the foundations and strategies of monetary policy to stress testing [10]. The author argues that the pandemic and war can cause permanent structural changes in the economy, which, together with new sources of inflationary risks, will consequently demand changes in monetary policy. The European Parliament also agrees that the war in Ukraine will require a change in the operational model of monetary policy [29]. Notably, K. Lagarde (2022) [15] believes that it is unlikely that the world will return to the dynamics of inflation on the eve of the pandemic, and the war will become an even greater impetus for global monetary policy adjustments. All decisions in monetary policy should be made taking into account the main risks caused by the war, both its economic consequences and the induced uncertainty.

That is why the assessment of the impact of the full-scale war consequences on the monetary sphere as well as the complex anti-crisis actions of the NBU together with the international financial community to support liquidity and monetary stability is becoming important.

AIMS AND OBJECTIVES

In view of the above, the purpose of the research is to study the peculiarities of the NBU's use of anti-crisis monetary instruments to support liquidity and ensure financial stability in Ukraine in the conditions of a full-scale military invasion of the Russian Federation.

In this context consideration of anti-crisis monetary instruments by identifying the features of their application in war conditions; conducting an analysis of the consequences of their influence on the monetary sphere; justification of directions for strengthening the monetary component of ensuring financial stability in Ukraine are provided for.

METHODS

To achieve the defined goal, a set of general scientific and special research methods were used, the application of mentioned above methods ensured the thoroughness, objectivity, and reliability of the provisions as well as conclusions presented in the research. The methodological basis of the study is the fundamental provisions of anti-crisis and monetary policy. In particular, the following methods were used in the research: systematization and generalization (when outlining the dynamics of analytical indicators of monetary policy and anti-crisis management measures); analysis, synthesis, induction, and deduction (to assess the impact of the military invasion on the monetary sphere of Ukraine); graphic (to visualize the identified trends).

RESULTS

Since gaining its independence in 1991, the financial system of Ukraine has experienced rapid monetary development. The hyperinflationary spiral of 1993 exceeded 10,000%, which predetermined carrying out a monetary reform in 1996 and switching to a new currency (at a ratio of 100,000:1) - the hryvnia. In 2000, 2008, and 2014-15, there were three major waves of currency devaluation, accompanied by subsequent surges in inflation (Figure 1).

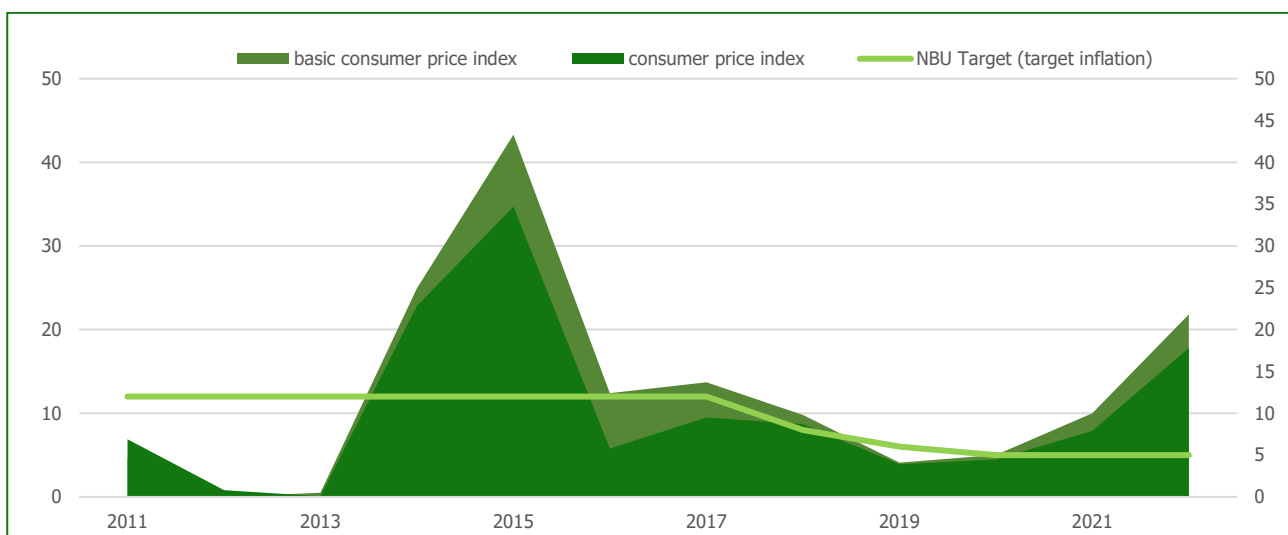


Figure 1. The main inflationary trend of Ukraine, % y/y. (Source: compiled by the authors based on data from the official NBU website [23])

The significant inflation surge of 2014-2015, which coincided with the introduction of the inflation targeting regime, was caused by exogenous factors rather than by endogenous ones and coincided with a period of economic turbulence, socio-political instability, in particular, the annexation of Crimea and the war in eastern Ukraine. The sharp drop in inflation in 2020 was again caused by an external factor, namely the COVID-19 pandemic. Currently, the stagnation of lending in 2014-2021 resulted from the growth of non-performing loans in the banking system and the strengthening of the NBU's

monetary policy. According to Anayi, L. et al. (2022) [1], the war in Ukraine increased the impact of subjective uncertainty (according to survey results), primarily concerning future inflation. As the researchers note, price uncertainty increased from 140% to almost 175% in March 2022 [19]. Therefore, the main inflationary trend in Ukraine is formed by non-monetary factors that are beyond the influence of monetary policy. The result of the NBU's unsuccessful attempt to protect the national currency was the depletion of international reserves (Figure 2).

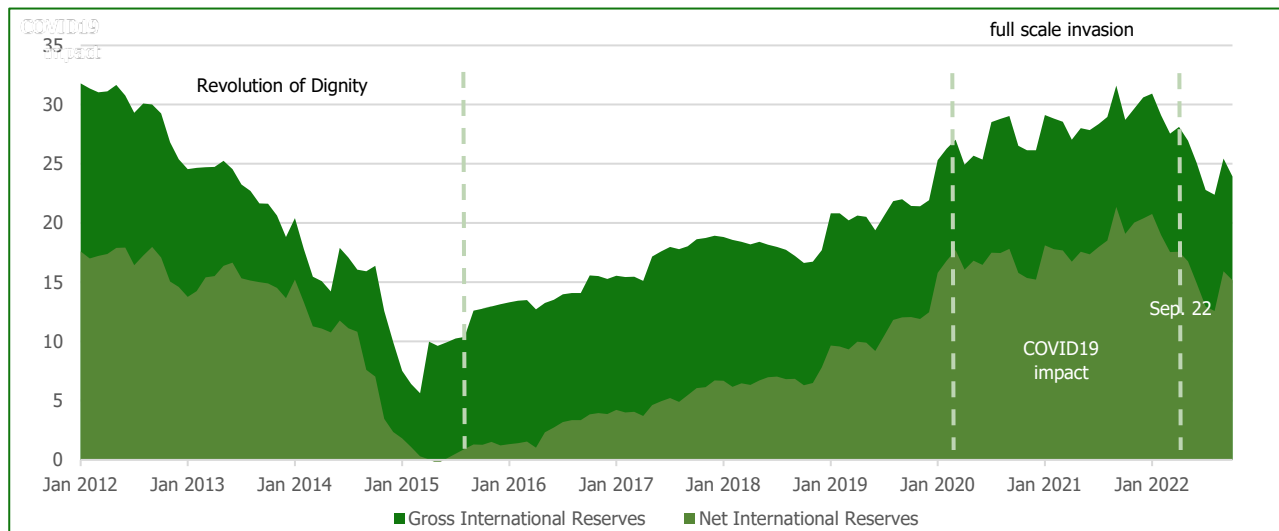


Figure 2. Dynamics of international reserves of the NBU for the years 01.01.2012-01.10.2022, billion USD in UAH equivalent. (Source: compiled by the authors based on data from the official NBU website [23])

Inflationary growth caused by full-scale military operations in 2022 will result in a further technical increase in the level of economic monetization, and subsequently, due to the rapid inflation increase, Ukraine will enter a new phase of the monetary cycle. All mentioned above will have a negative impact on consumer demand, the economy in general and the financial sector and will require proper anti-crisis management from the monetary authorities.

However, in the conditions of martial law, thanks to international assistance and grants, the volume of Ukraine's international reserves increased. As of April 1, 2022, during the period of the most significant aid, reserve volume exceeded USD 28 billion, which was 85% of the IMF's composite index and proved their sufficiency to fulfil obligations and conduct current operations at that time. Moreover, due to the military conflict escalation, we are observing a decrease in international reserves primarily because of the sale of foreign currency on the interbank foreign exchange market (these operations are partially financed by international partners). According to official NBU data, as of October 1, 2022, the international reserves of Ukraine already accounted for USD 23.9 billion. Their further reduction may cause panic among importers and trigger a new inflationary cycle. The parameter of the dynamics of foreign exchange reserves derives from the exchange rate dynamics, the market conditions in the foreign exchange market, the balance of payments of Ukraine as well as external net borrowings.

The dynamics of international reserves in 2022 were mainly influenced by non-market factors:

- currency interventions of the NBU (Figure 3), caused by the high demand of the population for foreign currency because of the war. Taking into account the crisis experiences of previous years, domestic households keep significant amounts of savings in foreign currency and quickly convert liquid savings into national currency when signs of economic or political instability appear, and vice versa. The country faced significant defence expenses, complicated logistics of imported goods and services, as well as the need to prove settlements for citizens staying abroad and using hryvnia-denominated cards, i.e., expenses exceeded income from exports and foreign currency receipts coming from labour migrants;
- public debt management operations: foreign currency receipts as of June 2022 amounted to USD 1.7 billion, of which USD 615.2 million is from the World Bank, and USD 613.4 million is from the EU accordingly. The total volume of payments of the national debt in foreign currency reached USD 145 million, including USD 60.2 million for servicing Eurobonds (OZDPs). Besides, the NBU and the Government paid the IMF - USD 68.6 million., including payments made at the expense of international reserves;

financial instruments were revalued due to changes in currency rates and the market value of government bonds. In the first semi-year of 2022, their value increased by USD 63.1 million mainly because of the exchange rate.

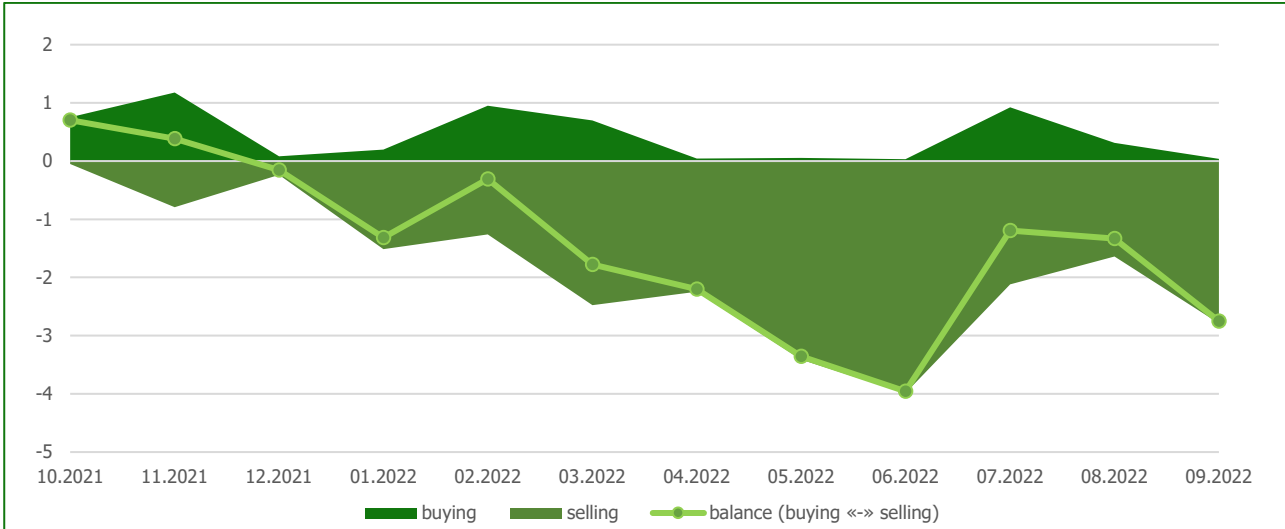


Figure 3. The dynamics of the NBU's currency interventions during the full-scale invasion of Russia, USD billion equivalent. (Source: compiled according to the official website of the NBU [23])

In 2015, the NBU changed its operational design and became transactionally independent, with the mandate to ensure price and financial stability to overcome the problems of fiscal dominance. To ensure price stability, the NBU introduced an inflation targeting regime, setting 5% annual inflation. Thus, in the context of the "unattainable triad", or the Mandell-Fleming trilemma (Figure 4.) [2, 25], the currency adopted an independent monetary policy and free movement of capital, allowing the exchange rate to float freely. Kuznyetsova, A., Klishchuk, O., Lisnyak, A., Kerimov, A., & Babayev, A. (2020) thinks, through consideration of the "trilemma", that the country cannot simultaneously have an open regime of capital transactions, a fixed exchange rate, as well as sovereignty in the monetary sphere [14]. In 2015, one of the largest reforms implemented by the NBU took place - the transition to inflation targeting (IT).

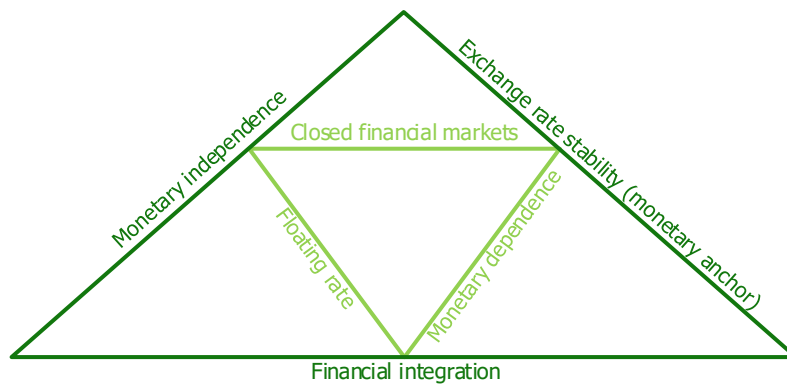


Figure 4. Mandell-Fleming trilemma or "impossible triad".

Until 2021, the NBU was a model of a typical modern central bank in the middle of a steady cycle of policy tightening, balancing between the need to support the economy during the COVID-19 pandemic and the prevention of inflationary pressures caused by the global pandemic as well as supply chain disruption. However, the build-up of the negative monetary effect of COVID-19 and the full-scale Russian invasion of Ukraine dramatically changed the monetary landscape forcing the NBU to quickly adjust its activities to prevent a financial collapse.

In November 2021, satellite images, showing Russian troops' preparation and movement were posted on social networks. In view of the above, each new escalation resulted in geopolitical and social tension, the mood of panic in society as well as increased financial pressure on the economy. The currency market is the most sensitive to the moods and expectations of economic entities. The first sign of this pressure was the turbulence in the foreign exchange market, its narrowing, and the drop in the hryvnia (UAH) exchange rate (Figure 5).

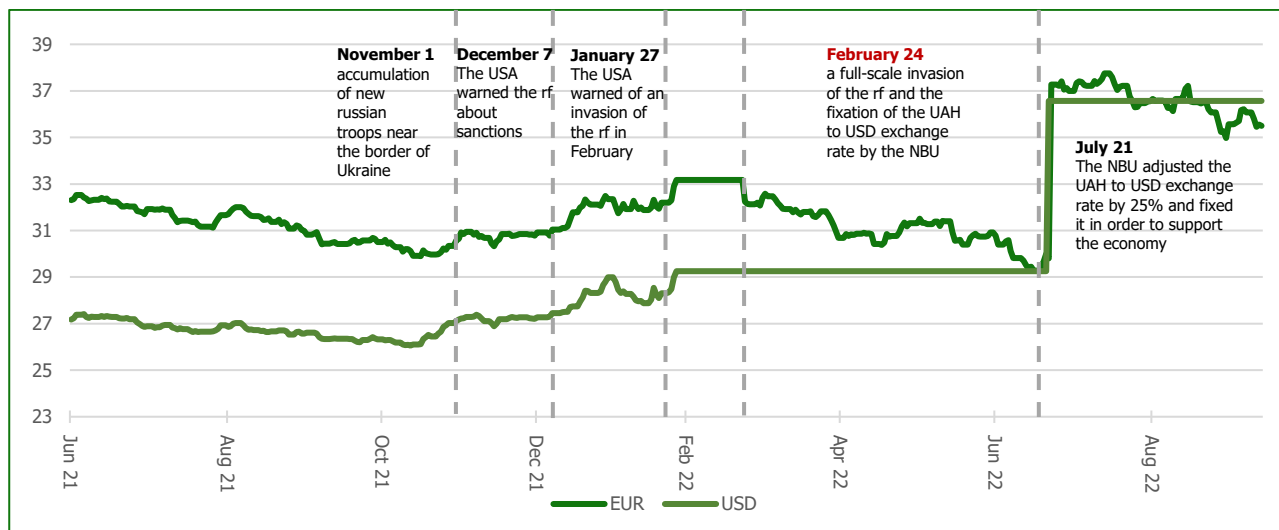


Figure 5. Dynamics of the official UAH exchange rate under the influence of escalation and a full-scale invasion of Ukraine, UAH/USD, UAH/EUR. (Source: compiled by the authors based on data from the official NBU website [23])

Investors quickly reacted both to changes in the economic environment of Ukraine and to the increased risks of investments. As a result, the market of Ukrainian government bonds owned by non-residents began to shrink (by almost 20% in January-February 2022), and Ukrainian households increased their investments in foreign currency (Figure 6).

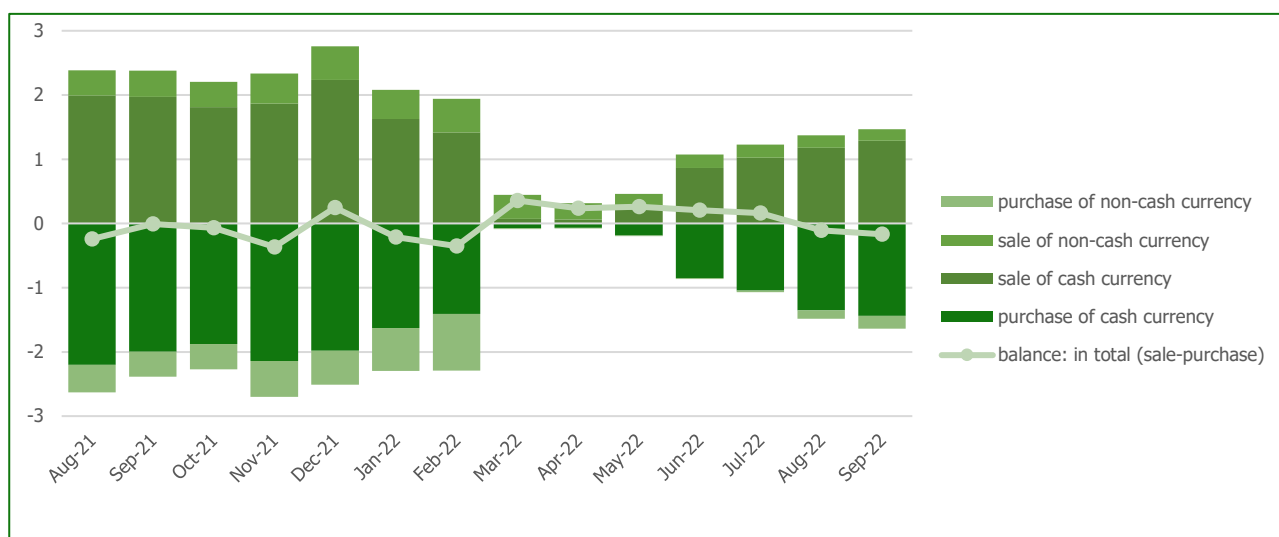


Figure 6. Foreign currency purchase/sale operations, USD billions. (Source: based on data from the official NBU website [23])

In February 2022, 30% of household deposits are in USD, 7% in euros, and 62% in national currency, despite a large difference in interest rates (7.1% for deposits in national currency vs. 0.5% for deposits in foreign currency). The NBU's reaction was to intervene in the foreign exchange market by selling net foreign assets in January 2022, with the aim of smoothing the fluctuation of the exchange rate and controlling currency depreciation. On February 23, 2022, on the eve of a full-scale military invasion, the currency devalued dramatically again. The NBU tried to verbally reassure the market, saying that the country has sufficient foreign reserves and there are no cash shortages in the banking system. On February 24, 2022, with the introduction of martial law, acting more decisively as compared to the Corona crisis period, the NBU attempted to avoid both uncontrolled devaluation of the national currency and capital outflow. Several currency restrictions were implemented to protect the financial system of Ukraine and ensure its reliable and stable functioning, rarely:

- the transition from a floating to an official fixed exchange rate (on February 24, 2022, 29.25 UAH /USD accordingly);
- suspension of the operation of the Ukrainian foreign exchange market, with the exception of the sale of foreign currency by clients;

- strengthening of the control over the capital movement due to the ban on trading in currency values (restrictions on the purchase of currency, except for individual cases with gradual weakening); purchase and sale of foreign currency by domestic banks should not deviate from the official rate of the NBU by more than 10%;
- a complete ban on the withdrawal of foreign currency funds from foreign currency accounts, with further weakening and establishment of restrictions on the withdrawal of cash funds in Ukraine from deposit accounts in foreign currency;
- a moratorium on cross-border currency transactions, with the exception of payments and cash receipts made by payment cards abroad with certain limits, in order to limit the excessive outflow of currency. This enabled exchanging UAH cash abroad;
- reduction in the settlement terms for export-import contracts from 365 calendar days to 90 to prevent the outflow of capital abroad, and prevention of formation disbalances in the macroeconomic environment.

However, it is worth mentioning that currency restrictions have a short-term effect. That is why, with the stabilization of the economic situation in the country, the NBU should gradually cancel them and restore the full operation of the foreign exchange market. Thus, on April 14, 2022, the restriction on the sale of foreign currency by banks to citizens with no deviation from the official rate of the NBU by more than 10% was cancelled. [21]. This step is aimed at reducing the level of speculation in exchange transactions and, as a result, reducing existing risks for citizens. In addition, the NBU introduced a few measures that simplify and speed up settlements in UAH and foreign currency.

To protect international reserves and ensure financial stability, the National Bank of Poland, at the beginning of the war, provided the NBU with a swap for 4 billion zlotys (USD 0.95 billion). In general, as of August 31, 2022, Ukraine received USD 17.4 billion in financial assistance aimed at supporting the country's financial sector, out of which USD 8.9 billion are foreign loans and USD 8.5 billion are guarantees from partner states. As a result, foreign assistance covered 37% of government spending, that is, what was not received as duties and taxes since February 24. The NBU made a significant contribution to the financing of expenses - during the period of the full-scale war, there was an additional UAH 285 billion, which in the future will affect an increased inflation rate, besides the NBU also transferred its profits to the budget and thus covered 20% of the expenses. It is important to note that the country's population continues to pay taxes since February 24 - this enabled covering expenses by 33%, the state covered the rest by raising funds through military bonds (distributed among banks, individuals, and legal entities).

The NBU's quick response to a full-scale invasion is largely due to the fact that since the annexation of Crimea in 2014, the NBU has developed procedures aimed at ensuring financial stability in response to further escalation of the military conflict.

At the beginning of March, the NBU weakened some currency restrictions, allowing customers to withdraw foreign currency funds from their accounts, but up to approximately 1 000 USD per day, or up to no more than UAH 30 000 equivalents. But banks received permission to sell currency in mid-May after the significant success of the Armed Forces, the de-occupation of the Kyiv region and the improvement of the situation in general. In the future, restrictions on the sale of foreign currency by banks to citizens were cancelled, with no deviation from the official rate of the NBU by more than 10% [3]. This step was aimed at reducing the level of speculation in exchange operations and panic among citizens. In addition, the NBU introduced a few measures that simplify and speed up settlements in UAH and foreign currency.

Another anti-crisis direction is the NBU's measures aimed at supporting the liquidity of banks using refinancing instruments. Although bank refinancing operations cover short-term liquidity deficits, they are actively used during the unfolding of crisis processes to provide banks with long-term liquidity aimed at expanding lending and financing the state budget. During the unfolding of the corona crisis in Ukraine, to maintain financial stability and support the economy, the NBU carried out long-term refinancing operations for up to 5 years [18].

After Russia's large-scale invasion of Ukraine in February 2022, taking into account the significant volumes of government securities in the portfolios of commercial banks, the NBU introduced overnight refinancing with the collateral of highly liquid assets. An instrument of compensatory support for banks was also implemented by providing them with unsecured blank refinancing loans in the national currency for a term of up to one year [21], which overall contributed to the increase in the volume of refinancing loans received by banks. The volume of such unsecured (blank) refinancing is limited to 30% of the household deposits available in the bank as of February 23. These loans, compensation for the outflow of funds of individuals, were unprecedented - without collateral. During the first 11 days, banks received UAH 62 billion through this instrument. For comparison, until February 25, the total amount in the national currency in the bank accounts at the NBU amounted to UAH 58 billion. However, banks' liquidity remained high, and banks resorted to refinancing to a limited extent.

And with the growth of the discount rate, banks massively returned loans. The net repayment of bank refinancing loans to the NBU for June-October 2022 amounted to UAH 49.5 billion. Therefore, refinancing operations were terminated later.

On February 24, the NBU also supported the government's liquidity by transferring UAH 19 billion from revenues for 2021 to the state budget (which is about 1.3% of government expenditures or 10% of the consolidated budget deficit in 2021). On March 8, the National Bank of Ukraine announced that it could support the state budget by purchasing Ukrainian government securities on the primary market, and later purchased military bonds worth UAH 20 billion.

Despite the difficult situation in the economy, which was caused by the war, the amount of excess liquidity in the banking system is growing. These are temporarily free funds that remained in banks after the issuance of loans, investments in government bonds and other assets. In the summer of 2022, they ranged between UAH 200-250 billion, crossed the UAH 300 billion mark in the fall, and continue to show an upward trend. At the beginning of November 2022, Ukrainian banks managed to accumulate record amounts of excess liquidity both in their correspondent accounts and in NBU certificates of deposit – which accounted more than UAH 400 billion.

In general, the NBU acted in a coordinated manner and introduced several additional anti-crises changes to support the financial system in the first week of the full-scale invasion (part of the requirements for submitting reports, enforcing limits and standards, etc. were additionally simplified). Overall, these anti-crisis measures during the last days of February 2022 helped prevent a sharp devaluation of the currency, a rapid outflow of international reserves as well as a liquidity crisis that could have triggered the country's financial collapse. Danylyshyn B. (2018) [5] emphasizes that the improvement of the NBU's refinancing tools should become a driver of expanding lending to the real sector of the economy and have a positive effect on economic growth.

As the director of the financial stability department of the NBU P. Dadashova (2022) [4] notes, the anti-crisis decisions of the regulator are based on three key principles:

- protecting the interests of bank clients, primarily depositors, who must retain access to their own and credit funds, payments and transfers;
- maintenance of banks' activities and their liquidity;
- honest reflection of the real financial condition of banks.

After the "bankruptcy" of 2014-2015 the number of banks has almost halved, as of February 1, 2022, 71 banks were operating on the market, including 33 banks with foreign capital. At the same time, the banking system of the country is quite strong and stable, even under the crisis conditions of martial law, there was no bank collapse - as of September 1, 2022, the system consists of 67 operating banks, 30 of which have foreign capital. Banks controlled by Russia (through third parties, offshore, etc.) operating in Ukraine were gradually eliminated from the system by revoking NBU licenses.

Having analyzed the state of the banking system, we see that 36% of liabilities are held in foreign currency, which indicates sensitivity to short-term financing, exchange rate and international financing markets. In general, since the first powerful mortgage crisis in 2008, the banking system has had a surplus of liquidity, with short-term liquidity mostly stored in the form of NBU certificates of deposit. The monetary policy decision of the NBU Board on June 3, 2022, changed the discount rate from 10 to 25%, which caused ambiguous judgments and clearly became another shock for the economy. Such anti-crisis actions of the NBU are a sharp change in monetary policy towards a restrictive one and are aimed at restraining inflation, preventing the outflow of deposits from banks, preserving their value, levelling the depreciation of the national currency as well as increasing the attractiveness of investments in government bonds, reducing pressure on international currency reserves and normalizing exchange rate.

The result of this debatable step of the NBU was the creation of a corridor of interbank rates close to the NBU discount rate, we can talk about the dependence of all rates on the discount rate (Figure 7).

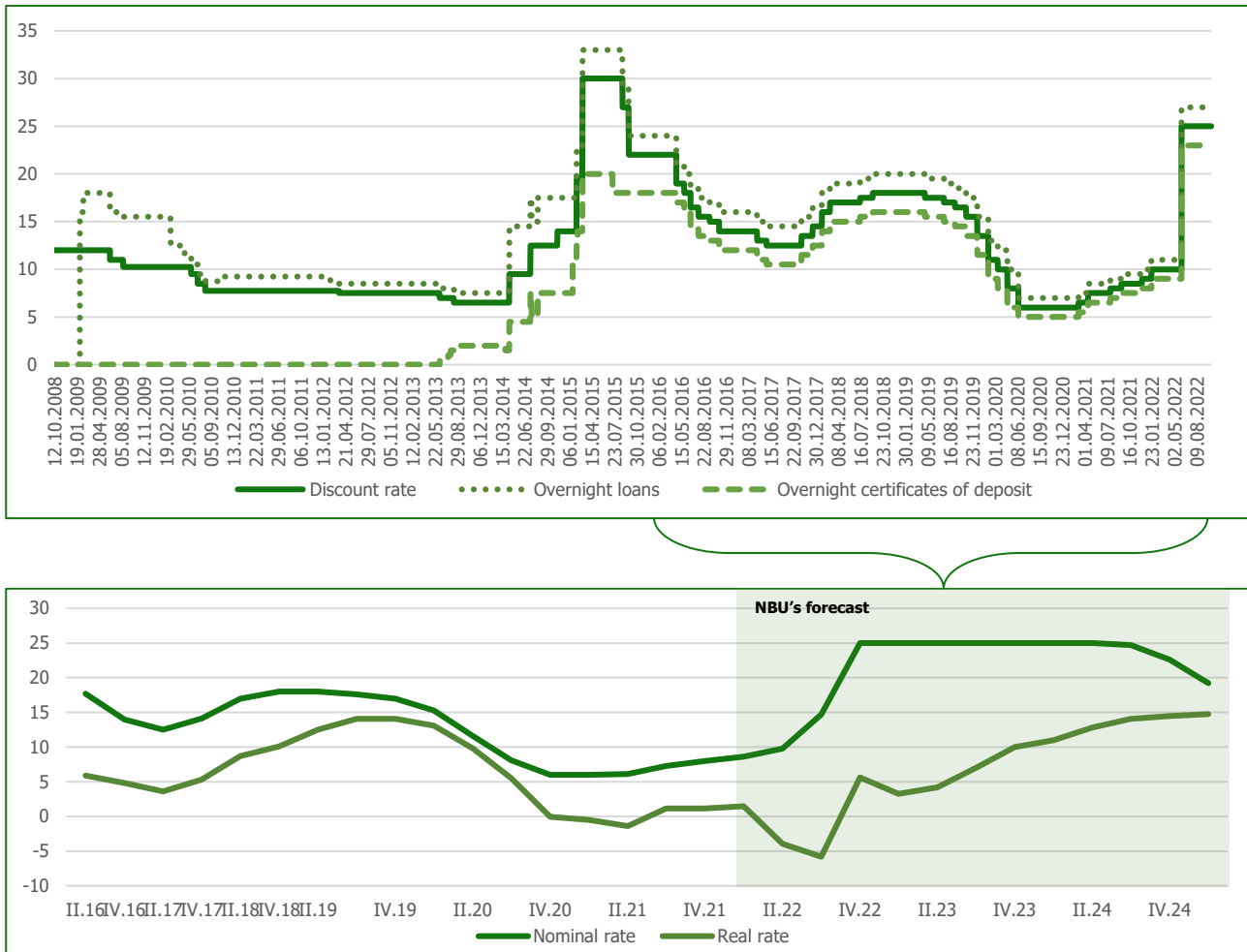


Figure 7. Dynamics of interest rates for monetary operations of the NBU with banks, %. (Source: compiled by the authors based on data from the official NBU website [23])

The NBU interest rate corridor does not exist as a "corridor", there are no interbank market transactions at a rate above the lower limit, so the interbank market does not work [6]. This is evidenced by the fact that the volume of interbank loans of domestic banks is about 1% of the total volume of bank loans to the real economy of the country.

Today, the banking system falls into a classic monetary trap, where free liquidity is placed mainly in certificates of deposit (CD) of the NBU and domestic government bonds, which facilitates liquidity management, but has a destructive effect on the economy. In the conditions of martial law, monetary transmission on the market of government securities does not give a positive effect, in any case, due to the mandatory security expenses of the government of Ukraine. This becomes a trigger for the issue of money, which mitigates the expected effect of an interest rate increase. Thus, bank investments in government securities covertly finance the budget deficit [26].

Liquidity injections on February 25, 2022, ensured the continuation of the functioning of the interbank credit market without visible signs of market stress. However, additional liquidity has already been offset by additional cash needs.

We single out the following channels of saturation of the financial sector: two types of NBU monetary policy operations (open operations and tenders) and the effect of changes in the volume of cash in circulation. We observe a jump in tender operations from February 25, 2022 (tenders included unsecured financing for up to one year), which is associated with injections into the banking system.

In the first month, Russia's full-scale invasion forced about 3 million Ukrainians to take refuge in neighbouring countries, and during the 6 months of the war, another 6 million Ukrainians accordingly. This caused long queues at ATMs in search of cash and a huge decrease in the liquidity of the banking system in general. At the beginning of February, the share of demand deposits was 58% of the total amount of deposits (of which 38% was in foreign currency). The NBU can easily provide cash in the national currency, but it is more difficult to satisfy the demand for cash in foreign currency (which was caused by the evacuation of Ukrainian citizens abroad).

In the pre-war period, remittances in foreign currency from Ukrainian workers abroad were an important source of foreign currency inflows to the country. These remittances of Ukrainians from abroad reached their maximum of USD 15 billion in 2021, which is about 10% of Ukraine's GDP (Figure 8). However, the current demand for foreign currency under currency restrictions in official markets has given rise to shadow currency markets. As of March 15, the exchange rate was about in diapason UAH 31-33/USD on one of these markets, which was significantly higher than the official rate in diapason UAH 29.26/USD. The widening of the gap between the official and the shadow exchange rate is a rough indicator of the level of pressure on the fixed exchange rate. If the NBU closes the exchange rate, it will probably be higher than UAH 45 per 1 USD.

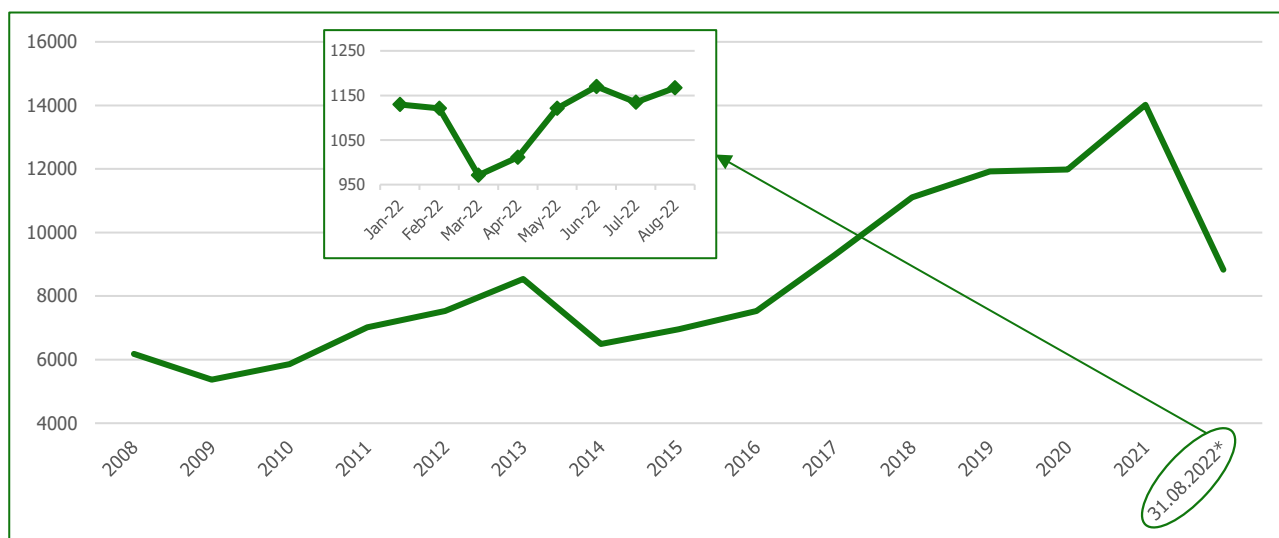


Figure 8. Remittances and exchange transactions of households, USD million. (Source: based on data from the official NBU website [23])

Providing liquidity in the national currency to ease financial conditions is also associated with risks. Ukraine is heavily dependent on imports, and the war has a significant impact on the economy's production potential. As a result, excess liquidity puts pressure on the currency. According to basic economic axioms, any currency devaluation is likely to lead to inflationary pressures, first through fuel and imported goods prices, and then through local and intermediate goods prices.

Liquidity spirals were observed in Ukraine even during the global financial crisis of 2008 and the banking crisis of 2015 in Ukraine. The NBU supported the financial system with liquidity to prevent bank failure. At that time, these measures prevented the collapse of the banking system, but the accumulation of excess liquidity contributed to increased demand for foreign currency and eventually caused a large-scale devaluation of the hryvnia. A similar situation could have occurred after February 24, but the concerted actions of the NBU prevented the outflow of free liquidity to the foreign exchange market and large-scale pressure on the hryvnia.

Scheduled for March 3, 2022. The NBU had to make a decision on its discount rate (10% as of 24.02.22), and on March 11 it had to introduce increased reserve requirements (both tools were immediately cancelled at the beginning of the invasion). Considering the inflation rate of 10% in January, which exceeded the target level twice (5%), interest rates were expected to continue to rise in 2022. In the spring, the regulator's uncertainty was observed, which was related to the decision regarding the discount rate – either to lower it in the future (to ease financial conditions for businesses and the population) or to increase it (to protect the currency and mitigate inflationary pressure through the currency transmission channel). So, in conclusion, we note that in the conditions of martial law, the financial market is unable to function adequately and fully, as it is largely under the influence of non-market structural shocks. Under these conditions, external resources are an important source of monetary support.

Starting from March 9, 2022, the IMF intervened and approved financing in the amount of USD 1.4 billion for Ukraine through quick financial response tools to help meet urgent financial needs [13]. In addition, the World Bank has provided a USD 3 billion support package that Ukraine may receive in the coming months, and the United States has approved USD 13.6 billion in spending on the war in Ukraine, about half of which is for humanitarian and economic aid. Ukraine had already had a Stand-by-Agreement – a standard IMF tool used to solve problems with balance of payments – but this is accompanied by a macroeconomic program, including commitments and certain restrictions on the recipient country's use to ensure macroeconomic stability. The Stand-by-agreement was cancelled after a full-scale invasion (the second revision of the program began on February 23, 2022, and planned funding of USD 2.2 billion), and a new program will be negotiated

in the future. The commitments which the IMF will make in the new program regarding monetary, fiscal and exchange rate policies, remain uncertain.

DISCUSSION

Ukraine's banking system is undergoing a natural stress test due to a full-scale russian invasion and hostilities. Unfortunately, the situation is complicated by the spiraling liquidity of the banking system due to excess liquidity that was accumulated even before the full-scale invasion. At present, remain debatable issues, the ways of regulating the excess liquidity of the banking system and the possibility of avoiding the trap of liquidity in the country's war economy, when government securities are one of the most effective tools for attracting funds by the state, but on the other hand, it can exacerbate liquidity problems.

Liquidity is one of the most important indicators of the banking system during the war. The banking system survived the war year, coped with shocks and remained liquid. But the impossibility of restoring active lending by banks to the real sector of the economy is the reason for the build-up of additional free liquidity, which may be a problem in the future. It is important to explore the ways of the future development of the banking system after the end of the war, when free liquidity will replenish the banking market, like a snowball.

CONCLUSIONS

The analysis of the Ukrainian financial sector functioning in the conditions of martial law resulted in the monetary anti-crisis measures taken by the NBU enabling the maintenance of its own stability. However, Ukraine's economic prospects in the future are uncertain and will largely be determined by the duration and scale of the war. The turbulence of the economy, the geographical incompleteness of the Ukrainian territory, the presence of temporarily occupied territories, the martial state and many other factors shape the modern reality of the country. Huge damage has been caused to the productive capacity of the economy, so significant domestic and foreign financing will be needed to revive the country after the war. With the beginning of the full-scale invasion, the NBU took a set of anti-crisis monetary measures, among them:

- regulation of the interbank market, which almost does not function due to the predominance of government securities and NBU certificates of deposit;
- change in the discount rate, which did not have a positive effect;
- introduction of blank refinancing of commercial banks in order to support the liquidity and solvency of banks and eliminate panic among the population, the advantage of which banks almost did not take due to oversaturation of liquidity,
- fixing the exchange rate and setting restrictions on the foreign exchange market, which is under the influence of non-market factors of demand and supply of foreign currency. Restrictions on cash withdrawals from current accounts helped slow down panic among the population. In addition, the foreign exchange market has almost completely stopped working. The exception was the exchange of foreign currency for hryvnia;
- indirect financing of the budget deficit mainly from non-market sources (international grant and credit assistance, hryvnia issued by the NBU).

Even with the support of the IMF and the international community, the way to return the NBU after the conflict to its full functioning as an independent central bank with its inflation targeting, an open currency market, a flexible exchange rate, market financing for the revival of the country's economy will undoubtedly be a delicate compromise to support the economy, prevention of currency devaluation and inflationary spiral.

ADDITIONAL INFORMATION

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МОНЕТАРНІ АНТИКРИЗОВІ ЗАХОДИ В УМОВАХ ВОЄННОГО СТАНУ В УКРАЇНІ

З уторгненням російських військ на територію України перед НБУ постали завдання не допустити знецінення національної валюти, уникнути паніки, забезпечити стабільність банківської системи. Цього вдалося досягти зокрема й завдяки монетарним антикризовим заходам. Регулятор оперативно ухвалював необхідні рішення, огляду яких та оцінці їхньої дієвості присвячене це дослідження в парадигмі економіки війни. Розглянуто сукупність інструментів антикризового монетарного управління, передумови, чинники й особливості їх застосування в умовах повномасштабного воєнного вторгнення. Проведено компаративно-динамічний аналіз основних монетарних індикаторів, який показав їхню керованість та відносну стабільність. Доведено, що основний інфляційний тренд в Україні характеризується невизначеністю, формується під впливом немонетарних чинників суб'єктивного характеру, що перебувають поза межами впливу монетарної політики. Ці та інші неринкові чинники спровокували скорочення міжнародних резервів та нестабільність на валютному ринку, на що НБУ відреагував уведенням упереджувальних валютних обмежень. Визначено, що для уникнення паніки на валютному ринку вкрай важливими й оперативними виявилися (валютні обмеження запроваджені НБУ) рішення НБУ щодо фіксації валютного курсу, запровадження необхідних обмежень на купівлю валюти та транскордонні валютні операції, обмеження на зняття коштів з валютних рахунків, надання можливості обміну готівкової гривні за кордоном. Із метою уникнення неконтрольованої девальвації та відпливу капіталів, НБУ підтримував валютний ринок інтервенціями. Проаналізовано антикризові заходи, спрямовані на підтримку ліквідності банківської системи України, у тому числі щодо операцій із депозитними сертифікатами та державними облігаціями, які в умовах воєнного стану не завжди досягають цілей забезпечення фінансової стабільності. Ці та інші заходи допомогли регулятору утримувати в цілому стабільність та безперебійність роботи банківської системи.

Ключові слова: монетарна політика, антикризове управління, рефінансування, інфляція, валютний курс, міжнародні резерви, центральний банк, банки, ліквідність, економіка, фінансова стабільність

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