Strengthening monetary policy and managing inflation expectations in Ukraine in conditions of maritime

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Abstract

The article considers the current problem of strengthening monetary policy in Ukraine. Competent monetary measures of the NBU in the first months of the war ensured the smooth functioning of the banking system and payments in the economy. Fixing the exchange rate was ensured by currency restrictions, as well as foreign exchange interventions. The gradual adaptation of Ukraine's economy to the war and the replacement of psychological shock by economic logic require a change in approaches to monetary policy.

The article substantiates the need to strengthen the monetary policy of the NBU. Strengthening the monetary policy of the NBU is aimed at compressing the money supply, and its effectiveness depends on the coordination of measures with the government.

The way in which inflation expectations are formed influences the consequences of monetary policy. Therefore, the NBU, which aims at price stability, should take into account the inflation expectations of economic agents when planning monetary measures.

Adaptive and rational hypotheses of inflation expectations are estimated. It is established that the reasons for the differences in the mechanisms of inflation expectations are explained by rational expectations and ways of disseminating information. It is concluded that the main focus in assessing monetary policy is to determine the characteristics of the factors shaping inflation expectations in Ukraine. The NBU can increase the effectiveness of monetary policy by developing and implementing measures to strengthen the impact on inflation expectations of economic agents.

Keywords: monetary policy, central bank, inflation, inflation expectations, inflation target, discount rate.

Introduction

During the long period of reforms in Ukraine, the controversy over how much money is needed for the economy to develop normally continues. Proponents of soft monetary policy argue that more money is needed, arguing that the more money in the economy, the more working capital, more investment and higher consumer demand. This is the basis for the rapid growth of production and the improvement of people's living standards. At the same time, economists rely on the opinion of J. Keynes (R. Clower, 1965) on the expansion of aggregate demand as an important tool for economic growth. They attribute the way out of financial difficulties to the need to print a lot of money.

At the same time, the demand to compress the money supply is put forward by supporters of tight monetary policy (monetarists) (M. Friedman, A.J. Schwarz, 1963). According to them, soft monetary policy causes inflation, which is devastating for the population and the economy as a whole, but is beneficial for the
rich, who become even richer. But the current realities of Ukraine in 2022 argue that war is not a temporary shock that requires a sharp one-time adaptation, but a protracted process that requires the activation of adaptive mechanisms. Thus, Ukraine’s economy is beginning to adapt to life in conditions of war, and the NBU’s monetary policy must be based on new realities.

**Material and methods**

In our study, we relied on the official position of the National Bank of Ukraine, highlighted in press releases and in the section "Statistics" on the official website of the NBU. Also, this project uses a set of general and special research methods, including sampling and generalization methods - to assess the hypothesis of the expectations of economic agents, as well as methods of formalization and observation - to study trends in modern monetary policy. The study of the hypothesis of rational expectations of economic agents and the assessment of the banking systems of foreign countries during active hostilities is based on the methods of synthesis and historical comparison.

**Results and discussion**

Inflation has become one of the most important problems for Ukraine during martial law. It proved extremely difficult to control the inflationary process in the economy during the war. Strengthening monetary policy to curb inflation is aimed at compressing the money supply. The central bank regulates the money supply and implements a unified state monetary policy. The effectiveness of the NBU’s monetary policy largely depends on the coordination of activities with the government. Under martial law, building a macroeconomy based on permanent expectations of international aid is short-sighted. Therefore, at the beginning of the war, the NBU temporarily changed the operational design of monetary policy (in particular, fixed the exchange rate at UAH 29.25 / $) and took the necessary measures to maintain an adequate level of liquidity in the banking system (including through blank refinancing mechanisms). Fixing the exchange rate was ensured by currency restrictions imposed by the NBU to reduce the demand for currency, and interventions to sell currency by the National Bank to cover the market deficit.

By easing some regulatory restrictions, the NBU has increased banks’ flexibility in liquidity management, and restrictions on capital movements and currency transactions have helped curb panic amid high uncertainty and shock to the economy.

To support the Armed Forces (Armed Forces of Ukraine) and the smooth functioning of the financial system under martial law, the NBU (according to the Law on the NBU) began supporting the state budget by purchasing government securities on the primary market. The corresponding volumes of transactions were determined by the situation on the financial market. From February 24 to early May 2022. the volume of hryvnia IGLBs grew by UAH 82.5 billion or 9%. 85% of this growth is provided by the NBU (+20 billion UAH in March and +50 billion UAH in April) (National Bank of Ukraine, 2022).

Such a monetary policy based on a freeze on the exchange rate at the beginning of the war was a reaction to a one-time shock, but a return to market mechanisms for setting money market prices is needed in the future. After all, there are arguments for changes in monetary policy to strengthen it.

The NBU discount rate needed to be raised. Arguments for this were the formation of "military" inflation in the current conditions, the inadequacy of interest rates, the inability to finance the budget deficit and the multiplicity of exchange rates that distorted the market.

From June 3, 2022. not only the size of the rate has changed (from 9 to 25%), but also its role: it is the creation of the advantage of owning hryvnia instruments and a strong signal of readiness to protect reserves. A significant increase in the NBU discount rate, along with
other measures, should help preserve hryvnia incomes and savings of citizens, increase the attractiveness of hryvnia assets and reduce pressure in the foreign exchange market.

There are not many examples in history, especially in recent times, when during the active hostilities the banking system worked, and did not declare a "bank vacation". Apparently, we should first mention the thirty-year-old Yugoslavia - a fairly developed European state that went through the war. But in terms of monetary policy, that was not the best example, as the banking system worked for two days during the Balkan war. Armenia and Azerbaijan recently went through another episode in the confrontation over Karabakh. But there is the question of how well these countries adhere to the principles of inflation targeting, and the hot phase of the war lasted a little over a month. Of course, there is the example of Israel, which coped with high inflation in the 1980s and successfully uses inflation targeting tools today. There is also the example of Colombia, one of the most stable countries in the region, with years of inflation targeting and armed struggle against FARC insurgents. There are also examples of Syria and Libya. There are scenarios that have developed in some countries of South and Latin America.

Ukraine must move its way here. It is impossible to return to the monetary regime of inflation targeting at one time. Obviously, this process will be difficult, and it will be possible to fully achieve it after the victory. But raising the rate, as well as lowering it in the future, is one of many steps towards the country's economic recovery. We are convinced that in the post-war revival the gradual "easing of the NBU's monetary policy together with effective steps of preferential lending to priority sectors of the economy ... will be a good basis for stimulating economic growth in the country" (I. Okhrymenko, V. Biloshapka, 2022).

One of the main goals of the sharp rise in the NBU discount rate is to launch an interest rate channel of monetary transmission. Interest rates on loans will increase immediately, the first - on loans that are tied to the discount rate. The change in the discount rate will affect the cost of servicing existing loans for which borrowers and banks have not fixed rates in the agreements.

In general, the dynamics of changes in the NBU discount rate (Chart 1) is due to the fact that "one of the main problems of the modern money market of Ukraine has long been the instability of the national currency and rising inflation" (I. Okhrymenko, V. Biloshapka, 2022).

![Chart 1. Change in the discount rate of the NBU in 2017-2022, %](image)

NBU slowly raised the discount rate throughout 2021 (from 6% to 9%), "which was aimed at reducing the impact of additional pro-inflationary risks, improving inflation expectations ... The key risks for the economy were: Russia's escalation of military conflict, price surge in the world, so in the case of further realization of inflation risks, the NBU was already ready to raise the key rate and further" (I. Okhrymenko, V. Biloshapka, 2022).
It will not be easy to cool the inflation provoked by the war, high world prices, food and fuel shortages, complicated logistics, with just one discount rate. War-torn production and logistics fuel inflation. In order to work more effectively to curb inflation, it is necessary to understand the nature of inflation expectations.

The way in which inflation expectations are formed influences the consequences of monetary policy. If economic agents do not respond to the actions of the central bank, the achievement of the goals of anti-inflation programs may be delayed for a long time and be accompanied by significant GDP losses. Therefore, monetary authorities, whose goal is price stability, must take into account the inflationary expectations of economic agents. The question of how to measure inflation expectations in practice, as well as how to determine the rate of growth / decline of the economy on the basis of these measurements, remains open. As a rule, inflation expectations of households and firms are unobserved, so the expert community uses various methods to obtain their quantitative estimates.

There are various hypotheses about the formation of expectations of economic agents. Historically, the first hypothesis of adaptive expectations was put forward, according to which inflation expectations are based on the actual values of inflation in past periods of time. Then the hypothesis of rational expectations was proposed, according to which there were significant changes in the conclusions and methods of solving models for analyzing the consequences of monetary policy. At the generally accepted stage, it is believed that one part of economic agents forms rational expectations, the other - adaptive.

There are different explanations for the reasons why economic agents act in this way. In the study of J. Muth (J. Muth, 1961), the hypothesis of rational expectations of economic agents was formulated. However, it received the greatest development after the publication of studies by R. Lucas (R. Lucas, 1976), as well as T. Sargent and N. Wallace (T. Sargent, N. Wallace, 1975). The hypothesis is based on three assumptions:

a) agents form expectations, using the relevant realities of the mechanisms of the relationship of economic variables,

b) economic agents best take into account all available information in the formation of inflation expectations,

c) public forecasts (public authorities) of significant impact on the functioning of the economy (if they are not based on internal, inaccessible to economic agents, information).

It should be noted that the hypothesis of rational expectations does not claim that the forecasts of economic agents are perfect (i.e., free from accidental error) or the expectations of all agents are the same. Thus, if agents are rational, optimize the behavior in the production and purchase of goods and services and investment decisions, then the expected inflation may deviate from the actual only randomly. In this sense, the hypothesis of rational expectations is more perfect than other hypotheses of inflationary expectations.

However, despite the logic, the hypothesis of rational expectations is subject to serious criticism (J.B. Taylor, 1979). Many economists believe that economic agents are irrational because most agents do not have enough information to make rational forecasts. The counter-argument of the statement is that uninformed agents, as a rule, do not formulate forecasts themselves, but use the forecasts of informed experts. In this case, the economic equilibrium will be the same as it would be if all agents were rational. Other critics insist that the rational expectations hypothesis cannot be applied to changes in monetary policy or other structural changes in the economy, as this takes a long time for agents to realize the changes and adapt to the new economic situation. The counterargument of this statement is that such changes and their effects can often be predicted on the basis of economic and political events that preceded changes in the economic situation. Thus, agents can predict structural changes and quickly adapt to the new economic regime.
As a rule, the diversity of agents' expectations is not taken into account in macroeconomic models. One of the reasons for such models is the assumption that all agents have the same information and use the same technology to process it. Therefore, all agents have the same expectations. But practice and numerous empirical studies show that this is not the case. One of the ways to explain the reasons for the emergence of heterogeneous inflationary expectations, proposed by K. Sims and is called the hypothesis of "Rational inattention". In the framework of this hypothesis (C. Sims, 2003) it is assumed that not all economic agents have complete information about the state of the economy. Among them there is diversity in the level of knowledge about what is happening. At the same time, increasing his level of information, the agent must pay (or incur other costs associated with obtaining and processing information). For example, he needs time and certain skills to search and analyze data obtained from information sources. In general, the "better" and more reliable the information, the more expensive it is. In this case, the economic agent has a choice: to pay for information and expand their awareness or not to spend resources, but to remain less informed. If the second alternative is chosen, economic agents limit themselves to ignorance of important information and act (make decisions) with limited rationality.

Identifying the factors that influence the formation of inflation expectations in Ukraine has a number of features. And these features became even more acute during the war. Current and expected inflation as of June 1, 2022 ranks first among systemic risks (after the war). Being an unpleasant phenomenon for the average consumer, inflation is especially unpleasant in a period when incomes are not growing. The conditional average annual inflation of 20% with constant income essentially means that an employee receives a salary for only 10 out of 12 months during the year. And this is a significant reduction in welfare. But the incomes of most Ukrainian households are still falling due to the loss of some workers.

The first important feature is that inflationary expectations of economic agents during the war are not statistically observed. It is only possible to indirectly assess inflation expectations through various surveys. For example, the dynamics of product prices can be statistically monitored according to statistical databases of retail sales. And inflation expectations as a private type of forecast can not have factual evidence that could be referred to when collecting statistics. This feature makes the process of measuring inflation expectations subjective and resource-intensive.

The second important feature is that numerical estimates of inflation expectations, taking into account the answers of respondents or other methods (for example, taking into account the data of financial markets) are subjective. On the one hand, there is no single generally accepted methodology for quantifying inflation expectations, on the other hand, there is a huge variance in inflation rates depending on the region. It is now the largest in the history of statistics collection. Growth rates are highest in areas where there are occupied territories and hostilities are taking place.

For example, according to the NBU [3], consumer prices (data at the end of March 2022) for the year increased by 25.9% yoy in Kherson region and 16.4% in Kharkiv region - much higher than the average. 13.7% in March for Ukraine as a whole. Instead, in the regions of western Ukraine, the pace was much lower. For example, in Ternopil and Zhytomyr regions prices increased by 11.2% (National Bank of Ukraine, 2022). The spread of prices for certain goods is also striking. For example, a liter of sunflower oil, according to the State Statistics Service, cost 83 hryvnias in the Kherson region and 66 hryvnias in the Lviv region (State Statistics Service of Ukraine, 2022). Such a wide spread of prices shows that in the current conditions the key factor in inflation is problems with the supply of goods and services. Prices rose the fastest in the occupied regions, where the supply of goods and services...
fell sharply due to the security situation and disrupted logistics.

The third feature is a sharp change in the structure of the consumer basket since the beginning of the war. Inflation is a change in the weighted average price of goods and services consumed by the average household. Inflation depends on changes in prices for specific goods and services, as well as their weight in the consumer basket. For example, the State Statistics Service of Ukraine for the calculation of inflation takes into account that food occupies 41% of the consumer basket of the household, utility bills - 8.4%, transport - 9.3% (State Statistics Service of Ukraine, 2022). These data are estimated on the basis of statistical observations for 2020.

Thus, inflation today can be estimated only very, very roughly. Many goods and services that were in the consumer basket before the war are simply not available today. There are more than enough examples - some models of electronics and home appliances, clothing and footwear brands are not sold today. The supply of food has also narrowed - the products of many producers are currently not supplied due to the destruction of production facilities. Leisure services, closed hotels and restaurants, and sometimes private educational and medical facilities are not available in many areas. Therefore, it is not possible to measure the prices of many components of the consumer basket in some regions, and in some places throughout the country.

The fourth feature is the gap between consumer-perceived inflation and official inflation. Based on this discrepancy, the respondent can make a forecast of his perception of inflation. Subjective perception of inflation can be quite detached from the real situation. Therefore, inflation expectations may be excessive or detached from actual inflation.

The fifth important feature is that the formation of their own assessment of inflation and its expectations has ceased to be an urgent task for most respondents. As a result, respondents may give superficial answers, not due to some objective factors, but irrational and illogical motivations. Psychologically, most respondents tend to remember the increase in prices for certain goods and services, not taking into account lower prices or slowing their growth for other goods and services. This makes inflation expectations often inflated.

Finally, the sixth feature is the limited public confidence in monetary policy, including on inflation targets. Macroeconomic shocks periodically occurred in the memory of citizens: crises, devaluations, defaults, bank failures, interest rate jumps. It does not promote trust. In addition, the domestic scientific and expert community has not yet developed a uniform understanding of the factors shaping inflation. Accordingly, this affects the difference in approaches to assessing inflation expectations of ordinary respondents and experts.

In general, in the course of our research we found that less informed groups of economic agents (consumers) do not take into account the information of more informed agents (professional forecasts) when forming their expectations. It was found that in the formation of inflation expectations, economic agents focus primarily on actual inflation. Less account is taken of changes in exchange rates, the dynamics of long-term interest rates and the rate of economic decline.

Inflation restraint is based on the stability of inflation expectations. Rising current inflation will create expectations of even higher inflation in the future. This can force businesses to raise prices "in advance" and people to buy more goods than they need. In addition, a significant increase in inflation expectations will lead to an outflow of deposits from banks, increased demand for foreign currency and, consequently, deteriorating financial stability.

Therefore, the NBU's monetary policy measures should be aimed at controlling inflation no less, and perhaps even more, than in pre-war times. Moreover, the central bank now remains "the first pillar of protection against systemic instability in the financial and banking spheres, and monetary policy instruments provide ...
reduction of negative expectations of participants in the banking services market" (V. Biloshapka, I. Britchenko, I. Okhrimenko, 2019). The Government's role in controlling inflation is also growing by strengthening monitoring and responding to unjustified actions in non-competitive markets, as well as maintaining payment discipline in tax collection. Coordinated actions of the NBU and the Government will help prevent the spread of inflation in Ukraine during the war.

For central banks aimed at ensuring price stability, it is in the inflationary expectations of the population, business, banks and the expert community that public confidence is measured. We share the opinion that the main criteria for the success of monetary policy in the future will be "anchored inflation expectations at the level of the target and the compliance of actual inflation with its target values in the medium term" (S. Arzhevitin, 2021).

By developing and implementing measures to increase the impact on inflation expectations, the NBU can increase the effectiveness of monetary policy as a whole. And if the inflation expectations of economic agents are approaching the future level of inflation - it means that the economy is moving according to the declared by the NBU vector to strengthen monetary policy.

Conclusions

Under martial law, the economy needs to activate adaptive mechanisms. The adaptation of Ukraine's economic agents to life during the war has begun and the NBU's monetary policy must be based on new realities. Arguments are ripe for strengthening the NBU's monetary policy. The need to raise the NBU discount rate was exacerbated by the formation of "military" inflation, inadequate interest rates, the inability to finance the budget deficit and the multiplicity of exchange rates. By raising the discount rate, the NBU gave a strong signal to strengthen monetary policy, readiness to protect reserves and increase the attractiveness of hryvnia assets.

At the same time, when assessing monetary policy, it is necessary to focus on the peculiarities of the factors shaping inflation expectations in Ukraine. The article identifies six groups of such features. It was also found that the most common in the analysis of monetary policy trends were adaptive and rational hypotheses of inflation expectations. It is concluded that these hypotheses assume the homogeneity of inflation expectations of economic agents, which is not always true. The reasons for the differences in the mechanisms of inflation expectations are explained by rational expectations and ways of disseminating information. The expectations of economic agents in Ukraine are currently not fully adaptive.

Inflation restraint is based on the stability of inflation expectations. Therefore, the NBU should pay more attention to controlling inflation than in pre-war times. By developing and implementing measures to increase the impact on inflation expectations of economic agents, the NBU can increase the effectiveness of monetary policy as a whole.

The role of the Government in controlling inflation by strengthening monitoring and responding to unjustified actions in non-competitive markets, as well as maintaining payment discipline in tax collection is growing. Coordinated actions of the NBU and the Government against the background of strengthening monetary policy are aimed at preventing the promotion of inflation in Ukraine under martial law.

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