

Research Priorities by the National Bank of Ukraine until 2025

The priorities of research by the National Bank of Ukraine until 2025 (hereinafter referred to as the research priorities) have been determined to facilitate the implementation of the NBU's Strategy until 2025, approved by NBU Board Decision No. 412 dated 13 August 2021 (hereinafter referred to as the NBU Strategy 2025), under Russia's large-scale military invasion and the imposition of martial law in Ukraine. The goals declared in the research priorities are aimed at providing analytical and scientific support to the decisions by the National Bank of Ukraine (NBU) in response to modern economic and financial challenges. The research priorities take into account the preliminary outcome of cooperation with the scientific community and external experts, as well as considering future activity of the NBU's departments involved in research projects.

I. Research in Modern Central Banks

In order to achieve their goals of price stability and financial sustainability, as well as promoting sustainable economic growth, modern central banks must respond in a timely manner to various challenges, the number and scale of which have constantly been growing. Russia's full-scale military aggression, the imposition of martial law, a combination of domestic and global factors exacerbate the uncertainty of the economic environment and make it difficult to ensure macroeconomic and financial stability. Ensuring macroeconomic stability in such an environment, mitigating the risks of accumulated imbalances in the economy, and supporting post-war reconstruction further expand the list of topics that are in the focus of the NBU's attention.

In this context, research is an extremely important function of a central bank, which can and should generate new knowledge for proper adaptation in a changing environment.

Successful research fulfills its role in supporting and enriching decision making across various domains of central banking – from traditional monetary policy and financial stability to novel areas, such as decentralized markets and financial education. The added value of integrating research elements into the decision-making process is a quantitative, logically consistent analysis that is verifiable and reveals the benefits and risks of possible alternatives. Engaging analysts and researchers in public debates and scientific events enhances the accountability and transparency of the central bank and, accordingly, increases confidence in the central bank's decision making and, as a result, in its policies.

The various areas of knowledge necessary for the central bank require professional researchers who can work both in analytical units and in a separate special research unit (as is currently the case with the NBU). Specialists and experts wishing to upskill or research into new topics may temporarily join the Research Unit of the NBU's

Monetary Policy and Economic Analysis Department to implement certain projects or fulfill tasks.

Joint work on research and analytical projects by experts of the analytical units and the Research Unit of the Monetary Policy and Economic Analysis Department improves the way of sharing knowledge and skills within the NBU. As part of joint projects, knowledge is exchanged on how to apply empirical methods, which allows the analytical units to expand and upgrade their tools. In turn, researchers obtain very valuable, context-sensitive information from analysts. The context-sensitive information in most cases is related to specific and qualitative assessments of a particular area of the NBU's activity or an economic process. Researchers can use this information to test and develop new economic theories and models. This two-way flow of information and skills is the main goal of in-house research projects aimed at meeting the NBU's policy needs.

Joint projects with external researchers provide for the temporary involvement in the NBU's research projects of highly specialized experts who would otherwise be unavailable. This method of temporarily involving external experts ensures greater flexibility in planning and high efficiency of research projects, as highly specialized, external researchers often prefer temporary employment. Projects with external researchers' participation generate new knowledge about the applied models and methods in a relatively short time.

II. Priority Research Areas

The following priority areas for research at the NBU have been identified for the period up to 2025:

- 1) monetary policy in wartime and in the period of post-war recovery of the economy
- 2) ensuring financial stability during large and permanent shocks
- 3) long-term challenges in the real sector of the economy following a prolonged war
- 4) development of digital markets, products, and their regulation.

The specified areas of research reflect the following pillars stipulated in the NBU Strategy 2025: *Promoting Economic Recovery and Growth* and *Digital Finance as a Driver for Digitalization of the Economy*.

Regular publications in influential journals, presentations, and participation in key international events strengthen the NBU's status as a leading analytical center of the country and thus support the strategic pillar *Institutional Development and Operational Excellence of the NBU*.

1. Monetary policy in the War period and the period of post-war recovery of the economy.

Optimal monetary policy during war and its aftermath. Due to the long-term unavailability of certain elements of the official statistics and the fundamentally uncertain environment for setting the economic policy in wartime, analytical approaches to studying topical issues related to the central bank's policy need to be updated. What amendments and updates need to be introduced in the NBU monetary policy strategy, including exchange rate regime and advice on monetary and fiscal policy mix? How does one define the proper balance between the fiscal and monetary policies in wartime? What are important lessons for the post-war recovery period?

The monetary transmission mechanism. The NBU is a relatively young inflation-targeting central bank. Financial markets, economic agents' behavior, and expectations are evolving as the regime is establishing itself. Thus, further research of monetary transmission and its evolution is needed for ensuring comprehensive analytical support of monetary policy decisions, especially in terms of a sizable increase in the structural surplus of liquidity due to the large-scale purchase of government securities and currency valuables of the government by the central bank.

Effects of the war on long-term trends and steady states of key macroeconomic variables. Monetary policy forecasting and decision making require an understanding of trends and steady states of the GDP, REER, and unemployment. The structural factors that influence them include the aftermath of the full-scale war, the modality of the reconstruction plan for the Ukrainian economy, structural changes in the economy and financial system, external and internal migration, demographic changes, and others.

The possibility of reviewing the inflation target in future also needs a thorough analysis. The level of favorable inflation may depend on various characteristics of the economy, including the scenarios of postwar reconstruction of Ukrainian economy.

New sources of data and their analysis for policy purposes. Assessing the current state of the country's economy – nowcasting – is an important element of central banks' system of analytical tools. Even before the full-scale invasion, the official statistics used in economic models to forecast and analyze policy measures were published infrequently and with considerable delays. It has been standard practice for central banks to use indirect methods that make it possible to estimate GDP based on alternative, high-frequency data. The use of such indicators in economic analysis

proved its effectiveness during the COVID-19 crisis. Amid the unprecedented shock of the full-scale war, nowcasting economic activity has become particularly relevant, primarily under conditions of the limited availability of official statistics and a changing and turbulent environment. Understanding the depth of the economic downturn, as well as the speed of recovery, makes it possible to take timely and effective economic decisions and adapt policy measures.

Communications and their impact on expectations during a prolonged shock. Central bank communications are becoming an increasingly important element of monetary policy. Peculiarities of their influence on shaping economic agents' expectations belong to the sphere of constant attention of researchers and policy makers, taking into account prolonged shock due to the martial law and new challenges in the post-war redevelopment.

The impact of monetary policy of major central banks. Ukraine's high levels of economic openness and dollarization increase sensitivity to monetary policy decisions made in developed countries. Exploring such effects and their channels is necessary to justify decisions on monetary policy in Ukraine.

Digital money and the monetary policy. Rapid innovation in public and private e-money is relentlessly pushing the boundaries of traditional payments markets and challenges to the monetary policy. In particular, the impact of the potential implementation of the instant payments system on the change in the monetary landscape needs to be investigated. The possible introduction of the e-hryvnia should be assessed from the standpoint of influencing the results of monetary policy of different system design options (accounts for all or a two-tier system). Expected adjustments in savings behavior and management of foreign exchange risk for both households and firms become important additional topics for research after the introduction of the central bank's digital currency.

2. Ensuring Financial Stability during Large and Permanent Shocks

Macroprudential policy analysis. The central bank must monitor systematic risks and constantly examine the effects of macroprudential policy to respond to the shocks effectively and timely. Given the structural changes in financial markets, war-related challenges for the economy, and the expected post-war recovery, it is crucial for the central bank's macroprudential policy to develop theoretical frameworks and use advanced empirical models to assess and choose the best possible values of key policy instruments.

Bank lending. Bank lending has the potential to play a significant role in the post-war economic recovery. Therefore, the central bank has to explore the effectiveness of credit channels to better analyze the impact of bank financing on the real economy. In the context of financial stability, it is important to analyze the relationship between

new credit creation and the accumulation of systemic risks as well as to investigate the effects of government credit support programs on economic recovery.

Targeted research at the micro and macro levels provides a deeper understanding of the determinants of bank lending and enables assessing the expected dynamics of the aggregate loan portfolio.

Cyber risks, climate risks, and financial stability. The evolution of the financial system poses significant challenges for the banking system, its monitoring, supervision, and regulation. Although financial innovation and virtual assets open new opportunities for the sector development, virtual assets may pose a range of risks, like money laundering and terrorist financing, high volatility, insufficient investor protection, and uncontrolled capital outflow. In addition, the full-scale Russian invasion enhances concerns about the possible gaps in cybersecurity and climate risks (including those caused by direct attacks on critical infrastructure) that potentially may affect the further development of the financial sector in Ukraine.

All these risks may likely reinforce each other and even become systemic. Therefore, the central bank should monitor and investigate the sensitivity of the financial system and banking sector in particular to such risks to dodge excessive shocks and ensure financial stability.

3. Long-term Challenges in the Real Sector

Demographic changes. Demographic processes, including population aging and migration, will have a significant impact on labor markets and productivity in the medium term. This effect will considerably reshape the entire economy, starting from the sustainability of the pension system to productivity and competitiveness at the firm level. Estimates of the influence of the above-mentioned factors should be considered in macroeconomic forecasts for a timely and appropriate response through economic policy.

Climate change. Climate change poses new risks to agriculture, leading to significant impacts on crop yields. At the same time, the transition to a green economy can lead to high spending on decarbonization in energy-intensive industries. These two factors determine the need to consider climate risk factors in renewing the capital stock, the energy intensity of Ukrainian exports, and the expected evolution of agricultural production. A limited choice of tools designed to address such risks may not allow the economic policy to respond to those risks properly.

Post-war redevelopment. The “build back better” principle underlying modern rebuilding strategies will require large-scale investment in industry and infrastructure with a clear mandate to increase energy efficiency and reduce carbon emissions. This policy is included in regional development strategies and combine elements of

industrial policy as well as firm-based interventions. Understanding the evolution and determinants of firm growth, entry, and exit – along with the implications for productivity and labor markets – becomes relevant in disentangling factors driving short-term and medium-term macroeconomic fluctuations.

4. Development of Digital Markets, Products, and Regulation

Embracing a resilient digital financial ecosystem is a strategic imperative for Ukraine. To catch the wave of innovation in payment and market infrastructure, as well as enable accelerated development of Ukrainian digital financial markets, it is important to achieve a balance between the need for greater regulatory stringency and incentives for novelty-centered businesses. The long-term benefits of developing a vibrant and competitive financial market have been analyzed in detail, and these lessons are highly relevant in the context of Ukraine. In the current setting, however, the latest technological innovations (decentralized/distributed ledgers) constitute challenges that were previously not given enough attention.

Undoubtedly, financial intermediation, insurance, pensions, and investment products are all needed for the proper functioning of the economy, but their form and work are largely dependent on the interplay between new global legislation and the capabilities of distributed ledger technologies. New research in this area should provide an understanding of the common evolution of private goals and institutional requirements for the efficient functioning of the financial market in Ukraine.