National Bank of Ukraine

RESEARCH PRIORITIES OF THE NATIONAL BANK OF UKRAINE

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The National Bank of Ukraine's (NBU) research priorities are closely aligned with the NBU Strategy, approved by NBU Board Decision No. 401, dated 7 November 2023, which sets forth a mission to ensure price and financial stability and promote sustaina-ble economic development, so as to enhance Ukraine's capacity on its way to victory and during post-war recovery. These priorities establish a robust analytical and scientific foundation for decision-making, ensuring that research remains dynamic and in step with key strategic goals – including a sustainable hryvnia, financial stability, a resilient financial system that supports recovery and EU integration, modern financial services, and effective central banking.

By embracing cutting-edge research methodologies and expanding its analytical capa-bilities, the NBU has reaffirmed its commitment to addressing modern economic and financial challenges through rigorous, data-driven policymaking. Furthermore, these priorities aim to strengthen partnerships with the academic and policy communities, while actively engaging external experts to explore topics pertinent to the NBU and cen-tral banking. This collaborative effort includes identifying and investigating a compre-hensive set of potential research questions to guide future inquiry.

The Role of Research in Modern Central Banks

In today's complex economic environment, central banks must proactively address mul-tifaceted challenges to maintain price stability, financial resilience, and sustainable eco-nomic growth. A combination of domestic and global pressures, exacerbated by full-scale war and geopolitical instability, has been significantly heightening economic uncer-tainty in Ukraine. This dynamic landscape, coupled with the imperative of supporting Ukraine's post-war reconstruction, demands a rigorous and forward-thinking research agenda.

Research within central banks is indispensable – it not only generates new knowledge, but also enables adaptation to rapidly changing circumstances. This process supports evidence-based decision-making across a wide spectrum, from traditional monetary policy and financial stability considerations, to emerging fields such as digital markets and fintech innovations. By embedding robust research into its policy framework, the NBU enhances transparency, builds public trust, and strengthens its capacity to re-spond effectively to both immediate challenges and long-term developments.

Collaboration between the NBU's research units and external experts deepens analyti-cal insights and facilitates the application of advanced empirical methodologies. This synergy is essential for developing innovative policy tools and ensuring that research findings directly inform practical, data-driven policy interventions.

Key Research Areas and Priorities

1. Monetary Policy and Macroeconomic Stability
2. Financial Stability and Lending Development
3. Addressing Long-Term Economic Growth Challenges
4. Digitalization, Emerging Technologies, and Artificial Intelligence

Monetary Policy and Macroeconomic Stability

1.1. Designing Optimal Monetary Policy amidst High Uncertainty and External Shocks

This area focuses on crafting monetary policy frameworks that are resilient in times of crisis. It involves developing high frequency indicators to inform policy making in crisis times, conducting scenario-based analyses, and ensuring effective coordination be-tween monetary and fiscal policies within the scope of research on priority issues.

- How can central banks design monetary policy frameworks that remain robust un-der extreme external shocks?
- How do different exchange rate regimes influence the transmission and effective-ness of monetary policy during crises?
- In what ways can stress testing and scenario analysis be refined to better predict the impacts of unforeseen global economic shocks?

1.2. An Integrated to Policy Formulation

Beyond conventional interest rate management, this priority explores the integration of various policy instruments – including foreign exchange interventions and capital con-trols – into a coherent strategy, including research on relevant matters.

- What synergies can be achieved by coordinating interest rate adjustments, foreign exchange interventions, and capital flow management?
- How can lessons from other central banks contribute to the development of an integrated policy framework tailored to Ukraine's unique challenges?
- How might a multi-instrument approach mitigate the risks of policy conflicts and ensure smoother economic adjustments?

1.3. The Evolution of the Monetary Policy Transmission Mechanism

Understanding how war-induced structural shifts affect the channels of monetary transmission is critical. This research area examines changes in market microstructure, digital payment innovations, and the behavioral responses of economic agents, includ-ing research into matters of primary importance.

- How do structural changes in the economy modify traditional channels of monetary transmission?
- In what ways does digitalization alter the responsiveness of economic agents to monetary policy adjustments?
- To what extent do behavioral changes among consumers and firms, induced by prolonged uncertainty, affect the propagation of monetary policy measures?

1.4. Advanced Macroeconomic Modeling and Forecasting

This priority is focused on the development of sophisticated forecasting models that account for non-linearities and regime shifts. Enhanced models can improve the accu-racy of economic forecasts in the face of

unprecedented disruptions. A series of mat-ters may be singled out in this priority.

- How can non-linear and regime-switching models be used to improve forecasting accuracy during periods of economic turmoil?
- What advanced econometric or machine-learning techniques are most effective in capturing complex economic dynamics during crises?
- What are the limitations of current forecasting models in capturing the effects of unprecedented economic disruptions, and how can these be overcome?

1.5. Inflation Expectations, Central Bank Credibility, and Effective Communication

Here, the focus is on how policy actions, design and communication strategies shape market expectations and reinforce the credibility of the central bank. Specifically, this area of research defines a set of issues.

- What communication strategies are most effective in anchoring inflation expecta-tions during prolonged uncertainty?
- How can central bank communications be tailored to different segments of the population to enhance overall trust and effectiveness?
- How do the timing and clarity of central bank communications affect market reac-tions and overall policy credibility?
- What is the role of financial literacy in anchoring inflation expectations?

1.6. Interaction Between Fiscal and Monetary Policy

This area investigates the dynamic interaction between fiscal measures and monetary policy, especially during crisis periods, to maintain macroeconomic stability, including research on pressing matters.

- How can monetary and fiscal policies be coordinated to achieve balanced econom-ic stabilization during crises?
- What are the long-term implications of fiscal stimulus on debt sustainability and monetary stability?
- How do variations in fiscal policy design influence the transmission of monetary policy during economic recovery phases?

1.7. Global Economic Cycles and External Shock Transmission

Given the interconnectedness of global markets, this priority examines how external economic cycles influence the domestic financial environment by seeking solutions to relevant issues.

- What mechanisms drive the transmission of global economic shocks to emerging economies, particularly Ukraine?
- Which international factors (e.g., commodity price cycles, trade imbalances) have the most significant impact on Ukraine's economic stability?
- How do financial linkages with major economies contribute to both the vulnerabili-ties and resilience of the domestic financial system?

Financial Stability and Lending Development

2.1. Analyzing and Calibrating Macroprudential Instruments

This research area focuses on calibration according to the current economic context, assessing the effectiveness of, and refining macroprudential tools used to prevent a build-up of systemic risks and enhance financial sector resilience. It encompasses capi-tal and liquidity instruments, borrower-based measures, and other tools and questions.

- What empirical evidence supports the current calibration of macroprudential in-struments in a post-war economy?
- How do different macroprudential measures compare in their effectiveness across various banking systems, and what lessons can be drawn for Ukraine?
- What lessons can be drawn from international experiences regarding the adjust-ment of macroprudential measures in times of economic stress?

2.2. Monitoring Systemic Risks and Financial Cycles

This priority is dedicated to developing robust tools for monitoring systemic risks, includ-ing integrating traditional indicators with high-frequency data to capture rapid market changes, things that determine the research of a number of significant topics.

- What indicators, individual and composite, would be appropriate to supplement existing indicators to monitor the build-up of systemic risks and procyclical imbal-ances in the financial sector?
- Can novel approaches improve the models and tools of macroprudential analysis?
- What role do market sentiment, behavioral biases and other financial cycle deter-minants play in its formation and propagation?
- How can high-frequency data analytics be optimized to detect early signs of sys-temic risk?
- How can the integration of unconventional data sources improve the timeliness and accuracy of risk monitoring systems?

2.3. Lending Drivers and Risks

Understanding the determinants of lending supply and demand is essential for as-sessing the overall health of the financial system, particularly in the context of post-war recovery, which requires the investigation of primary issues.

- What are the key drivers behind fluctuations in the demand and supply of credit during economic recovery?
- How do changes in lending standards and borrower behavior affect credit risk in a post-crisis environment?

2.4. Impact of Macroprudential Policy on Lending and Economic Growth

This area is to explore the relationship between macroprudential policies, lending, and broader economic development, combining quantitative modeling with empirical case studies into pressing matters.

- What is the relationship between tightened credit conditions and short-term versus long-term economic growth?
- How can policy frameworks be designed to balance credit expansion

with the need to mitigate systemic risks?
- What is the contribution of state and international lending programs to financial stability and economic growth in Ukraine?
- What are the long-term implications of evolving credit market dynamics on eco-nomic growth?

2.5. Cyber Risks and Financial Stability

As financial systems become increasingly digital, ensuring cybersecurity is paramount. This research area aims to identify vulnerabilities and develop strategies to enhance digital resilience and cover a range of issues.

- What are the most significant cyber threats facing Ukraine's financial infrastruc-ture?
- How can cyber risks be assessed?
- Do cyber threats pose systemic risks to Ukrainian financial sector and how can they be averted?
- How can central banks develop and implement effective strategies to mitigate cyber risks?

2.6. ESG Considerations in Financial Stability

Integrating environmental, social, and governance (ESG) factors into financial risk as-sessment is becoming crucial. This research area focuses on how ESG risks can lead to systemic vulnerabilities and examines how they can be incorporated into existing models given the relevant issues.

- How can ESG risks be quantitatively integrated into traditional financial risk as-sessment frameworks?
- What impact do environmental and social factors have on the stability of financial institutions?
- How can ESG factors be integrated into stress testing frameworks?

Addressing Long-Term Economic Growth Challenges

3.1. Navigating Economic and Financial Integration in a Fragmented Global Environ-ment

This priority examines how global economic fragmentation affects Ukraine, focusing on both risks and opportunities in an increasingly multipolar world within the framework of uncertainty-related issues.

- How can Ukraine effectively integrate into the European and global economy amid increasing geopolitical fragmentation?
- What policy measures can mitigate the risks associated with global economic de-coupling?
- How do international trade disruptions affect domestic economic stability and growth prospects?
- What role does Euro integration play in enhancing economic resilience?

3.2. Enhancing Competitiveness and Global Economic Convergence

Fostering long-term competitiveness is essential for sustainable growth. This research area aims to analyze technological innovation, productivity, and human capital devel-opment through the prism of emerging issues.

- Which policy interventions can accelerate Ukraine's convergence with advanced economies in terms of productivity and innovation?
- How do investments in education, technology, and infrastructure contribute to long-term economic competitiveness?
- What are the comparative advantages that Ukraine can leverage to improve its position in global markets?
- How do industrial policies and market reforms interact to promote sustainable competitiveness?

3.3. Demographic Shifts and Migration Trends

Demographic changes, including war-induced migration and aging populations, have profound implications for the labor market and economic growth, which underlines the need for research on such issues.

- How will war-induced migration and demographic shifts influence Ukraine's labor market and productivity over the next decade?
- What policy measures can be implemented to mitigate the negative effects of pop-ulation aging and capitalize on potential demographic dividends?
- How do remittance flows from diaspora communities affect domestic consumption and investment patterns?
- In what ways should social policies be reformed to address the challenges of a shrinking or transforming labor force?

3.4. Climate Change, Green Finance, and Energy Security

This research area investigates the interaction between environmental sustainability and economic growth, addressing both the risks and opportunities associated with the tran-sition to a low-carbon economy, and addresses a series of issues.

- What role can green finance play in facilitating the transition to a sustainable, low-carbon economy?
- How do climate change risks affect energy security and overall economic resili-ence?
- What risks does net-zero transition bring to the economy and the financial sector?

Digitalization, Emerging Technologies, and Artificial Intelligence

4.1. Innovative Approaches to Economic Analysis and Forecasting

Harnessing advanced data science, this priority seeks to transform economic forecast-ing by integrating machine learning and alternative data sources into traditional models that are involved in the research of a wide range of questions.

- How can AI-driven models improve the timeliness and accuracy of economic fore-casts during periods of volatility?
- What alternative data sources offer the most promise for enhancing traditional economic models?
- How can real-time data integration be optimized to provide actionable insights for policy interventions?
- What are the challenges and limitations of using machine learning in economic forecasting, and how can they be addressed?

4.2. Big Data for Economic Policy Insights

Big data analytics offer unprecedented opportunities to capture economic trends with enhanced precision. This area focuses on integrating diverse datasets to develop com-prehensive, high-frequency indicators, considering specific matters.

- How can disparate data sources be integrated into a unified analytical framework for economic forecasting?
- What are the potential pitfalls of relying on big data, and how can they be mitigat-ed in policy design?
- How do big data insights compare with traditional economic indicators in predicting macroeconomic trends?
- What role does data quality and accessibility play in shaping the effectiveness of big data-driven models?

4.3. Artificial Intelligence in Central Banking

Integrating AI into central bank operations promises significant improvements in effi-ciency and decision-making. This area aims to explore algorithm development and op-erational optimization, focusing on practical issues in particular.

- In what ways can AI-driven process optimization enhance central bank operations and risk management?
- What are the challenges and benefits of implementing AI-based systems in the context of central banking?

4.4. Regulation and Impact of Digital Money and Markets

With the rise of digital currencies and FinTech innovations, understanding their implica-tions for monetary policy and financial stability is critical. This area examines regulatory challenges and proposes frameworks for digital asset management with regard to re-search on urgent matters.

- What regulatory frameworks are needed to manage the risks and opportunities of central bank digital currencies (CBDCs)?
- How should monetary and financial stability policies account for financial innova-tions?
- How might the introduction of digital money reshape traditional monetary policy tools and financial market dynamics?