TECHNICAL ASSITANCE REPORT

UKRAINE

Strengthening Macroeconomic Modeling in Support of Forecasting and Policy Analysis System (FPAS) at the National Bank of Ukraine (NBU)

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Prepared By

Iaroslav Miller, Daniel Baksa, Mariia Sydorovych, Natan Epstein (ICDMM)

Authoring Department:

Institute for Capacity Development

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Table of Contents

Acronyms and Abbreviations

BOP	Balance of Payments
CPI	Consumer Price Index
EUR	IMF European Department
FPAS	Forecasting and Policy Analysis System
ICD	IMF Institute for Capacity Development
ICDMM	ICD Macro-Modeling and Monetary division
IMF	International Monetary Fund
MMFD	Macroeconomic modeling and forecasting Division
MPC	Monetary Policy Committee
MPEAD	Monetary Policy and Economic Analysis Department
NBU	National Bank of Ukraine
NTF	Near-Term Forecast
QPM	Quarterly Projection Model
STX	Short-term expert
TA	Technical Assistance

Preface

At the request of the National Bank of Ukraine (NBU), a Technical Assistance (TA) Project on Strengthening Macroeconomic Modeling in Support of FPAS at the NBU was launched by ICD in May 2024. A total of four in-person missions were conducted in FY25 (all held in Vienna, Austria), and regular virtual office hours in between the missions. The project focused on two broad and complementary workstreams: (i) reviewing the NBU's existing Quarterly Projection Model (QPM)[1], further developing the QPM and strengthening modeling and forecasting capacity; and (ii) reviewing the existing FPAS processes[2] and further integration of model-based forecasting and analysis into NBU's policymaking and external communications.

During the scoping mission in May 2024, the TA team reviewed existing NBU FPAS processes and identified areas for strengthening modeling and FPAS practices in two broad categories: (i) forecasting and modeling capacity; and (ii) organization of modeling and forecasting processes. By the end of the first year of the FPAS TA project the NBU modeling team made remarkable progress in capacity development, including in data management, macroeconomic modeling and coding. The existing QPM model has been reviewed, recalibrated and extended to better reflect key features of the Ukrainian economy and improve the analysis of policy trade-offs in an environment of exceptionally high uncertainty due to the ongoing Russian invasion. Still, further progress is forthcoming, including building model extensions to reflect the direct effects of the balance of payments (BOP) and fiscal policy, and strengthening communications between the forecasting team and the monetary policy committee (MPC) on the development of initial conditions and preliminary forecast. In addition, under acutely challenging circumstances, the modeling team is subject to ongoing staff shortages, turnover and key person risk.

The IMF TA project team consists of Natan Epstein, Iaroslav Miller, Daniel Baksa, Mariia Sydorovych (all ICDMM), and Karel Musil (short-term expert). During the in-person missions, the TA team met regularly with Dr. Sergiy Nikolaychuk, who at the time held the position of Deputy Governor and now serves as the First Deputy Governor, and the Director of the Monetary Policy Department, Volodymyr Lepushynskyi and his team, including the head of the Macroeconomic Modeling and Forecasting Division, Artem Andriuschenkov, and the head of the Macroeconomic Forecasting Team, Anton Grui. The mission team would like to express its appreciation to NBU management and staff for their close cooperation throughout the TA Project process.

[1] For details see Grui and Vdovychenko (2019).

[2] Prior to the launch of this TA project, the NBU had an established FPAS, which benefited from previous IMF TA and supported policymaking under its Inflation Targeting regime since 2016.

Executive Summary

The first year of the multi-year NBU FPAS TA Project focused on two broad and complementary workstreams: (i) reviewing the existing NBU's QPM, further developing the QPM and strengthening modeling and forecasting capacity; and (ii) reviewing existing FPAS processes and further integration of model-based analytical work into NBU's policymaking and communications. Starting in May 2024, four in-person missions were conducted in Vienna, Austria. In between missions, the IMF team organized regular virtual office hours to discuss coding exercises, develop modeling capacity and give recommendations to actual forecast rounds.

The TA project achieved significant progress along the QPM and modeling capacity development workstream. The existing QPM has been reviewed, recalibrated and extended to better reflect key features of the Ukrainian economy and improve policy trade-off analysis in the environment of exceptionally high uncertainty due to the ongoing Russian invasion. In particular, the model was extended (i) with relative prices block to better interpret distinct core and non-core drivers of inflation; (ii) more detailed monetary policy block to allow a more comprehensive assessment of policy trade-offs under Inflation Targeting with increase in exchange rate and capital flow management during the ongoing war; and (iii) decomposition of the GDP into agricultural and non-agricultural sectors to better reflect their distinct implications for inflationary pressures. The teams also revised the external sector and labor blocks to reflect change in composition of trade partners and growing labor market pressures due to conscription and emigration. The NBU modeling and forecasting team made remarkable progress in data management, coding and modeling capacity development. Although staff have built a strong skillset and expanded the relevant knowledge base, staffing shortages, staff turnover and key person risk remain key challenges. Despite these obstacles, the NBU team has been using the updated version of the QPM called QPM+ as a core forecasting model since early-2025 to inform MPC decision making on the key policy rate.

During the scoping mission the TA team identified several areas for strengthening FPAS practices. The NBU modeling and forecasting team follows existing internal forecast calendar when preparing QPM-based forecasts. The model is used to construct baseline forecasts and alternative scenarios, to impose expert judgements, to assemble the forecast narrative and then deliver it to the peers and to MPC. However, a standalone meeting to discuss model-based initial conditions with the MPC is missing from the forecast calendar and, as a result, relatively less attention is paid to analysis of the cyclical position of the economy and the trend-gap decomposition of the forecasts. In addition, in best-practice central banks, a separate FPAS Coordinator is assigned to organize and manage the workflow during the forecasting round; such a role currently is missing from the NBU team.

The next TA missions will be aimed at further model extensions focusing primarily on balance of payments (BoP) and fiscal policy blocks to explicitly reflect inflationary and economic activity pressures stemming from these sectors in the environment of exceptionally high uncertainty. In addition, the mission team will work together with the NBU team on designing a template for MPC initial conditions presentation and roadmap to integrate it formally into the forecasting calendar.

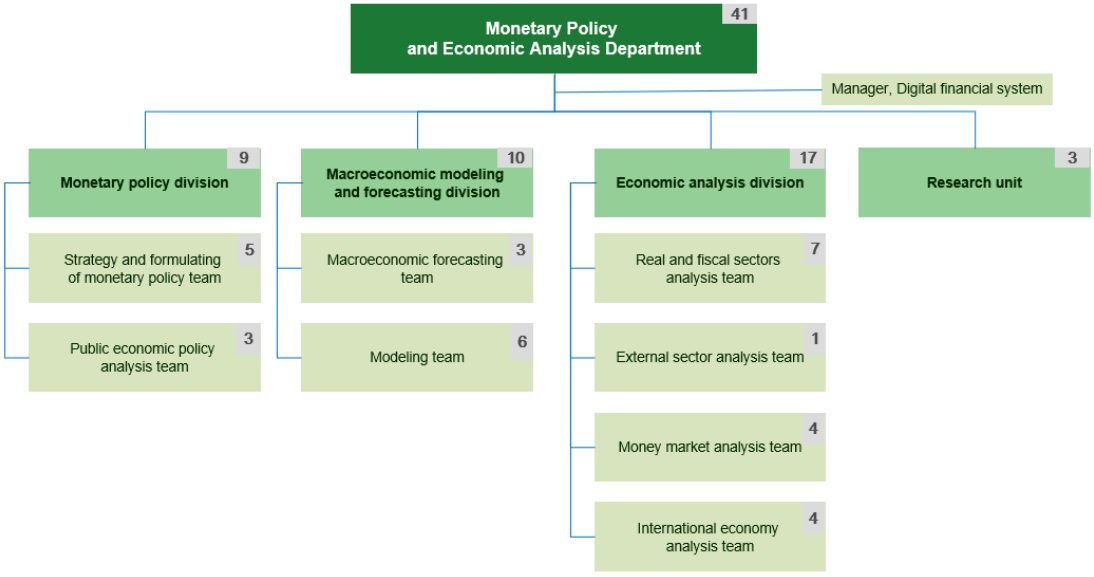
Overview of the first year of the NBU FPAS TA Project

1. In February 2024, the NBU requested a TA project on reviewing and strengthening their FPAS processes and macroeconomic modeling, with a focus on their existing QPM. Although the NBU had an established FPAS, which benefited from previous IMF TA, the existing model-based forecasting and policy analysis faced significant challenges and uncertainty due to the ongoing Russian invasion. In addition, there was a need for a more detailed monetary policy block to reflect the Inflation Targeting (IT) framework combined with exchange and capital flow management to maintain the economic and price stability during the ongoing war. Hence, the NBU requested assistance focusing on assessment of its existing QPM structure and outputs, further development of the modeling toolkit and review of its FPAS processes.

A. SCOPING MISSION FINDINGS

2. Modern central bank practice recognizes the benefits of a forward-looking approach to policymaking. This accounts for the transmission lags and impact of agents' expectations when deciding on the future trajectory of the policy instruments consistent with achieving primary objectives (e.g., in the case of the NBU, the main instrument is the short-term policy rate, while the primary objective is inflation at 5% target). To facilitate its forward-looking policymaking the NBU has adopted a Forecasting and Policy Analysis System (FPAS)[3].

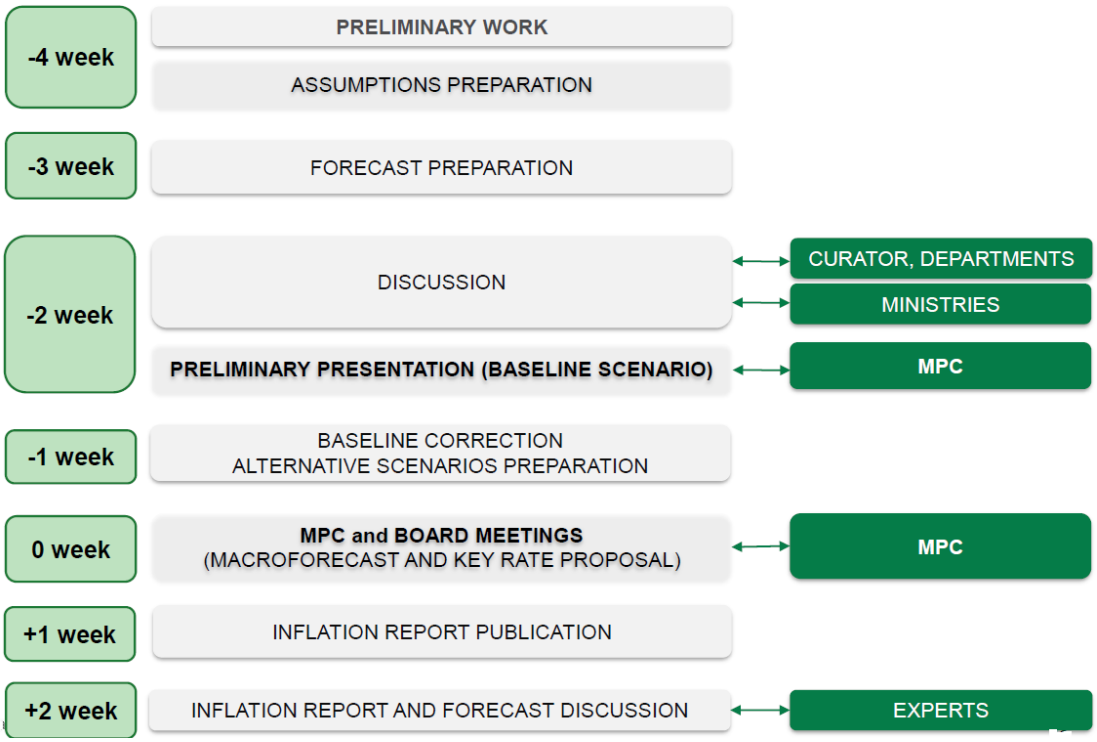
Figure 1. NBU Organization structure as of May 2024



[3] Adrian et al. (2018) define FPAS as a "system for organizing efficient and thorough provision of economic information to enable monetary policy committees to make good decisions."

3. The Monetary Policy and Economic Analysis Department (MPEAD) is responsible for implementing the NBU FPAS. It employs around 40 officials and consists of three divisions and one unit: Monetary Policy division; Macroeconomic Modeling and Forecasting division; Economic Analysis division; and Research unit (see Figure 1). The Economic Analysis division consists of sectoral experts that are responsible for analysis of sectoral data, preparation of nowcasting for CPI components and GDP growth, and the outlook for fiscal and external sectors. The Macroeconomic Modeling and Forecasting division (MMFD) comprises QPM operators and is responsible for model maintenance and forecasting.

Figure 2. NBU forecasting calendar



4. The forecasting round follows an internally pre-announced calendar that starts 4 weeks prior to the final monetary policy decision. The forecasting round includes extensive discussions within the MPEAD, one presentation to relevant ministries and two presentations to the MPC (see Figure 2). The first two weeks of the forecasting round start with preparation of the data, outlook for the fiscal and foreign sectors, and CPI and GDP nowcasts (by the Economic Analysis division) that are discussed with the MMFD modeling team. Next, the modeling team integrates these inputs into the QPM and produces an initial conditions assessment that is presented to members of the MPEAD. Feedback from this presentation is incorporated into the initial conditions. Then the modeling team produces a baseline forecast, which is sent for review to the Deputy Governor who oversees the NBU's monetary policy (currently First Deputy Governor Dr. Sergiy Nikolaychuk). Following this step, the baseline is presented to representatives of the Ministry of Finance and the Ministry of Economy. By the end of the second week, the preliminary baseline forecast is presented to the MPC for review, feedback, and discussion of alternative scenarios. The team has two weeks to incorporate the MPC feedback into the final baseline and produce alternative scenarios that are presented to the MPC during the policy decision meeting.

5. The scoping TA mission identified several areas for strengthening FPAS practices:

(i) **The presentation on the initial (cyclical) position of the economy could usefully be a part of the regular forecast round.** Under standard FPAS practices, the modeling and forecasting team would hold three presentations to the MPC during every forecasting round: (i) initial conditions, (ii) preliminary forecast, and (iii) final baseline forecast. Typically, the NBU team has described the initial conditions only indirectly within the first version of the forecast presentation and the discussion with MPC therefore has had lesser impact on the initial condition assumptions.

(ii) **The NBU team coding capacity was more focused on operating existing analytical tools and needed further development to build a richer analytical toolkit.** In a standard FPAS, various model outputs are prepared by the forecasting team to regularly review the model dynamic properties and examine the forecasts from different perspectives. For example, for the historical interpretation of the data, the equation decomposition serves as an input to assess the initial conditions, identify key drivers of inflationary pressures and imply predictions. These outputs help to build consistent economic narratives, and to focus discussion with sectoral experts on key drivers that affect inflation pressures or economic activity. The NBU team focused the analytical discussions mainly on a shock decomposition report or more frequently on a report on underlying trends and gaps. The NBU team did not produce richer reports explaining the impact of initial conditions and forecast assumptions on baseline projection.

(iii) **The NBU modeling team could benefit from focusing discussions with the MPC around business cycle pressures (underlying trends and gaps dynamics).** Under standard FPAS practices, the forecasting team would discuss business cycle position and inflationary pressures with the MPC using model-based interpretation of trends and gaps. This helps to build a consistent economic narrative and highlight key factors that drive the domestic inflation outlook. The NBU modeling team limited the technical level discussion on model-based outputs.

(iv) **The MPEAD could introduce an FPAS Coordinator role that organizes and manages the workflow during the forecasting round.** It is a standard practice to establish a position of an FPAS coordinator within the department responsible for smooth FPAS implementation. This could be at the level of the MPEAD deputy director, with experience in FPAS implementation, that oversees both modelers and sectoral experts. The FPAS coordinator has the authority to organize the workflow during the forecast round, identify key forecast issues, focus the analytical discussions between modelers and sectoral experts on key areas of interest, and communicate with senior NBU management. Although this role could have been performed at the level of the director of MPEAD, the director oversees a large department with numerous institutional functions and cannot solely focus on the FPAS coordination role.

6. The mission team also identified several potential model extensions that can further strengthen model-based policy analysis and forecasting at the NBU. The NBU team demonstrated their interest in adding four more blocks to their QPM with the assistance of the IMF: (i) the NBU QPM was missing a relative prices block to better capture distinct long-term dynamics of CPI subcomponents and second round spillovers among these components; (ii) the modeling team expressed interest in adding balance of payments (BoP) block based on Berg et al (2023) to better capture pressures that arise from external imbalances that affect domestic variables and policy decisions; (iii) the NBU team was also interested in adding more explicit fiscal block to better capture monetary-fiscal interactions as long as the impact of debt management strategies on inflationary and exchange rate pressures; and (iv) credit sector block to better

account for the pressures stemming from bank lending activities. After the scoping mission the TA mission team devised a medium-term model plan to accomplish these extensions (see Table 1) allowing for a high degree of flexibility to accommodate evolving NBU needs.

Table 1. Adjusted Model development plan.

KEY MILESTONES	EXPECTED TIMING
Development of relative price extension and regime switching in QPM.	2024Q3 (completed)
Launch development of the aggregated Fiscal block.	2024Q4
Launch Expenditure-side decomposition of GDP.	Spring 2025 (omitted)
Launch the development of BoP extension.	Fall 2025
Launch the development of a credit block.	Winter 2026

B. OBJECTIVES AND STATUS OF THE NBU FPAS TA PROJECT

7. At the end of the Scoping mission, the TA team proposed a project workplan envisioning recurring engagement over three years. The workplan envisaged both in-person TA missions and virtual support, including organizing dedicated training to NBU officials on model-based monetary policy analysis and forecasting (MPAF). The TA project focused on two broad and complementary workstreams: (i) reviewing and extending existing QPM and further strengthening modeling and forecasting capacity; and (ii) reviewing existing NBU FPAS processes and further integration of model-based analytical work into NBU's policy processes.

8. During the first year of the project the TA team largely achieved its model development objectives for FY2025. The mission team organized four in-person TA missions held in Vienna in FY2025. The focus of the missions was aimed primarily at the review of the existing NBU QPM, the assessment of its model properties and forecasting performance. After recalibration of the model to improve its forecasting performance, the work was aimed to reflect key features of the economy and shocks, which the economy faces during on-going Russian invasion. At NBU's request, the model development process deviated from the initially agreed plan (see Table 1) to accommodate NBU evolving priorities (i.e., overhaul of the existing external economy and labor sector blocks in the QPM). Nonetheless, the revised QPM has been used as a core forecasting model by the NBU since early 2025. This was officially announced as QPM+ in the NBU's April 2025 Inflation Report.

9. The TA mission team also largely achieved its objective of enhancing the NBU team's coding, modeling and forecasting capacity to produce forward-looking policy recommendations. In addition to an in-person mission, the TA mission team also organized frequent virtual office hours for NBU staff aiming to discuss coding and modeling exercises. These exercises focused on: (i) enhancing the coding skillset and modeling intuition of the NBU staff (ii) strengthening data management procedures, and (iii) reviewing existing nowcasting and near-term forecasting (NTF).

10. The NBU also faces challenges in managing staff turnover and shortages. At the start of the project, the NBU modeling and forecasting team (within the MMFD) included two model operators, one of whom was a team manager. During the first year of the project one of them was promoted to a different

role and the other was promoted to lead the modeling team (both within MMFD). To accommodate this staffing turnover the NBU hired one full-time operator while another economist joined the forecasting team on a part-time basis. The NBU has also requested the IMF to hire a peripatetic expert to further support the forecast rounds and the TA projects. The expert is expected to join the project in November 2025.

11. The mission team has noted several areas for strengthening FPAS practices and shared them with the NBU management via Aide-Memoires. While the NBU largely follows FPAS best practices and model-based forecast is presented to the MPC, the Scoping mission team identified some gaps and shared several recommendations aiming to strengthen the NBU FPAS and align it with international best practice. These are mainly to: (i) extend the forecast calendar with the MPC initial conditions presentation; (ii) include more explicit model-based analysis of business cycle position into MPC presentations; and (iii) appoint an FPAS Coordinator.

12. Throughout the project, the TA team has been in close contact with the EUR Ukraine country team. The mission team communicated with the IMF country team prior to every mission and briefed them on the outcomes after each mission completion. The scheduling of the TA missions was also informed by the country team visits and engagements with the authorities, including in the context of conducting the on-going 4-year IMF Extended Fund Facility arrangement.

C. DEVELOPING ANALYTICAL TOOLS AND BUILDING TECHNICAL CAPACITY

13. Existing nowcasting and near-term forecasting (NTF) tools are of high quality, however, they are limited by data quality constraints. The NBU has developed a broad suite of analytical instruments comprising empirical-based models for producing nowcasts and NTFs for key macroeconomic variables, which inform medium term forecasting process. The data-driven forecasts allow to explore valuable information contained in high-frequency data, which is not explicitly included or considered within the QPM (e.g., google trends analytics, night light intensity, online data on job vacancies and wages) and correlates well with the current-quarter GDP dynamics. While the quality of the tools is high, they are bound to a number of limitations that were exacerbated by Russian invasion: (i) higher volatility and publication lags for conventional data; (ii) larger heterogeneity on regional level; (iii) structural breaks and changes in correlations.

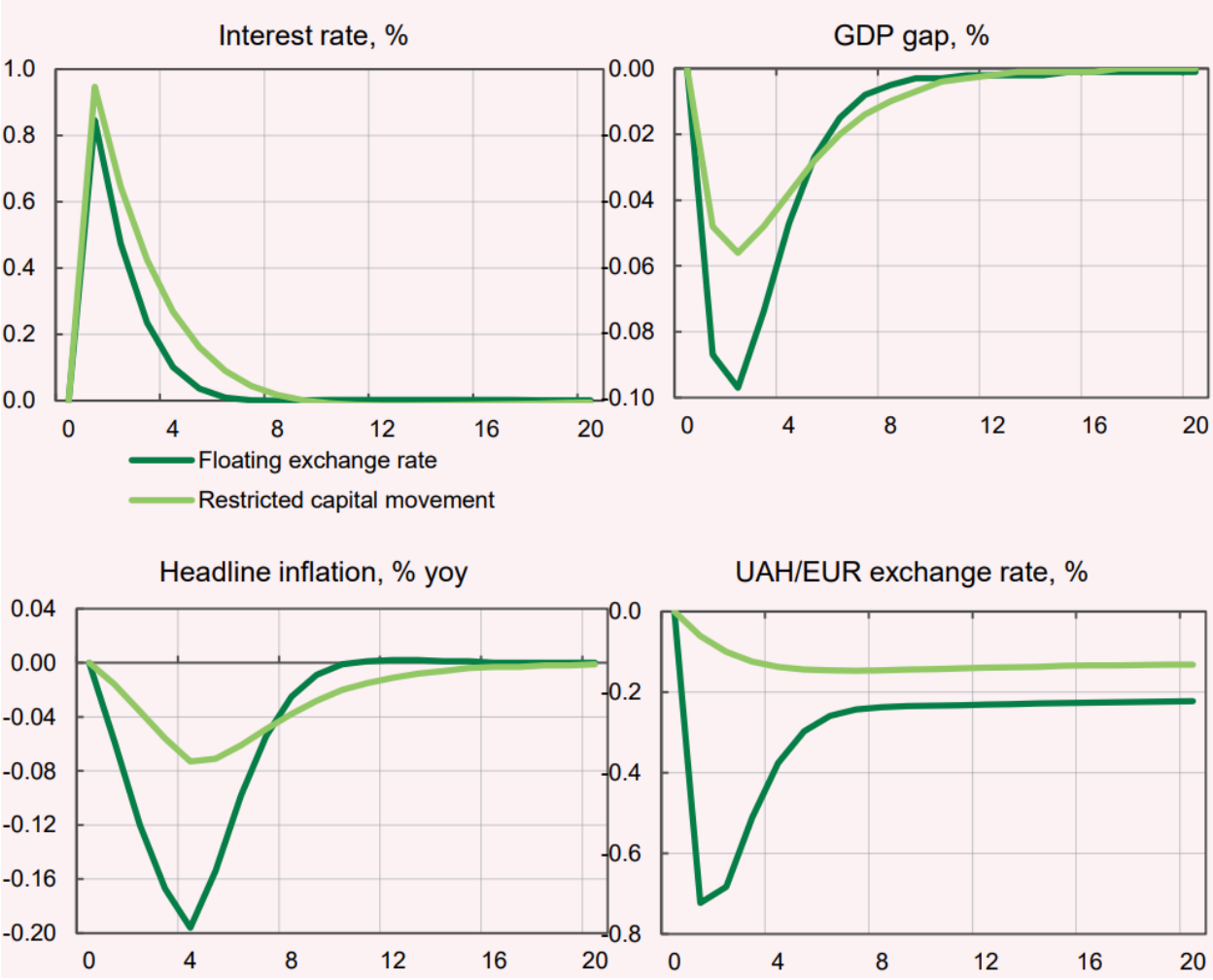
14. The regular medium-term macroeconomic projections have been produced using the semi-structural QPM since 2016. The NBU modeling and forecasting team has been using the QPM to support forward-looking policy making since the launch of the Inflation Targeting regime in 2016. The model has a New-Keynesian four-block core, along the lines of Berg et al. (2006), which was adapted and extended to better reflect the Ukrainian economy. The model was calibrated to match Inflation Targeting framework, however, the policy regime moved toward larger emphasis on exchange rate management in the wake of Russian invasion in 2022.

15. The NBU and the TA mission teams streamlined and extended the existing QPM with more detailed monetary and relative prices blocks. In order to better capture the evolving nature of the policy regime, the mission team elaborated monetary policy block to introduce an exchange rate volatility smoothing into the QPM. It allows to reflect a prevalent regime by changing parameters of modified UIP equation and policy reaction function. The update also allows to reflect gradual adjustments back to pure Inflation Targeting in the future. In addition, the inflation block was augmented to include relative prices to better capture diverging drivers of four distinct inflation components: core, raw food, petrol and administrative prices. The TA mission team also streamlined the foreign economy block to put a larger

focus on main trading partners and enhanced the euro's role in shaping external inflationary pressures and financial conditions to reflect an ongoing re-orientation of trade and capital flows towards Euro Area economies. The existing fiscal and terms-of-trade blocks were removed from the model and will be replaced by new versions of the fiscal and BoP blocks later.

16. The NBU team requested to deviate from the initial plan and extend the QPM with labor block and decomposition of GDP into agricultural and non-agricultural sectors. The NBU team suggested postponing development of the fiscal block and extending the model with a labor block and an agricultural sector. The former helps to capture economic pressures stemming from large outward migration during the war and associated wage and price pressures. The latter helps to interpret distinct inflationary pressures stemming from agricultural sector performance. For instance, a bumper harvest can better explain the simultaneity of high GDP growth and low inflation. The revised QPM has been used as a core forecasting model by the NBU since early-2025. It was officially introduced as QPM+ in the NBU's April 2025 Inflation Report (see Figure 3).

Figure 3. Impulse response to interest rate shock, % (Source: NBU Inflation Report April 2025)



17. The expenditure side GDP decomposition will not be implemented as the data quality limits the usefulness of this extension. The TA mission team and NBU team reviewed the data needed for the

expenditure side GDP decomposition: related deflators, nominal and real GDP. The NBU emphasized a relatively low quality of data for sectoral GDP components (especially GFCF and inventories) and difficulty reconciling business cycle based on overall GDP with business cycle constructed based on sectoral components. Therefore, Dr. Nikolaychuk suggested omitting this extension and prioritizing BoP extension.

18. The mission team assisted with the development of reporting infrastructure and streamlining data management procedures. The NBU team significantly expanded its reporting infrastructure to include and automatically compile: (i) a comprehensive impulse response report that helps to assess model properties during model calibration process; (ii) a detailed historical interpretation report that describes dynamics of key variables, decomposes behavior of key model equations and illustrates distinct drives of business cycle dynamics and determinants of country fundamentals to facilitate initial conditions discussion; (iii) forecast report that has a similar structure to historical interpretation report but focuses on the economic outlook to help build forecasting narrative; and (iv) scenario builder script to assess forecast risks in a transparent manner. In addition, the TA mission team also reviewed and overhauled data management infrastructure to eliminate risk of data pollution, ad-hoc data processing solutions and improve readability and maintainability of the code.

19. The regular virtual office hours allowed for supplementary time devoted to enhancing coding practices. The TA mission team organized regular virtual office hours to discuss coding exercises. A particular attention was given to experimentation with various model structures and calibrations of key behavioral equations to strengthen modeling intuition of the NBU staff and find a version of the model that is best suited to reflect the current monetary policy regime in Ukraine. This sustained engagement was particularly valuable due to the recent addition of junior modelers to the NBU team.

D. INTEGRATION OF FPAS INTO INTERNAL PROCESSES AND EXTERNAL COMMUNICATIONS

20. NBU FPAS practices are largely in line with international standards. The model-based analysis carried out by the MMFD is in accordance with a pre-announced forecasting calendar, and the MMFD manages deadlines and responsibilities for deliverables, following this forecasting calendar. The critical tasks that the MMFD performs are to:

- Identify and perform the tasks related to the quarterly forecasting cycles;
- Integrate medium-term and near-term forecasts, identify risks, build alternative scenarios;
- Compile macroeconomic forecasts by reaching collective and consensual views;
- Draft materials destined for internal and external communications;
- Present analysis and interact on them with management;
- Build a forecast narrative based on model outputs and present policy recommendations consistent with monetary policy objectives.

21. The MMFD includes two full-time model operators that interact with other divisions to obtain sectoral judgements and external sector assumptions. These two full-time model operators (one of whom is the head of the modeling unit) maintain, use and develop the QPM infrastructure, and produce the model-based analysis. A separate division supplies the modeling and forecasting team with sectoral expertise and forecast judgements (e.g., inflation NTFs, agricultural outlook, fiscal outlook, external sector outlook etc.)

22. The TA project highlighted several FPAS operational risks. These, along with the mitigation measures, were extensively discussed with NBU staff and management during the TA engagements and shared via Aide-Memoires. These include:

- Amount of model operators is insufficient → extend it by hiring more staff; consider both internal mobility and new hires options;
- Risk of excessive turnover → make sure there are backup staff; document FPAS tools and processes; practice MMFD staff rotation to broaden the skillset across individual staff;
- Key person risks → make sure analytical knowledge and skills are spread more broadly and there are backup positions; make use of documentation materials (including published Working Papers) to initiate new staff.

23. The forecasting process and the corresponding analytical workflow take place on quarterly basis, and given the NBU policy making process is conducted over four MPC sessions per year (out of eight). The dates of the MPC meetings and decision announcement dates are posted in advance. In practice, the forecasting process is complex, involving many stages, data processing and use, application of a wide suite of models, and various human interactions. As such, the organization of the processes is fundamental for timely and continuous provision of analytical results, as well as for accumulation of capacity. Broadly, the regular internal forecast calendar specifies for each round:

- Timing of meetings, deadlines, responsibilities and deliverables;
- Tasks performed by staff, structure to the overall workflow and internal communications (horizontally and vertically);
- Coordination within the MMFD and with management.

24. Initial conditions presentation to the MPC is missing. Under standard FPAS practices, the modeling and forecasting team would hold three presentations to the MPC during the forecasting round: (i) initial conditions, (ii) preliminary baseline forecast, and (iii) final forecast. The NBU does not have the initial conditions presentation. Instead, the first presentation to the MPC focuses on the preliminary baseline forecast. In the TA mission team's view, the preparation of the initial conditions presentation to policymakers is fundamental to building deeper understanding of recent developments and their implications for model-based forecasting and policy analysis. Such a presentation necessitates building a consistent narrative about current economic conditions and allows senior decision-makers to provide views and constructive feedback on the initial conditions.

25. The modeling team limits the discussion with the MPC to the headline numbers instead of seeking their input to identify underlying trends and gaps. Under standard FPAS practice, the forecasting team would discuss with the MPC business cycle position and inflationary pressures using model-based interpretation of trends and gaps. This helps to build a consistent economic narrative and anchor the MPC on key factors that drive the inflation outlook. The NBU modeling team does not discuss underlaying trends and gaps of a business cycle with the MPC. This requires long and detailed presentations that cover all areas of the economy instead of providing the MPC with concise analysis and policy messages, focusing their attention on key drivers of the outlook.

26. The MPEAD is missing an FPAS Coordinator that organizes and manages the workflow during the forecasting round. It is standard practice to establish a position of FPAS coordinator within the department responsible for FPAS implementation. This could be at the level of the MPEAD deputy director, with experience in FPAS implementation, that oversees both modelers and sectoral experts. The FPAS coordinator would have the authority to organize the workflow during the forecast round, identify key

forecast issues, focus the analytical discussions between modelers and sectoral experts on key areas of interest, and communicate with senior NBU management.

E. FORTHCOMING ENGAGEMENTS

27. The upcoming TA missions will aim at further model extensions focusing on balance of payments and fiscal blocks. Prior to the next TA mission in August 2025 the mission team connected virtually with the MMFD members and agreed not to pursue the expenditure side GDP decomposition due to data limitations. Therefore, going forward, the modeling TA workstream will focus on BoP and fiscal blocks. These extensions will help to better capture pressures that arise from external imbalances and monetary-fiscal interactions that affect domestic variables and policy decisions. In addition to the model development work, the TA team will continue developing MMFD's model intuition and capacity to analyze additional variables and policy interactions that will be reflected in BoP and fiscal blocks. The TA team will also continue practicing preparation of shadow forecasts using QPM+ together with the NBU team. In parallel, the mission team will work together with the NBU team on a design of a template for an MPC initial conditions presentation and roadmap to integrate it into the forecasting calendar.

28. In parallel, the TA team will work together with the newly hired Macroeconomic Frameworks Resident Advisor at the NBU on further strengthening the FPAS procedures at the bank. The Resident Advisor will reside in Vienna and travel to Kyiv on quarterly frequency to join the MMFD during forecasting rounds in-person. The Resident Advisor will support the FPAS, including advising on the model-based forecasting and analytical framework and re-designing the forecasting calendar to incorporate enhanced presentation development and delivery. The advisor will also work on strengthening the NBU's forecasting procedures and processes, assist the MMFD staff with analysis of economic developments and preparations of the forecasts using the NBU QPM+. The advisor will commence work in November 2025 and will join the FPAS TA missions held in Vienna.

29. The TA team will remain in a close contact with the EUR Ukraine country team. The TA mission's work has benefited from close cooperation with the EUR team. The TA team will remain in close communication and cooperation with the IMF country team to ensure that TA recommendations are aligned with the objectives underlining the IMF lending program with Ukraine.

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