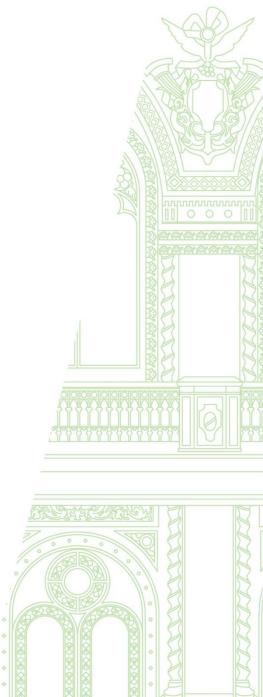


National Bank of Ukraine and Policy Framework

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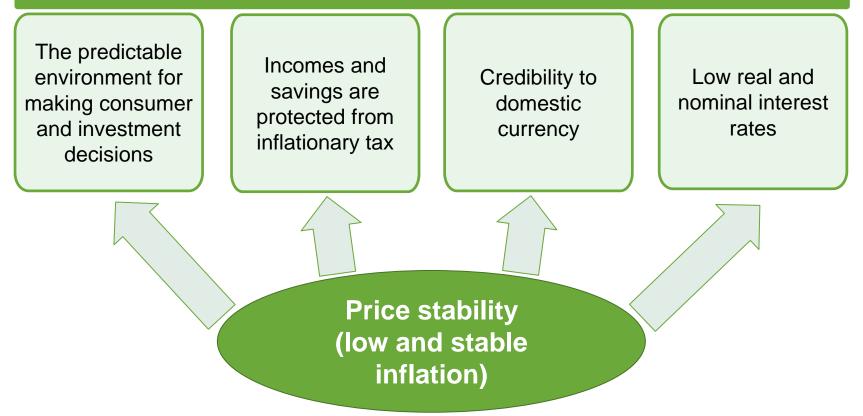
January 2024



1. Modern approaches to monetary policy







- Inflation is always and everywhere a monetary phenomenon (M. Friedman)
- The unique CB's function to supply money for the economy naturally
 determines responsibility of CB for the price stability



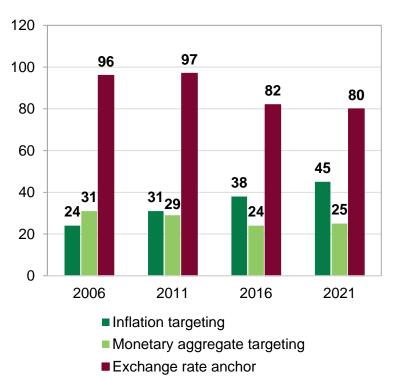
Monetary frameworks

Regime	Nature	Advantages	Disadvantages	
Fixed exchange rate	Maintaining the exchange rate stability	Allows to reduce inflation fast Clear targets, well perceived by the population	Monetary policy losses its independence Economy suffers from shocks and financial instability	
Monetary targeting	Determining the target level of money growth	High level of coordination between monetary policy and macroeconomic policy Fast response in the case of target change	Precondition is a stable demand for money For general public it is not easy to understand	
Inflation targeting	CB's responsibility for achievement of inflation target	Long-term objective with short- term flexibility Systemic approach and predictability	Effects of non-monetary factors on inflation Anchoring inflation expectations takes up time	
Nominal GDP level (or growth) or price level targeting	Commitments to maintain a certain level (or growth rate) of nominal demand or a certain level of prices	Mixed objectives of CB (balancing between inflation and output gap) Commitment to speed up inflation in a future	Delays in GDP data publication, frequent updates Absence of prioritization of objectives, difficulties with communications and accountability	



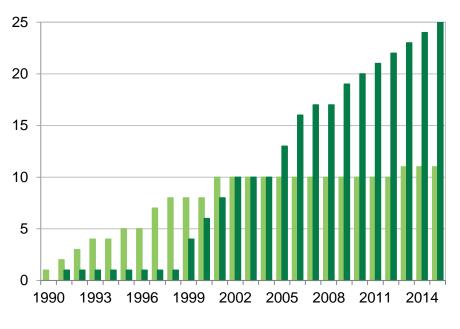
The popularity of the inflation targeting regime is growing ...

Monetary policy framework



Source: IMF, Annual Reports on Exchange Arrangements and Exchange Restrictions, 2006, 2011, 2016, 2021

Countries with the IT regime, 1989-2015



Advanced countries

Emerging Markets

Source: Klaus Schmidt-Hebbel, Martín Carrasco (2016)



Inflation as the only quantitative target

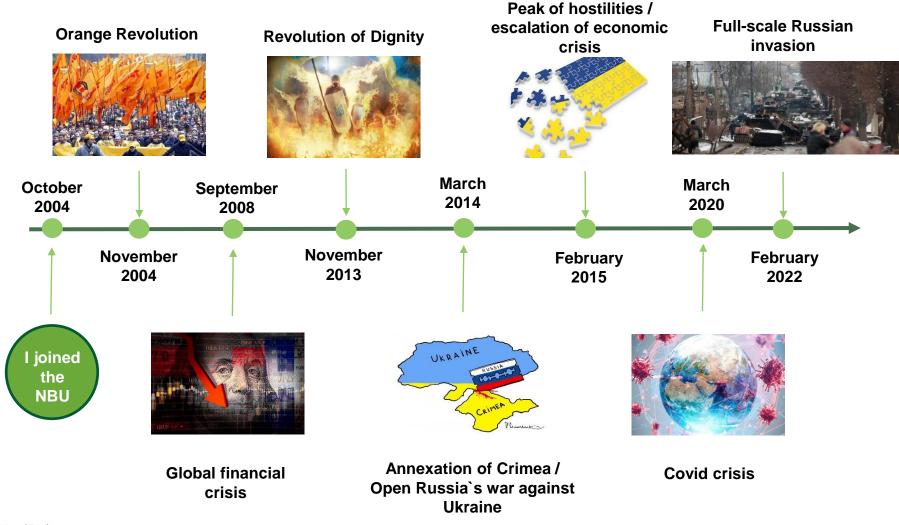
Clear institutional mandate for the central bank to achieve it

A collection of modern central banking practices

- Changes the way monetary policy is done
 - Relatively flexible exchange rate
 - Policy based on interest rate changes
 - Strong emphasis on forecasts and analysis of risks
 - Focus on transparency and accountability
- Appealing long-term solution for many countries
 - Some adopted it out of necessity in a balance-of-payments crisis

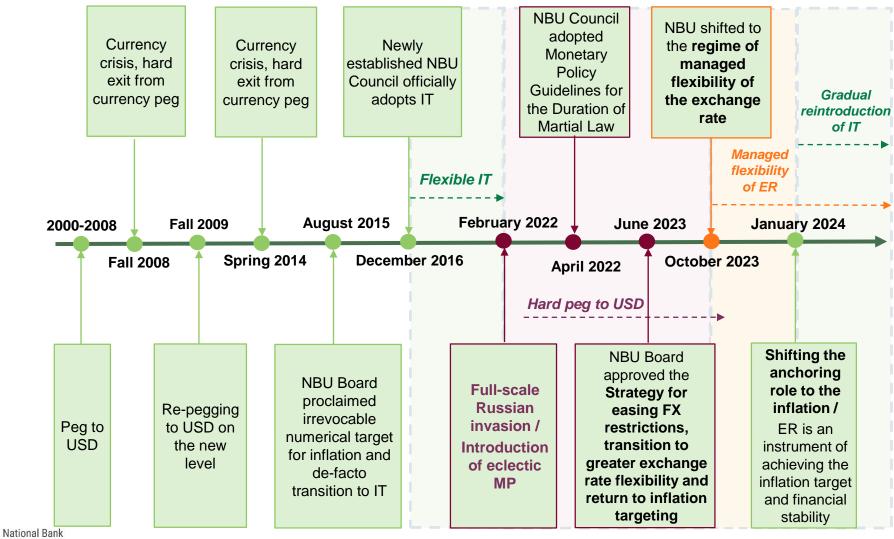
2. Evolution of monetary regime in Ukraine

The general context of economic policy is hardly predictable. Hence, Ukraine needs the highly credible monetary policy





Evolution of monetary regimes in Ukraine



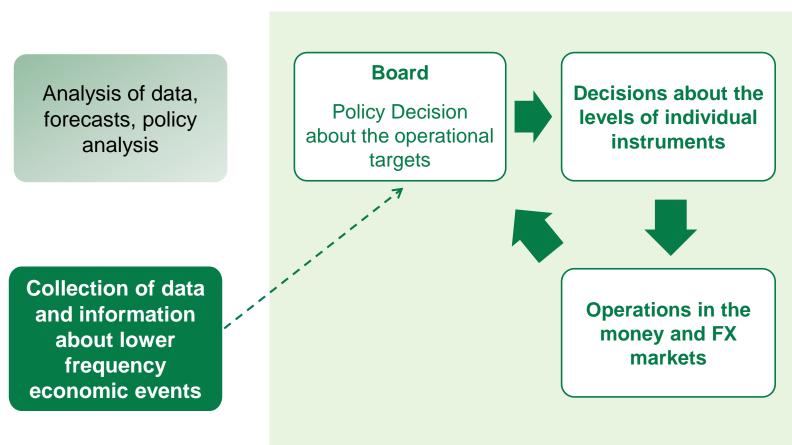


To be credible there is the need to have clear monetary strategy

	Before IT (-2013)	After IT adoption (2016-)
Objectives	Numerous and changeable objectives (ER, monetary aggregates, FX restrictions etc.)	Irrevocable inflation target
Decision making	De facto individual, non- transparent, lacking analytical support	Collegial, forward-looking, transparent
Instruments	Numerous instruments (interest rate, exchange rate, OMO, reserves requirements, refinancing loans)	One main instrument – key policy rate
Exchange rate regime	Peg to USD	Floating exchange rate
Transparency & predictability	Non-transparent central bank, incomprehensibility of goals, decision-making process, expected results	Transparency, communication with different target groups on the plans, goals and reasons behind the decisions



The pre IT period: chaotic decision-making, disrupted information flows, nothing to communicate

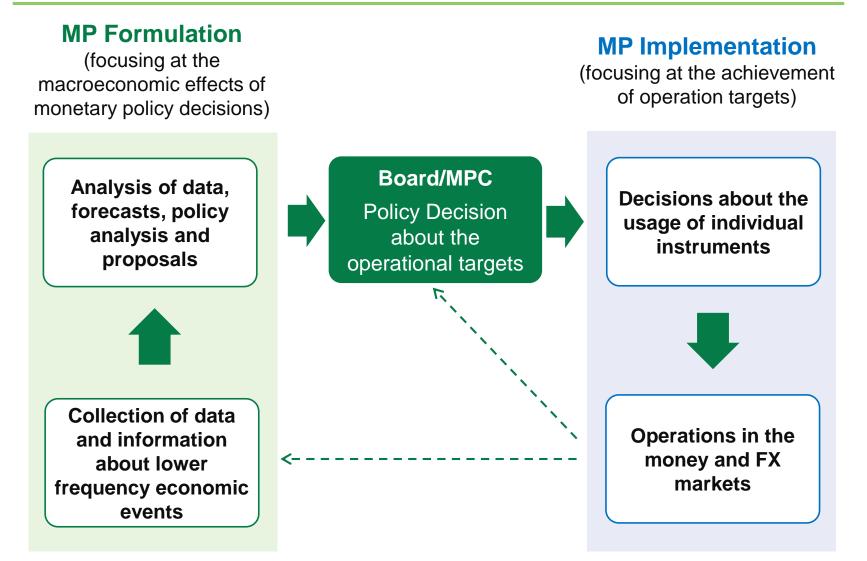


MP Formulation and Implementation

National Bank of Ukraine

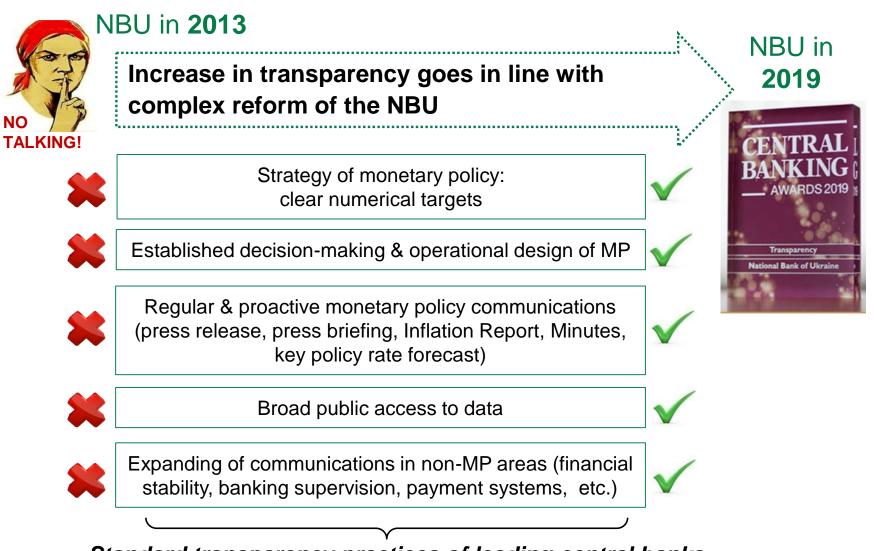


After IT introduction and nowadays: clear monetary policy decision-making as key prerequisite for communication



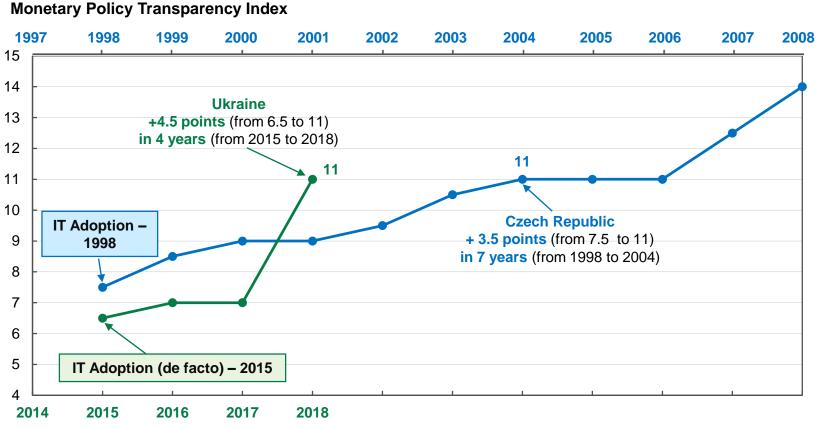


Implementation of best practice in communications is bringing central bank to another reality (case of the NBU)



Standard transparency practices of leading central banks

Communications are additional policy tool as well. The NBU used existing experience in order to achieve fast results



Source: Dincer/Eichengreen/Geraats Central Bank Transparency Data for 1998-2019.

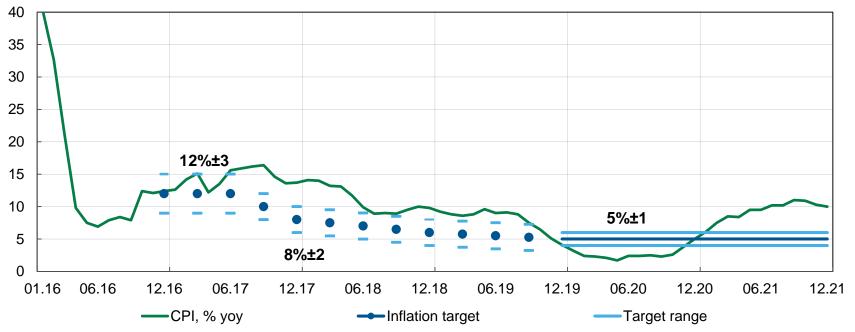
The NBU, following the examples of leading central banks on targeting inflation, has an opportunity to minimize the time lag between IT adoption and achieving a high level of monetary policy transparency

3. The NBU's monetary policy before full-scale invasion



Cornerstone of new monetary policy: adherence to announced inflation targets

CPI and Inflation Targets



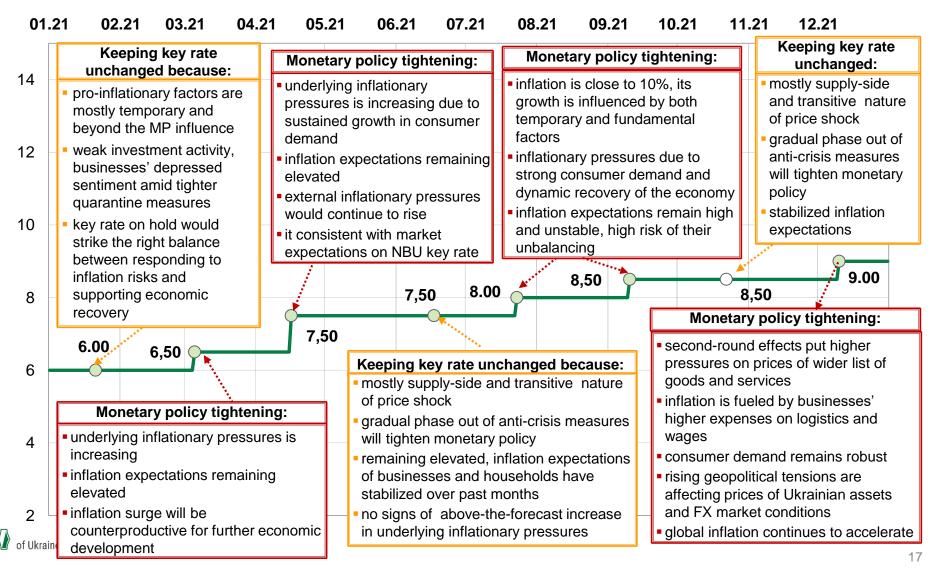
Source: SSSU, NBU staff estimates.

- The NBU started the transition to Inflation Targeting regime in 2015 in the midst of severe economic crisis
- In July 2018, the NBU Council adopted the Monetary Policy Strategy that confirms that the NBU will carry out its monetary policy based on the inflation targeting and its medium term inflation target of 5%

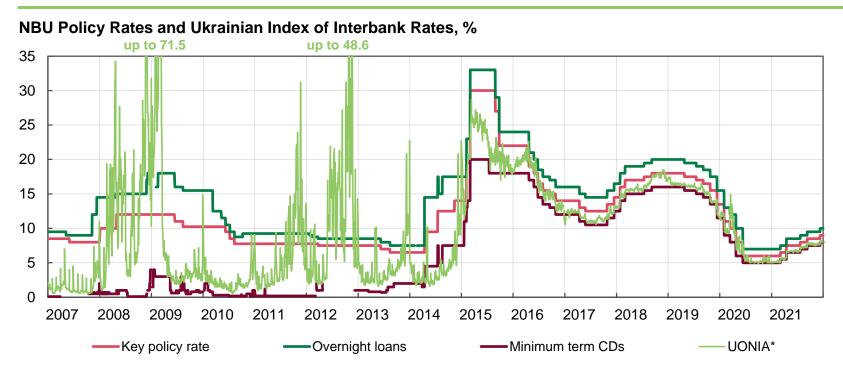
The mid-term inflation target could be revised only downwards

The NBU monetary policy decisions aimed at bringing inflation to 5% target and keeping inflation expectations under control

Key rate, %



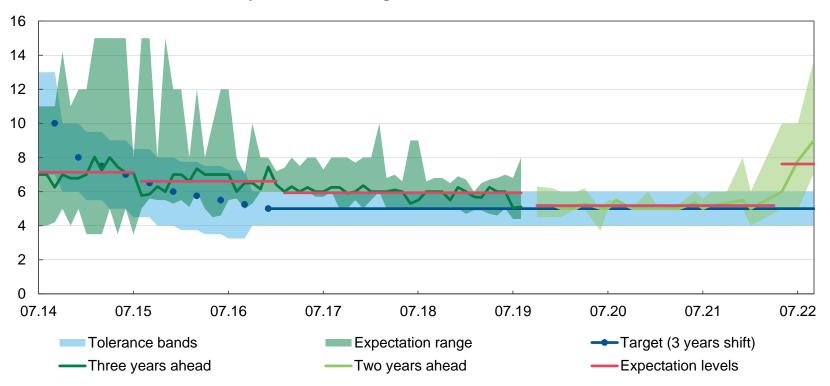
Monetary transmission has strengthened thanks to the NBU's efforts to enhance the role of the key policy rate



* Before 25.12.2015 – average interbank interest rate, 25.12.2015 - 22.06.2020 – overnight interbank (UIIR). Source: NBU.

- Prior to 2015, the interest rate channel of monetary transmission mechanism was quite weak as key policy rate played a rather symbolic role in the money market
- Since 2015, IR pass-through improved significantly, particularly after the NBU switched to a new operational design of its interest rate policy
- The agenda for strengthening pass-through is still large, including broadening and deepening of the local financial market, developing capital market, reducing dollarization, etc.

Credible inflation targeting showed fast results. Level in inflation expectations gradually approached the target

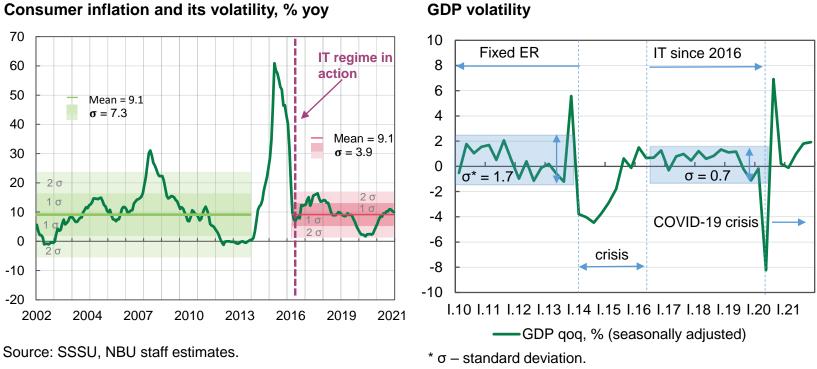


Medium-term IE of financial analysts and their range*, %

* Median value. The estimation of IE levels was done using the <u>Bai and Perron (2003)</u> methodology. Source: NBU.



The results of credible monetary policy

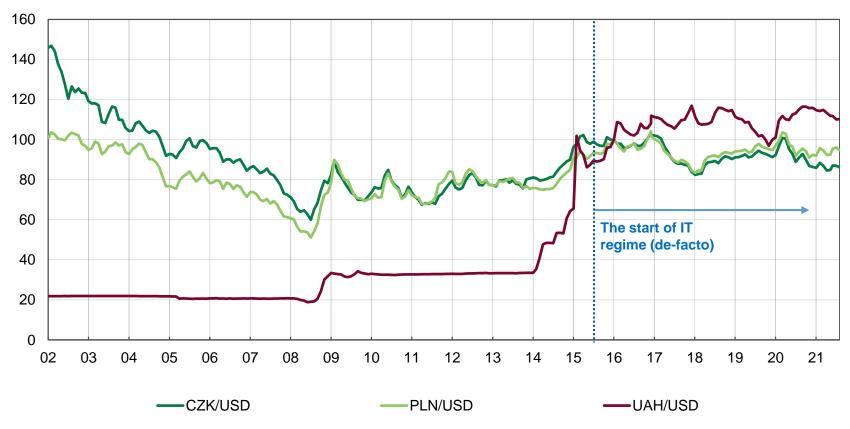


GDP volatility

Source: SSSU, NBU staff estimates.

Inflation targeting in the long run provides a more stable exchange rate than a peg...

Exchange rates of hryvnia, Czech koruna and Polish zloty to US dollar, Jan-2016=100

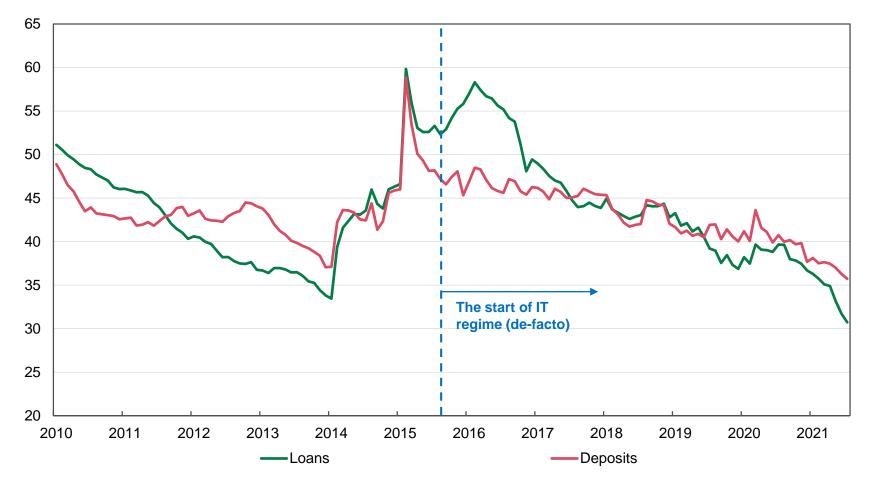


Source: IMF, NBU estimates.



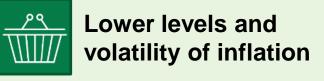
...and maintains a steady trend towards de-dollarization of the economy

Share of loans and deposits in foreign currency, %





TOP-5 NBU's achievements due to IT and floating exchange rate





Shock-resistant foreign exchange market



Cheaper financing for households, businesses and government



Liquid and stable banking system



Sustainable economic growth support



AS A RESULT

The Ukrainian economy faced russia's full-scale invasion with a greater margin of safety, compared to previous crisis episodes

Together with the measures of the NBU and the government, this allowed to prevent a panic and FX crises, ensure smooth functioning of the banking and payment systems, uninterrupted financing of Ukraine's defense needs and other critical budget expenditures, to ensure persistent disinflation and return to economic growth



Thanks to the operative actions of the NBU, the economy overcame the first difficult months of the war and was able to adapt to new conditions

4. Monetary policy during full-scale invasion



The full-scale russian invasion started on 24 February 2022





Source: NBU.

- The bombardments started in the early morning at 4:00, February 24
- Occupants invaded eight regions of Ukraine and in several hours were at the outskirts of Kyiv, the capital



The factual invasion was a shock, but we had prepared the action plan in advance

The bombardment of Ukraine started at 4:00

At the begging of business day, **9:00**, the NBU published **the list of measures it introduced to sustain financial stability**

How Ukraine's Banking System and FX Market Will Work from 24 February 2022 Under Martial Law Throughout Ukraine

The National Bank of Ukraine has passed a Resolution outlining how Ukrainian banks will operate now that martial law has been imposed throughout the country. Martial law is a special regime under which:

24 Feb 2022 9:52

- Banks ensure the uninterrupted operation of their branches unless doing so puts at risk the lives and health of the public.
- Banks continue to operate subject to the restrictions stipulated by this Resolution.
- Banks provide uninterrupted access to safe deposit boxes.
- It is ensured that all cashless payments go through without limitation.
- ATM cash replenishment is carried out without restrictions.
- The NBU provides unlimited cash support.
- The NBU grants unlimited unsecured refinancing loans to banks, with up to one-year maturity and an option to extend the loan by another year, so that banks can maintain their liquidity.
- Payments to and by the Ukrainian government are made without restrictions, in accordance with legislation governing this special period.

The Resolution also imposes temporary restrictions, effective 24 February 2022. Those include measures that:

- suspend the operation of Ukraine's FX market, except for FX sales by customers
- fix the official exchange rate for 24 February 2022
- limit cash withdrawals from client accounts to UAH 100,000 per day (excluding salaries and social benefits), except for businesses and institutions that ensure the implementation of the government's mobilization plans (objectives) and entities that have the NBU's special permission to operate without paying commissions
- prohibit the release of cash from client accounts in foreign currency, except for businesses and institutions that ensure the implementation of the government's mobilization plans (objectives) and entities that have the NBU's special permission

These measures aim to ensure the reliable and stable operation of Ukraine's financial system and facilitate the fullest support for activity of the Armed Forces of Ukraine, as well as the smooth operation of critical infrastructure.

National Bank of Ukraine

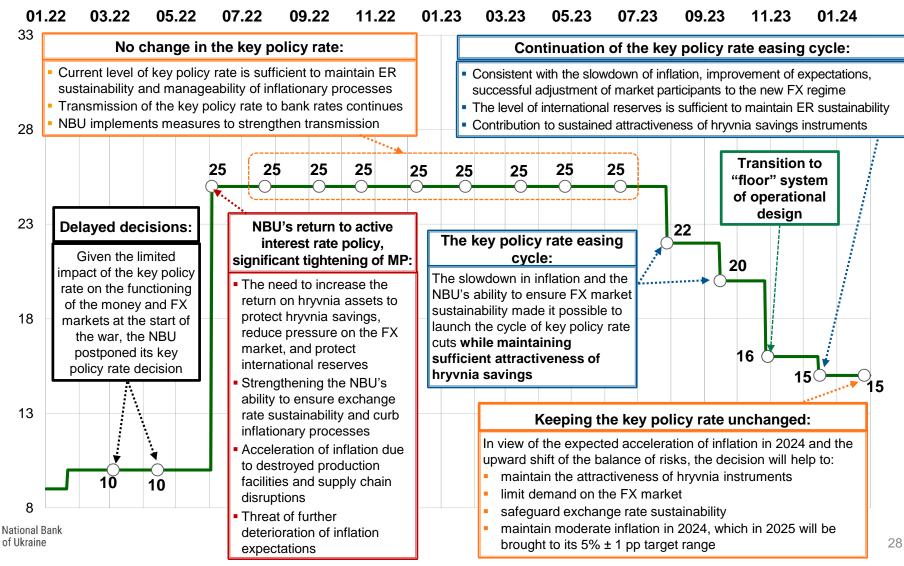


The evolution of monetary policy: creating predictability in the fast-changing environment

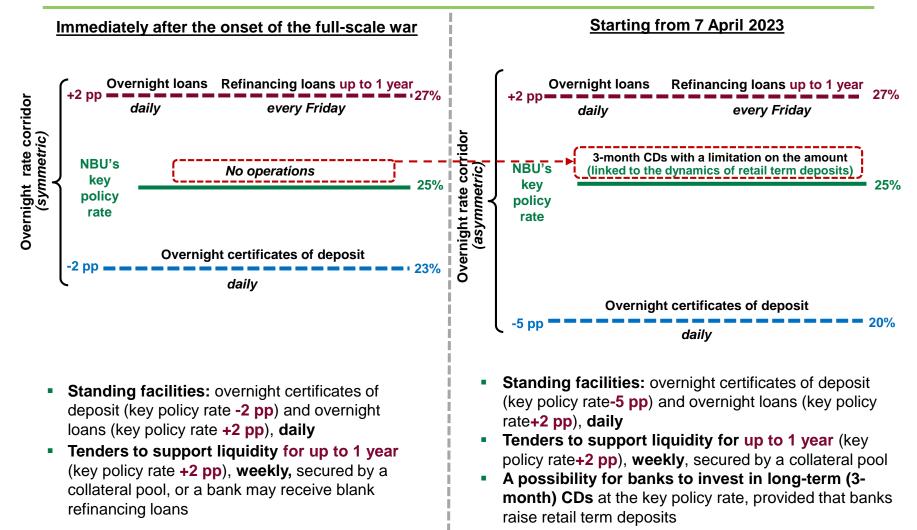
	The first shock of the war	Lasting war	On the way to the Victory	Peaceful time
Stages	Monetary policy Guidelines for the period of martial law			
TASKS	 Prevent panic Ensure the smooth functioning of the banking and payment systems Ensure uninterrupted financing of Ukraine's defense needs and other critical budget expenditures 	 Support the adaptation and stable functioning of the economy under martial law Minimize monetary financing of the state budget Manage inflation expectations 	 Ensure persistent disinflation and ER sustainability Maintain the attractivness of UAH assets Maintain a sufficient level of international reserves Prepare conditions for reintroduction of inflation targeting Avoid monetary financing 	Return to inflation targeting (as before the full-scale war)
MAIN ACTIONS	 Bank liquidity support, including anti-crisis tools Tight FX restrictions Fixed ER Budget support Restraining from key policy rate changes 	 One-time correction of the official ER and defending the new level of the UAH/USD exchange rate Return to active interest rate policy Transition from lender of last resort to market maker of last resort (reducing the role of refinancing) Recalibration of MP operational design and strengthening monetary transmission Recalibration of FX restrictions 		

The key policy rate plays an important supporting role for ensuring the ER sustainability as temporary nominal anchor

Key policy rate, %



In April 2023, an unconventional operational design of the interest rate policy was introduced





Innovative operational design contributed to enhanced competition for term deposits among banks...

Incentives for banks to attract more UAH term deposits from households:

High premium for new 3-month CDs as compared to overnight CDs (\downarrow from 5 pp to 4 pp over the year)

+ Multiplier effect: banks can compensate for the difference in the cost of funding from term deposits and from funds on current accounts
 + Cheaper rollover: banks compensate part of their interest expenses from the rollover of term deposit balances at the new increased rates



1. Active banks increase interest rates on UAH term deposits to benefit from NBU stimuli 2. Other banks are **forced to at least follow the market** not **to** lose customers, whose trust is always difficult and expensive to win back 3. Banks with only overnight CDs lose out both due to changes in the operational design and revised calculation of reserve requirements

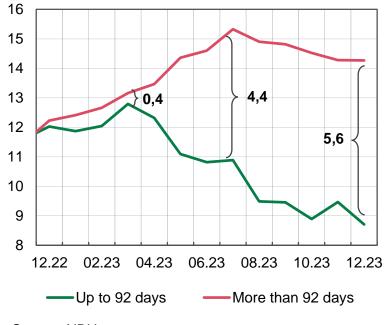
Banks attract longer deposits and channel liquidity towards 3-m CDs

...and the overall policy mix supported the increase of interest rates on UAH term deposits...

on hryvnia retail term deposits, % 30 25 20 Introduction of 3M CDs 15 10 of RR ratios and revision of **RR** calculation methodology 5 01.22 04.22 07.22 10.22 01.23 04.23 07.23 10.23 Overnight rate (NBU CDs) Expected rate* Key policy rate - Weighted average interest rate on term retail deposits *The post effects of the key policy rate change starting from June 2022 are taken into account Source: NBU staff estimates.

Expected and current weighted average interest rates

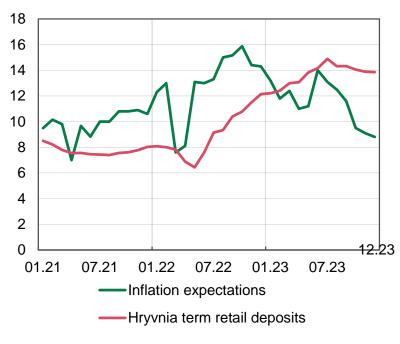
Weighted average interest rates on hryvnia retail term deposits, %



- Source: NBU.
- After the NBU shift to a cycle of interest rate policy easing in July, 3M CDs have been helping to restrain the reduction in interest rates on UAH households` term deposits
- Interest rates on hryvnia retail deposits for up to 92 days tenors have been declining since the introduction of 3-month-CDs (-2.9 pp in March–December), while rates on longer-term retail deposits still remain 1.1 pp higher than in March, despite the key policy rate cuts

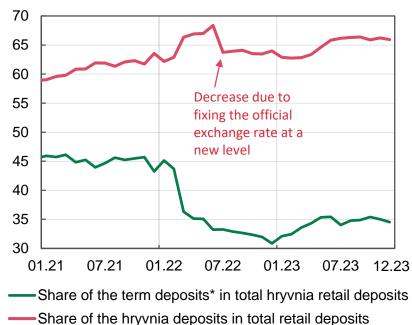
...higher real rates strengthened attractiveness of UAH term deposits for households

Weighted average interest rates of hryvnia retail term deposits and 12-month-ahead inflation expectations of HHs, %



Source: NBU, Info Sapiens.

Shares of some types of retail deposits, %



- adjusted for the approximate amount of deposite with the

* - adjusted for the approximate amount of deposits with the right of early termination, which are accounted for as term deposits Source: NBU.

The attractiveness of UAH assets remains the crucial prerequisite for supporting the exchange rate sustainability

Bank clients' FX transactions* and NBU Hryvnia exchange rates, UAH per USD interventions, USD bn 0,5 45 0,0 -0,5 40 -1,0 -1,5 35 -2,0 -2,5 30 -3,0 -3.5 -4.0 25 01.22 07.22 01.23 07.23 12.23 01.22 07.22 01.23 07.23 12.23 NBU's interventions Balance of customer operations Cash market ask Gray market ask * Net sale and purchase of noncash and cash foreign currency ----Official exchange rate by bank clients (Tod, Tom, Spot).

Source: NBU.

Source: NBU, open data sources.

- Attractive yields on hryvnia instruments and sufficient volumes of the FX interventions helped to preserve the sustainability of the FX market. Further progress in liberalization of the FX market which ensured an effective link between the noncash and cash segments of the FX market, also had a stabilizing effect
- The NBU continues to focus on maintaining the sustainability of the FX market and smoothing exchange rate fluctuations via FX interventions



Favorable macroeconomic conditions allowed the NBU to start FX restrictions loosening, as well as KPR easing cycle ...

According to the <u>Strategy</u>*, implementing any particular step of the Strategy will be informed by an assessment of a set of following macroeconomic preconditions being met:

0	Inflation and inflation expectations	 Consumer and core inflation decreased faster than forecast Exchange rate and inflation expectations of different groups of respondents have improved significantly 	Sufficient real
٢	Real interest rates and the attractiveness of hryvnia instruments	 Interest rates on term deposits cover both expected inflation and the anticipated change in the exchange rate 	yields on hryvnia instruments
0	The level of international reserves and sustainability of the FX market	 In 2023, the FX market situation remained sustainable Ukraine's international reserves have consistently remained at a sufficiently high level 	Acceptable risk for ER sustainability
0	Financial stability parameters	 The banking system remained stable, despite the challenges posed by the full-scale war 	and financial stability

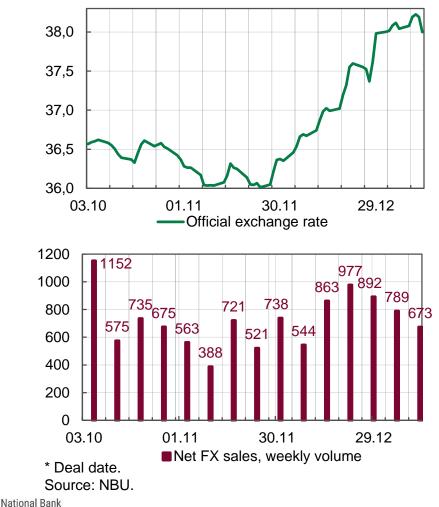
- A steady decline in both consumer and core inflation, as well as improved inflation expectations, underpin a sufficient real yield on UAH instruments
- The international reserves and FX interventions dynamics were better than forecast, indicating acceptable risk for exchange rate sustainability and financial stability
- These conditions allowed the NBU to ease some FX restrictions, launch a key policy rate reduction cycle, and ensure a smooth transition to managed flexibility of the exchange rate without threatening the attractiveness of hryvnia savings and thus exchange rate sustainability and the steady decline in inflation



of Ukraine

...and to switch to managed flexibility of the exchange rate in October 2023

UAH per USD exchange rate and NBU's net FX sales* after the transition to managed flexibility (03/10/2023 – 12/01/2024)



Principles of the NBU's FX and exchange rate policy:

- 1. Focus on maintaining exchange rate sustainability via:
 - > compensating for the structural FX deficit
 - smoothing excessive exchange rate fluctuations
 - keeping the hryvnia sufficiently attractive
- 2. Ensuring the both-sided exchange rate fluctuations
- 3. Gradual increase in exchange rate fluctuations
 - conditional on macrofinancial prerequisites
- 3. Minimization of multi-currency practices



The mix of policy tools contributed to macroeconomic stability

Significant hike in RRRs and changes in the mechanism for calculating the required reserves for hryvnia and FX demand deposits and current accounts

Introduction of long-term 3-month CDs at the key policy rate, provided that banks accummulate retail term deposits

Modernization of the NBU's monetary policy operational design in line with the "floor system"

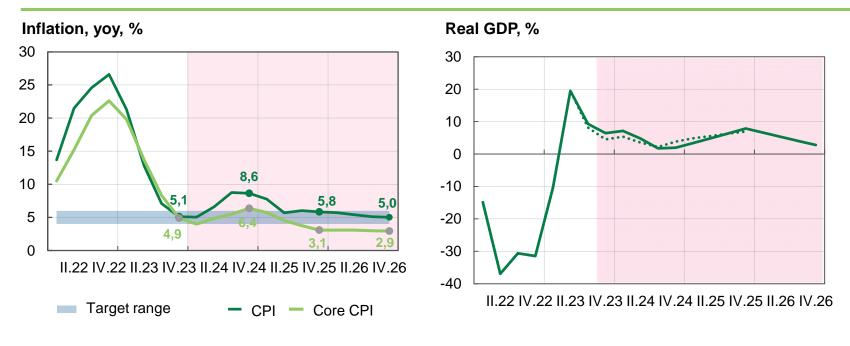
- enhanced monetary transmission
 increased the banks' competition for retail term deposits
 lower risks associated with the banking system's structural surplus of liquidity
 lower market distortions
 - increased attractiveness of hryvnia savings
 - higher incentives for banks' to attract hryvnia retail term deposits
 - lower risks to the FX market and international reserves
 - short-term interbank rates closer to the KPR, which reinforces its status
 - Higher NBU's capability to affect the cost of medium- and long-term financial resources, the expectations of economic agents
 - enhanced effectiveness of MP decisions, and MP communications

 steady disinflation

- improved expectations
- sustainable exchange rate

of Ukraine

NBU's policies will support moderate inflation, while the economy continues to recover



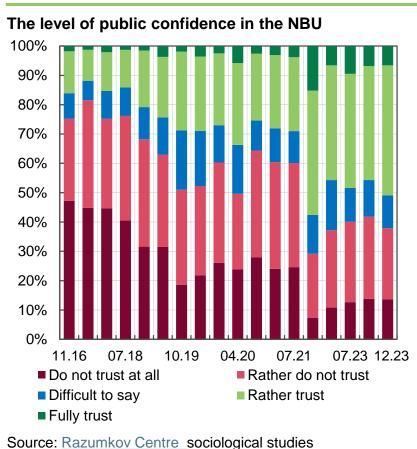
Source: SSSU, NBU staff estimates.

Source: SSSU.

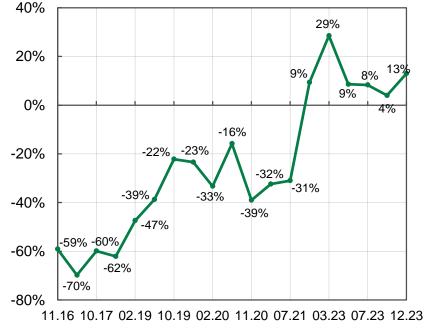
- In 2023, inflation slowed markedly, including thanks to the NBU's consistent monetary policy. The achievement of moderate levels of inflation makes it possible to strengthen its role as a nominal anchor
- Despite the expected acceleration of inflation in 2024, it will remain moderate and will return to the target range of 5% ± 1 pp over the monetary policy horizon due to the NBU's measures to maintain exchange rate sustainability, the attractiveness of hryvnia asset, and decline in security risks
- **Real GDP** retuned to growth and will reach at least 5.7% in 2023 (after the decline by 28.8% in 2022). Resilience of the Ukrainian economy and the persistent adjustment of businesses and households to wartime conditions, stable energy supply, rebound in domestic demand, record-high yields, faster National Bank expansion of alternative export routes, and substantial budget support are the main drivers



Credibility is the most valuable resource for the central bank



Trust-mistrust balance*



*Difference between share of those who trust and share of those who don't trust it

Source: Razumkov Centre sociological studies

- _____ 0
 - Despite a full-scale war trust-mistrust balance for the NBU became positive



Key achievements so far

Despite russia's full-scale invasion and terrorist attacks, **the financial system and the NBU are operating well and supporting Ukraine's defense needs**

The hryvnia continues to perform its monetary functions. Ukraine has managed to avoid the worst-case scenario: a demonetization of the economy

NBU's commitment to its mandate to ensuring price and financial stability **paid off**. Macrostability is crucial for the country's defense capability under the martial law and for the subsequent rapid recovery

NBU applied a mix of traditional instruments (ER sustainability, racalibration of capital controls) and **unconventional tools** (unconventional operational design, instruments for households to hedge against FX risks etc) to achieve its targets

The NBU managed to strengthen MP transmission to deposit rates and encouraged competition among banks for depositors' UAH savings, **keeping UAH assets attractive**. That allowed to decrease speculative motives among FX market participants and minimize FX interventions

The NBU keeps moving forward along the `Strategy for easing FX restrictions, transition to greater exchange rate flexibility and return to inflation targeting`



National Bank of Ukraine

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