National Bank of Ukraine

Inflation Report (April 2023)

9 May 2023

Summary: monetary decisions

- Inflation deceleration, inflation expectations lowering, and external sustainability improvement in recent months **provide grounds for easing monetary conditions**
- At the same time, **the encouraging trends are ensured not least due to tight FX restrictions and fixed exchange rate (ER), which a-priori are temporary solutions**, optimal only in a relatively limited time perspective
- **Therefore, the liberalization of FX market becoming increasingly urgent in the foreseeable future.** With uncertainty still being high and the risks of current account balances growing further amid significant budget expenditures, **the key prerequisite for preserving exchange rate sustainability and sustaining the decrease in inflation is to make sure that hryvnia savings are attractive. With this in mind, the NBU Board decided to keep the key policy rate at 25%**
- Keeping the key policy rate high will **support the effects of the NBU's previous measures and leave room for further growth of attractiveness of hryvnia savings**
- At the same time, given the improved macroeconomic situation, including a deeper decline in inflation and the accumulation of a comfortable amount of international reserves, **the expected trajectory of the key policy rate was revised in the updated macro forecast – the beginning of a cycle of key policy rate cuts is envisaged in Q4 2023**
- Even if such a scenario materializes, monetary conditions will remain fairly tight over the forecast horizon as inflation continues to slow, inflation expectations improve, and real returns on hryvnia instruments remain high. **The NBU will continue to sustain the needed monetary conditions to maintain ER sustainability, improve expectations and steadily reduce inflation**
- **The NBU stands ready to adjust the time and pace of changes in the key policy rate in view of FX market developments, inflationary dynamics, the sustainability of international support, and the effectiveness of measures to make hryvnia instruments attractive**

Summary: forecast

- **The baseline scenario of the forecast is a program-based**, as it takes account of effects from a number of necessary measures in the economic policy implementation. Among other things, the baseline scenario assumes that Ukraine will consistently meet its commitments under the new IMF-supported program and pursue coordinated monetary and fiscal policies, and that quasi-fiscal imbalances will be gradually eliminated, in particular those in the energy sector. It assumes a significant decline in security risks from the start of 2024, complete unblocking of seaports, a decrease in sovereign risk premiums, and the return of forced migrants
- **Inflation has been declining (to 21.3% yoy in March), among others thanks to the NBU's measures to support exchange rate sustainability. However, price pressure remains elevated because of the war.** Inflation will decelerate to 14.8% in 2023 and will return to a single-digit level in the next years, including due to lower global energy prices, restrained domestic demand, and the effect of the NBU's monetary policy, a decrease in security risks, restoration of optimal logistical routes and production capacities
- **Already this year, the economy will return to growth (2%), which will accelerate in the coming years** (to 4.3% in 2024 and to 6.4% in 2025) on the back of a decrease in security risks, an assumption underlying the forecast
- **The current account deficit is expected to be large in 2023**. Among other things, this will be driven by an increase in imports on the back of a gradual recovery in domestic demand, a large number of migrants from Ukraine spending money abroad, and exports remaining subdued due to lower harvests and limited logistics routes. Starting in 2024, rising export flows and the gradual return of forced migrants to Ukraine will help reduce the current account deficits, which will continue to be offset by substantial amounts of official external financing. This will maintain international reserves at a relatively comfortable level

Forecast and its assumptions

Forecast	2022	2023	2024	2025
Real GDP growth, %	-29.1 (-30.3)	2.0 (0.3)	4.3 (4.1)	6.4 (6.4)
CPI, % yoy (eop)**	26.6	14.8 (18.7)	9.6 (10.4)	6.0 (6.7)
Core CPI, % yoy (eop)**	22.6	12.5 (15.8)	7.2 (8.7)	2.8 (3.0)
Current account balance, USD bn	8.0 (8.6)	-13.5 (-20.4)	-10.6 (-8.4)	-7.7 (-5.5)
Gross reserves, USD bn	28.5	34.5 (27.0)	36.1 (31.0)	37.1 (34.6)

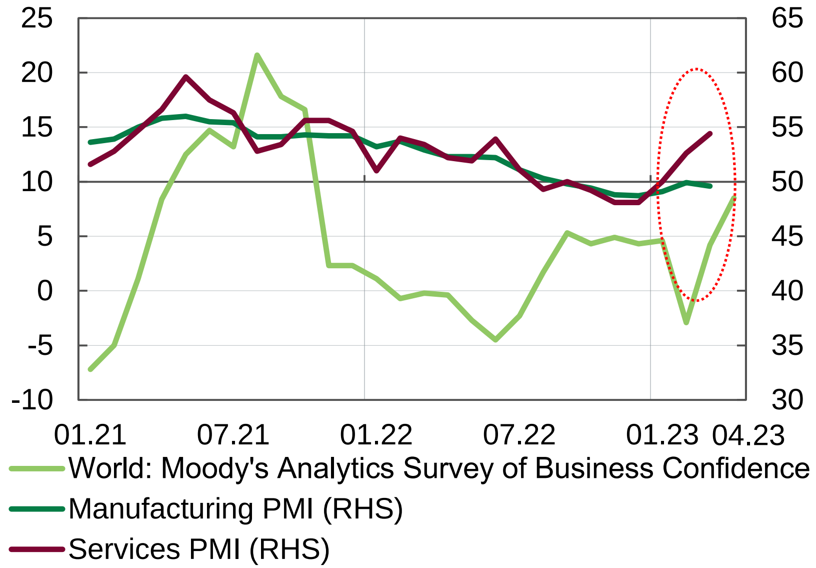
In brackets: previous forecast (January 2023)

Assumptions		**2022***	**2023**	**2024**	**2025**
Full access to Black Sea ports		-	-	+	+
Official financing	USD bln	32.6	42.2	26.4	16.8
Migration (net, excluding russia and belarus)	mln people	-5.0	0.1	0.6	0.7
Real GDP of Ukraine's MTP (UAwGDP)	% yoy	3.5	2.0	3.0	2.9
Consumer inflation in Ukraine's MTP (UAwCPI)	% yoy	14.0	5.9	3.9	3.3
World prices:**					
Steel price, Steel Billet Exp FOB Ukraine	USD/t	618.1	616.1	549.3	497.2
Iron ore price, China import Iron Ore Fines 62% FE	USD/t	121.4	118.1	82.8	74.7
Steel price, No.1 Hard Red Winter, ordinary protein, Kansas City	USD/t	360.2	307.9	272.6	251.8
Corn price, Yellow #2 Delivery USA Gulf	USD/t	318.4	265.0	229.2	215.8
Oil price, Brent	USD/bbl	99.8	89.1	81.4	69.5
Natural gas price, Netherlands TTF	USD/kcm	1362.9	766.5	632.3	456.8
Volumes of gas transit	bcm	20.6	15.0	15.0	15.0
Harvest of grain and leguminous crops	m t	53.9	45.0	49.2	53.8
Minimum wage**	uah	6550	6700	7665	8200

* actual data
** period average

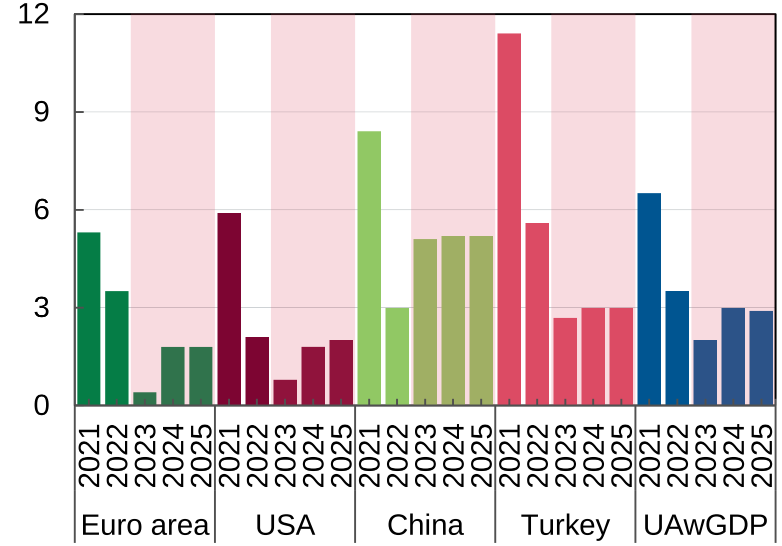
Economic recovery of countries – MTPs will be sluggish due to tight financial conditions

Global PMI and World business confidence index



Source: J.P.Morgan, S&P Global, Moody's.

Real GDP of selected countries and UAwGDP, % yoy

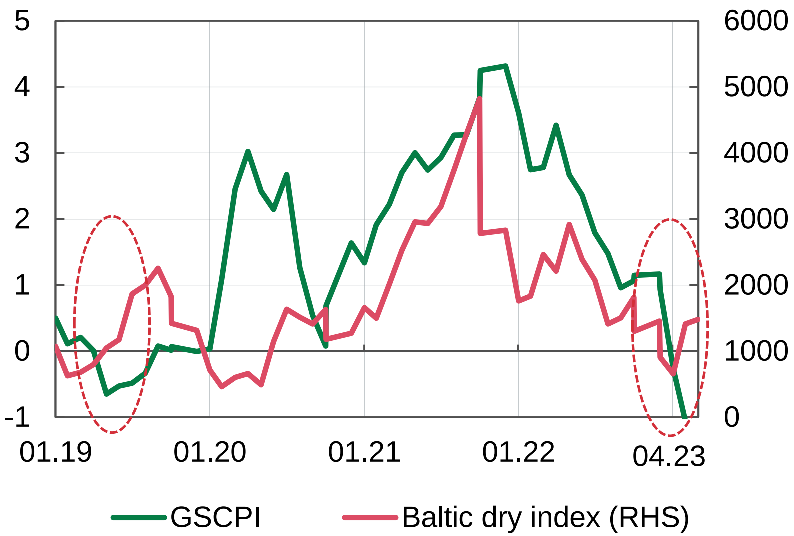


Source: National statistical offices, NBU staff estimates.

- **Despite generally positive current trends, business confidence remained weak** due to geopolitical tensions (primarily the war in Ukraine), still high inflation and tightening financial conditions, including problems with individual banks in the US and Europe, which made it difficult to obtain loans. **Due to the same factors, the growth of world trade in goods will slow** down to 1.7% in 2023 from 2.7% in 2022
- **In the following years, the growth of the global economy will intensify** due to the gradual reduction of inflationary pressure against the background of a robust labor market

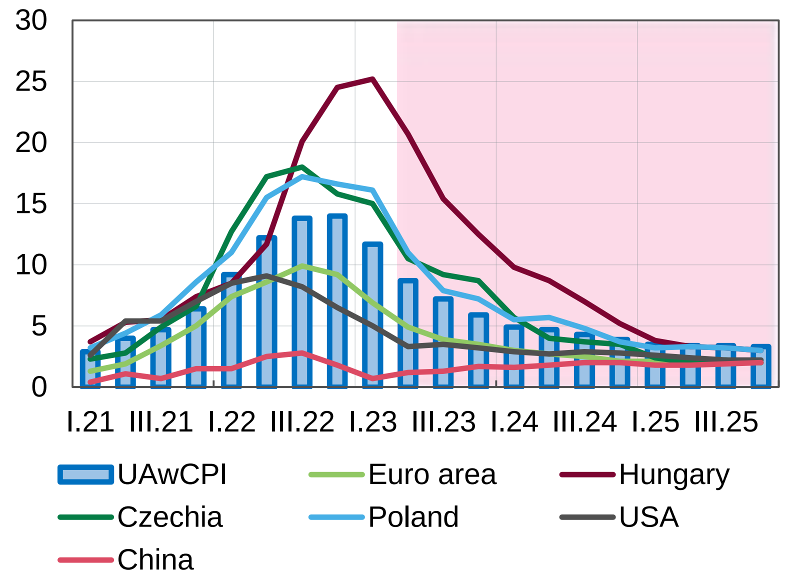
Global inflation will slowly decline, primarily due to the exhaustion of the effects of high energy prices

Global supply chain pressure index and Baltic dry index



Source: FRB of New York, Investing.

UAwCPI and consumer inflation of selected countries (eop), % yoy

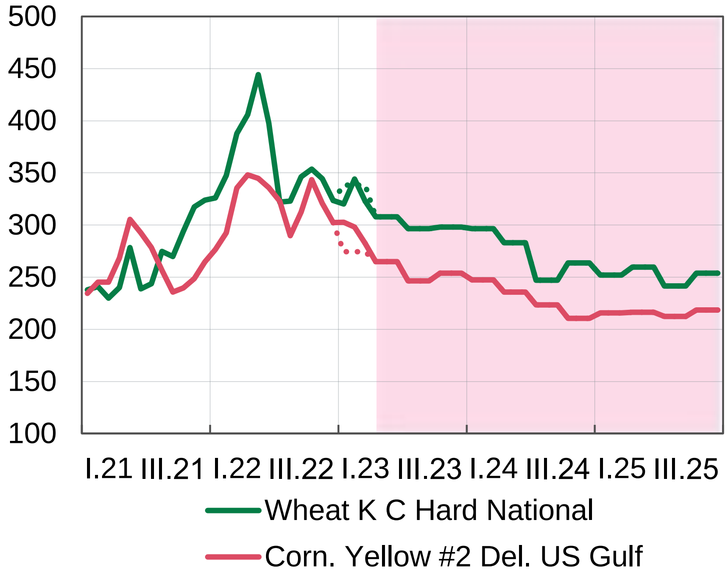


Source: National statistical agencies, NBU staff estimates.

- **Thanks to improved logistics and lower energy prices, supply shortages and production costs fell to their lowest level in the last 2.5 years**
- **At the same time, wage pressures remain** due to persistent staff shortages
- **Given the current situation, inflationary pressures are expected to ease further**. However, due to a fairly robust labor market, the inflation targets in most countries – MTPs of Ukraine will be reached only in 2024

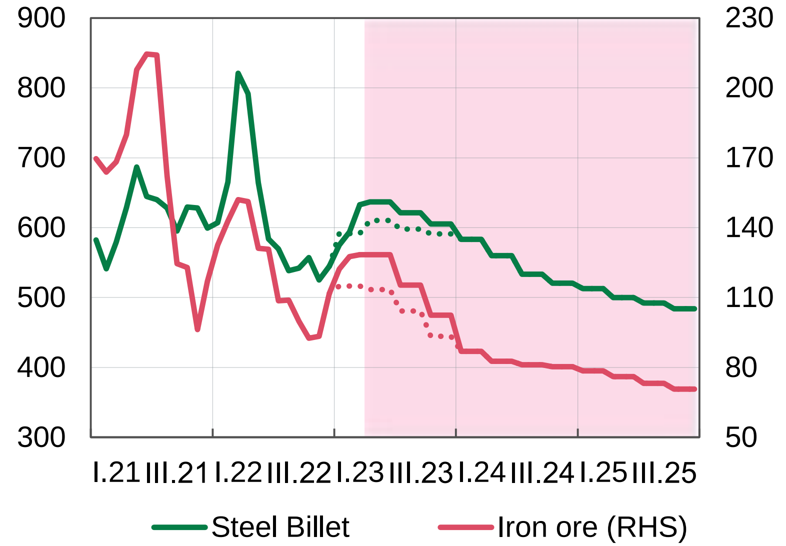
Commodity prices will decrease due to gradual increase in supply

World grain prices, USD/MT, quarterly average



Source: Refinitiv, NBU staff estimates.

World steel and iron ore prices*, USD/MT

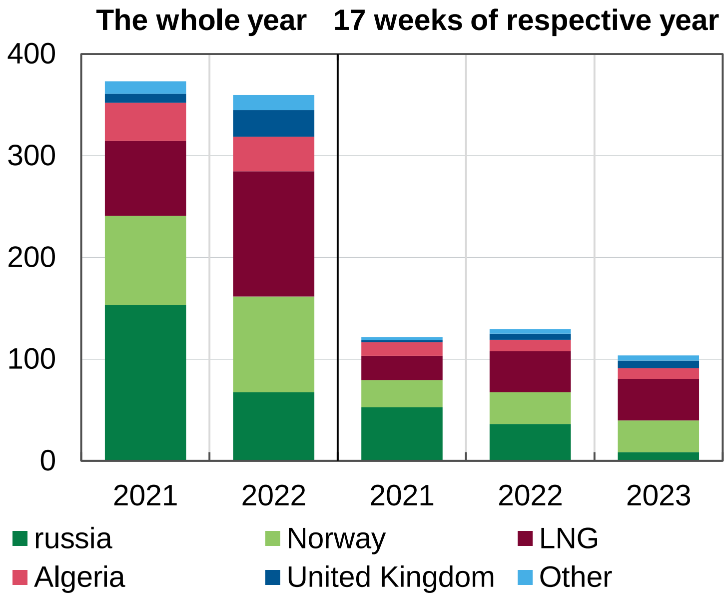


* Steel Billet Exp FOB Ukraine and China import Iron Ore Fines 62% FE spot (CFR Tianjin port).
Source: Refinitiv, Delphica, NBU staff estimates.

- **The extension of the "grain corridor" will continue to be an important** factor supporting the supply of grains on the world market
- **Global steel and iron ore prices have been revised upwards in 2023** compared to the previous forecast due to a significant increase in demand from Turkey due to the need to rebuild areas affected by the earthquake
- **Natural gas prices on the European market have been significantly revised downwards.** This is due to the rapid decrease in the dependence of the European market on pipeline russian gas against the background of increased production and supplies of LNG in the US and other countries

BOX. Natural gas prices on the European market: the time of the downward trend

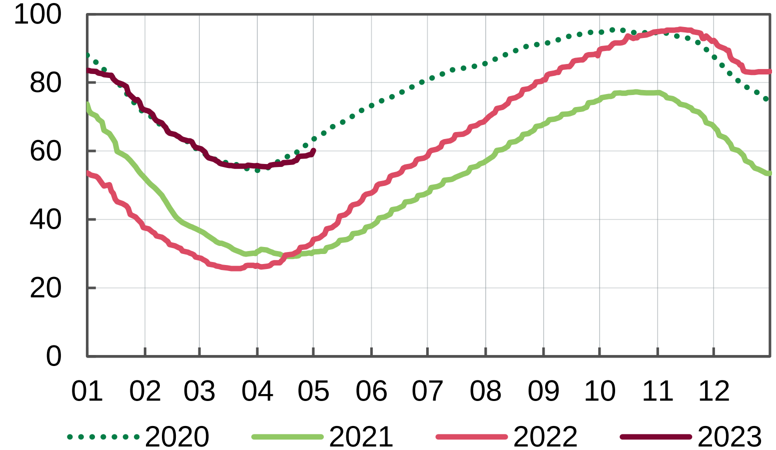
Natural gas import to the EU by origin, bcm



* russia, Norway, Algeria – pipeline
Source: Bruegel.

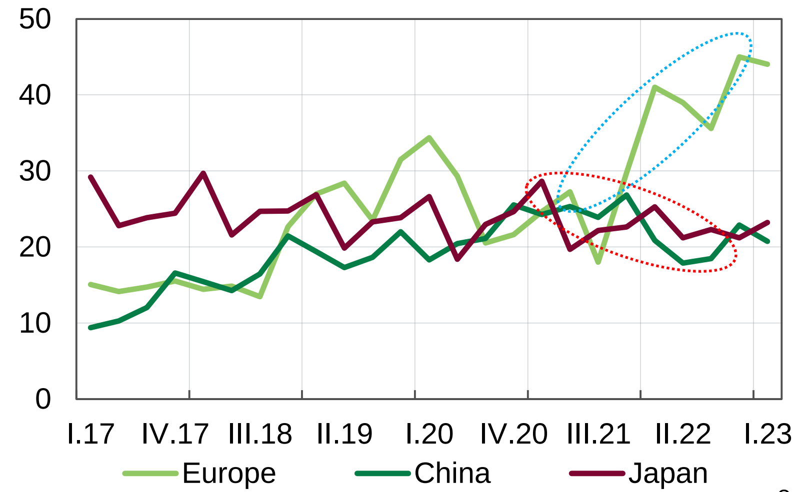
- **EU gas stocks hit a five-year high** for this period, 2.2 times higher than last year and close to the record high seen at the beginning of winter 2020
- **Combined with reduced demand and record high LNG supplies, this has offset losses for russian pipelines** while maintaining a significant storage buffer, which has reduced prices

Filling level of gas storage facilities in the EU in the corresponding year, %



Source: Refinitiv.

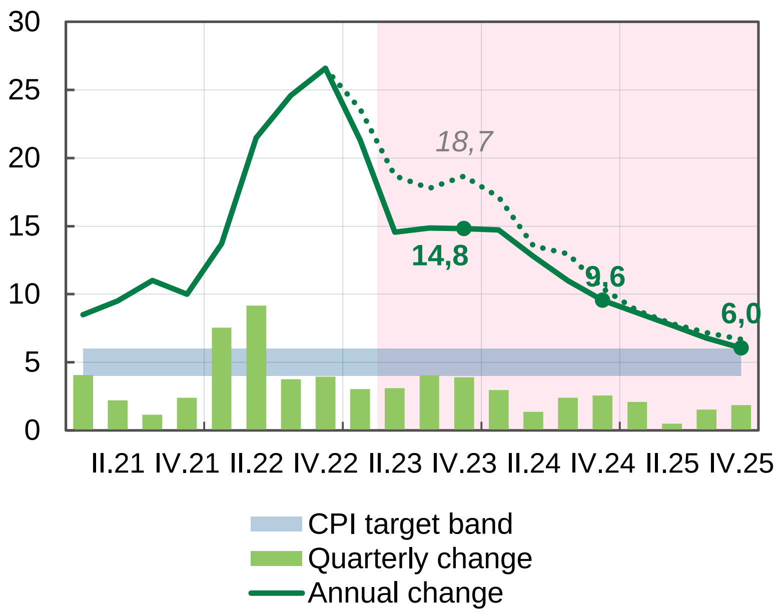
LNG imports, bcm



Source: Bloomberg.

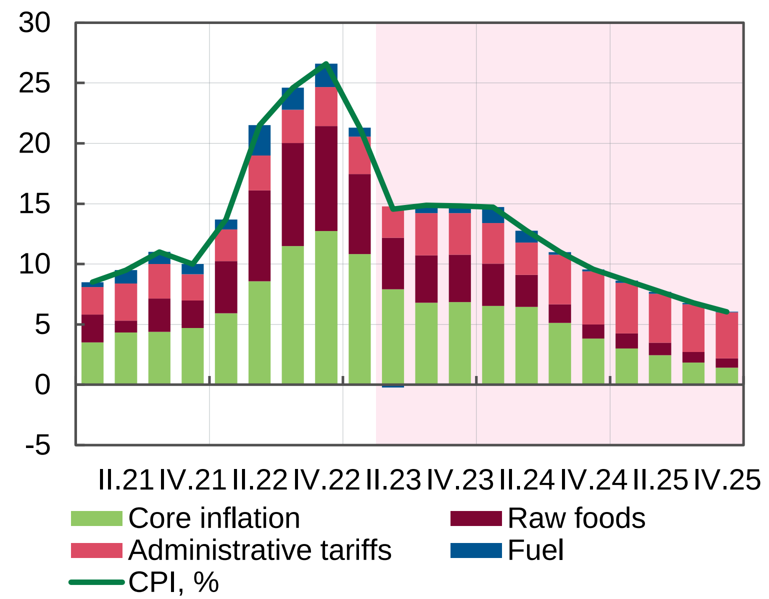
Inflation will decline due to tight MP, gradual slowdown in global inflation and weak demand

Inflation, yoy, %



Source: SSSU, NBU`s estimates

Contributions to the annual change of CPI, p.p

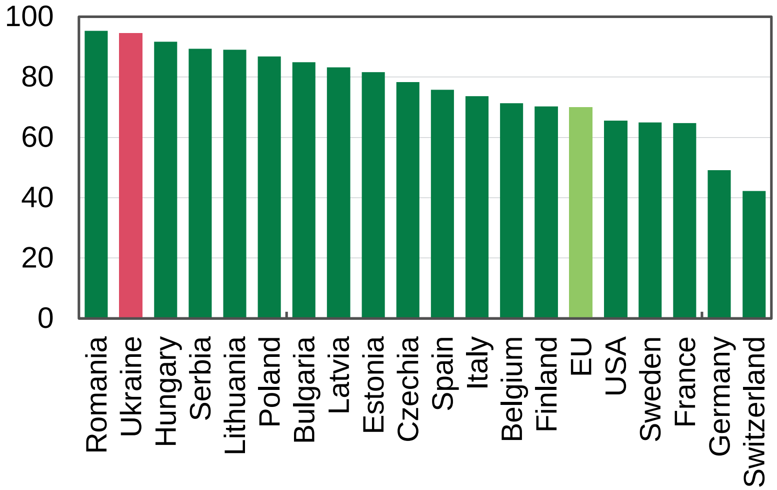


Source: SSSU, NBU`s estimates

- **Inflation began to decline since the beginning of the year more rapidly than expected.** This was facilitated by sufficient supply of food and fuel, a smaller shortage of electricity, improved inflation expectations in the context of strengthening the hryvnia cash exchange rate
- **In the future, inflation will continue to decline** under the influence of tight monetary conditions, lower global inflation and weak demand, **but will remain above the target range** due to the consequences of the war and significant growth of administrative prices and tariffs
- **After the expected reduction of security risks, increased yields and the resumption of logistics, disinflationary processes will accelerate**

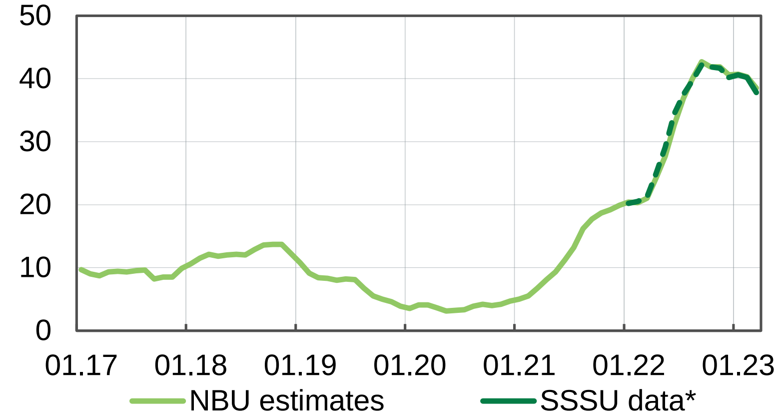
Box. Impact of inclusion of owner-occupied housing costs on inflation

Share of households living in their own housing in 2021, %



Source: SSSU, Eurostat, BLS.

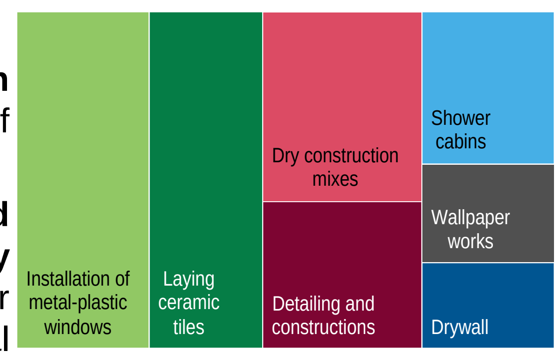
Index of the owner-occupied housing costs, % yoy



* The calculation of the owner-occupied housing costs indices was introduced in 2022. The green dashed line indicates the annual changes in the SSSU index combined with the NBU's calculations for previous periods.

- **Starting from 2022, the SSSU has incorporated owner-occupied housing costs in the CPI calculation.** This was aimed at further approximating the index to households' actual expenditures and aligning domestic statistics with international standards
- **Up until now, these changes have had no significant impact on the inflation gauge**, in particular due to the incremental share of owner-occupied housing costs in the CPI (just 0.43% in 2023)
- **According to data from other countries, however, the weight and impact of this component on overall indicators of inflation may rise considerably**, taking into account the expected post-war economic recovery and an accompanying development of the real estate and mortgage markets

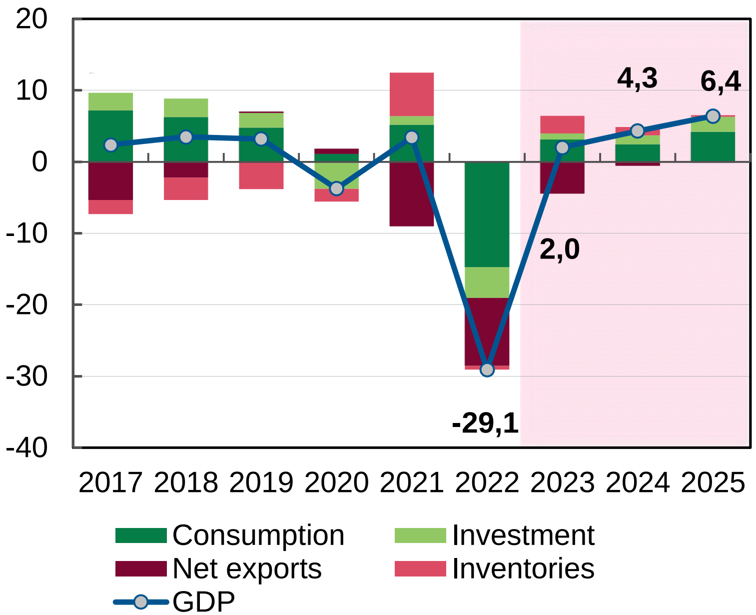
Components of group 04.2 "Owner-occupied housing costs" by their relative weight, %



Source: SSSU.

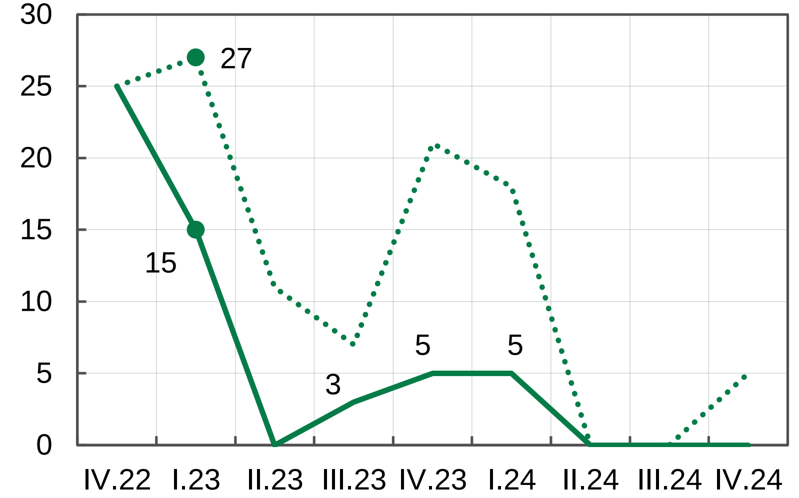
GDP will grow due to better energy situation, reduced security risks, opening sea ports and a loose fiscal policy

Real GDP, component contributions, p.p.



Source: SSSU, NBU.

Capacity deficit in the energy system, %

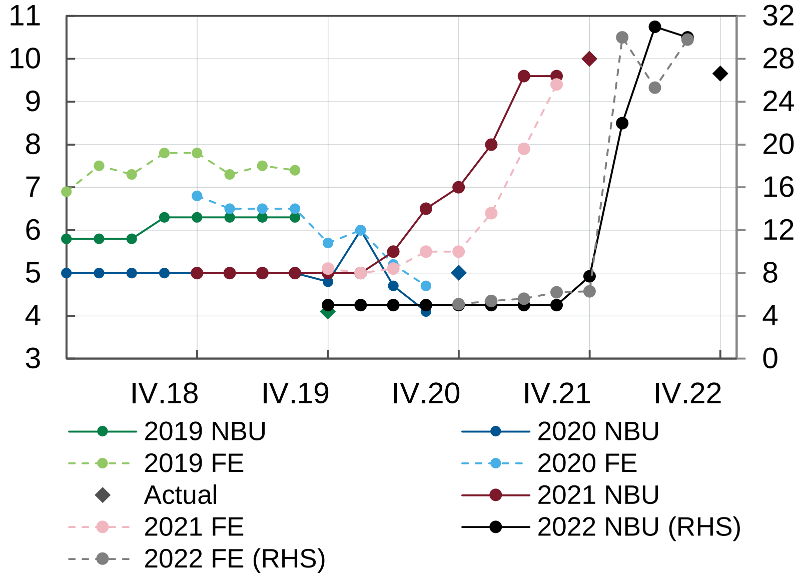


Source: NBU.

- **The situation with energy shortages in Q1 2023 turned out to be better than expected**
- **The NBU improved its economic growth forecast for 2023, from 0.3% to 2.0%** in view of the rapid recovery in the energy system, better terms of trade and the loose fiscal policy
- **The easing of security risks, starting next year, will help accelerate economic growth** to 4.3% in 2024 and to 6.4% in 2025. But the negative GDP gap will persist throughout the forecast horizon due to the weakening of competitiveness during the war and the long-term persistence of war-induced structural imbalances in the markets of goods and services, labor and capital, which will restrain the recovery of aggregate demand

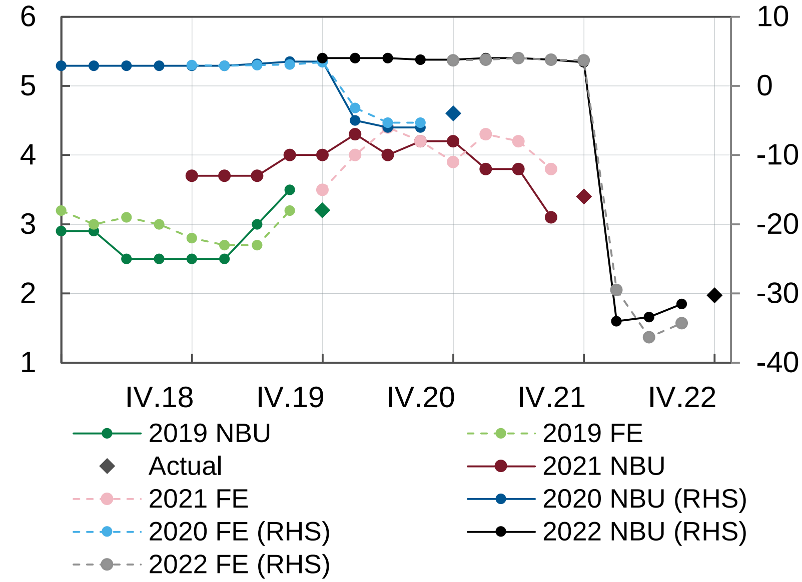
Box. Estimating the accuracy of the NBU's macroeconomic forecasts

Forecast history: CPI (2019-2022), annual change eop, %



Source: SSSU, NBU staff estimates.

Forecast history: GDP (2019-2022), % yoy

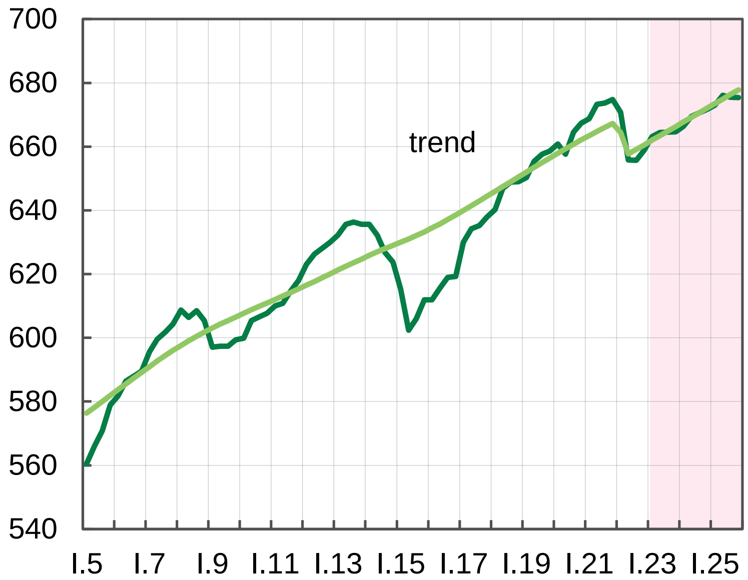


Source: SSSU, NBU staff estimates.

- Regular analysis of forecasts remains important for the NBU even during the temporary suspension of the classic IT regime and the lack of a significant part of official macroeconomic statistics. Such analysis helps to identify weaknesses in the forecasting tools for further adjustments
- This practice helps to determine the impact of the NBU's forecasts on the economic expectations of market participants. **The analysis shows that the quality of the NBU's forecasts is equal to or better than the consensus forecasts of market participants.** The reason for deviations of forecasts from actual data are the shocks unexpected for all forecasters, as well as the traditional conservatism of the scenario assumptions embedded in the forecast

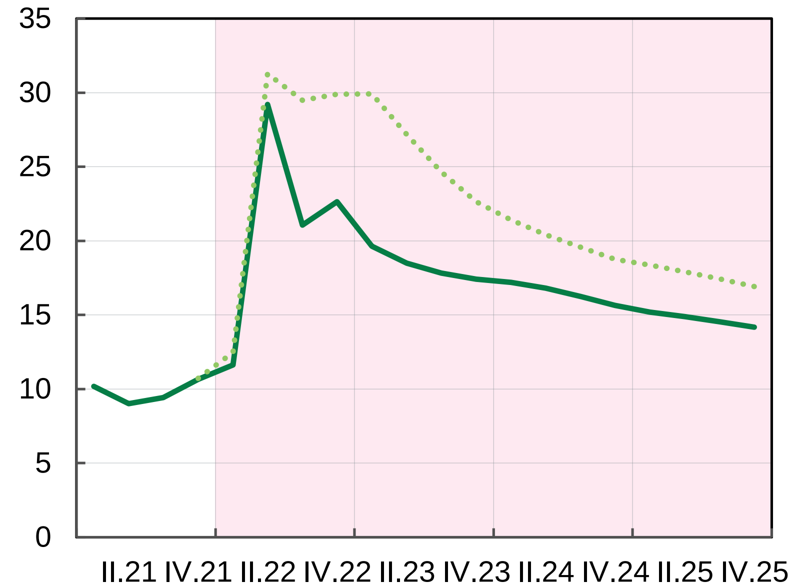
Over the forecast horizon, employment and wages will gradually grow due to increased economic activity

Real wages, level (logarithms)



Source: SSSU, NBU`s estimates

Unemployment (ILO), %, s/a

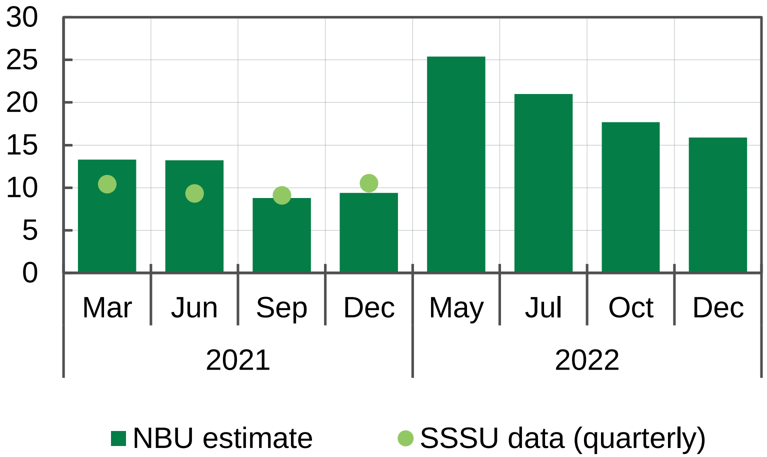


Source: SSSU, NBU`s estimates

- **Since the beginning of the year, the gradual recovery of the labor market continues.** However, unemployment is still high, and the financial situation of households is difficult
- **Over the forecast horizon, employment and wages will gradually increase along with the intensification of economic activity.** However, imbalances in the labor market will remain, so unemployment will remain higher than the pre-war level, and real wage growth will remain restrained and uneven across industries and regions

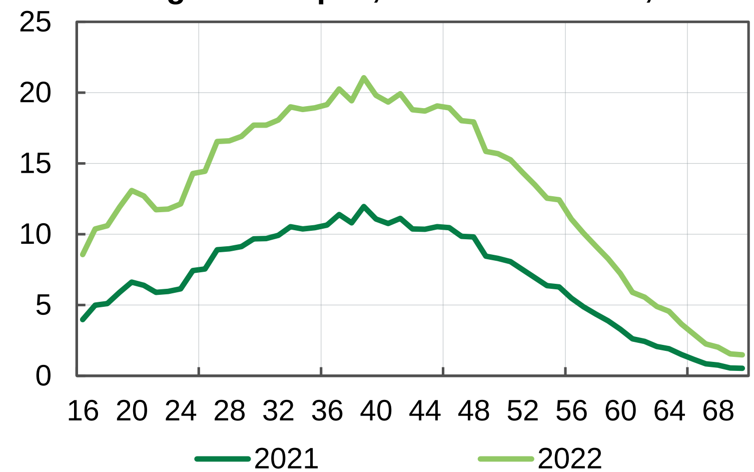
Box. The labor market in Ukraine during the full-scale war

Estimated unemployment rates in 2021 and 2022 based on the InfoSapiens data, % of the labor force



Source: NBU staff estimates.

Probability of becoming unemployed by age, all other things held equal, in 2021 and 2022, %



Source: NBU staff estimates.

- **Unemployment estimate for 2022 was improved using alternative sources of information, including household surveys.** Alternative estimates confirmed a significant increase in unemployment after the full-scale invasion and positive dynamics in the labor market in the second half of 2022
  - based on the Rating surveys on the employment status of Ukrainians, unemployment rate in 2022 is estimated at 23%. The data were adjusted for migration processes based on the results of the CES migrant survey and the assumption that some of those who lost their jobs became economically inactive
  - based on InfoSapiens surveys, unemployment rate reached 25% in May 2023 and falling down to 16% in December
- **The direct effect of the full-scale invasion was an increase in the probability of becoming unemployed by 9 percentage points in May 2022 compared to December 2021**. At the same time, being in the east and south of Ukraine resulted in additional increases by 27 p.p. and 13 p.p., respectively, in May 2022 compared to December 2021. The liberation of the territories had a direct and tangible impact on reducing the likelihood of becoming unemployed in all regions

The number of migrants abroad is gradually increasing, the share of those who do not plan to return is increasing

Number of citizens who crossed the border, millions

Source: UNHCR.

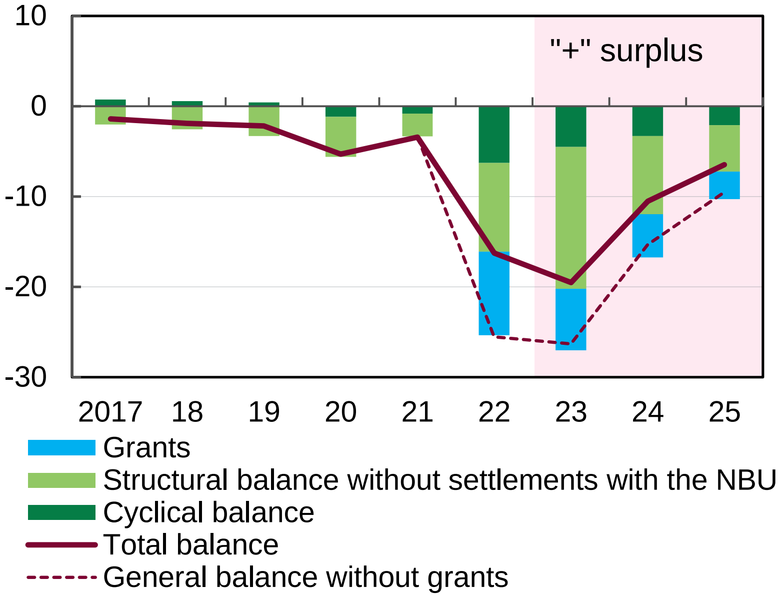
Do you plan to return to Ukraine?, % of responses

Source: Gremi Personal (March 2023).

- **At the end of Q1, the number of migrants, according to UNHCR, was smaller than our estimates** in the January 2023 IR (8.6 million vs 9 million) due to a better situation in the energy sector, as well as faster adaptation of businesses and households to the electricity shortages
- **The propensity of migrants to return is unfortunately declining**: in March 2023, 45% of migrants surveyed in Poland (17% in October 2022) did not plan to return, and among those who plan, the majority (82%) will return only after the war
- **The forecast includes a net inflow of migrants** (0.1, 0.6 and 0.7 million in 2023-2025)
- **The risks of labor shortages for post-war recovery are significantly increasing** (according to the Ministry of Economy, Ukraine will need 4.5 million people of additional labor)

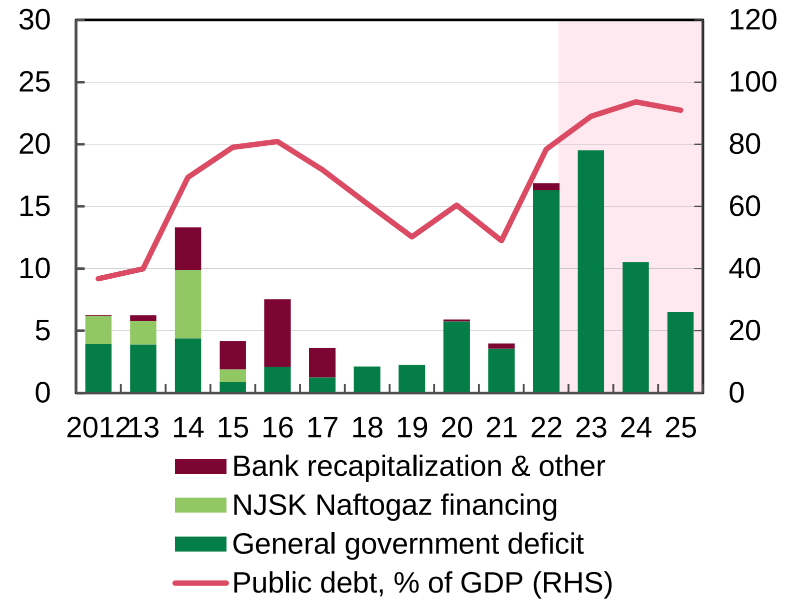
The budget deficit will remain significant in view of the needs of the security sector, social support and recovery needs

Consolidated budget balance, % of GDP



Source: STSU, MFU, NBU`s estimates

Broad public sector deficit and public and publicly guaranteed debt, % of GDP

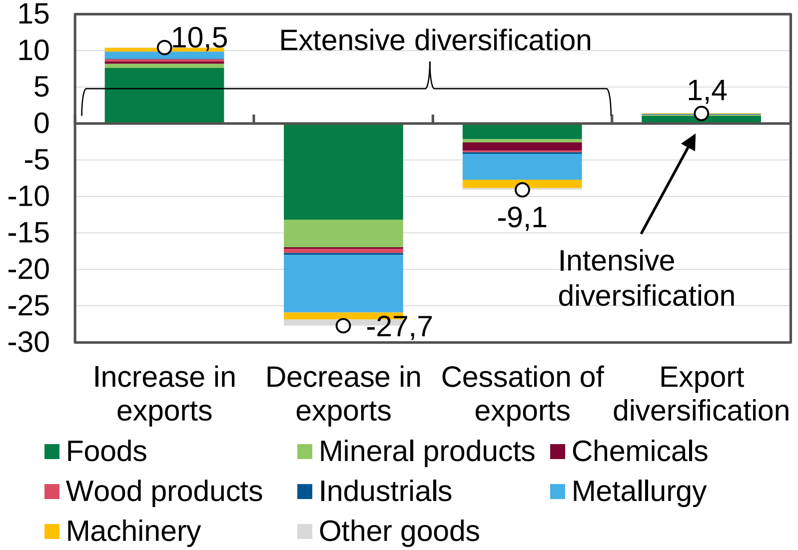


Source: STSU, MFU, NBU`s estimates

- **Fiscal policy remains ultra-loose.** The consolidated budget deficit this year will expand due to significant needs to ensure the country's defense capability. In the future**, the deficit will gradually decrease, but will remain significant**
- **International assistance will remain a key source of funding for budget needs,** although its volume will gradually decrease over the forecast horizon. At the same time, the share of domestic borrowing will continue to grow
- **The debt-to-GDP ratio** will continue to grow due to high financing needs amid a gradual reduction in grant support

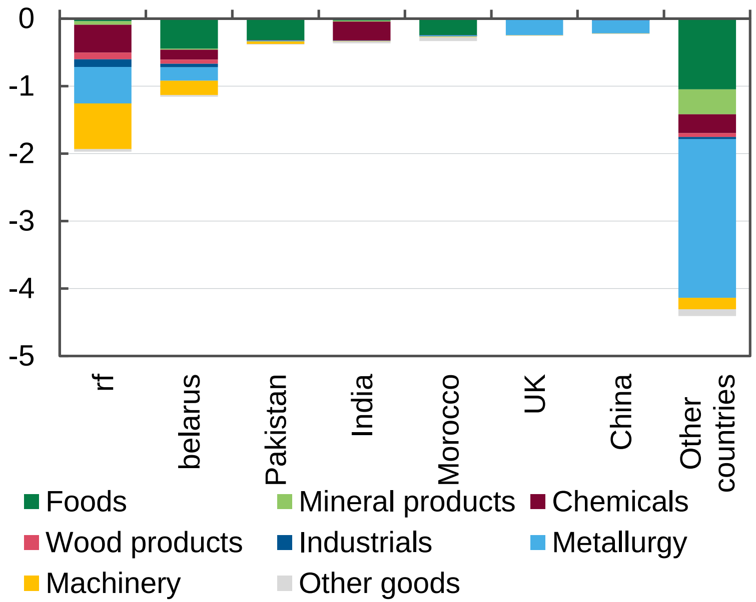
Box. The factors behind the resilience of Ukrainian goods exports during a full-scale war

Decomposition of the annual change* in the exports of goods, USD bn



* In Mar – Dec 2022 compared to Mar – Dec 2021.
Source: NBU staff calculations.

Export losses* by selected countries, USD bn

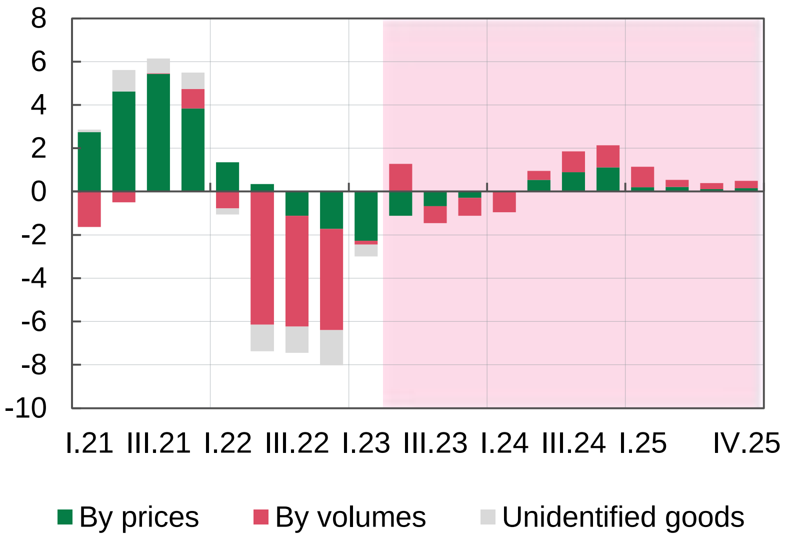


* In Mar – Dec 2022 compared to Mar – Dec 2021.
Source: NBU staff calculations.

- **Due to the support measures implemented by international partners exports of goods demonstrated resilience during the full-scale war.** This had the greatest impact on the exports of food products, which ensured a ¾ increase in the exports of goods to previously established markets
- **Meanwhile, the lion's share of the drop in exports accounted for decline in supplies of ores, metals and machinery goods** due to both the loss of production capacities and the disruption of a large part of traditional supply chains amid sea ports blockade, as well as the severance of trade ties with the russian federation and belarus

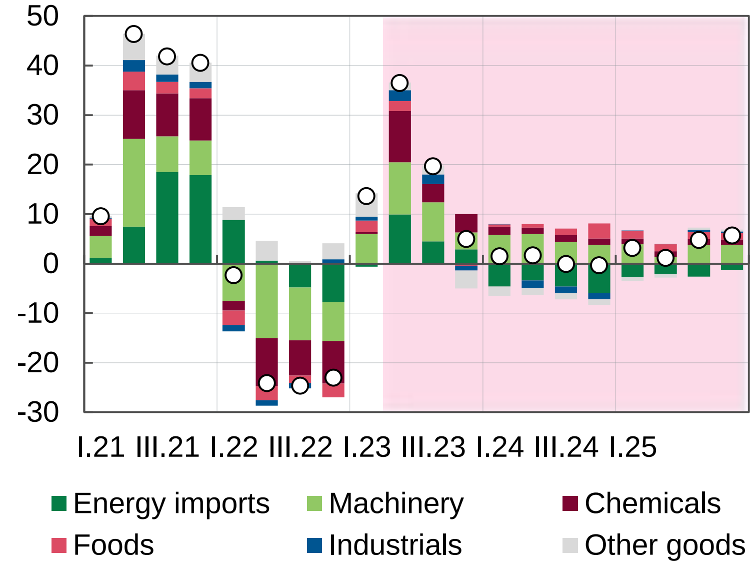
In 2023, the merchandise trade deficit will widen significantly, and afterwards in 2024-2025 it will start to shrink

Absolute annual change in merchandise exports by prices and volumes, USD bn



Source: SCSU, NBU staff estimates.

Contributions to annual change in merchandise imports, pp

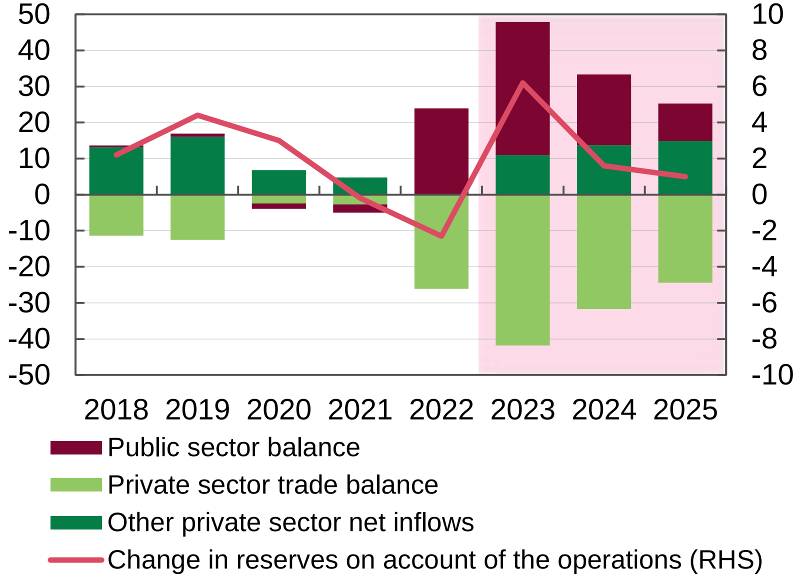


Source: NBU staff estimates.

- **Until the end-2023, the exports of goods will remain weak** due to further decline in prices for main commodities and continuing problems with the sea shipments. In addition, grain harvest this year is expected to be much weaker than the last year's one
- **Export earnings are expected to grow in 2024** due to increased harvests and shipments of metallurgical products amid the full reopening of Black Sea ports
- **Non-energy imports of goods will grow** throughout the forecast period driven by strong domestic demand and the gradual return of migrants from abroad. After rising in 2023 amid high demand for gas and oil products, energy imports will continue to decline, among other things, owing to falling energy prices

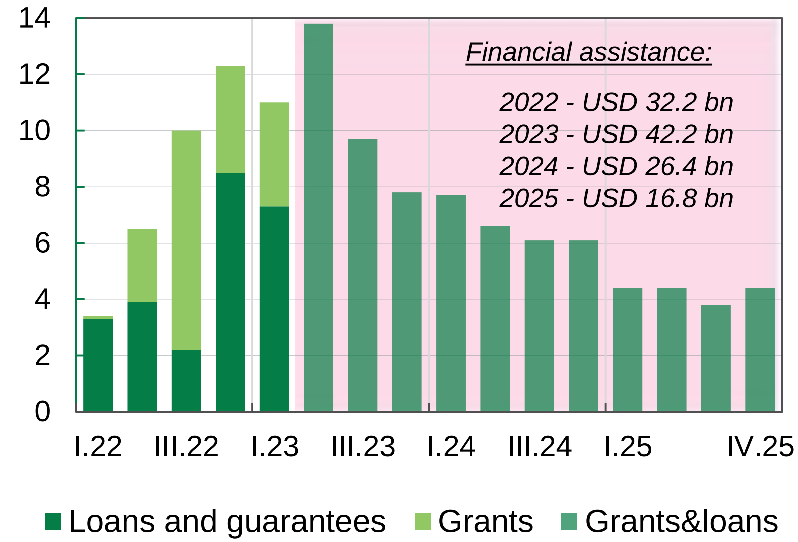
International reserves will grow over the entire forecast horizon thanks to significant international assistance

Change in international reserves on account of selected operations, USD bn



Source: NBU staff estimates.

International financial assistance, USD bn

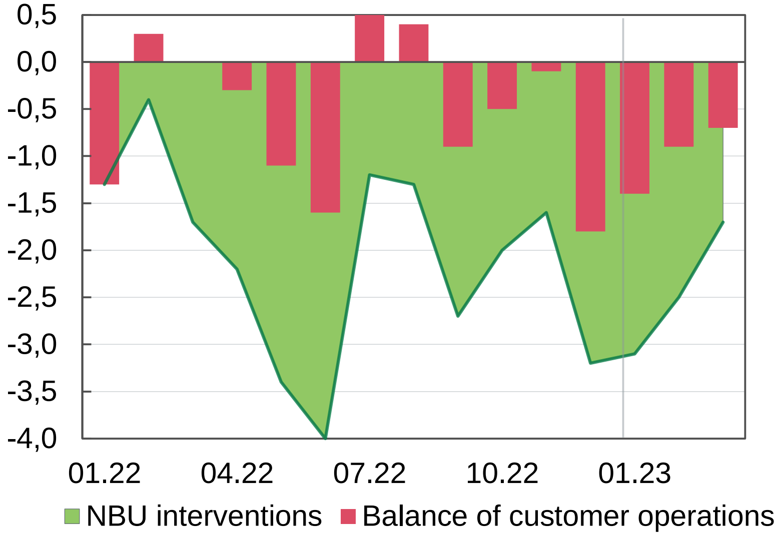


Source: NBU, MoF, data from the open sources.

- The widening trade deficit in goods and services, significant outflows of cash outside banks, and outflows due to the gradual liberalization of current and financial transactions **are offset by an increase in international aid**
- Significant official financing, despite declining since 2024, will remain a significant contributor in the growth of reserves in 2024-2025. As a result**, international reserves will reach $37.1 billion by the end-2025**, the highest level since 2011

The NBU`s measures help support the FX market stability and create the preconditions for the future easing of restrictions

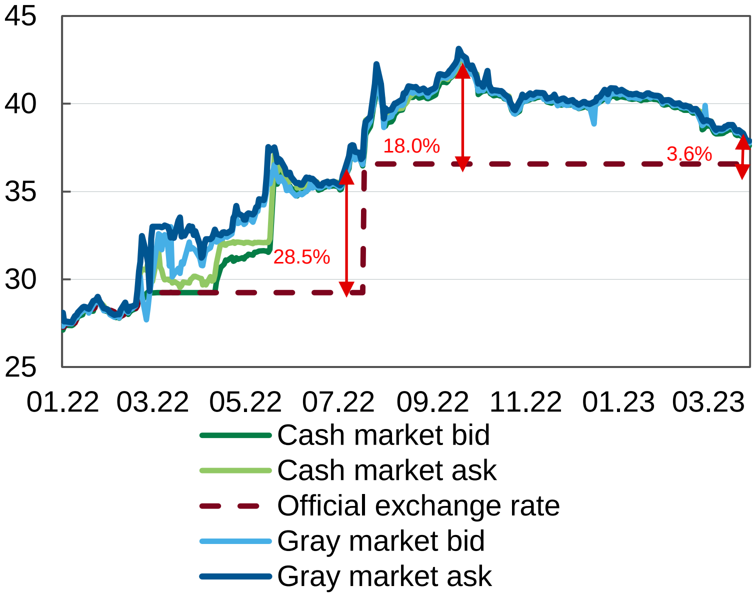
Balance of NBU`s and banks` client operations*



*Net sale and purchase of non-cash and cash foreign currency by bank clients Tod, Tom, Spot

Source: NBU

Exchange rate UAH/USD

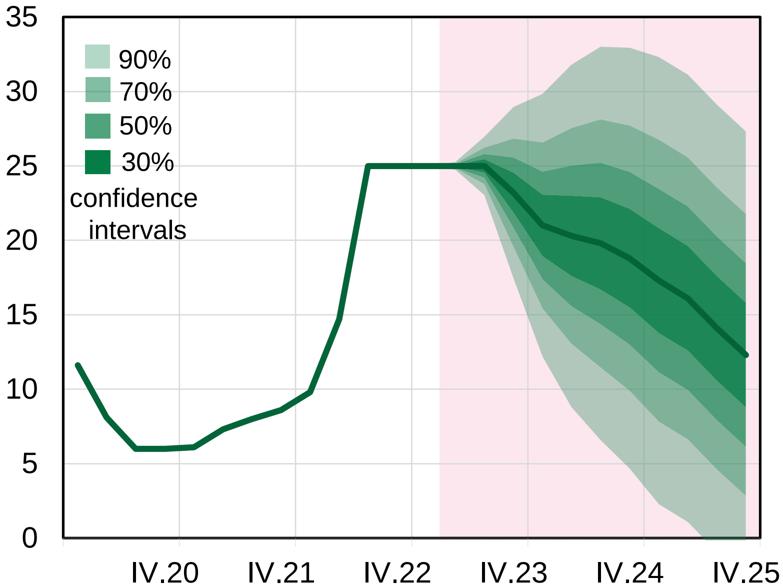


Source: NBU, open data sources.

- Keeping the key policy rate at 25% coupled with measures to increase hryvnia assets attractiveness through enhancing competition among the banks for time deposits have helped **to maintain exchange rate controllability and to curtail demand for foreign currency**
- **At the same time, exchange rate stability is primarily ensured by tight FX restrictions.** Their effectiveness wanes over time, while their restrictive effect on business activity increases. Large volumes of international assistance coupled with the improvement in FM market situation since the beginning of the year create the preconditions for the gradual liberalization of administrative restrictions

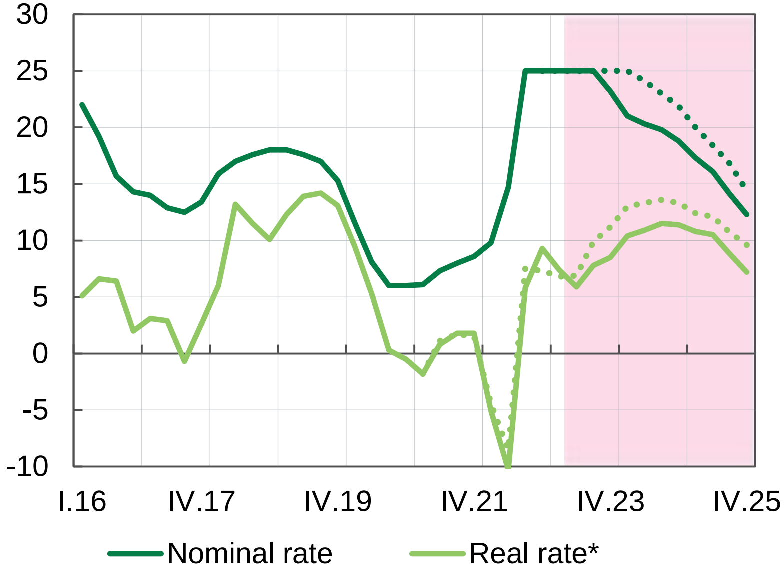
Favorable macroeconomic conditions will make it possible launch of a cycle of key policy rate cuts already in Q4 2023

Key rate, %*



* quarterly average
Source: NBU.

Key rate, %



* quarterly average, deflated by model expectations (QPM)
Source: NBU.

- **Key policy rate was kept at 25% per annum.** This will support the effects of previous measures to improve attractiveness of hryvnia assets, help maintain sustainability of the FX market and form proper conditions for easing the most burdensome FX restrictions.
- The updated forecast envisages the launch of a cycle of key policy rate cuts in Q4 2023. Even if such a scenario materializes, **monetary conditions will remain fairly tight** over the forecast horizon as inflation continues to slow and real returns on hryvnia instruments remain high
- **The NBU stands ready to adjust the time and pace of changes in the key policy rate** in view of FX market developments, inflationary dynamics, the sustainability of international support, and the effectiveness of measures to make hryvnia instruments attractive.

The NBU proactively creates proper preconditions for FX restrictions easing while minimizing risks to ER stability

The key policy rate remains unchanged at high level (25%) since June 2022

Significant increase in ratios and changes in the calculation of required reserves for current accounts

Revitalizing the domestic government debt market by allowing banks to cover part of required reserves with G-bonds

Adjustment of the operational design of monetary policy:

- placements of long-term (3-month) CDs with a fixed interest rate that equals the key policy rate, conditional on banks' success in attracting retail term deposits in hryvnia
- cutting the interest rate on overnight CDs to 20% from 23% per annum

A steady decline in inflation, improving inflation expectations, and supporting ER sustainability via:

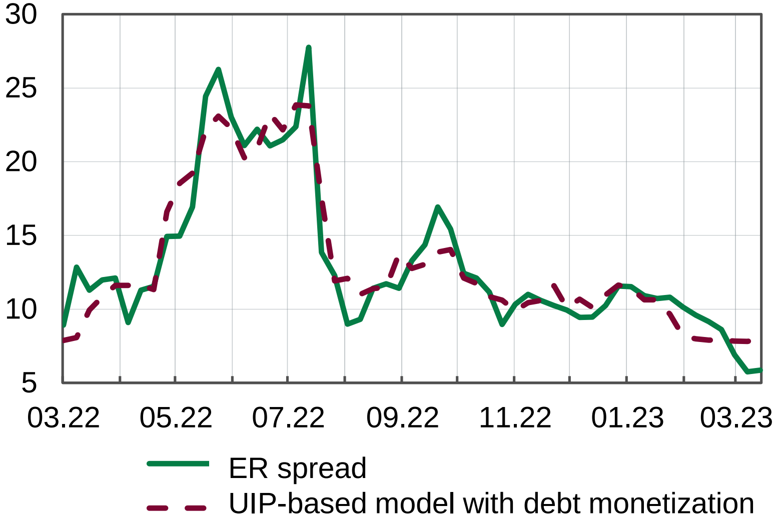
- contributing to further increase in the attractiveness of hryvnia savings
- developing a culture of hryvnia-denominated term savings
- minimizing risks generated by significant current account balances
- abandoning monetary financing of the State budget
- encouraging the banks to step up their activity in the interbank market
- boosting the impact of the key policy rate on the money market and the business behavior of economic agents

Creating the preconditions for:

- gradual FX restrictions easing
- higher ER flexibility
- inflation targeting reintroduction

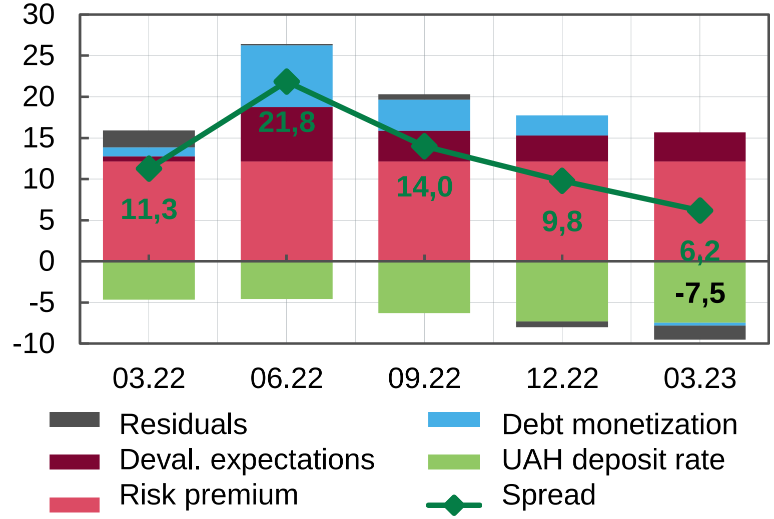
A managed transition to FX liberalization requires maintaining the attractiveness of hryvnia assets

Actual and estimated values of the exchange rate spread (cash - official rate), %



Source: NBU estimations.

Contributions of factors to the spread, average for the month, in p.p.



Source: NBU estimations.

- Preservation of ER stability is an important prerequisite for fulfilling the NBU's key task of ensuring a steady decrease in inflation. In view of the still high uncertainty and unprecedented balances on current accounts, in the conditions of further easing of currency restrictions to ensure the controllability of ER, it is important to maintain the appropriate attractiveness of hryvnia savings
- According to the NBU's estimates, the contribution of the increase in hryvnia deposit rates to the reduction of the spread between the cash and official exchange rates was -7.5 p.p. in March 2023
- Important condition for maintaining exchange rate stability is the further avoidance of monetary financing of the budget deficit by the NBU: thanks to the refusal of monetization, its contribution to the exchange rate spread decreased from 7.5 pp. in June 2022 to -0.3 pp. in March 2023

Risks

The degree of influence on the baseline scenario	The likelihood of risk: Low <15%	Average 15%–25%	High 25%–50%
Weak		The unfolding banking crisis in leading countries	
Moderate	Renewed electricity shortages due to infrastructure damage	Enhanced emigration	Blocking the work of the "grain corridor" and/or food supplies by individual European countries
Strong		Imbalance of public finances (issue financing of the budget, reduction of international assistance, freezing of utility tariffs) Rapid implementation of a large-scale plan for the reconstruction of Ukraine "Marshall Plan"	Longer war period, escalation