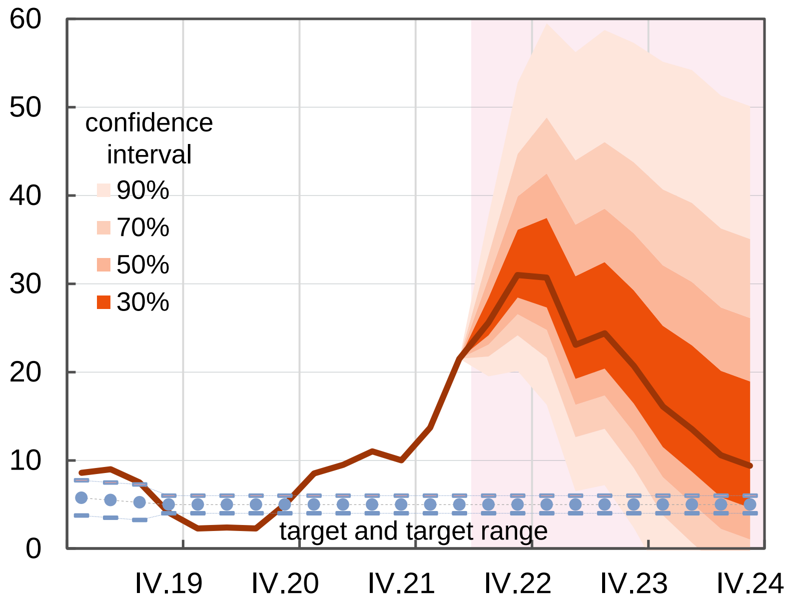
National Bank
of Ukraine

Inflation report
(July 2022)

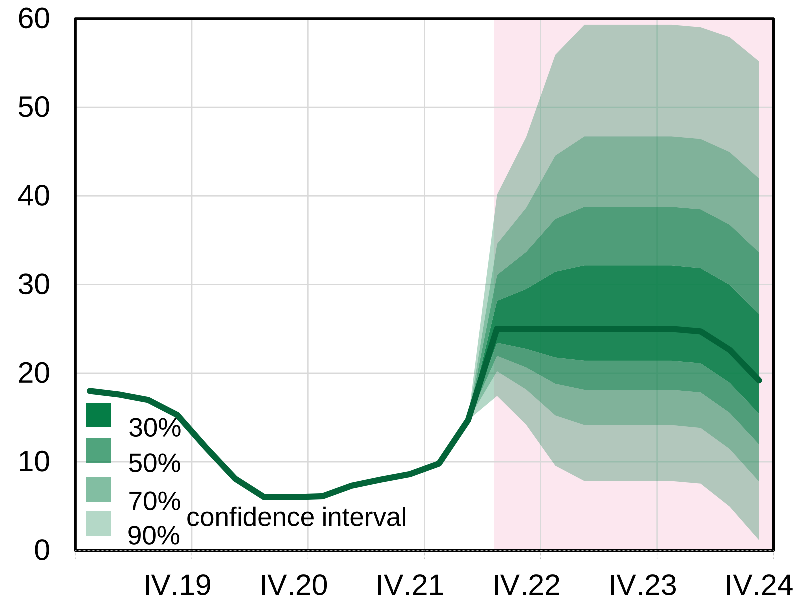
August 2
2022

Due to prolonged period of price pressures and the prevalence of inflationary risks the key rate needs to remain on high level

CPI, %*



Key rate, %*



* quarter average

Indicators	2021	2022	2023	2024
Real GDP growth, %	3.4	-33.4	5.5	4.9
CPI, % yoy (eop)*	10.0	31.0	20.7	9.4
Core CPI, % yoy (eop)*	7.9	24.5	12.4	2.6
Current account balance, USD bn	-3.2	6.4	-3.9	-8.8
Gross reserves, USD bn	30.9	20.8	21.2	28.7

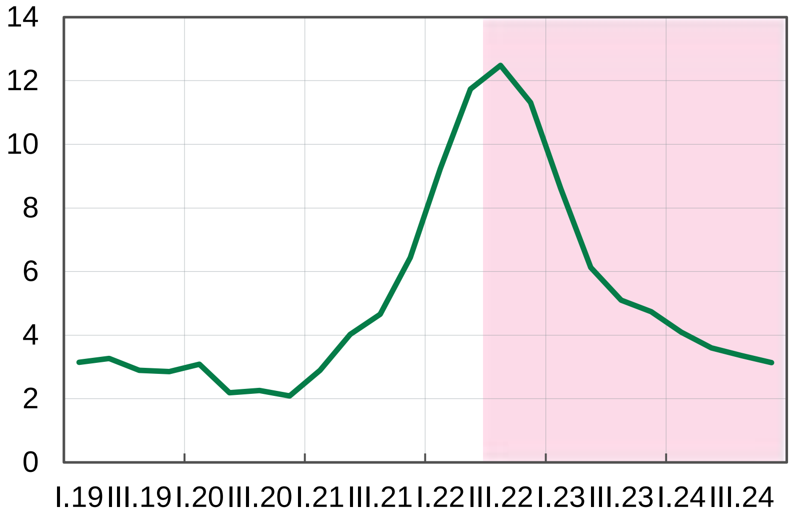
* end of period

Summary

- **The NBU based its forecast on the assumption that Ukraine's Black Sea ports will fully recommence operations** from the beginning of 2023. Security risks are expected to subside markedly in 2023–2024
- **The NBU expects that active international financial support will continue** to help the country financing its budget needs and close its balance of payments gap. In particular, the successful implementation of a new IMF program is expected in 2023–2024
- **The forecast represents a program scenario, as it is calculated based on the assumptions of an active economic policy**
  - The government will return to the market borrowings to cover the budget deficit by ensuring proper yields, while also conducting a fiscal consolidation policy and narrowing quasi-fiscal imbalances
  - The NBU will return to the usual principles of inflation targeting with a floating exchange rate, while gradually discontinuing the practice of the budget's monetary financing
- **Inflation will accelerate over 30% by the end of 2022; in 2023-2024, it will slow down but remain higher than target level of 5%**
- **Real GDP will decrease by one third in 2022 and will only partially offset losses in 2023-2024**. The significant losses of production and human potential, as well as lower but still relevant security risks, the pace of economic recovery will be about 5-6% per year in 2023-2024
- **Keeping the key rate at the level of 25% will contribute to the greater attractiveness of hryvnia assets** and coupled with the exchange rate fixed at a new level – to the balancing of the FX market, thus maintaining the macrofinancial stability
- **The key risks for the baseline forecast are:** high security risks persist for a long time; insufficiency of economic policy measures for macro-financial stabilization

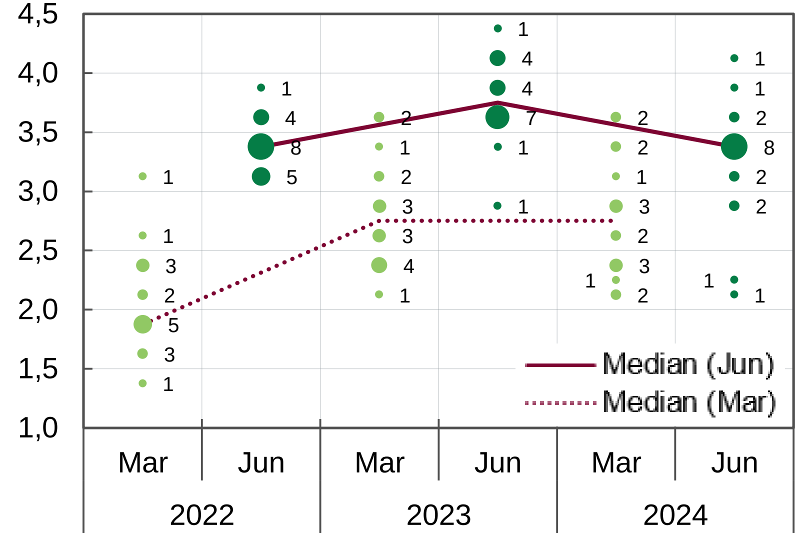
A high inflation environment stipulates monetary policy tightening by central banks

Weighted average CPI of Ukraine's MTP countries (UAwCPI), % yoy



Source: national statistical agencies, NBU staff estimates.

Number of FOMC members who expect a particular policy rate

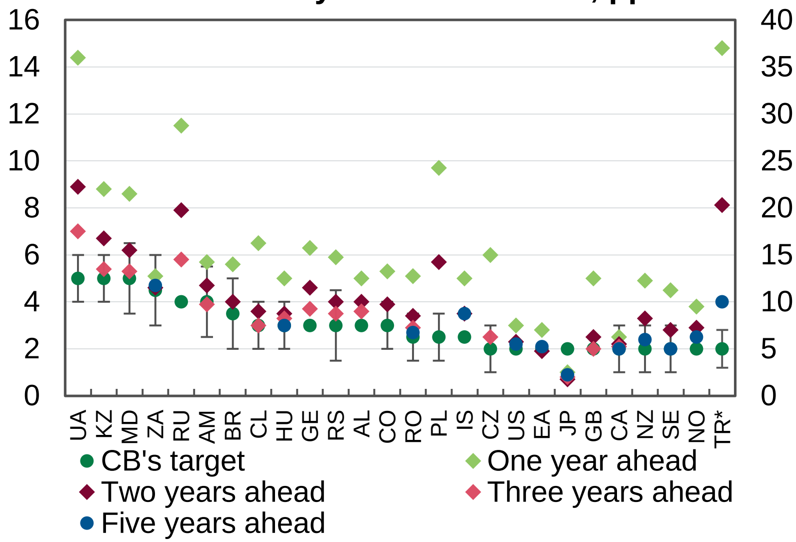


Source: Federal Reserve.

- **Global inflationary pressure remains high**: initially caused by the post-COVID recovery amid persistent supply chain disruptions, became protracted due to shocks from russia's invasion of Ukraine and the next wave of the pandemic in China
- **Fighting high inflation requires tighter financial conditions all over the world. Thus** central banks of both leading countries and developing countries accelerated the tightening of monetary policy.
- **Global inflation will remain high until the end of this year and will decline onwards** due to tighter monetary policy by most central banks, a reduction in geopolitical tensions and a gradual downward correction in global commodity prices

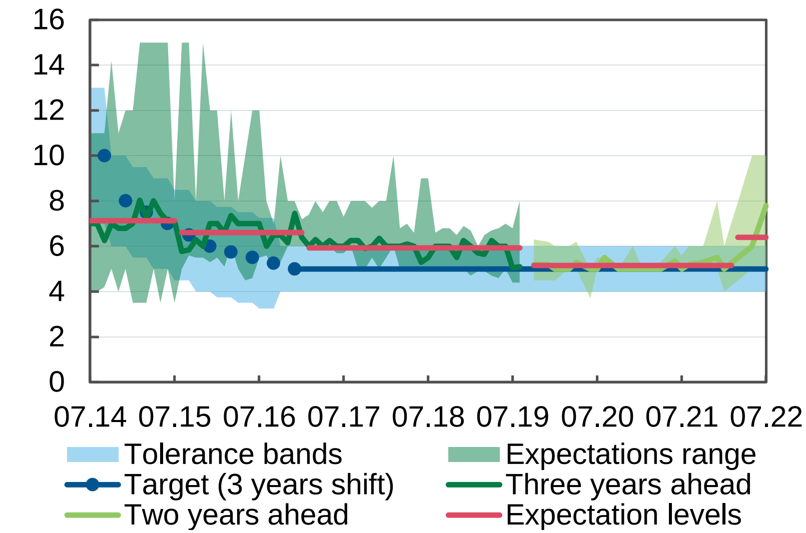
Box. Unanchoring inflation expectations (IE) in the face of supply shocks: is there a space to delay monetary policy reaction?

CB's inflation target and financial analysts' IE in selected countries by forecast horizon, pp



* Turkey is on the right-hand side.
Source: official web pages of central banks, Consensus Economics, Focus Economics (June).

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

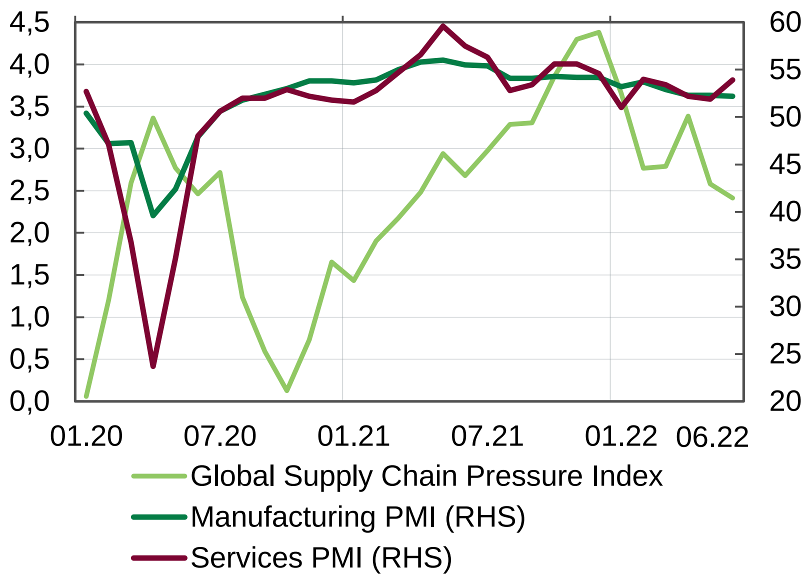


* Median value. The estimation of IE levels was done using the Bai and Perron (2003) methodology.
Source: NBU.

- **Whatever the initial nature of inflation, prolonged and substantial price increases have a negative impact on inflationary expectations.** Short-term IE have deteriorated markedly in countries with IT regime and has already begun to worsen long-term expectations
- **The higher threat of losing control over the inflationary spiral amid persistent inflationary expectations' deterioration prompts central banks to accelerate their interest rate policies strengthening**, in both EM countries and developed countries
- **Since the introduction of IT, the NBU has managed to improve the anchoring of IE significantly.** However, the de-anchoring of IE intensified amid the full-scale invasion of russia
- **The NBU takes into account the IE dynamics when making monetary policy decisions** and takes measures to keep IE under control

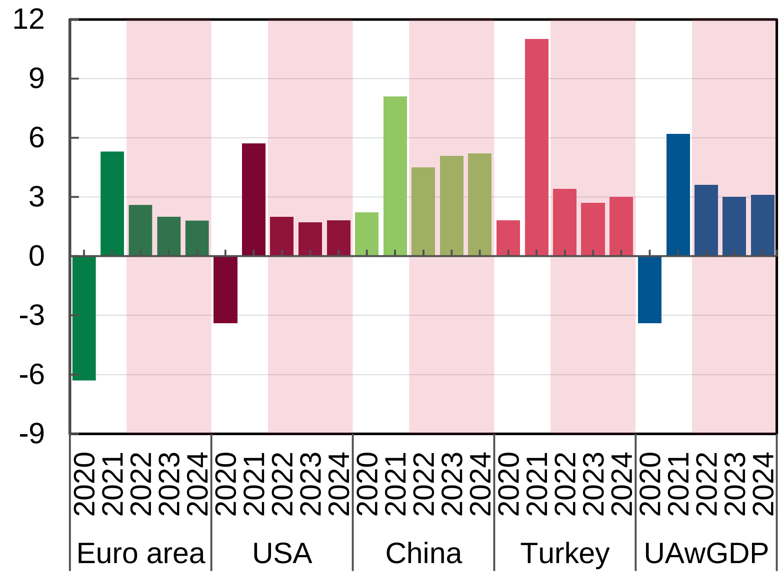
Global economic growth will be sluggish due to tightening of financial conditions and continuing supply chain disruptions

Global PMI and Global Supply Chain Pressure Index



Source: J.P.Morgan, S&P Global, FRB of New York.

Real GDP of selected Ukraine's MTP countries, % yoy

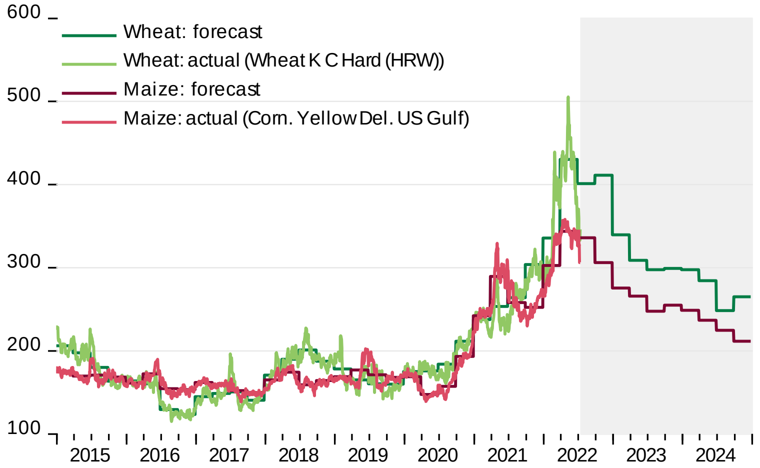


Source: national statistical agencies, NBU staff estimates.

- **Rising prices of raw materials and supply chain disruptions will restrain US economic growth** until the end of 2023, although the effect of these factors will weaken. Fed's policy tightening will serve as an additional impediment
- **Growth in euro area weakened** amid geopolitical uncertainty, supply delays and high energy prices, enhancing recession expectations. The recovery in the services sector is expected to accelerate as quarantine restrictions are lifted while a strong labor market will support consumption
- **Economic growth in China, despite significant government support, will slow down** owing to shrinking external demand and existing internal imbalances

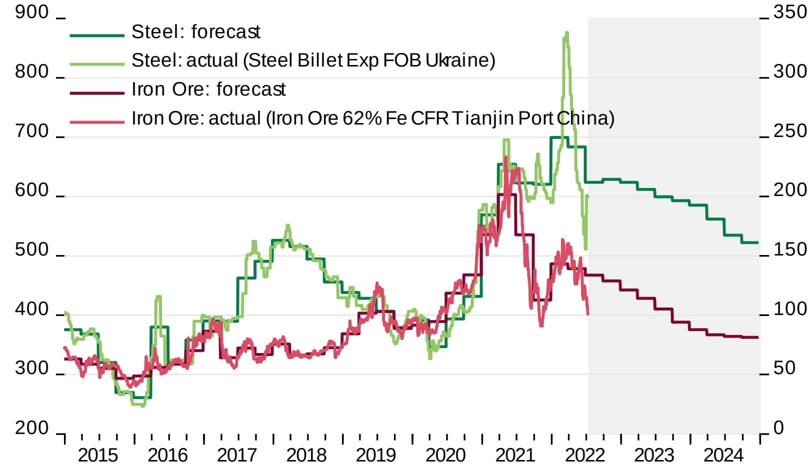
Prices for Ukraine's exports will decline gradually as supply chain disruptions ease and supply grows

World grain prices, USD/MT



Source: Refinitiv, NBU estimates.

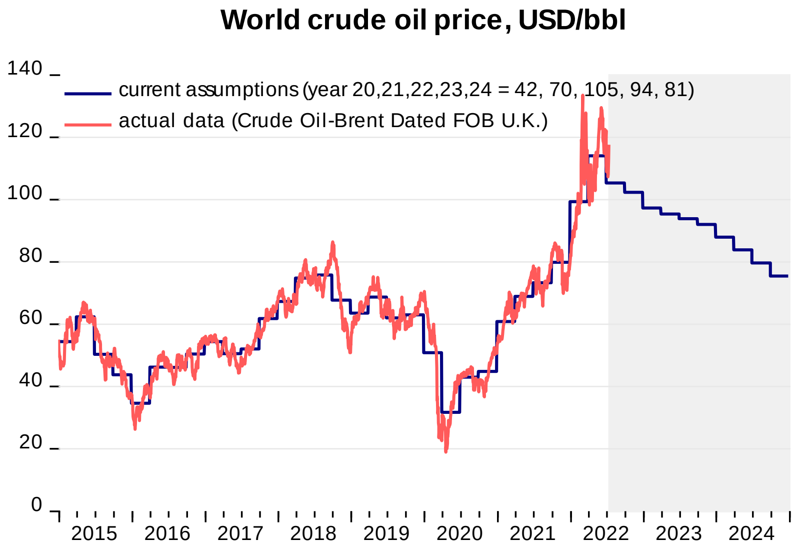
World price of ferrous metals, USD/MT



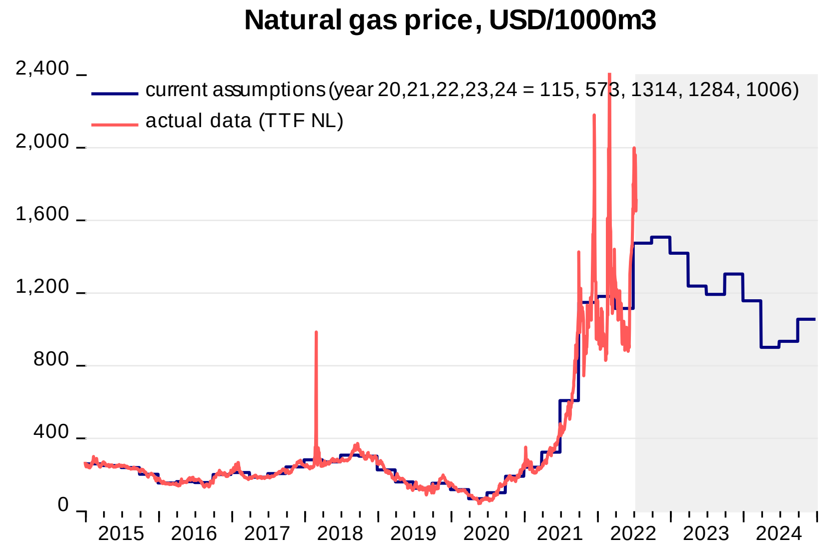
Source: Refinitiv, NBU estimates.

- **Global steel and iron ore prices will be mostly lower** due to weak business activity in most regions and high level of inventories in the world amid oversupply
- **Russian aggression influenced grain markets the most** as it limited export capacities and crop areas in Ukraine. Next year, grain prices will slowly decline, provided that Ukraine fully resumes its participation in the wheat and corn markets. The high cost of growing cereals due to expensive fuel and fertilizers will remain a restraining factor

Despite the slight correction, energy prices will remain high



Source: Refinitiv, NBU estimates.

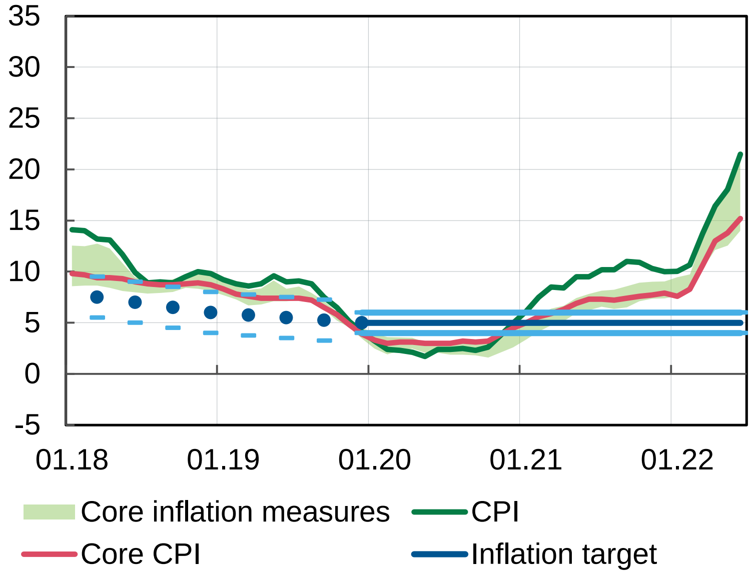


Source: Refinitiv, NBU estimates.

- **Price volatility was exacerbated by low inventory levels**, which made prices sensitive to changes in market supply and demand
- **Oil prices will decrease gradually.** Sanctions against russian oil, which limited its access to the European market, will further reorient it to the Asian market, allowing the respective countries to buy it at a lower price and fully satisfy their demand. The increase in production by OPEC+ countries and the US will let to balance the growing demand
- **Natural gas prices in Europe**, despite the substantial LNG import from the US, **will remain at relatively high levels** due to political pressure from russia

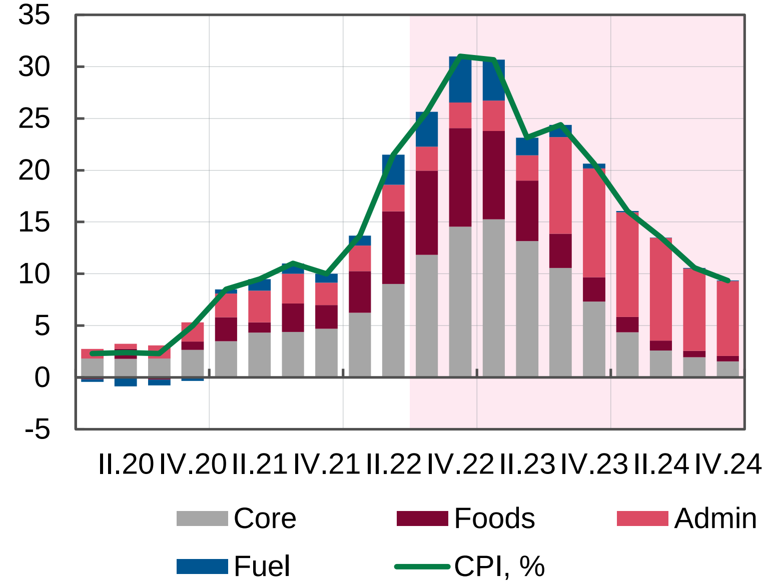
Inflation is expected to slow next year thanks to set up logistics, higher harvest, lower global inflation and tight monetary policy

Inflation and inflation targets, % yoy



Source: SSSU, NBU calculations.

Contributions to annual CPI, pp

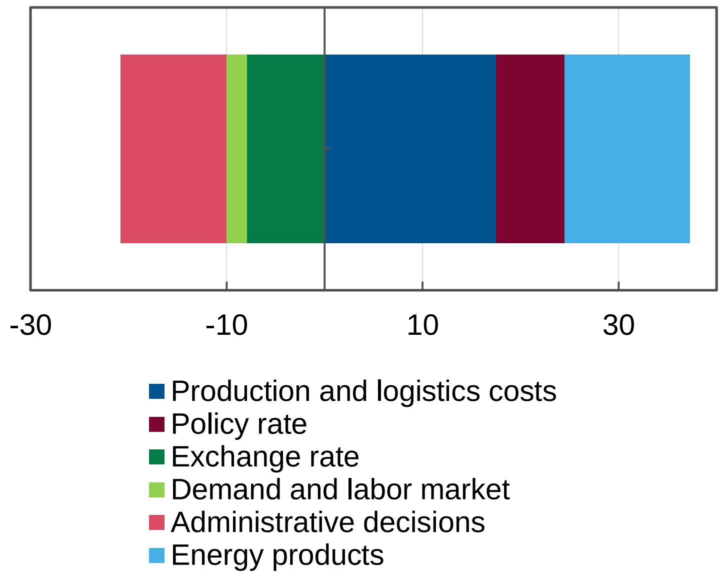


Source: SSSU, NBU calculations.

- **Acceleration in inflation after the invasion was caused by supply factors**: high prices for energy resources, production and supply chain disruptions, destruction of assets and infrastructure, limited stocks and import capacities, occupation of the territories, emission financing of the budget deficit
- **Inflationary processes are restrained by** a significant drop in demand, a fixed exchange rate of the hryvnia, and a moratorium on tariffs increases for utility services
- **Inflation is expected to slow next year** thanks to improved inflation expectations, set up logistics, gradual increase in harvests, lower global inflation and tight monetary policy. Disinflation will be restrained by the need to gradually bring energy tariffs for households to market levels.

Box. Factors of inflation deviation from the target during the war

Decomposition of inflation deviation from the target in June 2022, pp



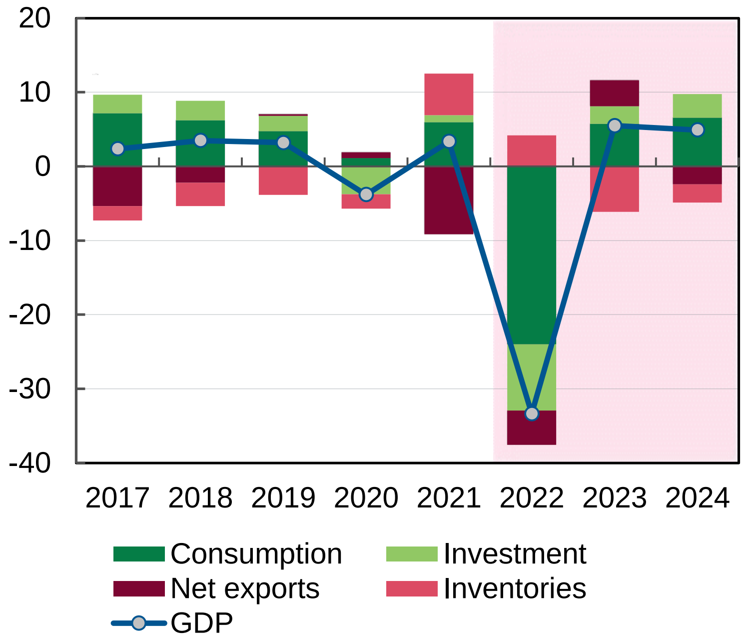
Source: SSSU, NBU staff estimates.

russia's war against Ukraine led to a rapid increase in inflation. In June, consumer inflation overshoot the target by 16.5 pp, significantly exceeding all previous forecasts

- **High inflation in Ukraine reflected the effects of** supply factors related to the war, high global energy prices and weakened monetary policy transmission
- **The increase in prices was restrained by the measures taken by the NBU** (fixing the exchange rate), **and by the government** (freezing the tariffs for heat and natural gas for the households, reduction of taxes on imports and fuel)

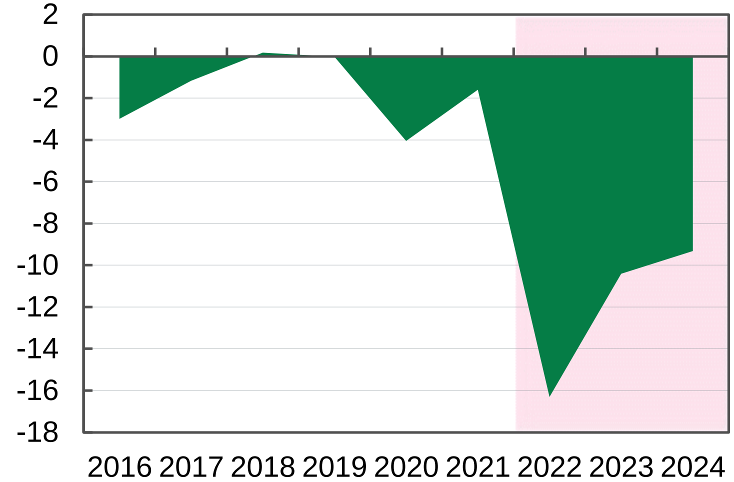
Real GDP will decrease by one third in 2022. In 2023, economy will return to growth if security risks subside

Real GDP, contributions, p.p.



Source: SSSU, NBU calculations.

GDP gap, %

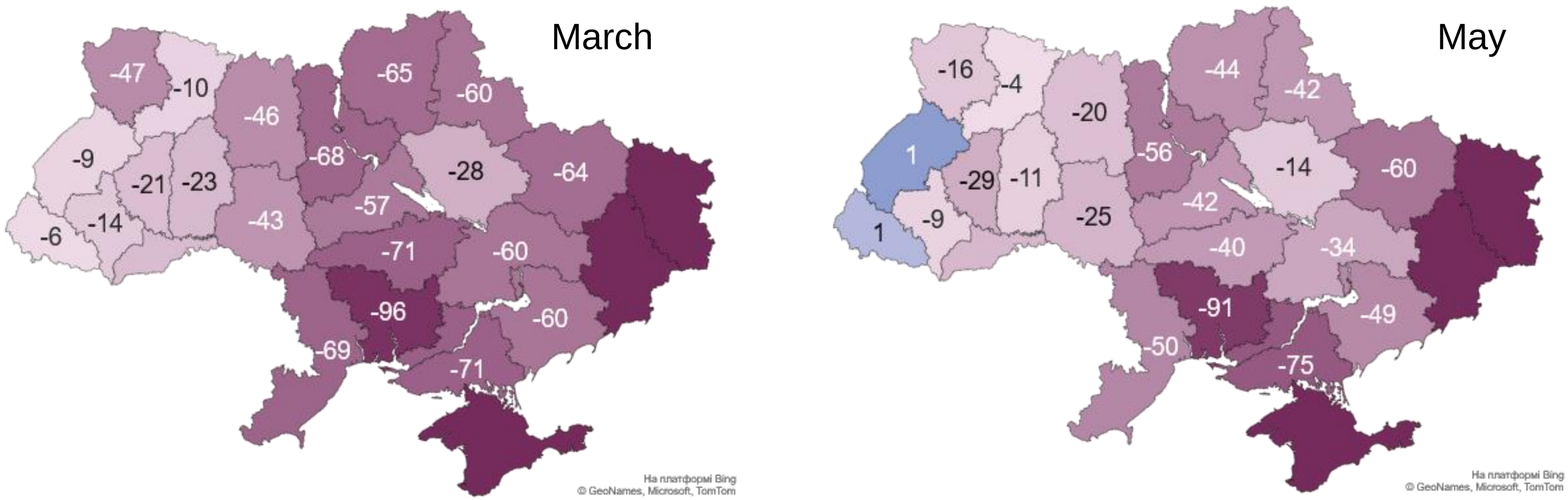


Source: SSSU, NBU calculations.

- **The russian invasion resulted in a sharp fall in economic activity** and weakened the country's middle-term economic potential
- **Large losses of production and human potential will put a drag on economic recovery.** In 2023–2024, GDP will grow at a pace of around 5%–6% per year
- **The economy will return to growth on the back of** a pickup in consumer demand, technological and logistical processes will be set up, and investment activity will recover, among other things, thanks to Ukraine's European integration prospects
- **GDP will remain below its potential level**, which will restrain inflation in the postwar period

Box. Features and methods of GDP nowcasting during war

Geographical diagram of the decline in economic activity in Ukraine in March and May 2022 (yoy, %)

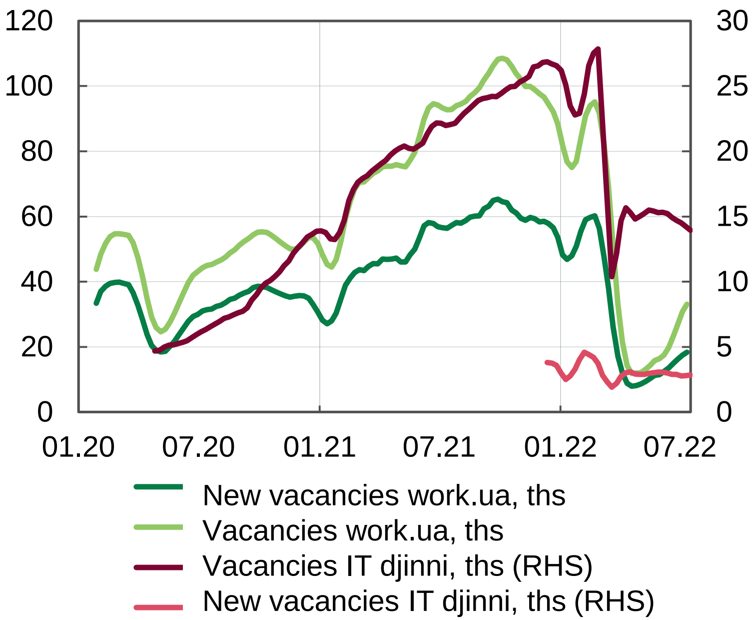


Areas colored in a darker/lighter shade reflect a greater/lesser decline in economic activity in individual regions. There are no estimates for Crimea, Sevastopol, Donetsk and Luhansk Oblasts in their administrative boundaries. Source: NBU staff estimates.

- **Expert assessment of the economy's stance at the sectoral and regional level utilizing high-frequency indicators** (flash business surveys, the restaurant business operations, new home construction market, electricity production): *GDP drops by 42% yoy on average in March–April with a GDP's rate of decline slowing down to 36.5% yoy in June*
- **Business expectations index and other results of the quarterly business survey** (aggregated according to the method of principal components): *GDP drop of around 23% yoy in Q2 22*
- **"Big data" for approximation of economic activity at the regional level** (night lights, Google trends, online vacancies, cash transactions of banks, activity on Twitter):
  - *the economy contracted by 48% yoy in March, with a decrease in the rate of decline to 32% yoy in May*
  - *an alternative estimate of regional GDP indicates a 45% drop in March with a slowdown to 15% as early as April*

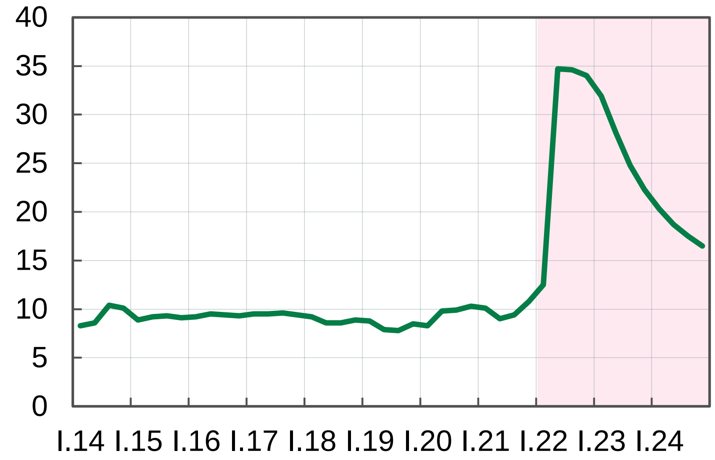
The deep contraction of the economy led to a sharp reduction in the incomes of the population and an increase in the unemployment

Demand for labor 4 weeks moving average



Source: SSSU, NBU calculations.

Unemployment, ILO, s/a, %

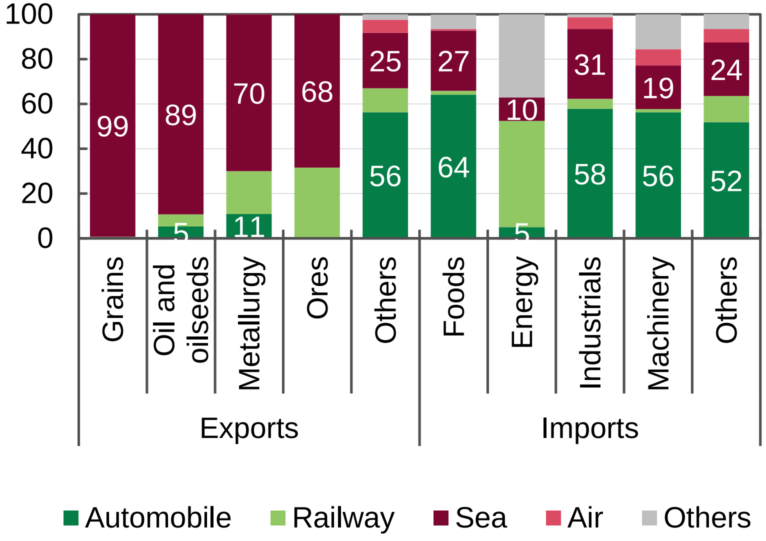


Source: SSSU, NBU calculations.

- **The full-scale war has resulted in a humanitarian crisis and active migration**, including emigration, which will determine the demographic development and labor market conditions for many years to come.
- **Unemployment will gradually decline going forward but will remain above its natural level** due to long-term effects of the war.
- **Further on, as the economy recovers and demand for labor revives, real wages will grow rapidly but growth rates will be restrained** by the excess of labor supply over demand for it

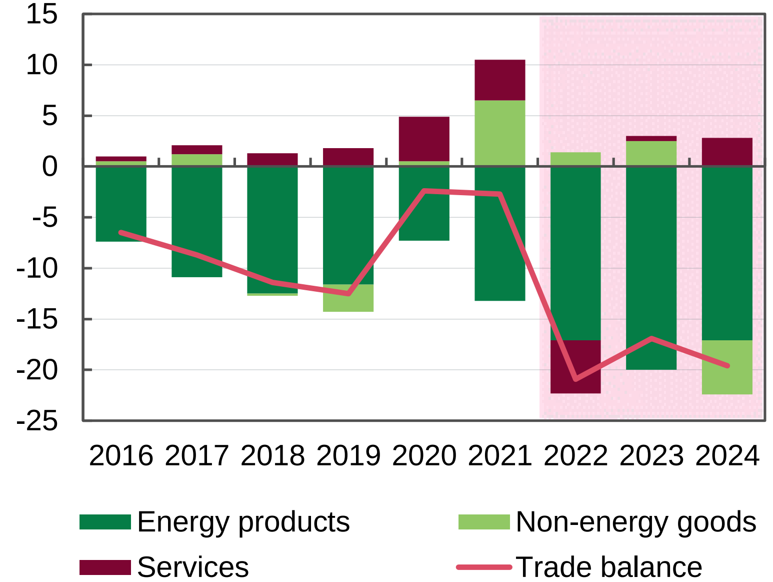
The war caused the deterioration of Ukraine's foreign trade position. This will have medium-term consequences

International trade by mode of transport, 2021, %



Source: SCSU.

Trade balance, USD bn



Source: NBU staff estimates.

- **Logistics problems, primarily the sea blockade, has a greater negative effect on exports of goods rather than on imports.** The trade deficit has widened significantly, and will remain substantial even after the Black Sea ports are unblocked
- **The merchandise export recovery will be moderate** on the back of the destruction of production facilities, problems agricultural sector facing, and decrease in a global commodity prices. Meanwhile the need for imports will grow during the post-war recovery of the country
- **The exports of IT services, as well as remittances**, remains a stable source of FX inflows

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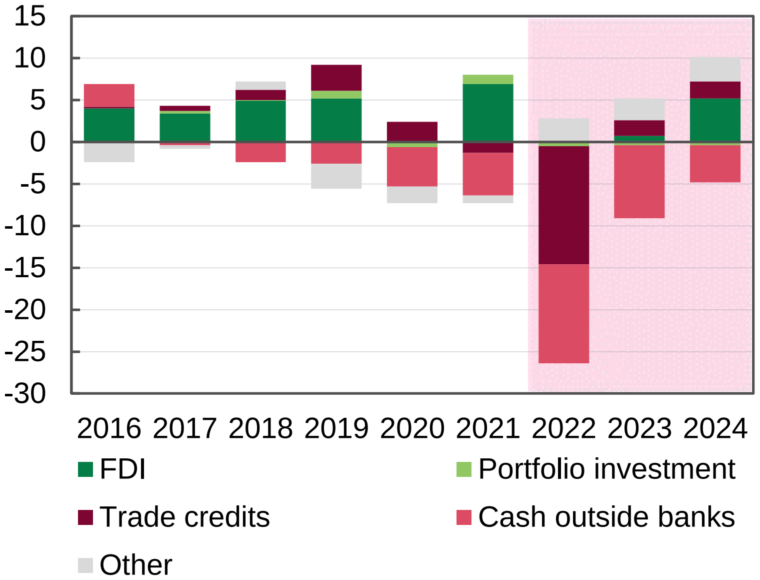
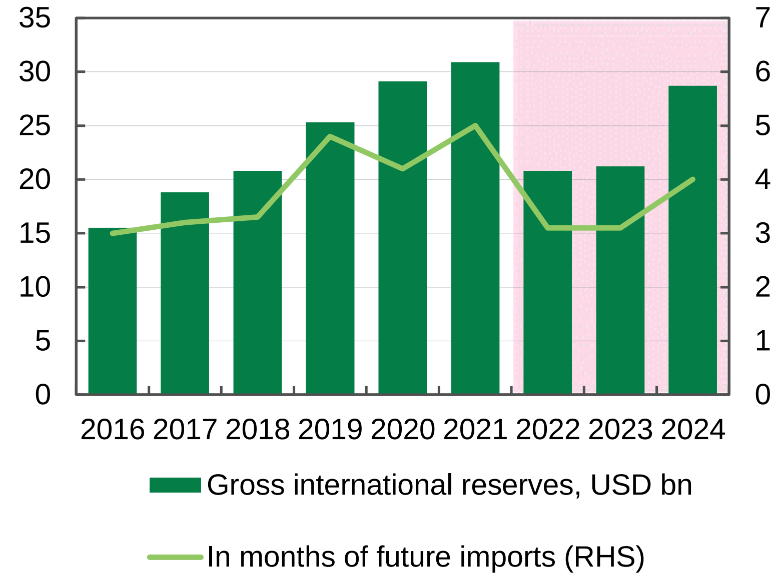
Private capital inflows will be limited, thus, official financing will remain the main source of FX inflows

Private sector: net external liabilities, USD bn



Source: NBU staff estimates.

Gross international reserves

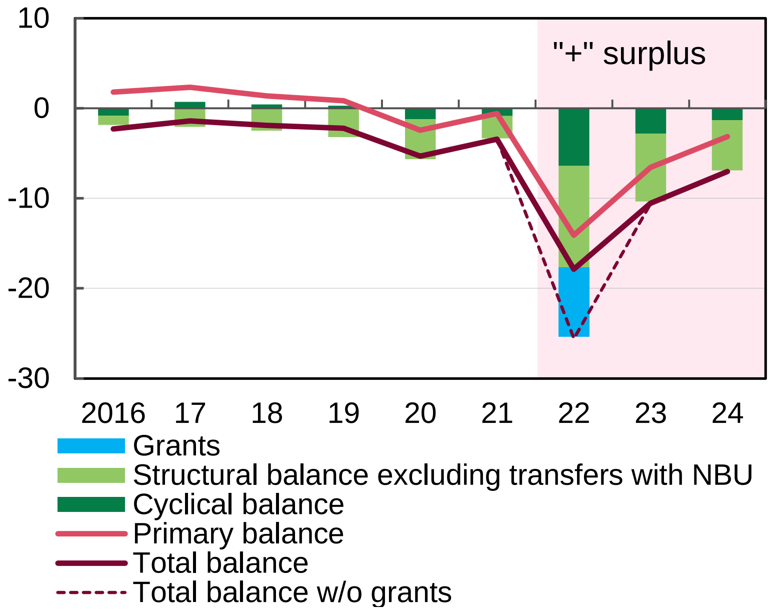


Source: NBU staff estimates.

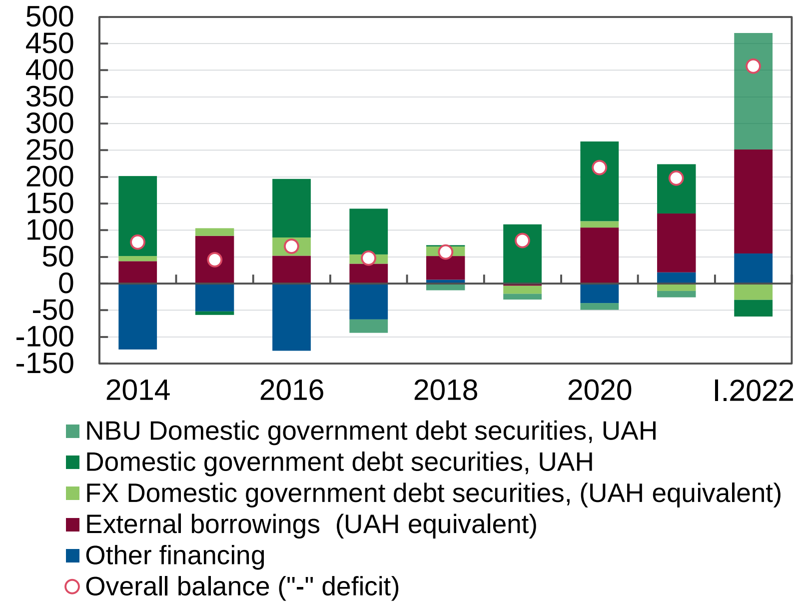
- **The increase in the number of Ukrainian migrants abroad resulted in significant FX outflows.** In addition, debt and investment capital inflows to the private sector came to a halt
- **The private capital inflows will recover gradually** and will be limited in scale due to high risks
- **International financial assistance only partially covered the FX outflows**, as a result, reserves decreased
- **Reserves will stabilize further** thanks to both, declared official financing and expected signing of a new cooperation program with the IMF

Significant budget support is needed for the economy. Gradual consolidation is expected in the post-war period

Consolidated Budget Balance, % of GDP



State budget balance financing *, UAH bn



* Borrowings in UAH include government bonds issued to increase banks' authorized capital, Deposit guarantee fund (DGF) and other state-owned enterprises.

- **Fiscal policy became expansionary, which softened economic shock**
- **Despite the expected narrowing of the budget deficit, it will remain rather loose.** This would support the post-war economy but stimulate inflation
- **In 2022, international financial support and budget monetization will remain major sources of budget financing**. Official and market borrowings will gradually replace budget monetization in the following years
- **A large budget deficit will cause a rapid increase in the public debt,** which will slow down after the war. However, the debt-to-GDP ratio will remain high

Maintaining the exchange rate peg was the main instrument for ensuring stability since the beginning of war

Monetary policy principals during the wartime

Fixed exchange rate – nominal anchor for expectations	Exchange rate stability is a nominal anchor for expectations, the main factor for curbing inflationary pressures and ensuring the macro-financial stability
FX interventions is the main monetary policy instrument **Restrictions on certain FX transactions and capital movements**	Fixed exchange rate is supported by NBU's interventions on the sell of foreign currency, FX restrictions imposed to reduce unproductive capital outflow, and, therefore, demand for foreign currencies
Decision on the key policy rate – additional instrument	Market monetary instruments, in particular the key policy rate, did not play a significant role in the functioning of the money and FX markets in the first months of the war due to high psychological pressure. However, the NBU returned to active monetary policy due to the gradual adaptation of Ukraine's economy and the psychological shock giving way to the economic decision-making logics of businesses and households
The operational design of monetary policy	At the beginning of the war the NBU's measures were primarily aimed at ensuring the smooth functioning of banking system and payments in the economy, in particular, by facilitating banks' access to refinancing loans, including blank refinancing. NBU gradually returns to the traditional operational design and act as the lender of last resort as the banking system resumes its normal market functioning
Monetary financing of budget	The NBU provides direct financing of critical government spending, in particular to meet military and social needs

Box. Monetary policy lessons in wartime

There is no universal recipe for anti-crisis policy

HOWEVER

Each country has its own unique experience, which is determined by:

- different duration and scale of hostilities, their consequences
- pre-war state of the economy and its structure
- level of international reserves and public debt
- level of financial regulators and institutions development and level of confidence in them and in the national currency
- previous dynamic of inflation and degree of inflation expectations anchoring
- international military, political and financial support
- **external conditions**

Georgia → unfolding of the global financial crisis and decline in global commodity prices
Armenia → global disinflation caused by Covid-19
Iraq → rise in global oil prices
Ukraine → ongoing global spike in inflation, tightening of financial conditions in the world, decline in investors' risk appetite

There are certain patterns in the application of monetary policy instruments

1 **Temporary pegged exchange rate** is a widespread and effective measure to stabilize the macro-financial situation and contain inflation→ ***Israel, Iraq, Georgia, Serbia***

BUT! **Pegged exchange rate for a long time** may turn out to be unstable and lead to the accumulation of macroeconomic imbalances → ***Libya*** (in 2016–2020), ***Lebanon*** (in 2020)

2 **Large-scale monetization** of the budget deficit generates risks for financial and price stability→ ***Germany*** (inflation 29,500% mom in October 1923), ***Austria*** (129% mom in August 1922), ***Poland*** (275% mom in October 1923), ***South Korea*** (213% yoy in 1951), ***Serbia*** (1.16 × 10^{14}% yoy in January 1994), ***Israel*** (480 yoy in November 1984)

3 Successful stabilization plans mostly provides for **tight and independent monetary policy, fiscal consolidation, structural reforms and usage of market resources to cover the budget deficit** → ***Israel*** (inflation was reduced from 480% yoy to 18% yoy during 1985–1986; inflation declined to 5.4% yoy as of the end of 1998), ***Croatia*** (inflation declined from 1839% yoy in October 1993 to 4% yoy in October 1994)

Alternative scenario: a longer period of war and blockade of ports

- **The main difference between the assumptions of the alternative and the baseline scenario is the extended period of high security risks** – till Q4 2023. Starting from January 2024 security risks will be significantly reduced and seaports will be fully unblocked **Economic activity will remain depressed in 2023** - GDP will grow by only 2%, and full recovery will not begin until 2024. Limited access to Black Sea ports and related negative effects for agriculture will remain the main restraining factor
- **After rising over 31% this year, inflation will begin to calm down** due to weak consumer demand. Still it will remain high due to negative effects of depressed exports and high exchange rate and inflation expectations
- **In order to offset pro-inflationary "war" factors, monetary policy of the NBU in this scenario will be tighter** than in the baseline
- **Deterioration of the balance of payments due to limited exports and further capital outflow** in 2023 will lead to a decrease in international reserves to a low levels

Indicators*	2021	2022	2023	2024
Real GDP growth, %	3.4	-33.4 [-34.5]	5.5 [2.0]	4.9 [5.6]
CPI, % yoy (eop)*	10.0	31.0 [31.5]	20.7 [19.4]	9.4 [20.7]
Core CPI, % yoy (eop)*	7.9	24.5 [25.2]	12.4 [22.2]	2.6 [13.4]
Current account balance, USD bn	-3.2	6.4 [6.1]	-3.9 [-6.2]	-8.8 [-4.4]
Gross reserves, USD bn	30.9	20.8 [20.8]	21.2 [9.8]	28.7 [14.6]

* in brackets – alternative scenario

Balance of risks for the NBU's baseline scenario forecast for inflation and interest rate is shifted upwards

Degree of impact on the baseline scenario	Probability that a risk will materialize: Low <15%	Medium 15%–25%	High 25%–50%
Weak			
Moderate	Delays in cooperation with the IMF	Recession of the world economy	Increased emigration Unblocking Black Sea ports in 2022
Strong	Rapid implementation of the large-scale reconstruction plan of Ukraine "Marshall Plan"		A longer period of war Imbalance of state finances (low rates for debt securities, freezing tariffs for utilities, no fiscal consolidation, emission in significant volumes)