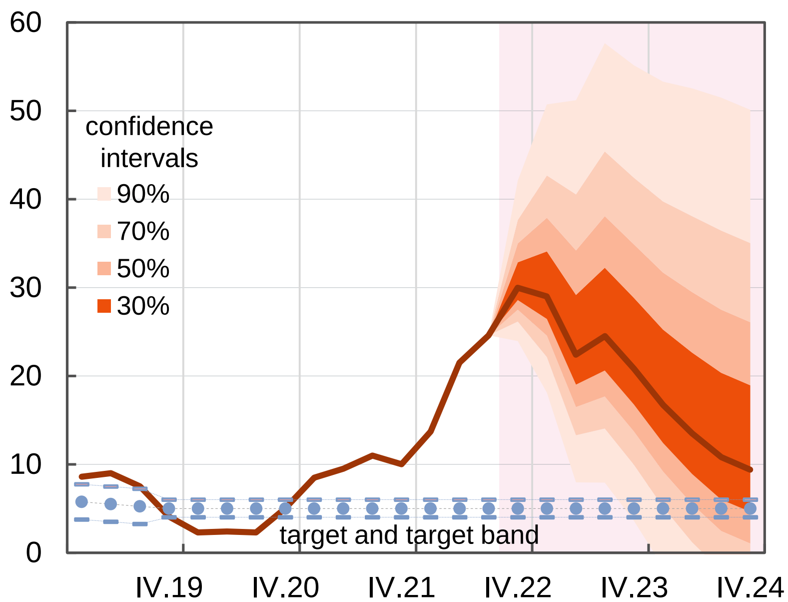
National Bank of Ukraine

Inflation report (October 2022)

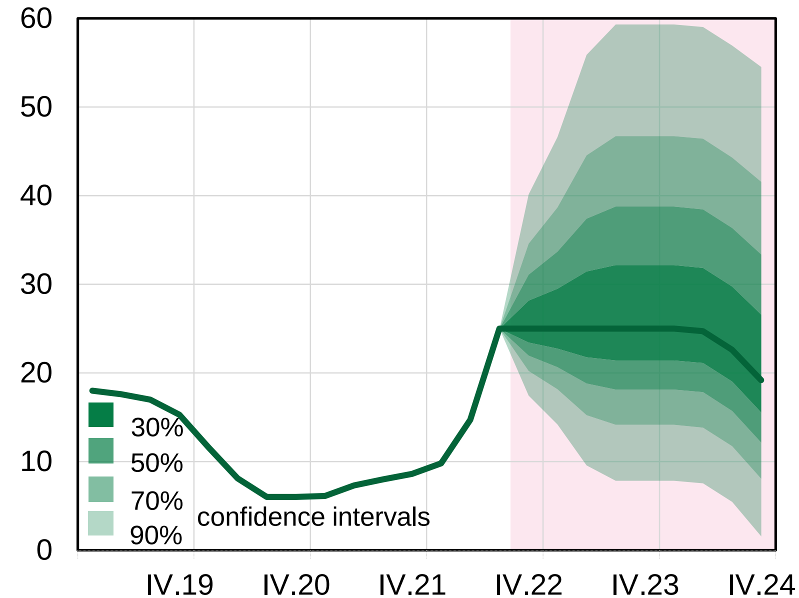
November 1
2022

Due to prolonged period of elevated price pressures and inflation risks tilted to the upside, the key rate needs to remain high

CPI, %*



Key rate, %*



* quarter average

Indicators *	2021	2022	2023	2024
Real GDP growth, %	3.4	-31.5 (-33.4)	4.0 (5.5)	5.2 (4.9)
CPI, % yoy (eop)**	10.0	30.0 (31.0)	20.8 (20.7)	9.4 (9.4)
Core CPI, % yoy (eop)**	7.9	24.5 (24.5)	13.3 (12.4)	3.0 (2.6)
Current account balance, USD bn	-3.2	6.8 (6.4)	-8.0 (-3.9)	-5.1 (-8.8)
Gross reserves, USD bn	30.9	26.0 (20.8)	21.7 (21.2)	27.4 (28.7)

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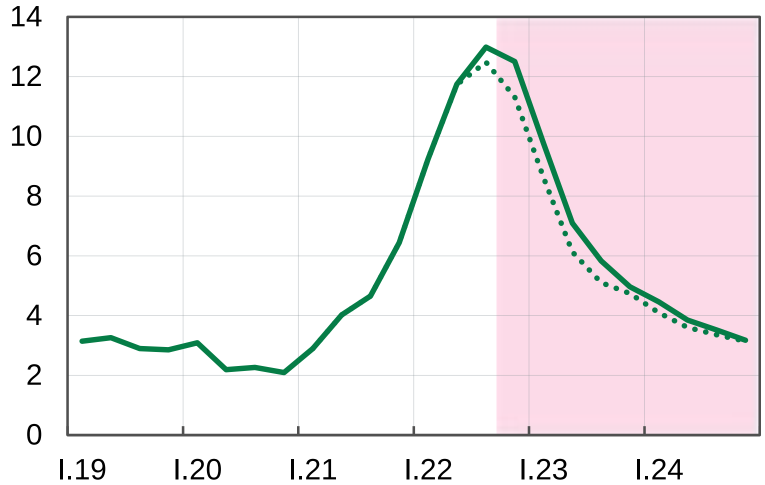
* in brackets – previous forecast
** end of period

Summary

- **The baseline scenario** is based on assumptions of starting a new IMF program, conducting coordinated monetary and fiscal policies, and gradually neutralizing quasi-fiscal imbalances
- **The baseline scenario assumes a significant decline in security risks from the middle of next year**, which would contribute to complete unblocking of seaports, a decrease in sovereign risk premiums, and return of migrants to Ukraine
- **As expected, inflation has been rising during the war but remains manageable.** Inflation will begin to slow down from next year due to the gradual setup of logistics and production, the deceleration of global inflation, and moderately tight monetary conditions
- **After a deep fall at the start of the war, the economy of Ukraine has been picking up.** The gradual recovery will continue in 2023–2024. Continued cooperation with international partners remains an important factor in maintaining the Ukrainian economy during the full-scale war and post-war recovery
- **The current account to return to deficit in the coming years due to limited exports because of the war, strong migration, and the economy's large needs for imports to carry out the reconstruction**
- **As the inflation dynamics are close to the forecast and the balance of risks is skewed upward over the policy horizon, the key policy rate is kept at 25%**
- **A more extended full-scale Russian aggression against Ukraine remains the key risk** to the baseline scenario of the forecast

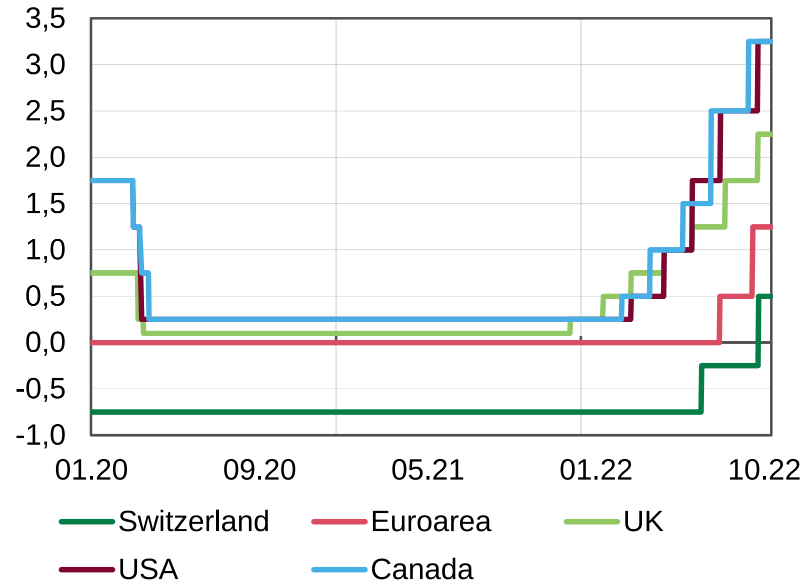
Global inflationary pressures will decrease thanks to a resolve of commodity shortages and monetary policy tightening

Inflation of Ukraine's trading partners (UAwCPI), yoy



Source: World Bank, NBU staff estimates.

Key interest rates in selected developed countries, %



Source: official web pages of central banks.

- **Global inflation was fueled by deficits in energy markets and became increasingly pervasive.** Continuing disruptions in logistics and Russia's invasion of Ukraine provoked an energy shock. A decrease in world prices for energy and other commodity markets will contribute to the reduction of inflation
- **High inflationary pressure intensified the tightening of monetary policy:**
  - **The Fed continued to aggressively raise the Federal funds target range.** Such policy, including balance sheet reduction, is expected to be in place also next
  - **The ECB will carry on with the rate hikes**

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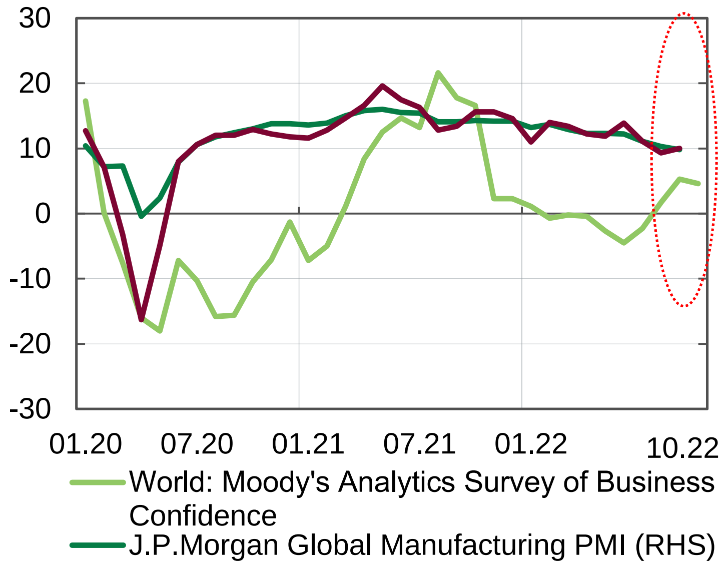
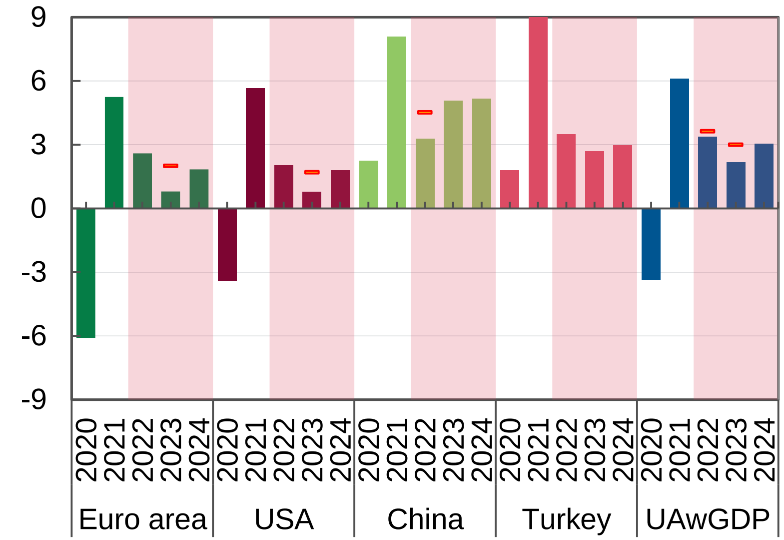
Global GDP growth will remain sluggish as supply chain recovery will take time and global trade will remain weak

Global PMI and Global index of business confidence



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

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

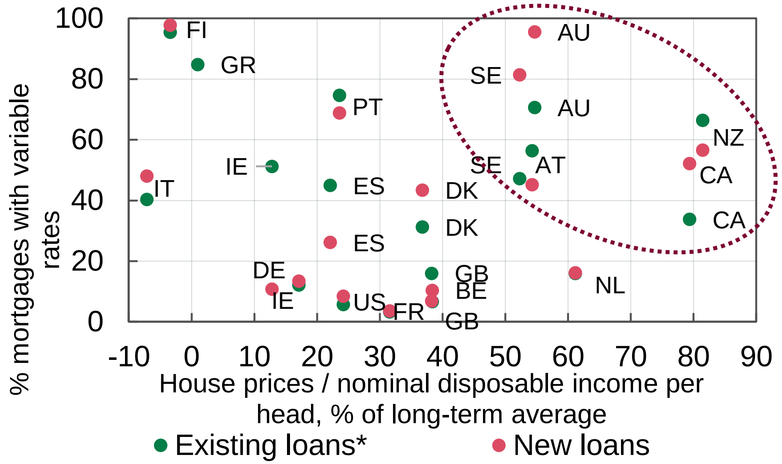


Source: National statistical offices, NBU staff estimates.

- **Estimates of current conditions of doing business and expectations regarding next year prospects remain negative**, and sales are still low
- **Economic growth will be restrained by:**
  - tighter monetary policies in order to curb inflationary pressure
  - negative impact of high energy prices
  - weaker global trade growth due to disruptions in supply and production chains. Volumes of world merchandise trade will grow by just 1% yoy in 2023, as opposed to 3.4% yoy previously forecast

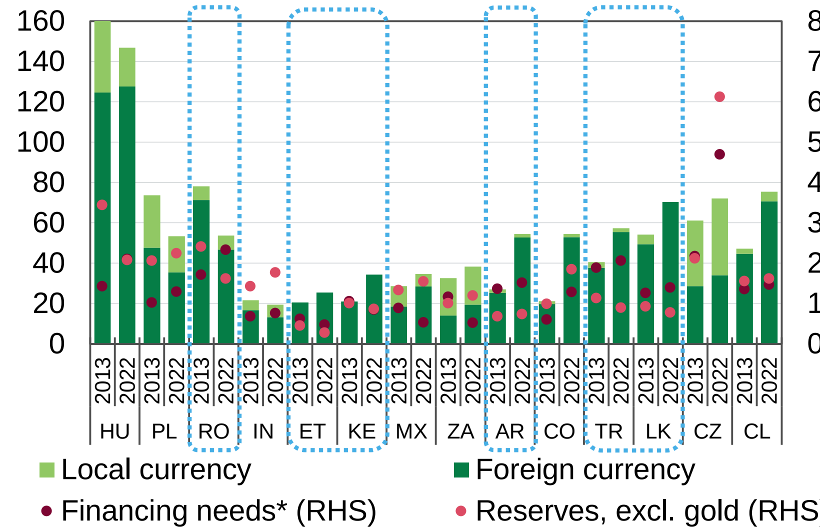
Box. Tightening of global financial conditions: sneaker wave of debt

House price to income ratio and share of mortgages with variable rates**



* For countries without such statistics, it is calculated as the average share of new variable-rate mortgages in 2013-22.
** Includes mortgages with rates fixed for less than one year.
Source: OECD, EMF, ECB, RBA, RBNZ, Bank of Canada, MBA, NBU staff estimates.

EM external debt by currency, financing needs, and foreign reserves, % of GDP

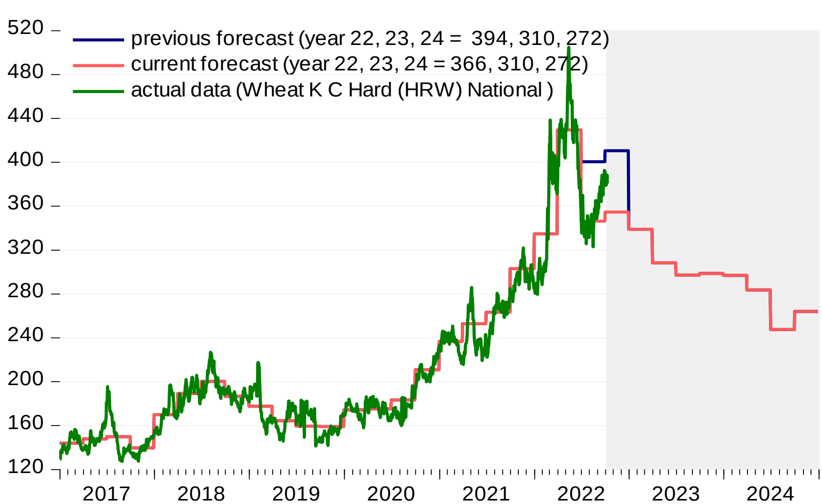


* Short-term external debt (on an original maturity basis) at the beginning of the year minus the current account balance.
Source: IIF, World Bank, IMF.

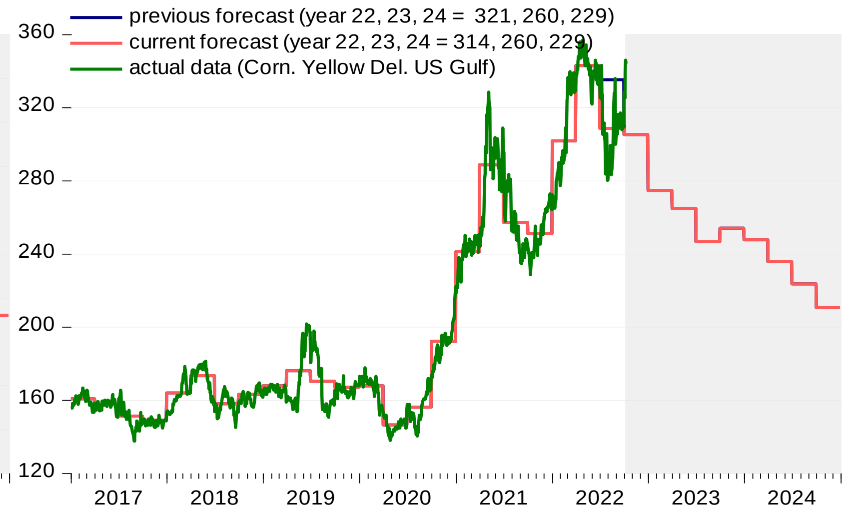
- Rapid tightening of monetary policy in advanced economies **ended a period** of low interest rates and high liquidity that was **favorable for risk assets**
- Mortgage rates have reached ten-year highs, creating **risk of a downturn in real estate markets** given the high costs of housing and a significant share of variable-rate loans
- Slower fiscal consolidation and deterioration of the debt dynamics in selected Eurozone countries may lead to a substantial **revision of the sovereign risk premia** of these countries
- Amid debt accumulation (~80% in foreign currency) and higher current account deficits, the deterioration of external conditions causes **debt distress in several EM and frontier markets**

Prices for grains and steel are forecast to gradually slide down amid supply build-up, including from Ukraine

Wheat World Price, USD/MT

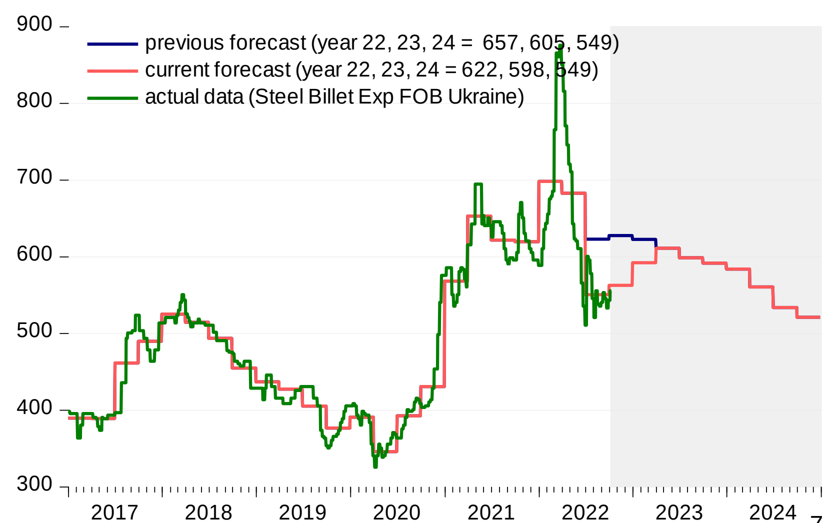


Maize World Price, USD/MT



- **World grain prices will decrease (despite expensive fuel and fertilizers) due to:**
  - Operating the grain corridor
  - expansion of crop areas (in particular in Latin America, India, and Australia)
  - improving weather conditions
- **World steel and iron ore prices will remain at lower levels after the correction**

Steel World Price, USD/MT



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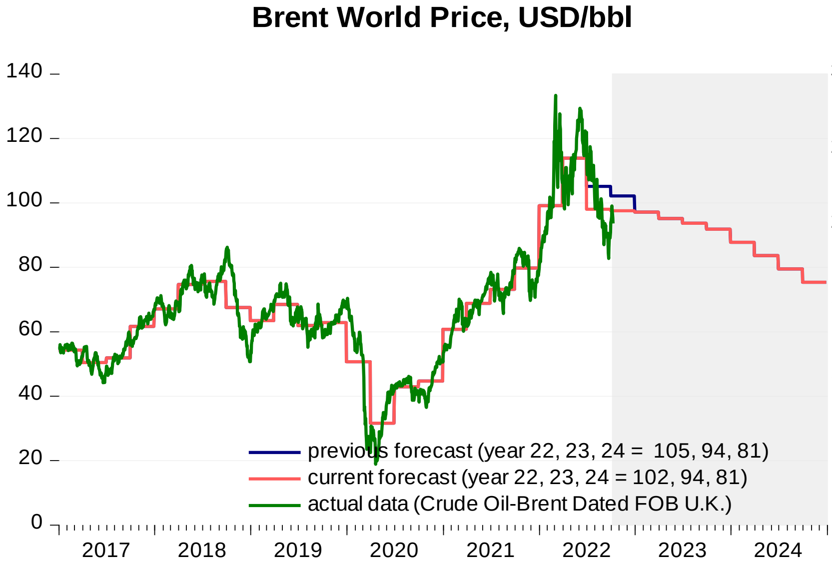
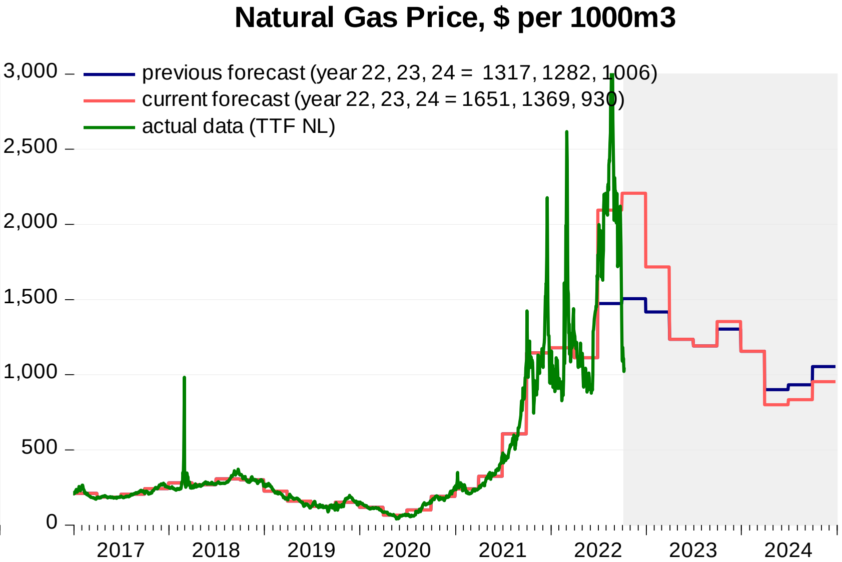
Energy prices will decrease amid fading shocks

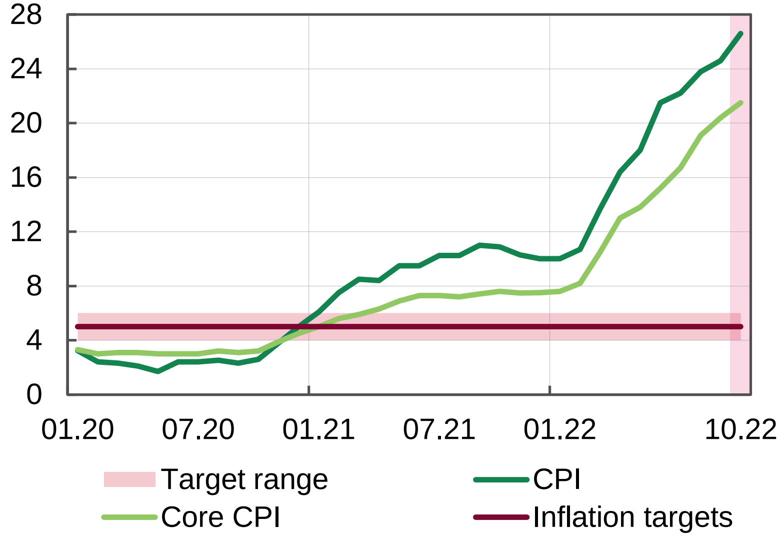




- **Slowing global economy will further be an important factor behind the significant drop in oil demand,** and as a result, oil becoming cheaper. Nevertheless, the restriction of oil production by OPEC+ will restrain prices from falling deeper
- **An imposition of a price cap on russian oil by European countries will have an additional impact on the oil market**. As a result, russia will increasingly re-orient to Asian market
- **High volatility in European natural gas market will remain in place** against the backdrop of russia’s blackmail. Meanwhile, the gradual reduction of Europe’s dependency on russian gas amid significant drop in consumption, active LNG imports, and filled gas storage facilities will put a downward pressure on prices

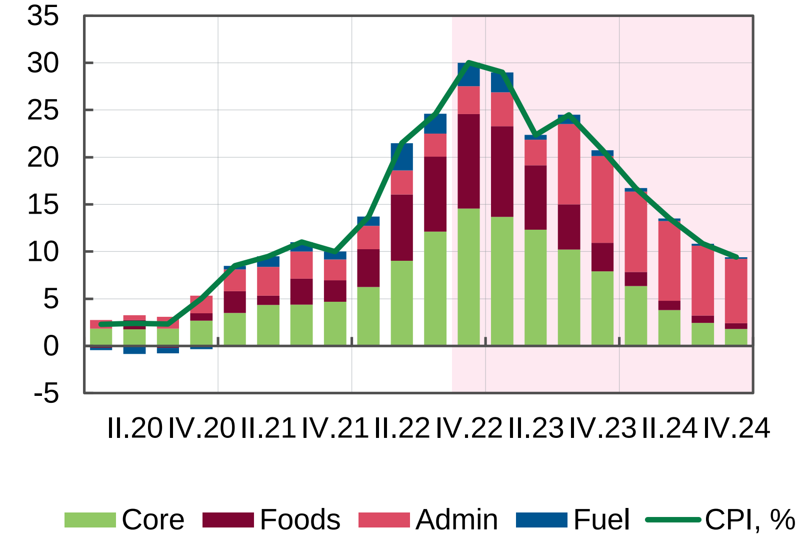
Inflation will begin to slow down from 2023 due to the gradual recovery of logistics and production, and tight monetary conditions

Headline inflation and inflation targets, %



Source: DSSU, NBU staff estimates.

Contributions to Annual CPI Growth by Main Components, pp



Source: DSSU, NBU staff estimates.

- **Inflation continued to accelerate (to 24.6% yoy in September) due to the consequences of full-scale war**, including the disruption of supply chains, the destruction of production facilities, the reduction of the supply of goods and services, and the increase in business costs
- **Another factor was the pass-through effect that the adjustment of the official hryvnia-to-dollar exchange rate had on prices.** The NBU adjusted the exchange rate in July to preserve the stability of the Ukrainian economy
- **Inflation will begin to moderate from next year.** However, it will be above the target primarily due to the consequences of the war and the high rate of growth of administrative prices

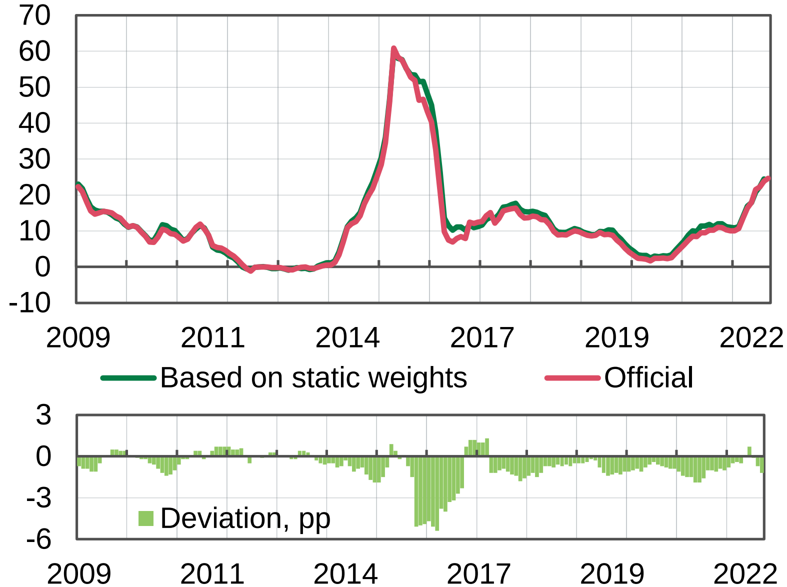
Box. How is the change in consumption reflected in the CPI?

Example of updating the weight of fuel in CPI, %

	Fuel	Other CPI components	CPI total
Official weights, SSSU	**2.8**	**97.2**	**100**
Price change in December 2021 relative to the whole of 2020	32	12.9	13.4
Weights updated for price changes	3.7	109.7	113.4
New normalized weights	**3.2**	**96.8**	**100**

Source: SSSU, NBU staff estimates.

CPI calculated by static and dynamic weights, % yoy

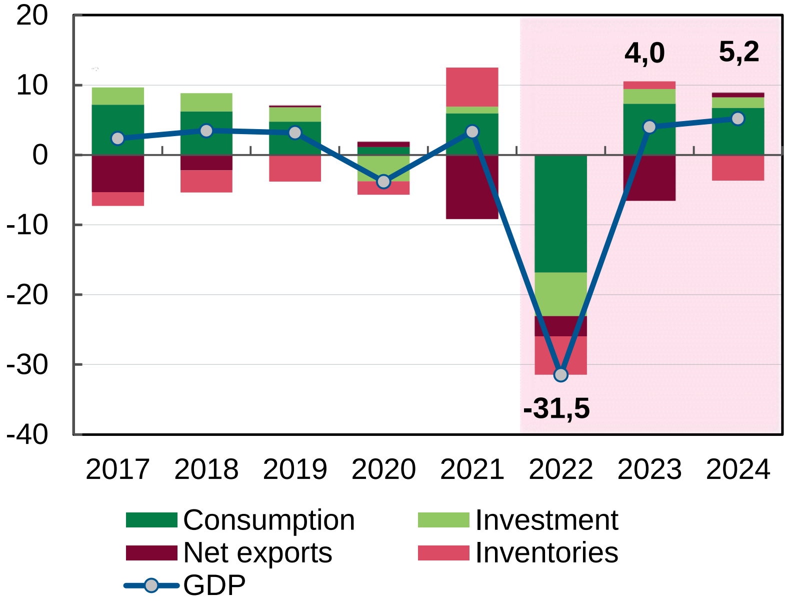


Source: SSSU, NBU staff estimates.

- **The structure of consumption changes over time under the influence of many factors**. According to international standards, such price changes are taken into account in the weight structure for calculating the CPI by updating the weights and the consumer basket
- **At the same time, CPI calculations also take into account impact of current price changes on consumption** through the chained index method or so-called dynamic weights
- As a result, the use of the monetary expenditure structure of previous periods, adjusted for changes in the relative prices of individual components of inflation, **does not significantly distort CPI indicators.** Accordingly, inflationary indicators expressed by the traditional CPI remain relevant even during significant structural changes

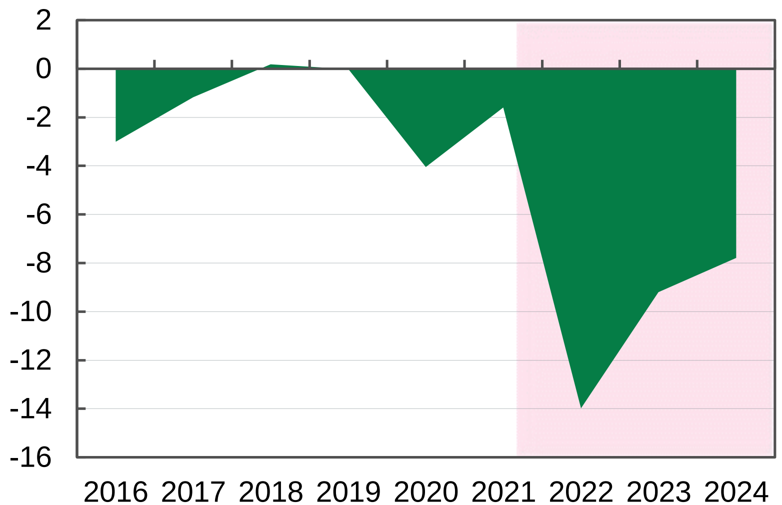
In 2022, GDP will decrease by almost a third. A decline in security risks will be the key factor in the future economic recovery

Real GDP, contributions, p.p.



Source: DSSU, NBU staff estimates.

GDP GAP, %

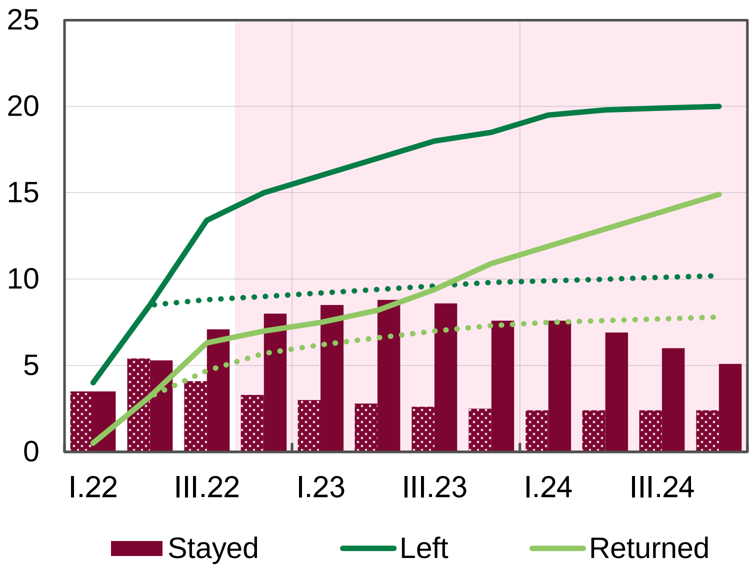


Source: DSSU, NBU staff estimates.

- **After a deep fall at the start of the war, the economy of Ukraine has been picking up** thanks to the adaptation of enterprises and households to the conditions of war, the setup of logistics, the improvement of business and consumer expectations
- **The expected reduction in security risks from mid-2023 will be a key driver of future economic recovery.** Growth will be supported by accommodative fiscal policy and the full recovery of Black Sea ports
- **But GDP will continue to be below its potential level due to the effects of the war.** The potential level of GDP will remain significantly below the pre-war level

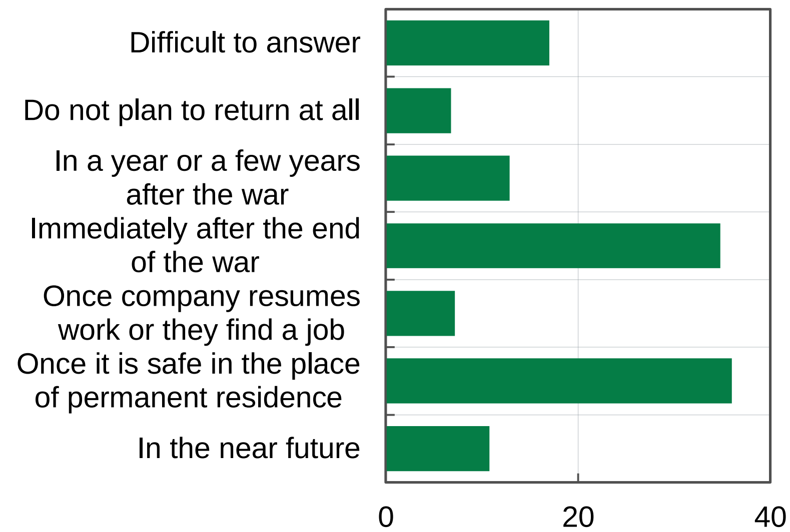
Migration will continue to be strong (domestic and external)

Number of migrants staying abroad, millions (at the end of the quarter)



Source: UNHCR, NBU staff estimates.

Plans to return to Ukraine, % of answers

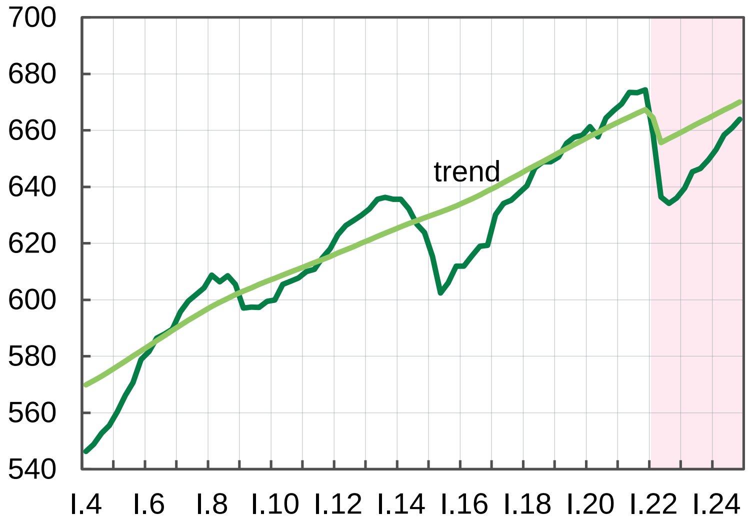


Source: Razumkov Centre Survey (July-August 2022).

- **13.4 million people left Ukraine, and 6.3 million people returned** (according to UN data, from 24.02.2022 to 30.09.2022). According to the IOM, at the end of September, the number of internally displaced persons was almost 7 million, of which 3.2 million were registered as IDPs
- **With the reduction of security risks, an intensification of citizen returns is expected** from the second half of next year, although at the end of 2024, according to the assumptions of the NBU, there will still be about 5 million people abroad, which will lead to a corresponding decrease in the workforce and lay risks for the post-war recovery

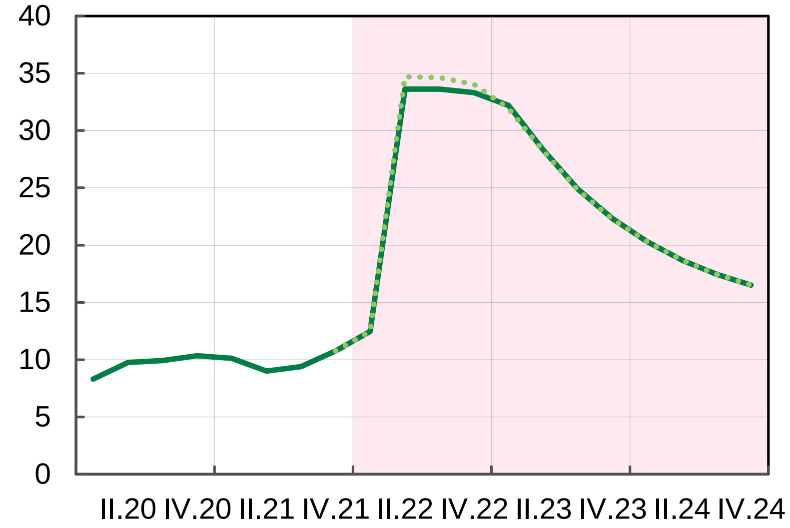
Wage growth will resume, but will be limited by high inflation and lower than pre-war productivity

Real wages, level (in logs)



Source: DSSU, NBU staff estimates.

ILO unemployment, sa, %

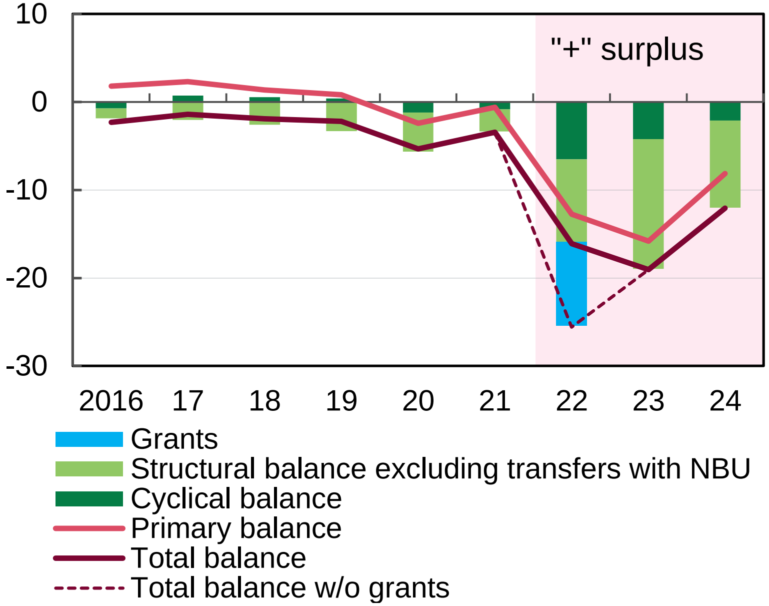


Source: DSSU, NBU staff estimates.

- **In 2022, salaries sharply decrease**, but household income is supported by social benefits and payments to the military
- **Going forward, real wage growth will resume**, albeit limited by high inflation and lower than pre-war productivity
- **Despite the gradual revival of economic activity and labor demand, unemployment will remain high** due to the destruction of production capacity and structural disparities in the labor market

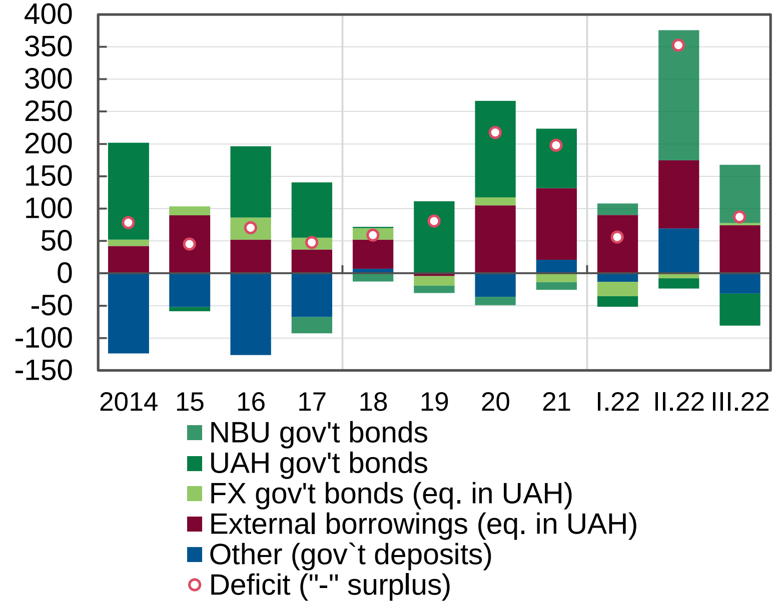
Fiscal policy will remain accommodative during and after the war with the support of international partners

Consolidated Budget Balance, % of GDP



Source: Treasury, MoF, NBU staff estimates.

State budget balance financing, UAH bn

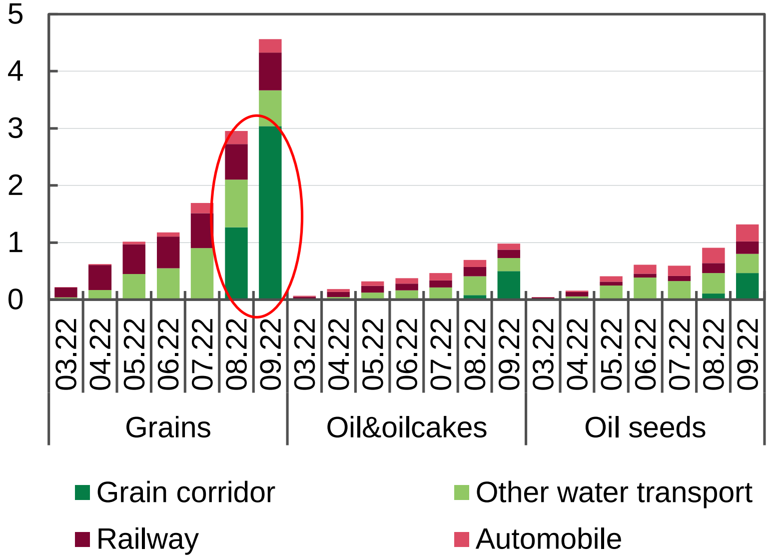


Source: Treasury, MoF, NBU staff estimates.

- **Fiscal policy is unprecedentedly expansionary and will remain accommodative through the end of the forecast period.** This supports the economy during wartime and will facilitate recovery with reduced security risks. The budget deficit will decrease gradually
- **International support will remain the key source of budget needs financing.** Together with an increase in market borrowing, this will make it possible to completely stop monetizing the budget deficit from 2023

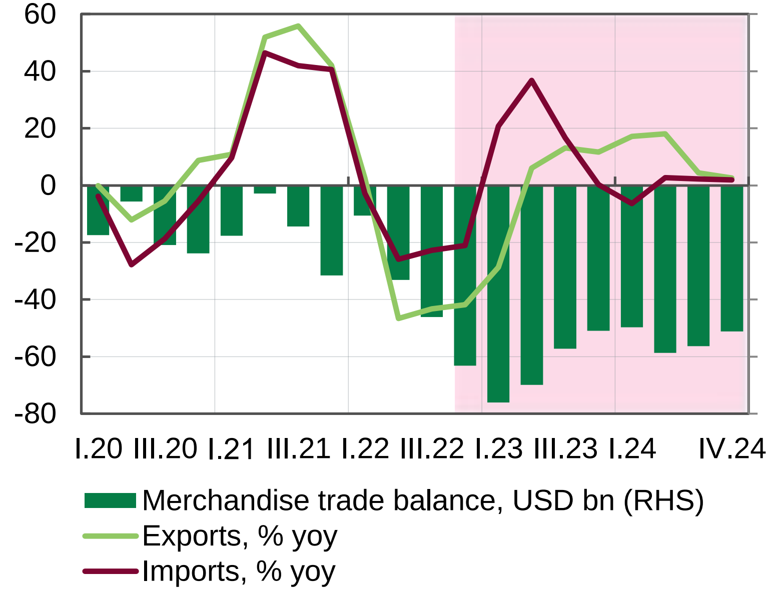
Having "grain corridor“ operational and further unblocking of sea ports will make exports grow, however, at a slow pace

Exports of key food products by mode of transport, m t



Source: Ministry of Agrarian Policy and Food of Ukraine, Black Sea Grain Initiative JCC.

Merchandise trade

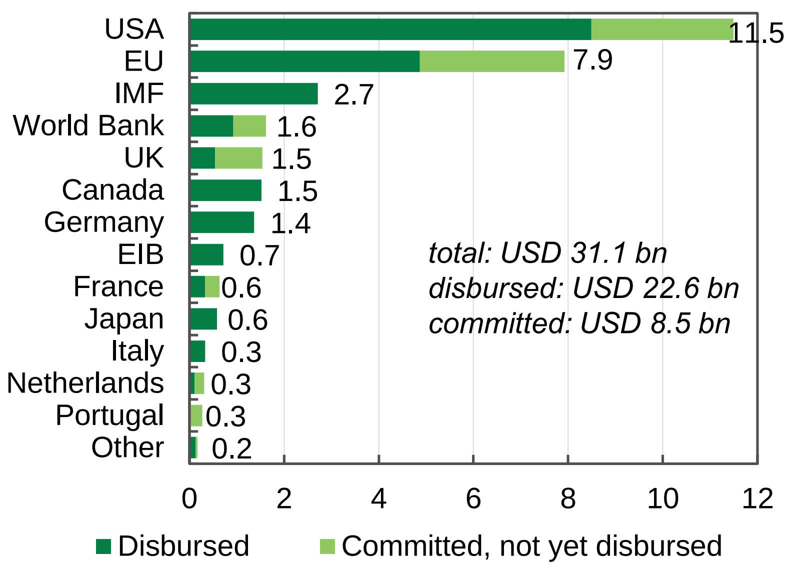


Source: NBU staff estimates.

- **Expansion of agricultural products exports due to the launch of the "grain corridor" and larger inflows of official financing contributed to the growth in FX receipts in Q3 2022.** These items, along with remittances, will continue to be the primary sources of FX inflows
- **Export recovery will remain to be constrained** by destroyed and damaged production facilities and logistics, lower harvests and lower prices for key export commodities

Expected sizable amounts of official financing will ensure a sufficient level of reserves

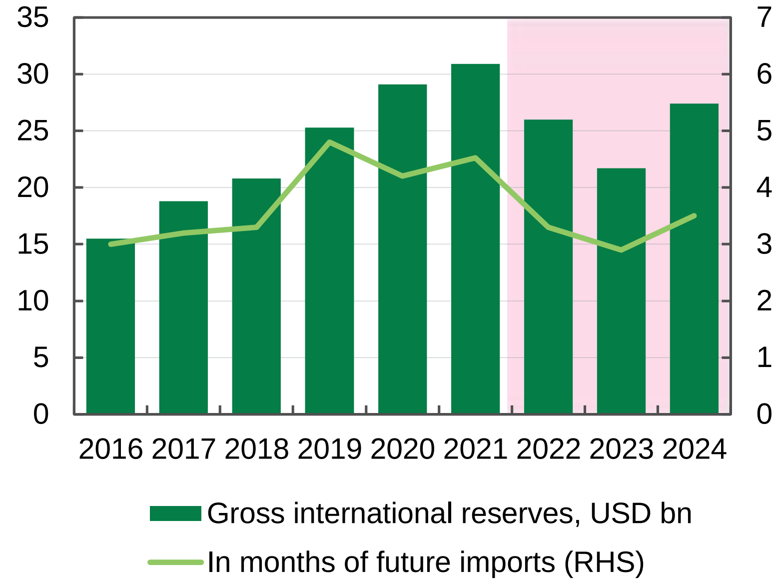
International financial assistance* in 2022 from the beginning of the full-scale war, USD bn



*as of 20 October 2022

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

Gross international reserves, USD bn

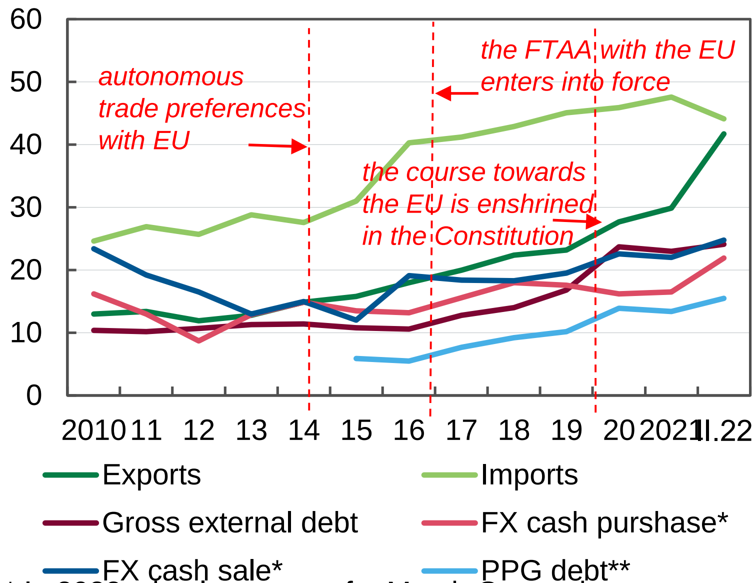


Source: NBU staff estimates.

- **The international financial support surpassed the extent of the NBU's net sale of FX currency in Q3.** As a result, reserves increased to USD 23.9 bn as of the end of September
- **Financial support from international partners will continue to be substantial** and cover significant current account deficits. This will help maintain international reserves at a sufficient level

Box. The role of the Euro in FX settlements of Ukraine is steadily growing, however, US dollar will retain a significant role

Euro share in financial settlements by selected indicators, %

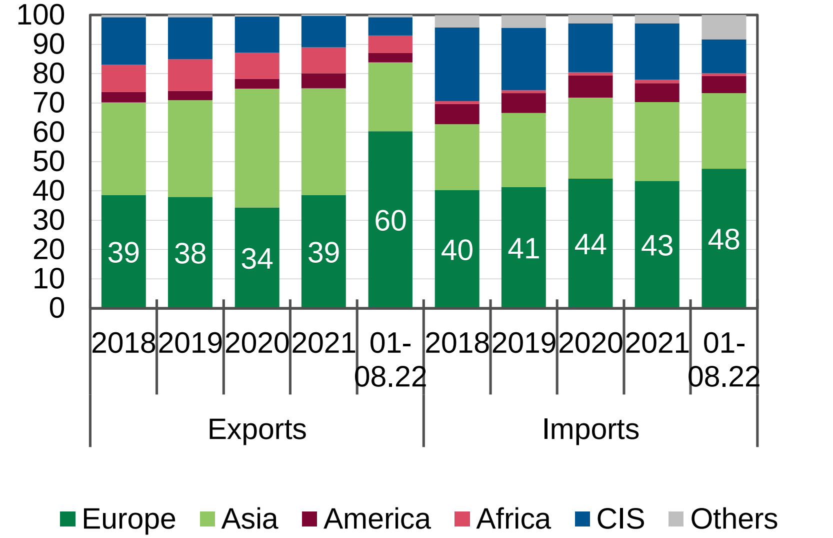


* In 2022, simple average for March-September

** In 2022, data as of end of July

Source: NBU, MFU.

Geographical structure of trade in goods of Ukraine, %



Source: NBU.

- **The Association Agreement with the EU became one of the most powerful drivers behind the steadily increasing role of the euro** for foreign trade settlements. And the intensification of cooperation with the EU also affected the currency structure of financial flows
- **In 2022, the blockade of transport routes due to a full-scale war caused a significant surge in the share of the euro in Ukraine's FX settlements**, in particular in the export of goods
- **The recovery of traditional trade routes will somewhat diminish the share of the euro** as access to non-European markets to be restored. Furthermore, the role of the US dollar will remain significant as long as the high share of commodities in exports is preserved

Alternative scenario: prolonged war and ongoing blockade of ports

- **The most significant risk is the longer duration of high security risks**. The alternative scenario of the macro forecast is based on the assumption of their preservation until the middle of 2024
- **In the case of the implementation of the scenario with long-term preservation of high security risks, the prospects for the recovery of the Ukrainian economy in the next year will significantly deteriorate**
- **A longer period of subdued demand, low investment activity and logistical constraints will be the main restraints on GDP growth.** Under such conditions, recovery will begin no earlier than 2024
- **Weak consumer demand will restrain inflation, but it will remain high due to the adverse exchange rate impact of the loss of export potential and high inflation expectations**. CPI profile revision is mostly related to the adjustment of the terms of bringing energy tariffs to the level of cost
- **In 2023-2024, the balance of payments will be worse than in the baseline, due to limited export opportunities and continued capital outflows.** As a result, international reserves will decrease over the entire forecast horizon

Indicators *	2021	2022	2023	2024
Real GDP growth, %	3.4	-31.5	4.0 [1.9]	5.2 [2.5]
CPI, % yoy (eop)	10.0	30.0	20.8 [13.4]	9.4 [19.6]
Current account balance, USD bn	-3.2	6.8	-8.0 [-8.3]	-5.1 [-7.9]
Gross reserves, USD bn	30.9	26.0	21.7 [18.7]	27.4 [12.6]

* In brackets – alternative scenario

Risks

Degree of impact on the baseline scenario	Probability that a risk will materialize: Low <15%	Medium 15%–25%	High 25%–50%
Weak			Termination of gas transit
Moderate	Delays in cooperation with the IMF	Cessation of the grain corridor	Increased emigration Energy risks of the coming winter
Strong	Rapid implementation of the large-scale reconstruction plan of Ukraine "Marshall Plan"	Imbalance of state finances (low rates for debt securities, freezing tariffs for utilities, prolonged emission)	A longer period of war, escalation