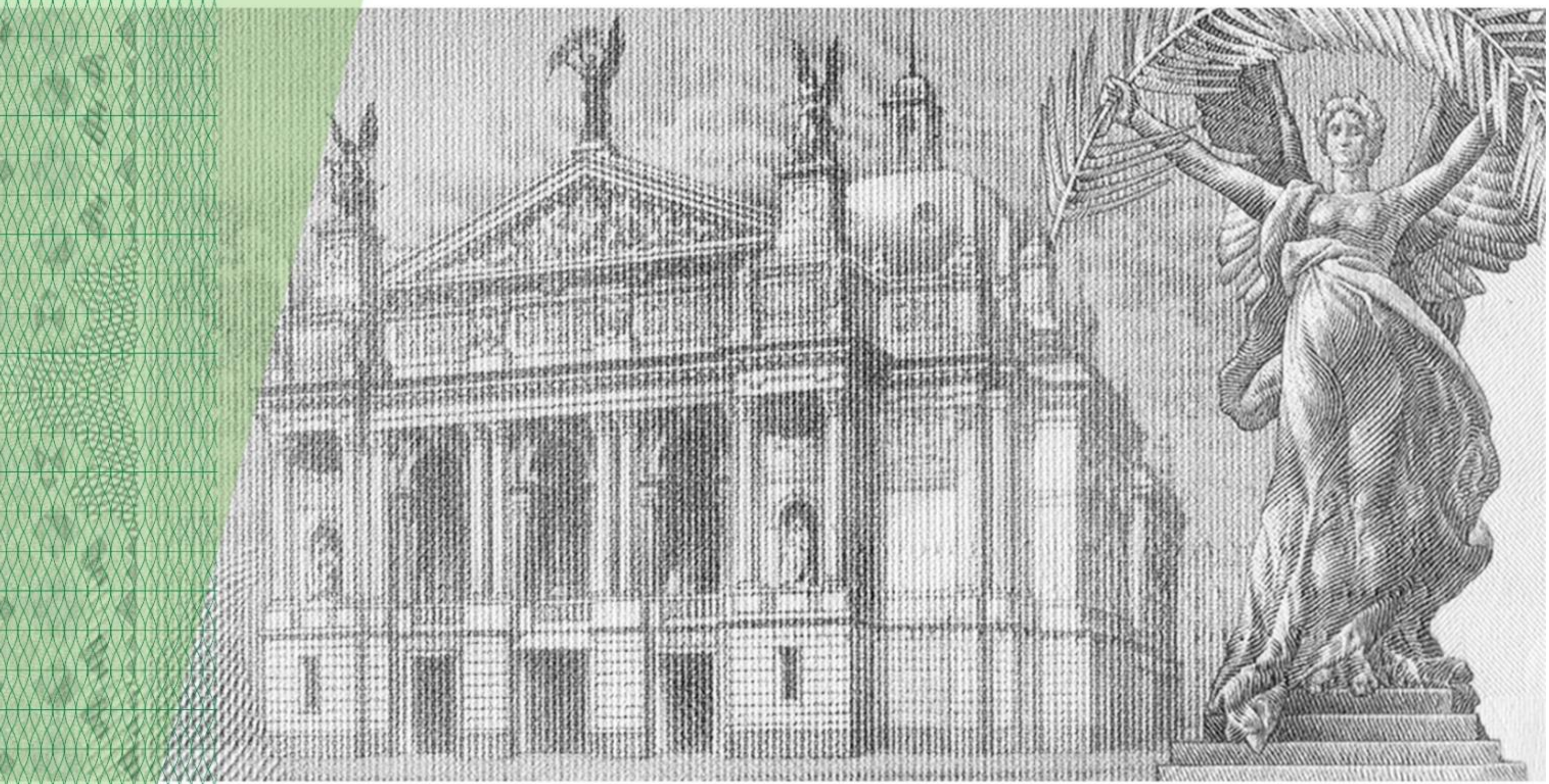
National Bank of Ukraine

Inflation Report

April 2023



Despite the full-scale war, the NBU stays committed to its mandate to ensure price and financial stability, which are the keys to achieving sustainable economic recovery. At the same time, the lower effectiveness of market instruments and high uncertainty have rendered it temporarily impossible to conduct monetary policy in its conventional inflation targeting format. The approaches to fulfilling the NBU's priority functions, as well as the objectives and principles of the central bank's monetary policy have had to be changed, and these changes were set forth in the Monetary Policy Guidelines for the Duration of Martial Law.

Maintaining exchange rate sustainability remains the key stabilization measure to ensure steady disinflation and support the adjustment of the economy to the conditions of full-scale war. Not only does it have a direct restraining effect on the growth in the cost of goods and services, it also eases underlying price pressures through its stabilizing influence on expectations.

Among other things, FX market stability is supported by the NBU's active FX interventions, the maintenance and calibration of a number of administrative restrictions (in particular, restrictions on FX transactions and capital movement), termination of monetary financing of the budget, and measures aimed at raising attractiveness of hryvnia assets. The NBU directs its interest rate policy, adapts its operational design, and applies other monetary policy tools (in particular, changes the reserve requirement) primarily in order to ensure the sufficient attractiveness of hryvnia term deposits. This restrains demand for foreign currency, while helping to protect international reserves and maintain exchange rate sustainability – thus supporting further disinflation amid still-high risks, high uncertainty, and an unavoidably large state budget deficit. Such policy of the NBU also helps create the preconditions for the gradual liberalization of administrative restrictions, which become less effective over time, and will allow a return to the conventional inflation targeting framework as the functioning of the economy normalizes.

The analysis in the current Inflation Report (April 2023) is based on the data available at the date of its preparation. Thus, for some indicators, the time horizon of the analysis may vary. The cut-off date for the data in this report is 26 April 2023 for the majority of indicators. The Inflation Report contains a forecast for the economic development of the country in 2023–2025, which was prepared by the Monetary Policy and Economic Analysis Department, and approved by the NBU Board at its monetary policy meeting on 27 April 2023[1].

The NBU Board will continue to decide on the level of the key policy rate and the use of other monetary tools in line with the schedule that it publishes in advance. The decisions the NBU Board makes in January, April, July, and October are based on new macroeconomic forecasts. At the remaining four meetings (taking place in March, June, September, and December), the NBU Board takes its interest rate decisions based on the results of assessments of risks and uncertainly that take into account the economic developments in Ukraine and beyond that have emerged since the latest published forecast.

The NBU Board announces its decisions on setting the level of the key policy rate and the use of other monetary instruments at a press briefing held after the NBU Board's monetary policy meeting, on the same day, at 2 p.m. A press release that explains the NBU Board's consensus position on its monetary policy decisions is published at the same time. The Summary of the Discussion on the Key Policy Rate at the Monetary Policy Committee is published on the 11th day after the decision is made. In contrast to press releases on monetary policy decisions, the summary shows the depersonalized opinions of all MPC members on the optimal monetary policy decisions to be made. It includes dissenting views and the reasoning behind them.

Previous issues of the Inflation Report, presentations of the Inflation Report, the forecast of the main macroeconomic indicators, data for tables and figures are available here.

.

[1]NBU Board decision No. 160 *On Approval of the Inflation Report* dated 27 April 2023.

Contents

Summary

The baseline scenario of the macroeconomic forecast is a program-based forecast, as it takes account of effects from taking 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. In addition, the baseline scenario assumes a significant decline in security risks from the start of 2024, which would contribute to the complete unblocking of seaports, a decrease in sovereign risk premiums, and the return of forced migrants back to Ukraine.

Inflation has been declining, including thanks to the NBU's measures to support exchange rate sustainability. However, price pressure remains elevated because of the war

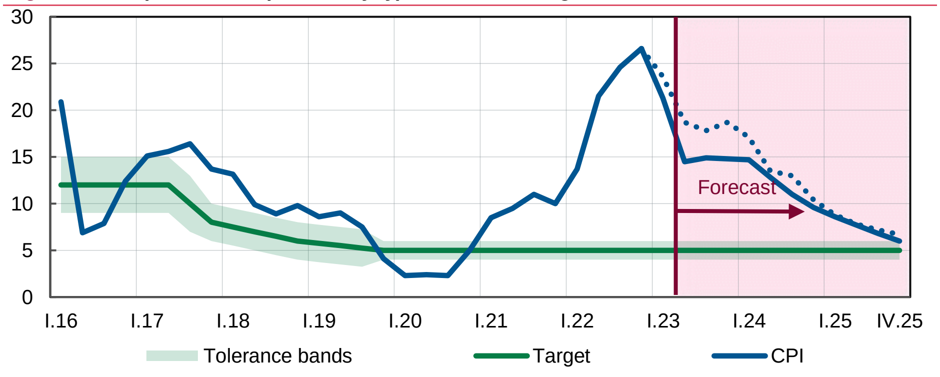
From the start of the year, inflation has been declining faster than expected. In March, consumer price growth slowed to 21.3% yoy. The easing of inflationary pressure was facilitated by the sufficient supply of food staples and fuels and by a rapid recovery of the energy system from the consequences of russia's terrorist attacks. An important factor was the improvement in inflation expectations from the start of the year on the back of ceased monetary financing of the budget, hryvnia exchange rate appreciation on the cash market, and the improved attractiveness of hryvnia assets thanks to the measures taken by the NBU.

However, inflationary pressure remains high. The year-on-year decline in inflation was largely driven by the base effect from last year and enhanced by the mild winter. On the other hand, pressures on businesses' production costs persist, in particular due to difficulties of running business and setting up supply chains during the war.

Inflation will decelerate to 14.8% in 2023 and will return to a single-digit level in the years ahead

Inflation will continue to decelerate, including due to lower global energy prices, restrained domestic demand, and the effect of the NBU's monetary policy. Having considered the combined effect of the above factors and the much-better-than-expected situation in the energy sector, the NBU revised its year-end 2023 inflation forecast downwards, from 18.7% to 14.8%.

Figure 1.[2] **CPI (as of end of period, % yoy) and inflation targets**



Source: SSSU, NBU staff estimates.

The easing of price pressures in the coming years will be primarily facilitated by a decrease in security risks, which is the main assumption of the NBU forecast. Under such conditions, inflation expectations are forecast to improve and the supply of goods is projected to increase thanks to a restoration of optimal logistical routes and production capacities. With this in mind, the NBU expects inflation to decrease to 9.6% in 2024, and to 6.0% in 2025.

Already this year, the economy will return to growth, which will accelerate in the coming years on the back of a decrease in security risks, an assumption underlying the forecast

In view of the rapid recovery in the energy system and the loose fiscal policy, the NBU improved its economic growth forecast for 2023, from 0.3% to 2.0%. Provided that the assumptions about the security situation materialize, no significant deficits of electricity are expected, except for some local

[2] Unless otherwise indicated, the dashed line in the figures means the previous forecast.

and ad-hoc shortages that might occur in H2. At the same time, an increase in budget spending on the back of substantial international financial assistance will support economic activity and consumption.

The easing of security risks, starting next year, will help accelerate economic growth to 4.3% in 2024 and to 6.4% in 2025. The de-occupation of territories and the complete unblocking of Black Sea ports will enable a gradual increase in industrial production and crop harvests. Moreover, domestic demand is expected to increase as forced migrants return.

Net FX inflows to Ukraine continue thanks to substantial international assistance

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. At the same time, inflows of international assistance will offset these factors.

Overall, inflows from international partners could exceed USD 42 billion this year. Disbursements from partners will help increase international reserves to about USD 35 billion by the end of 2023. This will strengthen the NBU's capability to further maintain exchange rate sustainability and gradually ease FX restrictions.

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.

Significant inflows of official financing, along with the development of the domestic debt market, will help avoid monetary financing of the budget

The government has been raising tax revenues and increasing domestic borrowings. However, these funds are not sufficient to finance the considerable expenditures of the state budget in wartime and during the post-war recovery. International assistance will remain an important source of financing to meet state budget needs. Meanwhile, after reaching records this year, the deficit and official financing are expected to gradually decline from 2024.

Given the uncertainty around the war, as well as significant state budget expenditures, maintaining exchange rate sustainability amid plans to start liberalizing FX restrictions will require measures to keep hryvnia-denominated savings attractive. In view of this, the NBU has been maintaining the key policy rate at the level of 25%

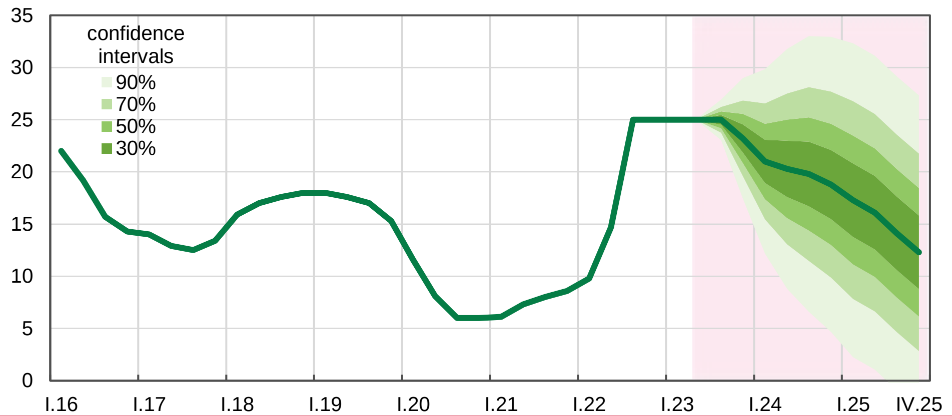
Keeping the key policy rate at the level of 25% and taking additional measures to increase the investment appeal of hryvnia savings, including by incentivizing competition among banks for term deposits, have helped fortify exchange rate sustainability. These same measures boosted demand for hryvnia instruments, while curtailing demand for foreign currency. This was evidenced, among other things, by an appreciation of the hryvnia's cash exchange rate seen from the start of 2023, which had a positive effect on expectations, while also supporting a downward trend in inflation.

At the same time, exchange rate sustainability is primarily being ensured by tight currency restrictions. Their effectiveness wanes over time, while their restrictive effect on business activity increases. Therefore, the liberalization of FX restrictions in the foreseeable future becomes increasingly relevant.

To this end, the NBU is making policy efforts to establish appropriate preconditions for an easing of FX controls. With uncertainty still being high and the risks of current account balances in banks 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 stay attractive. Which makes it necessary to keep the key policy rate at the level of 25% per annum.

To maintain exchange rate sustainability, improve expectations, and steadily reduce inflation, the NBU will continue to ensure the needed monetary conditions. The key policy rate will stay high for sufficient time, supporting the effects of the NBU's previous measures and leaving room for further growth in the investment appeal of hryvnia savings. At the same time, the improved macroeconomic situation, including a faster decline in inflation and the accumulation of a comfortable amount of international reserves, is creating prerequisites for revising the key policy rate forecast. The updated macro forecast envisages the launch of an easing cycle in Q4 2023. Even under this scenario, monetary conditions will remain fairly tight over the forecast horizon as inflation continues to slow, inflation expectations improve, and real returns on hryvnia assets remain high.

Figure 2. Key policy rate, average, %



Source: NBU staff estimates.

The NBU stands ready to adjust the time and pace of changes in the key policy rate in view of FX market developments, inflation developments, the sustainability of international support, and the effectiveness of measures to make hryvnia instruments attractive.

The key risk to this forecast is that the war may last longer and be fiercer than anticipated

As before, the core assumption of the forecast is that security risks will start to decline significantly from early 2024. Prolonged hostilities could slow the economic recovery and worsen exchange-rate and inflation expectations. This will pose additional challenges to the country’s macrofinancial sustainability. The war is also generating other risks. Those include:

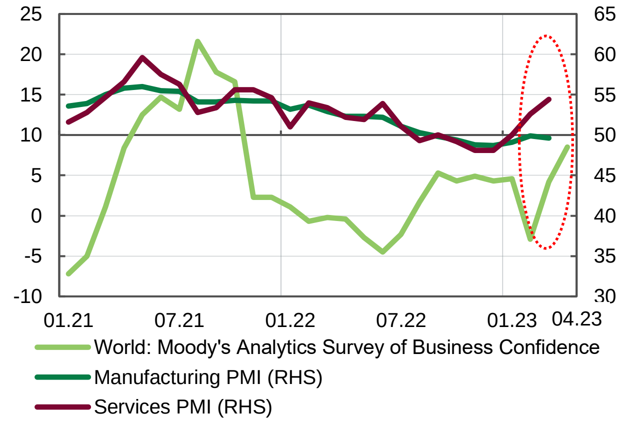
- the emergence of additional budget needs and substantial quasi-fiscal deficits, including in the energy sector;
- disruptions or a shutdown of the "grain corridor", and aggravation of problems arising from the limitations imposed on imports of Ukrainian foodstuffs by some European countries;
- further damage inflicted by russia on energy infrastructure, which could again cause substantial power shortages, restraining economic activity and exports and fueling demand for imported equipment and energy and, consequently, foreign currency;
- a slower decline in global inflation than expected.

Conversely, the rapid implementation of Ukraine’s recovery project, together with reforms related to European integration, will significantly accelerate the pace of economic growth. The disbursement of significant funds to finance the recovery will also expand Ukraine’s options in terms of easing FX restrictions.

Part 1. External Environment

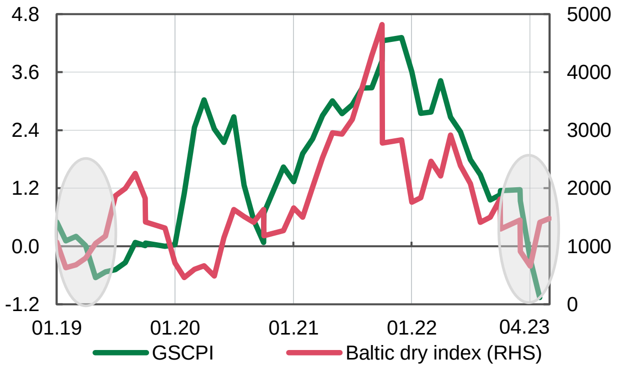
- A recession in the global economy has been avoided, but economic growth in Ukraine's main trading partners (MTPs) is sluggish due to geopolitical uncertainty, tight financial conditions, and persistently high inflationary pressures. At the same time, a gradual decline in inflation, coupled with strong labor market conditions, will contribute to the further acceleration of economic growth.
- The situation on the global commodity markets will improve thanks to a gradual increase in supply, which will slowly lower prices. Natural gas prices on the European market, which have had the most significant impact on inflation, will trend downward due to weaker demand amid increased LNG production.
- After central bank interest rates reach a peak in mid-2023, they are expected to be cut gradually as inflationary pressures ease.

Figure 1.1. Global PMI and World business confidence index



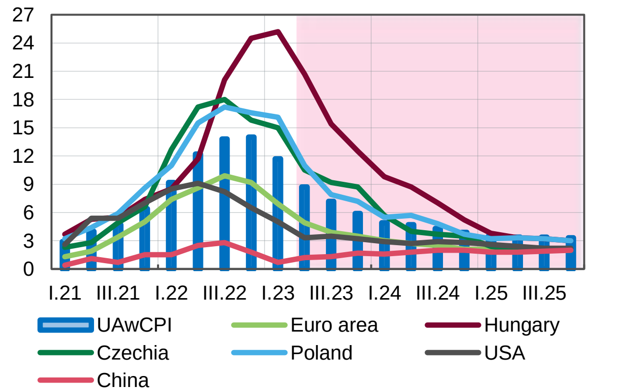
Source: J.P.Morgan, S&P Global, Moody's.

Figure 1.2. Global supply chain pressure index and Baltic dry index



Source: FRB of New York, Investing.

Figure 1.3. UAwCPI and consumer inflation of selected countries (eop), % yoy



Source: National statistical agencies, NBU staff estimates.

The global economy has avoided recession, but growth remains sluggish. Going forward, lower inflation coupled with a strong labor market will spur economic growth

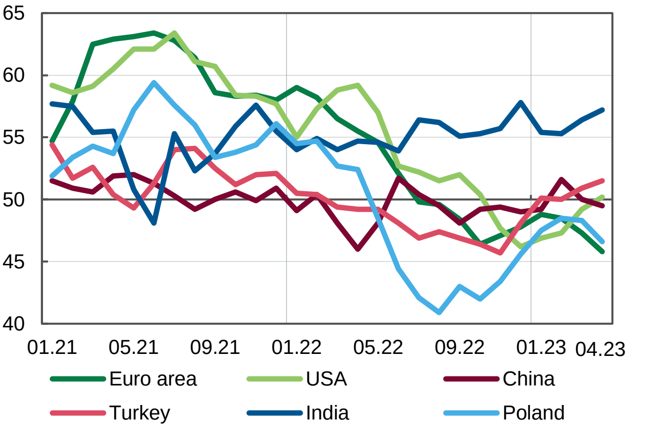
A global recession was averted thanks to an improvement in the energy situation in Europe, the lifting of quarantine measures in China, and the strong labor market in the United States. Global economic growth and growth in developed economies that are Ukraine's MTPs (primarily the United States and the euro area), was supported by the services sector, thanks to an increase in new orders amid robust domestic demand, buoyed by rising household incomes. At the same time, the EMs that are Ukraine's main trading partners developed at differing rates. Economic growth in the CEE countries was weak amid high inflation, declining investment, and lower real household incomes. The Asian economies, on the other hand, grew faster due to the opening up of China, which supported foreign trade, a gradual recovery in domestic demand, and significantly lower inflation.

Global manufacturing production growth, while still relatively weak, has improved since the end of 2022, thanks to improvements in supply chains (according to the Global Supply Chain Pressure Index). The gradual revival of industrial production was also evidenced by the resumption of the rise in the cost of maritime shipping according to the Baltic Dry Index, which reflects changes in supply and demand for raw materials, including coal, ore, and grain. Meanwhile, the situations in the United States and the euro area remained challenging, raising fears of a possible recession in H2 2023.

Despite the generally positive current trends in the global economy, business confidence remained weak. The chief reasons for this were geopolitical tensions (primarily russia's war in Ukraine), persistently high inflation, and tightening financial conditions (including due to problems with some banks in the United States and Europe, although these were temporary), which made it harder to take out loans. The same factors will slow the growth in the global merchandise trade to 1.7% in 2023, from 2.7% in 2022, and global growth will be anemic.

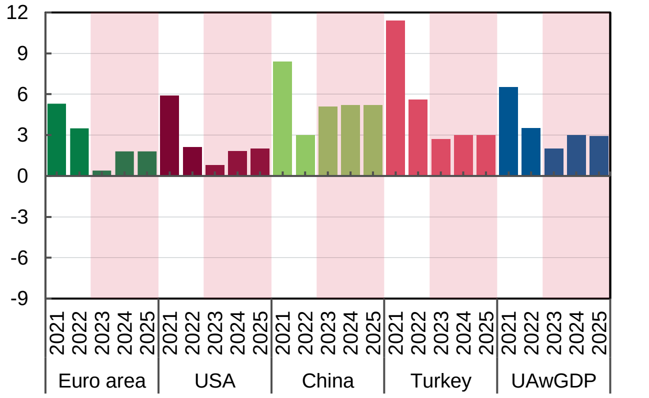
In the coming years, global economic growth will pick up thanks to a gradual decline in inflationary pressures amid strong labor market conditions, which will fuel consumer

Figure 1.4. Manufacturing PMI of selected countries



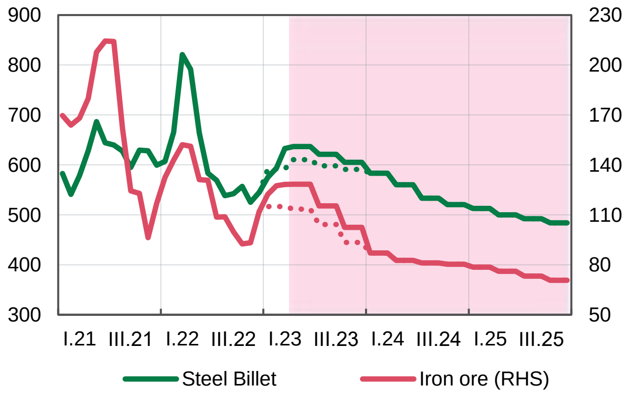
Source: S&P Global.

Figure 1.5. Real GDP of selected countries and weighted average of annual GDP growth of Ukraine's MTP countries (UAwGDP), % yoy



Source: National statistical offices, NBU staff estimates.

Figure 1.6. 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, World Bank, NBU staff estimates.

demand. Even a moderate economic recovery in China will have a stimulating effect on foreign demand further on. Investment growth will resume on the back of gradual interest rate cuts, primarily by the Fed, which may start in late 2023. Low unemployment and a significant number of vacancies, as well as a prolonged period of high inflation, will continue to put pressure on nominal wage growth, which, amid further easing of inflationary processes, will lead to a resumption of growth in real household income. However, the tightening of financial conditions due to the gradually increasing effect of the central bank's interest rate hikes will restrain economic growth – primarily through its impact on private investment.

Global inflation will slowly decline on the back of the restraining effects of monetary policy. Important factors will include the waning effect of high energy prices and increased supply. The stabilization of global supply chains (GSCPI) will make an additional contribution. However, inflation targets in most of Ukraine's MTPs will not be achieved until 2024.

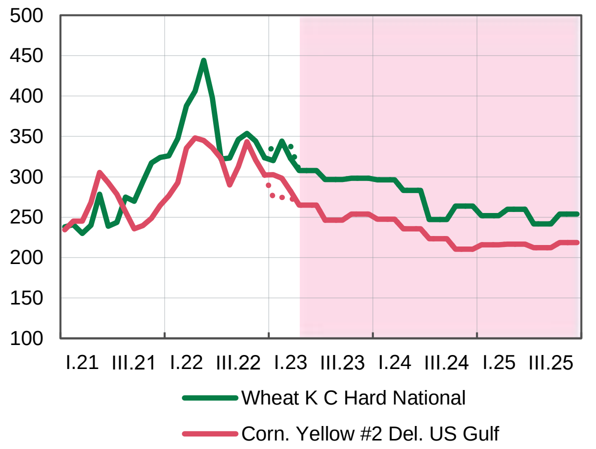
An increase in supply will drive global commodity prices down

Global commodity prices for Ukraine's main exports will decline as supply increases. The NBU estimates that they will reach their pre-pandemic levels in 2025.

Despite the continuing downward trend over the forecast horizon, the level of global steel and iron ore prices in 2023 was revised upward compared to the previous forecast. This was driven by a significant increase in demand from Turkey due to the need to rebuild areas affected by the earthquake (which should take three to four months, according to the government's plans). At the same time, the impact of China's revitalization after the lifting of quarantine restrictions at the end of 2022 will be relatively restrained due to the need to comply with excessive carbon emission caps and to prevent financial imbalances (particularly in the real estate market). Global prices for steel and iron ore are expected to continue to decline: a pickup in economic activity across all regions of the world will lead to faster growth in supply (primarily in supplies of ore) compared to demand, which will boost market competition.

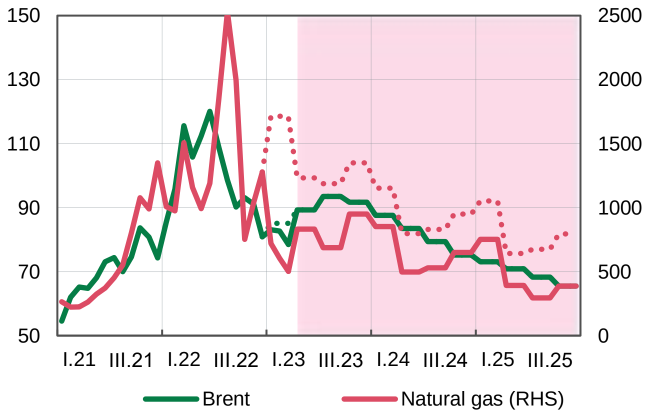
Global grain prices will also slowly decline. The operation of the grain corridor will remain a significant factor supporting grain supplies on the global market. Global wheat prices will fluctuate within a relatively narrow range in 2023. Increased exports from Kazakhstan, Australia, and Brazil will compensate for lower supplies from Argentina, which was affected by drought, and India, which, despite the expected record harvest, needs to significantly increase its domestic inventories. Global consumption will be supported by increased use of grains in the food industry, and as feed. However, ending stocks will decline for the second consecutive year (albeit at a slower pace – by 2.6% yoy, down from 5% yoy in 2021/2022 MY), which will keep prices from falling. In the following years, a gradual increase in wheat production amid rising stocks will contribute to a decline in global prices.

Figure 1.7. World grain prices, USD/MT, quarterly average



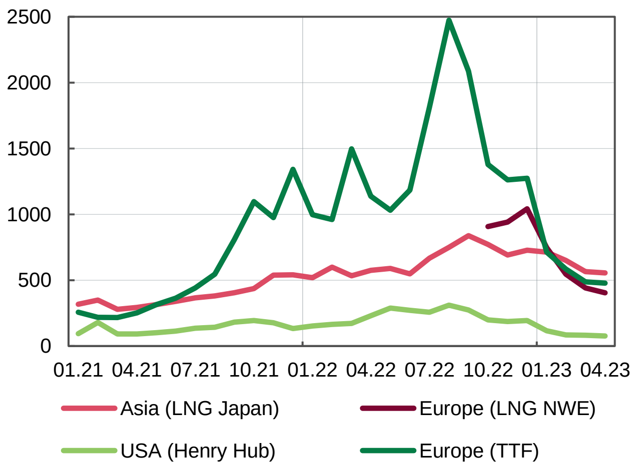
Source: Refinitiv, NBU staff estimates.

Figure 1.8. World crude oil prices (USD/bbl) and Netherlands TTF natural gas prices (USD/kcm)



Source: World Bank, Refinitiv, NBU staff estimates.

Figure 1.9. Gas prices in Europe, Asia and the US, USD/kcm*



*- A significant change in the structure of the European gas market led to a decrease in the role of pipeline gas and an increase in the share of LNG. In order to correctly reflect the gas price, the EU Agency for the Cooperation of Energy Regulators (ACER) introduced at the end of 2022 a benchmark based on LNG prices (in particular, LNG North West Europe) instead of the pipeline TTF.
Source: World Bank, Bloomberg.

Global corn prices will slowly decline on the back of a strong harvest in the United States and bumper crops in Brazil, which will offset a weaker harvest in Argentina. Additionally, global imports will weaken, in particular those of China (by 17.7% yoy) and Egypt (by 23.2% yoy) due to the expansion of sown areas in these countries.

Increased economic activity in most regions of the world in the spring period will lead to an increase in demand and, consequently, a short-term rise in energy prices. According to IEA estimates, growth in global demand will accelerate rapidly in 2023 (from 710,000 bbl/day in Q1 to 2.6 million bbl/day in Q4). The largest contribution will come from the opening of Chinese borders to tourists and the realization of deferred demand in China. In the future, global oil prices will come under downward pressure from increased production in the United States and some Latin American and African countries (despite OPEC+ production curbs), as well as low prices for russian oil due to international sanctions.

Natural gas prices on the European market will also gradually decline, and their level has been revised significantly downward over the entire forecast horizon. This is being driven by the rapid decline in the European market's dependence on russian pipeline gas, amid increased LNG production and supplies from the United States and other countries. However, due to strong demand, Asian countries will continue to compete with Europe for LNG, which will keep prices from falling sharply (read more in *Natural Gas Prices on the European Market: Time for a Downward Trend* on page 11).

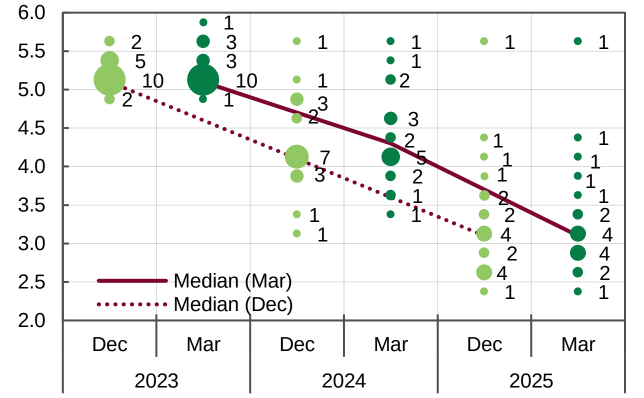
After central bank interest rates peak in mid-2023, they are expected to be gradually cut

In the face of persistent inflationary pressures and in order to prevent high inflation expectations from becoming entrenched, most central banks will retain tight monetary policies.

Keeping real interest rates in positive territory is necessary to achieve sustainable disinflation, especially where demand pressures are a significant source of inflation. Specifically, the Fed raised the target range for its rate by 25 bp in March and May, despite the crisis in the banking sector, and will continue to reduce the size of its balance sheet amid strong pressure from the tight labor market. Given that the median rate projection of FOMC members remains at 5.1% for the end of 2023, the rate peak is likely to have been reached, and a gradual easing is to be expected only in 2024. However, futures market participants, contrary to the Fed, continue to expect the rate to remain unchanged at the next two meetings and for cuts to start already in September 2023 due to an expected significant downturn in the US economy.

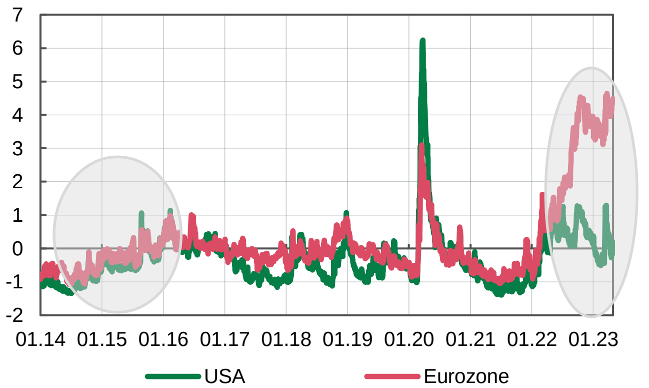
The ECB, as expected, also continued to tighten its monetary policy, raising rates by 50 bp in March and by 25 bp in May. The slower growth in the ECB's rates is likely due to the significant pass-through effect the tightening has on funding in the banking sector, while the pass-through to the real

Figure 1.10. **The number of FOMC members that expect the respective policy rate***



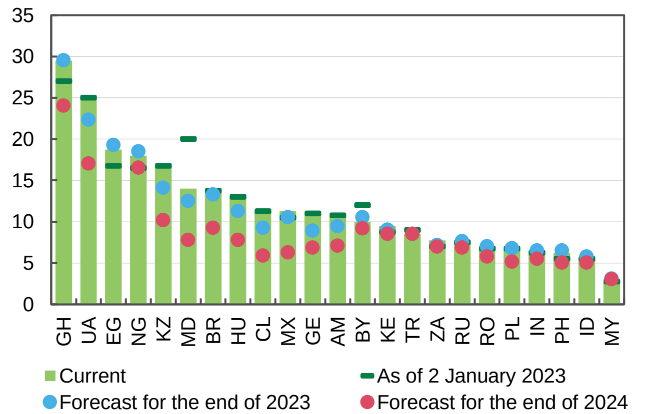
* The previous meeting (December 2022) is marked in light green, the current meeting (March 2023) in dark green.
Source: Fed.

Figure 1.11. **Financial conditions index of the US and the Eurozone (level of financial stress), reversed**



Source: Bloomberg (+ tightening, - weakening).

Figure 1.12. **Key policy rates in selected EM countries, %**



Source: official web pages of central banks, Focus Economics, Oxford Economics, as of 02.05.23.

economy remains weaker (as indicated by the persistently high level of core inflation). Although the ECB, due to high uncertainty, is not providing clear signals in its communications about the future path of rates, some of its representatives have signaled that monetary policy tightening will continue. For their part, financial markets expect the deposit rate to peak at around 3.75%, which suggests there will be at least one additional hike. The market believes that the peak rate will be maintained for a longer period of time, and that the policy might switch to easing only at the end of 2024. This will put pressure on the euro to strengthen against other major currencies, especially the US dollar.

Financial conditions are tightening markedly, as interest rates have risen, while the leading central banks are reducing their balance sheets. This, along with the turmoil in the US and EU banking sectors, led the financial stress index to reach the level of the global shock from the pandemic (and significantly exceed the level of monetary tightening by the Fed in 2014–2015). Under such conditions, interest in risky assets is expected to weaken and the availability of funding in the market should decrease.

Further growth in interest rates in the advanced economies and persistent inflationary pressures limit the room for maneuver for the central banks of most EM countries, due to conflicting objectives. However, the interest rate differential between domestic and foreign interest rates will remain an important factor in monetary policy decision-making, especially in countries with a large share of FX debt and in countries where inflation expectations are sensitive to food and energy prices.

Therefore, most EM central banks are currently taking a wait-and-see attitude in order to analyze the effects of global shocks and the economic impact of the cumulative tightening. The projected decline in inflation over the next two years is expected to enable a cautious policy easing in some EM economies as early as at the end of 2023. This is especially true for those central banks that started their tightening cycle early (as early as March 2021), when inflation deviated from the median target level by 0.3–3 pp. Proactive policies helped keep inflation expectations from unanchoring and reduced pressure on the exchange rate.

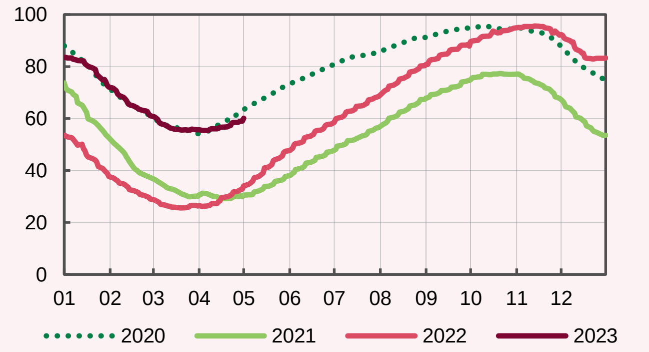
Box 1. Natural Gas Prices on the European Market: Time for a Downward Trend

The decrease in the supply of natural gas on the European market in 2022 caused by russia's energy blackmail did not lead to the anticipated energy crisis, although it did cause a steep rise in prices. Rather, russia's blackmail triggered the rapid development of a European gas market with a full-fledged pricing mechanism and more competition. Currently, this market remains vulnerable to fluctuating supply volumes and competition from buyers in Asia, which will cause risks of high price volatility to persist and will keep prices high above the level of 2022. Nevertheless, the foundations have been laid for natural gas prices to trend downward in the coming years.

Gas stocks as the foundation of resilience. At the end of February 2023, the EU's stocks of natural gas had almost reached a five-year high for this period, with gas storage facilities being almost 60% full. This was 2.2 times more than last year, and close to the record-high level of early winter 2020. Thanks to large purchases in summer 2022, by 1 November gas storage facilities were already 95% full, which was significantly above the levels of previous periods and 80% of the mandatory target. Purchases of natural gas were spurred by the threat of lower supplies from russia. Combined with lower demand and record-high imports of LNG, this compensated for the loss of supply through russian pipelines, while also supporting the creation of a large storage buffer.

The high current levels of natural gas stocks will somewhat lower purchasing needs this summer and will support the downward pressure on prices. On the other hand, risks for winter 2023–2024 persist, as it was mild weather that played an important role in the decrease in demand in Europe this winter, and thus in the decline in prices as well.

Figure 1. Filling level of gas storage facilities in the EU in the corresponding year, %

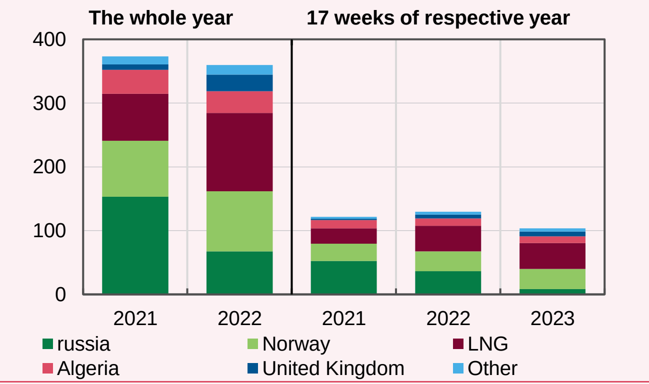


Source: Refinitiv.

Competition is at the core of the modern market. As a rule, the pricing mechanism for natural gas is divided into three categories: state-regulated prices (based on the cost of servicing), indexation of prices for related types of fuel (e.g. crude oil; the so-called Groningen pricing model), and spot-market pricing. The first mechanism is usually used when the government sets prices for households, as it allows prices to be adjusted depending on households' incomes. The other two types are the basis for determining prices in foreign trade transactions (irrespective of contract duration). Taking into account that European countries have for a long time cooperated with a limited number of natural gas suppliers, primarily with russia, contracts based on oil-indexed prices prevailed.

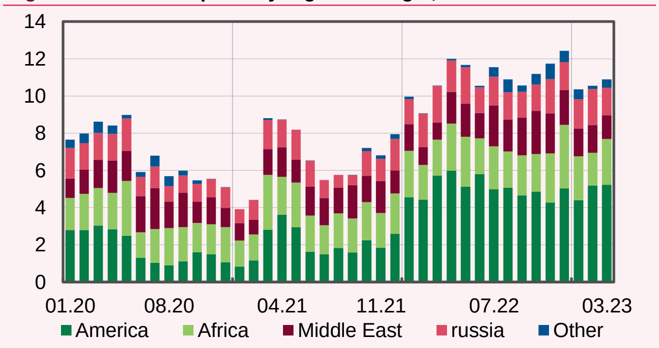
Thanks to the shale revolution in the early 2010s, the United States turned into a major natural gas exporter. With the rapid increase in global supply and simultaneous implementation of regulatory changes by EU countries to create a common natural gas market and promote competition on it, the situation on the European market changed considerably.

Figure 2. Natural gas import to the EU by origin, bcm



Source: Bruegel (russia, Norway, Algeria – pipeline)

Figure 3. EU LNG imports by region of origin, bcm

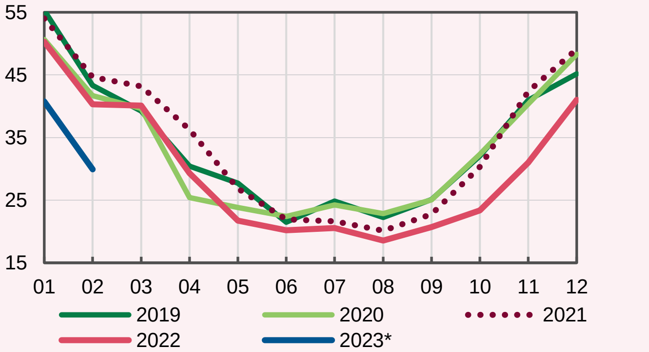


Source: Bruegel.

As a result, in Europe, the share of oil-indexed import prices of natural gas declined from 93% in 2005, to 25% in 2019, and continued to decrease. The growth in volumes of LNG trade improved connections between the global gas markets, whereas pipeline gas leads to strong dependence of consumers on the supplier, which enables political pressure to be brought to bear on dependent countries. Taking into account that in 2021, russian gas accounted for 45% of the EU's total imports and almost 40% of its consumption, the threats by russia to partially or completely cease natural gas supplies to EU countries fueled a surge in gas prices in the European market. At the same time, despite significantly reducing pipeline gas supplies to the EU, russia tried to increase LNG exports as much as possible. As a result, although total imports of natural gas from russia to the EU decreased markedly, they still accounted for more than 15% of all gas imports to the EU in Q1 2023.

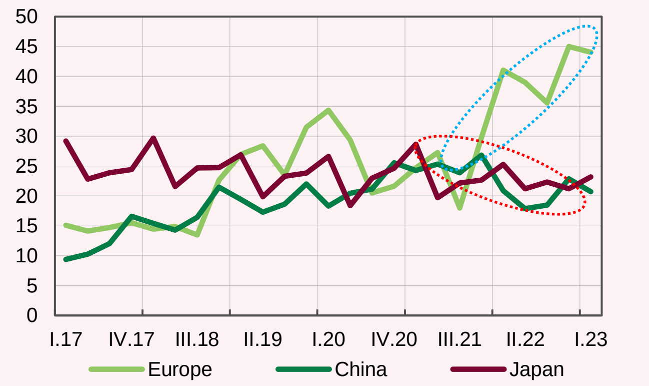
Demand: targeted measures to reduce consumption and a favorable combination of circumstances. As of the end of 2022, demand for natural gas in the EU decreased by almost 15% (the largest decline over the period of observation, which was in line with targets set by the European Commission). However, the structure of demand remained almost unchanged. According to estimates by experts from the European Gas Hub and the International Energy Agency (IEA), a significantly milder winter made demand fall by around a third. In addition, difficulties in industrial production following a sharp rise in prices, especially in natural-gas-heavy sectors, pushed demand down by 20%. The shift toward using fuel oil and coal reduced demand by another 25%. Only a little more than 20% of the reduction came from the structural cutbacks achieved thanks to the wider use of renewable energy sources and thermal pumps, and higher energy efficiency.

Figure 4. Monthly volumes of EU natural gas consumption in the corresponding year, bcm



Source: Eurostat (* - NBU staff estimates based on Eurostat data).

Chart 5. LNG imports, bcm

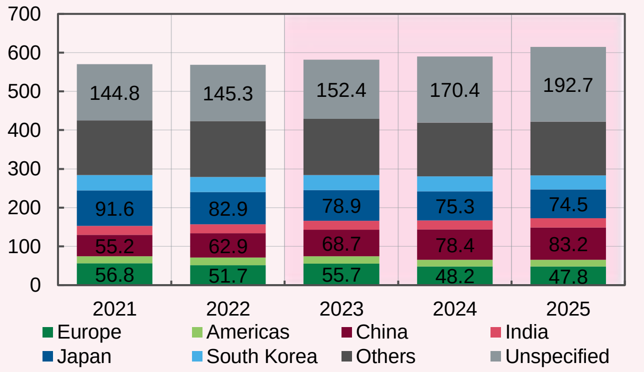


Source: Bloomberg.

Moreover, China's zero-COVID policy and the mild winter were a combination of events that was favorable for Europe. As a result of Beijing's strict strategy for fighting the pandemic, demand for natural gas remained subdued in China in 2022, which was an important factor behind the sizeable increase in LNG supplies to Europe. As of the end of 2022, Europe's share of global LNG imports was around 30%, whereas Asia accounted for 57%. Due to the recovery in China after lifting quarantine restrictions, Europe will face stronger competition for LNG from the Asian market. However, LNG purchases are expected to cover around 48% of total demand for natural gas in the EU in 2023, and this number might exceed 50% by 2025 if actual purchases are larger than contractual volumes (on account of contracts not specifying the destination country).

Nevertheless, European natural gas prices will gradually decline. According to IEA estimates, global demand for natural gas is expected to remain generally unchanged in 2023 compared to the previous year: demand will increase in Asia, primarily from China (due to the anticipated economic recovery after the easing of quarantine) and India (due to a rise in industrial production), while it will decrease in Europe.

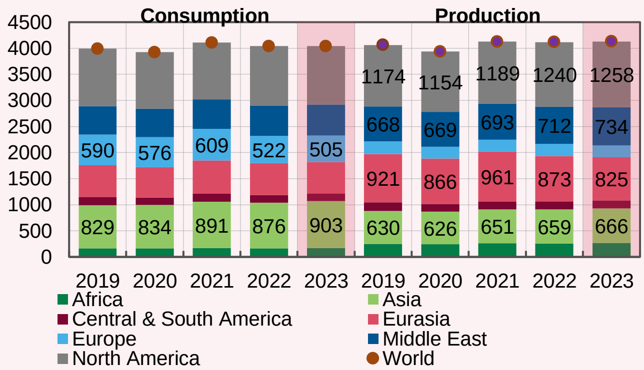
Chart 6. LNG contracts by importer (MMtpa)



Source: Bloomberg.

For 2023, the European Commission recommended a cut in demand for natural gas at the same pace – by 15%. That said, high emission prices will keep coal usage low even despite relatively high natural gas prices. Taking into account the low probability that next winter will be as mild as last year, structural changes will pick up. Demand for natural gas will decline on the back of increased renewable energy generation. Hydropower generation will recover to its five-year average, and nuclear power generation will grow by around 2% in 2023.

Chart 7. World natural gas consumption and production by region, bcm



Source: IEA.

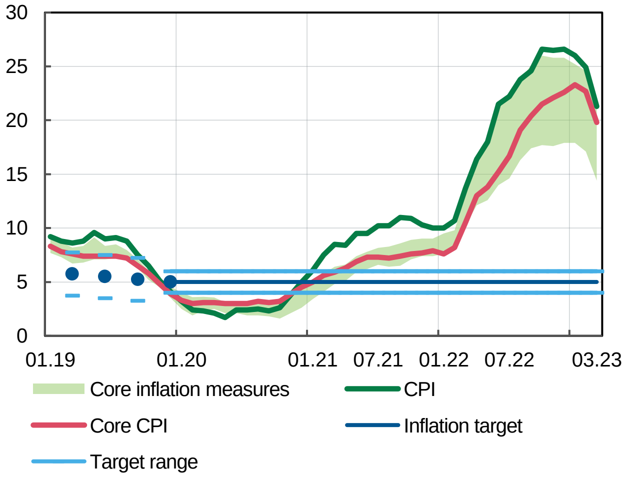
In turn, global natural gas production will rise in 2023, as forecast by the IEA. The supply of LNG will grow by 4.5%, with half of this growth coming from the United States. Supplies of natural gas from Algeria and Egypt are also expected to become more accessible. Due to stronger competition from Asian countries, LNG supplies to Europe will increase by only 9% in 2023. This might not be sufficient to offset the decrease in pipeline supplies from russia. All of this will provoke high volatility in natural gas prices on the European market, keeping them higher than before 2022. However, the foundation of structural changes that has been laid means natural gas prices can be expected to trend downward in the coming years (read more in *External Environment* on page 7).

Part 2. Economy of Ukraine

2.1. Inflation Developments

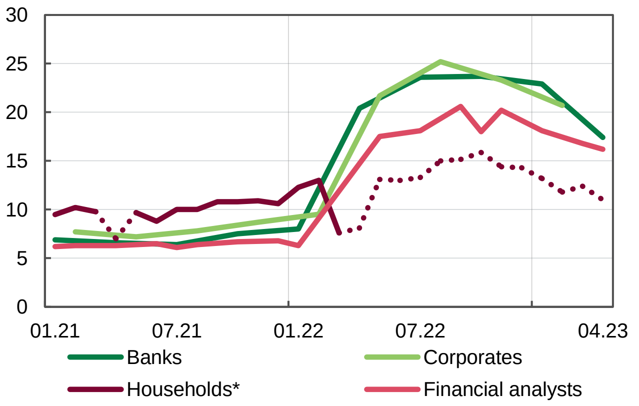
- Since the start of the year, consumer inflation has been declining more rapidly than expected. This was driven by an ample supply of food and fuel, a better situation in the energy sector, and improved inflation expectations amid a stronger hryvnia cash exchange rate.
- Inflation is expected to continue to decline over the forecast horizon, driven by tight monetary conditions, slowing global inflation, and weak demand. Disinflationary processes will accelerate following the expected decrease in security risks, increased harvests, and the recovery of logistics.
- However, inflation will remain high and will reach the target range only at the end of 2025 – primarily due to the effects of the war and the need to adjust administered prices and tariffs.

Figure 2.1.1. Consumer inflation and underlying inflation trends*, % yoy



* Read more in *the January 2017 Inflation Report* (pages 20–21).
Source: NBU staff estimates.

Figure 2.1.2. 12-month-ahead inflation expectations*, %



* The dotted line indicates a change in the method of survey for a telephone interview.
Source: NBU, GfK Ukraine, Info Sapiens.

Consumer inflation has been declining sooner and faster than expected

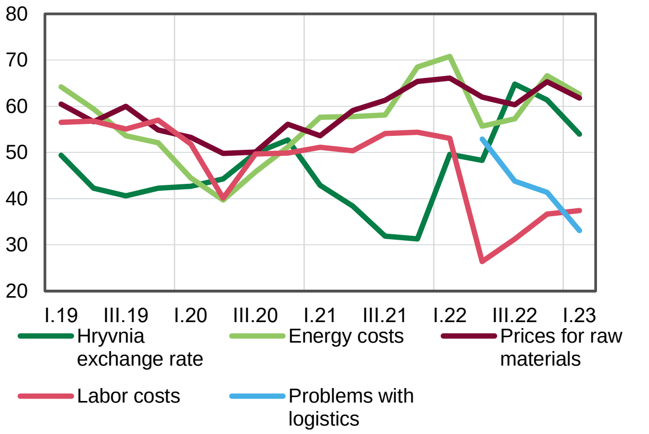
In Q1 2023, growth in consumer prices slowed to 21.3% yoy. Underlying inflationary pressures also eased, with core CPI growth slowing to 19.8% yoy. The actual inflation rate was lower than the NBU's January forecast, primarily due to warmer weather and a better situation in the energy sector. Inflation was also restrained by improved inflation expectations and a favorable situation in the cash segment of the FX market (including due to measures taken by the NBU), as well as by unchanged utility tariffs. These factors neutralized the effects of higher business costs, particularly those incurred to ensure business continuity amid power outages.

Despite the easing, inflationary pressures remained high and uneven, as illustrated by the wide range of estimates of the underlying inflationary trend. On the one hand, inflation was limited by restrained consumer demand, which was unevenly distributed across goods and services. This primarily put the brakes on the growth in prices of nonstaple goods, including some types of household and computer equipment, furniture, alcoholic beverages, travel services, and hotel services. Previous administrative decisions to freeze utility tariffs remained another factor in restraining inflation. On the other hand, prices for veterinary care, telecommunication services, clothing and footwear, and personal care products grew rapidly, fueled by higher costs and stronger demand due to the effects of the war, including power outages. In addition, price growth accelerated for healthcare, insurance, and the services of electricians and plumbers.

Lower inflation, adaptation to the consequences of the bombing of energy facilities, unchanged utility tariffs, and the strengthening of the cash exchange rate of the hryvnia contributed to an improvement in the inflation expectations of all groups of respondents, these expectations being highly adaptive in Ukraine. In addition, the absence of monetary financing of the budget deficit had a positive effect on inflation expectations.

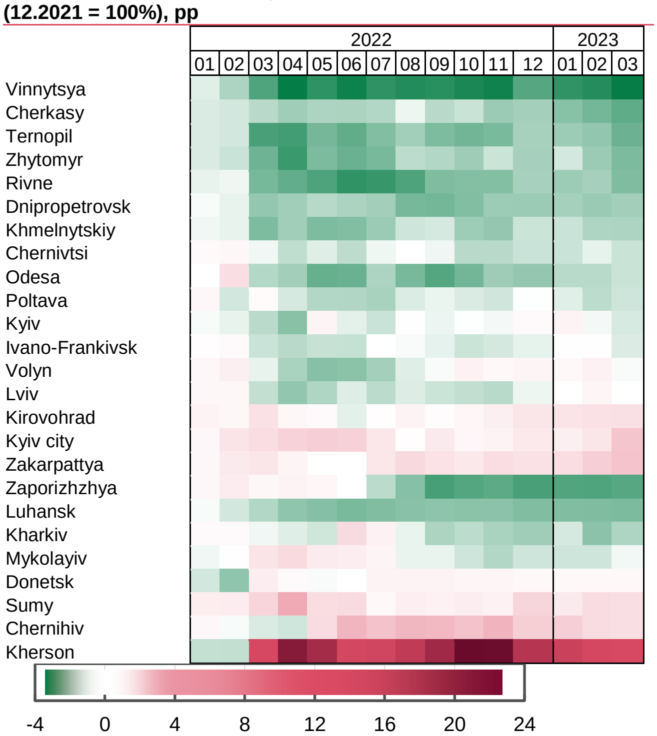
As seen from the results of the business outlook survey, in Q1 2023, companies noted a weaker impact of most major factors on their expectations for the selling prices of their goods and services, including the factors of the hryvnia exchange rate, energy prices, and prices for raw materials and supplies. This was, among other things, the result of a

Figure 2.1.3. Major factors affecting businesses' expectations of price changes for their goods and services, % of respondents



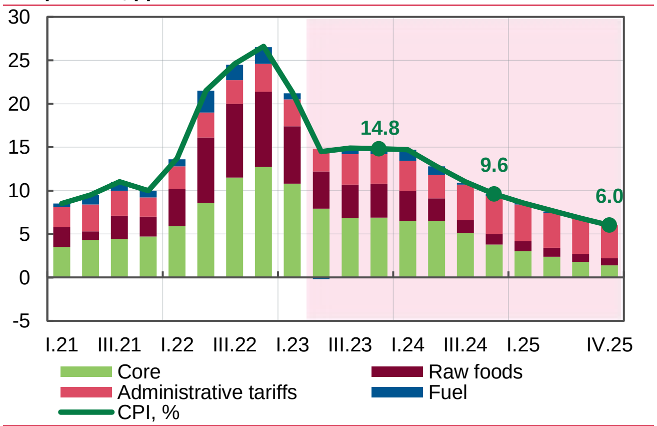
Source: NBU.

Figure 2.1.4. Deviation of regional CPIs from the all-Ukrainian index (12.2021 = 100%), pp



Source: SSSU, NBU staff estimates.

Figure 2.1.5. Contributions to annual CPI growth by main components, pp



Source: SSSU, NBU staff estimates.

much better than expected situation in the energy sector, and the high adaptability of Ukrainian businesses to the difficult environment. The factor of logistical problems also declined sharply.

In particular, the overall pro-inflationary effect of russia's energy terror in Q1 2023 was less than the NBU had expected (for more details, see the [January 2023 Inflation Report](#) on pages 21–23). This was primarily reflected in the slower growth of prices for processed foods that require thermal treatment (bread and flour products, dairy products, sunflower oil, beverages, and canned food), as well as prices for some services[3]. However, electricity shortages still put upward pressure on inflation, as businesses included costs of purchasing backup equipment and energy supplies in their prices of goods and services.

Large price growth discrepancies persisted across all regions. Prices grew relatively faster in the frontline regions due to higher security risks and more difficult logistics, while in some western regions and in the capital price growth accelerated on the back of stronger demand. The resumption of economic activity and logistics in the de-occupied part of Kherson oblast contributed to slower price growth in the region, and in neighboring Mykolaiv oblast.

Consumer inflation will continue to decline on the back of tight monetary conditions, slower global inflation, improved logistics, and relatively low demand

This year, inflation will decline to 14.8% yoy, primarily due to tight monetary conditions, slower global inflation, and domestic demand being restrained by the slow recovery in household incomes. These factors will also contribute to a decline in core inflation, to 12.5% yoy in 2023.

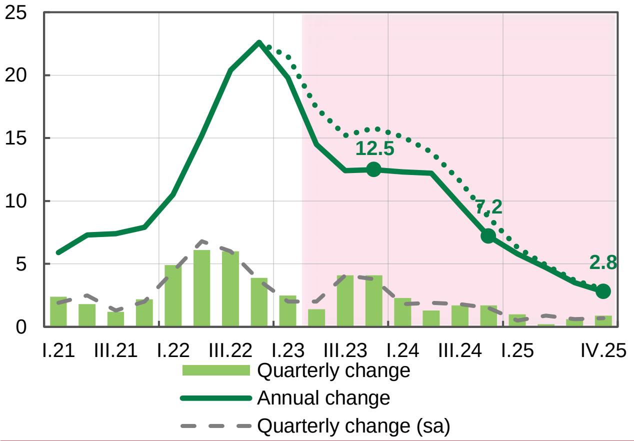
Lower security risks starting next year will further improve inflation expectations of economic agents and dampen supply shocks, thanks to the restoration of logistics and production capacity, and larger harvests. This, together with the NBU's relatively tight monetary policy, will ease inflationary pressures even as the economy revives and the fiscal policy remains loose. As a result, headline inflation and core CPI will decline to single-digit levels already during next year. In 2025, inflation will return to its target range, with core CPI at around 3%. Price growth will decelerate across almost all key components of core inflation. In the postwar period, the main source of pressure on prices will be the recovery in demand and wages, which will have the strongest impact on prices of services – in particular those related to housing reconstruction (for more details, see *Owner-Occupied Housing Expenses Now Included in CPI: Impact on Inflation* on page 17).

A sufficient supply of agricultural products and lower global food prices will contribute to disinflationary processes

Despite the lower harvests gathered last year, the supply of agricultural products was sufficient to cover domestic needs,

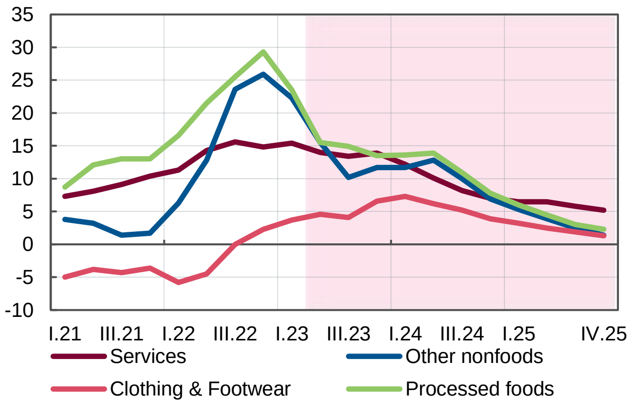
[3] According to the Business Outlook Survey, the pressure of production cost rises associated with power outages eased in Q1 2023 (the average estimate of the growth in costs slowed to 6.3%, compared to 7.4% in Q4 2022).

Figure 2.1.6. Core inflation, %



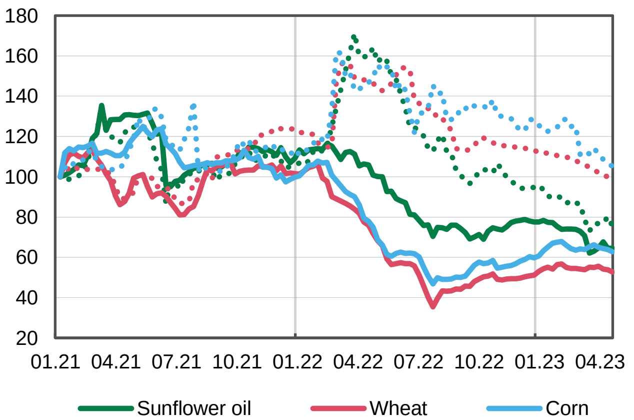
Source: SSSU, NBU staff estimates.

Figure 2.1.7. Core CPI components at the end of period, % yoy



Source: SSSU, NBU staff estimates.

Figure 2.1.8. Prices for major agricultural commodities in Ukraine and on foreign markets* in dollar terms, 01.2021 = 100



* Solid lines refer to prices for agricultural products in Ukraine on EXW terms, and dashed lines are prices in foreign markets on FOB terms.
Source: APK-Inform, NBU staff estimates.

which was due, among other things, to the warm weather in winter. Moreover, global prices for these commodities continued to decline, and export prices for Ukrainian crops and other agricultural products were even lower than global prices due to logistical difficulties and high risks – even despite the operation of the grain corridor. As a result, the growth in raw food prices decelerated to 31.6% yoy. In particular, prices for flour and cereals, along with animal farming products, grew more slowly under the influence of second-round effects from lower feed prices and weak demand. This, in turn, restrained the growth in prices for processed foods. At the same time, prices for vegetables – in particular onions, carrots, and greenhouse vegetables – grew rapidly at the end of Q1 as the effects of the mild winter waned. The rise in vegetable prices was also driven by rising business costs in the previous months due to the shortage of electricity, and limited imports as a result of the earthquake in Turkey. Egg prices continued to rise at a fast pace.

Food inflation will remain high this year due to continued growth in prices for fruit and vegetables resulting from the expected decline in harvests, as well as because of the effects of higher fuel prices in H2. Relatively cheap feed will restrain the rise in prices for animal farming products.

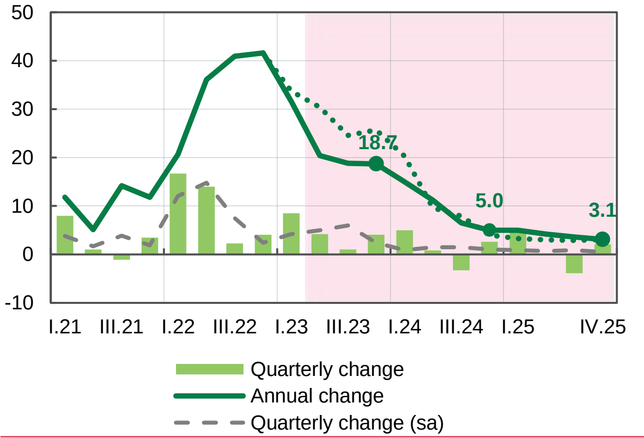
In the coming years, as security risks subside, food inflation will decline rapidly, thanks to the restoration of technological and supply chains, larger harvests, and an expected decrease in global prices for food and energy. This will outweigh the impact of a recovery in consumer demand, driven, among other things, by the return of refugees. Accordingly, in the absence of significant new supply shocks, raw food inflation is projected to decline to single digits next year, and fall to almost 3% by the end of the forecast period.

As taxes are restored to pre-war levels, fuel prices will go up this year, but will stabilize further on

The growth in fuel prices slowed significantly in early 2023 (to 27.9% yoy in March), driven by a drop in global crude oil prices, large stockpiles accumulated by businesses and households, and lower demand, amid decreased electricity shortages and warm weather. The stabilization of fuel prices helped slow the rate of growth in transportation prices and ease the pressure that this component exerted on the CPI through second-round effects.

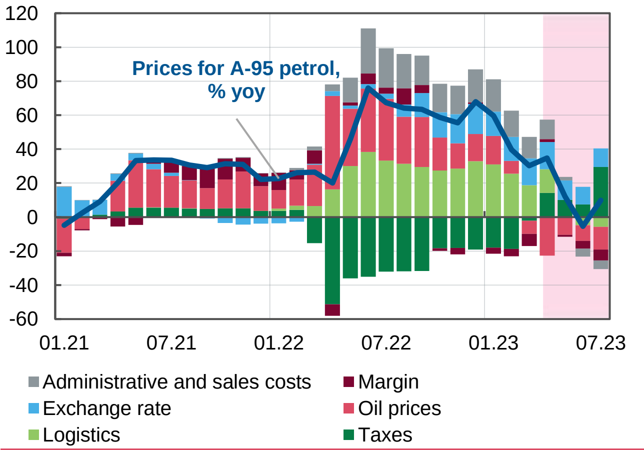
In the coming months, the year-on-year growth in fuel prices will be very volatile, ranging from a slight acceleration in April to a drop in June, and a resumption of growth in July. This will reflect the base effect caused by last spring's fuel crisis and tax changes (including last year's waiver of excise taxes and reduction of the VAT rate). The restoration of the pre-war fuel tax starting this July will make a direct contribution of about 1 pp to change in the CPI. In turn, the pass-through effects from fuel prices to the prices of other goods and services will put upward pressure on the cost of transportation services. Further on, fuel prices will stabilize thanks to a gradual decrease in global crude oil prices. In 2024, the fuel component will start to slow down headline inflation, both directly and through second-round effects.

Figure 2.1.9. Raw food inflation, %



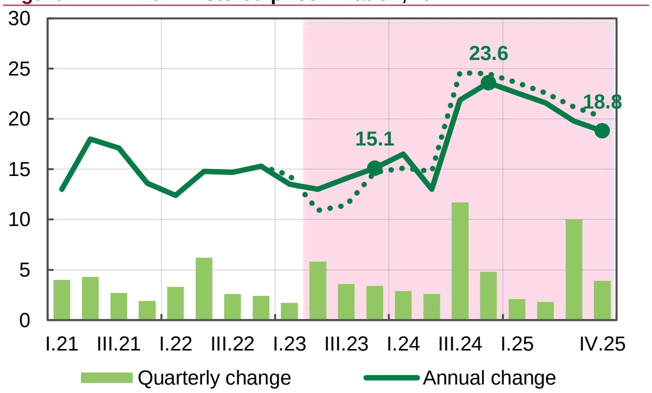
Source: SSSU, NBU staff estimates.

Figure 2.1.10. Contributions of factors to the change in price of A-95 petrol, pp



* Data for April - July 2023 reflects NBU staff estimates.
Source: SSSU, minfin.com.ua, NBU staff estimates.

Figure 2.1.11. Administered price inflation, %



Source: SSSU, NBU staff estimates.

The need to bring administered prices and tariffs to economically justified levels will be the main pro-inflationary factor in the coming years

The growth in administered prices slowed slightly in Q1 2023 (to 13.5% yoy). The moratorium on raising some utility tariffs for households remained the main factor restraining the increase in administered prices. The growth in prices for alcoholic beverages, pharmaceuticals, bread, and transportation services also slowed on the back of reduced pressure from production costs and subdued demand. Growth rates of prices for tobacco products remained high as a result of the planned increase in excise taxes.

Over the forecast horizon, the level of administered price inflation will be determined primarily by the government's decisions on bringing utility tariffs to market levels in order to eliminate imbalances in the energy sector. Considering the great social significance of utility prices, increases in them are likely to be phased, spread over several years, and entail an expansion in social assistance. The NBU's forecast takes into account a possible increase in electricity tariffs for household consumers this year. Instead, it is assumed that the moratorium on raising tariffs for natural gas, hot water, and heating will not be lifted until next year. This, together with further increases in prices of tobacco products resulting from higher excise taxes, will lead to an increase in the contribution of administrative price inflation to the CPI in 2024–2025.

Box 2. Owner-Occupied Housing Costs Now Included in the CPI: Impact on Inflation

In early 2022, the SSSU conducted a planned review of the consumer basket that is used to calculate the CPI. A key innovation that resulted from the review was the inclusion of owner-occupied housing costs into the CPI. The revision was aimed at further approximating the consumer basket to households' actual expenditures, given the large portion of Ukrainians who own housing, and aligning domestic statistics with global standards. Up until now, these methodological changes have had no significant impact on the inflation measure – despite prices in this group growing rapidly – due to, among other things, the very small share of owner-occupied housing expenses in the CPI (only 0.43% in 2023). According to data from other countries, however, the weight and impact of this component on overall inflation may rise considerably, taking into account the expected post-war economic recovery and the accompanying development of the real estate and mortgage markets. Integrating owner-occupied housing costs into the CPI formula will thus help better inform monetary policy decisions

The CPI is calculated to measure the purchasing power of money. That is why the relevant consumer basket should consist of all goods and services that are consumed by households, including housing. Owner-occupied housing costs are expenses related to purchasing, maintaining, and inhabiting a dwelling[4]. However, due to the difficulties with calculating these costs, many countries exclude owner-occupied housing costs from the calculation of their CPIs, and in Ukraine, until 2022, these costs were factored into the CPI formula only in part[5].

Challenges posed by gauging owner-occupied housing costs. For those living in rented housing, the cost of housing services corresponds to the rent, while calculating owner-occupied housing costs requires more complex calculation approaches. Overall, there four main approaches[6]:

- **The use approach** measures the changes in the cost to owner-occupiers of using the dwelling. As a rule, these costs comprise two elements: recurring actual costs, such as those for repairs and maintenance, and property taxes; and the opportunity cost of investing in the dwelling. This opportunity cost is represented by the rate of return available on alternative assets or the average interest rate on mortgages. This method is used in Canada, Sweden and Iceland. However, a serious drawback of this method is that including interest rates in a CPI makes it more difficult to analyze the impact of monetary policy, as it will always have effects opposite to the intention of the measures.
- **The rental equivalence approach.** This method is used in the United States, Japan, Denmark, Norway, Switzerland, the Czech Republic, Mexico and in South Africa. It is also often used to make international comparisons of living standards. However, it is not always representative for countries such as Ukraine, which have a rather small housing rental market. What is more, housing rentals are already included in the Ukrainian CPI as a separate group.
- **The net acquisition approach** includes the net purchase of housing (purchase price less sales), the cost of building new dwellings, alterations and additions to existing dwellings, legal and real estate agency fees payable on property transfers, repair and maintenance of a dwelling, insurance, and property taxes. In the SNA, housing acquisitions less disposals are shown as gross fixed capital formation, which means that these costs should be excluded from household final consumption expenditure. However, a dwelling is both an asset and a source of dwelling services. That is why CPI compilers separate investment spending from consumer spending in order to include only the consumption of dwelling services in the CPI. Although this method does not rely on the imputed price mechanism like the previous two, it is difficult to understand. It also increases the volatility of the CPI through price fluctuations on the housing market. That said, Australia, New Zealand, Finland and the EU use precisely this method.
- **The payments approach** is defined by reference to actual expenditures made by households to gain access to all goods and services for occupying a dwelling, legal services related to property transfers, mortgage interest payments, alterations and additions to the dwelling, repair and maintenance of the dwelling, insurance, and property taxes. This method – which measures costs directly, avoiding interpolation, and is used, in particular, in the United Kingdom – is easier to understand by the general public.

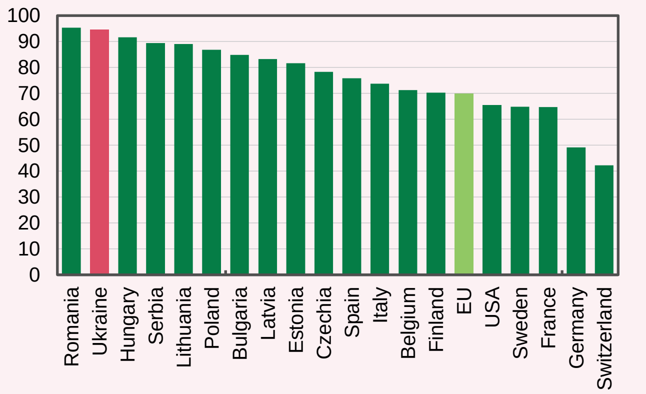
Currently, there is no single methodology for evaluating i owner-occupied housing on which international organizations agree. Therefore, when choosing an approach, statistical services should assess how well a particular approach meets the needs of consumers and suits the main purpose of the CPI. They also should take into account international experience, public recognition, as well as the practicality of implementation. The SSSU chose the payments method and in early 2022, while conducting a scheduled revision of the consumer basket used for measuring the CPI, introduced calculations of owner-occupied housing costs through replenishing and redistributing the existing list of goods and services.

Integrating owner-occupied housing costs into the CPI formula is a way to bring national statistics more closely into line with international standards. More specifically, the European Statistical System in early 2022 also included owner-

[4] These costs should be distinguished both from payments for utility bills, which are regarded as current expenses, and from expenses related to the purchase of real estate, as these are classified as investments, rather than consumption. That said, payments made to service a mortgage loan, costs pertaining to the purchase of housing, such as getting a mortgage or an insurance policy, are components of owner-occupied housing expenses, and often depend on mortgage interest rates. Therefore, these expenses should be included in consumer spending when calculating the CPI.
[5] Some goods and services related to owner-occupied housing expenses are included in the 04.3 group *Dwelling Maintenance and Repairs*.
[6] Read more about the methods to integrating owner-occupied housing costs into the CPI formula in the IMF Consumer Price Index Manual.

occupied housing costs in the calculation of a harmonized ICP across countries and for the EU as a whole. This inclusion will enhance the cross-country comparability of the inflation measure, although it may increase differences in inflation rates and slow inflation convergence processes in different countries due to differing shares of the population living in owner-occupied housing, and differences in the movements of domestic real estate prices in different countries.

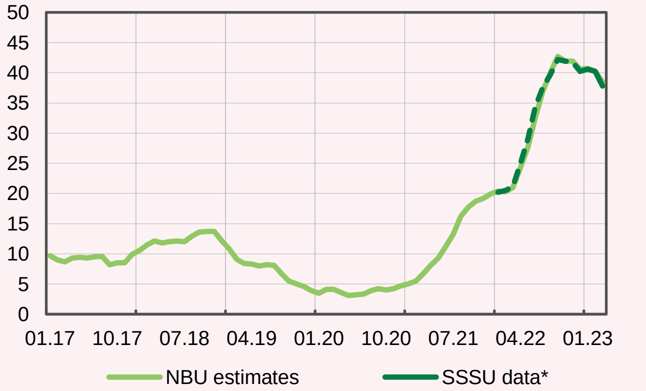
Figure 1. Share of households living in their own housing in 2021, %



Source: SSSU, Eurostat, BLS.

The impact of incorporating owner-occupied housing costs on inflation movements in Ukraine. russia's full-scale war has caused significant damage to both residential housing and companies that produce construction materials. This, coupled with a decline in domestic supply, sharply pushed up demand for the materials and services needed to rebuild damaged or destroyed housing. In addition, migration had substantial and unevenly distributed pressure on owner-occupied housing costs. As a result, prices for dwelling repair materials and services were among the fastest growing in 2022. These effects will persist into the post-war period.

Figure 2. The index of owner-occupied housing costs, % yoy



* The calculation of owner-occupied housing cost indices started in 2022, so year-on-year changes can only be computed from December 2022. Green dashes indicate year-on-year changes in the SSSU index, which was combined with NBU estimates for previous periods.
Source: SSSU, NBU estimates.

Up until now, the overall impact of this component on CPI dynamics has been insignificant. This was mainly due to the small share of the component – only 0.43% in 2023.[7] Over time, however, the weight and impact of this component on overall inflation may rise considerably, taking into account the expected post-war economic recovery and the accompanying development of the real estate and mortgage markets. More advanced economies have significantly larger weights of this component, in particular, the average EU figure is 9%.

Figure 3. Components of group 04.2 "Owner-occupied housing costs" by their relative weight, %

Source: SSSU.

Integrating this component into the CPI formula could better inform monetary policy decisions. Integrating owner-occupied housing costs into the CPI formula will improve the representativeness of the inflation measure with respect to household expenditures, and more fully reflect price trends within a country, which is especially important for conducting an effective monetary policy. What is more, owner-occupied housing is an important asset for many households. Changes in households' housing costs could affect their well-being, financial health and consumer behavior, which, among other things, could have a bearing on their perception of inflation and inflation expectations. Therefore, the careful monitoring of these indices will contribute to understanding economic agents' decision-making processes, and to shaping effective macroeconomic policy measures.

Due to its nature, including owner-occupied housing costs in a CPI, as a rule, increases the procyclicality of inflation. More specifically, an economic upturn could be accompanied by a real estate market boom, whereby real estate prices grow at a faster rate compared to overall inflation. Accordingly, a CPI that does not factor in owner-occupied housing costs will grow at a slower pace than a CPI into which these costs have been integrated, as a result of which monetary policy could turn out to be too loose. Conversely, falling real estate prices during a crisis should be a signal for a greater easing of monetary policy. Hill et al. (2019) estimate that the non-inclusion of owner-occupied housing costs in the U.S. CPI may partly explain the flattening of the Phillips curve, and the fact that inflation during a global financial crisis did not decrease as much as expected.

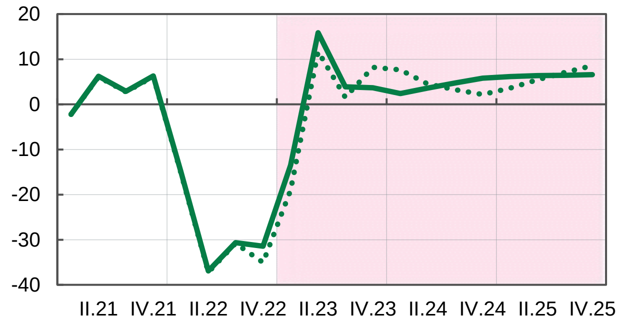
At the same time, integrating this component into the CPI formula could make inflation more volatile and exacerbate regional differences, which in turn could make taking monetary decisions more difficult.

[7] The 2023 weights of consumer basket components for compiling the CPI are based on SNA data for 2021.

2.2. Demand and Output

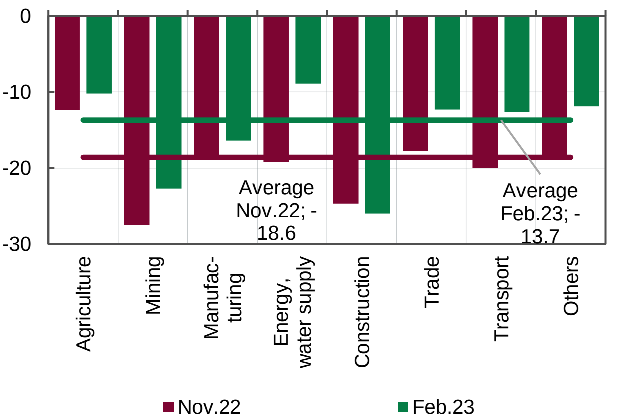
- In Q1 2023, the situation in the energy sector turned out to be better than expected, and it supported economic activity. Because of the substantial damage suffered by their physical capital, companies continued to operate very much below their full capacity, with consumer and investment demand remaining weak.
- The NBU revised its real GDP growth forecast upwards, to 2.0% in 2023, thanks to the rapid decline in electricity shortages, better terms of trade, and rising budgetary spending.
- Starting in 2024, economic recovery will speed up, propelled by lower security risks and Ukraine's post-war restoration efforts. In spite of that, the negative GDP gap will persist over the entire forecast horizon due to Ukraine's weakened competitiveness in the wake of the war, and because of protracted war-induced structural mismatches on the commodity and services, labor and capital markets, which will restrain the recovery of aggregate demand.

Figure 2.2.1. Real GDP, % yoy



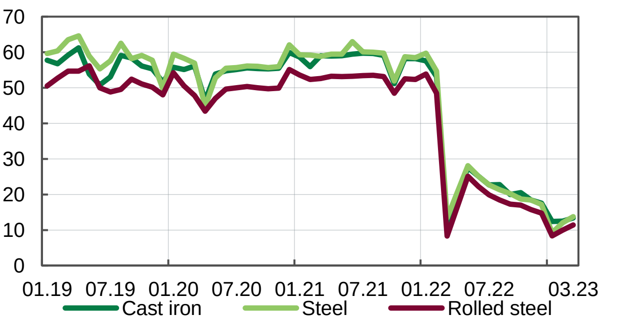
Source: SSSU, NBU staff estimates.

Figure 2.2.2. The average change in the volume of production/service provision due to power outages by type of activity, %



Source: NBU.

Figure 2.2.3. Average daily production of steel, cast iron and rolled steel, thousand tons



Source: Ukrmetalurgprom.

The rapid improvement in the situation in the energy sector shored up economic activity in early 2023

Electricity shortages declined quickly in Q1 2023, to about 15% according to the NBU's estimates, which was significantly lower than envisaged in the central bank's January forecast (27%). The NBU's survey[8] showed that companies also reported easing power shortages: in February 2023 respondents on average assessed their power cuts at 15% of working time (compared to 19% in November 2022). In early Q1, energy shortages persisted both due to new missile attacks and as a result of the damage inflicted last year. But rapid repairs, the launch of a number of NPP units and favorable weather[9] practically offset electricity shortages starting in the latter half of February.

Lower power shortages and companies' successful adaptation – due to, among other things, purchases of power-generating equipment – revived economic activity. In particular, the NBU's survey showed that the negative effect of power shortages on production and the provision of services softened for companies across almost all sectors (apart from construction, which may have been mainly attributed to seasonal factors). As a result, the NBU revised its real GDP estimates upwards, to -13.5% yoy.

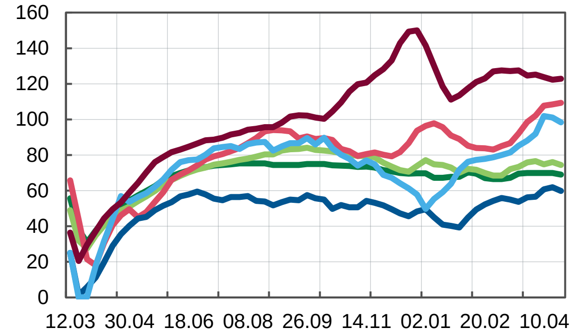
The rapid recovery of the energy sector had a positive effect on manufacturing sectors. More specifically, metallurgical companies relaunched some of the production facilities they halted when the missile attacks on energy infrastructure began. This, coupled with stronger external demand, propped up the mining industry. Chemical companies also ramped up operations at some of their production facilities, including with a view to manufacturing fertilizers for agricultural companies ahead of the spring harvesting campaign. The food industry revived (in particular, flour milling and milk processing plants).

The performance of the animal breeding sector also improved, slowing the decline in agricultural output. However, the sowing of spring crops this year is encumbered by the consequences of the war: high levels of pollution, damage to and the mining of lands in de-occupied areas and areas that are close to hostilities; difficulties with cultivating land after

[8] Additional questions to the NBU's quarterly business outlook survey. The first round was conducted from 31 October through 30 November 2022, reaching out to 637 companies in 21 oblasts of Ukraine. The second round, which surveyed 644 companies in 21 oblasts, was held from 30 January through 28 February 2023.

[9] In February, the air temperature was 1.9°C higher than the climatic norm, which somewhat reduced demand for energy. What is more, the warm weather in Q1 created floods, which are unusual for winter. This increased electricity generation by hydroelectric and pumped storage power plants. Meanwhile, sunny weather increased the generation of electricity from renewable sources.

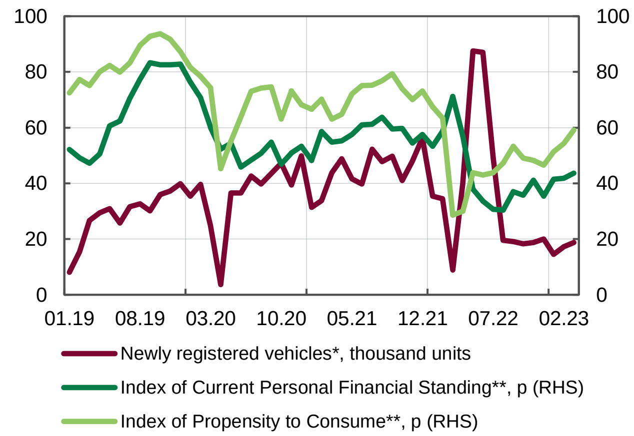
Figure 2.2.4. High-frequency indicators of economic activities in the services sector, % to the level preceding the full-scale invasion (4-week moving average)



*The indicator is deflated by the CPI

Source: Opendatabot, Poster, NBU staff estimates.

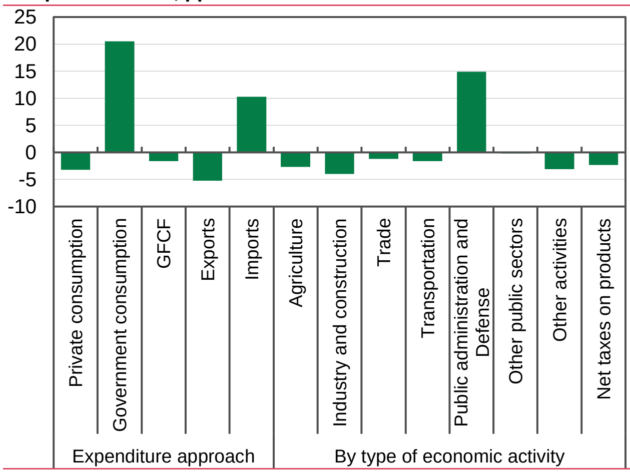
Figure 2.2.5. Components of the consumer sentiment index, p



*New and used ones, excluding cars imported with violation of customs regulations. **Change of the survey method from face-to-face to the phone interview from March 2022.

Source: Info Sapiens, Ukravtoprom.

Figure 2.2.6. Changes in the share of GDP components in 2022 compared to 2021, pp



Source: SSSU, NBU staff estimates.

last year's delayed corn and sunflower harvests;[10] as well as by higher production costs and staff shortages. Another factor hampering the harvesting campaign and the operation of oil extraction plants was uncertainty over the continued functioning of the 'grain corridor.' This, among other things, slowed the shipment of grain and sunflower oil to sea ports. However, the increased transportation of agricultural products via alternative routes and the railway transportation of ores and metals shored up freight transportation. The relaunching of electric public transport helped revive passenger transportation.

Q1 2023 also saw an improvement in businesses' short- and medium-term expectations, which indicated that companies had further adapted to wartime conditions. That said, expectations remain cautiously optimistic due to persisting high security risks.[11] Limited transportation opportunities for exports are one of the main factors restraining economic recovery, with other factors being higher production costs, subdued demand and staff shortages resulting from emigration and mobilization.

Consumer and investment demand rebounded, fueled mainly by budgetary support

The improved situation in the energy sector has also affected household consumer sentiment. In turn, more robust consumer demand supported the retail trade and services sectors. This is evidenced by a number of high-frequency indicators, such as an increase in registrations as sole proprietors and the growing turnover of restaurants. That said, consumer demand remains weak on the back of high unemployment, restrained household income and the large number of migrants (read more in the *Labor Market and Household Income* on page 27).

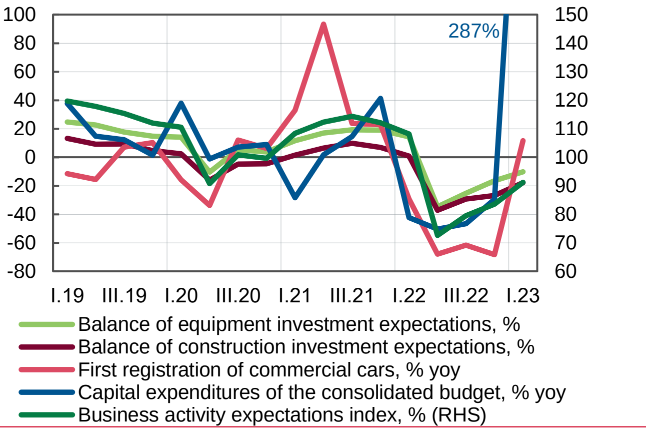
The role of the government sector in the economy has continued to strengthen. In Q1 2023, an increase in budgetary spending (read more in the *Fiscal Sector* on page 33) supported rapid growth in the final consumption expenditures of the general government, as well as in the GVA of those sectors that are mainly funded from the budget (primarily the government and defense sector and health care and education).

The budget's capital expenditures on infrastructure restoration and development and on defense rose at a fast pace, reviving investment in Q1 2023. There were also signs of a rebound in private investment demand, especially in demand for investment in housing construction related to the rebuilding of housing. Both government and private investment in the development of railway and river logistical routes on the western border propped up nonresidential construction. Transportation companies upgraded their fleets of vehicles, while agricultural and logistical companies purchased freight transport for shipping agricultural products.

[10] As of 9 March 2023, 4% of the areas sown to corn had not been harvested.

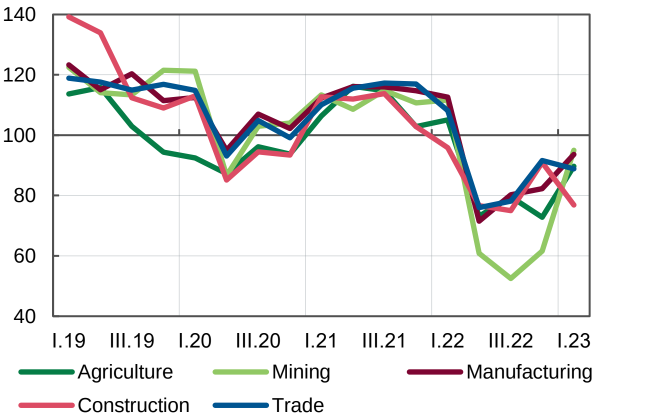
[11] According to the NBU's survey, the BEI increased by 7.7 pp, to 91.2% in Q1 2023. According to the IER's survey conducted in February, businesses' expectations regarding changes in their economic performance in the next six months have been improving steadily since December, while 30% of companies expect to expand their production in the next two years. The EBA's survey shows that 33% of respondents anticipate some improvements, and 76% plan on expanding their businesses.

Figure 2.2.7. Selected indicators of investment demand



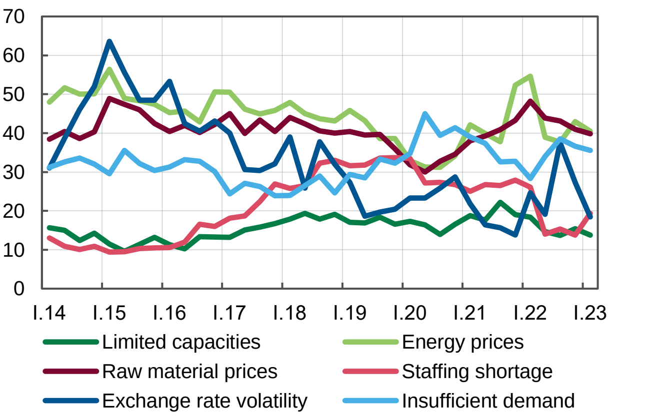
Source: SSSU, STSU, NBU, Ukravtoprom.

Figure 2.2.8. BEI for base sectors, %



Source: Source: NBU.

Figure 2.2.9. Assessment of the factors that will restrain production growth over the next 12 months, % of answers



Source: NBU.

Processing also developed, while energy companies invested in energy production. Overall, however, investment demand remained low. Demand growth was restrained by security risks, uncertainty and the financial difficulties experienced by companies, as evidenced by companies' still negative expectations for investment in construction, and in machinery and equipment, over the next 12 months.[12]

A rebound in external demand for iron ore and metals and the continued, if problematic, operation of the 'grain corridor' helped slow the drop in exports in Q1 2023. At the same time, with domestic production declining, domestic demand was mainly met by imports, as a result of which the fall of imports was smaller than that of exports. As a consequence, the negative contribution of net exports to real GDP persisted into Q1 2023.

The rapid recovery of the energy system will enable the Ukrainian economy to return to growth in 2023. However, the growth will be dampened by high security risks

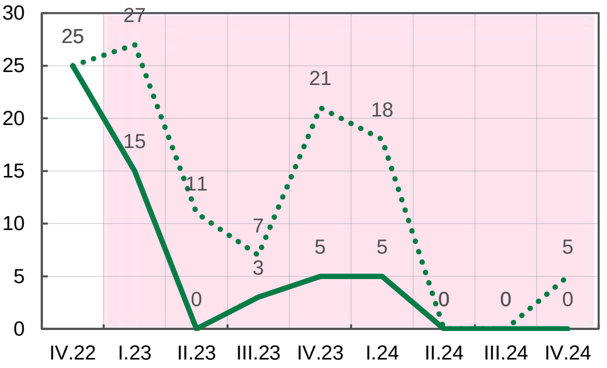
The successful restoration of the energy system made it possible to revise assumptions about its future state, and to significantly decrease estimates for power shortages. The NBU estimates that there will be no electricity deficit in Q2, but Ukraine could start experiencing power shortages again from Q3 2023 until Q1 2024. More specifically, scheduled repairs are expected to be carried out on most nuclear power generation units in summer. Generation by hydroelectric power plants will also decrease as water levels drop, which could weaken the maneuverability of the energy system. In contrast, demand will increase, driven, among other things, by hot weather. Therefore, the total amount of electricity generated may not be enough to meet peak consumption demand. That said, any shortages will mostly be localized and will be experienced only when consumption peaks, while outages will be noticeably shorter than in the winter of 2022/23. This macroeconomic forecast envisages shortages of 3% to 5% in Q3–Q4 2023 and in Q1 2024.

Given the energy system's revival and the growing amounts of anticipated international aid, which will be injected into the economy through budgetary spending and which will stimulate private consumption, the NBU has upgraded its 2023 real GDP growth forecast, to 2.0%. What is more, the positive contribution of government spending to real GDP change will persist in 2023. Meanwhile, the contribution of power shortages to 2023 real GDP change was assessed at (-0.6 pp), compared with (-1.9 pp) in the previous forecast.

However, economic recovery will be impeded by the persistence of high security risks, in particular due to depressed investment and consumer sentiments, logistical restrictions for exports, and the slow return of migrants from abroad.

[12] The NBU's business outlook survey shows that although improving, the balance of expectations for investment over the next 12 months still remained negative in Q1 2023 – (-17.8%) for construction investment compared to (-26.9%) in Q4 2022 and (-10.3%) compared to (-16.6%) for investment in machinery and equipment. This means that the share of companies that plan to cut down on investment is greater than the share of those that intend to ramp up investment.

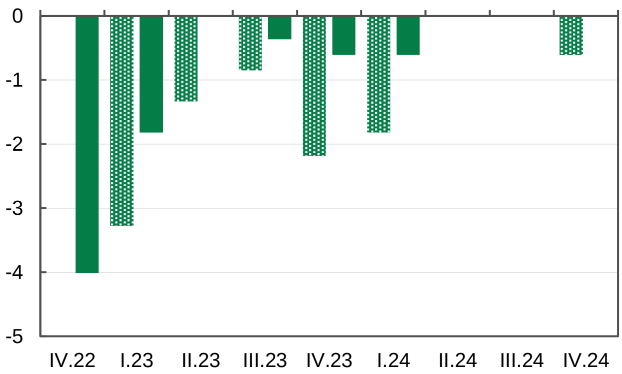
Figure 2.2.10. Assumptions regarding capacity deficit in the energy system, %



*Dashed line – assumptions in the January 2023 Inflation Report.

Source: NBU.

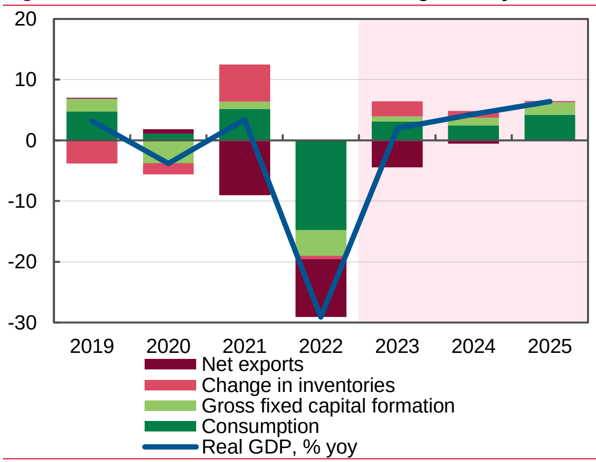
Figure 2.2.11. The contribution of electricity deficit to the change in real GDP compared to the scenario with no deficit, pp



*Shaded columns represent the forecast in the January 2023 Inflation Report.

Source: NBU staff estimates.

Figure 2.2.12. Contributions to annual GDP growth by final use, pp



Source: SSSU, NBU staff estimates.

Limited access to Black Sea ports will markedly narrow the window of opportunities for export-oriented sectors. This year's lower harvest will also reduce potential food exports to the external markets. As a result, exports will continue to fall, exacerbating the financial difficulties of companies. With rising imports – mostly energy and machinery imports – this will result in a significant negative contribution of net exports to 2023 real GDP change.

Starting in 2024, economic growth will speed up on the back of lower security risks and persistently large government spending

Given the assumption that security risks will reduce, the recovery of the Ukrainian economy will accelerate, propelled by, among other things, rebounding investment, rising consumer demand, and the return of forced migrants from abroad. The post-war reconstruction of infrastructure and production facilities will require a great deal of investment from both private companies and the government sector. Substantial government spending on capital investment is expected to persist until the end of the forecast period, ensuring the significant role of the government sector in the economy and remaining a strong stimulus for economic recovery. Substantial amounts will also be invested in enhancing the country's defense capability. At the same time, ongoing European integration efforts will help revive the inflow of external private investment. Starting in 2024, investment will be the fastest-growing GDP component.

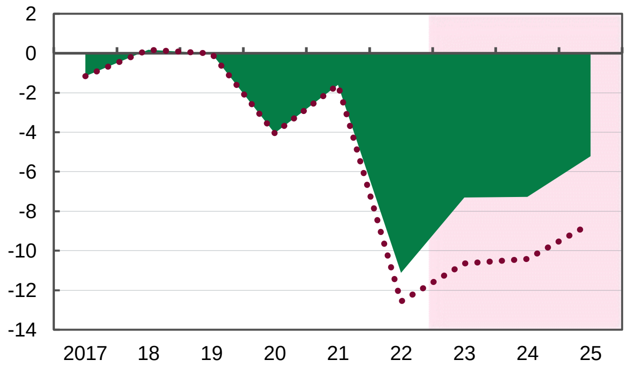
The reestablishment of logistical chains for Ukrainian exports – mainly the complete unblocking of the Black Sea ports – will be an important contributor to continued economic growth. This will provide incentives for metallurgical companies to rebuild their production facilities more quickly, while also encouraging agricultural companies to step up output. Imports will grow at a slower pace than exports, dragged down by a drop in imports of travel services and by persistently low energy imports. The lower energy imports will result from the gradual increase in domestic production and the reduced consumption of coal and gas by heat-and-energy producers. As a result, the negative contribution of net exports to real GDP change will gradually decrease.

The negative GDP gap will persist over the entire forecast horizon due to war repercussions, which will curb the recovery of aggregate demand

The full-scale war has dealt a heavy blow to the Ukrainian economy: destroyed or damaged production facilities and infrastructure, disrupted logistical chains and substantial outflows of the labor force abroad have adversely affected potential GDP.

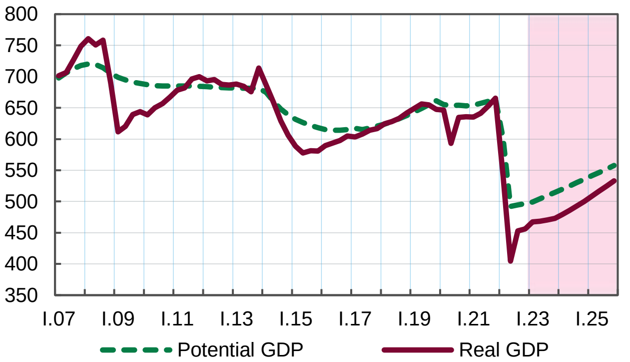
Potential GDP will gradually grow over the forecast horizon, thanks to the economy adapting to new realities, reestablishing optimum supply chains, the return of migrants, and the speeding up of European integration processes. That said, this growth will be rather slow, with potential GDP recovering only about half of its decline over the forecast horizon because of the magnitude of the losses, the pace of investment growth not being fast enough, and the slow return

Figure 2.2.13. Output gap, % of potential GDP



Source: NBU staff estimates, SSSU.

Figure 2.2.14. Real and potential GDP, sa, at 2016 constant prices



Source: SSSU, NBU staff estimates.

of migrants from abroad. However, things could be significantly different, if the large-scale recovery plan is implemented (this plan is not currently factored in by the baseline scenario, as the plan is still being finalized and funding sources are being searched for).

The substantial economic downturn has noticeably widened the GDP gap, which will remain negative for a long time. Some existing production facilities will continue to operate under capacity for a protracted period, even after security risks decline. In particular, it could take Ukrainian exporters quite a while to regain access to the external markets they have lost.

In addition, logistical hurdles, structural mismatches on the labor market and significant risks, which will dampen investment recovery and consumer demand, will persist for some time to come.

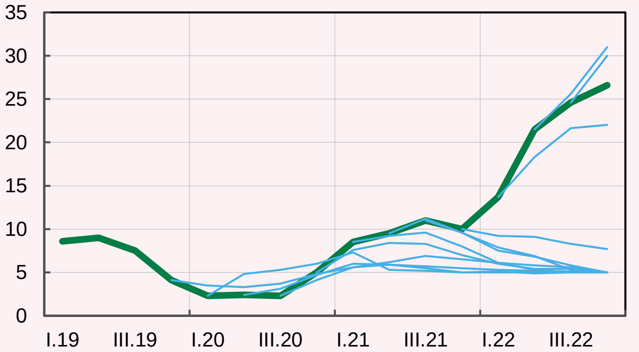
Box 3. Assessing the Accuracy of the NBU's Macro Forecasts

Accurate macroeconomic forecasts are important for the effective design and implementation of monetary policy, the anchoring of inflation expectations, and for building confidence in the regulator among market participants. Despite the temporary halt of the classical inflation targeting regime and the lack of a substantial portion of official macroeconomic statistics, it is still important for the NBU to analyze forecasts on a regular basis, as this helps identify weaknesses in forecasting tools, as well as adjust and improve these tools. What is more, these practices help determine the extent to which NBU forecasts affect the economic expectations of market participants. The analysis shows that the quality of the NBU's forecasts is at least as good, if not better, than the consensus forecasts of market participants. The main reasons for forecasts deviating from actual data are shocks that are unexpected for all forecasters, as well as the conservative nature of the scenario assumptions embedded in NBU forecasts.

Usually, the accuracy of forecasts is measured on the basis of the following four indicators: the CPI, GDP, the current account balance of the BoP, and the key policy rate.

NBU forecasts that were published before February 2022 envisaged that the CPI would continue its gradual decline in 2022 (see Figure 1). However, russia's full-scale invasion caused inflation to surge in 2022. In the face of great uncertainty, the NBU's subsequent inflation forecasts were rather accurate, with the accuracy being commensurate with that of other organizations.[13]

Figure 1. Forecast history: CPI (2020-2022), % eoy

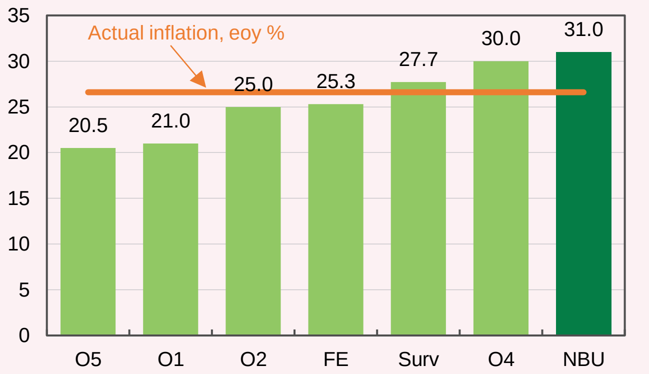


Source: NBU staff estimates.

In April 2022, the NBU published no macroeconomic forecast because of the unprecedented uncertainty as to how the situation would develop. However, the NBU made a forecast for internal use and published its main conclusions. The central bank expected that inflation would exceed 20% and that GDP would contract by one third, which, even given the great uncertainty at that time, turned out to be rather close to the actual data. The April forecast is not factored into the measurement of forecast ratings due to the fact that it was never published in full. However, its indicators are shown on some graphic figures.

The first forecast that accounted for the consequences of the war was made public in July 2022. The forecast envisaged that inflation would rise throughout 2022, hitting 31% in December. The July forecasts produced by other organizations were on the whole more optimistic (see Figure 2), but their assessments varied more than usual. In December 2022, actual inflation, at 26.6%, was lower than July's projections, but higher than forecast by most organizations. Consensus forecasts turned out to be the most accurate. The main reason for this was the expectation that the government would reimpose pre-war fuel taxes, which would have been passed onto the cost of other goods. However, the reimposition was postponed until the middle of 2023. The effects of the deoccupation of parts of Kherson oblast were stronger than expected, due to, among other things, the rapid reestablishment of logistical chains. As a result, in December this region saw deflation month-on-month, which helped decelerate inflation in late 2022. That is why the forecasts made by the NBU and other organizations turned out to be slightly overestimated (in particular because of food price inflation). An important contribution was made by the quick stabilization of inflation expectations, thanks to, among other things, a reduction in the budget's monetary financing.

Figure 2. Comparison of the CPI forecasts for 2022 made in July 2022, % eoy



Source: NBU staff estimates.

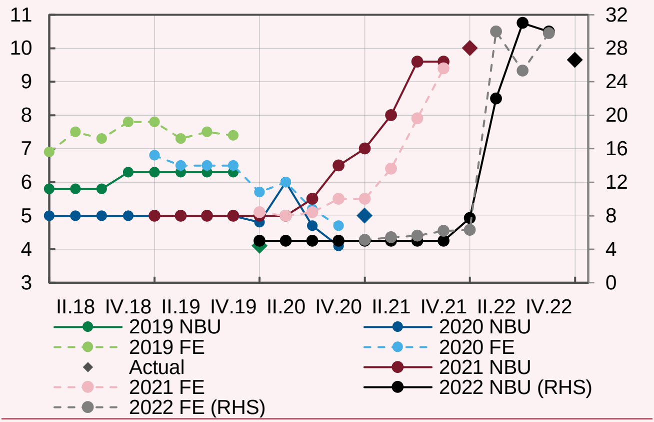
The accuracy of the NBU's inflation forecasts for 2016–2022 is above average[14] (see Figure 4), while the NBU's CPI

[13] For comparison, the NBU used the forecasts produced by the following organizations: the Ministry of Economy of Ukraine, Alfa Bank Ukraine (Sense Bank), ICU, Dragon Capital, Raiffeisen Bank Aval, J.P. Morgan, OTP Bank, Goldman Sachs, the IMF, as well as a number of consensus forecasts. The names of the organizations were obscured and replaced with codes O1-O8, with this order not correspond to the order in which the organizations appear in the figures. Below, the following abbreviations are used: FE – the consensus forecast of FocusEconomics; CE – the consensus forecast of Consensus Economics; Surv – the NBU's survey of financial analysts.

[14] The ratings were produced on the basis of the forecasts' mean absolute errors (MAEs) and their values adjusted for the duration of the forecasting period (adjusted MAEs). The longer the forecasting period, the smaller the weight, meaning that greater weights are assigned to short-term forecasts (read more in the April 2020 Inflation Report). Zero values on the figures signify that the forecast errors of a specific organization correspond to the average forecast errors of all organizations; positive values mean that the average forecast errors of a specific organization are greater than the average errors of all forecasts, while negative values indicate that the organization's average errors are lower. To avoid significant distortions of forecast

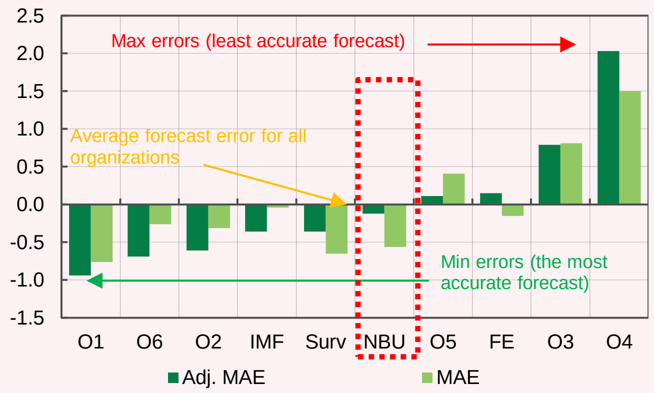
forecasts with unadjusted errors were among the most accurate.

Figure 3. Forecast history: CPI (2019-2022), % eoy



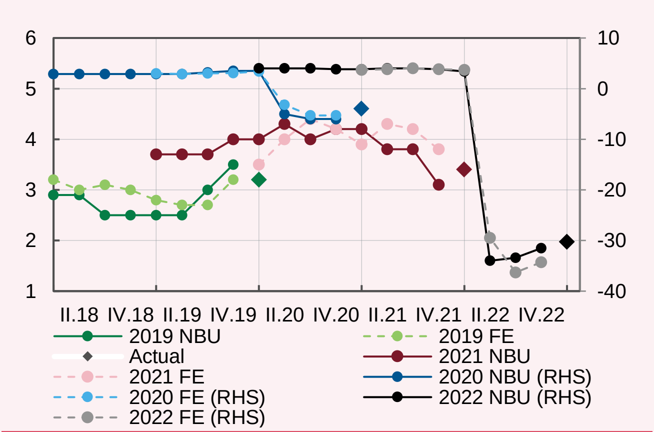
Source: NBU staff estimates.

Figure 4. Forecast ranking: CPI (2016-2022), % eoy



Source: NBU staff estimates.

Figure 5. Forecast history: GDP[15] (2019-2022), % yoy



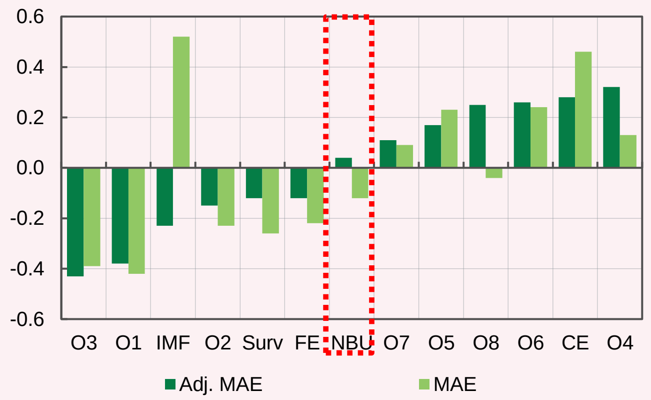
Source: NBU staff estimates.

The NBU's real GDP forecasts were also reasonably accurate, and close to consensus forecasts (see Figure 5).

In 2022, the NBU's official real GDP forecasts published after russia's full-scale invasion were quite close to the actual figures, and somewhat more optimistic than the consensus forecasts. Using regular methods and models to make short-term GDP forecasts was difficult not only because of structural changes caused by the consequences of the war, but also due to the lack of a significant portion of SSSU statistics. However, relying on alternative approaches (read more in a box in *the July 2022 Inflation Report* on pages 25 and 26) and tapping into its expertise, allowed the NBU to make rather accurate short-term forecasts of economic activity, despite there being unprecedented uncertainty.

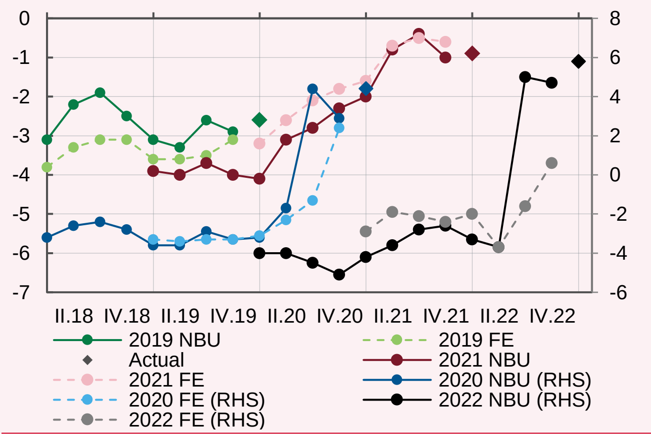
The 2020 coronavirus crisis and the full-scale war launched in 2022 widened the range spread for GDP forecasts, which in turn increased forecast errors. The accuracy of the NBU's GDP forecasts remained average compared to the forecasts of all covered organizations, both in terms or adjusted and unadjusted errors (see Figure 6).

Figure 6. Forecast ranking: real GDP (2016–2022), % yoy



Source: NBU staff estimates.

Figure 7. Forecast history: current account balance (2019-2022), % of GDP



Source: NBU staff estimates.

The forecasts for the BOP current account were very volatile because of the great vulnerability of the Ukrainian economy to external and internal shocks (Figure 7). The coronavirus crisis and russia's full-scale war have greatly increased uncertainty in recent years, which resulted in substantial corrections of balance of payments forecasts.

In 2022, the wider actual surplus of the current account compared to the NBU's latest forecasts was caused by larger

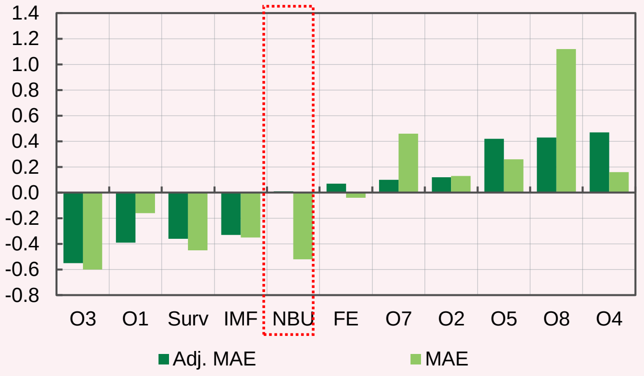
comparison results, the NBU changed the methodology for assessing the quality of 2022 forecasts. More specifically, forecasts published before russia's full-scale invasion were not factored into the analysis.

[15] Actual data shown on figures reflects preliminary official estimates, which are not adjusted after further revisions.

amounts of grants received from international partners. The NBU's official forecasts that were published after russia's full-scale invasion were rather close to actual figures, and more accurate than consensus forecasts.

The accuracy of the NBU's 2016–2022 forecasts of the current account balance was close to that of consensus forecasts, and average when compared to other organizations (Figure 8). When unadjusted for the timing effect, the errors generated by the NBU's forecasts are one of the smallest compared to other organizations.

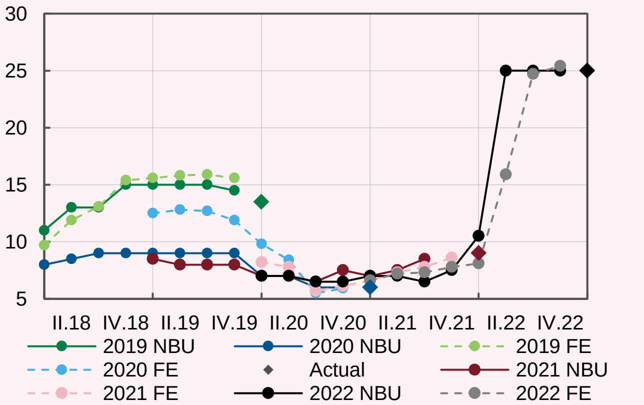
Figure 8. Forecast ranking: current account balance (2016–2022), % of GDP



Source: NBU staff estimates.

The accuracy of the NBU's key policy rate forecasts is typically higher than that of other market participants (see Figure 9).

Figure 9. Forecast history: key interest rate (2019-2022), % eoy

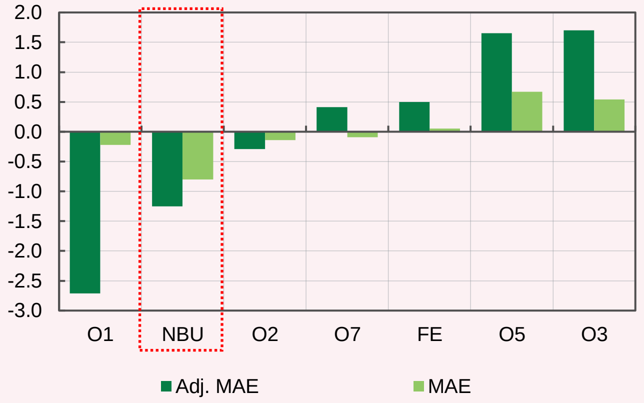


Source: NBU staff estimates.

After the start of the full-scale war, the NBU postponed taking key policy rate decisions (keeping the key policy rate at 10%) in view of high uncertainty and the low effectiveness of the monetary transmission mechanism amid the psychological shocks suffered by economic agents. After the NBU resumed conducting an active interest rate policy in June 2022 and declared its intentions to keep the key policy rate at 25% for a long time, the key policy rate forecasts made by other organizations quickly caught up with the announced figures. This was mostly indicative of confidence in the NBU's actions in a crisis.

The accuracy of the NBU's key policy rate forecasts is typically higher than of forecasts made by most other market participants (see Figure 10).

Figure 10. Forecast ranking: key interest rate (2016–2022), % eoy



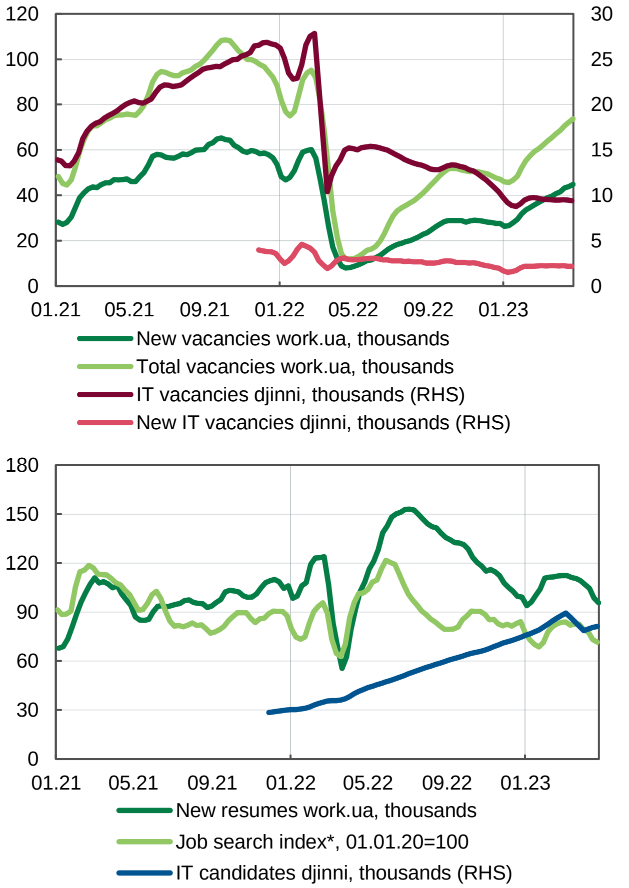
Source: NBU staff estimates.

In spite of the unprecedented uncertainty in 2022 caused by russia's full-scale invasion, the errors generated by the NBU's forecasts for main macroeconomic indicators were relatively insignificant.

2.3. Labor Market and Household Income

- Since the start of 2023, the labor market has been gradually recovering, but this process is still uneven. Unemployment is running high, and the financial standing of households is difficult.
- Up to the forecast horizon, employment and wages will gradually rise as economic activity recovers. However, labor market mismatches will persist, and so unemployment will stay above pre-war levels, and real wage growth will be mostly subdued, but uneven across sectors and regions.

Figure 2.3.1. Labor force supply and demand (4-week moving average)



* Includes job search queries in Ukrainian and russian.

Source: work.ua, opendatabot, Google Trends, SCE, NBU staff calculations.

.

Labor market conditions have been improving since the beginning of 2023. However, unemployment remains high and is showing signs of being structural

The revival of economic activity, driven by the improved situation in the energy sector and the seasonal uptick in economic activity, supported the labor market in Q1 2023. As expected, labor market conditions remained difficult in early Q1 due power outages, but in the second half of Q1, the number of resumes and vacancies being posted on job search sites returned to growth[16]. At the same time, the number of vacancies grew faster.

However, regional and qualification-related mismatches have deepened compared to before the full-scale invasion, holding back further recovery in employment.[17] Specifically, the resumes-to-vacancies ratio has increased, and it varied considerably between regions and professions. This is attributable both to changes in the economic landscape because of the war and to the significant number of displaced persons,[18] and may also be evidence of more pronounced signs of structural unemployment.[19] Specifically, one of the causes of structural unemployment is the difficulty of relocating potential employees to where there are the jobs that they were trained to do. The current situation in Ukraine is essentially similar but technically opposite: a large number of IDPs have had to move to regions where the number of job openings in their profession is limited. This was one of the reasons that IDPs have a higher proportion of both those who have lost their jobs after the full-scale war started and those who are still unemployed. However, even among those who have returned to their previous place of residence, a significant number of people cannot find work.[20]

Although labor market conditions have improved, businesses remained cautious in their estimates of increases in staff numbers and wages. Specifically, the Business Outlook

[16] As of end-March 2023, the number of vacancies on the work.ua website has recovered to almost 80% of the 2021 average, and the number of resumes exceeds the 2021 average by about 10%. At the same time, comparisons of data on job search sites for different periods have to be performed with caution, as there is uncertainty over the relevance of resumes, vacancies, and the frequency and depth of database revisions.

[17] The share of those who had a job before the full-scale war, lost their job, and are still looking for one, has remained practically unchanged since June 2022. In February 2023, it stood at 36%, according to a Rating survey. About 51% of IDPs are out of work.

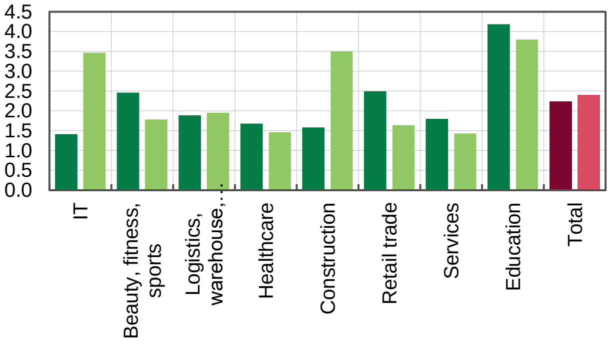
[18] At the end of January 2023, there were about 5.4 million IDPs, according to an IOM estimate. The number of registered IDPs is 4.9 million, which includes those who have received this status both since 2014 and those who have been forced to leave their places of permanent residence since 24 February 2022, according to the Ministry of Social Policy of Ukraine.

[19] By definition, structural unemployment is caused by structural changes in the economy, whereby workers do not have the necessary skills or, on the contrary, there is an excess of workers with particular skills in their region of residence or in their profession. Put another way – there is a significant mismatch between what employers need and what employees can offer. Reducing structural unemployment is a rather long-term process that requires relatively large-scale measures, even up to reforming the education system.

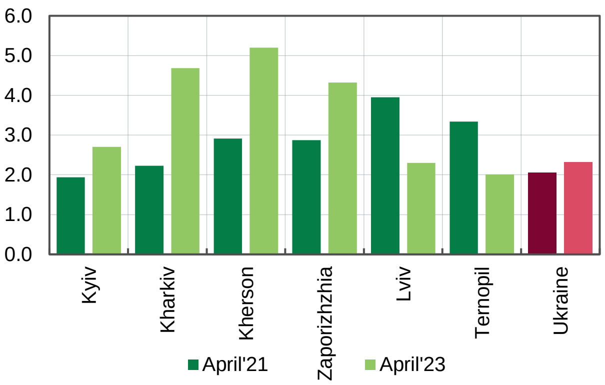
[20] According to data from the first round of the Assessment of Return Conditions (ARC), conducted in January–February 2023, 5.6 million displaced persons returned to their permanent places of residence, including 20% who came home from abroad. The largest share of the returns was recorded in Kyiv oblast. About 15% of IDPs returned to very difficult conditions, the main problems being unemployment and the destruction of housing. In particular, some of those who returned are living in settlements with very few or no residents. Some of the returnees cannot find suitable employment options.

Figure 2.3.2. Number of applicants for one job opening, persons

by sectoral specialization

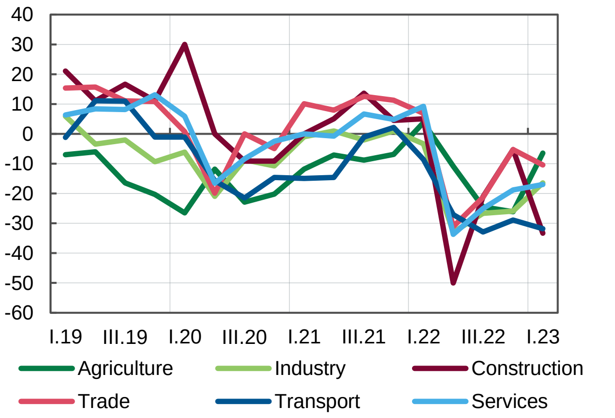


by selected regions



Source: work.ua, NBU staff calculations.

Figure 2.3.3. Expectations regarding the change in the number of workers over the next 12 months, by sector (balance of responses), pp



Source: NBU.

Survey for Q1 2023 showed that companies continued to expect a reduction in staff numbers, although the share of respondents who anticipated layoffs was gradually shrinking. At the same time, a significant share of businesses expect an increase in per-person expenses on remuneration of employees[21]. Apart from an increase in wages fueled by inflationary processes, this may mean that some businesses will raise wages out of concern over losing (primarily skilled) workers. Other surveys yield similar outcomes: the layoffs continued, and finding people to hire was increasingly difficult[22]. This may also indicate a shortage of certain skilled workers, despite the high unemployment rate.

So, despite the revival of the labor market, the recovery of employment slowed in Q1 2023. Overall in Q1 2023, the unemployment rate is estimated at about 20%. The development of alternative methods for assessing labor market conditions in the absence of relevant official statistics during martial law made it possible to improve the estimate of the unemployment rate in Ukraine in 2022 (read more in *Ukraine's Wartime Labor Market* on page 31) compared to the estimates published in the January forecast.

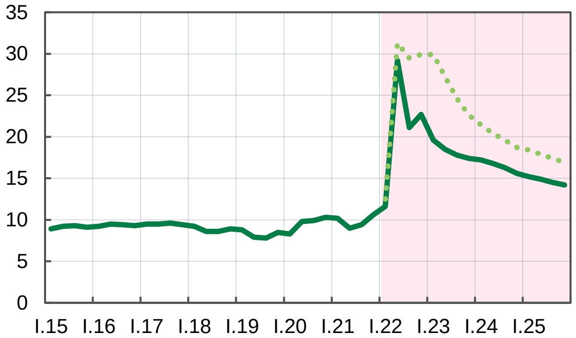
Provided no significant shocks occur, the recovery of the labor market will continue until the forecast horizon. The unemployment rate will gradually decline as economic activity picks up, but will remain high. This will primarily be related to the likely preservation of significant qualification and regional mismatches in the labor market, as well as the return of migrants from abroad, which, all else equal, will increase the labor supply.

External migration continued, but at a slower pace than expected. As security risks moderate, migrants will gradually return, but a significant number of them will remain abroad.

By UNHCR estimates, the number of migrants outside Ukraine continued to increase in Q1 2023: 600,000 more Ukrainians left than returned. A total of 8.6 million Ukrainians were living in the EU at the end of the quarter, including 5 million with temporary protection status. The further increase in the number of migrants met the NBU's expectations, but the slowdown in migration processes turned out to be faster than expected in the January forecast. A significant factor behind the growth in departures, especially at the beginning of the quarter, was the difficult heating season. At the same time, the rapid normalization of the situation in the energy sector, as well as the successful adjustment of Ukrainian households to energy supply disruptions, led to an increase in returns from abroad. This, and the faster-than-forecast recovery of the economy, made it possible to slightly improve the estimate of the migration balance at the end of 2023. However, a significant

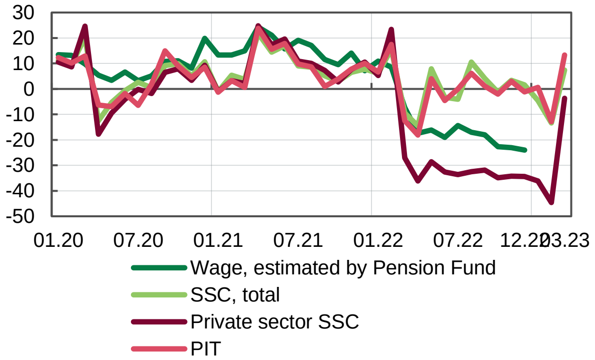
[21] In Q1 2023 and Q4 2022, a reduction in staff numbers in the next 12 months was expected by 25.4% and 29% of respondents, respectively. No change was expected by 65.5% and 62%. An increase was anticipated by 9% and 8.9% of respondents. Growth in expenses on employee wages was expected by 39.9% and 44.9% of respondents, respectively. A decline was anticipated by 4.6% and 6% of respondents, and no change, by 55.5% and 49.1%.
[22] According to an IER survey of companies, more respondents fired than hired employees in January–February 2023, the same as in 2022. At the same time, an expanding share of respondents note that finding new employees, both skilled and unskilled, is becoming increasingly difficult, and that companies plan to step up hiring in the next six months.

Figure 2.3.4. Unemployment sa, %



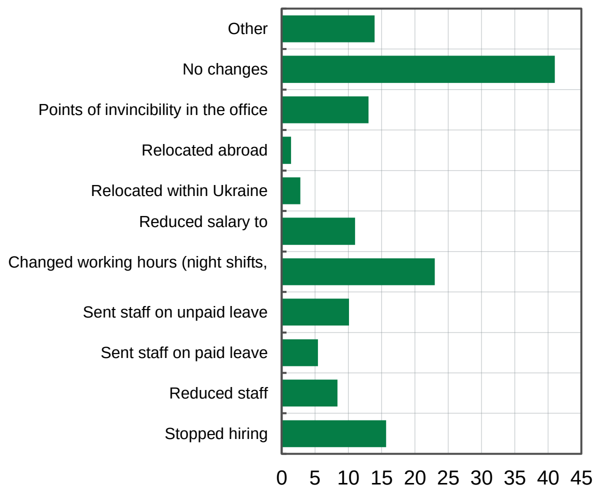
Source: SSSU, NBU staff estimates.

Figure 2.3.5. Indirect indicators for estimating real household income*, % yoy



* Deflated by CPI.
** The private sector SSC is calculated as the difference between total SSC and SSC paid on budget sector wages.
Source: Pension Fund of Ukraine, STSU, NBU calculations.

Figure 2.3.6. Changes in approaches to personnel management due to electricity shortages, % of responses



Source: NBU.

percentage of migrants still have no plans to return, and the timing of such returns remains extremely uncertain due to high security risks.[23]

Further adaptation of Ukrainians to living abroad can significantly diminish their propensity to return. Specifically, the proportion of Ukrainian migrants who make a living primarily by earning a salary and who rent housing in the host country[24] is expanding. At the same time, the share of Ukrainians working abroad varies by country: Poland leads the way, with about 0.9 million Ukrainian migrants already working there, which is the majority of those who wanted to find a job.

The return of migrants from abroad will accelerate as security risks abate, which will gradually improve the labor force situation. At the same time, people's movement abroad may become more active, including due to the goal of family reunification or searching for a job outside Ukraine.

The financial standing of households remained difficult. Going forward, household incomes will gradually rise as economic activity picks up.

According to the SSSU,[25] the average nominal wage increased by 5.9% in 2022 (the average real wage was down by 11.8%), an improvement on the NBU's previous estimates. The growth in wages was primarily due to the public sector, in particular the increase in the compensation of healthcare professionals at the beginning of 2022, in the public administration and defense sector, as well as in IT, finance, and insurance. On the other hand, nominal wages decreased in manufacturing and services.

Indirect estimates indicate that in Q1 2023, the financial standing of households was still difficult, although it was supported by an increase in pensions by an average of 19.7% since March 2023.

A significant factor in the reduction of incomes in Q1 2023 was the contraction in economic activity due to a shortage of electricity at the beginning of the quarter. According to an NBU survey,[26] energy supply disruptions led businesses to optimize their expenses in Q1 2023, including by laying off personnel and cutting wages to match the actual number of working hours, among other things. By contrast, some companies supported their employees in kind, in particular by opening Invincibility Points at their offices where employees could work and rest.

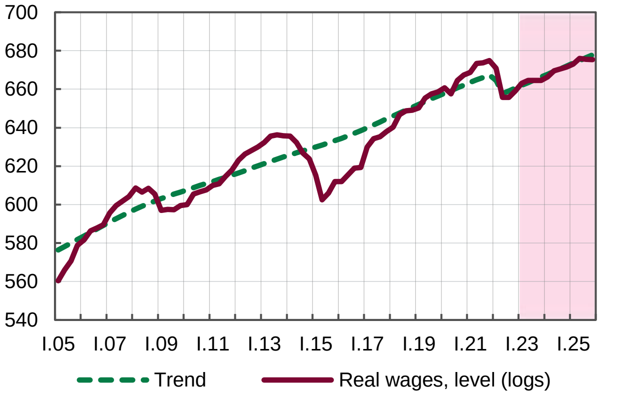
[23] According to a UNHCR survey, the share of migrants planning to come home shrank from 78% (in August–September 2022) to 66% in December 2022–January 2023, while uncertainty about returning increased (from 10% to 19%), as did the share of those not planning to return at all (from 4% to 5%). About 94% of respondents cited security problems around their place of residence in Ukraine as an obstacle to coming back.

[24] According to a UNHCR survey, the share of working migrants increased from 32% (in August–September 2022) to 40% (in December 2022–January 2023), while the proportion of those learning a new trade rose from 2% to 11%. As a result, the share of the unemployed shrank from 33% to 19%. On the other hand, the share of the economically inactive (taking care of children or pensioners) remained practically unchanged. The share of those who rent housing increased from 27% to 45%.

[25] In estimating 2022 wages (based on data on legal entities with 10 or more employees), the SSSU took into account the availability of reporting and data from administrative sources. The data will be verified after martial law is lifted.

[26] Additional questions in the NBU's quarterly Business Outlook Survey. The survey was conducted between 30 January and 28 February 2023. The NBU polled 644 businesses in 21 oblasts of Ukraine.

Figure 2.3.7. Real wages, level (logs)



Source: SSSU, NBU staff estimates.

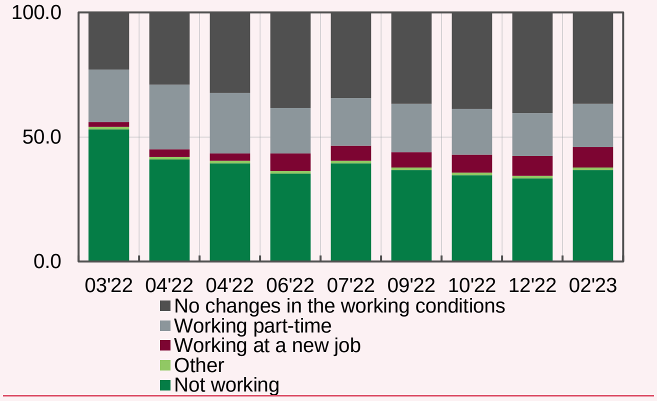
Overall, real wage growth is expected to resume in 2023 after falling in the previous year. Real wages will still be constrained by the high-inflation environment. Nominal wages will grow at double-digit rates each year. In 2023, this growth will be facilitated by the further adjustment of the real sector to operating in conditions of elevated risks and a fairly loose fiscal policy. Going forward, the major contributing factor will be an increase in the demand for labor amid accelerated economic growth. After Ukraine's borders fully reopen, a large number of businesses will have to compete for workers, including against foreign peers. Rivalry to lure talents will become a strong factor in driving the subsequent growth in wages. In this regard, the wage gap between mobile and less mobile workers is expected to grow.

Box 4. Ukraine's Wartime Labor Market

A large number of Ukrainians have lost their jobs since the beginning of the full-scale invasion. At the same time, in the absence of official statistics, it is difficult to assess the impact of the war on the labor market, both in general and in terms of demographics and regions. It requires additional research methods, including ones based on alternative sources of data. Such alternative survey data and findings have made it possible to estimate 2022 unemployment more precisely. As a result, the average unemployment rate in 2022 is estimated to be between 19% and 23%. In addition, the data confirmed there had been a decrease in the unemployment rate in H2 2022.

Before russia launched its full-scale assault on Ukraine, official statistics from the SSSU were the primary source of data on labor market conditions. The SSSU gathered such observations by taking randomized polls of households on economic activity issues (the so-called labor force survey).[27] This survey has been suspended for the duration of martial law, so employment and unemployment estimates in Ukraine currently require the use of alternative data. These can be sourced from various other polls.

Figure 1. Current job status of respondents previously employed before 24 February 2022, % of responses



Source: Rating.

In particular, according to Rating group's nationwide polls, prior to the full-scale war, 65% of respondents had a job, 12% did not have one, and another 23% were outside of the labor force (retirees and other relevant categories). These indicators are rather close to official SSSU data (in Q4 2021, the unemployment rate was 10.2%[28]). Such proximity makes it possible to use the results of these polls to estimate the unemployment rate in 2022, particularly households' responses to questions about their current employment status. Specifically, at the outbreak of the full-scale invasion, the share of those who lost their jobs increased rapidly. Subsequently, the recovery of economic activity and the labor market led to an increase in the proportion of people who resumed their jobs or found new ones. So, according to NBU estimates based on the results of these polls,[29] the average unemployment rate in 2022 was about 23%.

Another source of representative data on labor market conditions in 2022 was the findings of InfoSapiens[30] surveys, especially the detailed socioeconomic attributes of respondents. To assess the unemployment rate, respondents who belonged in the labor force were singled out (all those able to work were divided into employed and unemployed)[31]. Estimates based on data from this 2021 poll also differ in some ways from the SSSU data. In particular, they are made for the corresponding month of the survey, while the SSSU publishes the average value for the quarter, a discrepancy that may affect the results, given the significant seasonality of the labor market. In addition, because of the full-scale war, the structure of Ukraine's population has changed significantly, in part due to there being a significant number of internal and external migrants. According to estimates based on data from these polls, the unemployment rate increased from 9% in December 2021 to 25% in May 2022[32], and then gradually decreased to 16% in December 2022.[33]

Based on these data and using probit models,[34] the NBU estimated the probability of becoming unemployed for a person, depending on their sociodemographic characteristics. The outcomes showed that the most important determinants of the unemployment status were

[27] The SSSU used the ILO methodology to survey about 16,000 households every month. The data collected in this way could be used to provide highly accurate aggregate estimates of the size of the workforce, employment, and unemployment, and more detailed estimates by age, gender, and region. These data also enabled country-by-country comparisons. The SSSU surveys have been suspended for the duration of martial law.

[28] The gap is due to the difference in samples: the poll sample is made up of persons aged 18+, while that of the SSSU survey of the workforce consists of individuals aged at least 15.

[29] The survey data were adjusted to account for migration processes using the results of a CES survey of migrants. In addition, assumptions were made about the transition of some of those who lost their jobs into the economically inactive group.

[30] The survey has been conducted on a quarterly basis at the NBU's request since 2021, and is intended to monitor the financial standing of households. During the study, 1,000 individuals aged 16+ are interviewed. The structure of the sample mirrors the breakdown of the population in terms of gender, age, size of settlement and region and other parameters observed by the SSSU just before the full-scale invasion.

[31] Respondents are included in the labor force if in their responses to multiple-choice questions they identify themselves as: employed; self-employed; a registered sole proprietor; temporarily unemployed but looking for work; or other. The rationale for adding the last category: if respondents choose *other* when given the option to choose *unemployed*, this means that they have a job, but that they probably picked *other* because they are working in the informal sector or on a temporary basis. Only those who answered *temporarily unemployed but looking for work* were designated as unemployed.

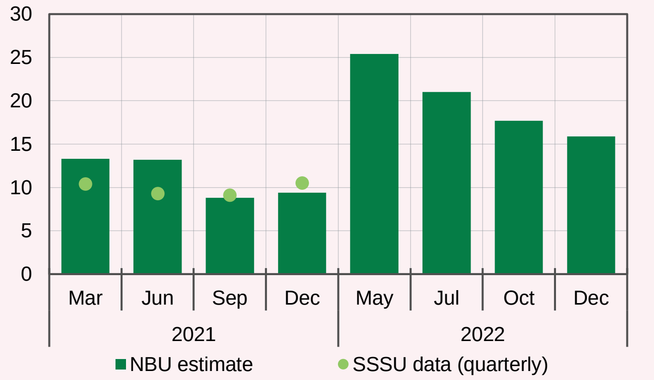
[32] The first survey since the full-scale war broke out.

[33] Since February 2022, the share of respondents who identified themselves as *running the household* has expanded significantly. Under ILO methodology, such respondents are categorized as economically inactive. Such an increase was largely driven by people without a higher education who live outside large cities. This likely happened because of a significant narrowing of job search options for those who lost their jobs, but are unable to find a new one in wartime without relocating to other regions. If such individuals were to be identified as potential labor force, then the unemployment rate would be 28% in May 2022 and 19% in December.

[34] The dependent variable of the model is the unemployed status of the respondent, and the independent variables are: gender, age (as a quadratic function), the presence of debts and additional sources of financing (remittances from abroad), the presence of higher education, living in a big city, living in a village, period full-scale war (the whole year of 2022 or a specific month of 2022, depending on the model specification), and the region of residence (North, Center, East, South, West, Kyiv city).

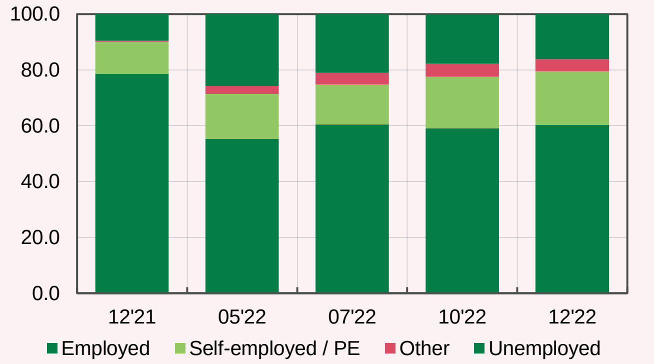
age, place of residence (urban/rural), educational attainment, and macroregion of residence. The estimated coefficients on these variables are highly significant and have predicted signs explaining the labor market's development.

Figure 2. Estimated unemployment rate in 2021 and 2022 based on the InfoSapiens data, % of the labor force



Source: NBU staff estimates.

Figure 3. Structure of the labor force in December 2021 and 2022, % of the labor force

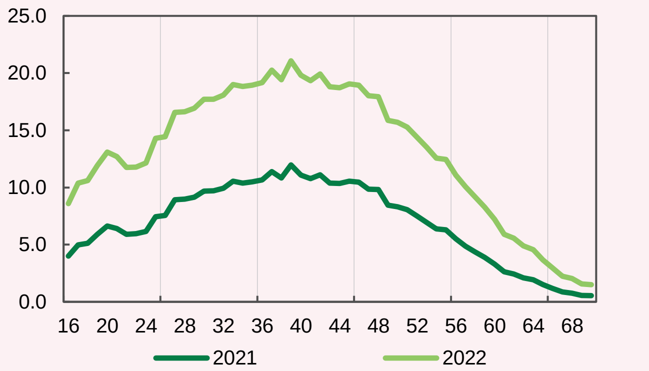


Source: NBU staff estimates.

A direct effect of the full-scale invasion was a 9 pp increase in the probability of becoming unemployed in May 2022 relative to December 2021.[35] The increase in the unemployment as a result of the war was not uniform and depended, among other things, on proximity to the front line,[36] which deepened the differences between regions. Specifically, although the chance of becoming unemployed increased in all regions, being in the east and south of Ukraine caused respective 27 pp and 13 pp increases in the estimated probability in May 2022 compared to December 2021. For the north and center, this probability was only 7.6 pp and 4.6 pp higher, respectively.

The liberation of territory had a significant direct impact on reducing the probability of becoming unemployed in all regions. In average probability of unemployment, the north caught up with the base-for-comparison regions (Kyiv city and West) as early as the next period of the poll (July 2022). In the east and south, this gap narrowed, but remained significant until the end of the year. The probability differences between the west of Ukraine and the city of Kyiv were statistically insignificant throughout 2022. This can be attributed to the availability of more vacancies in the capital, the higher share in the region's population compared to other regions, and the fact that there were no active hostilities (except for missile strikes) in these regions at the poll time.

Figure 4. Probability of becoming unemployed by age, ceteris paribus, in 2021 and 2022, %.



Source: NBU staff estimates.

Table 1. Probability of becoming unemployed for workers aged 36-40, %[37]

	Before 24.02.2022				After the full-scale invasion			
	women		men		women		men	
	w/o higher educa-tion	with higher educa-tion	w/o higher educa tion	with higher educa tion	w/o higher educa tion	with higher educa tion	w/o higher educa tion	with higher educa tion
West	13.8	6.5	13.4	6.2	24.2	13	23.6	12.6
Kyiv	15.2	7.2	14.7	7	26	14.3	25.4	13.8
South	17.1	8.5	16.6	8.1	28.7	16.1	28.1	15.7
North	12.1	5.5	11.4	5.3	21.6	11.3	21.1	10.9
East	23.4	12.5	22.9	12.1	36.9	22.3	36	21.8
Center	12.1	5.5	11.7	5.3	21.6	11.4	21.2	11

Source: NBU staff estimates.

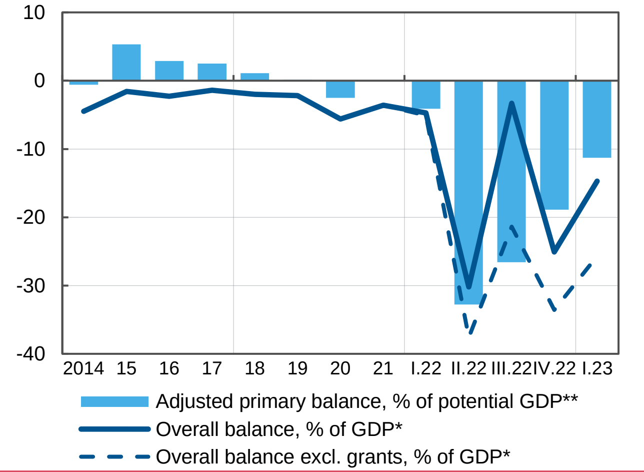
Alternative estimates of the unemployment rate confirmed not only a significant increase in unemployment in Ukraine at the beginning of the full-scale invasion, but also positive developments in the labor market in H2 2022. What is more, the estimates presented here testify to the importance of taking a region-based approach in analyzing the labor market situation, and of taking into account the gender-age structure of the population. Therefore, even after the SSSU resumes its the labor force surveys, the proposed alternative-data-based research methods could continue to play a useful role as a source of information, especially in quick assessments of labor market conditions.

[35] Hereinafter, unless otherwise noted, comparisons are to December 2021, the latest month for which pre-full-scale-war data are available. The truncated nature of the data did not allow us to capture seasonality, which could have had an impact on the results.
[36] The city of Kyiv was chosen as the base for comparison. In addition, there was no statistically significant difference between the war's effects for Kyiv and for the west of Ukraine.
[37] The east and south of Ukraine represent the regions holding the highest rates of unemployment growth. They might also have the highest portion of the population fleeing these regions, which could have probably affected the structure of the sample and the estimates.

2.4. Fiscal Sector

- Fiscal policy remained loose as expected. The consolidated budget deficit will widen this year, primarily due to the significant need for funds to ensure the country's defense capabilities. With a decline in security risks, the deficit will gradually decrease, but will remain significant due to the need to support economic recovery.
- International assistance, as expected, is playing a key role in financing budget needs, although it will gradually decrease over the forecast horizon. At the same time, domestic borrowings will become more important.
- The debt-to-GDP ratio will be high over the entire forecast horizon due to large budget deficits.

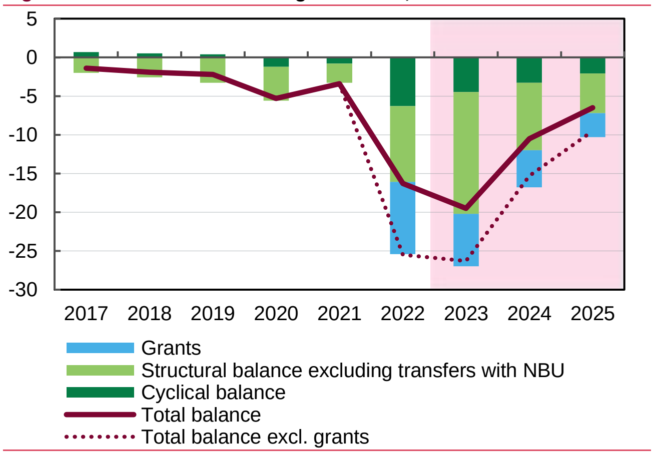
Figure 2.4.1. General government fiscal balance



* Overall balance is the consolidated budget balance, taking into account loans to the PFU from the STA.
** Cyclically adjusted primary fiscal balance (CAPB) of the general government (% of potential GDP). CAPB is the difference between seasonally adjusted revenues, in the structure of which tax revenues are adjusted for cyclical changes in GDP, and seasonally adjusted primary expenditures. Additionally, one-off proceeds are subtracted from revenues. A positive value indicates tight fiscal policy, a negative value indicates expansionary fiscal policy.

Source: STSU, NBU staff estimates.

Figure 2.4.2. Consolidated budget balance, % of GDP



Source: MFU, SSSU, NBU staff estimates.

Fiscal policy will remain expansionary for a long time to ensure the country's defense capabilities and support the economy

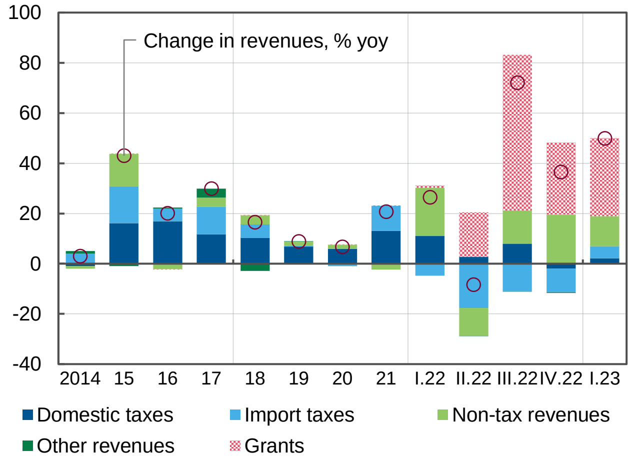
Fiscal policy predictably remained loose in early 2023.Thus, in Q1, the primary negative balance, adjusted for the cyclical position of the economy, despite narrowing remained significant. The consolidated budget deficit reached more than UAH 180 billion, and, excluding grants from revenues, exceeded UAH 314 billion, or almost 26% of GDP, according to the NBU’s estimates. As in the previous year, this deficit was primarily driven by massive expenses on defense, despite some improvement in the resource base and the partial abolition of tax breaks. At the same time, under martial law, significant amounts of budget spending are supporting economic activity and domestic demand. In particular, significant spending on defense and security supported certain industrial sectors and the purchasing power of households.

In 2023, the deficit will widen to more than 26% of GDP, excluding grants from revenues, despite the expected return to pre-war tax levels and stronger tax administration. This will be driven primarily by significant defense spending and a limited resource base due to the occupation of some regions, the destruction of businesses, and large-scale migration. In addition, the impact of the economic results achieved before the invasion, in particular the record harvest that supported last year's budget revenues, has worn off. Going forward, the budget deficit will slowly shrink to 9.5% of GDP in 2025, excluding grants from revenues. Despite a certain fiscal consolidation, fiscal policy will remain expansionary over the forecast period in order to support households and meet the needs of the country's post-war economic recovery.

Tax revenues have improved even in the face of high security risks and will drive revenue growth going forward

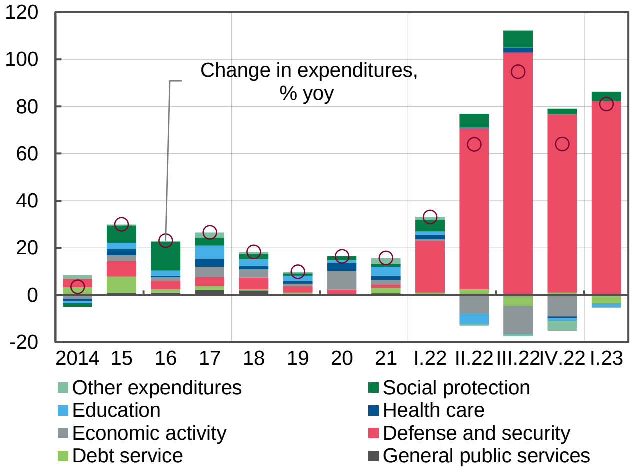
Consolidated budget tax revenues increased (by 9.1% yoy) in Q1 2023 due to a certain recovery in economic activity, improved administrative mechanisms, and higher tobacco excise tax rates. An additional impact came from a low base effect since March, and inflationary and exchange rate factors. Major support for revenues continued to come from payments to the military, which was reflected in revenues from personal income tax and consumption taxes. At the same time, the growth in tax revenues was restrained by the acceleration of VAT refunds, in particular for previous periods.

Figure 2.4.3. Contributions to annual changes in revenues of the consolidated budget, pp



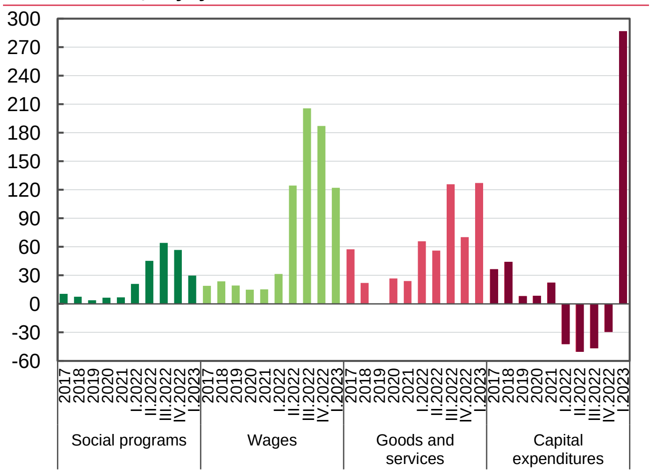
Source: STSU, NBU staff calculations.

Figure 2.4.4. Contributions to annual changes in expenditures of the consolidated budget, pp, functional classification



Source: STSU, NBU staff calculations.

Figure 2.4.5. Growth in consolidated budget expenditures by selected areas, % yoy



Source: STSU, NBU staff calculations.

A significant share of budget revenues continued to come from nontax revenues, in particular voluntary contributions from Ukrainian and foreign citizens, businesses, organizations, and humanitarian aid providers. However, as in 2022, a large portion of revenues came in the form of grants: in January–March 2023, grants accounted for more than 20% of revenues. As a result, budget revenues grew by 50% yoy, while excluding grants, they grew by 19% yoy.

Over the forecast horizon, the growth in revenues is expected to be moderate. Tax revenues will be the main driver of this growth, thanks to the revival of economic activity and consumer demand, the phasing out of tax breaks, and persistently high inflation. Grants will remain an important source of revenues for some time to come.

Expenditure growth remains high. In the future, the growth will slow, although the focus will remain on defense and social spending, and later on the post-war recovery

In Q1 2023, consolidated budget expenditures were more than 80% higher than last year. This growth is primarily due to the pressure of the large needs of the defense and security sector (which account for more than 60% of consolidated budget expenditures). Expenditures on military allowances also remain significant. Social support for households continued in the form of a range of payments and benefits, as well as privileges and subsidies for utility payments. Also, the planned indexation of pensions was implemented on 1 March, and the minimum pension and certain pension payments were raised. At the same time, the financing of social and humanitarian expenditures, as in the previous year, was modest and sometimes ad-hoc due to a decrease in resources and consumers of public services, given the large-scale migration.

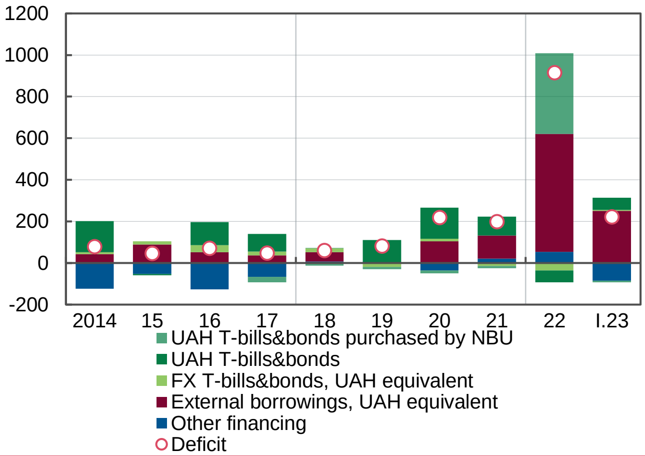
At the start of the year, capital expenditures increased sharply, in particular due to the need to reconstruct infrastructure, including road repairs. Despite businesses' adaptation to wartime, the funds that companies had available to use for large capital investments remain limited. To this end, government projects play an important role in supporting investment activity.

Expenditure growth will slow markedly over the forecast period. Until security risks moderate, the emphasis will remain on supporting the defense and security sector, but it will remain among the top spending priorities in the post-war period. Budgetary social programs will also be a major source for supporting households, but the focus of the programs will gradually shift toward providing subsidies for utility services. Capital expenditures will increase due to the need for post-war reconstruction, but will be limited by the availability of budget resources.

International aid will remain the key source for financing budget needs, but the role of domestic borrowings will grow

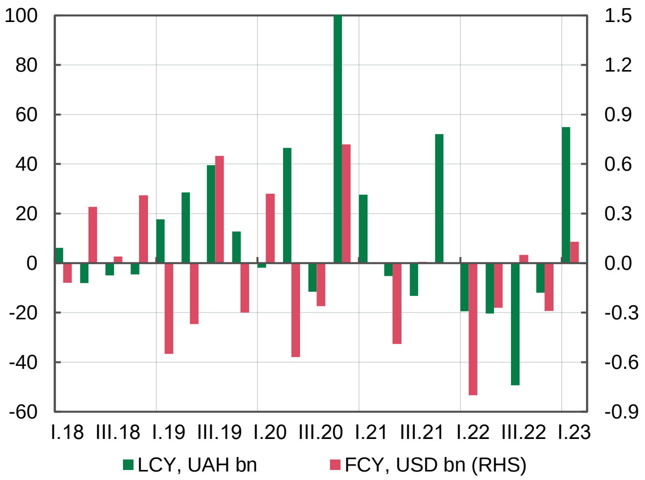
As in 2022, the wide budget deficit has been manageable thanks to unprecedented international financial support.

Figure 2.4.6. State budget deficit financing*, UAH bn



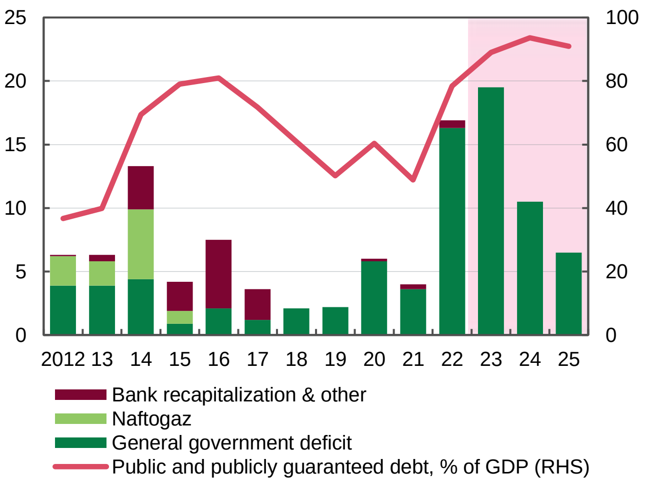
* Net borrowings. Borrowings in UAH include government T-bills & bonds issued to increase the authorized capital of banks, the Deposit Guarantee Fund (DGF), and other state-owned enterprises.
Source: STSU, MFU, NBU staff calculations.

Figure 2.4.7. Net borrowings* on hryvnia (LCY) and foreign currency (FCY) government T-bills & bonds (by placement date)



* Market placement.
Source: MFU, NBU, NBU staff estimates.

Figure 2.4.8. Broad public sector deficit and public and publicly guaranteed debt, % of GDP



Source: IMF, STSU, MFU, NBU staff estimates.

Almost USD 11 billion was received in Q1 2023. International financing is expected to exceed USD 42 billion in 2023. In the forthcoming years it will decline gradually, but will remain significant.

The government securities market revived in early 2023, largely due to the NBU's measures to make benchmark domestic government T-bills & bonds eligible (hereafter – benchmark securities) to cover required reserves. Benchmark securities accounted for more than 87% of hryvnia government T-bills & bonds placements. Overall, in Q1, a significant amount of net borrowings in the national currency came from securities placement auctions. The role of the domestic debt market in financing budget needs will continue to grow, in particular due to the increased attractiveness of government securities amid lower risk premiums and inflation.

Substantial external financial support and a pickup in domestic borrowings made it possible to avoid resorting to monetary financing, meeting commitments made by the government of Ukraine and the NBU. This helped improve both inflation and exchange rate expectations.

Although the level of debt on the forecast horizon is high, the debt burden in the years ahead will be relatively moderate, primarily thanks to preferential terms of new loans

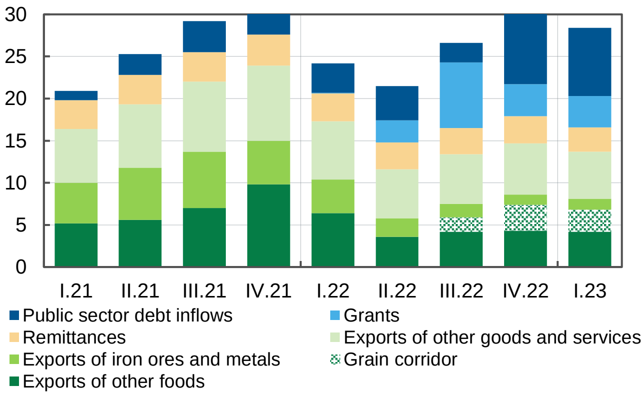
Public and publicly guaranteed debt continued to rise and exceeded 82% of GDP at the start of 2023, according to the NBU's estimates. Over the forecast horizon, it will grow and stabilize at 90% – 95% of GDP. This will be the result of still significant budget deficits and a gradual reduction in grant support. In Q1 2023, almost two thirds of the total amount of international financial support received was made up of loans (in 2022, it was more than half). Their share is expected to exceed 70% in the full year 2023. At the same time, the weight of domestic borrowings will increase.

Despite the significant level of debt, its pressure on the budget will be relatively moderate in the coming years. This is primarily due to the fact that loans are mostly provided to Ukraine on preferential terms: in addition to low interest rates, principal repayments are considerably deferred in time.

2.5. Balance of Payments

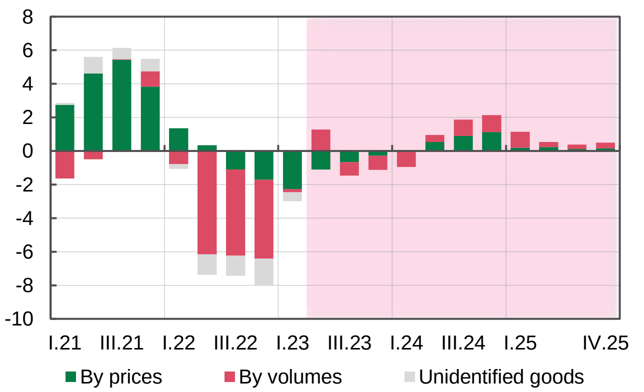
- Early 2023 continued to see net FX inflows into Ukraine. Substantial international aid and a drop in imports of goods thanks to the improved situation in the energy sector offset the narrowing of export flows caused by falling global prices. As a result, international reserves continued to rise, hitting USD 31.9 billion by late March.
- Overall, FX outflows will increase in 2023 due to the gradual revival of domestic demand and the large number of migrants abroad. Export earnings will decline, dragged down by the lower grain harvest, damaged production facilities, and logistical hurdles. However, a rise in official financing will drive reserves up, to USD 34.5 billion in late 2023.
- In 2024, growing export flows and the gradual return of migrants to Ukraine, coupled with the still substantial international aid, will contribute to the persistence of the net surplus of FX inflows, pushing reserves up, to USD 37.1 billion in late 2025.

Figure 2.5.1. **Key components of FX inflows, USD bn**



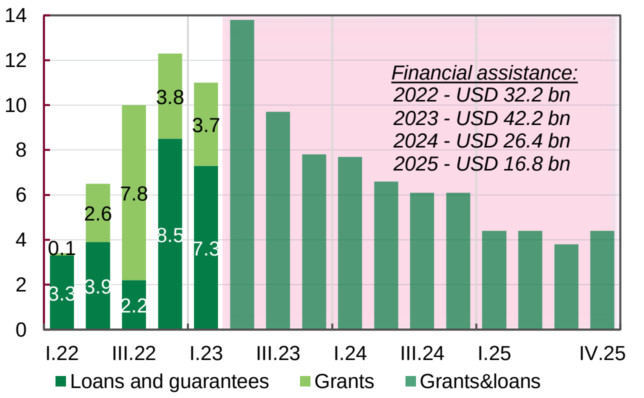
Source: NBU.

Figure 2.5.2. **Absolute annual change in merchandise exports by prices and volumes, USD bn**



Source: SCSU, NBU staff estimates.

Figure 2.5.3. **International financial assistance, USD bn**



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

Larger amounts of international aid will offset the 2023 decline in exports. However, from 2024 exports will play a greater role in generating FX earnings

In Q1 2023, exports of goods shrank on the previous quarter. An increase in the volumes of grain exports owing to a rise in the tonnage of shipments going through the "grain corridor" and the greater throughput of the Danube ports was offset by a drop in global food prices. What is more, exports of oilseeds and sunflower oil contracted noticeably on the back of depleting rapeseed stocks and last year's lower sunflower harvest. Despite a gradual rebound in the output of metallurgy thanks to the recovery of the energy sector, the value of metallurgical exports was practically unchanged due to cheaper pig iron prevailing in the composition of these exports. Robust domestic demand for fertilizers reduced chemical exports, while declining exports of engines and some electrical equipment decreased machinery exports.

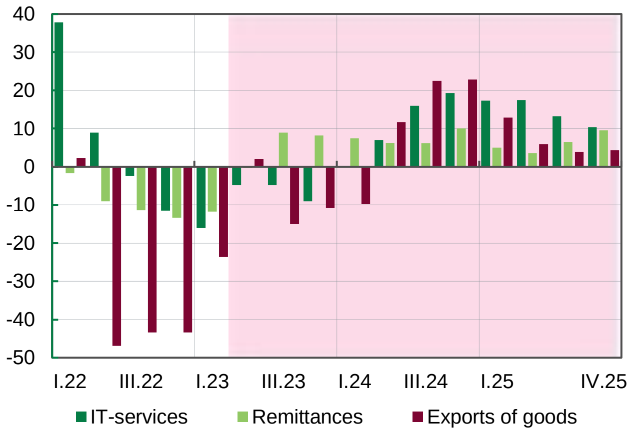
FX earnings from exports of services also shrank on the back of the problems experienced by the IT sector, which resulted from the relocation of some workers abroad, and from narrowing demand for these services amid weaker growth in the global economy.

Remittances also contracted, which may have been the result of seasonal factors, the relocation of relatives, and the further integration of migrants into the labor markets of their host countries.

Conversely, international aid remained a stable and substantial source of FX inflows. In Q1, Ukraine received almost USD 11 billion, of which USD 3.7 billion were grants. Overall, international aid is expected to rise in 2023. A reduction in international aid in 2024–2025 will be indicative of the ongoing recovery of the budget's resource base and a decline in the budget deficit as security risks decrease. Smaller amounts of international aid will be partly offset by a rise in export earnings.

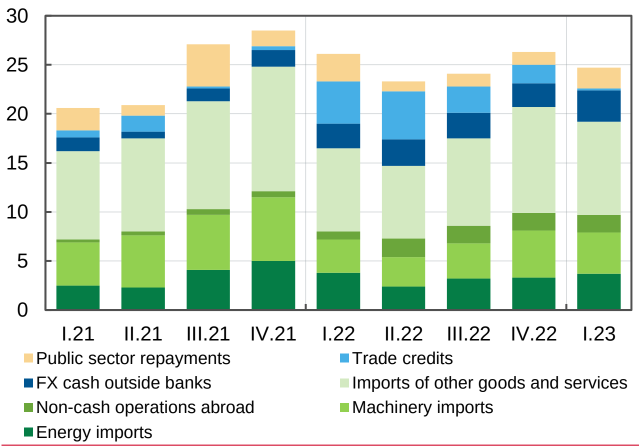
Exports of goods will remain depressed until the end of 2023, dragged down by continuing falls in prices for Ukraine's main exports, and by persisting problems with sea shipments. In addition, this year's grain harvest is expected to be much poorer than last year's because of a reduction in the areas sown to winter crops, mainly wheat. The NBU estimates that the EU-imposed ban on imports of some foods to five EU border countries in Q2 will have no significant effect on Ukraine's exports of goods, as exporters may shift to alternative routes. Export earnings are expected to return to growth in 2024, driven by a better harvest. Exports of iron ore and metals will also grow thanks to the complete unblocking

Figure 2.5.4. Selected components of FX inflows, % yoy



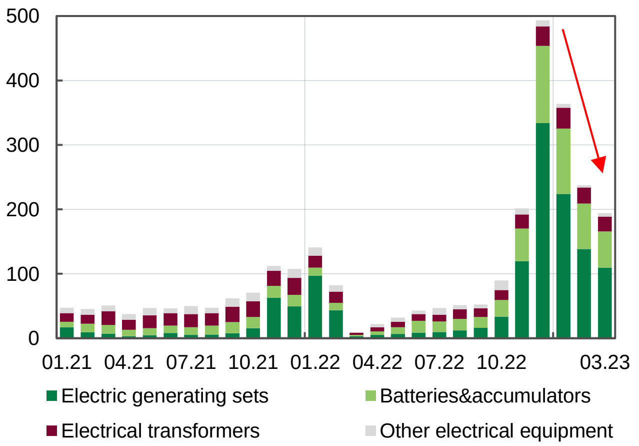
Source: NBU staff estimates.

Figure 2.5.5. Key components of FX outflows, USD bn



Source: NBU.

Figure 2.5.6. Imports of emergency power supply goods, USD m



Source: SCSU.

of the Black Sea ports. However, this growth will be sluggish due to both the need for considerable investment to rebuild production facilities and to reestablish supply chains, and a widening in domestic demand for iron ore and metals.

Following the 2023 drop in exports of IT services, which was seen for the first time in the last decade, these exports are expected to return to growth in 2024. Exports of IT services will return to their pre-war levels, propelled by a rebound in global economic growth and lower security risks in 2024. In 2025, the growth of these exports will accelerate.

The reviving global economy will also have a bearing on remittances. In 2023, remittances from labor migrants will remain at the previous year's level. However, these remittances are expected to grow starting in 2024, fueled by higher compensation of employees in host countries and the resumption of the labor migration of seasonal workers.

FX outflows will rise in 2023, driven by rebounding domestic demand. In 2024, however, these outflows will decrease due to the return of migrants and falling energy prices

In Q1, imports of goods declined more pronouncedly than exports and were lower than expected thanks to the improved situation in the energy sector and the warm winter, which enabled Ukraine to get through the cold season without having to import a lot of natural gas. Imports of emergency power supply goods and petroleum products dropped on the back of easing power shortages. The drop in the above imports was greater than the increase in imports of natural gas needed for the heating season and imports of chemical products, on the back of larger imports of fertilizers and plant protection products by agricultural companies. The rise in the latter imports was due to Ukrainian farmers increasing the share of soybeans and sunflower seeds in their crops, and the shift in the peak of seasonal demand.

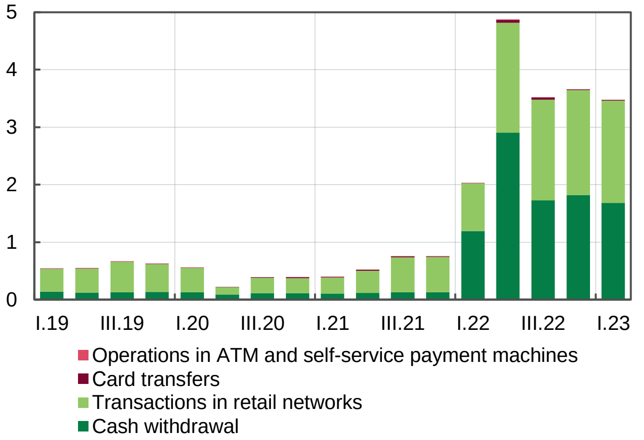
As a result, the deficit in the trade in goods narrowed somewhat Q1, to USD 6.1 billion, and was much smaller than expected.

Improved logistics and exchange rate expectations in early 2023 also decreased capital outflows generated by trade credits.

At the same time, a significant number of Ukrainian migrants remained abroad in early 2023 on account of high security risks. The expenses incurred by these migrants caused steady FX outflows through travel services imports, including through FX cash withdrawals from cards abroad. The amount of cash outside the banks increased, to USD 3.2 billion in Q1 2023. FX outflows through travel services imports and cash outside the banks will remain substantial because of the large number of migrants abroad. However, in 2024, the return of migrants will be a main contributor to a decrease in FX outflows, owing to a drop in imports of travel services and slower growth in cash outside the banks.

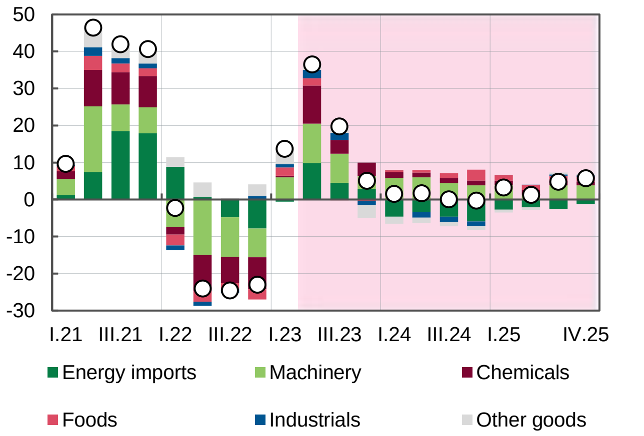
Falling energy prices will play a no less important role in driving down the value of imports and, consequently, FX outflows. Following a rise in 2023 fueled by Ukraine's strong need for natural gas and petroleum products, energy imports are expected to decline by 21% in 2024 and by other 12% in 2025. The decline in these imports will be also brought about

Figure 2.5.7. Transactions (hryvnia and foreign currencies) with cards of Ukrainian banks abroad*, USD bn



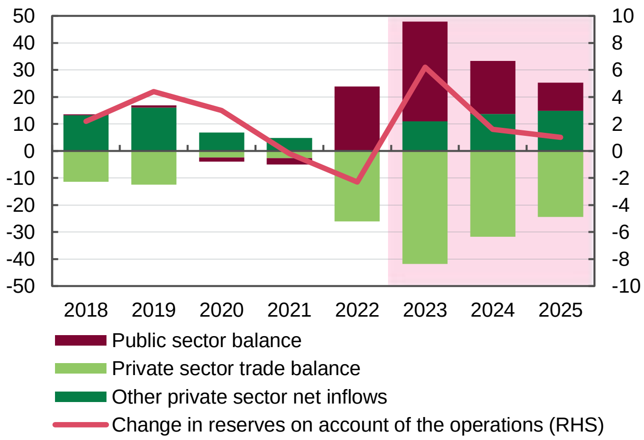
* Missing data for February – April 2022 was obtained as a result of extrapolation of bank surveys data.
Source: NBU.

Figure 2.5.8. Contributions to annual change in merchandise imports, pp



Source: NBU staff estimates.

Figure 2.5.9. Change in international reserves on account of selected operations, USD bn



Source: NBU staff estimates.

by an increase in the domestic production of energy sources/products/carriers?, as a result of which import volumes will remain low. What is more, easing power shortages will help decrease the use of coal and natural gas by district heating companies. In contrast, imports of non-energy goods will rise over the entire forecast period. In 2023, these imports will be fueled by robust domestic demand on the back of higher wages and substantial budgetary spending, including on reconstruction and recovery, while starting in 2024, non-energy imports will be propelled by the gradual return of migrants from abroad.

Overall, the growth in imports of goods will decline considerably in 2024–2025, while the deficit in the trade in goods, following a substantial widening in 2023, will start to narrow in 2024.

Starting in 2024, the growth in international reserves will be driven by the narrowing in the trade deficit, and by still substantial international aid

Persistently large amounts of international aid helped increase international reserves in early 2023. Thanks to Ukraine's international partners, in Q1 FX inflows into the country exceeded FX outflows. This pushed reserves up to a level not seen since 2011 – USD 31.9 billion in late Q1.

A significant increase in international aid in 2023 will offset a widening in the trade deficit, substantial outflows of FX cash outside the banks, as well as FX outflows resulting from the gradual liberalization of current and financial transactions. As a result, gross reserves will rise, to USD 34.5 billion by late 2023, and will be sufficient to cover 4.7 months of future imports.

Although decreasing from 2024, the still significant official financing will remain an important contributor to reserve growth in 2024–2025. Meanwhile, net FX outflows from the private sector will also decline, due to the narrowing of the trade deficit, smaller cash outflows outside the banks, and the gradual recommencement of borrowing. By late 2025, this will push up international reserves to USD 37.1 billion – a level not seen since 2011.

Box 5. Factors That Sustain Ukrainian Exports as the Full-Scale War Grinds On

As usually occurs in times of economic crises, the considerable share of food in the commodity composition of Ukrainian exports restrained the decline in exports of goods. This trend again showed itself last year in the face of the great uncertainty caused by russia's full-scale invasion. Despite substantial export losses in absolute terms, Ukraine, supported by its international partners, not only maintained its presence on most of its traditional external markets, but also expanded and diversified its exports to some countries, mainly EU countries. Food exports will remain an important factor supporting the Ukrainian economy during the full-scale war and the post-war recovery. At the same time, an important long-run task in terms of honing the competitive edge of Ukrainian-made goods is to expand the share of high-tech products in the country's exports.

Focus on food as a factor that sustains Ukrainian exports. Over the last decade and a half, the higher productivity of the agricultural sector, boosted by investment, has enhanced the importance of agricultural exports for the Ukrainian economy[38] and the role of Ukraine as a key supplier of food worldwide. In particular, in 2021 Ukraine came third globally for exporting corn and fifth for exporting wheat, while also delivering about half of global sunflower oil exports. Ukrainian exports support global food security, especially in the poorest countries, while also ensuring the sustainability of global value chains in the food industry.

For Ukraine, agricultural exports act as a kind of buffer during crises. In times of global crises (the global 2008–2009 financial crisis and the 2020 coronavirus crisis), thanks to the lower income elasticity of demand for food, external demand for food contracted at a slower pace compared to more technologically advanced goods, while domestic crop production turned out to be resilient to the war risks arising from russia's 2014–2015 invasion. For this reason, during all of these most severe crises, the response of Ukraine's food exports has been more restrained than that of other product groups.

russia's full-scale invasion in 2022 posed unprecedented challenges for Ukrainian producers and exporters: in addition to destroying production and storage facilities and fueling security risks and uncertainty,[39] russia dealt an exceptionally heavy blow to the Ukrainian economy by blocking Ukraine's maritime transport routes (arteries that facilitated about two-thirds of Ukraine's foreign trade turnover before the full-scale war).

However, food exports remained resilient even in the face of hostilities. In March – December 2022, food exports decreased less (by 27%) than supplies of other goods, mitigating the fall in total exports (45%). Moreover, in 2022, Ukraine retained its place among the top five global exporters of agricultural products. This was owing to a number of measures with substantial support from international partners, each of which made a critically important contribution.

Active mapping out of alternative export routes. With significant support from its international partners, Ukraine has started to develop the available logistics routes on its western border. A key element has been the increased operation of the Danube ports, as water transportation is the cheapest way of transporting large cargos.[40] In particular, Ukraine expanded its fleet, dredged the waterway, and improved logistics routes, as well as access and loading infrastructure. As a result, in 2022 cargo handling in the Danube ports reached a new high.

The role of road transport also increased significantly: exports of goods by road grew by 32.4% compared to 2021, mainly due to supplies of oversized and high-margin goods. Other contributors included Solidarity Lanes, an EU-established initiative, designed to urgently eliminate transport delays on Ukraine's border with the EU, improve coordination, and to deliver the integration of transport connections.

The expanded throughput of railway crossings on Ukraine's borders with the EU increased exports of goods by rail by 3.4%. However, any greater growth of exports by this mode of transport is hindered by the different gauges of the railway tracks in Ukraine and the EU.

The liberalization of customs duties. With a view to supporting Ukraine in times of war, the countries' main Western trading partners temporarily cancelled customs duties and quotas on Ukrainian exports. Liberalized trade with EU countries shored up Ukraine's exports the most. Together with Ukraine's joining the Convention on Common Transit and entering into the Agreement on the Carriage of Freight by Road, this delivered the proper conditions for Ukrainian companies to enter the EU market, and to transit freight to other countries.

The launch of the "grain corridor". Declining global food security – due to, among other things, surging global food prices – and large available stocks of food in Ukraine encouraged greater international efforts to unblock Ukrainian food exports. As a result, on 1 August 2022, with assistance from Turkey and the UN, some Black Sea ports were opened for food exports. In 2022, the "grain corridor" accounted for about 12% of total exports of goods, while from August 2022 through March 2023 over one fourth of total good exports were carried out through the "grain corridor". By 1 April 2023, 26.4 million tons of food worth over USD 7 billion had been exported to 45 countries through the "grain corridor". More specifically, 40.1% of supplies were made to European countries, 48.7% to Asian countries, and 11.2% to African countries.

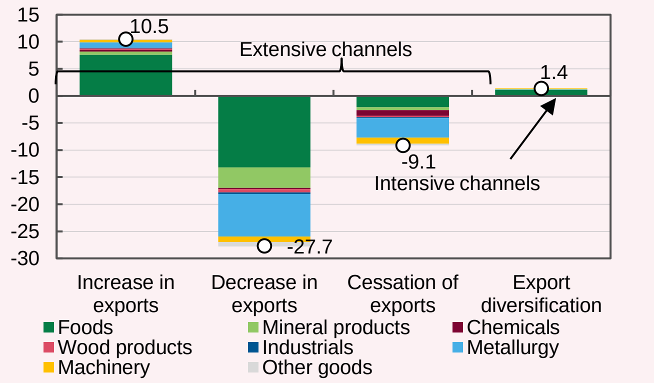
That said, the "grain corridor" did not operate at full capacity on account of systematic obstructions by russia. In view of

[38] In the years that preceded the full-scale invasion, food accounted for about half of Ukraine's exports of goods, while the agricultural sector contributed about 10% to the country's GDP.
[39] A survey by KSE shows that in early November 2022 the war-induced direct losses of the agricultural sector alone were assessed at USD 6.6 billion.
[40] See UNCTAD, 2021.

the noticeable drop in Ukraine-generated FX earnings and substantial international financial aid, to achieve macrofinancial stability and reduce Ukraine's need for financial support, it is important to ensure the unobstructed operation of the "grain corridor", and to expand it to include other sea ports and goods (such as iron ore and metals).

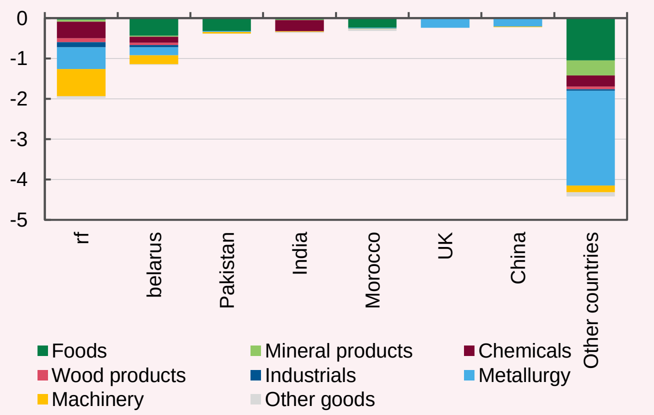
Lesser dependence on energy shortages. The terrorist attacks on Ukraine's energy infrastructure russia launched in late 2022 created considerable power shortages. The energy-intensive sectors of iron ore and metals production, the chemical industry and machinery were hit the most. The technological processes of producing and shipping unprocessed foods, in particular grain, are more energy-independent. In addition, the food industry rather quickly adapted to operating in conditions of power shortages through procuring emergency power supply equipment. As a result, the effect of power shortages on food exports was weaker compared to other sectors, even with the interrupted operations of the sea ports.

Figure 1. Decomposition of the annual change in the exports of goods,[41] March – December 2022 compared to the corresponding period of 2021, USD bn



Source: NBU staff calculations.

Figure 2. Export losses* by selected countries, USD bn



* In March – December 2022, compared to the corresponding period of 2021, exports of selected goods to some markets ceased as a result of the rupture of trade relations with the rf and belarus, as well as logistical difficulties and the destruction of production facilities.
Source: NBU staff calculations.

As a result, exports of iron ore, metals and machinery accounted for the lion's share of total exports drops. The reasons for this were the loss of production facilities and disruptions to a substantial portion of traditional supply chains due to the blockade of the Black Sea ports, and severed trade ties with russia and belarus. This severing of the ties is responsible for one third of export losses through the cessation of trade. At the same time, the Ukrainian agricultural sector once again proved it was in demand and, consequently, demonstrated resilience. Food generated three fourths of the growth in exports in goods to previously established markets.. What is more, Ukrainian companies even managed to diversify exports on some markets, mainly on the markets of those EU countries[42], the border with which was the only alternative to maritime routes. The positive effect of this diversification on the performance of Ukrainian exports of goods in March – December 2022 is assessed at USD 1.4 billion. Meanwhile, total exports to EU countries grew by 3.5% in March – December, with the agricultural sector accounting for the lion's share of these exports.

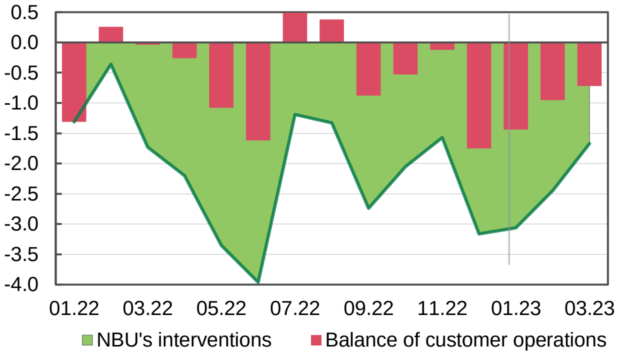
Despite being expected to decline in 2023, **food exports** will provide a foundation that will keep Ukraine afloat in wartime, while also **serving as a pillar underpinning the post-war recovery**. This will be facilitated by established supply routes, European consumers' awareness of Ukrainian products, and Ukrainian goods being better adapted to the requirements of the European market. However, in the long-run, the competitive edge of Ukrainian goods on the global market will be driven by measures to enhance the processing depth of agricultural products, the continued development of logistical infrastructure, and the restoration of the country's potential for producing more highly processed goods.

[41] Extensive channels include the increase/decrease/cessation of exports to previously established markets. Among the intensive channels, the expansion of the product nomenclature in previously established markets was mostly used, the export of new goods and the conquest of new markets were not carried out.
[42] A portion of the goods shipped to the EU via new transportation routes was intended for markets further away. The specific nature of statistical accounting makes it difficult to identify such operations, but in any case their share was not significant. Most goods remain on the EU country markets, while the "grain corridor" was used to deliver goods directly to consumers.

2.6. Monetary Conditions and Financial Markets

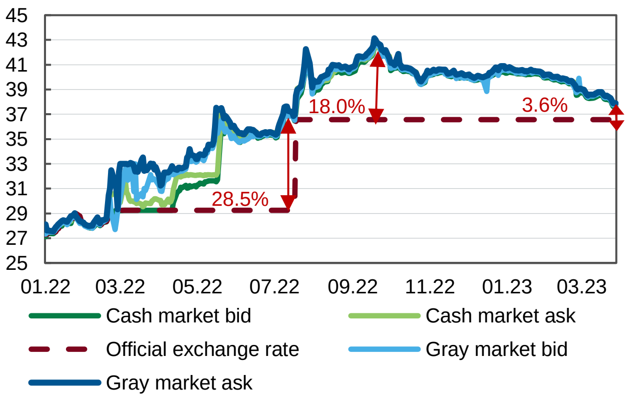
- A number of measures taken by the NBU, in particular those to increase the attractiveness of hryvnia assets, together with significant inflows of international financial assistance, helped ease pressure in the FX market. However, the market remains dependent on the NBU's interventions, which will continue to play an important role in balancing the market.
- The key policy rate is being kept at 25% to maintain the effects of previous measures to make hryvnia assets more attractive. This will allow the NBU to ensure the stability of the FX market going forward, as the most burdensome currency restrictions are eased, and create the preconditions for further disinflation.
- A more favorable macroeconomic situation over the forecast horizon will make it possible to start a cycle of key policy rate cuts in Q4 2023. However, even if the key policy rate is lowered, monetary conditions will remain fairly tight as inflation continues to slow and real returns on hryvnia savings increase.

Figure 2.6.1. Bank clients' FX transactions and NBU interventions*, USD bn



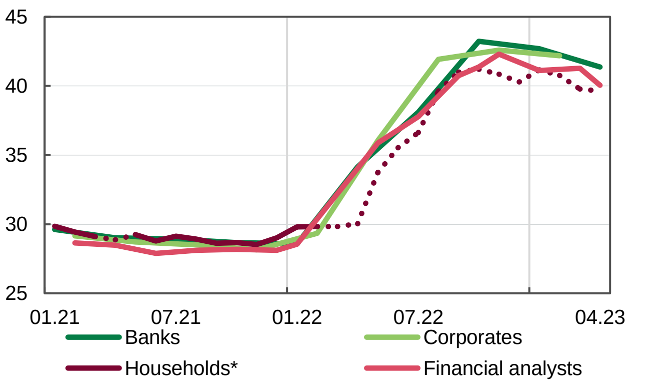
* Net sale and purchase of noncash and cash foreign currency by bank clients (Tod, Tom, Spot).
Source: NBU.

Figure 2.6.2. Hryvnia exchange rates, UAH per USD



Source: NBU, open data sources.

Figure 2.6.3. 12-month-ahead exchange rate expectations, %



* The dotted line indicates a change in the method of survey for a telephone interview.
Source: NBU, Info Sapiens.

Measures taken by the NBU contribute to supporting stability on the FX market and create preconditions for the prospective easing of FX restrictions

Keeping the key policy rate at the level of 25%, along with measures to increase the appeal of hryvnia savings by incentivizing competition among banks for term deposits, have helped maintain exchange rate sustainability and reduce demand for foreign currency.

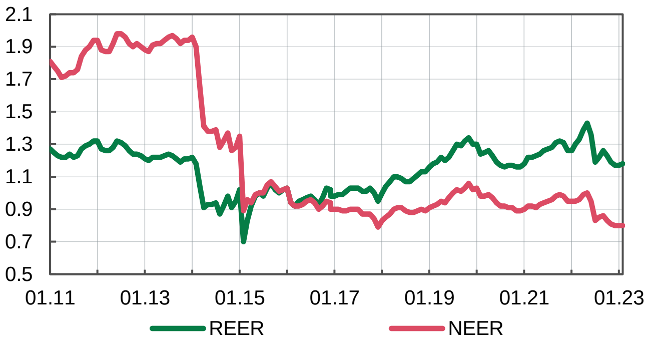
FX market conditions were mixed during the quarter. At the start of the year, demand for foreign currency remained high, primarily reflecting the government's large spending in late 2022. Later on, demand gradually weakened, in part due to the improved situation in the energy sector. The banks' net purchases of foreign currency for their own positions also declined markedly, primarily due to a decrease in transfers to international payment systems. In addition, volumes of households' purchases of noncash foreign currency considerably declined in spring.

Demand for foreign currency in the cash market also declined, reflecting in a pronounced narrowing of the spread between the cash and official exchange rates (from around 12% at the end of December 2022 to 3.6% at the end of March 2023). In addition to the measures taken by the NBU, this was also facilitated by a seasonal increase in the supply of cash foreign currency by farmers who purchased seeds, fertilizers, and fuel for the sowing campaign. The narrowing of the spread eliminates market distortions and helps increase foreign currency inflows through official channels. The appreciation of the hryvnia cash exchange rate also supports an improvement in exchange rate and inflation expectations.

At the same time, the supply of foreign currency in the noncash market was largely driven by agricultural companies and the seasonal factor of annual tax payments. However, the total supply of foreign currency declined slightly compared to Q4 2022. The NBU continued to balance the foreign exchange market through interventions, which have been declining noticeably since the start of the year (from more than USD 3 billion in January to USD 1.7 billion in March). However, the FX market remains dependent on the NBU's interventions, which will continue to play a major role in maintaining exchange rate stability.

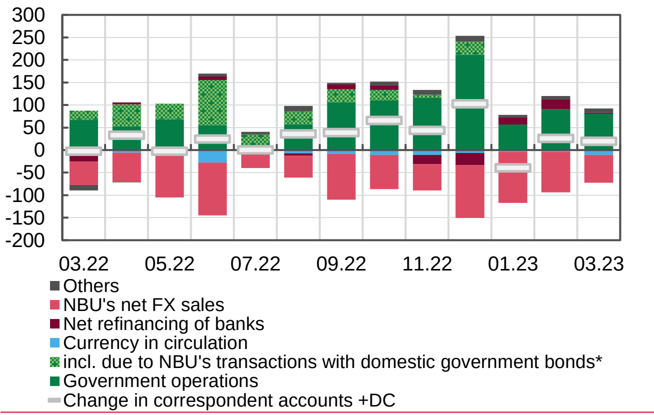
The hryvnia's nominal effective exchange rate (NEER) and real effective exchange rate (REER) slightly strengthened during the quarter. The strengthening in the hryvnia's NEER

Figure 2.6.4. REER and NEER indices, 06.2015 = 1



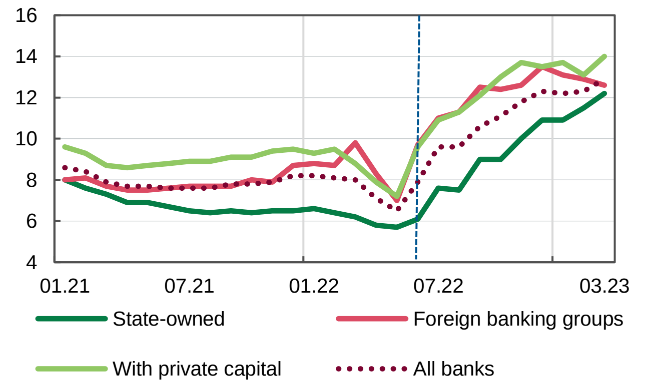
Source: IFS, NBU staff estimates.

Figure 2.6.5. Factors affecting the banking system liquidity (correspondent accounts + CDs), UAH bn



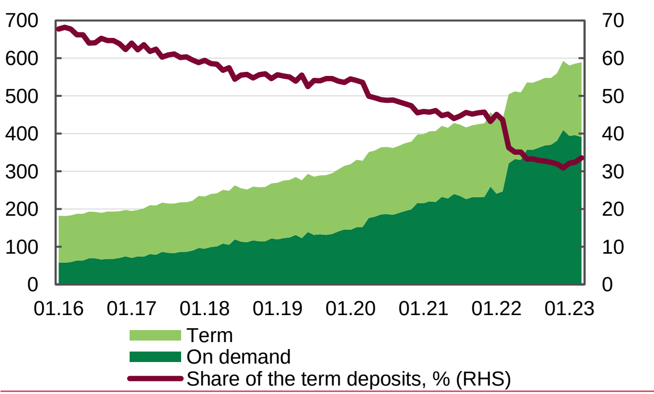
* The NBU's purchase of war bonds (+) / principal and interest payments on government T-bills & bonds (-) in the NBU's portfolio. Source: NBU.

Figure 2.6.6. Weighted average interest rates on retail term deposits in hryvnia, %



Source: NBU.

Figure 2.6.7. Hryvnia retail deposits, UAH bn



Source: NBU.

was primarily driven by the appreciation of the U.S. dollar against leading currencies due to the Fed's more aggressive monetary policy. The REER of Ukrainian domestic currency was additionally driven by inflation in Ukraine still being higher compared to partner countries. The hryvnia's REER also continued to be stronger than its equilibrium level and will remain so over the entire forecast horizon. The hryvnia's relatively strong REER will be supported by an improved trade balance, lower risk premiums, and a gradual recovery in private sector borrowing. Moreover, de-dollarization will resume thanks to a further rise in the attractiveness of hryvnia term deposits.

At the same time, exchange rate sustainability is largely being ensured by tight FX restrictions. The effectiveness of the restrictions wanes over time, while their restrictive effect on business activity grows in intensity. Therefore, the liberalization of FX restrictions will become increasingly relevant in the foreseeable future.

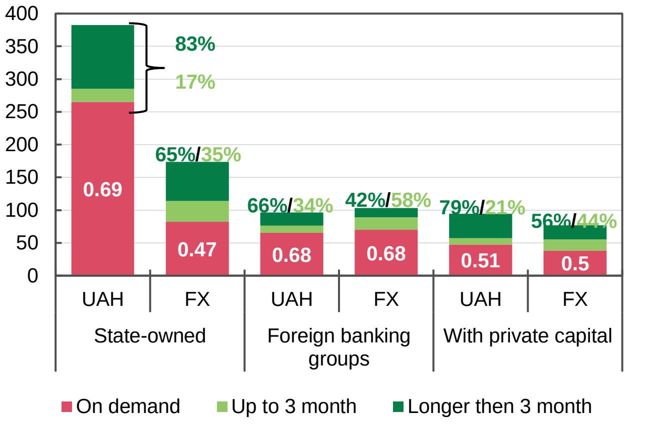
Large amounts of international assistance and an improvement in the FX market since the start of 2023 create the preconditions for a gradual easing of administrative restrictions. With this in mind, the NBU eased a number of administrative restrictions in April.

Despite high liquidity in the banking system, deposit rates are rising thanks to measures taken by the NBU

The banking system's liquidity surplus continued to grow in Q1 2023, reaching new record highs (average daily balances on correspondent accounts and certificates of deposit amounted to almost UAH 520 billion, compared to UAH 415 billion in Q4 2022). This was driven by significant government spending, accompanied by a decline in cash outside banks. These factors outweighed the impact of the NBU's interventions to sell foreign currency, which were below the central bank's previous expectations. The accelerated decline in cash outside banks at the start of the year was driven by seasonal factors and a decrease in the motivation of businesses and households to hold cash in view of the improved electricity supply situation. The increase in required reserve ratios pushed up the portion of liquidity held by banks on correspondent accounts. Looking ahead, liquidity will remain ample, propped up by considerable budget spending (through the government converting foreign currency).

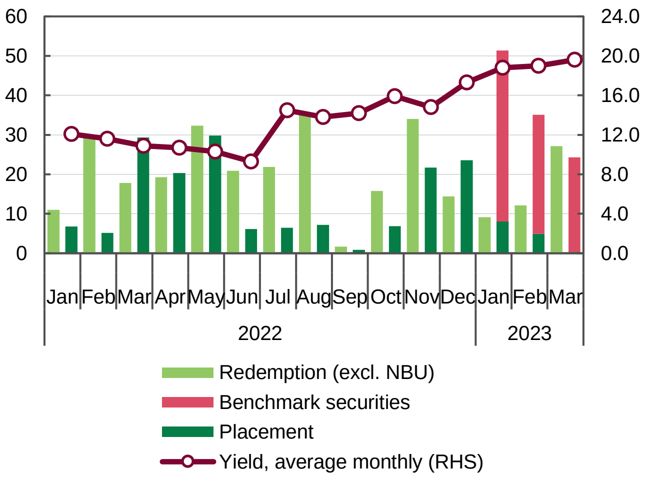
Despite the high liquidity, hryvnia deposit rates continued to rise in response to the key policy rate being kept at a high level for a long time, tighter reserve requirement ratios, and the announced improvement in the way they are calculated. Thus, the weighted average rate on retail term deposits increased by 0.6 pp, to 12.9%, in March, and the weighted average rate on deposits of nonfinancial companies rose by 1.2 pp, to 13.7%. The negative differential between the rates on retail and nonfinancial corporations' deposits (the weighted average rate on retail deposits is lower than the corresponding rates on nonfinancial corporations' deposits) indicates the potential for an increase in retail deposits rates, especially given the changes in the operational design of monetary policy.

Figure 2.6.8. National and foreign currency (UAH equivalent) retail deposits by group of banks, UAH bn



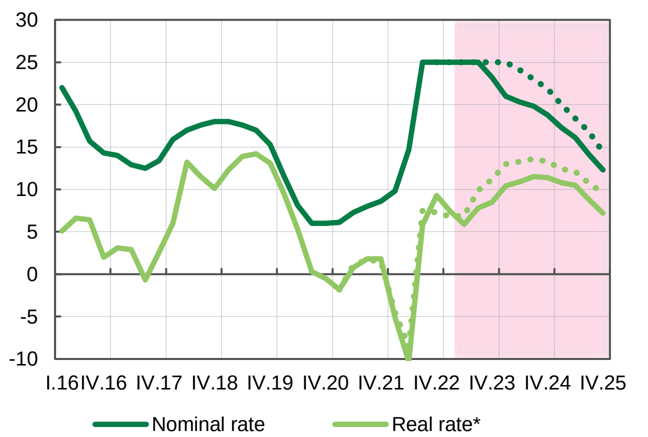
* Balances as of 4 April 2023 – start of new reporting period by original maturity terms.
Source: NBU.

Figure 2.6.9. Placement* and redemption of domestic government T-bills & bonds, UAH bn and YTM



* Excluding hryvnia domestic government T-bills & bonds issued in December for recapitalization of Ukrfinzhytlo.
Source: NBU.

Figure 2.6.10. Nominal and real key policy rate, period average, %



* Deflated by model expectations (QPM).
Source: NBU.

Currently, the share of term deposits is only 34% of total hryvnia retail deposits. Thanks to the NBU's measures, the banks began to compete more actively for deposits in April, offering more attractive rates, especially for deposits of more than three months. This is expected to have a positive impact by improving the functioning of the transmission mechanism, and will mark the start of a sustainable trend toward an increase in the share of term deposits.

Yields on the primary market for government borrowings also grew in Q1 2023, with benchmark debt securities being most in demand as the banks can use them to cover their required reserves. The weighted average interest rate increased to 19.6% in March 2023, from 17.3% in December last year. The new operational design of monetary policy will not have a significant impact on the initial placement of domestic government debt securities. The banks' capability to acquire three-month certificates of deposit (CDs) will be limited. Considering high budget expenditures, the banks will have sufficient liquidity to invest in domestic government debt securities. Furthermore, the domestic government debt securities designated for primary-market placement do not currently include securities with up-to-one-year maturity, meaning that three-month CDs will not face direct competition with domestic government debt securities.

A more favorable macroeconomic situation over the forecast horizon will make it possible to start a cycle of key policy rate cuts earlier

In April, the NBU left its key policy rate unchanged at 25%. This will support the effects of previous measures to improve the attractiveness of hryvnia assets, help maintain stability of the FX market, and form proper conditions for the continuation of a steady disinflation trend and for easing the most burdensome FX restrictions.

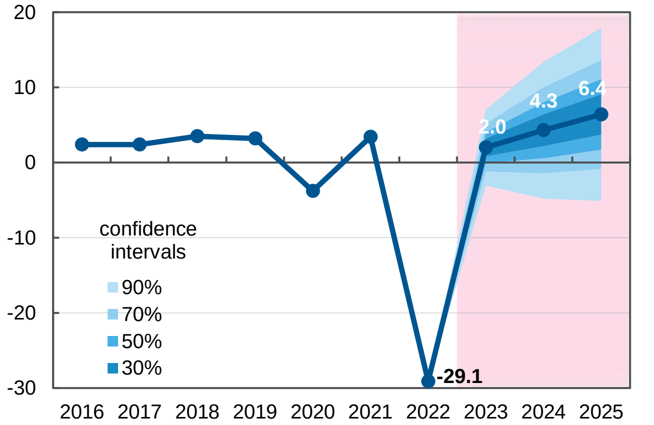
The updated macroeconomic forecast envisages the launch of an easing cycle in Q4 2023 (under the January forecast, it would have started from Q2 2024). The improved macroeconomic situation, including a deeper decline in inflation and the accumulation of a comfortable level of international reserves, is creating prerequisites for a faster-than-expected decrease in the key policy rate. Even under this scenario, monetary conditions will remain rather tight over the forecast horizon. This will be driven by a further slowdown in inflation, an improvement in inflation expectations, and, accordingly, sustained high real yields on hryvnia instruments.

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.

Part 3. Risks to the Forecast

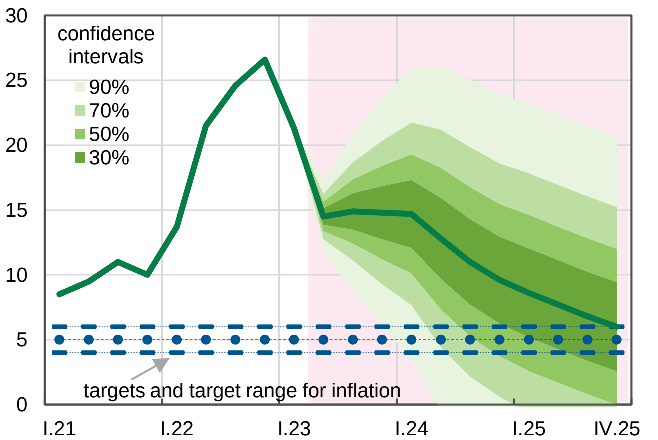
- The macro forecast primarily assumes that security risks will moderate significantly, from early 2024 forward, thanks to the successes of Ukraine's defense forces. The most serious risk is therefore the higher intensity and longer duration of russia's full-scale war of aggression.

Figure 3.1. Real GDP forecast, % yoy



Source: NBU staff estimates.

Figure 3.2. CPI forecast and inflation targets, % yoy



Source: NBU staff estimates.

The forecast is given in a fan chart. This chart type is used to illustrate uncertainty with regard to predicted future values. For instance, the probability that the inflation rate will be in the range of the darkest shaded area in the chart (around the central line) is 30%. The same applies to other chart areas, implying the 90% probability that the inflation rate will be in the range of the lightest shaded area.

Security risks remain a key factor in assessing the prospects for the further economic development of Ukraine. The most significant risk to this macroeconomic forecast is thus the longer duration and intensity of active hostilities. This will worsen the prospects for Ukraine's economy, and increase inflation and depreciation expectations. Thus, economic recovery will continue to slow in 2024, despite businesses adapting to the high security risks. The NBU estimates that if the period of high security risks continues until mid-2024, economic growth will be slower next year (at around 2.0%). Accordingly, the labor market will recover more slowly, both in terms of the fall in unemployment and the growth in wages. Consumer sentiment will remain subdued, and depreciation expectations will be still high due to weaker export proceeds. Inflation will be restrained by the extension of the moratorium on tariff increases for certain utilities, but will significantly accelerate after tariffs are allowed to rise. In this scenario, the NBU will maintain tighter monetary conditions. At the same time, the negative effects of the prolongation of intense war will be partially offset by higher volumes of international assistance: in the IMF's negative scenario, the financial needs for the four years of the EFF program guaranteed by international partners increase to USD 140 billion, compared to USD 115 billion in the baseline scenario.

The risk that the grain corridor may be closed or that its operation may be limited have increased markedly. Additional problems may come from some European countries extending their restrictions on imports of Ukrainian food. Such scenarios would worsen the prospects for agricultural exports and reduce FX inflows (by USD 270 million per month if the ban on food exports to neighboring countries is extended, by USD 290 million per month if the grain corridor is not renewed, and by USD 800 million per month if both restrictions are in place simultaneously, taking into account a partial reorientation to alternative supply routes). Export restrictions would temporarily reduce food price inflation in Ukraine due to there being a higher supply in the domestic market. However, this will make it more difficult for farmers to operate and may force them to reduce their sown areas, which will affect economic activity and raise pressure on the exchange rate.

The deterioration of economic conditions as a result of the protracted war could also pose significant challenges to public finances. The room for maneuver in public finances is significantly limited, given the still subdued economic activity, which is reflected in tax revenues, and the constrained potential for expenditure optimization. Therefore, it is crucial that the authorities take effective and prudent actions to optimize the use of available resources for the most urgent needs (primarily defense and social support) and avoid initiatives to increase expenditures without ensuring

Degree of impact on the baseline scenario	Probability that a risk will materialize		
	Low <15%	Medium 15%–25%	High 25%–50%
Weak		Potential banking crisis in leading countries	
Moderate	Resumption of electricity shortages due to infrastructure damage	Increased emigration	The operation of the grain corridor being blocked and/or some European countries suspending imports of Ukrainian foods
Strong		Imprudent public finance framework (budget monetization, a decrease in international assistance, frozen utility tariffs) Rapid implementation of the large-scale reconstruction plan for Ukraine (the "Marshall Plan")	Prolonged war, escalation

that they are adequately covered. On the other hand, unpredictable developments in the war and additional budgetary needs, primarily for the defense sector, may require the NBU to once again resort to monetary financing of the budget when the potential of all other sources of financing is fully exhausted. This would worsen depreciation expectations and speed up inflation. Under this scenario, the NBU would also have to keep interest rates higher for a longer time than envisaged in the baseline scenario.

A correction to energy tariffs in the utilities sector may pose another risk to the inflation forecast. The high social significance of energy tariffs will weigh in future decisions on the timelines to bring them to economically justified levels. Postponing these decisions will lead to the accumulation of quasi-fiscal deficits and a deterioration in the financial standing of state-owned energy companies. This may cause instability in the energy market and reduce the potential for recovery in this sector. Moreover, this will shift additional price pressures into the future. Subsequently, the rapid rise in tariffs will create significant inflationary pressures and will require a significant increase in subsidies for households.

The risk of further attacks on energy infrastructure by the aggressor remains high. This could lead to new electricity shortages. In the event of significant damage to energy facilities, household and industrial consumers might again face power outages, which will limit economic activity. In such a scenario, GDP growth would be slower than in the baseline scenario, and exchange rate pressures would increase due to higher demand for imported equipment and energy.

A potential banking crisis in leading countries, which might occur if the situation escapes the control of state regulators, could considerably slow global economic activity, affect international trade, and impair access to the capital markets. Capital will flow out of risky assets, including EM assets. In the current environment, the direct impact on the Ukrainian economy will be limited, as Ukraine is not participating in the international capital markets. This risk will be reflected primarily in a decline in FX inflows from exports due to decreased demand and lower commodity prices. This will be partially offset by a further decrease in energy prices.

Conversely, the rapid implementation of the project to reconstruct Ukraine, together with EU integration reforms, could significantly accelerate the pace of economic growth. Currently, the plans for Ukraine's post-war reconstruction involve close cooperation with international lenders and donors, as investments required to reconstruct damaged infrastructure and production facilities are already estimated to be in the hundreds of billions of U.S. dollars. The expected inflows of funds for reconstruction are not included in the baseline scenario of the forecast. The rapid implementation of such a program will lead to an increase in household income and a reduction in unemployment more quickly than assumed in the baseline scenario. The growth in income will not trigger significant pro-inflationary effects, because price pressures will be offset by favorable FX market conditions as the country receives FX inflows and the risk premium goes down. This will allow the NBU to ease monetary policy more rapidly than envisaged in the baseline forecast.

Macroeconomic forecast (April 2023)

Indicators	2019	2020	2021	2022		2023						2024						2025					
				actual/ estimate	forecast 01.2023	I	II	III	IV	current forecast	forecast 01.2023	I	II	III	IV	current forecast	forecast 01.2023	I	II	III	IV	current forecast	forecast 01.2023
REAL ECONOMY, % yoy, unless otherwise stated																							
Nominal GDP, UAH bn	**3977**	**4222**	**5451**	**5191**	4825	1226	1493	1808	1983	**6510**	5985	1456	1772	2142	2330	**7700**	7085	1697	2063	2477	2674	**8910**	8175
Real GDP	**3.2**	**-3.8**	**3.4**	**-29.1**	-30.3	-13.5	15.9	3.9	3.7	**2.0**	0.3	2.4	3.6	4.8	5.8	**4.3**	4.1	6.1	6.4	6.5	6.6	**6.4**	6.4
GDP Deflator	8.2	10.3	25.1	34.3	26.8	30.0	25.5	21.7	17.7	22.9	23.7	16.0	14.5	13.3	11.1	13.4	13.7	9.8	9.5	8.6	7.7	8.7	8.4
Consumer prices (period average)	7.9	2.7	9.4	20.2	20.2	-	-	-	-	17.1	20.3	-	-	-	-	12.8	14.4	-	-	-	-	7.6	7.9
Consumer prices (end of period)	**4.1**	**5.0**	**10.0**	**26.6**	26.6	21.3	14.5	14.9	14.8	**14.8**	18.7	14.7	12.8	11.0	9.6	**9.6**	10.4	8.6	7.7	6.8	6.0	**6.0**	6.7
Core inflation (end of period)	3.9	4.5	7.9	22.6	22.6	19.8	14.5	12.4	12.5	12.5	15.8	12.3	12.2	9.7	7.2	7.2	8.7	5.8	4.7	3.5	2.8	2.8	3.0
Non-core inflation (end of period)	4.8	5.9	13.5	30.6	30.6	22.8	14.5	17.4	17.7	17.7	21.9	17.6	13.4	12.5	12.2	12.2	12.3	11.8	11.0	10.4	9.6	9.6	10.5
raw foods (end of period)	3.9	4.1	11.8	41.6	41.6	31.6	20.4	18.8	18.7	18.7	25.7	15.0	11.2	6.5	5.0	5.0	4.0	5.0	4.2	3.6	3.1	3.1	3.1
administrative prices (end of period)	8.6	9.9	13.6	15.3	15.3	13.5	13.0	14.1	15.1	15.1	14.7	16.5	13.0	21.9	23.6	23.6	24.5	22.6	21.6	19.8	18.8	18.8	20.2
Nominal wages (period average)	18.4	10.4	20.9	6.0	0.5	13.4	31.2	26.0	18.0	21.9	25.0	18.4	19.4	19.3	19.4	19.2	21.7	16.0	14.1	11.8	9.3	12.7	12.4
Real wages (period average)	9.8	7.4	10.5	-11.4	-15.8	-8.7	12.4	9.9	3.2	3.7	3.3	2.9	5.1	6.2	8.4	5.7	6.5	6.5	5.7	4.5	3.0	4.9	4.3
Unemployment (ILO, period average)	8.2	9.5	9.8	21.1	25.8	-	-	-	-	18.3	26.1	-	-	-	-	16.5	20.0	-	-	-	-	14.7	17.6
FISCAL SECTOR																							
Consolidated budget balance, UAH bn	**-87.3**	**-224**	**-187**	**-845**	-845	-	-	-	-	**-1271**	-912	-	-	-	-	**-811**	-635	-	-	-	-	**-577**	-487
% of GDP	-2.2	-5.3	-3.4	-16.3	-17.5	-	-	-	-	-19.5	-15.2	-	-	-	-	-10.5	-9.0	-	-	-	-	-6.5	-6.0
Public sector fiscal balance (IMF methodology), UAH l	**-89.2**	**-243**	**-195**	**-846**	-846	-	-	-	-	**-1270**	-912	-	-	-	-	**-810**	-636	-	-	-	-	**-578**	-487
% of GDP	-2.2	-5.8	-3.6	-16.3	-17.5	-	-	-	-	-19.5	-15.2	-	-	-	-	-10.5	-9.0	-	-	-	-	-8.2	-6.9
BALANCE OF PAYMENTS (NBU methodology)																							
Current account balance, USD bn	-4.1	5.3	-3.9	8.0	8.6	-0.8	-2.9	-3.5	-6.3	-13.5	-20.4	-4.4	-2.8	-2.0	-1.5	-10.6	-8.4	-2.8	-1.7	-1.7	-1.5	-7.7	-5.5
Exports of goods and services, USD bn	63.6	60.7	81.5	57.0	57.1	13.7	11.9	12.3	13.5	51.4	49.0	12.6	13.0	14.6	16.1	56.3	56.8	14.3	14.3	15.7	17.0	61.3	60.8
Imports of goods and services, USD bn	76.1	63.1	84.2	83.0	80.9	23.0	22.7	23.5	24.0	93.2	99.9	22.1	21.3	21.9	22.7	88.0	85.2	20.8	20.3	21.7	22.9	85.7	80.4
Remittances in Ukraine, USD bn	11.9	12.0	14.0	12.8	13.1	2.9	3.2	3.3	3.4	12.9	15.9	3.1	3.4	3.5	3.8	13.9	15.0	3.3	3.5	3.8	4.2	14.7	14.8
Financial account, USD bn	-10.1	3.3	-4.4	11.1	11.5	-4.6	-5.3	-3.1	-4.0	-17.0	-13.2	-3.6	-1.5	-2.2	-2.0	-9.3	-6.8	-2.4	-2.1	-2.5	-2.2	-9.2	-7.4
BOP overall balance, USD bn	**6.0**	**2.0**	**0.5**	**-2.9**	-2.9	**3.9**	**2.4**	**-0.4**	**-2.2**	**3.6**	-7.2	**-0.8**	**-1.3**	**0.2**	**0.5**	**-1.4**	-1.6	**-0.5**	**0.4**	**0.8**	**0.7**	**1.5**	1.9
Gross reserves, USD bn	**25.3**	**29.1**	**30.9**	**28.5**	28.5	**31.9**	**36.9**	**36.4**	**34.5**	**34.5**	27.0	**33.8**	**34.0**	**34.7**	**36.1**	**36.1**	31.0	**35.3**	**35.7**	**36.1**	**37.1**	**37.1**	34.6
Months of future imports	4.8	4.2	4.5	3.7	3.4	4.1	4.9	4.9	4.7	4.7	3.8	4.7	4.8	4.9	5.1	5.1	4.6	4.9	4.9	4.9	4.9	4.9	4.9
MONETARY ACCOUNTS (Cumulative since the beginning of the year)																							
Monetary base, %	**9.6**	**24.8**	**11.2**	**19.6**	19.6	9.0	12.4	16.5	24.9	**24.9**	26.3	2.0	5.7	9.4	17.1	**17.1**	12.0	-1.5	1.0	4.0	11.2	**11.2**	8.4
Broad money, %	**12.6**	**28.6**	**12.0**	**20.8**	21.0	2.3	7.4	12.8	19.2	**19.2**	17.8	3.9	7.4	11.2	16.3	**16.3**	11.9	1.0	4.3	7.1	11.7	**11.7**	11.2
Velocity of broad money (end of year)	**2.8**	**2.3**	**2.6**	**2.0**	1.9	-	-	-	-	**2.2**	2.0	-	-	-	-	**2.2**	2.1	-	-	-	-	**2.3**	2.2

Forecast assumptions

Indicators		2020*	2021*	2022*	2023	2024	2025
Full access to Black Sea ports				-	-	+	+
Official financing	USD bln			32.6	42.2	26.4	16.8
Migration (net)	mln people			-8.0	-0.3	1.2	1.4
Real GDP of Ukraine's MTP (UAwGDP)	% yoy	-3.4	6.2	3.5	2.0	3.0	2.9
Foreign CPI (UAwCPI)	% yoy	2.1	6.4	14.0	5.9	3.9	3.3
World prices:**							
Steel price, Steel Billet Exp FOB Ukraine	USD/t	389.4	615.0	618.1	616.1	549.3	497.2
	% yoy	-5.2	57.9	0.5	-0.3	-10.8	-9.5
Iron ore price, China import Iron Ore Fines 62% FE	USD/t	108.9	161.7	121.4	118.1	82.8	74.7
	% yoy	16.1	48.5	-24.9	-2.7	-29.9	-9.8
Steel price, No.1 Hard Red Winter, ordinary protein, Kansas City	USD/t	185.5	263.5	360.2	307.9	272.6	251.8
	% yoy	12.6	42.0	36.7	-14.5	-11.5	-7.6
Corn price, Yellow #2 Delivery USA Gulf	USD/t	165.5	259.4	318.4	265.0	229.2	215.8
	% yoy	-2.7	56.7	22.7	-16.8	-13.5	-5.8
Oil price, Brent	USD/bbl	42.3	70.4	99.8	89.1	81.4	69.5
	% yoy	-33.9	66.4	41.8	-10.7	-8.6	-14.6
Natural gas price, Netherlands TTF	USD/kcm	115.0	575.5	1362.9	766.5	632.3	456.8
	% yoy	-28.7	400.4	136.8	-43.8	-17.5	-27.8
Gas transit	bcm	55.8	41.6	20.6	15.0	15.0	15.0
Grain and leguminous harvest	m t	64.9	86.0	53.9	45.0	49.2	53.8
Minimum wage**	uah	4815	6042	6550	6700	7665	8200

** Actual data.*
*** Annual average.*

Terms and Abbreviations

GDP	Gross domestic product
IDP	Internally displaced person
STSU	State Treasury Service of Ukraine
SCSU	State Customs Service of Ukraine
CD	Certificates of deposit
SSSU	State Statistics Service of Ukraine
SES	State Employment Service
EBA	European Business Association
STA	Single Treasury Account
EU	European Union
ECB	European Central Bank
IER	Institute for Economic Research
CPI	Consumer Price Index
MPC	Monetary Policy Committee
KIIS	Kyiv International Institute of Sociology
QPM	Quarterly Projections Model
IMF	International Monetary Fund
IOM	International Organization for Migration
ILO	International Labour Organization
SMEs	Small and medium enterprises
IFI	International financial institution
MFU	Ministry of Finance of Ukraine
NBU	National Bank of Ukraine
NEER	Nominal effective exchange rate
T-bills&bonds	Domestic government debt securities
UN	United Nations Organization
OPEC	Organization of the Petroleum Exporting Countries
MTP	Main trading partner
VAT	Value-added tax
PFU	Pension Fund of Ukraine
REER	Real effective exchange rate
russia	russian federation
U.S.	United States of America
UEEX	Ukrainian Energy Exchange
Fed	U.S. Federal Reserve System
CB	Central bank
CES	Centre for Economic Strategy
CEE	Central and Eastern Europe
EM	Emerging market
IIF	Institute of International Finance
PMI	Purchasing Managers' Index
UAwCPI	Weighted average of the CPI in Ukraine's MTP countries
UAwGDP	Weighted average of economic growth in Ukraine's MTP countries
UIIR	Ukrainian Index of Interbank Rates

m	million
bn	billion
UAH	Ukrainian hryvnia
USD	U.S. dollar
p	point
bp	basis point
pp	percentage point
bbl	barrel
yoy	in annual terms; year-on-year change
qoq	in quarterly terms; quarter-on-quarter change
sa	seasonally adjusted
mom	in monthly terms; month-on-month change month-on-month
RHS	Right-hand scale