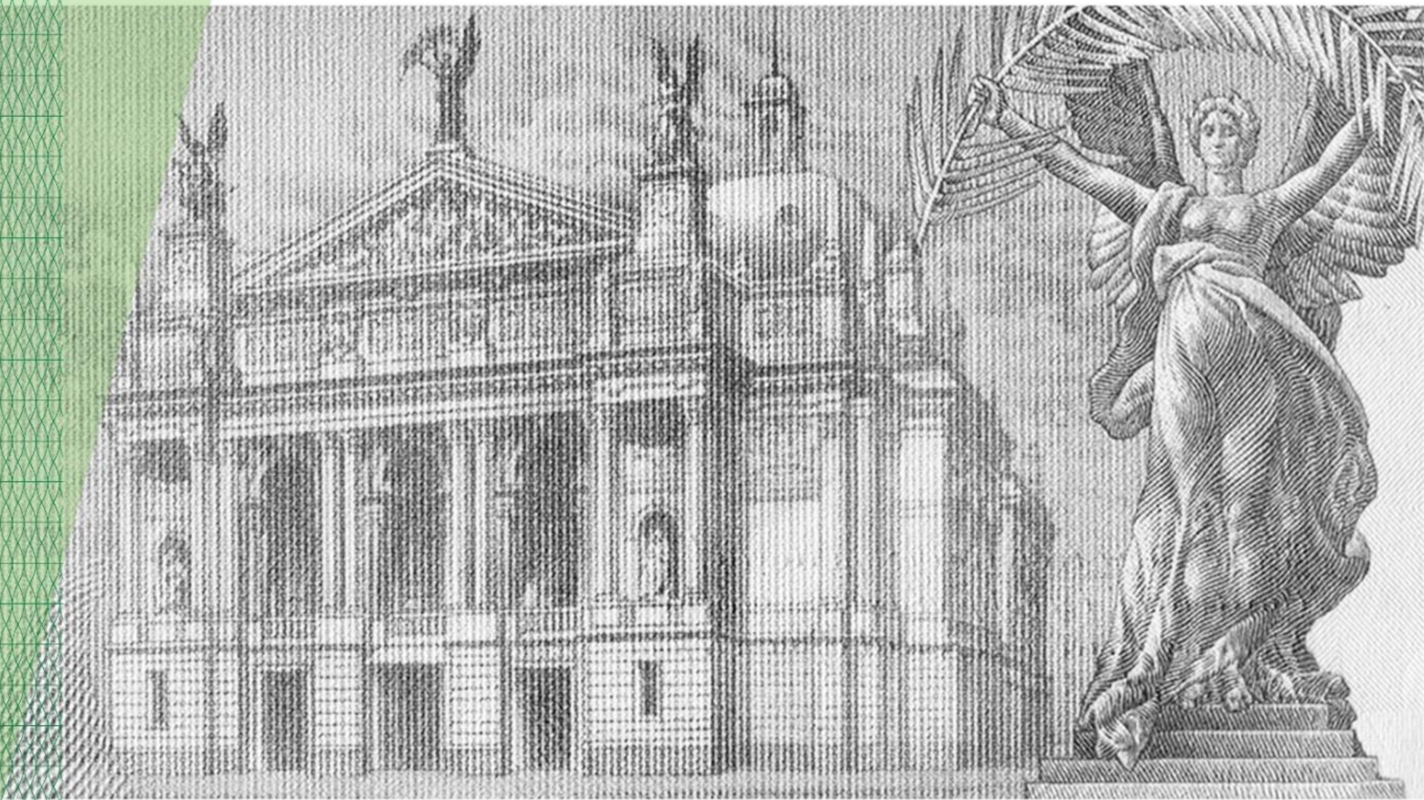
National Bank of Ukraine

Inflation Report

October 2022



Lower effectiveness of market instruments and high uncertainty caused by full-scale hostilities made the usual inflation targeting format of monetary policy impossible. To maintain macroeconomic stability in Ukraine, ease the panic, and prevent the inflationary spiral, the NBU was forced to fix the UAH/USD exchange rate at the start of the war and impose a number of administrative restrictions, including those on FX transactions and capital movements. Moreover, in line with the amended legislation, the NBU for the period of martial law was temporarily given the opportunity to purchase government debt securities in order to provide limited financing of the government's critical expenditures, primarily the expenditures on defense.

The said changes to the monetary policy principles were confirmed in the Monetary Policy Guidelines for the Duration of Martial Law. At the same time, this document formalized the NBU's commitment to the traditional inflation targeting format and its obligation to gradually return to principles and tools of this monetary regime as the economy gets back to normal.

The NBU has already taken the first steps to return to market-driven management of the financial system. In June, the central bank has resumed conducting an active interest rate policy by hiking its key policy rate. The NBU is also gradually winding down monetary financing of the budget, which is expected to stop at the start of 2023. In the meantime, the monetary policy remains focused on maintaining the exchange rate under current conditions. The NBU is taking measures to balance the FX market and make the transmission mechanism of the key policy rate more effective, which are the preconditions for the NBU's return to the traditional inflation targeting format. Another step in this area was the recovery of the forecast cycle and resuming the practice of quarterly publications of the Inflation Report from July 2022.

The analysis in the current Inflation Report (October 2022) 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 19 October 2022 for the majority of indicators. Taking into account the still high uncertainty, the Inflation Report contains several forecast scenarios of economic development of the country in 2022–2024, which were prepared by the Monetary Policy and Economic Analysis Department and approved by the NBU Board at its monetary policy meeting on 20 October 2022.[1]

The NBU Board will continue to decide on the key policy rate in line with the schedule it publishes in advance. The next NBU Board meeting on monetary policy issues, which will be the last this year, will take place in December. The decisions will be based on assessments of risks and uncertainty taking into account new economic developments in Ukraine and beyond that have emerged since the latest forecast.

The NBU Board announces its interest rate decision at a press briefing held on the same day at 2 p.m., after the NBU Board's monetary policy meeting. 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 depersonalized opinions of all MPC members on the monetary policy decision to be made. That 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, time series and data for tables and figures are available on the NBU website at the following link.

[1] NBU Board decision No. 506 *On Approval of the Inflation Report* dated 20 October 2022.

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Summary

The baseline scenario of the macroeconomic forecast is a program forecast, as it takes account of effects from taking a number of necessary measures in the area of the state economic policy implementation. In particular, it is based on assumptions of entering a new IMF program, conducting coordinated monetary and fiscal policies, and gradually neutralizing quasi-fiscal imbalances, in particular in the energy sector. In addition, the baseline scenario assumes a significant decline in security risks from the middle of next year, which would contribute to complete unblocking of seaports, a decrease in sovereign risk premiums, and return of displaced persons to Ukraine.

As expected, inflation has been rising during the war but remains controllable

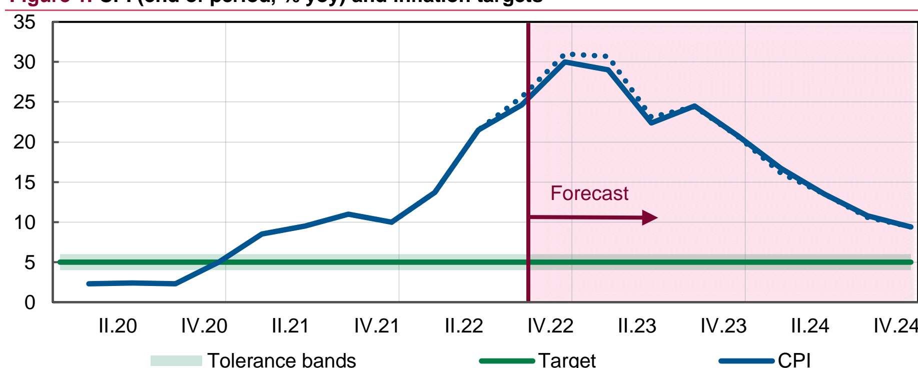
Consumer inflation in Ukraine was 24.6% yoy in September, and core inflation exceeded 20% yoy. Inflation continued to accelerate in October, according to the NBU's preliminary estimates. Consequences of russia's full-scale war against Ukraine remain the main price driver. This includes supply chain disruptions, destruction of production facilities, reduced supply of goods and services, and higher costs incurred by businesses. Another inflation driver has been the pass-through effect that the adjustment of the official hryvnia-to-dollar exchange rate had on prices. A further rise in global inflation also influenced prices in Ukraine.

At the same time, the actual price dynamics were in line with the expectations and even somewhat below the NBU's July forecast. Fixing utility rates and the saturation of the domestic fuel market while keeping the preferential tax regime for fuel curbed price growth. The planned reduction in monetary financing of the budget and the NBU's additional measures to calibrate FX restrictions helped ease pressures on the FX market, restraining the deterioration in expectations.

Inflation will reach around 30% this year, but it should slow in the next years provided that security risks subside and monetary and fiscal policies are well coordinated

Due to the adverse impact of the full-scale war on supply of goods and economic agents' expectations, inflation will accelerate to 30% at the end of this year. However, such price growth is rather moderate considering the wartime challenges and inflation reaching its highest levels over many years in many countries. Price pressures and expectations will remain under control, laying the groundwork for a gradual slowdown in inflation.

Figure 1. CPI (end of period, % yoy) and inflation targets



Source: SSSU, NBU staff estimates.

The NBU expects that price growth will slow next year thanks to a gradual setup of logistics and production, lower global inflation, and moderately tight monetary conditions. This process will accelerate in the middle of the year in view of the high base effect and expected easing of security risks, which is a key assumption of the new forecast. The latter factor will lead to a sizeable decline in inflation expectations and risks to business activities, a decrease in production costs, setup of logistics, including through Black Sea ports, and a recovery in production capacity. All of this will result in further growth in supply and a stabilization of consumer prices. Prudent debt policy of the government and refusal from monetary financing of the budget deficit will be an additional factor for an improvement in inflation expectations. The relevant factors will drive inflation down to less than 21% next year and to below 10% in 2024. A faster decrease in inflation in the next years will be restrained mainly by high energy prices, which will require to gradually bring utility tariffs to market levels.

After a deep fall at the start of the war, the economy of Ukraine has been picking up. The gradual recovery will continue in 2023–2024

Economic activity recovered gradually in Q2–Q3 2022 on the back of further liberation of Ukrainian territories, businesses adapting to new conditions, and opening the “grain corridor". The latter factor made a positive contribution to GDP compared to the July forecast. However, the existing logistical problems (especially in the metals industry), destruction of production facilities (in the energy sector in particular), and a decline in real household income are restraining economic recovery. A large negative contribution to real GDP change expectedly came from agriculture – due to both this year’s lower yields and considerably smaller sown areas. As a result, the NBU upgraded its estimate of a decrease in GDP for this year only slightly, to 31.5%.

A decline in security risks from the middle of 2023 assumed by the forecast will be the key factor in the future economic recovery. In particular, the full recovery in operations of Black Sea ports will enable a significant increase in Ukrainian exports. Large budget support will boost consumer demand and investment in the reconstruction of the country. At the same time, huge losses of labor force and production capacity, high global energy prices, and large import needs in the period of post-war reconstruction will be a drag on economic recovery. Under such conditions, growth in Ukraine’s GDP will be moderate in the next years, at around 4%–5%.

Exports being limited due to the war, strong migration, and the economy’s large needs for imports to carry out the reconstruction will cause the current account to return to deficit in the coming years

International financial support and revived exports contributed to an increase in FX inflows to Ukraine. Official financing has exceeded USD 22 billion since the start of the full-scale invasion. The lion’s share of the financing came as grants in several past months. In autumn, exports of goods peaked from the start of the war thanks to the launch of the “grain corridor" and record-high growth in electricity supply to the EU. A correction of the official exchange rate of the hryvnia and the cancellation of the preferential tax regime slowed the recovery in imports of goods. This resulted in a large surplus in the current account.

The current account will return to deficit next year. On the one hand, international financial assistance in 2023–2024 is expected to be large, in particular in the form of grants. The improvement in security assumed in the forecast will favor further growth in exports, and remittances from labor migrants will not be lower than before the war. On the other hand, the reconstruction of the country will require large volumes of imports. Moreover, as security risks remain high, migration will continue to be strong, reflecting in large volumes of imports of travel services.

Continued cooperation with international partners remains an important factor in maintaining the Ukrainian economy during the full-scale war and post-war recovery

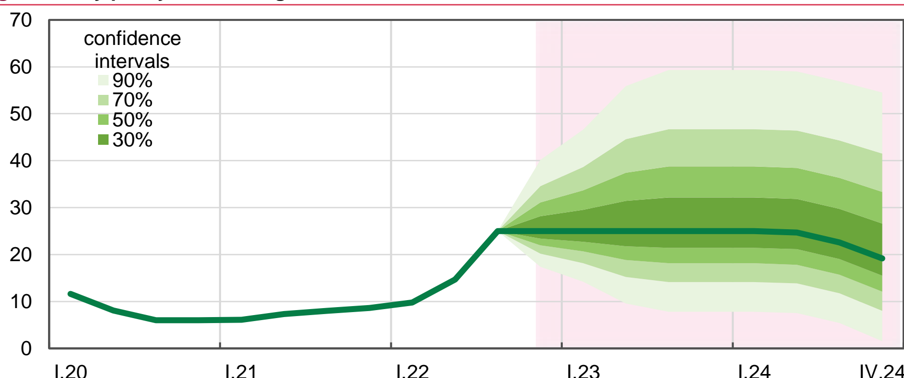
International financial assistance has become the main source of meeting significant budgetary needs during the full-scale war. The budget deficit will decrease in the coming years, but will still be substantial due to the need to maintain the country’s defense capabilities, and to ensure the smooth functioning of the economy. That is why Ukraine’s cooperation with its international partners will remain a critically important source for replenishing the budget. International support will also enable the NBU to maintain its international reserves at a sufficient level, keep expectations under control, and to safeguard macrofinancial stability.

As the inflation dynamics are close to the forecast and the balance of risks is skewed upward over the policy horizon, the key policy rate is kept at 25%

Supporting the exchange rate stability and protecting international reserves require ensuring that yields on hryvnia assets stay attractive in the long run. Among other things, keeping the key policy rate unchanged will be a favorable factor for this. Interest rates on hryvnia deposits continue to rise closely following the expected trajectory in response to the key policy rate hike in June. The NBU also welcomes the decision of the Ministry of Finance of Ukraine to raise interest rates on hryvnia domestic government debt securities at the auction held on 18 October. First, such step enabled a sizeable increase in volumes of borrowing compared to previous auctions, reducing the need for monetary financing of the budget. Second, it gave an additional impetus to other interest rates on the financial market, which is important for ensuring attractive yields on hryvnia assets.

In order to stabilize exchange rate expectations and reduce pressures on international reserves, the NBU developed a new mechanism that will provide households with more options to protect their savings from the risk of exchange rate fluctuations and will help dampen demand for FX cash. Such an instrument will create economic incentives for banks to introduce a corresponding product for private clients, enhance the effect of monetary transmission, and improve resilience of the fixed official exchange rate regime.

Figure 2. Key policy rate, average, %



Source: NBU staff estimates.

Moreover, the NBU has developed a set of potential measures for reinforcing monetary transmission and optimizing the structural surplus of hryvnia liquidity. The detailed design of these measures is being discussed as part of current consultations of the NBU and the Ministry of Finance of Ukraine with the International Monetary Fund.

The updated forecast, like the previous one, envisages maintaining the key policy rate at a level of 25% at least until Q2 2024. If required, the NBU stands ready to raise the key policy rate above its forecast and will further deploy additional measures to protect international reserves, as well as to maintain control over inflation.

A more extended full-scale war against Ukraine by russia remains the key risk to the baseline scenario of the forecast

The key assumption of the forecast is that security risks will start to decline significantly from mid-2023. If the full-scale war lasts longer than is envisaged in the baseline scenario of the current forecast, depressed demand, low investment, and logistical constraints on exports will persist longer. Under such conditions, the recovery of the Ukrainian economy would be slower, and inflation would be higher than currently expected.

Other risks are also relevant for the forecast. When realized, most of these risks will worsen inflation dynamics and hold back economic recovery. In particular:

- despite a certain easing, the risk of state finances becoming unbalanced persists on the back of the unpredictable nature of the war, possible problems with the regularity of international aid provision, and the emergence of additional budgetary needs. Another problem could arise from the formation of large quasi-fiscal deficits in the energy sector, taking into account high energy prices;
- russia's terrorist attacks on Ukrainian energy infrastructure facilities are increasing the risk to Ukraine's ability to go through this winter smoothly. The lack of capacities would create the need to save energy, through temporarily disconnecting power supply for both household consumers and companies. This would decrease production of goods and services;
- the duration and intensity of hostilities, together with energy terror attacks, are increasing the risk that a large part of Ukrainians who had gone abroad, will not return, and that some more may decide to leave Ukraine. A demographic crisis would slow the post-war recovery due to a decline in consumer demand and aggravated structural problems on the labor market;
- there is still a risk that the "grain corridor" may be terminated and that russia may block Ukraine's seaports. Should it materialize, it would greatly complicate food exports, reduce FX inflows to Ukraine, diminish the farmers' financial capability to carry out the sowing

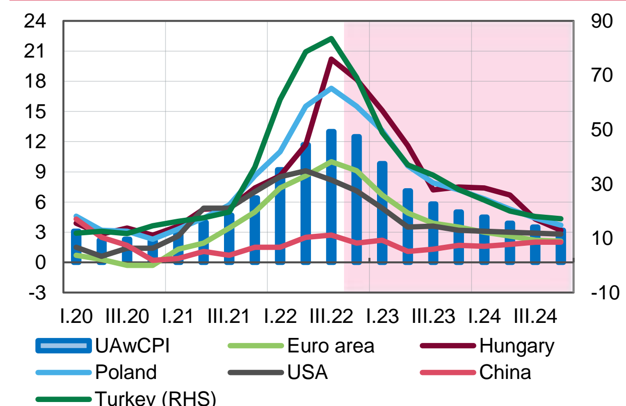
campaign, and have an adverse impact on the country’s economy, both at the end of this year and throughout next year.

Instead, the rapid implementation of a recovery plan for Ukraine, generating foreign investment inflows and substantial funding for reconstruction projects could accelerate economic growth to two-digit figures and facilitate faster return of inflation to its target of 5% set by the NBU.

Part 1. External Environment

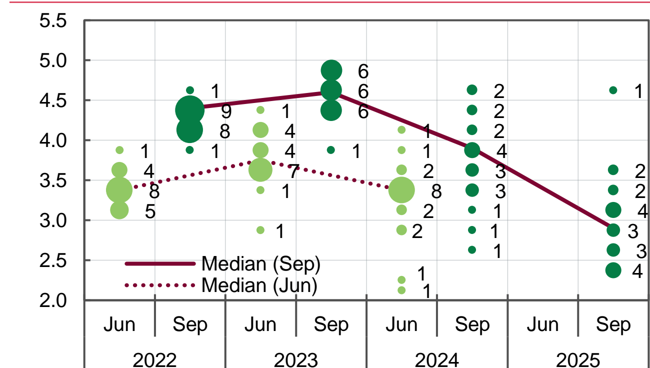
- Inflation has been fueled by shortages on the energy markets, and has become increasingly widespread globally. This has prompted a monetary policy tightening, which, however, is expected to be short-lived.
- As supply shocks persist and global financial conditions are being tightened, dampening already weak demand, the global economy will be in recession for the next few quarters. Going forward, global GDP growth will resume but will remain sluggish due to the slow recovery of supply chains and the weak revival of global trade.
- Global commodity prices will decline under the influence of weak economic growth. However, the decline will be moderate as supply growth will be limited, including due to the aggressive actions of russia.

Figure 1.1. UAwCPI and consumer inflation of selected countries (eop), % yoy



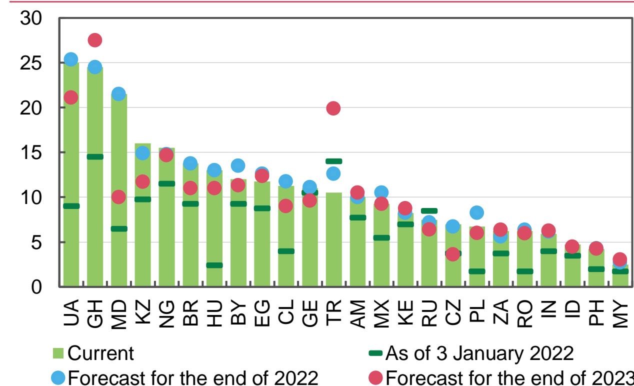
Source: National statistical agencies, NBU staff estimates.

Figure 1.2. The number of FOMC members that expect the respective policy rate



Source: Fed.

Figure 1.3. Key policy rates in selected EM countries, %



Source: official web pages of central banks, Focus Economics, Trading Economics, as of 26.10.22, excluding Brazil.

Global inflation has been fueled by energy shocks and has prompted a monetary policy tightening, which, however, is likely to be short-lived

Global inflationary pressures have become increasingly widespread, both in terms of various groups of goods and by country. That said, inflation significantly exceeds the level of mid-2021, when demand increased considerably during the post-pandemic recovery. In order to contain inflation and anchor inflation expectations, central banks have aggressively raised their interest rates, often resorting to a higher-than-usual hike of 50 bp or more, as the risks from insufficiently resolute measures to reduce inflation were probably much higher than those from excessive measures. Around three-quarters of the world's central banks raised interest rates in 2022, reflecting the global nature of the current inflationary environment.

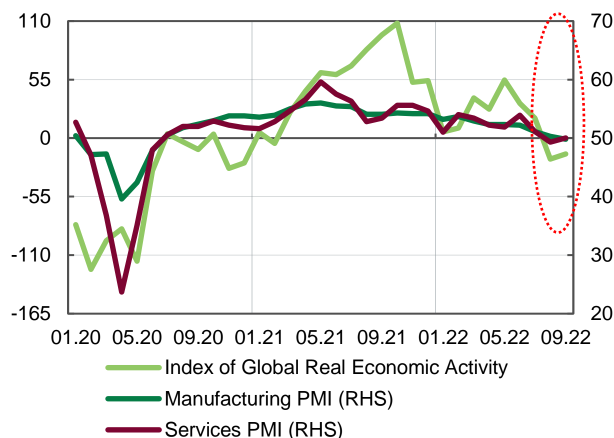
Important reasons for inflation remaining persistently high were the continuance of logistical disruptions and russia's invasion of Ukraine, which caused an energy shock. Although supply chains had been set up that eased pressures on food prices, the Global Price Pressures Index showed that energy prices were growing steadily, and at one of the highest rates on record. According to the Global Supply Shortages Index, supply pressures also eased markedly, but raw material shortages in September 2022 were three times higher than usual for this month. Inflation in both advanced economies and emerging markets (EMs) is expected to decline gradually as commodity markets stabilize, economic growth slows, and financial conditions tighten.

Despite a slowdown in August–September, inflation in the United States significantly exceeded the long-term target, and core inflation has been above 5% yoy for more than six months. Therefore, the Fed raised its rates aggressively (up to 3%–3.25% in September). This policy is expected to continue next year, along with a reduction in assets, but will gradually ease as inflationary shocks fade.

Inflation in the euro area continued to grow, primarily due to rising energy prices. Moreover, high energy prices were a consequence not only of record-high natural gas prices, but also of abnormally high refining margins for diesel fuel and distribution margins for private transport fuel. Therefore, the ECB will continue to raise interest rates, and the tightening cycle may end at 2.25%–2.5%. As the measures of monetary policy tightening take effect and the supply factors are exhausted, inflation will decline, but will not reach the target until late 2024.

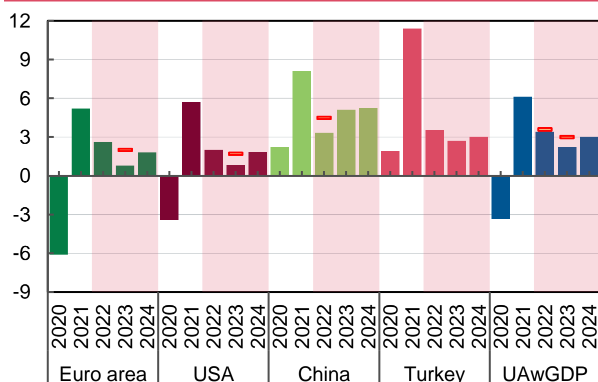
In EMs, inflation also increased rapidly, prompting their central banks to accelerate monetary policy tightening.

Figure 1.4. Global PMI and Index of global real economic activity (Kilian index)



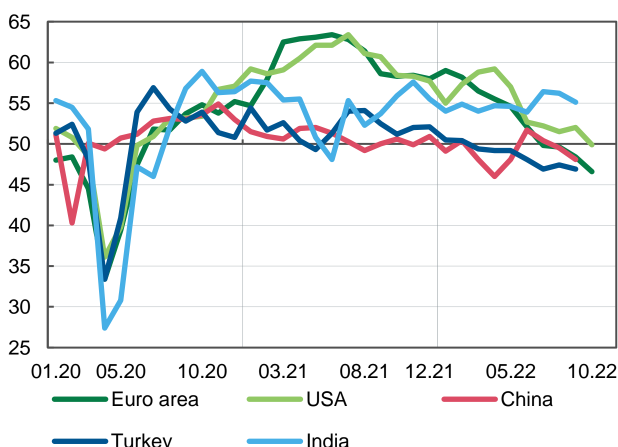
Source: J.P.Morgan, S&P Global, FRB of Dallas.

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



- previous forecast of NBU
Source: National statistical offices, NBU staff estimates.

Figure 1.6. Manufacturing PMI of selected countries



Source: S&P Global.

Conversely, some central banks in Central and Eastern Europe probably came to the end of the tightening cycle, particularly the central banks of Hungary, Poland, and the Czech Republic. However, the growing pressure on the currencies of these countries, in particular as a result of the Fed's resolute actions, may prompt the central banks to resume raising their rates. The central banks of russia, Turkey, and China remained an exception. Also, more and more EMs have chosen to take a wait-and-see approach in the short run in order to analyze the impact the tightening has on the macroeconomic situation in their countries.

As a result of a faster normalization of monetary policies by leading central banks, global financial conditions became tighter, bond yields rose, and interest in risky assets declined. However, yields adjusted downward due to a worsening in the prospects for economic growth, which will restrain inflation. This somewhat eased the pressure of rate hikes on EM assets (read more in the Box *Tightening Global Financial Conditions: The Sneaker Wave of Debt* on page 11).

As supply shocks persist, the world will fall into recession for several quarters. Further on, global economic growth will resume, although it will be weak due to the slow restoration of logistics and sluggish global trade

Global economic activity has started to decline for the first time in more than two years in both manufacturing and services, influenced by high inflation, tighter financial conditions, and persisting supply problems. Weaker demand eased the pressure on supply chains and reduced shortages, but they still persist. In addition, current assessments of business confidence and the outlook for the next year remain negative, while sales are low.

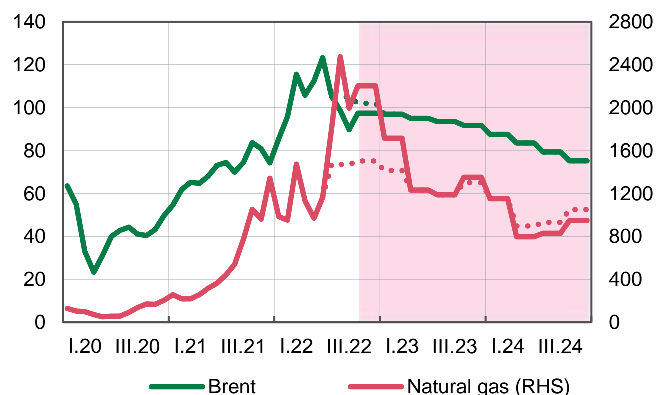
The decline in global manufacturing is slowing trade, and this is worsened by a decrease in new export orders. That said, the loss of momentum is more pronounced in EMs. Therefore, global merchandise trade volumes will grow by only 1% in 2023 (down from 3.4% forecast previously).

As a result of the simultaneous effect of negative factors, the onset of the global recession is expected at the end of 2022 or in H1 2023. Going forward, due to the slow restoration of logistics, weak global trade, and the tightening of financial conditions, growth will be sluggish in both the advanced economies and the EMs.

Economic growth is slowing in the United States. Rising mortgage rates and high costs led to a drop in construction investment. Private consumption slowed as the real disposable income of households fell. The slow recovery of logistics and higher prices of raw materials will have a dampening effect on the U.S. economy until the end of 2023. The Fed's tighter monetary policy will produce an additional restraining effect.

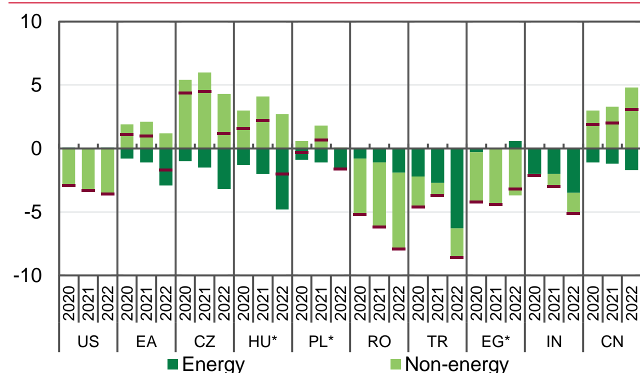
The euro area's economy is facing the adverse effects of high inflation and the geopolitical consequences of the war in Ukraine. These factors are expected to persist until at least mid-2023. However, fiscal measures aimed at mitigating the impact of high energy prices, stable labor markets, and accumulated savings (accumulated savings in excess of pre-pandemic levels amounted to around EUR 850 billion by Q1 2022) will support the euro area economy.

Figure 1.7. World crude oil prices (USD/bbl) and Netherlands TTF natural gas prices (USD/kcm)



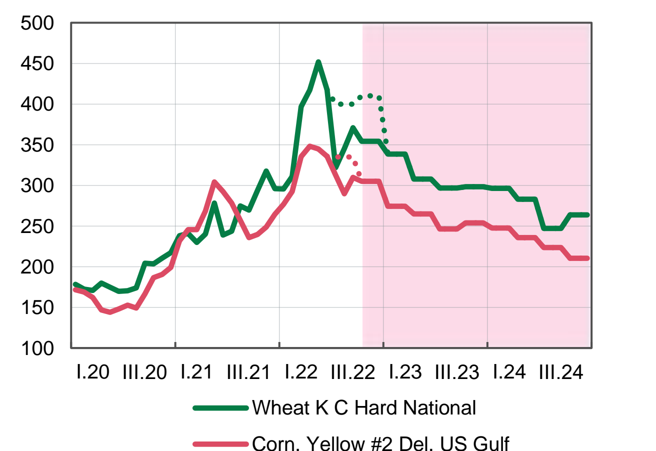
Source: Refinitiv, NBU staff estimates.

Figure 1.8. Goods trade balance for January-August, % of GDP



* For Poland and Hungary data is for 7 months, for Egypt it is for 6 months.
Source: UN Comtrade Database, IMF, national statistical agencies, NBU staff estimates.

Figure 1.9. World grain prices, USD/MT, quarterly average



Source: Refinitiv, NBU staff estimates.

High inflation, an increase in the cost of borrowing, and weaker growth in the leading economies significantly undermine the growth prospects for the EMs that are Ukraine's main trading partners. As the war in Ukraine de-escalates and global logistical chains recover, consumption and investment will revive, which will lead to an active economic recovery in EMs. On the other hand, in China, a decrease in demand caused by strict quarantines, production cuts in energy-intensive industries, and deeper recession in the residential real estate sector will restrain economic growth over the forecast horizon, despite the provision of substantial government support.

Influenced by sluggish growth in the global economy, global commodity prices will decrease, albeit at a moderate pace due to limited growth in supply

The dynamics of global crude oil and natural gas prices in Europe were mixed in Q3 2022. The slowdown in the global economy significantly reduced demand for oil, and thus drove a decline in oil prices. However, production cuts by OPEC+ countries kept prices from falling deeper. These factors will continue to influence the crude oil market further on. The introduction of a cap on russian oil prices by European countries will have an additional impact on the market, resulting in russian producers reorienting more toward the Asian market.

Natural gas prices sometimes reached new record highs due to problems with supplies from russia. However, the rapid filling of gas storage facilities ahead of schedule, primarily due to active imports of liquefied natural gas, led to a downward price correction. The market is expected to remain highly volatile as russia will continue its blackmailing. Nevertheless, the lower dependence of European countries on russian gas thanks to a significant reduction in consumption will contribute to a decrease in prices.

Global steel and iron ore prices declined on weak business activity in the majority of regions, caused by persisting oversupply. The effect of these factors will last over the forecast horizon, pushing steel and ore prices further down.

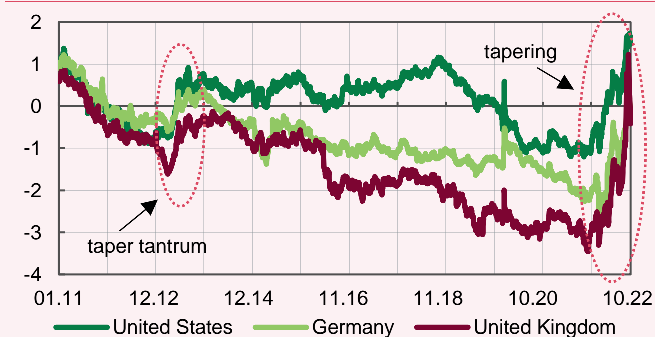
Grain markets, in particular wheat and corn markets, were relieved somewhat by the launch of the grain corridor from Ukraine, and prices decreased accordingly. However, the decline in prices was restrained as weather conditions were unfavorable for growing and harvesting new crop in the majority of the grain-producing regions of the world. The operation of the grain corridor, coupled with the expansion of sown areas, in particular in Latin America, India, and Australia, and larger harvests gathered thanks to more favorable weather will push prices down (despite expensive fuel and fertilizers) in 2023–2024.

Box 1. Tightening Global Financial Conditions: The Sneaker Wave of Debt

The record-high inflation seen in advanced economies turned out to be more persistent than the major central banks had expected, forcing them to rapidly tighten their monetary policies. More than a decade of ultra-cheap money on the global financial markets thus came to an end in 2022. However, given the challenges the global economy has faced over the past two years, such tightening of financial conditions is affecting public finances. For the most part, the vulnerabilities that had built up before 2019 only worsened due to the COVID-19 pandemic, measures to contain it, and russia's military aggression against Ukraine. According to the IIF, global debt will reach 352% of GDP as of the end of 2022, which is 30 pp higher than at the end of 2019. The tightening of financial conditions will push up the cost of debt servicing and that of new borrowing. As a result, the need to reduce the debt burden will create challenges for global economic growth.

All the shocks that hit the global economy because of the COVID-19 pandemic, measures to contain it, and russia's invasion of Ukraine led to an acceleration of inflation, the like of which has not been seen for decades. In response, most central banks sped up monetary policy tightening, by both hiking their rates and tapering quantitative easing (QE) programs. Compared to September 2021, the rate expected by the market in the next two years (based on two-year swaps) increased in September 2022 by more than 3 pp in the euro area and by 4 pp in the United States. As a result, real yields on government bonds reached levels last seen nearly a decade ago.

Figure 1. Real yields on 10-year government bonds*, %

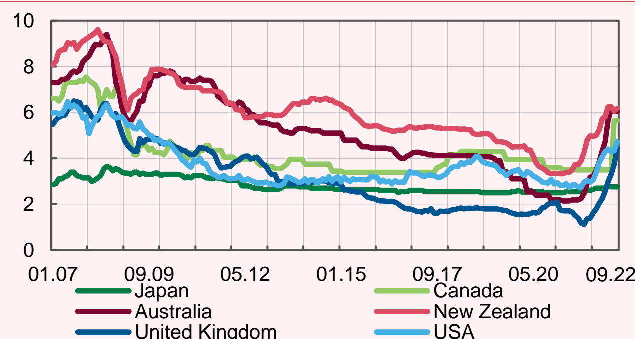


* Based on inflation-protected bonds.
Source: Bloomberg.

The rapid tightening of monetary policies in advanced economies ended a period favorable to risky assets, marked by low interest rates and high liquidity. Stock indices have fallen by more than 20% since the start of the year, primarily in sectors with high price-to-earnings ratios. Capital inflows to EMs virtually came to a halt, and the U.S. dollar strengthened the most in nearly 20 years in view of more policy space for rate hikes and lower risks to the economy of the United States due to its energy independence. Amid an unstable and uneven recovery of the global economy, such a rapid tightening of financial conditions is challenging for both advanced economies and EMs.

Advanced economies. The real estate market is one of the most cyclical economic sectors. Its growth was for a long time supported by low interest rates. As central banks tightened their monetary policies, mortgage rates in some advanced economies hit highs not seen for a decade. Macroprudential measures implemented after the 2008 global crisis reduced the risks of a recurrent crisis. However, household debt (mostly mortgages) still account for more than 180% of net disposable income in some countries.

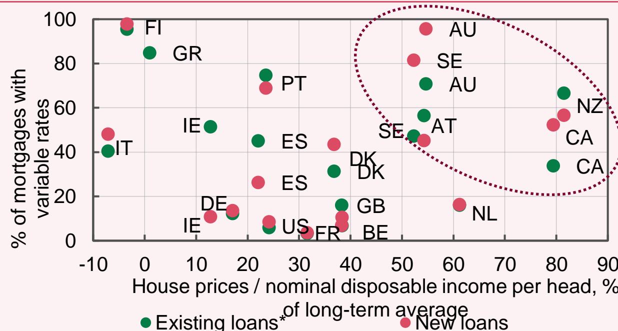
Figure 2. Three-year fixed mortgage rates, %



Source: Bloomberg.

Changes in preferences during the pandemic and unprecedented fiscal stimuli spurred growth in residential property prices, which created the risk they might steeply fall amid the current economic slowdown.

Figure 3. House price to income ratio and share of mortgages with variable rates**



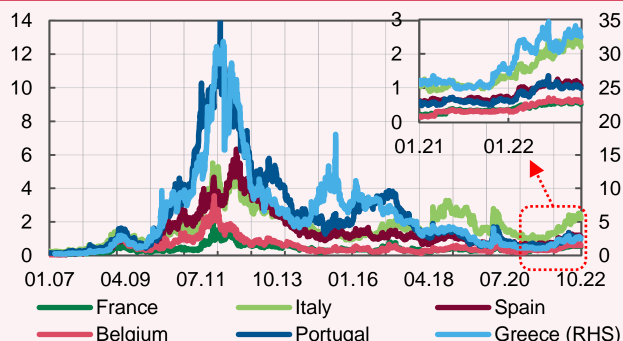
* For countries that do not have such statistics, it is calculated as the average share of new mortgages with variable rates during 2013–2022.
** Includes also mortgages with rates fixed for less than one year.
Source: OECD, EMF, ECB, RBA, RBNZ, Bank of Canada, MBA, NBU staff estimates.

Whereas prices grew by 1.8% in real terms in 2019, the growth rates were already 4.4% and 8.0% in 2020 and 2021, respectively. As a result, the ratio of house price to income exceeded the long-term average in New Zealand, Canada, Sweden, and Australia. In addition, these countries are facing high borrower insolvency risks due to a larger share of floating rate mortgages. According to available metrics, the United States also saw excessive growth in home prices after 2020. The probable sharp decline in the real estate market caused by these factors will intensify the recession in the major economies and could reduce their GDP by another 3%–4% over two years (Williams, 2016).

Specifics of the euro area. With the ECB tightening its monetary policy amid stagflation, some countries in the euro area faced debt sustainability issues. Due to the uneven

impact of the pandemic, the state of public finances deteriorated more significantly in southern Europe: deficits in these countries (except for Portugal) widened to 9%–11% of GDP in 2020, and public debt grew more significantly than in Germany. Nevertheless, unprecedented amounts of QE helped keep sovereign risk premiums low. Countries mostly took advantage of the favorable period to increase maturity, decrease the share of floating-rate bonds, and reduce weighted average yields. Therefore, their vulnerability to tighter financial conditions is now somewhat lower than during the taper tantrum.

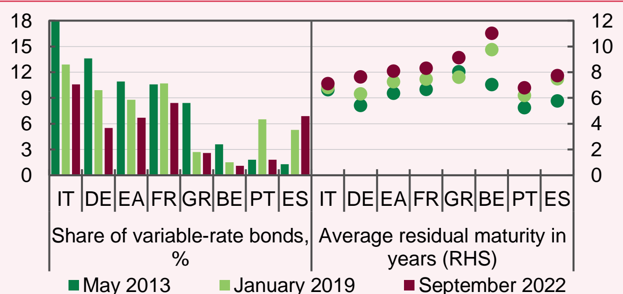
Figure 4. Spreads between 10-year government bonds of Germany and selected euro area countries, pp



Source: Bloomberg (series are on the left-hand side in the supplement).

However, the current spread in yields between German bonds and bonds of countries whose debts exceed 100% of GDP has almost reached the level of March 2020. The rise in budget needs caused by economic slowdown and compensation for energy prices is putting the brakes on fiscal consolidation. The expected increase in yields, against the backdrop of the economic slowdown, will considerably worsen debt-to-GDP dynamics. Given that market participants are susceptible to any changes, experts estimate that each upward revision of their sovereign risk assessments by 10 pp could reduce the GDP of the euro area by 0.8% in two years.

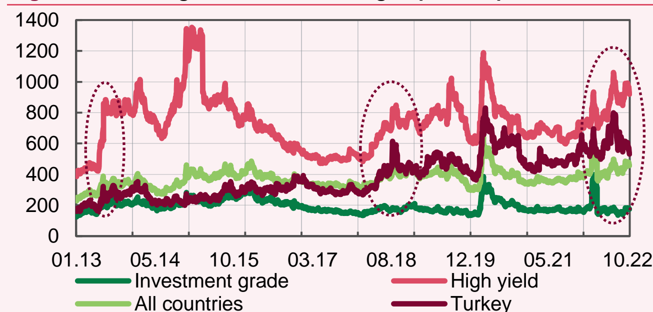
Figure 5. Share of variable-rate bonds and average residual maturity for total government debt securities in years



Source: ECB.

Emerging markets. Over the past three decades, EMs have managed to become more resilient to deteriorations in external conditions. However, countries with considerable economic imbalances are experiencing a negative impact from the Fed's monetary policy tightening, primarily due to the tighter financial conditions and a large share of trade settlements in U.S. dollars. Since the beginning of 2022, the spread between yields of U.S. Treasury bonds and bonds of high-yield countries widened by more than 200 bp, approaching the levels seen at the outset of the pandemic. According to the IMF, in around one third of EMs the cost of debt exceeded 10% (the maximum since the global financial crisis). In contrast, risk premiums remained almost unchanged in investment-grade countries.

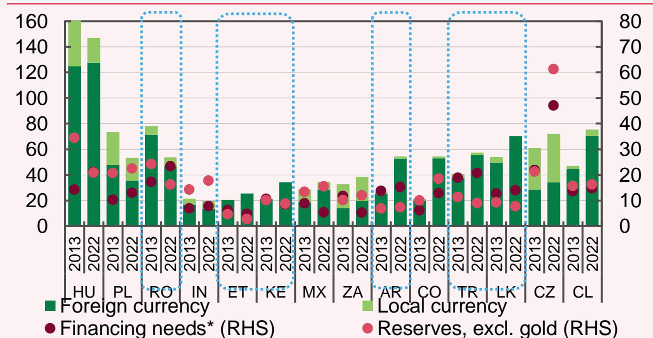
Figure 6. J.P. Morgan's EMBI+ Sovereign Spread, bp



Source: Bloomberg.

The rising cost of external borrowing and the strengthening of the U.S. dollar are creating serious challenges for EMs. A long period of favorable financial conditions prompted governments and nonfinancial companies to sharply increase their external debt, mainly in foreign currency (about 80%). However, most EMs have accumulated sufficient reserves to cover external financing needs. As in previous crises, reserves are smaller than short-term external debt only in Turkey and Argentina. However, the widening of the current account deficit due to higher energy and food prices also poses risks for many other EMs, in particular for Egypt, Romania, and Georgia. Even more vulnerable are frontier markets, such as Tunisia, Ethiopia, Kenya, and Ghana, while Sri Lanka has already defaulted. Overall, 25% of EMs and 60% of low-income countries are facing high risks or are already in a debt distress.

Figure 7. EM external debt by currency, financing needs, and foreign reserves, % of GDP, at the beginning of the year



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

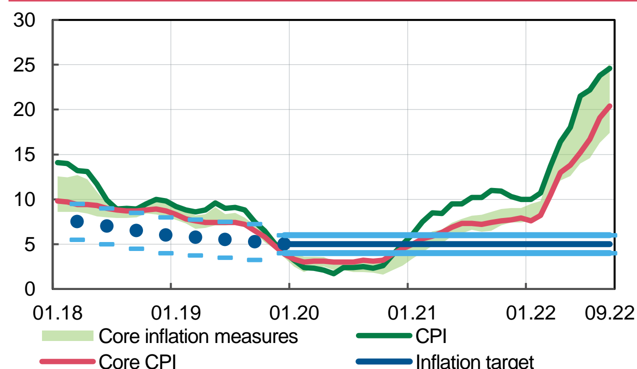
With the current tightening of global financial conditions, massive debt burdens, and unbalanced budget deficits, prudent macroeconomic and fiscal policies are the key factors to mitigate the adverse external impact.

Part 2. Ukrainian Economy

2.1. Inflationary Developments

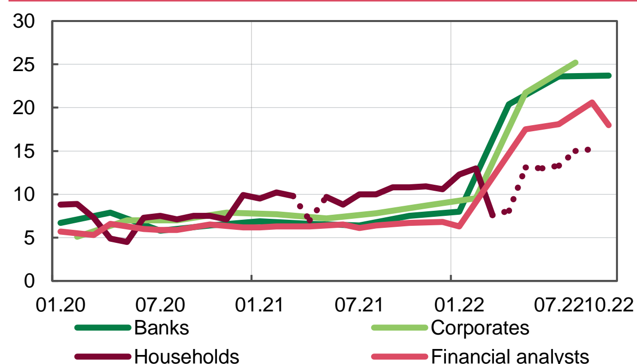
- As expected, inflation has been rising amid the war, but it remains controllable. It will reach 30% by the end of the year – mainly under the influence of supply factors and gloomier expectations.
- Inflation will start to slow next year thanks to the gradual restoration of logistics and production, lower global price pressures, and relatively tight monetary conditions. However, inflation will still be above the target, primarily due to the consequences of the war and high growth rates of administered prices.

Figure 2.1.1. Underlying inflation trends*, % yoy



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

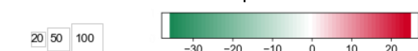
Figure 2.1.2. 12-month-ahead inflation expectations*, %



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

Figure 2.1.3. Respondents' estimates of the major factors affecting their expectations of price growth for their goods and services in Q3 2022, %*

* The size of the shape corresponds to the balance of responses, %, the color is the difference compared to the Q2 2022, pp



Source: NBU.

Consumer inflation is accelerating, driven mainly by supply factors and gloomier expectations

The acceleration of inflation continued to be driven by the fallout from russia's full-scale war on Ukraine. This includes supply chain disruptions and destruction of production facilities, which has led to decreased supplies of goods and services, and higher costs for businesses. Another factor was the pass-through effect that the adjustment of the official hryvnia-to-dollar exchange rate had on prices. The NBU adjusted the exchange rate in late July to preserve the stability of the Ukrainian economy. Pressures from global inflationary processes also increased.

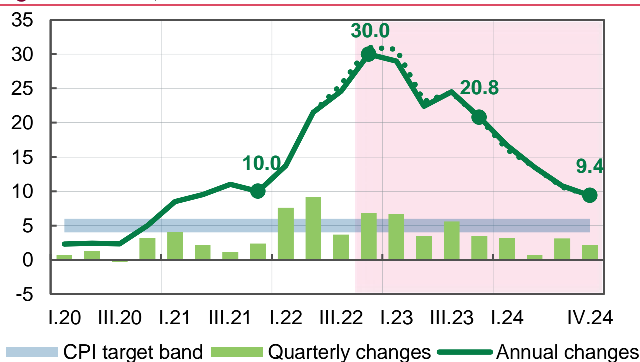
Consumer inflation reached 24.6% yoy in September 2022. Despite a large deviation from the target, the CPI was below the NBU forecast published in the July 2022 Inflation Report. In particular, the increase in inflationary pressure was restrained by taxes on fuel remaining low, a faster-than-expected saturation of the domestic fuel market, and utility tariffs remaining unchanged.

The worsening of inflation expectations was also an important factor.[2] In addition to high current inflation (inflation expectations in Ukraine are largely adaptive), the deterioration of expectations was driven by the rise of depreciation pressures on the cash market. In particular, the business outlook survey conducted in Q3 2022 showed that businesses saw the hryvnia exchange rate as having the greatest impact on price expectations for most sectors of the economy. However, the official exchange rate remaining fixed and the NBU's measures to balance the cash market in conditions of high uncertainty restrained a further deterioration in expectations. An additional factor was also the lack of change in utility tariffs.

The adjustment of the official exchange rate of the hryvnia and other consequences of the war led to an increase in underlying inflationary pressures in Q3 2022 (core inflation in September reached 20.4% yoy). Primarily, prices accelerated rapidly for goods that are mainly imported or have a significant share of imports in their cost. In particular, these are nonfood products such as electronics, cars, pharmaceuticals, clothes and footwear, household goods, personal care products, and goods for home repairs, and food products such as rice, dried fruits, dairy and fish products, and soft drinks. Given the limited opportunities to

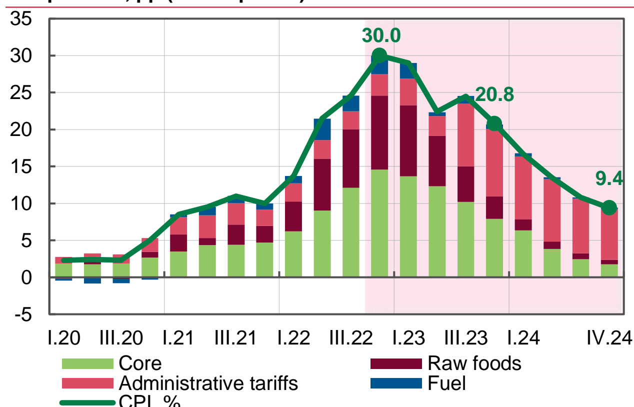
[2] Households' inflation expectations may have been affected by the change in the survey interview method from face-to-face to telephone. The same effect was observed in previous years during strict lockdowns.

Figure 2.1.4. CPI, %



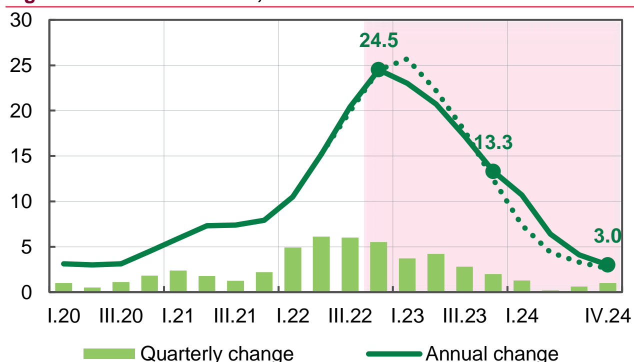
Source: SSSU, NBU staff estimates.

Figure 2.1.5. Contributions to annual CPI growth by main components, pp (end of period)



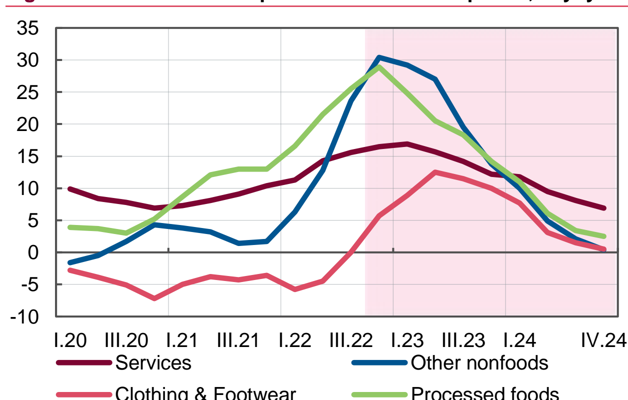
Source: SSSU, NBU staff estimates.

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.

protect hryvnia savings from depreciation, the rise in prices of durable goods could have also been supported by demand from households, as evidenced by the growth in their propensity to make large purchases.

Prices of services grew more rapidly due to an increase in business costs, which was driven by higher import prices among other things, and the impact of stronger demand, which was fueled, in particular, by the need to repair and insulate homes amid a shortage of some materials. Housing rentals continued to go up due to Ukrainians returning to their homes and demand coming from internally displaced persons. Prices for healthcare services and the services provided by beauty salons, dry cleaners, and cafes and restaurants increased faster. Prices for telecommunication services continued to grow. However, in general, demand for nonstaple goods and services remained weak, which restrained the growth in inflation. The growth in prices of hotel services slowed markedly. Prices of financial services, higher education, and car maintenance also rose more slowly.

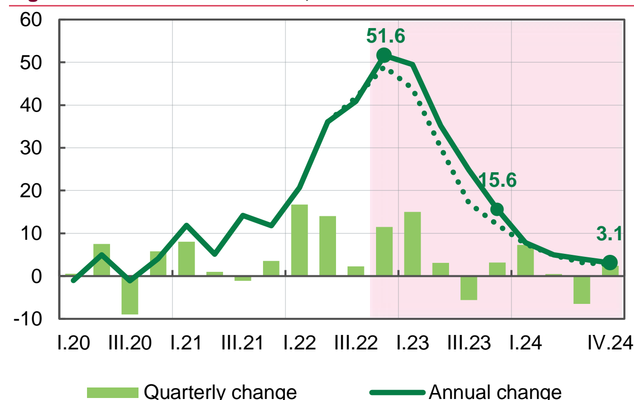
Inflation will start to slow next year thanks to the further restoration of logistics, lower global inflation, and relatively tight monetary conditions

Inflation will continue to accelerate and will reach 30% by the end of this year, driven primarily by supply shocks and a war-related worsening of expectations, as well as by high global inflation. Some of these factors will impact inflation next year as well. However, the expected decrease in security risks from mid-2023 will contribute to lower inflationary expectations by economic agents, while the pro-inflationary effect of supply shocks will gradually fade. Lower business risks, the setting up of optimal logistics, and the restoration of production capacities will reduce business costs and help increase supply and stabilize consumer prices. Relatively tight monetary conditions and a gradual decline in global inflation will be additional disinflationary factors. The prudent debt policy of the Ukrainian government and its rejection of monetary financing of the budget deficit will also contribute to an improvement in inflation expectations.

Like this year, demand-side pressures will be low over the forecast horizon due to the significant drop in household income. Consumer demand will remain below its equilibrium for a long time as high unemployment persists and because of the slow recovery of household income. War-related supply shocks, including increased business costs and second-round effects from the exchange rate adjustment in July, will remain the main cause of core inflation accelerating to nearly 25% by the end of this year. These effects will mostly fade next year, resulting in almost a twofold decrease in growth rates of core CPI, which will then drop to 3% by the end of the forecast period. However, the demand-side pressure on prices will stem from greater needs for housing reconstruction, which will drive growth in prices for the corresponding goods and services.

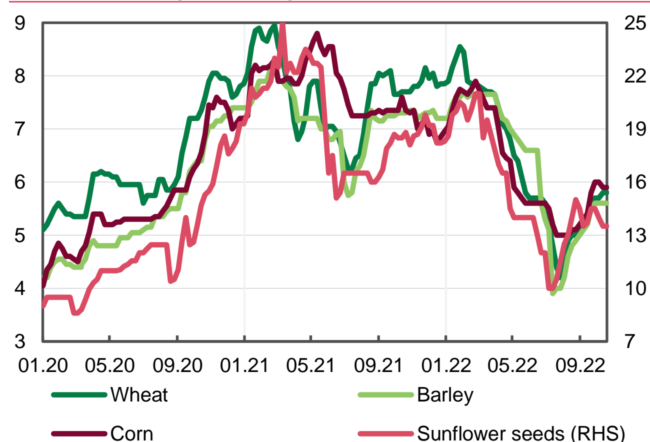
High energy prices will be the main obstacle to rapid disinflation and achieving the target over the forecast horizon. As imbalances build up in the energy sector in the post-war

Figure 2.1.8. Raw food inflation, %



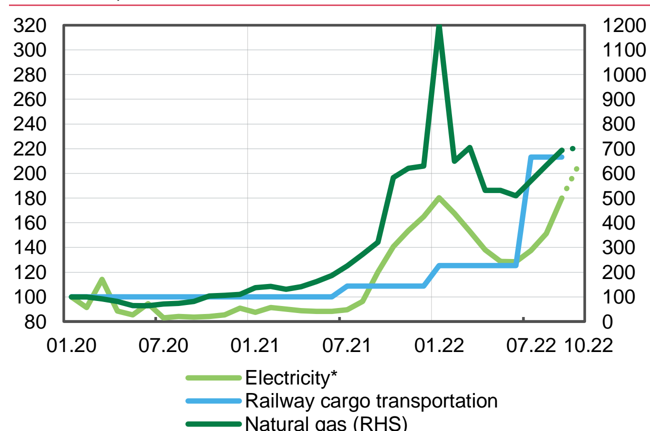
Source: SSSU, NBU staff estimates.

Figure 2.1.9. Demand prices for basic agricultural foraging cultures, EXW, exports, UAH per t



Source: APK-inform.

Figure 2.1.10. Tariffs for goods and services for non-household consumers, 01.2020 = 100



* Base load of the United Energy System of Ukraine.
Source: SSSU, UEEX.

period, the need will arise to gradually bring energy tariffs for households to market levels. Amid high global energy prices, administered prices will grow the fastest among the components of inflation in the coming years, making the largest contribution. Because of this, consumer inflation will be above the 5% target until the end of 2024 and will reach the target only in 2025.

Similar expectations regarding the slowdown of inflation in the medium term are expressed by bank managers (12.2% in three years) and financial analysts (8.5% in two years).

Higher costs caused by the war and expensive energy resources will remain important drivers of inflation, in particular, food price inflation

An increase in business costs, including energy costs, the occupation of territories, complicated logistics, and a decrease in livestock led to a further acceleration in noncore inflation, particularly food price inflation. Moreover, the pressure from global prices also intensified.

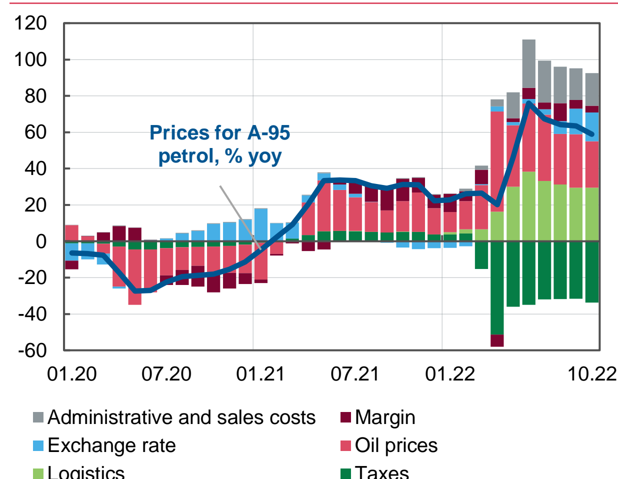
The growth in prices for fruits, mainly imported citrus fruits and bananas, accelerated because of supply chain disruptions, the rise in the global prices, and the adjustment of the hryvnia's official exchange rate in July 2022. Due to a decrease in supply, in particular from the temporarily occupied southern regions of Ukraine, and an increase in production and supply costs, vegetable prices continued to grow rapidly.

Agriculture remains one of the few sectors for which problems with logistics had a stronger impact on price expectations. This can be explained by the arrival of the new harvest while, despite the launch of the "grain corridor", storage and export capabilities remained limited. At the same time, prices for Ukrainian crops grew on the domestic market due to the effect of the "grain corridor" and the exchange rate adjustment in July.[3] Thus, accelerated growth resumed in prices for sunflower oil and derived products. This also led to an increase in fodder prices, which, together with a decrease in livestock and the expansion of export opportunities, supported the increase in prices for animal farming products. In particular, the prices of meat and eggs grew at a higher rate. Cereals rose in price more rapidly due to the depletion of inventories and limited imports. On the other hand, positive expectations of Ukraine's harvest of grains, in particular buckwheat, contributed to a decrease in growth rates of cereal prices at the end of the quarter.

Higher energy prices remain one of the key factors behind the rise in the cost of energy-intensive goods. This is confirmed by the increased impact energy prices have on further price setting by producers. The prices of bread, processed dairy products, and sausages grew more rapidly. This factor and expectations of production cuts also spurred growth in sugar prices. High energy prices also affected the production cost of nonfood products, in particular construction materials and

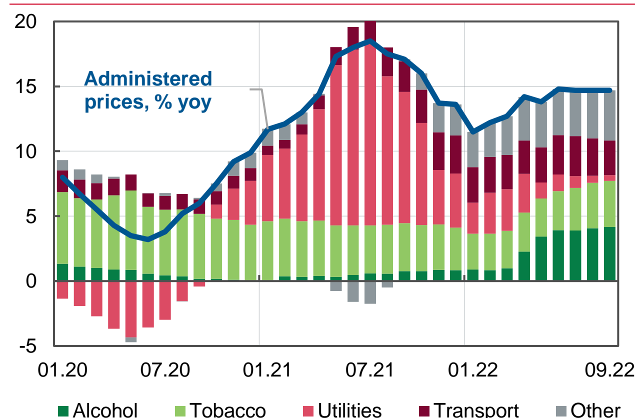
[3] Thanks to the operation of the "grain corridor" and the related increase in exports, purchase prices for grain rose on the domestic market. Domestic purchase prices are usually pegged to foreign currency. The July adjustment of the official exchange rate of the hryvnia led to a sharper increase in prices in the hryvnia.

Figure 2.1.11. Contributions of factors to the change in price of A-95 petrol, pp



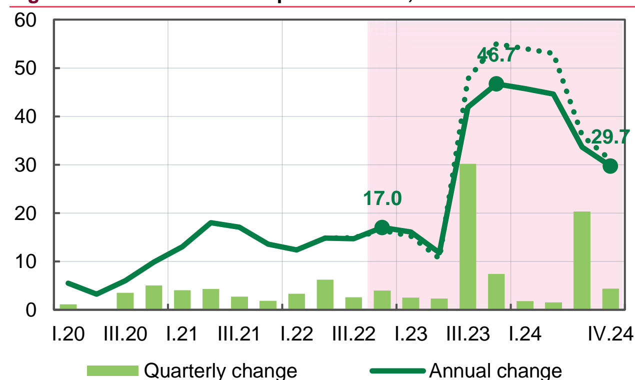
Source: minfin.com.ua, Refinitiv Datastream, NBU staff estimates.

Figure 2.1.12. Contributions to the annual change in administered prices, pp



Source: SSSU, NBU staff estimates.

Figure 2.1.13. Administered price inflation, %



Source: SSSU, NBU staff estimates.

glass products, which eventually passed through to headline inflation either directly or indirectly.

Raw food price inflation will continue to accelerate and will exceed 50% in the next two quarters. High risks and business costs, which will rise in the winter period due to expensive energy, will remain significant price growth drivers. Food price inflation will decrease rapidly next year thanks to the recovery of optimal technological and logistical chains, and the arrival of new, larger harvests to the market, including from the southern regions of the country. Moreover, an anticipated decline in global prices for food and energy will be a disinflationary factor. Further saturation of the food market with supply from both domestic producers and from imports will help stabilize food price inflation at low levels (at around 3%), provided there are no new strong supply shocks.

The growth in fuel prices slowed markedly (to 66.2% yoy in September), although they stabilized at a high level. This was due to global crude oil price decreases and market saturation as supply chain disruptions were resolved and competition between petrol stations revived.

Going forward, fuel prices will rise more slowly (up to 20% per year). On the one hand, prices will be restrained by a gradual decline in global crude oil prices. On the other hand, the expected return to the pre-war fuel taxation system will keep prices high. However, the pass-through effects from high fuel prices will persist, in particular, pushing up prices for transportation services. This will feed into headline inflation.

After the moratorium on raising utility rates ends, they will become major drivers of inflation

Growth rates of administered prices stood at 14.7% yoy throughout Q3. Prices of alcoholic beverages continued to accelerate on the back of rising costs, in particular energy costs, and shortages of packaging. Despite the gradual recovery of production capacity, prices of tobacco products grew more rapidly, also reflecting the pressure from production costs. Growth in prices for pharmaceuticals accelerated due to the exchange rate adjustment. On the other hand, with fuel prices stabilizing, transportation services rose in price at a slower rate. The growth in utility tariffs also slowed as the base effect vanished due to the tariffs being fixed.

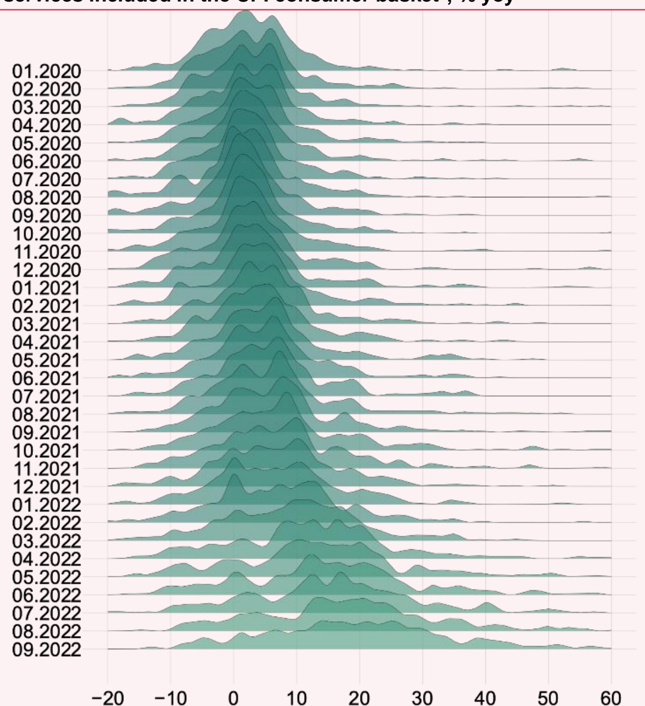
However, administered price inflation will accelerate over the forecast horizon, primarily due to the termination of the moratorium on raising utility tariffs, as financial imbalances build up due to a large gap between natural gas prices for households and market prices. Considering the great social significance of utility prices, their increase is likely to be phased and entail an expansion in social assistance. Further increases in prices for tobacco products, primarily due to higher excise taxes, will bolster the administered price component of inflation.

Box 2. How Changes in Consumption are Factored into the CPI

The consumer price index (CPI) is a widely used indicator that tracks changes over time in the overall level of prices for goods and services that are consumed by households. It is also known that over time, under the influence of many factors (economic, demographic and social), the pattern of consumption changes. In accordance with international standards, to which Ukraine's State Statistics Service also complies, such changes in prices are factored into the composition of weights used for calculating the CPI, through updating these weights (in Ukraine this is done every year, at the start of the year) and through updating the consumer basket (every five years). However, even during one year, consumer behavior changes depending on the current conditions. So do CPI measures take into account more rapid changes in household consumption? The short answer is – partially. This is done by measuring the CPI using chain indices, or dynamic weights. This method involves assigning greater dynamic weights in the CPI to those goods and services that rose in price faster compared to other goods and services over a year, and vice versa. It is precisely this that explains the significant deviations from inflation measured on the basis of its components using static weights, especially when there are considerable variations in price changes for some goods and services. However, the dynamic weight method takes into account only changes in relative prices. Under conditions of significant economic and social upheaval, such as a war or a pandemic, the pattern of consumption changes very quickly, driven primarily by behavioral and structural factors – people trying to spend less money on non-essential goods, the physical absence of certain goods and services, and so on. However, CPI measures based on the updated pattern of consumption during the pandemic indicated relatively minor deviations. Therefore, inflation as measured by the traditional CPI remains relevant even in the face of significant structural changes.

The Ukrainian economy has suffered multiple shocks in the wake of the russian invasion. These include a change in consumer behavior and stronger inflationary pressures. Another consequence of these events was the significant unevenness of price changes for CPI components – prices for some goods and services are rising much faster, while prices for other goods and services are even going down. More specifically, in September 2022, prices for vegetables, fruits, cereals, as well as fuel prices were leaders in terms of annual growth. In contrast, apples were cheaper than last year, while the prices of clothing and footwear have remained practically unchanged.

Figure 1. Distribution of annual changes in prices for goods and services included in the CPI consumer basket*, % yoy



* The horizontal axis is limited to values from -20% to 60% to facilitate visual perception, but a small part of the indices goes beyond this range.
Source: SSSU, NBU staff estimates.

With the range of extreme points of price changes widening quickly (Figure 1), the structure of household spending, which serves as the basis for calculating the CPI, can undergo sweeping change, due to the rapid change in the relative importance of certain goods and services. However, according to the established global methodology, which is most fully explained in the Consumer Price Index Manual: Theory and Practice, maintaining a stable weight structure is an important condition for measuring the CPI accurately. This helps ensure the accuracy, comparability, representativeness and relevance of statistical indicators. Therefore, as a rule, the weight structure is revised once a year. The consumer basket itself is revised once every five years.

Calculating the weight structure is a long and time-consuming process, which includes the collection and generalization of data on household spending. As a result, weights calculated on the basis of spending that occurred two years ago are used to measure the CPI in the current year. For example, the weight structure of 2022 CPI is based on 2020 spending.

All this gives rise to speculation that the traditional CPI does not reflect current inflationary trends, as it does not take into account the effect of price changes on the cost of the consumer basket, and the weight structure itself is already outdated at the time of publication. In fact, in accordance with international standards, spending weights are dynamically updated taking into account price changes that occurred starting from the calculation of the weight structure and to its use to compute the CPI.

Despite common misconceptions, the CPI is calculated on the basis of long chain indices, rather than monthly price changes. Updating weights to factor in price changes is mainly done at the lowest level of aggregation, i.e. at the level of components. Each spending weight is multiplied by its elementary price index for a given period, starting from the base period for these weights. The resulting dynamic weights, updated to factor in price changes, are normalized

so that their sum totals 100%. This procedure adapts the value of the consumer basket to price changes, meaning that it effectively accounts for changes in the amount and patterns of spending resulting from current inflation.

In order to better understand how price changes are factored into the composition of the consumer basket, we will look at how the weight of fuel changes in the CPI depending on changes in fuel prices. To do this, you need to multiply the individual weights of the components by the change in prices, and then normalize the obtained results.

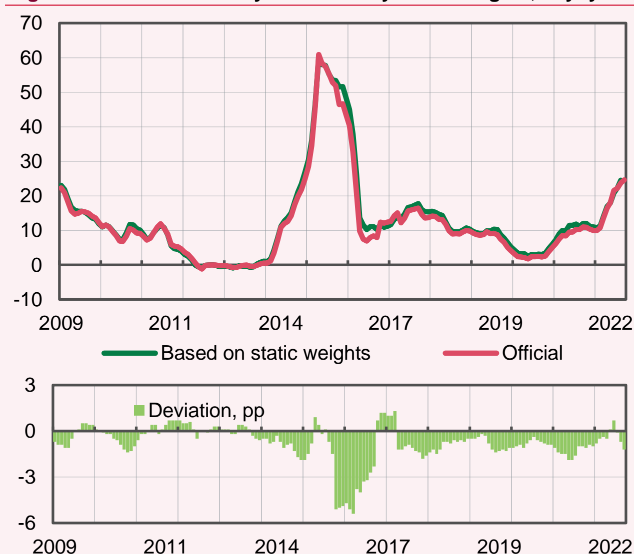
Table 1. Example of updating the weight of fuel in CPI, %

	Fuel	Other CPI components	CPI total
Official weights, SSSU	**2.8**	**97.2**	**100.0**
Price change in December 2021 relative to the whole of 2020	32.0	12.9	13.4
Weights updated for price changes	3.7	109.7	113.4
New normalized weights	**3.2**	**96.8**	**100.0**

Source: SSSU, NBU staff estimates.

As you can see, the actual weight of fuel has increased because fuel prices for the period starting from the calculation of weights for the base period until the present grew much faster compared to other CPI components. This is in line with a real life situation – when prices for some goods rise faster than those for other goods, their spending weight increases.

Figure 2. CPI calculated by static and dynamic weights, % yoy

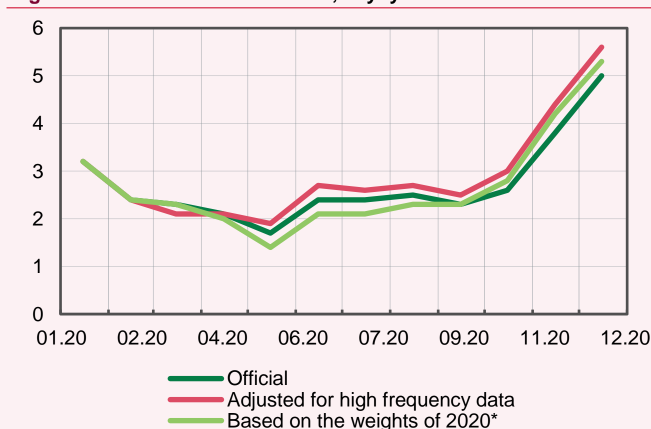


Source: SSSU, NBU staff estimates.

Indexing weights to price changes is a prerequisite for maintaining the relevance and representativeness of the CPI. Thus, using a static weight structure could generate errors, which increased markedly when there are excessive fluctuations in some of the elementary indices. In particular, this happened in 2015–2016, which is mainly attributed to the bringing of utility prices to market levels. At present, despite there being considerable discrepancies in the extent of changes in the prices of goods and services that are used to compute the CPI, the general deviation of the CPI measured using static and updated weights is insignificant, and is multidirectional for different months.

Under conditions of significant economic and social upheaval, such as a war or a pandemic, the pattern of consumption changes very quickly, driven primarily by behavioral and structural factors – people trying to spend less money on non-essential goods, the physical absence of certain goods and services, and so on. Although this affects changes in relative prices, the method of chain indices or dynamic weights is not able to fully capture the effects of structural shocks. At the same time, CPI calculations based on consumption patterns that were updated using high-frequency data during the pandemic (see the Box *Covid Inflation in Ukraine* in the January 2021 Inflation Report on pages 13 and 14) indicate relatively minor deviations – estimated “Covid" inflation exceeded official inflation by only 0.2 to 0.6 pp. The retrospective use of the 2020 CPI structure (used to compute the 2022 CPI) with price indices for that same year generally supports this statement. In late 2020, inflation was only 0.3 pp higher than the official figure and was close to the NBU’s analytical calculations.

Figure 3. "Covid" inflation in 2020, % yoy



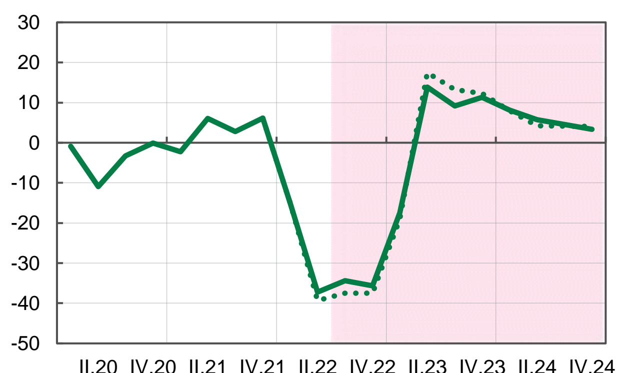
* Used in CPI computation in 2022.
Source: SSSU, NBU staff estimates.

Therefore, using the spending patterns of previous periods does not significantly distort CPI measures in the current period. What is more, the applicable methodology also accounts for changes in relative prices for certain inflation components. As a result, inflation measured through computing the traditional CPI remains relevant even in the face of significant structural changes.

2.2. Demand and Output

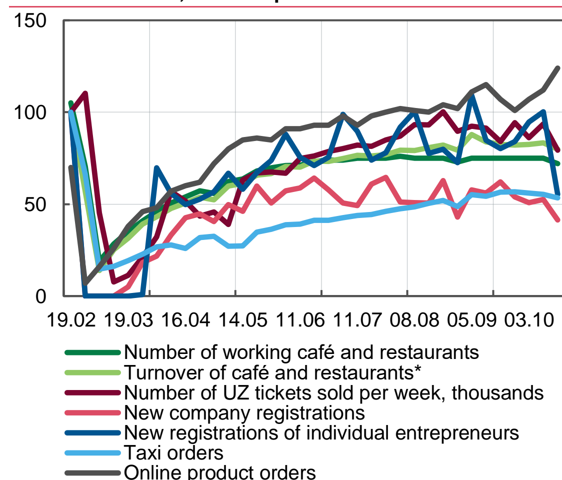
- After seeing its deepest decline at the start of the war, the Ukrainian economy is gradually reviving thanks to the adaptation of businesses and households to wartime conditions, reestablished logistics, and improved business and consumer sentiment. However, the economic downturn in 2022 will be significant (dropping by almost a third).
- The expected decrease in security risks from the middle of 2023 will be a key factor in the future economic recovery. Growth will be supported by a loose fiscal policy and the full recovery in Black Sea port operations. In spite of that, GDP will remain below its potential level due to the repercussions of the war. In turn, potential GDP will remain significantly below its pre-war level because of a reduction in the workforce and the destruction of physical capital.

Figure 2.2.1. Real GDP, yoy changes, %



Source: SSSU, NBU staff estimates.

Figure 2.2.2. High-frequency indicators of economic activities in the service sector, % to the pre-war level



* Deflated by CPI.

Source: Opendatabot, Poster, NBU staff estimates.

Despite the hostilities, Ukraine's economy is recovering, although risks for all sectors remain high

According to the flash estimate from the State Statistics Service of Ukraine, in Q2 2022 real GDP contracted by 37.2% yoy, which was slightly better than the July 2022 Inflation Report predicted. According to the NBU's estimates, recovery continued into Q3, slowing the decline in real GDP to 34.4% yoy.

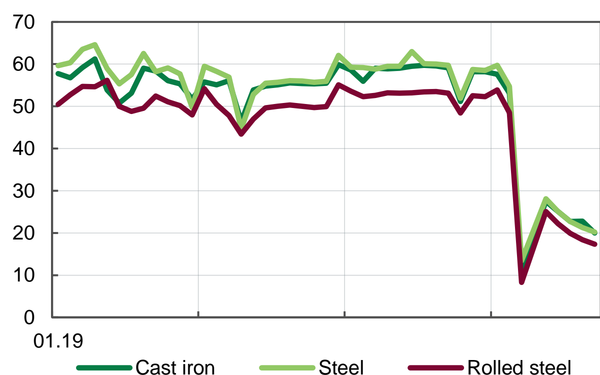
The liberation of occupied territories and the opening of the "grain corridor" were mainly responsible for the economic revival. What is more, even in the face of the severance of many links, the loss or damage of facilities and infrastructure, and a reduction in the workforce due to mass migration, the resilience and adaptability of economic agents to the shocks of war exceeded expectations.

In Q3, a lot of efforts were made to address logistical problems, including the launching of the "grain corridor" since August. This shored up transportation and the wholesale trade. At the same time, relocated companies recommenced production, and there was a rebound in the processing of agricultural products and in other manufacturing subsectors, including in those focused on meeting the country's defense needs. The financial sector is also recovering. There were signs that consumer demand is becoming stronger, which, together with the return of some migrants and IDPs to their places of permanent residence, propped up the retail trade and the services sector. Another contributor was the seasonal revival of economic activity, including a rather successful (taking into account the war conditions) harvest campaign. This pushed up the capacity utilization rate.[4] If the scale of destruction and security risks (including those to energy infrastructure) do not increase, the economy will continue on the path to recovery in late 2022. This, among other things, is evidenced by improved business and consumer sentiment.

However, logistical hurdles, especially those related to shipping goods for exports, remain a significant restraining factor, in particular for the metallurgy and mining industries, which are operating well below the pre-war capacity

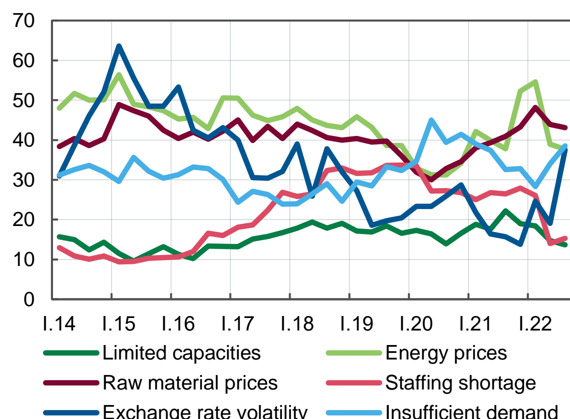
[4] According to a survey conducted by the NBU, in Q3 2022, the share of companies that are operating at almost full capacity was 47.9%, up from 46.5% in Q2. Other surveys have produced similar results: a study of SMEs conducted by Advanter in mid-September showed that the percentage of businesses that had stopped operating was at 11% – the lowest figure since the start of the full-scale war. At the same time, the share of companies that stepped up production was 8%, compared to 5% in July. A study conducted by the Institute for Economic Research and Policy Consulting also indicates there has been a decrease in the number of companies that are either non-operational or are operating at less than 50% of their capacity. Almost 70% of businesses are operating at 50% to 99% of their capacity.

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



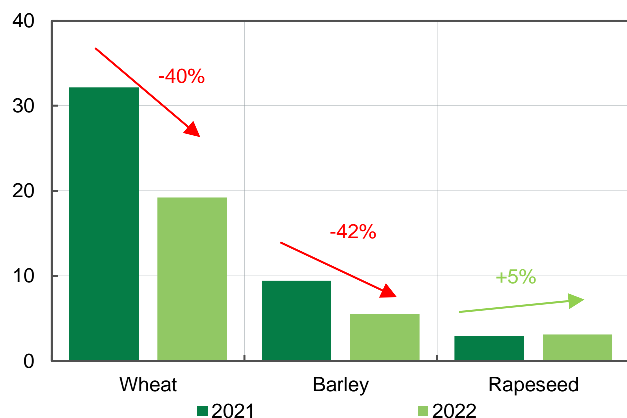
Source: Ukrmetalurgprom.

Figure 2.2.4. Assessment of the factors that will restrain production growth over the next 12 months, % of answers



Source: NBU.

Figure 2.2.5. Harvest volumes of selected crops as of 30.09.22, million tons



Source: SSSU, Ministry of agriculture of Ukraine.

utilization rate.[5] Domestic demand also remains depressed due to changes in consumer behavior and a large number of migrants. Demand for housing remains low (10% of its pre-war level), despite construction being propped up by the budget-financed restoration of infrastructure and the construction of new grain terminals, mainly in western and central regions.

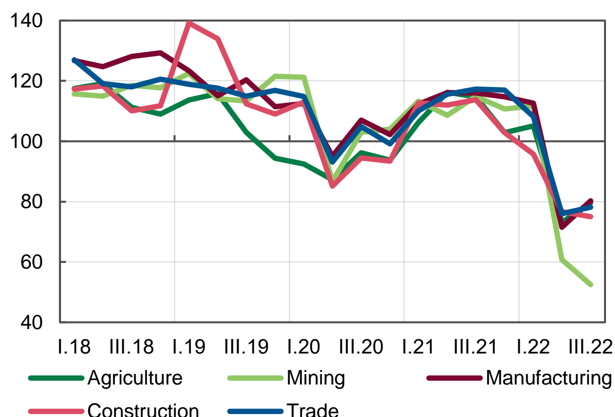
In winter, economic activity will also be dampened by the damage done to energy infrastructure and the forced reduction in electricity consumption due to russian missile attacks, and the disconnection of Zaporizhzhia Nuclear Power Plant from the Ukrainian power grid. The energy consumption restrictions apply to both households and companies, particularly energy-intensive ones.[6] The NBU estimates that Ukraine's gas and coal stocks will be at the minimum sufficient level at the beginning of the heating season (taking into account the fact that consumption is declining faster than production, and that the country is expecting imports, in particular from the United States). However, if the weather is colder than normal (although the Ukrainian Meteorological Center currently predicts a moderately cold winter), or if more damage is done to energy infrastructure, in order to balance the system, it will probably be needed to cut power off across the entire country during peak hours (as was the case after missile attacks), while power shortages could affect more than 15% of Ukrainian consumers. Therefore, difficulties in the energy sector will deepen the decline in real GDP in Q4.

The negative contribution of agriculture to change in real GDP persists (it will be about 4 to 5 pp in Q3 and Q4). This year's grain harvest was significantly lower compared to the previous year's record harvest, which was to be expected. This resulted mainly from a noticeable reduction in harvested areas, because of the occupation of some territories, mining, and shelling. On the other hand, the yields of early crops (wheat, barley and rape), which have already been harvested, even slightly exceeded the five-year average (for 2016–2020, excluding last year's record harvest). The rapeseed harvest was somewhat higher than last year, which confirms experts' views that agricultural producers are shifting to crops with higher profitability and lower storage and transportation costs. The loss of the vegetable harvest from the occupied southern territories was partially offset by an increase in vegetable production in other regions. Due to the rainy weather in September, the harvesting of late and technical crops is progressing more slowly than last year, which will affect the yoy figures for the agricultural sector in Q3. It is also delaying the sowing of winter crops and increasing risks to the next year's harvest.

[5] After a significant reduction in the capacity utilization rate in July, some metallurgy companies are still operating at minimum capacity (15% of their pre-war level, with mining companies operating at 25% of their capacity) in the expectation that the situation will improve, or are on the verge of shutting down altogether. Other companies are establishing new logistics routes and shifting to new types of products (such as, pipe companies servicing the growing oil and gas sector and suppliers of semi-finished products to European companies). The destruction of energy infrastructure in October and power shortages are also forcing companies to limit production.

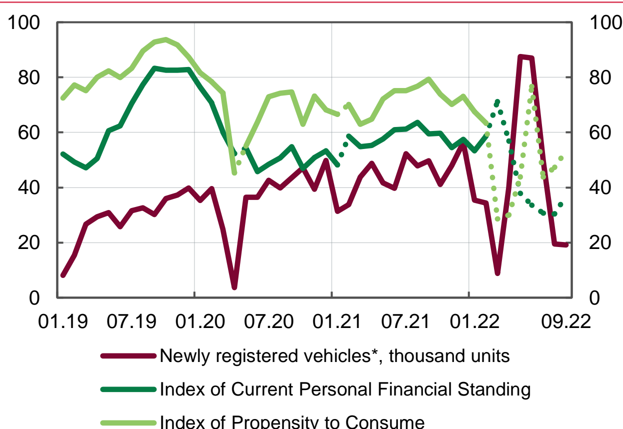
[6] More specifically, a russian missile attack in early October destroyed about 30% of the country's power-generating facilities, as a result of which some metals companies and other consumers said they were suspending their operations or taking other measures to decrease their electricity consumption.

Figure 2.2.6. BEI for base sectors, %



Source: NBU.

Figure 2.2.7. Selected indicators of consumer demand

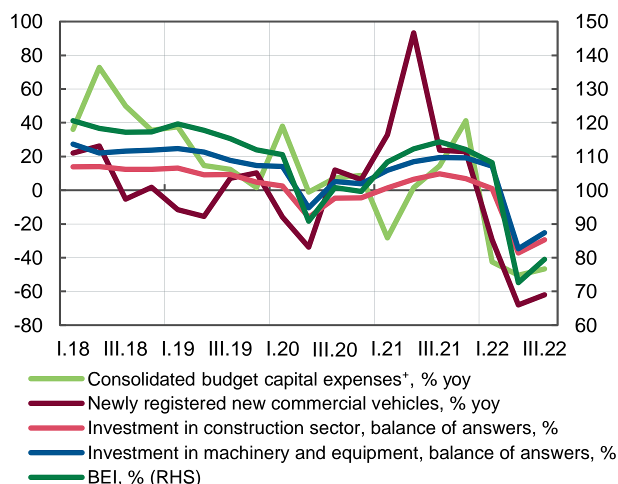


* * New and used ones, excluding cars imported with violation of customs regulations.

** Dotted line – change of the survey method from face-to-face to the phone interview.

Source: Info Sapiens, Ukravtoprom.

Figure 2.2.8. Some indicators of investment demand



Sorce: SSSU, STSU, NBU, Ukravtoprom.

A decrease in security risks will revive domestic demand and exports, while also being the main driver of economic growth

In 2022, the Ukrainian economy will shrink by almost one third. Domestic demand will make the largest contribution to the decline in real GDP in the current year. Thus, the rapid drop in real household income caused by the war, which is only partially being restrained by the expansion of social assistance and large payments to the military (read more in *Labor Market and Household Income* on page 23), is primarily responsible for the decline in private consumption (in 2022, it is expected to contract by about 23% compared to last year). Other factors included a change in consumer behavior, in particular its shifting to meeting only the most urgent needs, and the limited supply of certain goods and services due to the destruction of warehouses, stores, production facilities, and the severing of logistical ties. The rapid rise in prices also had a negative impact on consumption.

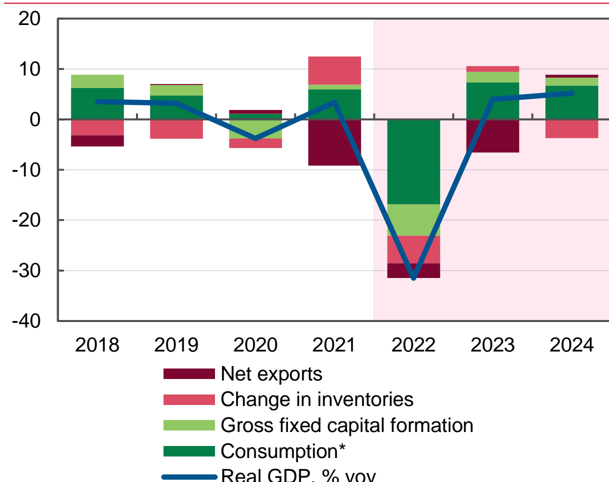
In 2022, investment, primarily private investment, will slump the most of all GDP components (by 50%), dragged down by the shocks of war. At the same time, budget expenditures on security and defense, as well as on rebuilding infrastructure, are supporting investment demand and consumption by the general government (read more in *Fiscal Sector* on page 27).

Export volumes declined more slowly in Q3 than in Q2 thanks to the functioning of the “grain corridor.” At the same time, the drop in import volumes accelerated due to low gas imports and logistical hurdles (read more in *Balance of Payments* on page 30). These same trends will persist until the end of the year. With both exports and imports falling, the contribution of net exports to real GDP in 2022, despite remaining negative, will decrease markedly compared to last year.

Despite the partial adaptation of business and households to the war, the great losses of production and human potential will significantly hamper the recovery of the Ukrainian economy in the medium term. Aggregate demand is expected to remain subdued in H1 2023. However, the expected decrease in security risks from the middle of 2023 will be a key factor in the future recovery of the Ukrainian economy (4% to 5% annually). Rising consumer demand and reviving investment activity on the back of reestablished production and supply chains and persistently large fiscal stimulus will be the main drivers of economic growth.

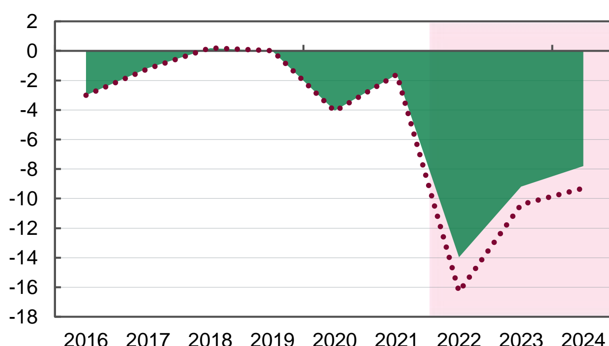
In 2023, private consumption will grow by 8%, thanks to a gradual rebound in demand and substantial international aid flowing into the economy and being distributed via the budget. The effect of international aid is expected to decrease after that, but lower security risks will significantly improve consumer and business sentiment. This, together with the return of Ukrainians from abroad and the release of pent-up demand, will support the stable growth of private consumption. Another contributor to this will be the gradual improvement in labor market conditions (read more in *Labor Market and Household Income* on page 23).

Figure 2.2.9. Contributions to annual GDP growth by final use, pp.



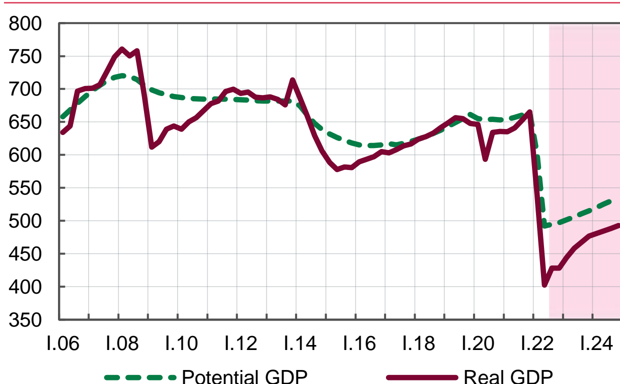
* Including non-profit institutions serving households.
Source: SSSU, NBU staff estimates.

Figure 2.2.10. Output gap, % of potential GDP



Source: NBU staff estimates.

Figure 2.2.11. Real and potential GDP, sa, at 2016 constant prices



Source: SSSU, NBU staff estimates.

In the post-war period, investment will rise at the fastest pace (16% to 25% annually) due to the need to recover substantial losses of infrastructure and production facilities. Government investment will play an important role both in rebuilding infrastructure and in supporting the country's defense potential. Private investment will be restrained due to persistently high risks. However, the country's investment attractiveness will gradually improve as European integration reforms pick up.

Next year, both Ukrainian exports and imports are expected to return to growth. Although the risk of a global recession has already materialized, its impact on the Ukrainian real sector will be limited as long as hostilities continue and there is not full access to the country's ports. The revival of investment and consumer demand will be mainly covered by imports (in particular, imports of machinery and equipment). Exports growth will be fueled by both increased domestic production on the back of lower security risks, and by reestablished supply chains, including transportation by sea. The faster recovery of imports compared to exports will widen the negative contribution of net exports next year. However, this contribution will turn positive in 2024, thanks to the Black Sea ports fully recommencing operations.

The war has resulted in a significant loss of potential GDP and a record-high negative output gap, which will not be closed in 2023–2024 because of the great scale of the losses

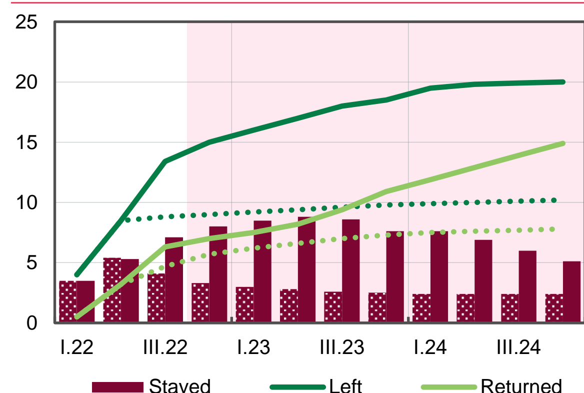
The structure of the economy has changed dramatically since the start of the full-scale russian invasion. The destruction of, and damage to, production facilities, disrupted logistical and technological chains, the occupation of territories and the high rates of labor force migration abroad have considerably reduced potential GDP and the economy's productive capacity. As in previous crises, the economy is adapting to new realities. Potential GDP will return to growth as more effective supply chains are set up, migrants come back home, new digital technologies penetrate all spheres of activity, and European integration intensifies. However, potential GDP will not rebound to its pre-war level over the forecast horizon because of the magnitude of the losses and the recovery rate of investment not being fast enough.

Real GDP fell faster than potential GDP because of the substantial losses of domestic demand, a weak labor market, temporary logistical difficulties, and the loss of export opportunities. This created a large negative GDP gap. The country's low investment attractiveness, coupled with high security risks, will dampen economic growth, as a result of which the substantial negative GDP gap will persist. This same factor will reduce the attractiveness of domestic assets and put downward pressure on the hryvnia's exchange rate, thus weakening disinflationary pressures from the negative output gap.

2.3. Labor Market and Household Income

- The number of persons displaced from and within Ukraine has been rising as the war grinds on. People are expected to start coming home in greater numbers in H2 2023 as security risks ease. At the end of 2024, however, the NBU assumes there will still be about five million Ukrainians abroad, causing a proportionate decrease in the labor force and posing risks to post-war recovery.
- Despite the gradual revival of economic activity and labor demand, unemployment will remain high due to the destruction of production facilities and structural mismatches in the labor market.
- Salaries have sharply decreased this year, but household incomes are being supported by social benefits and military allowances. Going forward, real wage growth will resume, but it will be limited by high inflation and lower-than-pre-war productivity.

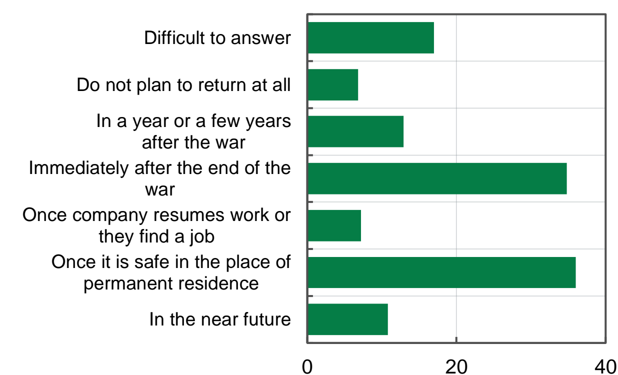
Figure 2.3.1. Number of migrants staying abroad, millions (at the end of the quarter)



* Shaded columns and dashed lines indicate the preliminary forecasts published in the July 2022 IR.

Source: UNHCR, NBU staff estimates.

Figure 2.3.2. Plans to return to Ukraine, % of answers



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

Security risks continue to loom large, leading to a further increase in the number of migrants: significantly more Ukrainians will remain abroad than previously expected

Between 24 February and 30 September, 13.4 million individuals left Ukraine, and 6.3 million returned, according to UN data. IOM data shows that the number of IDPs also remains significant: almost 7 million people as of late August, including 3.2 million with official IDP status.

The number of returns from abroad was almost in line with the estimates published in the July 2022 Inflation Report, but the number of those who left was significantly higher. The profile of a migrant has remained practically unchanged since the full-scale war broke out.[7] Although migrants encounter significant financial problems and language barriers, the persistence of high security risks is the main reason for the significant number of departures and delayed returns.[8] Another important reason is the lack of work in Ukraine due to the deep economic recession. Some of the migrants are in russia. They could have been taken there forcibly and have difficulty returning.

Over time, increasingly more migrants are adapting to life in their host countries: currently 4.2 million people have been granted temporary protected status or similar status in EU[9] countries, which facilitates access to social protection and employment systems. Many of the migrants' children attend local educational institutions,[10] some adults have found work, etc.[11] The share of those who are planning to return in the near future remains low, although the overall willingness to come back is increasing.[12]

[7] A Razumkov Center survey shows that 93% of those who have left are women, 74% have children, 71% are aged 30–50, the most productive age, 65% left in March, and 82% have received temporary protected status. According to a UN survey, 87% of the refugees are women and children. By ILO estimates, 3 million of those who remain abroad are of working age.

[8] Only 11% plan to come home in the near future, 35% expect to return only after the end of the war, and another 36% when their place of residence becomes safe to live, according to a Razumkov Center survey. An NBP survey shows that 59% will return within the next 12 months, another 20% in a year or more, 16% plan to stay in Poland for good, and 6% will move further west within a year. According to an EWL group survey, only 54%–58% plan to return from Poland, the Czech Republic, and Romania, while a Gradus survey suggests that 62% expect to return.

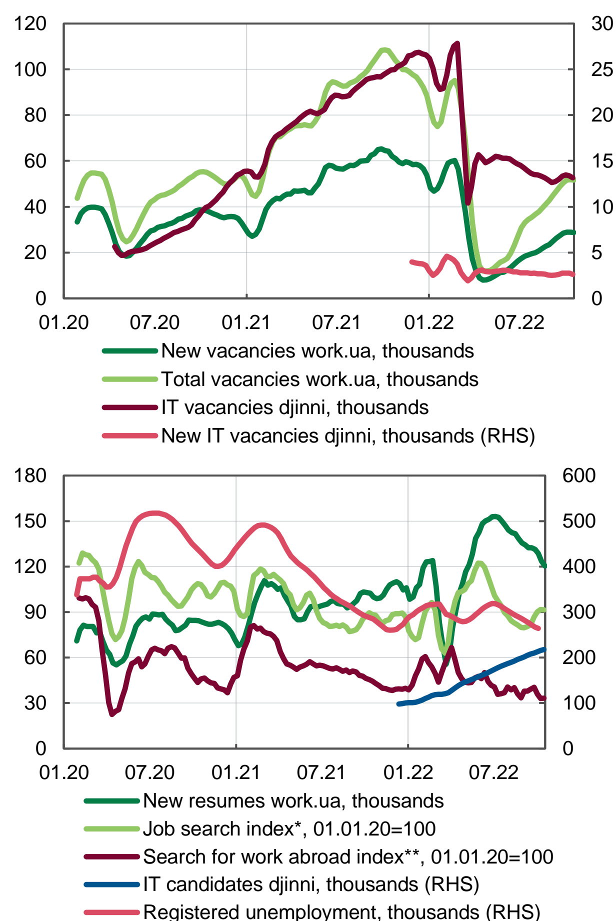
[9] According to reports, the EC plans to extend by a year the rules for accepting and providing protection to Ukrainian refugees, at least until March 2024.

[10] According to a UN survey, 73% of migrants with children (aged 5 to 17) say that their children study in local schools, but that only 18% of them follow the Ukrainian curriculum.

[11] A UN survey says that 28% of the refugees are employed (down from 63% prior to full-scale war). Some 35% of respondents named salaries or other income from work as one of their main sources of income. This is slightly less than the share of those who rely on social assistance for their primary source of funds (47%). For EU countries bordering Ukraine, the gap is even narrower: 44% and 52%, respectively. Ukrainians have become the largest group of foreign workers in Slovakia. At the same time, a significant number have taken jobs below their educational and qualification level, according to a study by EWL group.

[12] According to a survey by the Razumkov Center, in March, almost 10% did not plan to return, and in August, only about 7% did not expect to return. According to a UN survey, in July, 16% planned to return immediately, and in September, this percentage was down to 13%. A Gradus survey shows

Figure 2.3.3. Labor force supply and demand (4-week moving average), thousands

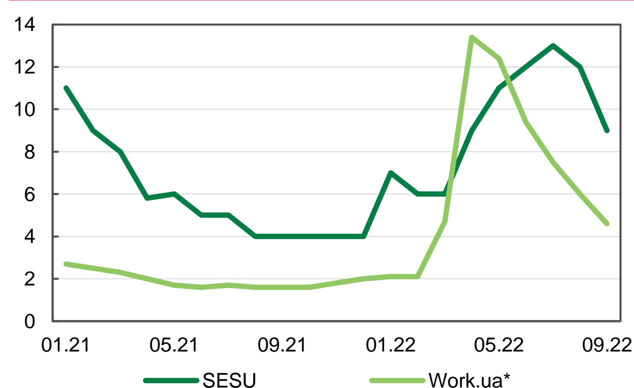


* Includes job search queries in Ukrainian and Russian.

** Includes job search requests in Poland, the Czech Republic, russia and Germany in Ukrainian and Russian made from the territory of Ukraine.

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

Figure 2.3.4. Number of applicants for one vacancy, persons



* Average per month.

Source: SESU, work.ua, NBU staff estimates.

Based on the current situation and high security risks, which will persist at least until the middle of next year, as well as growing risks for the 2022/2023 heating season, the estimated number of migrants who will remain abroad has significantly increased.

After security risks moderate, the number of migrants returning to Ukraine will increase. At the same time, people's movement abroad may become more active, including due to the goal of family reunification outside Ukraine. Seasonal work trips will also continue. The rollback of social assistance that some host countries have already announced might also increase the flow of migrants back to Ukraine. At the same time, a significant slump in business activity, weak labor market conditions, a reduction in income this year, and a slow recovery in the years ahead may stimulate additional departures in search of earnings. Therefore, the risks of Ukraine sustaining further irreparable demographic losses remain significant, potentially complicating its post-war reconstruction.

The labor market has currently stabilized at a low level. Unemployment will remain high for a long time due to the war's effects and significant structural mismatches

Although business activity has slightly picked up, most companies are still operating well below pre-war capacity utilization level. The declining output and earnings of businesses and expectations of a protracted war are interfering with employers' plans to hire more workers, according to data from job search sites. At the same time, companies are not experiencing a shortage of skilled workers.[13]

As a result, Ukraine's labor market remains employer-dominated. Although the number of vacancies has increased compared to March–April,[14] it still stands at between a half or one-third of the pre-full-scale-war level (depending on the line of business). Regional and sectoral mismatches persist. Specifically, Kyiv in September accounted for about 30% of all current vacancies in Ukraine, according to data from job search sites. Most vacancies are now in services, blue-collar jobs, and trade.

The growth in the number of resumes has slowed slightly, restrained by a revival of labor demand, mobilization, and migration abroad. However, the number of resumes is still significantly higher than last year (1.5 times the level of last year, according to job search sites). As a result, the resumes to vacancies ratio is declining, but still significantly exceeds the pre-war level. This shows that Ukrainians are actively looking for work and confirms the NBU's assessment of the high level of unemployment.

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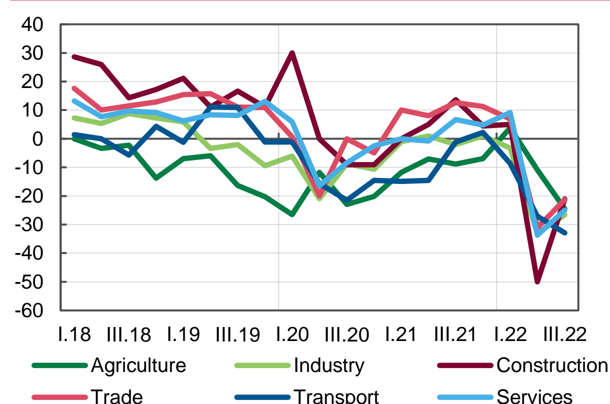
that the share of those who want to return at the first opportunity is very volatile and probably depends on the security situation: in May, it was 73%; in early September, it fell to 62%; and in late September, it increased to 78%. According to a Rating survey, in October, 85% of refugees said they wanted to return, while the share of those planning to return in the near future increased to 21% (up from 16% in July), and the percentage of those not planning to come back shrank to 6% (down from 10% in July).

[13] In Q3 2022, only 15% of respondents in an NBU survey complained about a lack of qualified employees, compared to 28% at the end of 2021. An IER survey shows that the lack of labor is becoming less and less of a problem for businesses. In May, 39% of respondents complained about there being not enough workers, and in August only 13% did.

[14] In September, the number of vacancies listed on OLX Work was down to 54% of the pre-war level of February 2022.

Figure 2.3.5. Expectations regarding the change in the number of workers in the next 12 month, by sector (balance of responses), %

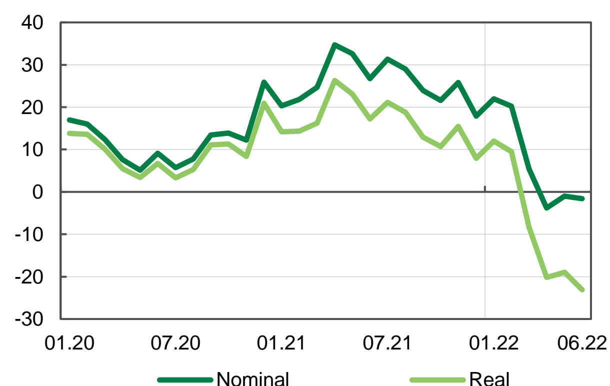


Source: NBU.

Figure 2.3.6. ILO Unemployment sa, %

Source: SSSU, NBU staff estimates.

Figure 2.3.7. Average salary in Ukraine, from which insurance contributions were paid, % yoy



Source: PFU, NBU staff estimates.

The seasonal uptick in the economy and the labor market's adjustment to new conditions did not lead to a significant increase in employment in Q3 2022. According to business surveys, the number of employees has stabilized and will not change in the short run,[15] for the most part. Household surveys have shown that the unemployment rate has also been largely unchanged since May, as has the share of those saying they have lost their job. The number of employed individuals is rising very slowly.[16] This indicates that the labor market has settled at an equilibrium that is much lower than before the war, with high unemployment, low employment, and low wages. Even in IT, the resumes-to-vacancies ratio is increasing (the number of vacancies is decreasing, while the number of resumes is steadily increasing), which may be attributable to the relocation of employers abroad (according to a survey, 42% of IT firms have relocated in whole or in part).

Going forward, the unemployment rate will gradually decline, but remain above its natural rate due to the long-term fallout from the war. The revival of business activity will stimulate growth in labor demand, but structural mismatches will remain in the labor market for a long time. As part of the skilled labor force has relocated abroad, certain types of economic activity, such as construction, may see a noticeable shortage of workers. This will push salaries higher in the relevant sectors. However, labor demand from sectors where production facilities have sustained the most damage due to the war will remain relatively weak. This will slow the reduction of the unemployment rate. Labor market mismatches that existed even prior to the war will persist.[17] Also, the weak financial standing of businesses and the slow recovery of private investment will play a restraining role in the short run.

The war has caused a decline in household incomes. Going forward, real wages will rise as some industries demand more labor, but rather slowly due to sectoral mismatches

The number of job seekers significantly exceeds available jobs, and employed workers have low confidence in their ability to retain stable income and jobs.[18] This forces job seekers to accept jobs outside of their profession and dial down their salary expectations.[19] When the financial resilience of businesses is reduced, they offer vacancies with a lower salary level or do not raise the salaries of existing

[15] According to IER surveys, both layoffs and hiring have been declining. An NBU survey shows that the vast majority of businesses (60%) do not plan to change the number of their employees in the next 12 months, 33% expect to lay people off, and only 7% plan to hire. An EBA survey has shown similar findings: most businesses (53%) plan to keep the number of their employees unchanged in 2023. More businesses expect to cut staff numbers (28%) than to increase them (19%). According to a Payoneer survey of SMEs, 62% of them do not plan to do any hiring this year.

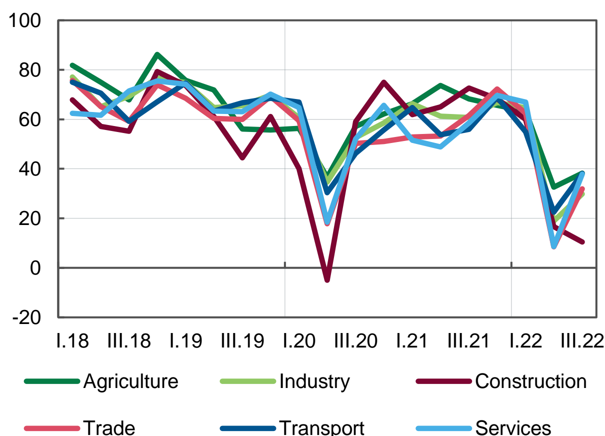
[16] Just over 30% of respondents in Gradus surveys are unemployed. Since May, their share has remained almost unchanged. The number of employed people has been rising moderately on account of some people having a job but not actually working. There has been no improvement for the people who lost their job at the start of the full-scale invasion. They accounted for about 30% of those who were unemployed between May and September. In October, 34% were not working, a Rating survey shows, and about 33% had lost their jobs, according to a KIIS survey. The Rating survey also shows that 28% of private businesses have shut down.

[17] This is specifically evidenced by the very low level of employment among Ukrainian university graduates before the war, of about 60%, compared to almost 85% in EU countries.

[18] According to a Gradus survey, almost half (49%) of respondents receive income but are not sure what they will earn in the future. Even among IT specialists, 40% fear being dismissed.

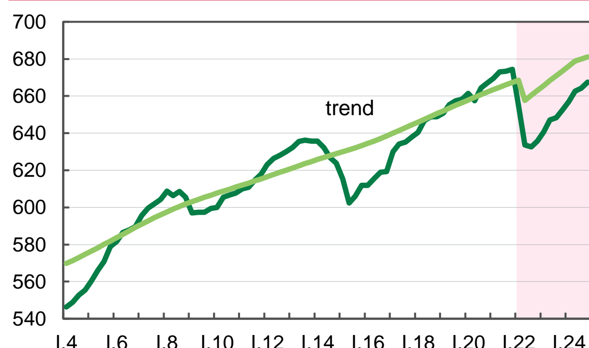
[19] Some 80% of the job-seeking respondents surveyed by Gradus are willing to work outside their profession. A grc.ua survey shows roughly the same number (71%). Two-thirds of Ukrainians are ready to lower their salary expectations if they have difficulties in finding employment , according to data from grc.ua.

Figure 2.3.8. Expectations regarding changes in labor costs per employee in the next 12 months by type of activity (balance of answers), %



Source: NBU.

Figure 2.3.9. Real wages, level (logs)



Source: SSSU, NBU staff estimates.

employees. As a result, nominal wages in the private sector continue to decline, which in the current conditions of high inflation translates to a significant decrease in real wages. Although the loss of labor income is partially compensated for by social benefits from Ukraine's government and international organizations, as well as military allowances, the standard of living of households has significantly deteriorated,[20] restraining consumer demand.

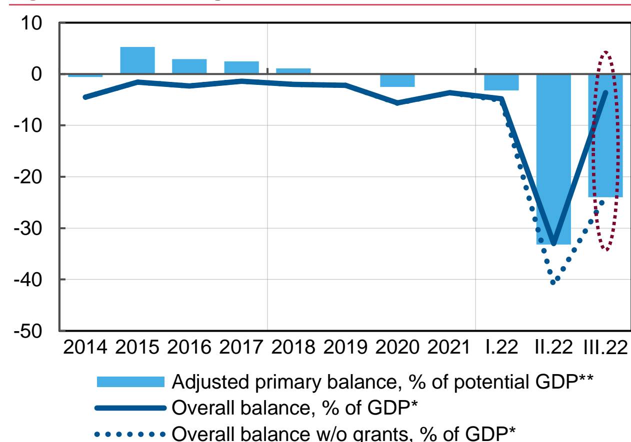
As before, we estimate that nominal wages will decrease by 12%–13% this year, primarily due to decreases in the private sector. In real terms, wages will fall by a quarter. Going forward, the economic recovery will be accompanied by a revival of demand for labor and by significant mismatches and shortages of skilled labor in certain sectors. Nominal wages will return to high rates of annual growth. In 2023, they will exceed their pre-war level, but in real terms they will grow quite slowly due to high inflation. At the same time, according to the draft State Budget for 2023, the growth in social benefits will be restrained, matching the pace of minimum living allowance increases. Going forward, social benefits will rise at a higher rate, driven by the growth in budget resources.

[20] As of August 2022, a Rating survey shows, almost 70% of Ukrainians said that they had suffered material losses due to the war, and 10% said that their housing had been destroyed or damaged. The need for money remains the greatest (Gradus survey). Power and water supplies are also lacking (KIIS). At the same time, the number of those whose existing savings will last less than a month is increasing (51% in September compared to 40% in March, according to a Rating survey). The World Bank estimates that the poverty rate in Ukraine has increased tenfold due to the war, to 25%, up from the pre-war level of 2%, and that it may reach 50% by the end of 2024.

2.4. Fiscal Sector

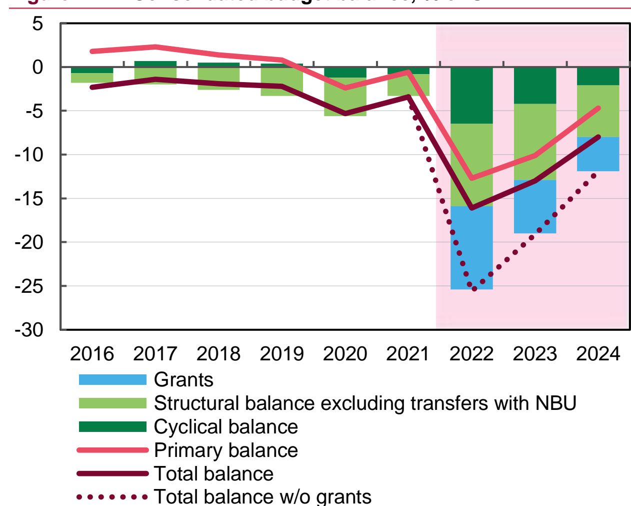
- Fiscal policy has never been more accommodative, and it will remain so until the end of the forecast period. This approach supports the economy during wartime and will facilitate recovery as security risks abate. The budget deficit, excluding grants, will narrow gradually to 12% of GDP in 2024, down from 25% of GDP in 2022.
- International support will remain the main source of financing to meet budget needs. Along with an increase in market borrowing, this will make it possible to completely roll back the monetary financing of the budget deficit from 2023 onwards.
- The economic slump, significant budgetary needs, and the adjustment of the hryvnia exchange rate have led to a rapid increase in the public debt to GDP ratio. However, it will remain below 90% on the forecast horizon thanks to the significant amount of grants.

Figure 2.4.1. General government fiscal balance



* Overall balance is the consolidated budget balance, taking into account loans to the Pension Fund 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, and a negative value indicates expansionary fiscal policy.
Source: STSU, NBU staff estimates.

Figure 2.4.2. Consolidated budget balance, % of GDP



Source: STSU, SSSU, NBU staff estimates.

With the support of international partners, Ukraine will continue to pursue a stimulating fiscal policy both in wartime and afterwards

This year's fiscal policy has been ultra-loose. This is evidenced by a significant negative primary balance after adjusting for the economy's cyclical position. A certain narrowing of the deficit in Q3 reflects slightly better revenues, as well as increasing international aid. International financial assistance has become the main source for meeting significant budgetary needs[21] as the war wears on. In Q3, grants (USD 7.8 billion) gained special importance as a source of revenues and exceeded 40% of state budget revenues (accounting for more than a quarter of revenues since the beginning of the year). Another reason for the narrowing of the deficit is the partial cancellation of tax benefits and preferences. However, a number of tax incentives have been retained[22] to support businesses. At the same time, significant budget expenditures have ensured the defense capability and supported the population.

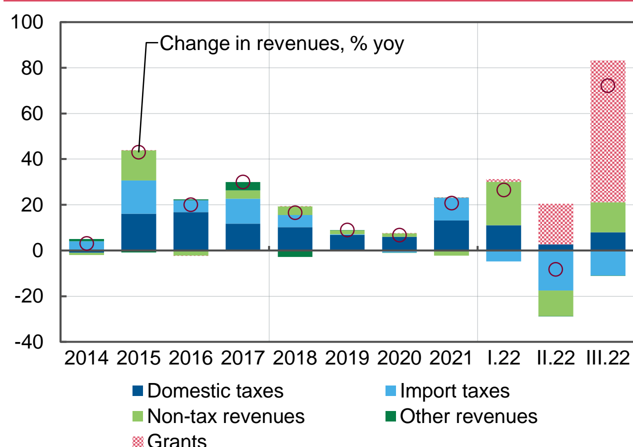
The consolidated budget deficit in January–September reached a historic high (over UAH 407 billion, and almost UAH 750 billion excluding grants). With the tax base shrinking and budgetary needs being significant, the deficit in 2022 will be about 16% of GDP (more than 25% of GDP excluding grants). A significant budget deficit creates a fiscal impulse that mitigates the impact of russian aggression on the economy in 2022 and lays the groundwork for future recovery. Because of low revenues and high expenditures, the deficit will also be significant in 2023 (19% of GDP). From 2024, the deficit is expected to narrow significantly (to 12% of GDP) to stabilize public debt. However, consolidation will be moderate, and the fiscal policy will remain stimulating in the years ahead, to facilitate the post-war economic recovery and to support the population. International financing from partner countries will remain a significant source of funds for meeting government needs and maintaining macrofinancial stability in the future. This forecast takes into account the new program of cooperation with the IMF.

The adaptation of economic agents to new conditions, coupled with the partial cancellation of tax benefits, has contributed to better tax revenues. Going forward, they will be driven by economic recovery

As expected, tax revenues in the first nine months of 2022 came in (5.5% yoy) lower than last year. In Q3, however, the

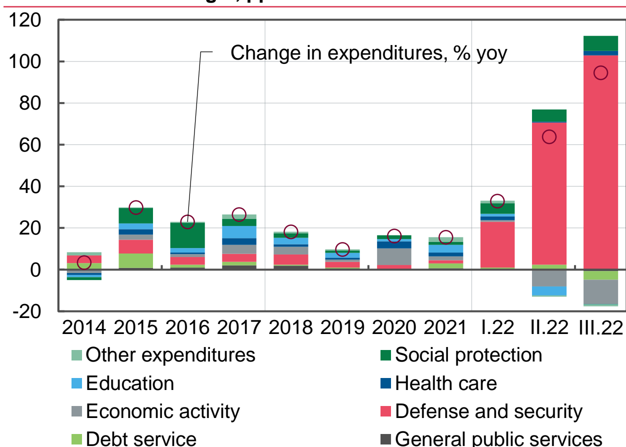
[21] Excluding grants.
[22] The option to switch to a simplified taxation system, the abolition of excise taxes, the reduced VAT on fuel, and more.

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



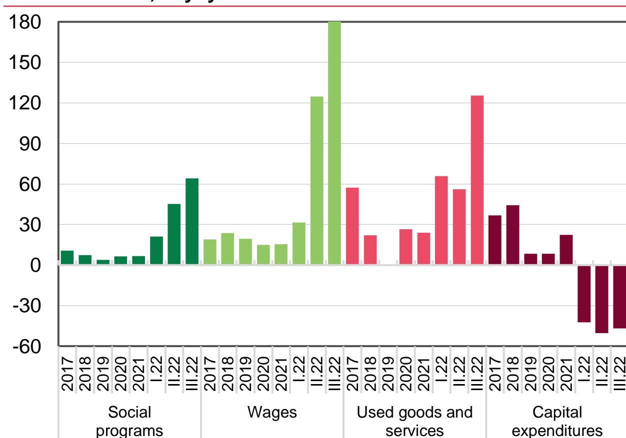
Source: STSU, NBU staff calculations.

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



Source: STSU, NBU staff calculations.

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



Source: STSU, NBU staff calculations.

situation improved somewhat, and the reduction in tax revenues decelerated (to 3.5% yoy). This was facilitated by both economic factors, in particular the gradual revival of business activity, and administrative decisions. The latter included the payout of significant military allowances, the receipt of tax payments that were deferred at the start of the full-scale war, and modest VAT refunds. Inflationary and exchange rate effects also had an impact. Another important factor was the cancellation of some tax benefits and breaks, primarily those related to imports. Thus, the reduction in revenues from taxes on imported goods slowed to 34% yoy in Q3 from 65% yoy in Q2, and the tax revenues to imports ratio increased in Q3 to almost 18% (up from 12% in Q2).

In 2022, tax revenues are expected to decline, primarily due to the narrowing of the tax base and the effect of certain tax preferences. In future, tax revenues are expected to resume growing at a high pace as the economy recovers. The recovery will in particular be driven by the revival of private consumption, including due to the return of people from abroad after security risks moderate. A highly inflationary environment will also fuel an increase in budget revenues.

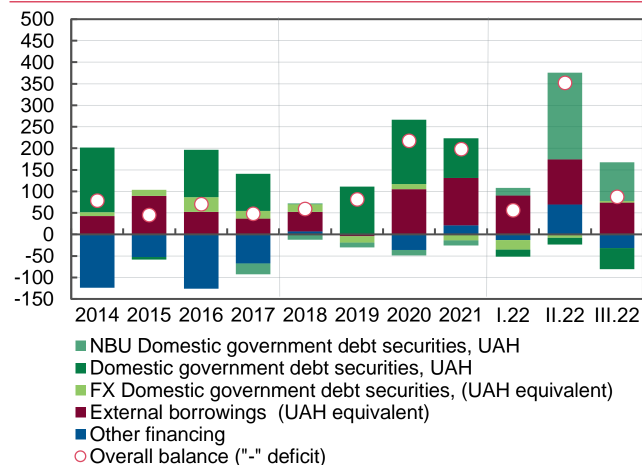
Spending will rise to sustain defense capabilities and support consumption

Defense and security remain priority areas of government spending. The share of defense in the total expenditures of the consolidated budget expanded to 36% in January–September, up from about 7% in 2021. Social expenses were also high, specifically under a number of programs (payments to IDPs, some types of social assistance, and Pension Fund support). Expenses on the compensation of employees increased rapidly, driven primarily by military allowances. Education and healthcare expenditures also rose.

At the same time, areas such as environmental protection, culture, and public administration were financed sparingly under wartime conditions of limited resources. Debt servicing costs also declined thanks to deferment of external public debt repayments that was previously agreed with investors. This freeing up of resources made it possible to slightly increase capital expenditures, in particular on the restoration of damaged infrastructure, although in annual terms remains significantly smaller than last year. The state-funded rebuilding of infrastructure supported investments, while substantial military allowances, coupled with social programs, bolstered consumer demand.

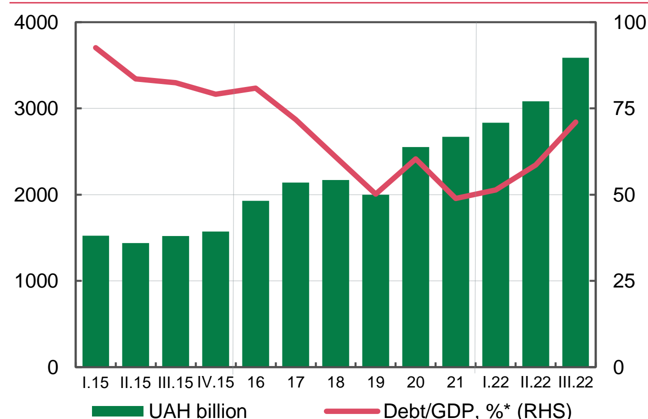
Defense and security spending will exceed all other expenditure items until security risks abate. This will be the main driver of the almost 50% increase in total consolidated budget expenditures in 2022 and their growth by 13% in 2023. Fiscal consolidation amid an easing of security risks will slow the pace of spending increases. At the same time, the share of capital expenditures spending will gradually expand as the country's post-war reconstruction needs rise. The growth in energy prices will lead to an increase in subsidies and social benefits.

Figure 2.4.6. State budget balance financing*, UAH bn



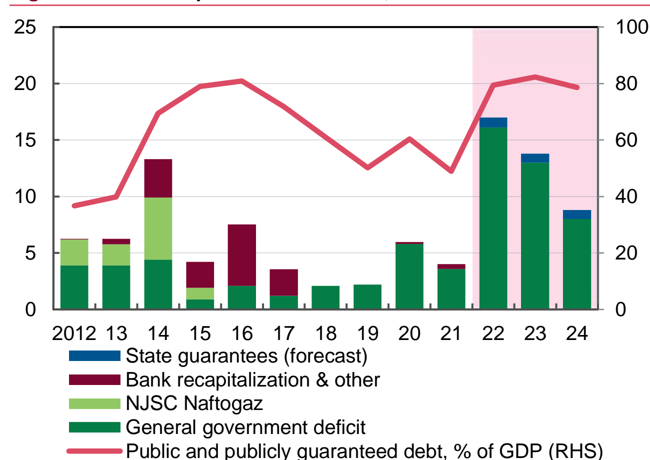
* Borrowings in UAH include government bonds issued to increase the authorized capital of banks, Deposit guarantee fund (DGF), and other state-owned enterprises
Source: STSU, MFU, NBU staff calculations.

Figure 2.4.7. Public and publicly guaranteed debt (end of period)*



* GDP in 2022 – NBU estimates based on quarterly data.
Source: MFU, SSSU, NBU staff estimates.

Figure 2.4.8. Broad public sector deficit, % of GDP



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

It is expected that in 2023, the monetary financing of the state budget will be replaced by market borrowing

Market demand for government securities remained weak. Net domestic borrowing came out negative. Therefore, despite more international aid coming in, the monetary financing of the budget deficit continued, but on a much smaller scale than in Q2. Since July, the NBU has kept its buybacks of domestic government debt securities at the previously announced level of UAH 30 billion per month. The limited volumes of monetary financing, which were announced in advance, contributed to the easing of pressure on the FX market and limited the worsening of inflationary expectations.

Monetary financing is expected to remain subdued until the end of the current year. In 2023, it will be rolled back and replaced with increased international aid and market-based domestic borrowing. In addition, the gradual reduction of the risk premium when there is a relatively high key policy rate will help rekindle foreign investors' interest in domestic debt instruments.

Rapid growth in public and publicly guaranteed debt was restrained by grant inflows. The debt to GDP ratio will continue to grow in 2023, but will gradually decline afterwards

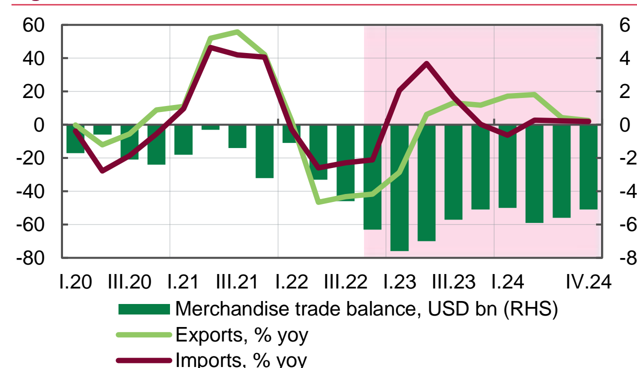
Public and publicly guaranteed debt increased both in absolute terms and in relation to GDP (to more than 70%, the NBU estimated in late September). The deterioration of debt performance was driven, on the one hand, by the exchange rate adjustment, significant budgetary needs, and state guarantees to support businesses, and on the other hand, by a large drop in GDP. However, significant repayments on hryvnia domestic government debt securities and the predominance in international aid of grant funds over credit funds restrained the growth in debt. What is more, credit funds within the framework of international assistance were provided on preferential terms. Debt-servicing costs will therefore increase at a slow pace, and repayments will be spaced out in time. With the servicing and repayment of Eurobonds having been postponed by two years, the debt burden in the coming years will be relatively moderate.

In view of the significant budget deficit in 2023, which will primarily be financed with debt, the debt to GDP ratio will increase. However, gradual fiscal consolidation and the reduction of quasi-fiscal imbalances will contribute to keeping debt at around 80% of GDP.

2.5. Balance of Payments

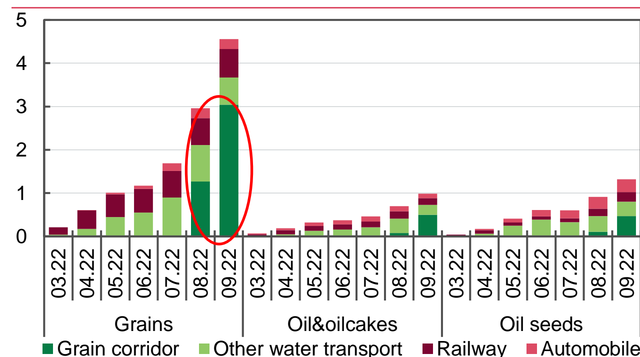
- A rise in exports of food products thanks to the launch of the "grain corridor" and an increase in official financing pushed up FX earnings in Q3 2022. These items, along with remittances, will continue to be the main sources of FX inflows. Export recovery will be limited by the destruction of and damage to production facilities, and disrupted logistics, lower harvests, and decreased prices for Ukraine's key export goods.
- FX outflows from the country slowed slightly, mainly due to the cancellation of preferential import taxation and the correction of the hryvnia's official exchange rate. However, FX outflows will continue to exceed FX inflows to the private sector because of the large number of Ukrainian migrants abroad, strong demand for FX cash, and growing demand for imports fueled by the revival of business activity.
- International financial aid exceeded the NBU's net FX sale in Q3, as a result of which international reserves had risen to USD 23.9 billion by late September 2022. Expected substantial official financing will continue to maintain reserves at a sufficient level.

Figure 2.5.1. Merchandise trade



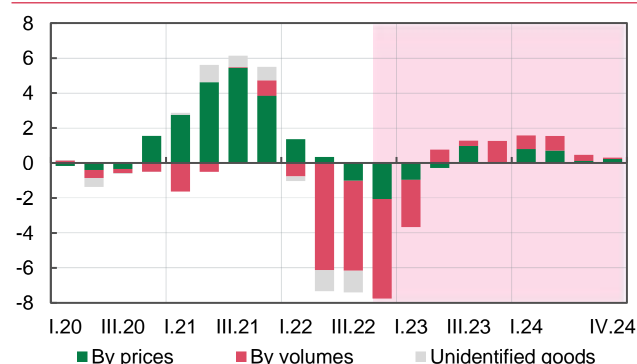
Source: NBU staff estimates.

Figure 2.5.2. Exports of key food products by mode of transport, m t



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

Figure 2.5.3. Absolute annual change in merchandise exports, USD bn



Source: SCSU, NBU staff estimates.

Exports will grow, albeit rather slowly, thanks to the operation of the "grain corridor" and the full unblocking of sea ports in future

The launch of the "grain corridor" in late July unblocked some Black Sea ports for food exports, starting in August.[23] Food exports by other modes of transport also grew thanks to the gradual increase in the throughput on the western border. Exports of some foods (such as corn, soy beans, sunflower oil, and meat and dairy products) even increased year-on-year. This slowed the fall in the overall exports of goods in Q3.

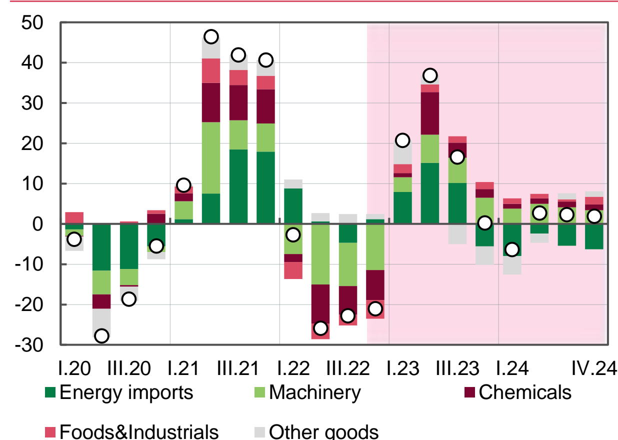
A pick-up in electricity exports to the EU through ENTSO-E was another contributor to the rebound in exports of goods. The value of these exports was at a record-high, totaling USD 260 million in Q3, compared to the average quarterly figure of USD 78 million in 2018–2021. However, this factor was temporary – in October, Ukraine had to stop exporting electricity due to high energy risks.

At the same time, exports of other goods were little changed due to unresolved logistical issues. Destroyed and damaged facilities, coupled with weak external demand, continued to significantly decrease exports of wood and wood products, as well as chemical and machinery exports. In addition, a significant increase in railway transportation costs and a drop in export prices deepened the decline in exports of iron ore and metals in Q3, which will persist for several more quarters to come. Once security risks decrease and sea ports are fully unblocked, exports of iron ore and metals will gradually revive. However, on the forecast horizon, these exports will not return to their pre-war levels because of the significant loss of production facilities and considerable domestic needs during the post-war recovery.

High grain prices and an increase in food exports through the "grain corridor" will support the recovery of exports. The corridor will partially free up railway and road transport for the exports of other goods. However, harvests and consequently exports of grains and oil seeds will remain below their pre-war volumes over the entire forecast horizon. In 2023–2024, export growth will also be dampened by the downward trend in global commodity prices and weak domestic production.

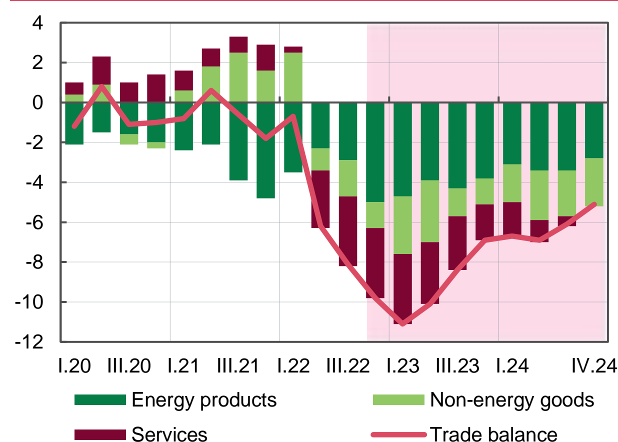
[23] Despite being called a "grain corridor," this route is used to export a number of food products: sunflower oil, oil seeds, oil cakes, sugar beet, and so on. At the same time, the agreement does not provide for exports of any non-foods, in particular exports of iron ore and metals, or for any imports.

Figure 2.5.4. Contributions to annual change in merchandise imports, pp



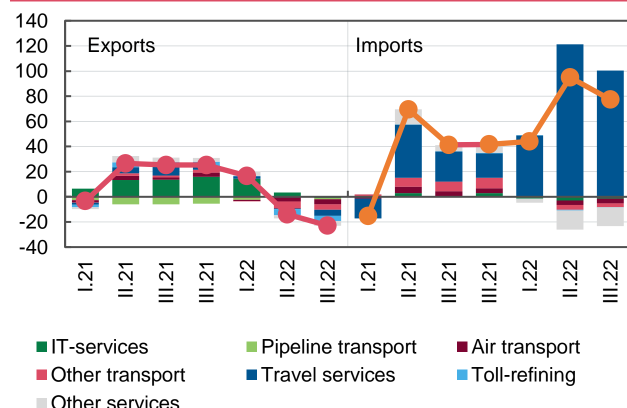
Source: NBU staff estimates.

Figure 2.5.5. Trade balance, USD bn



Source: NBU staff estimates.

Figure 2.5.6. Contributions to annual change in trade in services, pp



Source: NBU staff calculations.

Compared to the previous forecast, 2022 exports have been revised upwards thanks to the launch of the "grain corridor". However, export growth in the current year will decrease carry-over stocks, which, together with a downgraded forecast for the grain harvest, has resulted in the downward revision of the forecast for 2023 food exports. What is more, higher security risks and the unblocking of sea ports at a later date will drag down metallurgical exports in 2023.

Imports of goods will grow faster than exports due to the rebounding of domestic demand, widening the deficit in the trade in goods

The cancellation of the preferential taxation of imports and the correction of the hryvnia's official exchange rate decelerated the rapid recovery of imports in Q3. These changes primarily affected imports of motor cars – imports slumped to 53,000 cars, compared to the record-high figure of 231,000 cars in Q2. With extremely high prices on the European market and a lack of funds, gas imports were reduced to a minimum.

At the same time, imports recovered faster than exports, propelled by a significant increase in imports of petroleum products and some machinery. This widened the deficit in the trade in goods, to USD 4.6 billion in Q3.

Imports will continue to recover until the end of 2022, in particular, driven by larger imports of energy needed for the heating season. The energy component will continue to play an important role in 2023, given Ukraine's urgent need to replenish its stocks, and high prices for gas and petroleum products. However, in 2024 energy imports will decline (by 20.6%), dragged down by the expected drop in global prices.

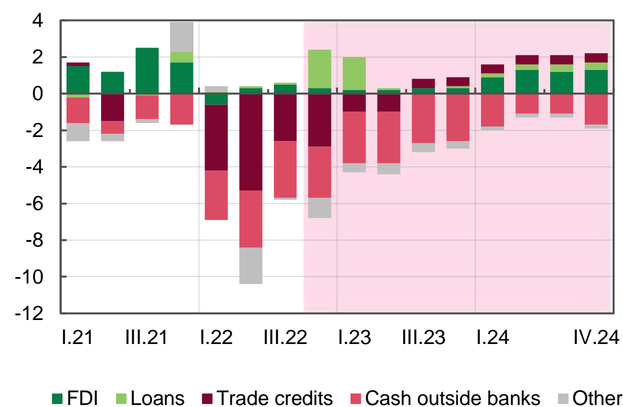
Compared to the previous forecast, non-energy imports will grow faster than expected. The main reasons for this are the more rapid recovery of domestic demand and the greater need for imports to rebuild the economy after large-scale destruction. Import growth will also be fueled by the country's need to replace those domestics goods that can only be produced in limited quantities or cannot be produced at all because of destroyed production facilities – mainly metallurgical products. As a result, the trade deficit will widen considerably over the forecast horizon.

Substantial FX outflows will result, among other things, from the large number of migrants abroad and persistently high demand for FX cash

Large-scale migration abroad widened the deficit in the trade in services in Q3. This deficit, which is unusual for Ukraine, was driven, among other things, by a substantial increase in imports of travel services. The recovery of exports of services was held back by the relocation of some IT companies abroad, russia's reduced payments for gas transit, and weak demand for components from the European machinery industry.

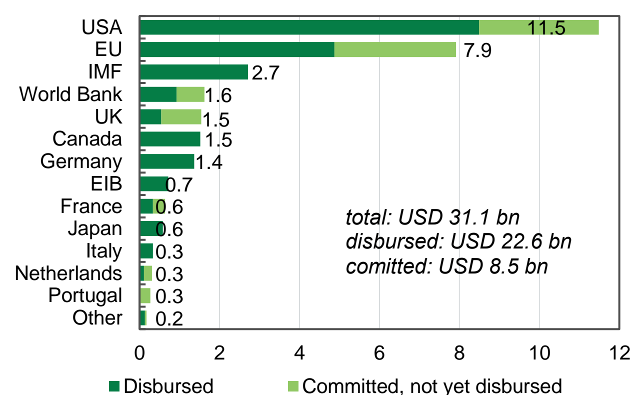
Demand for FX cash remained robust. That said, it declined slightly compared to the previous quarter on the back of the correction of the hryvnia's official exchange rate, restrictions on cash withdrawals abroad, and permitted purchases of cashless foreign currency by individuals for the purpose of

Figure 2.5.7. Private sector: net external liabilities, USD bn



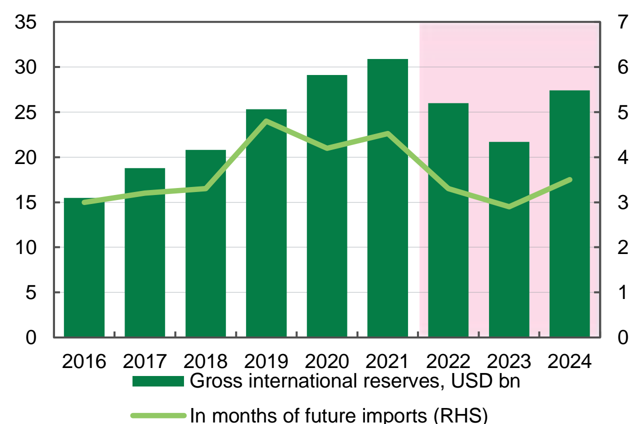
Source: NBU staff estimates.

Figure 2.5.8. International financial assistance in 2022 since the beginning of the full-scale war*, USD bn



* As of 20 October 2022.
Source: NBU, MoF, data from the open sources.

Figure 2.5.9. Gross international reserves



Source: NBU staff estimates.

making deposits. In addition, some improvement in transport logistics, in part thanks to the launch of the "grain corridor," helped reduce nonresidents' liabilities under trade credits.

At the same time, a large number of Ukrainians actively found employment abroad, which helped maintain a high level of remittances. In Q3, remittances were little changed on last year.

Active migration abroad will persist into 2023 due to high security risks. Only in 2024 will the number of returned migrants exceed the number of those who left Ukraine. This will further increase FX outflows under "travel" services in 2023. A significant number of migrants will gradually find employment abroad, contributing to the growth of remittances.

Official financing will continue to provide strong support for gross international reserves

Ukraine's international partners are continuing to support the Ukrainian economy. Since the start of the full-scale invasion, official financing has exceeded USD 22 billion[24], the bulk of which (USD 9.4 billion) arrived in Q3. The lion's share of international aid (USD 7.8 billion) came in as grants, which are recorded in the current account, widening its surplus to USD 5.2 billion in Q3.

What is more, the correction of the hryvnia's official exchange rate, the cancellation of preferential import taxation, and the gradual reestablishment of logistical ties significantly decreased the NBU's interventions to sell foreign currency in Q3. By late September, this had pushed up international reserves, to USD 23.9 billion.

Financial support from Ukraine's international partners will continue to be substantial, covering the country's large current account deficits. This will enable the NBU to maintain international reserves at a sufficient level.

Compared to the previous forecast, the amount of international financial support from Ukraine's international partners has been noticeably revised upward over the entire forecast horizon. Conversely, capital outflows from the private sector have also been revised upward due to high security risks persisting until mid-2023 and worsened assumptions about migration abroad.

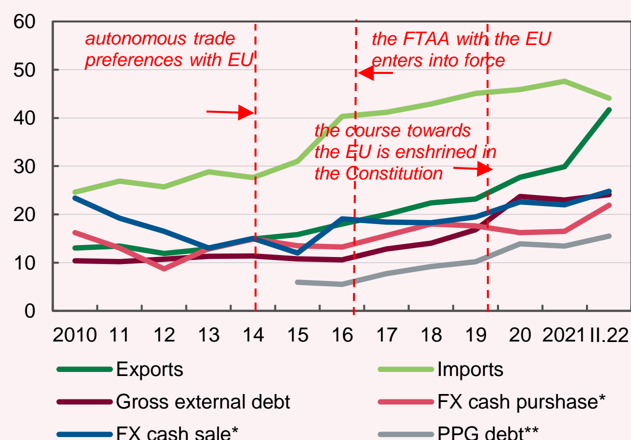
[24] As of 20 October 2022.

Box 3. The Role of the euro in Ukraine's Foreign Currency Transactions

Ukraine's integration into the European community is accompanied by a growing role for the euro in FX transactions. The Association Agreement with the EU has provided a powerful stimulus to these developments. The full-scale invasion has further enhanced the role of the euro: under conditions of a sea blockade, transportation routes could only be reoriented to the border with Europe, while a substantial share of unprecedented international aid comes from Ukraine's European partners. The NBU estimates that once the usual routes, which are mainly sea ones, are unblocked, the share of the euro in international transactions will decline somewhat compared to 2022. However, it will rise after that, driven by accelerating European integration processes, as evidenced by the experience of the countries that have successfully completed their European integration. Nevertheless, in contrast to these countries, the U.S. dollar will continue to play an important role in Ukraine's FX transactions, as the country mainly exports commodities.

The euro is playing an increasingly more important role in Ukraine's FX transactions. Ukraine's foreign trade and economic relations are quite diversified geographically: the list of the country's trading partners in 2021–2022 consists of 190 independent states. Despite the significant share of European countries, the U.S. dollar played a dominant role in Ukraine's foreign trade until 2016. However, accelerating European integration processes changed the currency breakdown of the country's transactions.

Figure 1. Euro-currency share in financial transactions by selected indicators, %



* For 2022, simple average for March-September.
** In 2022, data as of end of July.
Source: NBU, MFU.

External trade. The coming into force of the DCFTA agreement between Ukraine and the EU provided a powerful impetus to the sustained growth of the role of the euro in Ukraine's foreign trade. The main factors that affected the currency breakdown of export transactions included the liberalization of customs duties, the granting of duty-free quotas to Ukrainian exporters by the EU, the increased productivity of the agricultural sector, and the reorientation of exports from the CIS market. In 2015–2021, the share of the euro in export transactions moved up from 13% to over 26%. The growth of this share was restrained by the predominant proportion of commodities in Ukrainian exports, which are usually paid for in U.S. dollars. On the other hand, the higher technological level of the goods imported from the EU makes the share of the euro in transactions for these imports larger. This share also grew much more rapidly (from 31% to 49.5%), and in 2021 exceeded that of the U.S. dollar for the first time. The reasons for this were the refocusing of imports of natural gas and some chemicals from the russian to the European market, as well as an increase in imports of a wide range of consumer and investment goods, driven by the significant need to upgrade fixed assets and Ukraine's gradual cancellation of import duties on EU goods.

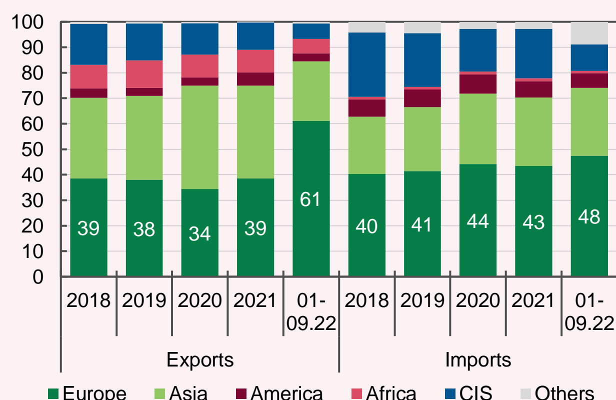
Financial flows. The deepening of cooperation with the EU has also affected the currency composition of Ukraine's gross external debt. While in 2010–2016 the share of the euro hovered at around 11%, in early 2017 it started to grow, reaching 23% by late 2021. The role of the euro grew the most in borrowing by the private sector (from 14.7% to 24% respectively), as structural reforms and the enhanced transparency of investment projects helped increase technical assistance from the EU, and from the EBRD in particular. The share of the euro in public and publicly guaranteed debt is smaller. It also grew at a slower pace (from 5.9% to 15.5%) due to the government maintaining active cooperation with international financial organizations. The main contributors to the growth in the share of the euro in public debt included the launch of domestic government debt securities in euros in 2012. However, these securities had lower yields and, consequently, were in lower demand compared to dollar domestic government debt securities. Despite the gradual increase in the role of other currencies, the U.S. dollar remains the most widely used currency worldwide. It enjoys considerable trust and acts as a risk-free asset, while its large share serves as a guarantee that it will retain this role, being kept to prevent financial turmoil in the largest global economies.

The share of the euro in other current account items also grew. In particular, the russian invasion of Ukraine in 2014 refocused labor migration to the European market. In 2015–2021, this pushed up the share of the euro in primary and secondary income account receipts by 14 pp and 20 pp, to 27% and 49% respectively.

The blockade of transport routes in the wake of the full-scale war resulted in a significant surge in the share of the euro in Ukraine's 2022 foreign currency transactions. The blockade of Ukrainian seaports slashed the country's exports of goods, while also leading to a partial loss of traditional Asian and African markets. Ukraine had to set up new transport routes through the only border accessible to it – the one with Europe. What is more, joining ENTSO-E allowed Ukraine to temporarily step up electricity exports to the European market. As a result, the share of the euro in transactions for exports of goods surged in H1 2022 (by 17.5 pp, to 44%). Deepening cooperation with European countries has also pushed up the share of the euro in sales of cashless

FX, while a large number of Ukrainian migrants in European countries, noticeably increased households' demand for euro cash in 2022.

Figure 2. Geographical structure of Ukraine's trade in goods, %



Source: NBU.

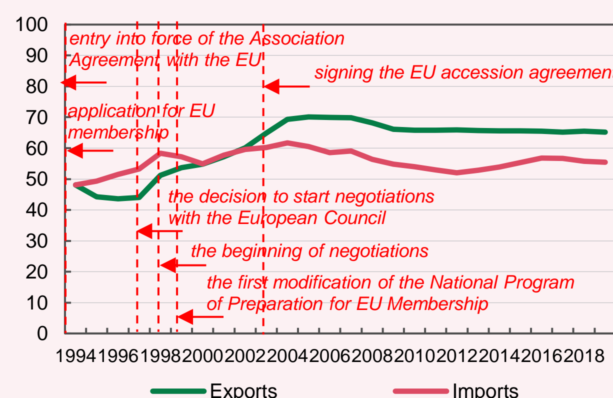
At the same time, the breakdown of transactions for imports of goods has not undergone significant change due to the transformation of both its product and geographical composition. The destruction of petroleum product production and storage facilities increased these imports, mainly from Asian countries, and contracts with these countries are concluded mostly in U.S. dollars. What is more, high global gas prices and Ukraine's lack of funds almost stopped gas imports, which came exclusively from Europe. As a result, the share of the U.S. dollar in imports of goods grew somewhat, while the share of the euro remained at the level of the previous year. In view of such import dynamics, purchases of cashless FX changed in a similar way.

The NBU estimates that once the sea ports become fully operational again and Ukraine returns to its usual markets of Asian and African countries, the share of the euro in foreign trade transactions will somewhat decline compared to 2022. The opening of the sea ports will restore direct container shipments, while also helping increase energy imports from these regions. The return of Ukrainians from abroad will help reduce demand for cash euros.

That said, the share of the euro will remain above its pre-war level, due to the maintenance of established logistical routes with Europe. Looking ahead, the share of the euro will continue to rise, propelled by European integration processes. More specifically, Ukraine has already joined the Convention on the Simplification of Formalities in the Trade in Goods and the Convention on a Common Transit Procedure. In addition, in the near future Ukraine plans to sign the Agreement on Conformity Assessment and Acceptance of Industrial Products (ACAA), which will ease access to the EU market for Ukrainian producers of goods with a higher value added, help improve the quality composition of exports to Europe and, consequently, increase the share of the euro in foreign trade transactions.

A pick-up in European integration usually changes the currency breakdown of transactions, but unlike in other countries, the U.S. dollar will continue to play a decisive role in Ukraine. As evidenced by the experience of the countries that have completed their European integration, such processes alter these countries' currency breakdowns of transactions – over time, the euro starts to play the main role. More specifically, the political change in Poland in 1989 set the country's European integration in motion. In 1994, the country signed an Association Agreement with the EU, becoming a full EU member in 2004. During its European Integration period, Poland saw structural changes in its economy and a surge in its goods trade turnover with the EU. After the EU Association Agreement came into force, imports of EU goods grew dynamically (27.5% on average in 1995–1998. Exports grew at a slower, albeit also significant, pace (17.5%). Trade with the EU grew much more rapidly than trade with other regions, as a result of which in 1994–2003 the share of the EU in exports of goods went up from 62% to 70%, while that in imports of goods moved up from 56% to 61%. The currency breakdown of transactions had similar dynamics. After Poland joined the EU, the share of the euro in transactions for foreign trade stabilized at a high level (about 60%), and has been at that level ever since. As of late 2019, the share of the euro in Slovenian exports hit 91%, 93.5% in Slovakian, 65% in Estonian, and 73% in Lithuanian.

Figure 3. Geographical structure of Ukraine's trade in goods, %



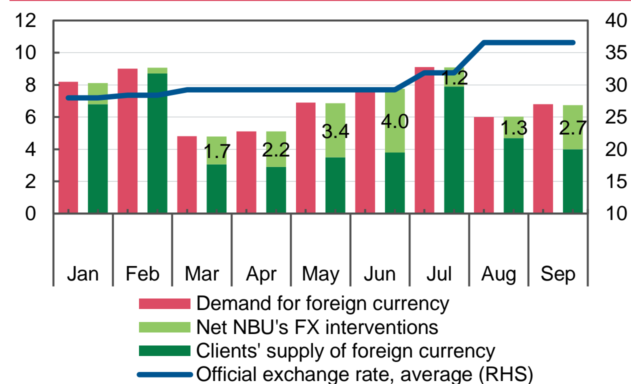
Source: Boz et al. (2020), "Patterns in Invoicing Currency in Global Trade," IMF Working Paper 20/126.

At the same time, the NBU estimates that the U.S. dollar will continue to play an important role in Ukraine's FX transactions, in particular if the country's exports continue to heavily rely on commodities. Such goods are usually settled in U.S. dollars; grain and sunflower oil as a share of exports of goods are expected to exceed 30% over the next two years, while iron ore and metals as a share of exports are projected to hit 20%. Active European integration processes and a transition to the EU's industrial standards will boost production and exports of products with higher value added. This will help gradually decrease the role of the U.S. dollar in Ukraine's FX transactions.

2.6. Monetary Conditions and Financial Markets

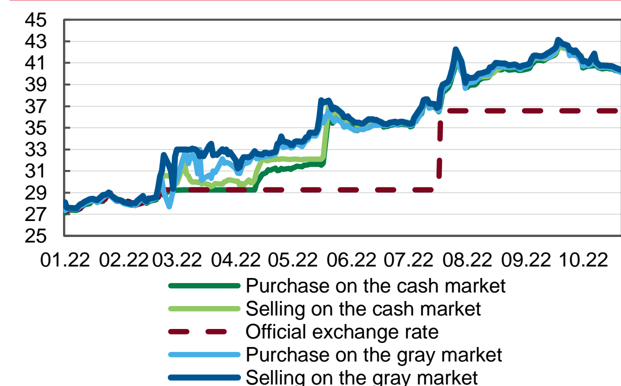
- The correction of the official hryvnia exchange rate, coupled with other measures to match supply and demand, helped ease imbalances in the FX market. However, the ability of the FX market to achieve equilibrium by itself is still limited, meaning support for the hryvnia exchange rate remains the NBU's main tool for maintaining macrofinancial stability.
- In real terms, the exchange rate of the hryvnia has weakened against the currencies of Ukraine's main trading partners, although it is still above its equilibrium level and will remain so over the forecast horizon. This will slow price growth on the domestic market.
- The cost of hryvnia resources is gradually reacting to the June key policy rate hike and to expected decisions to keep it unchanged at least until Q2 2024. The forecast continued effect of monetary transmission will push up yields on hryvnia financial instruments and support exchange rate stability.

Figure 2.6.1. Demand and supply in the interbank FX market and NBU interventions, USD bn, and official exchange rate in 2022



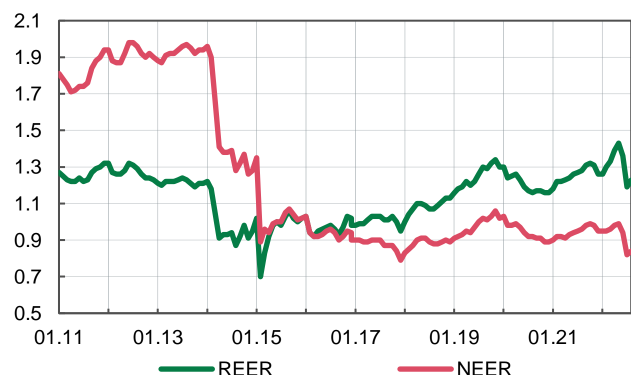
* The volume of purchases/sales of noncash foreign currency by banks' clients on the terms "tod", "tom", and "spot", and the balance of banks' transactions at the expense of their own position.
Source: NBU.

Figure 2.6.2. Exchange rate UAH/USD*



* As of 24 October 2022.
Source: NBU, open data sources.

Figure 2.6.3. REER and NEER indices, 06.2015 = 1



Source: IFS, NBU staff estimates.

Keeping the official exchange rate fixed contributes to the stabilization of expectations and restrains inflation pressures

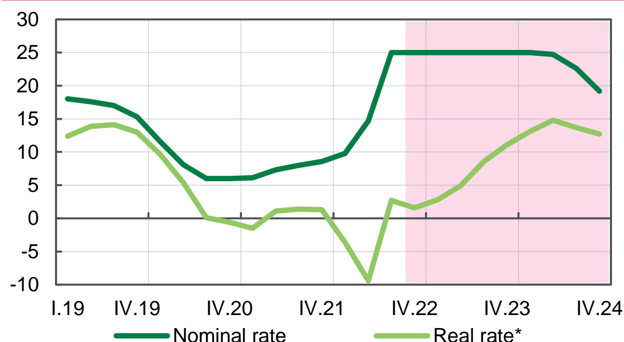
In Q3, the NBU continued its FX interventions to support exchange rate stability and ensure the resilience of the economy. However, net sales of foreign currency dropped to USD 5.3 billion (down from USD 9.5 billion in Q2). This was due – apart from the adjustment to the hryvnia's official exchange rate – to an increase in supply in the agricultural sector thanks to the operation of the "grain corridor," lower FX purchases by energy importers, and large FX sales by the government on the interbank FX market. An additional stabilizing effect on the interbank FX market came from a decrease in volumes of monetary financing to UAH 30 billion per month in July–September (versus UAH 105 billion in June).

The stoking of tensions in the media due to russia's aggressive statements and acts of terrorism, amid persisting shortages of FX cash, led to growth in demand and the buildup of depreciation pressures on the FX cash market in September. However, the situation later improved. In particular, transactions to supply the banks with cash U.S. dollars and euros, a new opportunity for individuals to purchase cashless foreign currency for the purpose of making deposits, and an increase in the amount of FX cash that a bank may offer to individuals eased the pressure on the cash market.

The NBU also continued to calibrate its FX restrictions. On the one hand, the central bank took measures to counteract unproductive capital outflows and ease pressures on international reserves. On the other hand, it simplified conditions for doing business for the duration of martial law (read more in Table 2 *Currency restrictions* on page 38). In particular, companies were allowed to pay interest on their foreign debts, opportunities were widened for importing goods, and timeframes for returning FX revenues were extended.

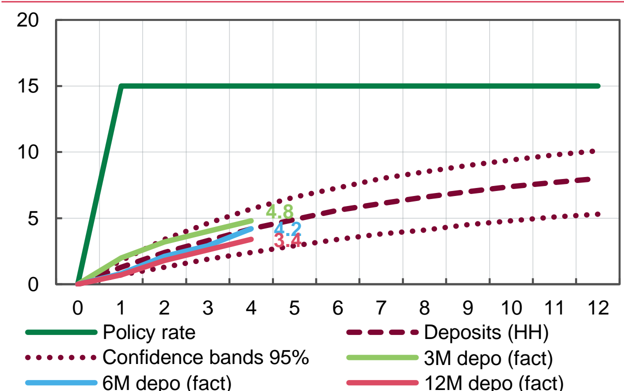
Although the nominal UAH/USD exchange rate was fixed as hostilities started, the nominal effective exchange rate (NEER) and the real effective exchange rate (REER) of the hryvnia had been strengthening, driven by both the appreciation of the U.S. dollar against leading currencies and by high inflation in Ukraine. However, the adjustment of the official exchange rate of the hryvnia in July led to a weakening

Figure 2.6.4. **Key policy rate, period average, %**



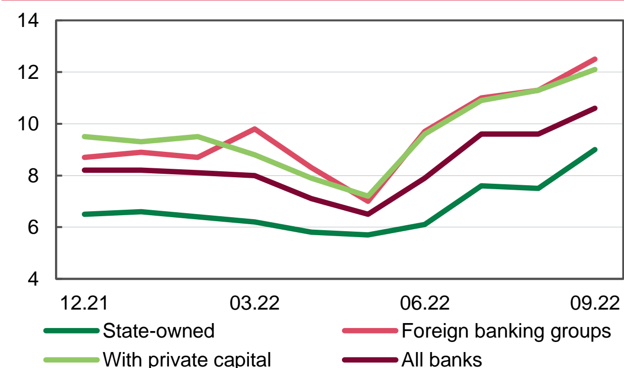
* Deflated by model expectations (QPM).
Source: NBU.

Figure 2.6.5. **Simulated* and actual** response of household deposits to a monetary policy shock, pp**



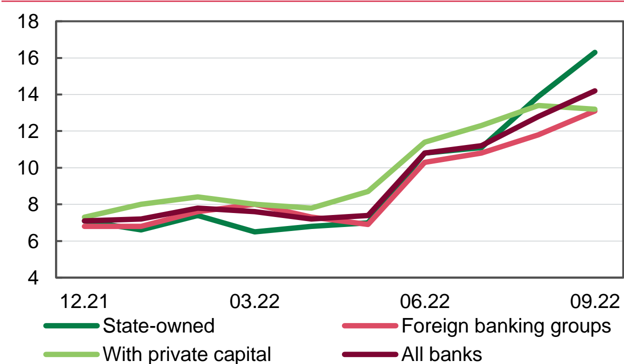
* NBU estimates for the period 2015–2021 are based on the ARDL model of Pesaran and Shin (1995);
** 5-day (working days) moving average UIRD.
Source: NBU.

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



Source: NBU.

Figure 2.6.7. **Weighted average interest rates on hryvnia deposits of NFCs with a term of more than 1 month, %**



Source: NBU.

of the hryvnia's NEER and REER. Nevertheless, the REER was above its equilibrium level, primarily thanks to large-scale FX interventions, and will remain so over the forecast horizon, resulting in tighter monetary conditions.

Tight monetary conditions will slow core inflation due to growth in relatively cheaper imports, which will increase competition, and a decrease in the relative cost of imports in domestic production.

The key policy rate will remain high for an extended period in order to counteract pressures on the exchange rate, which will restrain inflation

The NBU left its key policy rate unchanged in October. The rate is expected to remain at the current level at least until Q2 2024.

Despite the high nominal key policy rate in 2022, it will remain marginally positive in real terms. However, with current FX restrictions, such a level is beneficial for exchange rate stability. In 2023−2024, as security risks subside, the key policy rate will gradually regain its role as the main monetary policy instrument. Given the decrease in inflation expectations, the key policy rate will be higher in real terms, contributing to further disinflation.

High uncertainty carries mostly upside risks to the key policy rate trajectory. If required, the NBU stands ready to raise the key policy rate above its current level and to deploy additional measures to protect international reserves, as well as to maintain control over inflation.

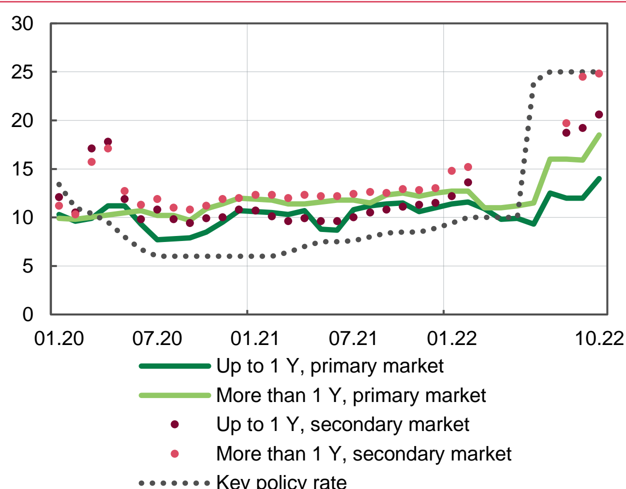
The cost of hryvnia resources will continue to rise on the back of expectations that the NBU will maintain the key policy rate at its current level for a long time

The NBU's June decision to increase the key policy rate to 25% and its intention to keep the rate at this level for an extended period will continue to drive growth in market rates. The increase in interest rates on three-month retail deposits (+4.8 pp to 11% from June 2022) is currently higher than the typical (model) response. The growth in interest rates on six-month deposits has also accelerated markedly since September. Overall, in some banks, interest rates on deposits placed for three to six months increased to 15%–20%. The transmission to rates on longer-maturity deposits was slower. However, it remained within the 95% confidence interval of the typical response.

Weighted average interest rates on deposits of nonfinancial corporations correlated more closely with the key policy rate. The banks are currently inclined to compete for corporate deposits, as it is operationally easier and faster to take large corporate deposits than retail ones.

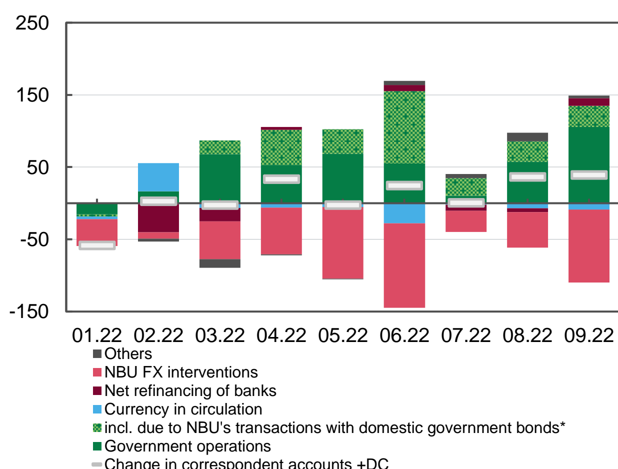
However, the level of deposit rates remains significantly lower than expected inflation and currently does not create sufficient incentives to give preference to hryvnia instruments over foreign currencies. One of the reasons for the banks' slow response to the key policy rate hike is the further growth in the banking system's liquidity. An additional obstacle to monetary transmission is the uneven distribution of liquidity

Figure 2.6.8. Yields on hryvnia government bonds*, % per annum



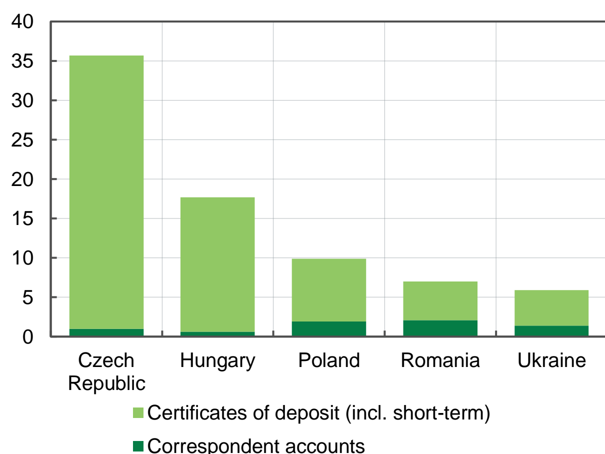
* As of 25 October 2022.
Source: NBU staff estimates.

Figure 2.6.9. Factors affecting the liquidity of the banking system (correspondent accounts + CDs), UAH bn



* The NBU's purchase of the war bonds (+) / principal and interest payments on government bonds (-) in the NBU's portfolio.
Source: NBU.

Figure 2.6.10. Banking system liquidity*, % of GDP



* As of August 2022.
Source: central banks' official web-pages, IMF, NBU's estimates.

between the banks – the lion's share of it is concentrated in those financial institutions that have the largest volumes of retail deposits. These banks are not interested in drawing in new deposits and are therefore in no rush to compete for depositors by raising interest rates on retail deposits.

Yields rose on the primary market of domestic government debt securities in October, enabling an increase in volumes of borrowing. However, real yields on hryvnia domestic government debt securities in the primary market remained negative. Nevertheless, after the functioning of the secondary market was restored in August, the response of the yields on hryvnia domestic government debt securities strengthened somewhat.

Despite there being certain positive developments, further measures are needed to increase the attractiveness of hryvnia instruments. Yields on hryvnia assets should take into account the worsening of inflation expectations, the rise in the exchange rate and price pressures, and the balance of inflation risks being skewed to the upside over the policy horizon. To this end, in October, the NBU introduced an additional instrument that will protect both households' hryvnia deposits from the risk of exchange rate fluctuations, and international reserves from depletion. It is also expected to help soak up part of the banking system's structural liquidity surplus. Supporting exchange rate stability and protecting international reserves requires ensuring that yields on hryvnia assets remain attractive in the long run.

Government expenditures will remain the main source of liquidity

The banking system's liquidity continues to grow: it reached another record high in Q3 2022 (the average daily balances of correspondent accounts and certificates of deposit exceeded UAH 267 billion, compared UAH 228 billion in Q2 2022). The main driver of this liquidity growth was a significant rise in government spending (especially in September), mainly on account of the sale of foreign currency. This situation will continue in the future, as the government's fiscal needs are being covered mainly by international assistance.

The increase in the volume of cash outside the banks in July – August 2022 coincided with the period of active harvesting. This, together with a rise in the share of banknotes of the largest denominations (500 and 1000 hryvnias) in circulation, might indicate an increase in demand for cash to make settlements with small agricultural producers. In September, the amount of cash decreased significantly, probably as small agricultural producers converted their profits from selling crops into foreign currency, and as aggressive statements and terrorist actions by russia spurred excessive household demand for foreign currency.

Despite the record-high surplus of liquidity, it is moderate compared to other countries. However, if hryvnia liquidity continues to grow rapidly, the NBU may use additional instruments to absorb excess liquidity and enhance monetary transmission. A decline in the structural surplus of liquidity in

the banking system will be positive for reviving transactions on the interbank lending market and will bolster its recovery.

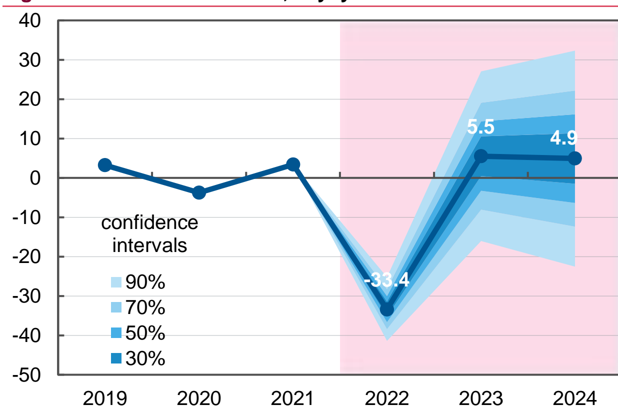
Table 2. Currency restrictions

		Feb-24	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Individuals	FX cash withdrawals from FX accounts	✖ Full ban	UAH 30K / day → UAH **100K / day**							
	Cash withdrawals abroad from UAH accounts	V No limit	**cap** → UAH 100K / month		→ UAH 50K / month		→ UAH **12.5K / week**			
	Settlements abroad with hryvnia cards	V No limit					**cap** → UAH **100K / month**			
	P2P card transfers	V No limit	**cap** → UAH 100K / month				→ UAH 30K / month			✖ Full ban
	FX cash purchases from banks	✖ Full ban		**cap** → cash currency purchased by banks			**+ 50%** of noncash FX purchased from individuals		**+ 100%** of noncash FX purchased from individuals	
	Online FX purchases	✖ Full ban					**cap** → UAH 50K / month + deposit for 3 months			UAH **100K / month** + deposit for 3 months
	ER for card payments	**cap** → official + 1%		→ official + 10%	→ **no restrictions**					
	SWIFT payments abroad	✖ Full ban								
Corporates	Imports payments	list of critical imports:	goods ~65% services 0%	← **allowed** →		~90% ~30%	→ **100%** (no restrictions) → **~50%**			
	Deadline for settlement of export-import transactions	365 days		→ 90 days		→120 days	→**180 days**			
	Repayments of debts abroad	✖ Full ban							interest payments are **allowed**	
Banks	FX open position				15% → **5%**					
	Repayments of loans to nonresidents			early repayments are prohibited						

Part 3. Risks to the Forecast

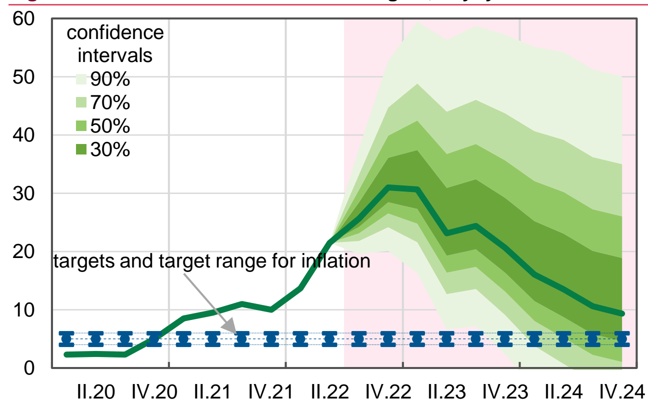
- The key assumption of the macroeconomic forecast is that security risks will start to ease significantly in mid-2023 thanks to successful operations by the Ukrainian army. Therefore, a longer duration of the active phase of the war is the main risk.
- The balance of risks in the inflation forecast is skewed upward due to the large number of pro-inflationary factors and their potential large scale.

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.

The economic situation in Ukraine depends on security developments. According to the baseline scenario of the macroeconomic forecast, security risks are expected to subside considerably from the middle of next year. Therefore, any longer persistence of high security risks and their possible escalation are the key risks to the forecast. Taking into account the importance of this risk and its high probability, the NBU has developed a corresponding macroeconomic forecast scenario, which is given in *Alternative Scenario: Protracted War* on page 43.

Despite easing somewhat, the risk of state finances becoming unbalanced remains. While the NBU is complying with the announced monetary financing limit of UAH 30 billion per month, the current version of the state budget for 2023 envisages financing the deficit without printing new money. Ukrainian authorities continue working to raise international assistance to cover all of the most urgent needs of the budget. Due to the unpredictable nature of the war, the potential for the irregularity of inflows of international assistance, and the emergence of additional budgetary needs, the risk persists that the NBU will once again have to provide monetary financing of the budget. This would worsen inflation and depreciation expectations still more. In this case, the NBU would have to tighten its monetary policy more than envisaged in the baseline scenario of the macroeconomic forecast. However, this risk has weakened compared to the previous forecast, as international support has grown stronger and the draft budget for the next year excludes monetary financing.

Another risk for the inflation forecast lies in the time and size of a prospective correction of energy tariffs in the utilities sector. The high social significance of utility tariffs will certainly influence future decisions on bringing them to economically justified levels in the post-war period. Eliminating imbalances in the energy sector, which has been severely affected by the war, and a corresponding decrease in quasi-fiscal deficits thanks to the improved financial standing of state-owned energy companies should improve prospects for cooperation under new programs with IFIs. On the one hand, such decisions will significantly enhance price pressures and increase social tensions, requiring large increases in subsidies for households. On the other hand, postponing these measures for a long time will only multiply inflation risks in future.

Russia's terrorist attacks on Ukrainian energy infrastructure facilities are increasing risks to Ukraine's ability to get through the coming winter. First of all, these risks are related to the capability to quickly restore the functioning of electricity and heating supply facilities that serve households and critical infrastructure. A temporary shortage of capacity would

Degree of impact on the baseline scenario	Probability that a risk will materialize: Low <15%	Medium 15%–25%	High 25%–50%
Weak			Termination of gas transit
Moderate	Delays in cooperation with the IMF	Cessation of the grain corridor	Increased emigration Energy risks of the coming winter
Strong	Rapid implementation of the large-scale reconstruction plan of Ukraine "Marshall Plan"	Imprudent public finance framework (low rates on debt securities, freezing tariffs for utilities, lower amounts of international assistance, prolonged budget monetization)	Prolonged war, escalation

require saving energy or disconnecting consumers – primarily industrial ones. This would lead to a decrease in industrial production in the main energy-intensive sectors, and in the energy sector itself. The energy shock could be exacerbated by the termination of natural gas transit through Ukraine. This would be a challenge for the Ukrainian energy system, as the pipeline network is also used for transporting gas inside the country. In the event of there being prolonged problems with heating in winter, Ukrainians might migrate abroad. This would substantially worsen the economic activity forecast.

The duration and intensity of hostilities, together with energy terror attacks, are increasing the risk that a large share of the Ukrainians who went abroad previously will not return, and that more Ukrainians may decide to leave Ukraine. Risks of a future demographic crisis are looming, considering the large number of young people who have already left Ukraine. In the post-war period, emigration may increase after the borders are opened for men aged 18–60. A decrease in consumer demand would only partially ease inflationary pressures. Labor shortages and greater mismatches in the labor market would fuel growth in businesses' labor costs, pushing up prices. Moreover, this would worsen the prospects for a rapid post-war recovery. The NBU will take into account the cumulative effect of migration in its monetary policy.

The launch of the "grain corridor" has mitigated the adverse effects of supply disruptions. However, the risk remains high that its operation is stopped and Ukraine's Black Sea ports again come under blockade. This would considerably complicate exports of agricultural products (primarily grains and oilseeds) and reduce FX inflows to Ukraine. Moreover, this would worsen agricultural producers' expectations about the prospects for selling their future harvests, which could lead to a decrease in sown areas. Apart from the negative impact on Ukraine's GDP, this would severely affect food security in the world. On the contrary, such forced export restrictions would partially slow food price inflation in Ukraine due to higher supply on the domestic market. However, in general, this scenario might require a tighter monetary policy or a large increase in inflows of international assistance.

Ukraine will need to maintain active cooperation with international lenders and donors not only during the war, but also in the period of post-war recovery. The damage to Ukraine's economy inflicted by russia is measured in hundreds of billions of U.S. dollars. Ukraine will only be able to attract such large investments for a fast-paced recovery if a corresponding program or project is launched, after being approved at a high international level. The accumulation of such resources and working out the details of such a program would take a long time, so it is not included in the assumptions of the baseline scenario of the macroeconomic forecast. Launching such a program, coupled with implementing European integration reforms, could boost economic growth to double-digit levels. At the same time, the inflationary pressure from accelerated growth in household income would be offset by a strong appreciation pressure on the exchange rate from inflows of foreign currency into the country. Under such conditions, the NBU would have earlier opportunities to start a cycle of monetary policy easing.

Macroeconomic forecast (October 2022)

Indicators	2019	2020	2021	2022 I	2022 II	2022 III	2022 IV	2022 current forecast	2022 forecast 07.2022	2023 I	2023 II	2023 III	2023 IV	2023 current forecast	2023 forecast 07.2022	2024 I	2024 II	2024 III	2024 IV	2024 current forecast	2024 forecast 07.2022
REAL ECONOMY, % yoy, unless otherwise stated																					
Nominal GDP, UAH bn	**3977**	**4222**	**5460**	1075	940	1305	1430	**4750**	**4540**	1126	1369	1752	1928	**6175**	**5990**	1437	1658	2055	2199	**7350**	**7100**
Real GDP	**3.2**	**-3.8**	**3.4**	-15.1	-37.2	-34.4	-35.6	**-31.5**	**-33.4**	-17.5	13.9	9.2	11.3	**4.0**	**5.5**	8.2	5.8	4.6	3.3	**5.2**	**4.9**
GDP Deflator	8.2	10.3	25.1	24.0	26.0	28.0	28.4	26.9	24.8	27.0	28.0	25.5	21.1	25.0	25.0	18.0	14.5	12.0	10.4	13.1	13.0
Consumer prices (period average)	7.9	2.7	9.4	-	-	-	-	20.5	21.1	-	-	-	-	25.8	26.5	-	-	-	-	13.2	12.9
Consumer prices (end of period)	**4.1**	**5.0**	**10.0**	13.7	21.5	24.6	30.0	**30.0**	**31.0**	29.0	22.4	24.5	20.8	**20.8**	**20.7**	16.7	13.5	10.8	9.4	**9.4**	**9.4**
Core inflation (end of period)	3.9	4.5	7.9	10.5	15.2	20.4	24.5	24.5	24.5	23.0	20.7	17.2	13.3	13.3	12.4	10.7	6.4	4.1	3.0	3.0	2.6
Non-core inflation (end of period)	4.8	5.9	13.5	17.6	29.2	29.6	36.6	36.6	38.7	35.8	23.9	32.2	28.2	28.2	28.7	22.2	20.0	16.4	14.5	14.5	14.3
raw foods (end of period)	3.9	4.1	11.8	20.7	36.1	40.9	51.6	51.6	49.0	49.5	35.2	24.8	15.6	15.6	12.0	7.8	5.0	4.0	3.1	3.1	2.7
administrative prices (end of period)	8.6	9.9	13.6	12.4	14.8	14.7	17.0	17.0	16.4	16.1	11.8	41.9	46.7	46.7	55.0	45.7	44.6	33.6	29.7	29.7	31.0
Producer prices (end of period)	-7.4	14.5	62.2	57.8	64.2	67.4	49.0	49.0	38.0	36.4	24.9	15.9	12.0	12.0	**14.0**	10.6	6.5	4.9	5.0	5.0	3.0
Nominal wages (period average)	18.4	10.4	20.9	0.2	-18.3	-16.0	-13.9	-12.3	-12.3	8.7	42.4	42.7	39.2	32.8	36.3	34.1	29.0	26.3	25.1	28.3	31.3
Real wages (period average)	9.8	7.4	10.5	-9.7	-31.0	-31.9	-32.7	-26.6	-26.9	-17.4	13.9	13.3	13.7	4.6	6.7	13.5	12.5	13.5	14.1	13.4	16.6
Unemployment (ILO, period average)	8.2	9.5	9.8	-	-	-	-	28.3	28.9	-	-	-	-	26.9	27.0	-	-	-	-	18.2	18.2
FISCAL SECTOR																					
Consolidated budget balance, UAH bn	**-87.3**	**-224**	**-187**	-	-	-	-	**-764**	**-811**	-	-	-	-	**-804**	**-632**	-	-	-	-	**-591**	**-499**
% of GDP	-2.2	-5.3	-3.4	-	-	-	-	-16.1	-17.9	-	-	-	-	-13.0	-10.5	-	-	-	-	-8.0	-7.0
Public sector fiscal balance (IMF methodology), UAH bn	**-89.2**	**-243**	**-195**	-	-	-	-	**-764**	**-812**	-	-	-	-	**-803**	**-632**	-	-	-	-	**-590**	**-499**
% of GDP	-2.2	-5.8	-3.6	-	-	-	-	-16.1	-17.9	-	-	-	-	-13.0	-10.5	-	-	-	-	-8.0	-7.0
BALANCE OF PAYMENTS (NBU methodology)																					
Current account balance, USD bn	-4.1	5.3	-3.2	2.4	1.0	5.2	-1.7	6.8	6.4	-1.9	-1.8	-1.1	-3.1	-8.0	-3.9	-1.2	-2.0	-1.5	-0.4	-5.1	-8.8
Exports of goods and services, USD bn	63.6	60.7	81.5	17.3	11.7	13.5	14.8	57.3	53.0	13.3	12.7	15.6	16.9	58.5	64.0	15.2	14.7	16.7	17.7	64.3	63.5
Imports of goods and services, USD bn	76.1	63.1	84.2	18.0	17.9	21.6	24.6	82.1	73.9	24.4	22.8	24.0	23.8	95.1	80.9	21.9	21.7	22.8	22.8	89.2	83.1
Remittances in Ukraine, USD bn	11.9	12.0	14.0	3.2	3.3	3.4	4.0	13.9	12.6	4.4	4.3	4.1	3.6	16.4	13.1	3.6	3.4	3.3	3.5	13.8	13.6
Financial account, USD bn	-10.1	3.3	-3.7	5.8	5.7	3.0	-2.8	11.7	15.3	0.2	2.2	2.0	-2.5	1.9	1.3	-0.2	-1.8	-1.6	-1.4	-5.1	-10.6
BOP overall balance, USD bn	**6.0**	**2.0**	**0.5**	**-3.3**	**-4.8**	**2.2**	**1.1**	**-4.9**	**-9.0**	**-2.1**	**-4.0**	**-3.1**	**-0.6**	**-9.9**	**-5.3**	**-0.9**	**-0.1**	**0.1**	**1.1**	**0.0**	**1.8**
Gross reserves, USD bn	**25.3**	**29.1**	**30.9**	**28.1**	**22.8**	**23.9**	**26.0**	**26.0**	**20.8**	**25.2**	**22.9**	**20.8**	**21.7**	**21.7**	**21.2**	**21.9**	**23.4**	**24.6**	**27.4**	**27.4**	**28.7**
Months of future imports	4.8	4.2	4.5	3.8	2.9	3.0	3.3	3.3	3.1	3.3	3.0	2.8	2.9	2.9	3.1	2.9	3.1	3.2	3.5	3.5	4.0
MONETARY ACCOUNTS (Cumulative since the beginning of the year)																					
Monetary base, %	**9.6**	**24.8**	**11.2**	10.6	10.1	11.8	15.0	**15.0**	**14.1**	-0.8	0.8	5.9	9.3	**9.3**	**8.1**	-1.9	-0.2	2.0	6.2	**6.2**	**5.6**
Broad money, %	**12.6**	**28.6**	**12.0**	0.4	3.7	10.1	13.0	**13.0**	**18.8**	0.2	3.1	12.6	15.0	**15.0**	**11.1**	-0.7	2.0	4.4	9.5	**9.5**	**8.6**
Velocity of broad money (end of year)	**2.8**	**2.3**	**2.6**	-	-	-	-	**2.0**	**1.8**	-	-	-	-	**2.3**	**2.2**	-	-	-	-	**2.5**	**2.4**

Forecast assumptions

Indicators		2019*	2020*	2021*	2022	2023	2024
Full access to Black Sea ports					-	since H2	+
Official financing	USD bln				31.1	28.0	20.0
Tariffs for gas and heating					unchanged	1/2 of parity	at parity
Migration (net)	mln people				-8.0	0.4	2.5
Real GDP of Ukraine's MTP (UAwGDP)	% yoy	2.7	-3.4	6.2	3.4	2.2	3.0
Foreign CPI (UAwCPI)	% yoy	2.9	2.1	6.4	12.5	5.0	3.2
World prices:**							
Steel price, Steel Billet Exp FOB Ukraine	USD/t	410.9	389.4	615.0	623.0	597.8	549.3
	% yoy	-17.2	-5.2	57.9	1.3	-4.0	-8.1
Iron ore price, China import Iron Ore Fines 62% FE	USD/t	93.8	108.9	161.7	123.0	106.3	82.8
	% yoy	34.6	16.1	48.5	-23.9	-13.6	-22.1
Steel price, No.1 Hard Red Winter, ordinary protein, Kansas City	USD/t	164.7	185.5	263.5	365.8	310.3	272.6
	% yoy	-11.5	12.6	42.0	38.8	-15.2	-12.1
Corn price, Yellow #2 Delivery USA Gulf	USD/t	170.1	165.5	259.4	314.5	259.9	229.2
	% yoy	3.5	-2.7	56.7	21.2	-17.4	-11.8
Oil price, Brent	USD/bbl	64	42.3	70.4	102.0	94.3	81.4
	% yoy	-9.9	-33.9	66.4	44.9	-7.5	-13.7
Natural gas price, Netherlands TTF	USD/kcm	161.4	115.0	575.5	1644.9	1371.0	932.3
	% yoy	-43.5	-28.7	400.4	185.8	-16.7	-32.0
Gas transit	bcm	90.4	55.8	41.6	21.2	20.0	20.0
Grain and leguminous harvest	m t	75.1	64.9	85.7	52.5	57.0	62.0
Minimum wage**	uah	4173	4815	6042	6550	7176	7665

** Actual data.*

*** Annual average.*

Part 4. Alternative Scenario: Protracted War

- If a scenario materializes under which high security risks persist for a long time, the prospects for the recovery of the Ukrainian economy next year will deteriorate significantly. A longer period of subdued demand, low investment activity, and logistical constraints will be the main factors restraining GDP growth. Under such conditions, a substantial economic recovery will not begin until 2024.
- Weak consumer demand will restrain inflation. However, inflation will remain high, driven by the adverse impact of the loss of export potential on the exchange rate, and by high inflation expectations. The change in the CPI profile compared to the baseline scenario is mostly related to the adjustment of the timelines for bringing energy tariffs to the break-even point.

Alternative scenario assumptions

The NBU makes no predictions about the battlefield situation, but must make various assumptions about the development of the war, as it has a crucial influence on the economy. To this end, the NBU presents an alternative scenario for the macroeconomic forecast in order to enhance transparency regarding potential economic developments, and its monetary policy response.

The time needed to win the full-scale war started by russia has become the main factor determining the state and prospects for the development of the Ukrainian economy. Therefore, the longer persistence of high security risks is the main uncertainty and thus the highest risk to the macroeconomic forecast. This alternative macroeconomic forecast is based on the assumption that these risks remain in place until mid-2024.

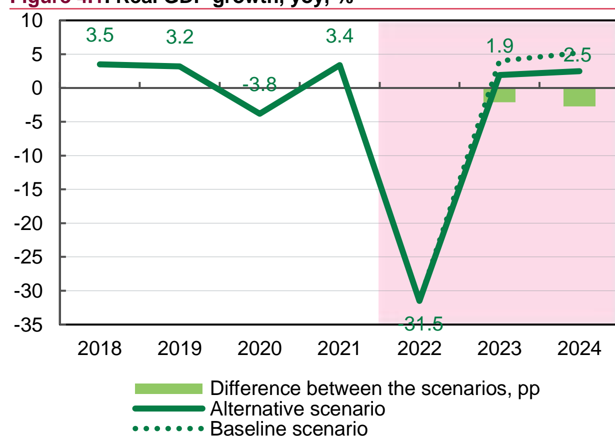
Most other assumptions, including active international financial assistance and participation in an IMF program, are also valid under this scenario.

Economic activity will remain sluggish and will start to revive only in 2024

With high security risks, the economic recovery in Ukraine will be extremely weak in 2023. Real GDP growth is expected to be around 2% only thanks to a partial adaptation of businesses to the war and active international financial assistance.

Consumer activity will be restrained by continued hostilities. Unlike in the baseline scenario, Ukrainians will continue to migrate abroad. This will limit domestic demand. Investment activity in the private sector will remain significantly suppressed, while government investment will be aimed at reconstructing damaged critical infrastructure and supporting the country's defensive capabilities.

Figure 4.1. Real GDP growth, yoy, %

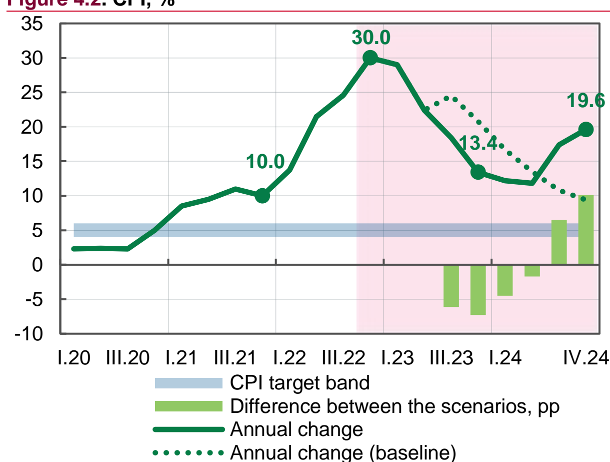


Source: SSSU, NBU staff estimates.

Logistical restrictions, primarily the limited functioning of the Black Sea ports, will lead to a deterioration in the performance of export-oriented business (only the "grain corridor" is expected to operate). Accordingly, exports will decrease markedly next year, exacerbating the financial difficulties of companies. Farmers will be less motivated to expand their activities, and fewer resources will be allocated to sowing campaigns. This will lead to lower harvests in 2023 and 2024.

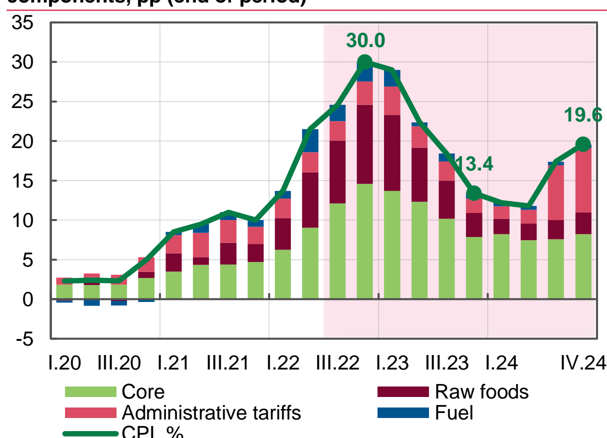
Economic recovery will accelerate from H2 2024, primarily due to the expected easing of security risks. This will have a

Figure 4.2. CPI, %



Source: SSSU, NBU staff estimates.

Figure 4.3. Contributions to annual CPI growth by main components, pp (end of period)



Source: SSSU, NBU staff estimates.

favorable effect on consumer sentiment, and consumer demand will pick up accordingly. The post-war reconstruction of ruined infrastructure will require a great deal of investment from both private companies and the state. Investment activity will thus revive as risks subside. These processes will increase the demand for labor. From 2024, the situation on the labor market will improve in terms of both lower unemployment and higher real wages. At the same time, GDP growth in 2024 will be slow (2.5%) due to the adverse effects of a longer period of destruction (of enterprises, infrastructure, and housing) and the weakening of the economy.

Potential GDP will decline more than envisaged under the baseline forecast due to greater damage to infrastructure and further migration. The GDP gap will remain negative through to the end of the forecast period. This will contain underlying inflationary pressures.

Fiscal policy will remain loose to ensure adequate spending on defense and social support. Consequently, the need to increase the budget deficit will grow, postponing fiscal consolidation and resulting in larger public debt. International support will be crucial for financing the deficit. Such support would mean further monetary financing of the state debt by the NBU could be prevented. Due to the large increase in the debt burden, the need for a gradual transition to a tighter fiscal policy will increase in the post-war period.

Inflation will decline due to subdued consumer demand, but will remain high because of a weaker exchange rate and high inflation expectations

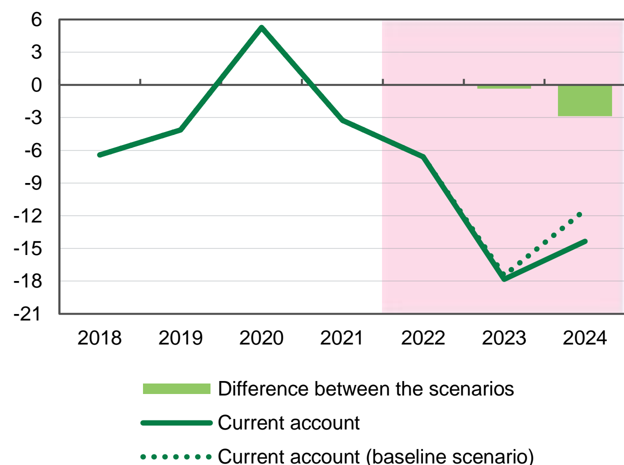
Most of main supply shocks will subside later than foreseen under the baseline scenario. Inflation will decline due to subdued demand caused by a large drop in real household income and high unemployment. In addition, the extension of the moratorium on raising utility tariffs until the end of hostilities will change the CPI profile (leading to a decrease in CPI in 2023 and an increase in 2024).

The underlying inflationary pressure will primarily be supported by longer-lasting supply shocks, high inflation expectations, and depreciation pressures driven by lower FX inflows from exports. The NBU will keep monetary conditions tight for longer to compensate for these inflationary factors. A decline in security risks and the normalization of logistics at the end of the forecast period will ease the pressure on core inflation through supply channels. At the same time, persistently high inflation expectations will keep inflation high until the end of the forecast horizon.

Food price inflation will decrease next year but will remain high until the end of the forecast period (at about 15%). Businesses will partially adapt to the new logistical conditions, but weaker harvests and more expensive imported food products will put upward pressure on prices.

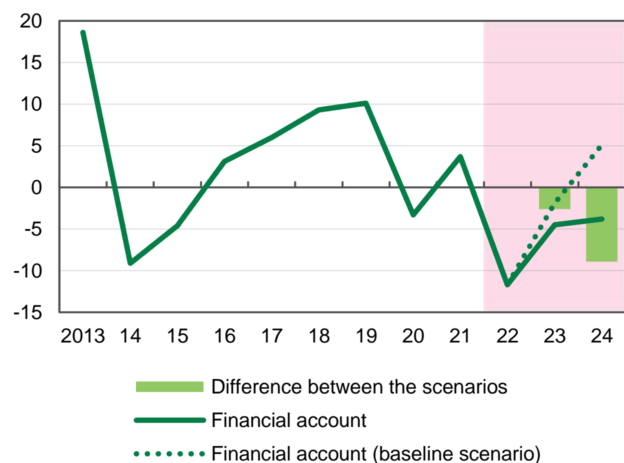
The administered component of inflation in 2023 will be restrained by the effect of the moratorium on raising utility tariffs, and will be determined primarily by increases in the prices of tobacco and alcohol products through higher excise taxes. However, imbalances in the energy sector

Figure 4.4. Current account (excluding grants), USD bn



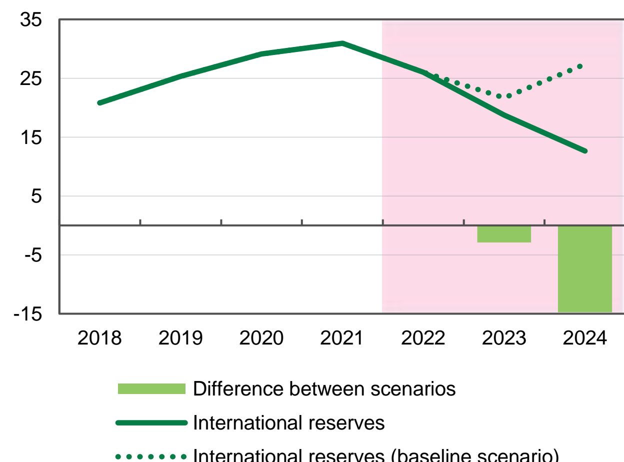
Source: NBU staff estimates.

Figure 4.5. Financial account: net inflows, USD bn



Source: NBU staff estimates.

Figure 4.6. Gross international reserves, USD bn



Source: NBU staff estimates.

accumulated over several years will make it necessary to gradually bring energy tariffs for households to market levels, starting from H2 2024. This will cause a sizeable increase in the administered component of inflation and lead to a steep acceleration in consumer inflation at the end of 2024.

The price of fuel will continue to grow due to sustained high global oil prices and depreciation effects. As a result of second-round effects, this will push up the cost of other CPI components.

In 2023–2024, the balance of payments will be worse than in the baseline forecast, due to limited export opportunities and continued capital outflows. As a result, international reserves will decrease over the entire forecast horizon

In 2023, the expected net FX outflows from the country coincide with the baseline scenario. Limited export opportunities will be offset by lower imports caused by slower recovery and the weaker hryvnia. Inflows of support from international partners will remain unchanged. However, net outflows will already start to exceed the level of the baseline scenario in 2024. Larger losses in the manufacturing and agricultural sectors will restrain export growth, and a longer period of high security risks will lead to a greater need for imports for post-war reconstruction. Capital outflows from the private sector will remain strong, primarily due to an increase in FX cash outside banks.

As a result, international reserves will decrease over the entire forecast horizon, and in 2024 they will fall below the critical level of three months of future imports.

The risks of macrofinancial destabilization are much higher for this scenario than for the baseline one, which means that a prudent macroeconomic policy and support from international partners will be crucial.

Alternative forecast (October 2022)

Indicators	2022 baseline	2022 alternative	2023 baseline	2023 alternative	2024 baseline	2024 alternative
REAL ECONOMY, % yoy, unless otherwise stated						
Nominal GDP, UAH bn	**4750**	**4750**	**6175**	**5978**	**7350**	**7025**
Real GDP	**-31.5**	**-31.5**	**4.0**	**1.9**	**5.2**	**2.5**
GDP Deflator	26.9	26.9	25.0	23.5	13.1	14.6
Consumer prices (period average)	20.5	20.5	25.8	22.2	13.2	15.4
Consumer prices (end of period)	**30.0**	**30.0**	**20.8**	**13.4**	**9.4**	**19.6**
Core inflation (end of period)	24.5	24.5	13.3	13.3	3.0	13.9
Non-core inflation (end of period)	36.6	36.6	28.2	13.6	14.5	24.5
raw foods (end of period)	51.6	51.6	15.6	15.5	3.1	14.3
administrative prices (end of period)	17.0	17.0	46.7	9.5	29.7	44.0
Producer prices (end of period)	49.0	49.0	12.0	15.5	5.0	7.0
FISCAL SECTOR						
Consolidated budget balance, UAH bn	**-764**	**-764**	**-804**	**-821**	**-591**	**-607**
% of GDP	-16.1	-16.1	-13.0	-13.7	-8.0	-8.6
BALANCE OF PAYMENTS (NBU methodology)						
Current account balance, USD bn	6.8	6.8	-8.0	-8.3	-5.1	-7.9
Exports of goods and services, USD bn	57.3	57.3	58.5	53.2	64.3	56.1
Imports of goods and services, USD bn	82.1	82.1	95.1	92.8	89.2	88.9
Remittances in Ukraine, USD bn	13.9	13.9	16.4	16.9	13.8	15.5
Financial account, USD bn	11.7	11.7	1.9	4.5	-5.1	3.8
BOP overall balance, USD bn	**-4.9**	**-4.9**	**-9.9**	**-12.8**	**0.0**	**-11.8**
Gross reserves, USD bn	**26.0**	**26.0**	**21.7**	**18.7**	**27.4**	**12.6**
Months of future imports	3.3	3.4	2.9	2.5	3.5	1.6
MONETARY ACCOUNTS (Cumulative since the beginning of the year)						
Monetary base, %	15.0	**15.0**	9.3	**10.5**	6.2	**7.5**
Broad money, %	13.0	**13.0**	15.0	**19.5**	9.5	**11.7**
Velocity of broad money (end of year)	2.0	**2.0**	2.3	**2.1**	2.5	**2.2**

Alternative forecast assumptions

Indicators			2022 baseline	2022 alternative	2023 baseline	2023 alternative	2024 baseline	2024 alternative
Full access to Black Sea ports			-	-	since H2	-	+	since H2
Official financing		USD bln	31.1	31.1	28.0	28.0	20.0	20.0
Tariffs for gas and heating			unchanged	unchanged	1/2 of parity	unchanged	at parity	1/2 of parity
Migration (net)		mln people	-8.0	-8.0	0.4	-1.4	2.5	0.6
World prices:*								
	Steel price, Steel Billet Exp FOB Ukraine	USD/t	623.0	623.0	597.8	597.8	549.3	549.3
		% yoy	1.3	1.3	-4.0	-4.0	-8.1	-8.1
	Iron ore price, China import Iron Ore Fines 62% FE	USD/t	123.0	123.0	106.3	106.3	82.8	82.8
		% yoy	-23.9	-23.9	-13.6	-13.6	-22.1	-22.1
	Steel price, No.1 Hard Red Winter, ordinary protein, Kansas City	USD/t	365.8	365.8	310.3	322.2	272.6	304.3
		% yoy	38.8	38.8	-15.2	-11.9	-12.1	-5.5
	Corn price, Yellow #2 Delivery USA Gulf	USD/t	314.5	314.5	259.9	271.8	229.2	256.6
		% yoy	21.2	21.2	-17.4	-13.6	-11.8	-5.6
	Oil price, Brent	USD/bbl	102.0	102.0	94.3	94.3	81.4	81.4
		% yoy	44.9	44.9	-7.5	-7.5	-13.7	-13.7
	Natural gas price, Netherlands TTF	USD/kcm	1644.9	1644.9	1371.0	1371.0	932.3	932.3
		% yoy	185.8	185.8	-16.7	-16.7	-32.0	-32.0
Gas transit		bcm	21.2	21.2	20.0	20.0	20.0	20.0
Grain and leguminous harvest		m t	52.5	52.5	57.0	51.5	62.0	52.5

** Annual average*

Terms and Abbreviations

GDP	Gross domestic product
GVA	Gross value added
STSU	State Treasury Service of Ukraine
SCSU	State Customs Service of Ukraine
SSSU	State Statistics Service of Ukraine
SES	State Employment Service
STA	Single Treasury Account
EU	European Union
ECB	European Central Bank
IE	Inflation expectations
CPI	Consumer Price Index
MPC	Monetary Policy Committee
QPM	Quarterly Projections Model
IMF	International Monetary Fund
ILO	International Labour Organization
MP	Monetary policy
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
REER	Real effective exchange rate
U.S.	United States of America
Fed	U.S. Federal Reserve System
CB	Central bank
EM	Emerging market
IT	Information technologies
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
RHS	Right-hand scale