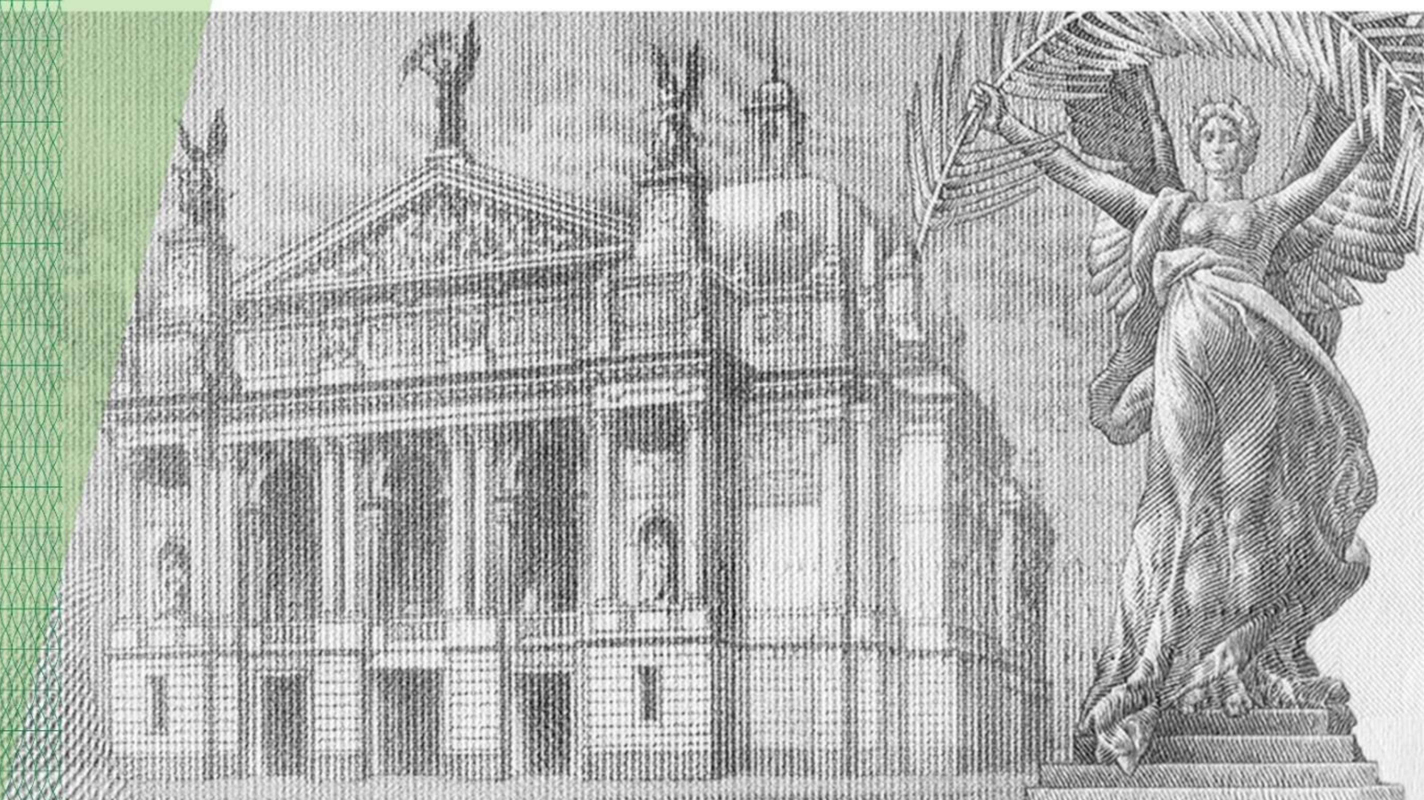
National Bank
of Ukraine

Inflation Report

October 2021



The Inflation Report reflects the opinion of the National Bank of Ukraine (NBU) regarding the current and future economic state of Ukraine with a focus on inflationary developments that form the basis for monetary policy decision-making. The NBU publishes the Inflation Report quarterly in accordance with the forecast cycle.

The primary objective of monetary policy is to achieve and maintain price stability in the country. Price stability implies a moderate increase in prices rather than their unchanged level. Low and stable inflation helps preserve the real value of income and savings of Ukrainian households, and enables entrepreneurs to make long-term investments in the domestic economy, fostering job creation. The NBU also promotes financial stability and sustainable economic growth unless it compromises the price stability objective.

To ensure price stability, the NBU applies the inflation targeting regime. This framework has the following features:

- A publicly declared inflation target and commitment to achieve it. Monetary policy aims to bring inflation to the medium-term inflation target of 5%. The NBU seeks to ensure that actual inflation does not deviate from this target by more than one percentage point in either direction. The main instrument through which the NBU influences inflation is the key policy rate.
- Reliance on the inflation forecast. In Ukraine, it takes between 9 and 18 months for a change in the NBU's key policy rate to have a major effect on inflation. Therefore, the NBU pursues a forward-looking policy that takes into account not so much the current inflation rate as the most likely future inflation developments. If inflation is projected to be higher than its target, the NBU raises the key policy rate to bring inflation down to the 5% target. And vice versa, if inflation is projected to be below its target, the NBU cuts the key policy rate.
- Open communications with the public. The transparent and predictable monetary policy of the NBU, which is achieved among other things by publishing this Inflation Report, enhances public confidence. Public confidence, in turn, is an important prerequisite for the effective management of inflation expectations and ensuring price stability.

The NBU Board decides on the key policy rate eight times a year, in line with a schedule it publishes in advance. The decisions the NBU Board makes in January, April, July, and October are based on new macroeconomic forecasts. At the remaining four meetings (taking place in March, June, September, and December), the NBU Board makes its interest rate decisions based on 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 week later, the NBU publishes the Inflation Report with a detailed macroeconomic analysis and outlook underlying its interest rate decisions. 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, which reflect the consensus position of the NBU Board, the summary shows depersonalized opinions of all MPC members on the monetary policy decision to be made and their positions. That includes not only the opinions expressed by the majority, but also dissenting views.

The analysis in the Inflation Report is based on the macroeconomic 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 most data in this report is 28 July 2021.

The forecasts of inflation and other macroeconomic variables were prepared by the Monetary Policy and Economic Analysis Department and approved by the NBU Board at its monetary policy meeting on 21 October 2021[1].

Previous issues of the Inflation Report, the presentation of the Inflation Report, the forecast of the main macroeconomic indicators, and time series and data for tables and charts in the Inflation Report are available on the NBU website at the following link: https://bank.gov.ua/monetary/report.

[1] NBU Board decision No. 516-D *On Approval of the Inflation Report* dated 21 October 2021.

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Summary

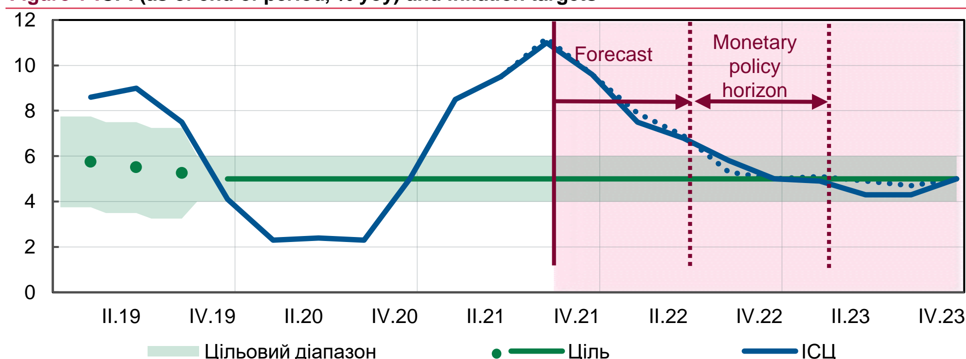
As expected, inflation ranged between 10% and 11% in the past several months, close to the forecast the NBU made in July

Consumer inflation increased to 11% in September. A number of external and internal factors continued to fuel inflation. Global commodity prices remained high. Underlying inflationary pressures also persisted as expected. An increase in businesses' production costs – namely expenses on wages, raw materials, and energy – impacted consumer prices. Inflation expectations also remained high. At the same time, benign FX market conditions restrained price growth. This maintained core inflation below the July forecast trajectory.

Inflation will slow to a single-digit level at the end of 2021 and will gradually decline to its 5% target next year

The NBU has maintained its December 2021 inflation forecast at 9.6%. The NBU estimates the growth in consumer prices will peak in September–October this year. Afterwards, the inflation trend will reverse. Inflation will decline thanks to waning low base effects, FX markets remaining favorable, and this year's large harvests. The monetary policy tightening actions taken earlier by the NBU – the optimization of the monetary policy design, a complete rollback of emergency monetary measures, and raising the key policy rate – will also curb growth in consumer prices. The above factors will make inflation slow to the 5% target at the end of 2022 and remain close to the target further on. A faster disinflation in 2022 will be impeded by higher-than-expected energy prices in the next few quarters, consumer demand, and labor costs. Moreover, considering the prolonged effects of these pro-inflationary factors, the NBU will have to tighten the monetary conditions in 2022–2023 more than envisaged in the July forecast in order to bring inflation to the target of 5%.

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



Source: SSSU, NBU calculations.

The NBU has revised its forecast of real GDP growth over the forecast horizon, taking into account a more lasting and strong impact of the pandemic and the consequences of the surge in natural gas prices

In H1 2021, the economic recovery was somewhat weaker than expected. This was driven by a number of factors, in particular a weaker recovery in the services sector due to pressure from production costs. In contrast, high-frequency indicators of economic activity point to an economic revival in H2. Specifically, a record harvest of early grain crops spurred growth in agriculture, which affected related sectors as well. Robust consumer demand supported retail trading and passenger turnover. A pickup in investment activity, together with a favorable external price environment, contributed to a recovery in construction and industrial production. However, factoring in the H1 performance, high energy prices, and the worsening of the pandemic, the NBU has revised downward its economic growth forecast for 2021, from 3.8% to 3.1%.

Persistent high prices for energy, the global deficit of raw materials and parts, and the worldwide contraction of supply will continue to restrain Ukraine's industrial output and curb economic recovery next year. As a result, the NBU has downgraded its GDP growth forecast for 2022, from 4% to 3.8%. In 2023, the economy will grow by 4%. The main drivers of economic growth over the forecast horizon will be the continued global economic recovery

[2]Unless specified otherwise, a dashed line in the figures indicates the previous forecast.

and an increase in domestic demand, including investment demand. The terms of trade will also remain favorable for Ukrainian exporters, although global prices will slightly decline from today's peaks. Progress in the vaccination rollout will also have a positive effect by preventing the imposition of lockdowns or other restrictions on economic activity. In particular, this will facilitate the services sector's recovery, and help return the labor force participation rate to its pre-pandemic levels.

The current account deficit will be small in 2021 thanks to a bumper harvest and high export prices. However, it will widen markedly in the coming years

The current account deficit in 2021 will hit about 1% of GDP. In the years ahead, the deficit will gradually widen to 3% to 4% of GDP. The deficit will be driven by some worsening in the terms of trade due to a decrease in global prices and more robust consumer and investment demand resulting from economic recovery. The current account deficit will be fully offset by capital inflows – both debt and FDI – in Ukraine.

The primary assumption in the macroeconomic forecast is that Ukraine will continue to cooperate with the IMF

Ukraine has reached a staff-level agreement with the IMF. This has opened the way for the first revision of the Stand-by Arrangement by the IMF Executive Board, and for consideration of the request for the program to be continued. The implementation of the existing Stand-by Arrangement will ensure the receipt of official financing in 2021–2022 and provide better terms of external borrowing, while also supporting foreign investors' interest in hryvnia assets. Cooperation with the IMF will help speed up economic growth, stabilize inflation at its target level, and maintain international reserves at USD 30–31 billion in the coming years.

In order to bring inflation back to its target of 5%, the NBU will have to maintain its key policy rate at no less than 8.5% until at least H2 2022

Under the baseline scenario, with a view to bringing inflation back to its 5% target, the NBU has delayed its monetary policy easing cycle until Q3 2022 rather than until Q2, as was expected in July. Moreover, the NBU expects its key policy rate cuts over the next year to be more gradual, bringing the key policy rate to 7.5% as of end-2022 (compared to 6.5% in the July forecast).

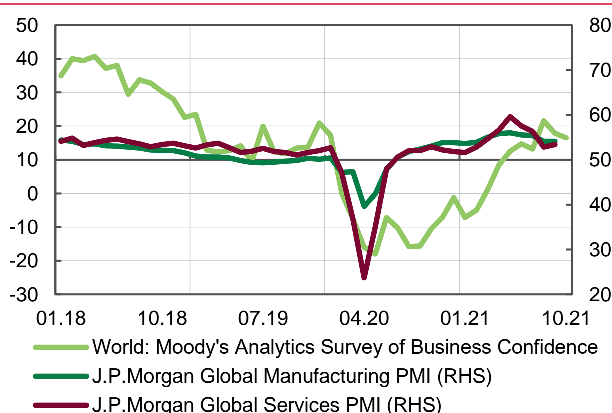
The key risks to the macroeconomic forecast are the imposition of stricter quarantine measures in Ukraine and globally, and a more protracted and stronger-than-expected global surge in inflation

Higher prevalence of disease due to the low vaccination rollout in Ukraine could lead to a stricter lockdown and a more significant slowdown in economic activity. However, in contrast to the quarantine imposed last year, this time supply will be more affected than demand, which could increase pro-inflationary pressures. What is more, there are stronger risks of a more protracted global price surge than envisaged in the baseline scenario, potentially putting pressure on domestic prices. This, among other things, refers to energy prices rising above currently projected levels, and a worldwide supply deficit. These factors could cause global stagflation. Other pro-inflationary risks also remain important, such as a sharp deterioration in the terms of trade, capital outflows from emerging markets, and an escalation of Russian military aggression. In view of the above, the NBU assesses the risks for its baseline scenario of inflation and the key policy rate as tilted to the upside, especially in the medium term. If the said or any other pro-inflationary risks materialize, the NBU also stands ready to raise its key policy rate and deploy other monetary tools.

Part 1. External Environment

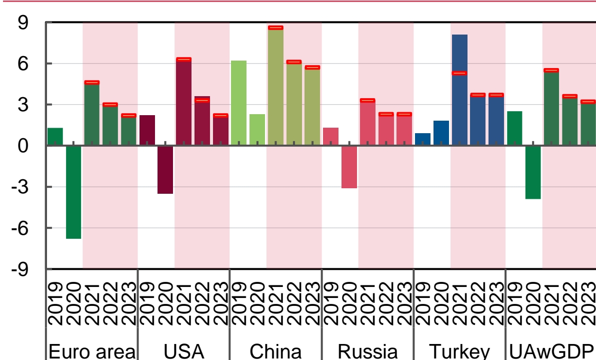
- After a period of active recovery in H1 2021, global economic growth will slow due to the gradual phasing out of stimulus measures, shortages of raw materials and components, and new waves of the pandemic.
- Global commodity prices will be high on the back of sizeable demand and limited supply. Price corrections will be slow and proceed at a variety of paces, depending on the ability to increase the supply of the respective goods. Global inflation will remain high until the end of this year. It will then start to decelerate, reaching its target levels in some countries at the end of 2022, and continue to be flat further on.
- Global financial market conditions will tighten in the wake of the expected phasing out of quantitative easing (QE) by the Fed and increased investor interest in the assets of the advanced economies, fueled by their higher growth rates compared to emerging markets (EMs). This will make EMs compete more for capital and require further normalization or even a transition to a tight monetary policy.

Chart 1.1. **Global PMI and та World Business Confidence**



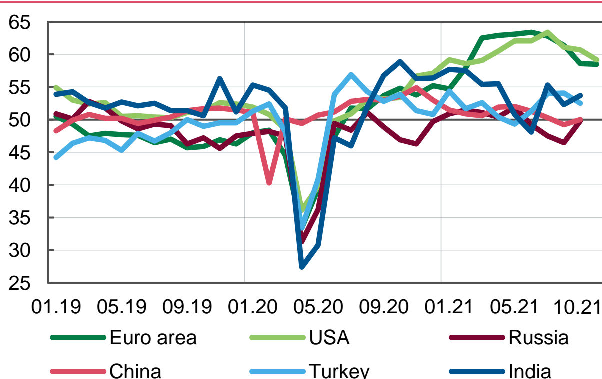
Source: J.P.Morgan, IHS Markit, Moody's.

Chart 1.2. **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.

Chart 1.3. **Manufacturing PMI of selected countries**



Source IHS Markit.

The recovery in the global economy will slow and remain unstable because of new waves of the pandemic and the shortage of raw materials and components

In Q3 global economic growth was the weakest since the start of the year due to the spread of the Delta variant. The growth in global industrial production was restrained by a shortfall of raw materials and components supplies, especially from the Asia-Pacific region, owing to the tightening of the quarantine measures.

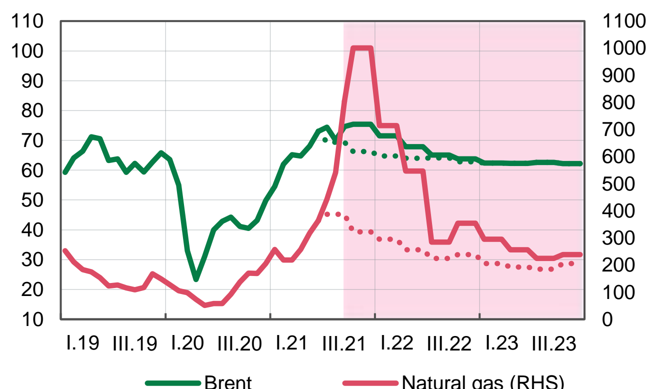
The leading role of supply factors in the economic activity slowdown was reflected in an unprecedented increase in backlogs of work (the difference between volumes of new orders and actual output, according to data from IHS Markit). The number of companies reporting a decrease in output due to a lack of staff or materials was almost five times the historical normal level. The shortages were the most pronounced in China in August–September. As a result, the China General Manufacturing PMI dropped below its neutral level, something that has not been seen since the start of the pandemic. At the same time, this caused serious delays in the supply of goods in the United States and Europe.

Leading indicators of global trade in both services and goods also point to a slower recovery. The construction index declined below the trend, and the growth in new export orders in the goods trade slowed considerably. Some PMI components that are targeted at future periods also signaled weaker global economic growth in the following months.

Economic recovery will remain uneven across the globe due to countries' varying ability to apply stimulus policies and their different levels of vaccination coverage. Advanced economies will reach the pre-pandemic level in early 2022, whereas EMs will recover to this level only in late 2022 – early 2023 (except for China, which had already recovered to pre-pandemic levels at the end of last year).

The US economy has been recovering actively thanks to growth in consumption, reflecting the income support provided earlier this year by the government and the easing of quarantine restrictions. Investment remained high. However, the increase in the number of COVID-19 cases halted the recovery in those sectors that are the most susceptible to the pandemic. Bottlenecks appeared in supply chains. Despite high demand, the number of construction permits issued fell due to the shortage of materials. Some

Chart 1.4. World crude oil prices (USD/bbl) and Netherlands TTF* natural gas prices (USD/kcm), quarterly average

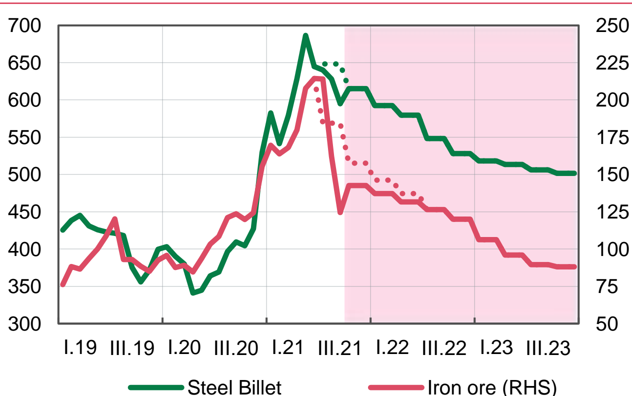


* Taking into account the peculiarities of determining the domestic price of natural gas in Ukraine, the indicator of natural gas has been replaced for analytical purposes - from the German hub to the Netherlands TTF.
Source: Refinitiv Datastream, NBU staff estimates.

Chart.5*. External Commodity Price Index (ECPI), Dec 2004 = 1**

** ECPI is calculated using a basket of 14 world price indicators, weighted by the share of corresponding Ukrainian exports in total exports of Ukraine. The total weight of these goods in Ukrainian exports is over 70%.
Source: World bank, NBU staff estimates..

Chart 1.6. World price of ferrous metals and iron ore*, USD/MT, quarterly average**



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

* Dotted line in charts refers to previous forecast unless otherwise stated.

plants paused the production of cars in early September as semiconductor production was halted in Malaysia and Vietnam. The temporary closure of Chinese ports affected maritime transportation and increased backlogs. As a result, growth rates of producer prices were among the highest across advanced economies. Although the overall unemployment rate decreased to 5.2% in August, unemployment adjusted for COVID-related nonparticipation[3] was 7.5% (that said, some companies even reported having reduced their staff). The GDP of the United States is expected to grow rapidly by the end of this year but slow further on as the effects of the large-scale stimuli wane.

The Euro area's economy continues to grow, although production is limited by shortages of equipment and materials. Unlike in other countries, the spread of the new virus variant has not led to a tightening of quarantine restrictions. Household income is rising, and unemployment is on the decline. Wages are expected to grow moderately and unemployment is projected to drop below the pre-pandemic level only in Q2 2023. The budget deficit at year-end 2021 will be close to the level seen in 2020 – 7.1% and 7.3% of GDP respectively – and is forecast to decline in the coming years. Taking into account the current rapid recovery, the Euro area's economy will reach the pre-pandemic level by the end of 2021 and approach its pre-crisis trend in 2023.

Economic activity slowed in EM countries in Q3: leading indicators signaled a decline in industrial output compared to the previous period for the first time since June 2020. Companies continued to use their inventories prudently, and the labor force has decreased for the first time in six months. The Chinese economy slowed sharply in Q3, primarily due to the decline in construction (by 1.8% yoy). In contrast, India, Ukraine's second largest trading partner in Asia and an important competitor on the metals market, has recorded and increase in industrial output for the first time since April. As the situation around the pandemic stabilizes, increases in domestic demand and international trade will support growth in EM economies. At the same time, the economy of China will grow more slowly than before as the country decommissions outdated industrial facilities with the goal of achieving carbon neutrality, and shifts the focus of its state economic policy toward reducing financial risks.

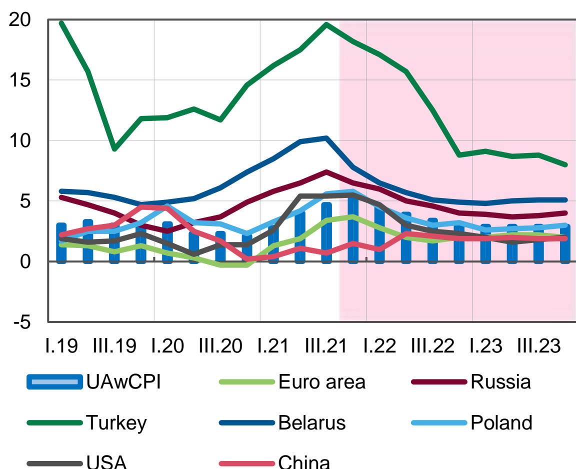
After a sharp rise, global commodity prices will undergo a gradual correction

Global energy prices, particularly prices for crude oil and natural gas, grew in Q3. Despite the increase in production by OPEC+ countries, crude oil rose in price due to a significant drawdown of inventories in the United States and a decrease in production in the Gulf of Mexico caused by hurricanes. Oil prices are expected to hover around USD 70–80 per barrel: high demand will be covered by larger production volumes by OPEC+ members and other countries, in particular the United States.

In Europe, natural gas prices reached record highs due to the depletion of gas stocks, relatively weak pipeline imports from

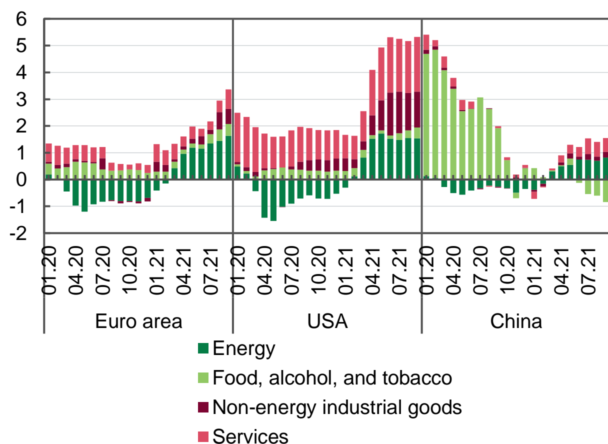
[3] An alternative indicator calculated by the Fed, reclassifying individuals who are considered employed but who were absent from work for some reason, as actually not participating in the labor force due to the pandemic. The broader indicator covered 12.8 million persons in July, compared to 8.7 million officially unemployed persons.

Chart 1.7. UAwCPI and consumer inflation of selected Ukraine's MTP countries (eop), % yoy



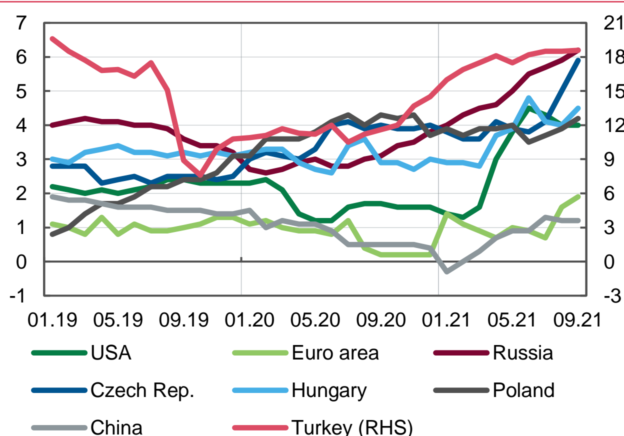
Source: National statistical agencies, NBU staff estimates.

Chart 1.8. Contributions to annual CPI growth in the US, Euro area, and China, pp



Source: national statistical offices, OECD, NBU staff estimates.

Chart 1.9. Core inflation dynamics, % yoy



Source: OECD, national statistical offices.

Russia this summer, and high demand for LNG from Asia. Natural gas prices are expected to decline in Q4, primarily on the back of larger supply from Norway and Russia, and LNG imports. Later on, despite the decline, prices will remain substantially higher than before the crisis, in particular due to demand for natural gas as a more environmentally-safe type of fuel, driven by tighter emissions controls.

Global prices for Ukraine's main export commodities (the External Commodity Price Index, ECPI) dropped by 8% qoq in Q3, although they remained 52% higher than in the same period of the pre-crisis year 2019. Global prices for the majority of commodity groups are expected to decrease as supply increases. However, price levels will remain considerably higher over the forecast horizon than before the pandemic in 2015–2019 as emissions controls get tighter across the globe, boosting production costs.

Steel prices declined in Q3 due to fears of a decrease in demand, especially from China. Coupled with a seasonal increase in supply from Australia and Brazil, this caused a sharp decline in iron ore prices. However, high global demand for steel, controls over steel production in China in H2, and disruptions in supply chains will buoy steel and iron ore prices until the end of the year. Further on, strong global demand for steel (excluding that from China) and high-quality iron ore provoked by climate change mitigation requirements will prevent prices from falling deeply.

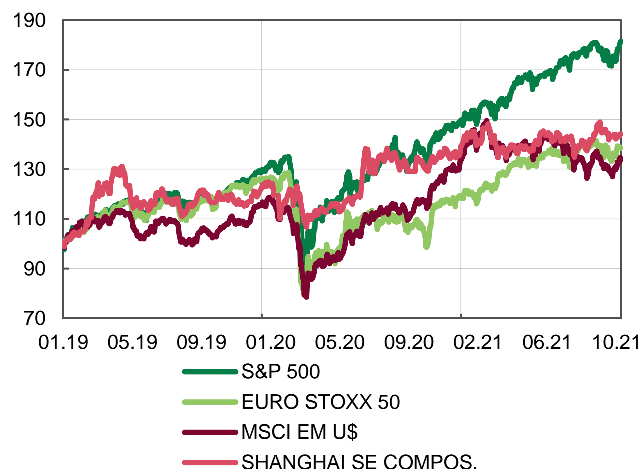
Global price trends for grain, in particular for wheat and corn, were mixed: corn became cheaper, while wheat prices fluctuated around the last quarter's highs. This was due to a change in harvest expectations as weather conditions turned unfavorable for wheat and good for corn. Wheat prices are projected to grow over the forecast horizon because of the weaker harvests impact on inventories. Corn prices will continue to decline thanks to bumper crops, albeit more slowly than expected as the rise in natural gas prices affects drying costs.

Global financial conditions will tighten as the Fed phases out its QE, despite the ECB's monetary policy remaining relatively loose

Steady growth in prices for raw materials and components, price increases by suppliers, and higher transportation costs will make the rise in consumer prices in many countries more sustained than expected. In these circumstances, monetary policy must balance the need to restrain inflation and being prudent about reducing the impulse for economic recovery.

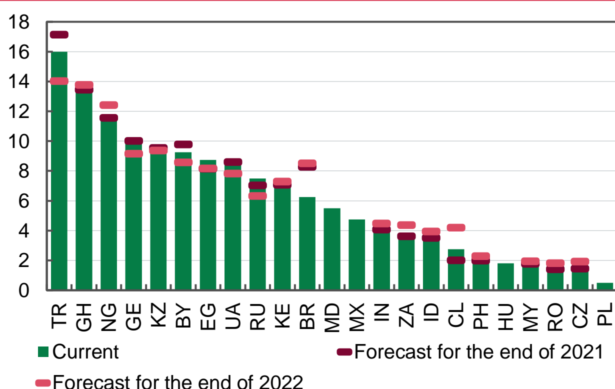
Consumer inflation in the United States greatly exceeded the Fed's target, prompting discussions of a QE phase out. However, unlike short-term expectations, long-term expectations remain relatively stable, according to the Survey of Consumer Expectations (SCE). Inflation will decline, in particular thanks to the Fed gradually phasing out its measures to support the economy – both the emergency assistance for the period of the pandemic (CARES) and QE. On the other hand, the path of core inflation was driven by supply factors, and low equilibrium interest rates will contribute to its return to the pre-pandemic level. The Fed is thus expected to raise its interest rate in H2 2022.

Chart 1.10. Global equity benchmarks, 01 Jan 2019=100



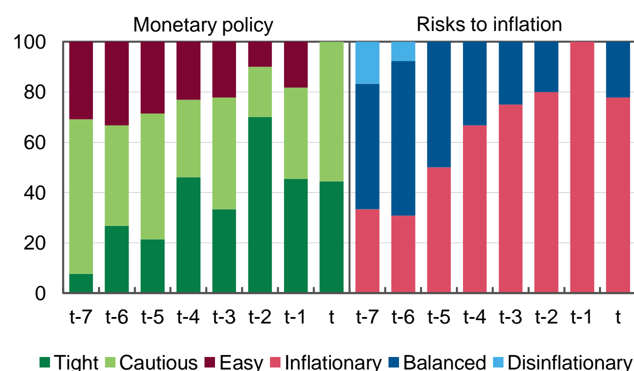
Source: Refinitiv Datastream, NBU staff estimates.

Chart 1.11. Key policy rates in selected EM countries, %



Source: official web-pages of central banks, Focus Economics, as of 27.10.21.

Chart 1.12. Balance of CBs' sentiments according to press releases on monetary policy decisions*, % of CB



* t – meeting in Oct 2021, t-1 – Sep 2021, t-2 – Aug 2021, t-3 – Jul 2021, t-4 – Jun 2021, t-5 – Apr / May 2021, t-6 – Mar / Apr 2021, t-7 – Jan / Feb 2021.
Each indicator accounts only for those CBs, which held their meetings in the respective period.
Source: official web-pages of central banks, as of 27.10.21.

Consumer inflation in the Euro area soared to the highest level in the past 10 years. The current inflation dynamics are expected to be temporary and mainly reflect the sharp increase in energy prices that started in mid-2020, the cancellation of the reduction in VAT in Germany, deferred demand, and pressures on costs caused by shortages of materials. The effect of these factors should wane in the coming years, which will lead to a decline in inflation. Inflation expectations do not reflect the risk of a rise in inflation either, and surveys of monetary analysts show that inflation will stabilize close to the target of 2% only in five years. However, as the Euro area's economy continues to recover, including due to monetary stimuli, core inflation is expected to increase gradually in the medium term, primarily on the back of moderate growth in wages. Taking into account these factors, and the expected closing of the negative GDP gap in the next two years, the European Central Bank (ECB) has started to gradually phase out its monetary stimuli, in particular by reducing bond purchases under the Pandemic Emergency Purchase Programme (PEPP). Nevertheless, the ECB's monetary policy will remain relatively loose.

Tighter global financial conditions will make EMs compete more for capital flows

Phasing out QE programs, especially by the Fed, and faster recovery in advanced economies compared to EM countries amid high inflation leads to higher yields on the government bonds of advanced economies, primarily US government bonds. Moreover, stronger fears of a slowdown in EM economies have resulted in an increase in spreads on corporate bonds, albeit from all-time lows. Therefore, risks of capital flight from EMs rose, which is clearly reflected in the short term on the stock market. Against the backdrop of high inflation, this has spurred monetary policy tightening by EM countries. In particular, in September–October, monetary policy tightened for the first time in a long period in Romania, Azerbaijan, and Poland (which unexpectedly raised the key rate for the first time in nine years). At the same time, Hungary, the Czech Republic, Kazakhstan, and Brazil signaled their readiness to continue hiking their rates in the near future.

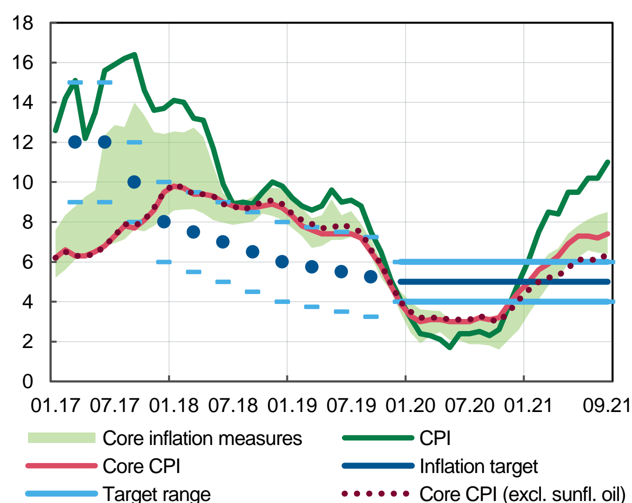
The gradual pace of phasing out stimuli programs and improved macroeconomic resilience will in the long run allow EMs to adapt to changes in financial conditions better than in 2014. In addition, the continued normalization of monetary policy in EMs and even a shift to tighter monetary policies will support investor interest in their assets and help bring inflation back to target levels.

Part 2. Economy of Ukraine

2.1. Inflationary Developments

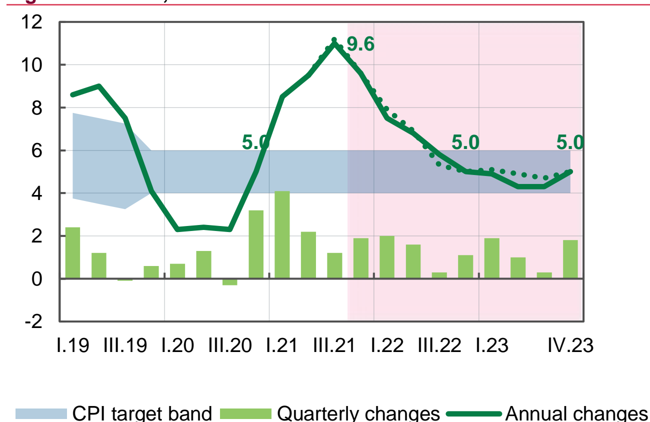
- In September–October, inflation peaked at 10%–11%. From now on, the inflation trend will reverse. Inflation will decline to 9.6% at the end of 2021, reaching its 5% target at the end of 2022 and staying close to that level afterwards.
- Inflation will gradually decelerate thanks to waning low base effects, FX markets remaining favorable, and this year's large crop harvests. The monetary policy tightening actions taken earlier by the NBU will also curb inflationary pressures.
- Higher-than-expected energy prices in the next few quarters, consumer demand, and labor costs will prevent inflation from decelerating more quickly.

Figure 2.1.1. Underlying inflation trends*, % yoy



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

Figure 2.1.2. CPI, %



Source: SSSU, NBU staff estimates.

Although accelerating to a two-digit level, consumer inflation will drop below 10% by the end of 2021, reaching its 5% target in late 2022

Consumer inflation sped up in Q3 2021, to 11.0% yoy in September, up from 9.5% yoy in June. At the same time, actual CPI growth rates in Ukraine were somewhat below the forecast published in the July 2021 Inflation Report. This was, among other things, attributed to a stronger hryvnia and unchanged electricity prices for households (the NBU expected these prices to rise in its July forecast)[4].

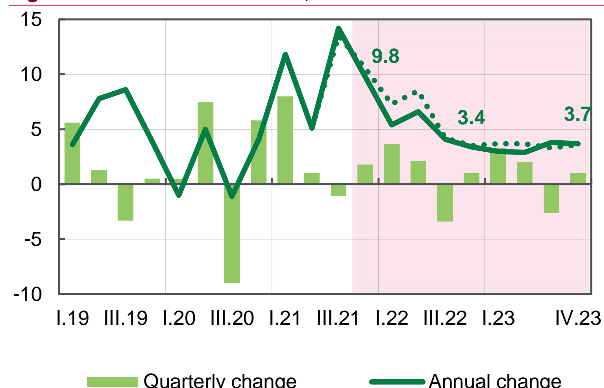
Robust consumer demand, rising production costs and high global prices for commodities continued to be the main drivers of the CPI's faster growth. More specifically, the findings of the business outlook survey for Q3 2021 show that energy and raw material prices and labor costs have been the most important price drivers for three quarters running. The impact of these factors will gradually weaken.

By the end of 2021, inflation will have declined to 9.6%, as predicted earlier. The NBU estimates the growth in consumer prices will peak in September–October this year. Afterwards, the inflation trend will reverse. The pass-through effects to prices of this year's stronger hryvnia and the bumper harvest will help reduce inflation. The monetary policy tightening actions taken earlier by the NBU – the optimization of the monetary policy design, a complete rollback of emergency monetary measures, and key policy rate hikes – will also curb growth in consumer prices. Looking ahead, a persisting prudent monetary policy will help control inflation expectations, ease underlying inflationary pressures markedly, and bring inflation back to its 5% target in late 2022. Afterwards, inflation will be close to its target level. A tighter fiscal policy than in previous periods and slower wage growth will also contribute to keeping inflation close to its target.

More rapid disinflation will be impeded by energy prices remaining high for longer. That said, the direct effect on consumer prices will be limited by the annual contracts with fixed prices for gas and unchanged tariffs for electricity, heating and hot water[5] for households. Higher gas prices,

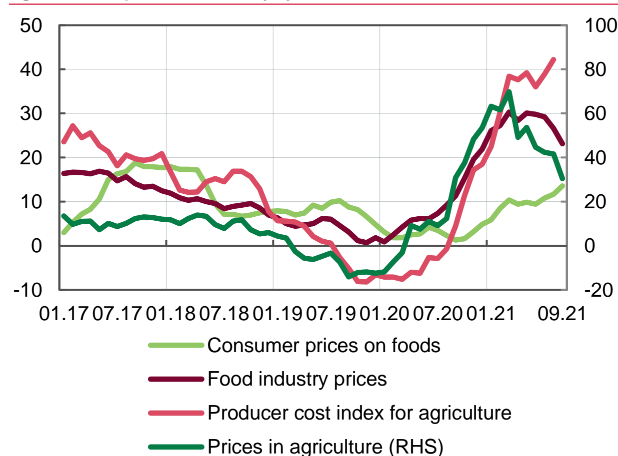
[4] On 31 July 2021, fixed electricity prices for households were set to expire, as stipulated in Resolution No. 483, dated 5 June 2019 (Annex 3). However, at its meeting on 28 July 2021 the government amended this resolution, extending the application of fixed prices until 31 August. At one of its subsequent meetings, the government extended this period until 30 September, after which some households will still pay a fixed price, while other households will pay a yet lower price for electricity. This resolution will be in place until 30 April 2022.
[5] On 30 September 2021, the government, Naftogaz and local governments signed a memorandum on keeping heat and hot water prices at last year's levels. However, it is unlikely that all heat producers will be able to keep their prices unchanged if high gas prices persist.

Figure 2.1.3. Raw food inflation, %



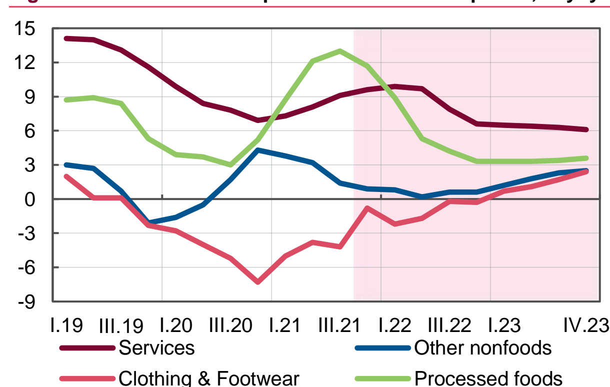
Source: SSSU, NBU staff estimates.

Figure 2.1.4. Food prices for consumers, in food industry and agricultural production, % yoy



Source: SSSU, NBU staff estimates.

Figure 2.1.5. Core CPI components at the end of period, % yoy



Source: SSSU, NBU staff estimates.

which will also affect other energy prices, including electricity prices for consumers other than households, will push up the cost of many goods (such as vegetable oil, sugar, and dairy products) and services, especially during the heating season. What is more, logistics costs will also rise due to higher fuel prices. Businesses will partly compensate for these expenses by raising their selling prices.

Considering the lasting effects of these pro-inflationary factors, the NBU will have to tighten the monetary conditions in 2022–2023 more than was envisaged in July's forecast in order to bring inflation back to its 5% target.

Despite the bumper harvest, food price growth will decelerate slowly on the back of pressures from production costs

The growth in raw food prices spiked in Q3 2021. The main reasons for these remained stagnating animal breeding, in part due to expensive fodder, the effect from last year's poorer harvest, and pressures from higher global food prices. The latter factor pushes up the prices of not only imports but also exports, as Ukraine is a small open economy. As a result, prices for animal products (such as meat, milk and eggs) grew at a faster pace, while sugar prices remained high. Colder weather conditions in September were an additional adverse factor[6]. Nevertheless, this year's better harvests reined in growth in the prices of some fruits and vegetables.

Stronger pressures from production costs (an increase in raw material prices and higher labor and energy costs) also drove up the prices of most processed foods. The growth in processed food prices was restrained by the further correction of sunflower oil prices, which, however, has not yet been passed on to the prices of processed products.

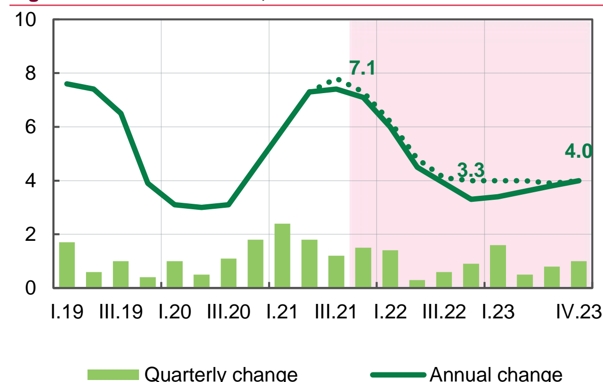
Looking ahead, pressures on food prices are expected to ease, mainly due to a correction in global prices, a better harvest and its impact on fodder prices. As a result, in 2022–2023 raw food price inflation will slow to 3%–4%. This will also help reduce pressures on the prices of processed foods, which are components of the core CPI. Overall, food price inflation will decelerate slowly on the back of high labor costs and energy prices.

Underlying inflationary pressures stabilized under the influence of a stronger hryvnia, and will ease in future. Even in mid-2022 core inflation will range between 3% and 4%

Core CPI growth in September was little changed on June (7.4% yoy and 7.3% yoy respectively), meaning that underlying inflationary pressures have stabilized. The core CPI growth was curbed by a drop in global sunflower oil prices, coupled with a stronger hryvnia. This offset the impact of sustained consumer demand and higher production costs, which were mainly reflected in services prices. More

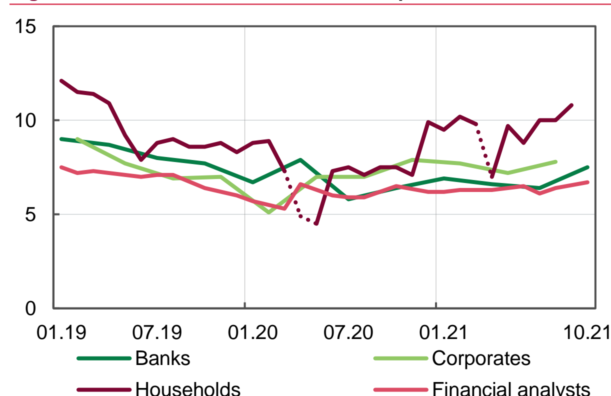
[6] According to meteopost.com, September 2021 was the coldest in the last eight years: the average temperature across Ukraine was 13.9°C in September 2021, whereas it was 18°C in September 2020. Moreover, frost was recorded in some regions. Among other things, the cold weather deepened the decline in egg production, while early frosts affected both the supply of vegetables and their quality.

Figure 2.1.6. Core inflation, %



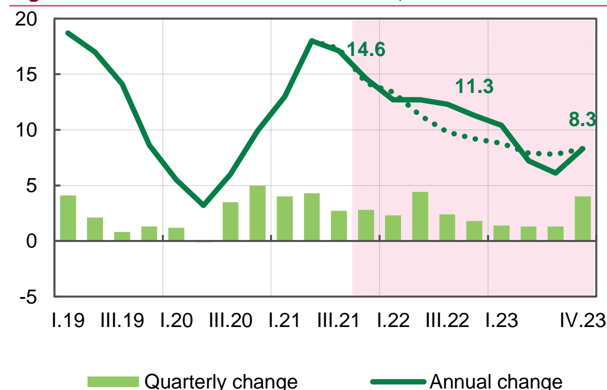
Source: SSSU, NBU staff estimates.

Figure 2.1.7. 12-month-ahead inflation expectations*, %



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

Figure 2.1.8. Administered Price Inflation, %



Source: SSSU, NBU staff estimates.

specifically, prices for financial, transportation, recreational and household services grew at a faster pace. Higher wages drove up the prices of educational and medical services significantly. The worsening in the epidemiological situation at the end of the quarter also contributed to the rise in medical services prices.

The strengthening of the hryvnia restrained growth in most nonfood prices. Prices for pharmaceuticals fell, with the decline in the prices of clothing and footwear becoming even slightly more pronounced compared to the previous quarter. Car prices also dropped year-on-year. Prices for processed foods most of which are imported goods (tea, coffee, spices and sea food) grew at a slower pace. Prices for tourist services continued to fall on the back of a stronger hryvnia and ample supply. At the same time, buoyant consumer demand and lower supply (in particular, shortages of microprocessors) sped up the growth in the prices of electronics.

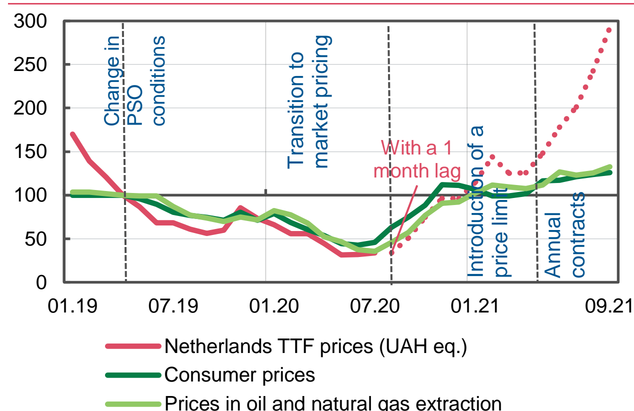
The inflation expectations of most respondent groups for the next 12 months worsened on the back of higher food and energy prices. That said, the NBU's tighter monetary stance, favorable FX market conditions, and a drop in actual inflation will contribute to a gradual improvement in these expectations.

Underlying inflationary pressures will gradually ease – by late 2021 core inflation will drop to 7.1%, declining to 3%–4% in 2022–2023. Among other things, the drop will result from eased pressures on processed food prices, a gradual slowdown in the growth of labor costs and energy prices, as well as from the effects of the tighter monetary policy and the strengthening of the hryvnia in 2021. Despite accelerating global inflation, the growth in imported goods prices will remain weak in the near future, thanks to the stronger hryvnia. Wage growth will gradually decelerate in the economy (read more in the Section "The Labor Market and Household Income" on page 22), easing pressures on prices both from supply (through production costs) and consumer demand. However, this process will be slow due to active labor migration. Other conditions being equal, this will require a tighter monetary policy. This will also prompt higher growth in the prices of services with the largest share of labor costs compared to other CPI components.

Administered price inflation will remain high, despite the limited impact of higher global energy prices in late 2021. Fuel price growth will slow gradually

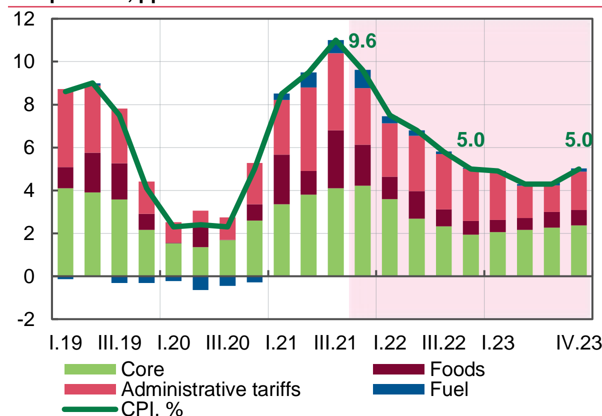
Administered price growth decelerated somewhat, from 18.0% yoy in June to 17.1% yoy in September, largely due to slower growth in gas prices for household consumers. The introduction of annual contracts with fixed prices for households in May 2021 offset the effect of a surge in gas prices in Europe. Unchanged electricity prices in August 2021 also affected the dynamics of administered prices. Prices for tobacco products fell, which may have been due to the increased supply of illegal tobacco products.

Figure 2.1.9. Natural gas prices, 04.2019 = 100



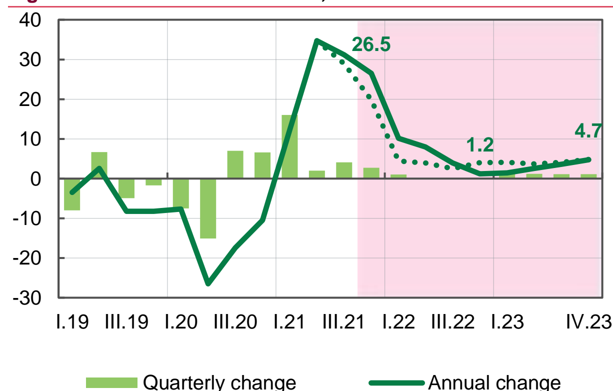
Source: SSSU, Refinitiv Datastream, NBU staff estimates.

Figure 2.1.10. Contributions to annual CPI growth by main components, pp



Source: SSSU, NBU staff estimates.

Figure 2.1.11. Fuel Price Inflation, %



Source: SSSU, NBU staff estimates.

Meanwhile, some administered price components increased at a faster pace. More specifically, alcoholic beverage prices were on the rise. The prices of transportation services also increased, driven by a hike in public transport fares in some cities.

Despite gas and electricity prices for households being fixed until May 2022, administered price inflation will be the highest among other CPI components. More specifically, tobacco product prices are expected to rise in the coming years, propelled by higher excise taxes. Electricity prices will rise at a fast pace (20%–25% annually), due to the need to increase these prices to economically sound levels, and to eliminate imbalances in the energy sector.

That said, the growth in administered price inflation will gradually decelerate, dragged down by its energy component. Among other things, it is expected that following a surge in late 2021, natural gas market prices will correct themselves in the summer of 2022. Therefore, in the next heating season, gas prices for households will rise only slightly, even despite them being brought to import parity prices, and they will remain unchanged in 2023. This will also slow the growth in the prices of centralized heating and hot water supplies. With a high comparison base, this factor will decelerate inflation below its target in the middle of 2023.

The growth in fuel prices slowed in Q3 2021 (to 31.2% yoy in September) on the back of the temporary downward correction in global oil prices seen in late summer and the impact of administered prices for A-92 and A-95 petrol and diesel fuel.

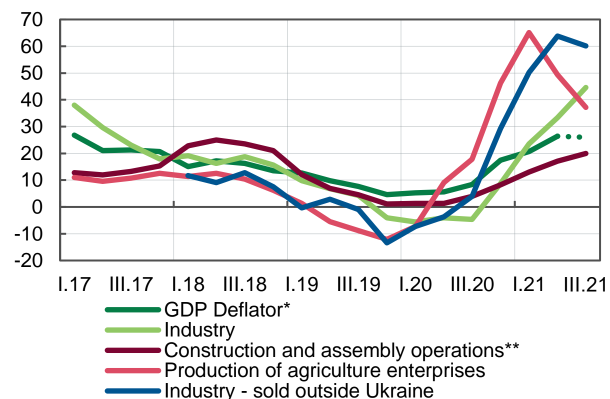
In 2021, fuel prices will surge by over 26%. Apart from having a direct impact on the overall CPI, this will put significant pressures on other prices by increasing transportation costs. In 2022, global oil prices are expected to correct themselves, which in turn is expected to slow fuel price inflation to below 5%, provided the exchange rate is only moderately volatile. On balance, fuel prices will have some disinflationary effect over the medium-term.

The GDP deflator has increased noticeably, mainly due to high global prices for raw materials. Looking ahead, the deflator will also decrease in response to a correction in these price in 2022

Q3 saw a spike in domestic producer prices, fueled mainly by a rise in global prices for the commodities most used in the domestic production. Stronger pressures on prices were also evident in the sectors that are most focused on the domestic market (construction, transportation, and communications), buoyed by higher production costs – largely labor costs and energy prices.

High energy prices will fuel producer price inflation until the middle of 2022. However, the GDP deflator and producer prices will start to rise at a slower pace in Q4 2021 in response to the correction of commodity prices. Nevertheless, global shortages in materials, components and

Figure 2.1.12. Other inflation measures, quarterly averages, % yoy



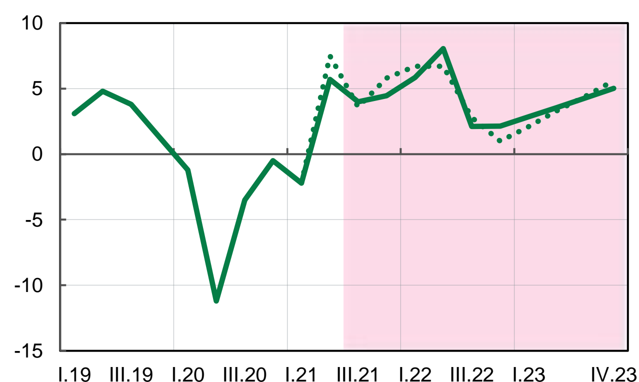
* Data for Q3 2021 represent the NBU staff estimates.
** Data for Q3 2021 cover two months.
Source: SSSU, NBU staff estimates.

certain products, coupled with the moderate rate of decline in Ukrainian wages, will prevent producer price inflation from decelerating rapidly. The GDP deflator and producer price growth will come close to moderate levels (commensurate with consumer inflation) only in 2023.

2.2. Demand and Output

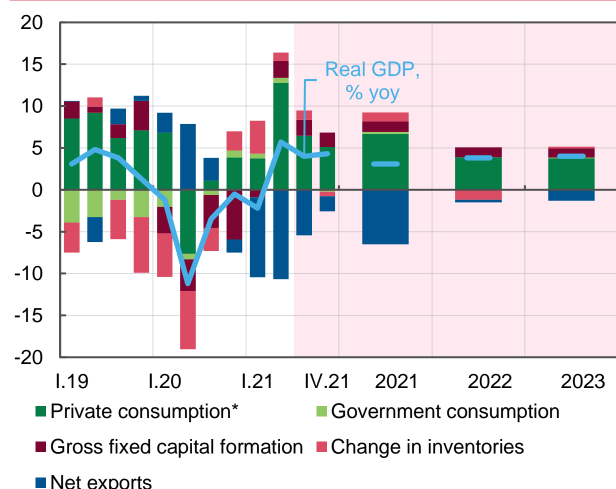
- In H1 2021, the economic recovery was somewhat weaker than expected for a number of reasons, such as the late start of the harvesting campaign.
- Economic growth is speeding up in H2, propelled by steady consumer demand, rebounding investment, and the bumper harvest. That said, the worsening epidemiological situation and high energy prices will restrain real GDP growth. Real GDP will rise by 3.1% in 2021.
- Unfavorable conditions on the energy market, coupled with the impact of global shortages of some products, will dampen Ukraine's industrial production and curb economic recovery next year. As a result, GDP will grow by 3.8% in 2022, while in 2023 it will rise to 4%. This will close the negative GDP gap in 2023.

Figure 2.2.1. Real GDP, yoy changes, %



Source: SSSU, NBU staff estimates.

Figure 2.2.2. Contributions to annual GDP growth by final use, pp



*Including non-profit institutions serving households.

Source: SSSU, NBU staff estimates.

In H1 2021, the economic recovery was somewhat weaker than expected

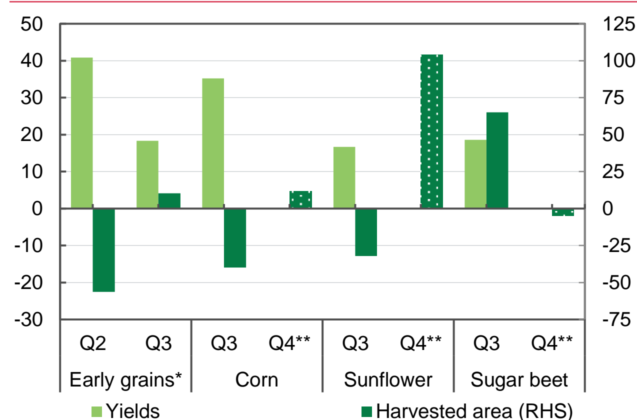
Real GDP increased by 5.7% yoy in Q2. Despite last year's low comparison base resulting from the coronavirus crisis, this year's economic recovery is rather sluggish. The relatively weak growth seen in H1 (1.8% yoy) was the result of several factors. More specifically, agriculture made a large negative contribution in Q2 because of the late start of the harvesting campaign this year. Despite a benign external environment, recovery in the industrial production was restrained by limited production capacity in some industrial sectors, due to insufficient investment being made in previous periods. Last year's poor harvest of main agricultural crops affected the performance of the food industry, wholesale trade, and cargo transportation. The quarantine restrictions imposed at the start of 2021 and in April dampened economic recovery, impacting primarily the sectors that provide face-to-face services. Other factors included the rapid budget consolidation (a decline in engineering infrastructure construction), colder weather (which affected the performance of the energy sector and domestic tourism), and disruptions to petroleum product supplies (which affected wholesale trade and transportation). An increase in price pressures from production costs was another drag on the economic recovery. Real GDP growth for 2021 has been revised downward (-0.4 pp) in the wake of the weaker performance seen in Q2.

In contrast, GDP growth was supported by domestic demand. More specifically, private consumption grew at a fast pace, as expected, while investment returned to growth. That said, rising domestic demand was to a great extent met with imported goods. Meanwhile, exports shrank, dragged down by high prices for exported goods[7], last year's poorer harvest, and the ongoing decrease in gas transit. This pushed up the negative contribution of net exports to GDP growth, to 10.7 pp.

Various economic activities saw divergent performance in Q2. Greater public capital expenditures, in particular on road infrastructure, helped revive construction, while larger spending on education and health care – including as part of the ongoing efforts to fight the pandemic – supported these activities. Sustained consumer demand and the low

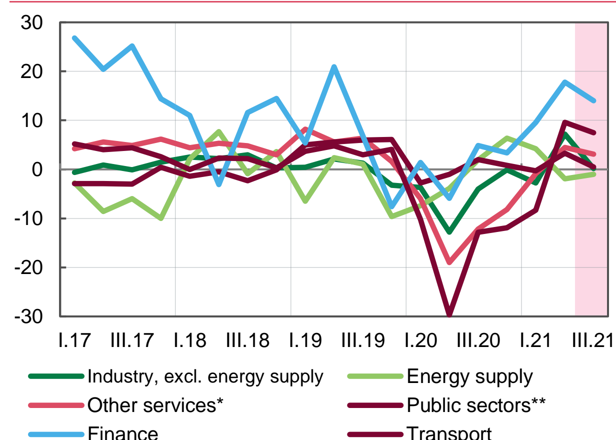
[7]High global commodity prices had a disproportionally larger impact on exports than on imports due to differences in their compositions – the bulk of exports are commodities, while most imported goods are products with greater value added, the prices of which are less volatile. Although high prices encouraged producers to increase exports in the short-term, export volumes were dampened by last year's poorer harvest and limited production capacity, while high prices weakened external demand for some products (such as sunflower oil).

Figure 2.2.3. Harvested area and yields of some agriculture crops as of 1 October 2021, % yoy



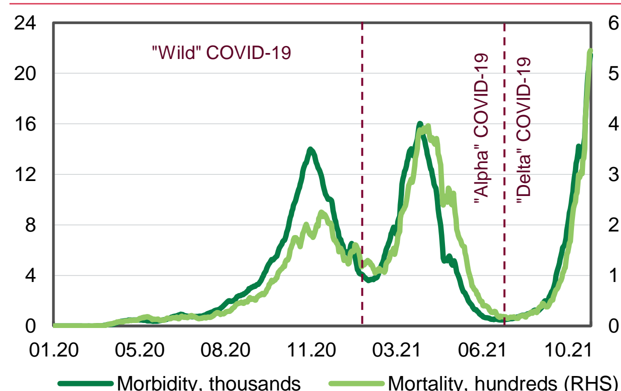
* Wheat and barley.
** Estimates for the Q4 based on the volume of sown areas in 2021.
Source: SSSU, NBU staff estimates.

Figure 2.2.4. GVA by sector, % yoy



* Other services include tempor. accom. and catering; IT and telecom.; real estate trans.; professional, scientific and technical activities; activities in the field of admin. and support services; arts, sports, entert. and recreation; other types of services.
** Public sectors include public administration and defense; education; health care and social assistance.
Source: SSSU, NBU staff estimates.

Figure 2.2.5. Daily morbidity and mortality from COVID-19, weekly moving average



Source: NSDCU.

comparison base brought about robust GVA growth in the trade, transportation and services sectors. However, recovery in some sectors was curbed by the quarantine restrictions imposed in April and the cold rainy weather in May–June 2021. Among other things, these factors affected the hotel and restaurant business, tourism, and rental and hiring services. What is more, more widespread remote working, together with a subsequent decrease in businesses' spending on renting premises, restrained recovery in the real estate sector. Therefore, despite witnessing rather high annual growth rates, most services sectors have not yet attained 2019 levels.

Although GDP growth will accelerate in H2, the forecast for 2021 and 2022 has been revised downward because of effects from higher gas prices

Real GDP will rise at a fast pace in H2, albeit more slowly than in Q2, due to the waning effect of the low comparison base. Weaker growth is expected in most sectors of the economy, apart from the agricultural sector. On the contrary, the GVA of this sector will return to rapid growth. It will be driven by a catch-up in harvesting on the back of much higher yields of early grain crops (wheat and barley) and a larger area sown. The forecast for Q3 GDP growth has been revised upward, to 4.0% yoy, thanks to the better performance of agriculture. In Q4, effects from the postponed harvesting of corn and sunflowers will also affect the agricultural sector and GDP.

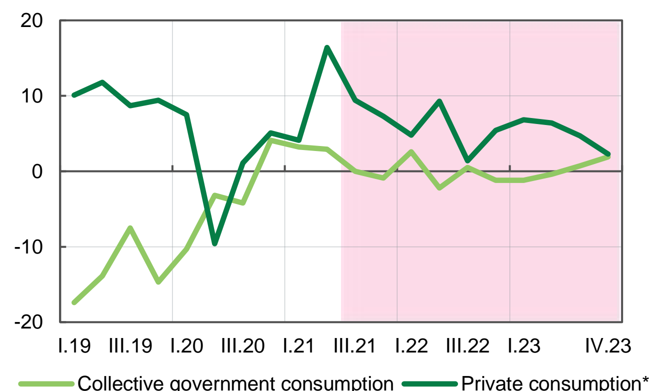
Recovery in some industrial sectors (mechanical engineering, oil refining and construction) continued in Q3. Retail trade grew at a fast pace. Growth in the finance sector was also robust, with the banks making more fee and commission income. Real estate transactions continued to increase, bolstered by an increase in residential housing construction and a reviving rental market. The liberalization of the land market also played a role[8]. Services sectors also recovered actively as restrictions were eased for face-to-face activities, such as passenger transportation, sports, culture, and recreation. Air travel and tourism also expanded, as the restrictions on travelling abroad were gradually eased for Ukrainians and the vaccination campaign gained momentum.

However, in view of the bad epidemiological situation, the baseline scenario factors in the introduction of red-zone quarantine for about a month in Q4 2021. This will make an additional negative contribution of 0.2 pp to real GDP growth in 2021. The overall effect of quarantine restrictions on 2021 GDP has been estimated at -0.8 pp.

Record-high natural gas prices will decrease output or reduce companies' profits due to higher production costs and, consequently, lower spending on investment and wages. High natural gas prices will have a negative impact primarily on the chemical industry, as well as on gas-intensive industries, such as the production of glass, tiles and refractory products. What is more, this will create the need for

[8] According to Ukraine's Ministry of Agrarian Policy and Food, after the moratorium on selling agricultural lands was lifted, 23,700 agreements to sell land plots worth UAH 1.1 billion were concluded in Q3.

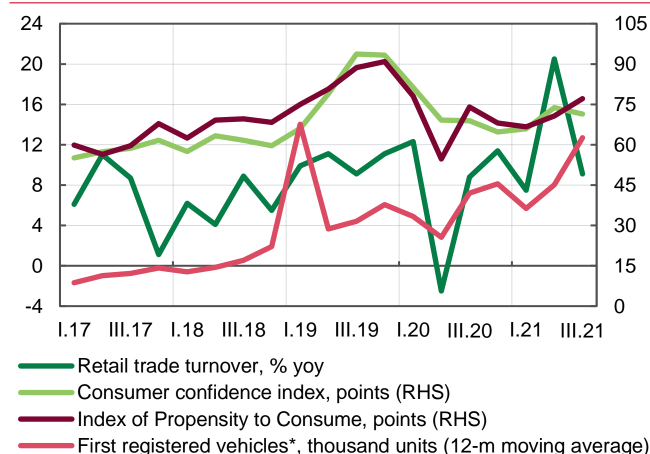
Figure 2.2.6. Final consumption expenditure, % yoy



*Including non-profit institutions serving households.

Source: SSSU, NBU staff estimates.

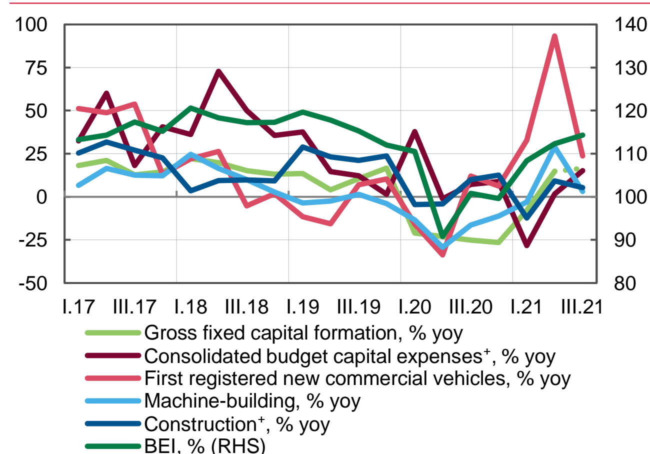
Figure 2.2.7. Selected indicators of private consumption



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

Source: SSSU, Info Sapiens, Ukravtoprom.

Figure 2.2.8. Selected indicators of investment demand



+ July-August 2021.

Source: SSSU, Treasury, NBU, Ukravtoprom.

increased imports of fertilizers. Economic growth will be also curbed by second-round effects from higher fuel and other energy prices. Critically low gas stocks will result in a surge in coal imports. Although the overall negative effect of the “energy crisis” on 2021 GDP has been assessed at 0.1 pp, its main effect of 0.4 pp will become apparent as early as next year.

The NBU has revised downward its forecast for Ukraine’s economic growth in 2021 from 3.8% to 3.1% on the back of quarantine restrictions, rising energy prices, and slower economic recovery in H1 than had been expected earlier. Unfavorable conditions on the energy market and the impact of global logistical problems will restrain Ukraine’s industrial production and will continue to curb economic recovery next year. In this light, the NBU has revised downward its forecast for GDP growth in 2022 from 4% to 3.8%. In 2023, the economy will grow by 4%.

The main drivers of economic growth over the forecast horizon will be the continued global economic recovery and an increase in domestic demand, including investment demand. The terms of trade will also remain reasonably favorable for Ukrainian exporters. Progress in the vaccination rollout will also have a positive effect by preventing the imposition of lockdowns or other restrictions on economic activity. In particular, this will facilitate the full recovery of the services sector, and help return the labor force participation rate to its pre-pandemic levels.

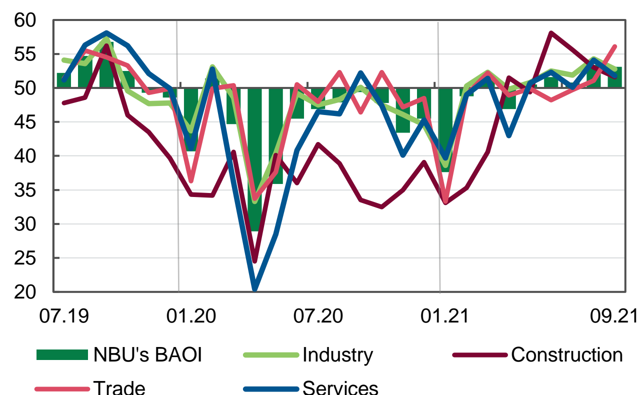
Private consumption will remain the main driver of economic growth

Households’ final consumption expenditure will continue to rise rapidly in H2, propelled by an ongoing increase in household income (read more in the Section “Labor Market and Household Income” on page 22), and favorable FX market conditions. Among other things, high-frequency indicators show that consumer demand is steady. More specifically, despite slowing due to fading low base effects, the growth in retail trade and consumer goods imports remains high. Car sales expanded, consumer sentiment improved further, the number of air flights increased, and tourism started to rebound. Private consumption growth will decelerate slightly in Q4 in the face of the worsening COVID-19 pandemic, but will remain robust.

As in the previous quarter, the tight fiscal policy conducted in Q3 (read more in the Section “Fiscal Sector” on page 25) had a bearing on the government’s collective services (public administration and defense), and on the volume of transport infrastructure construction. At the same time, some individual government expenditures, in particular those on education, culture and sports, continued to rise. In view of the significant growth in these expenditures in H1 and an expected rise in healthcare expenditures in the face of the pandemic, the general government’s total consumption will make a positive contribution to 2021 GDP growth.

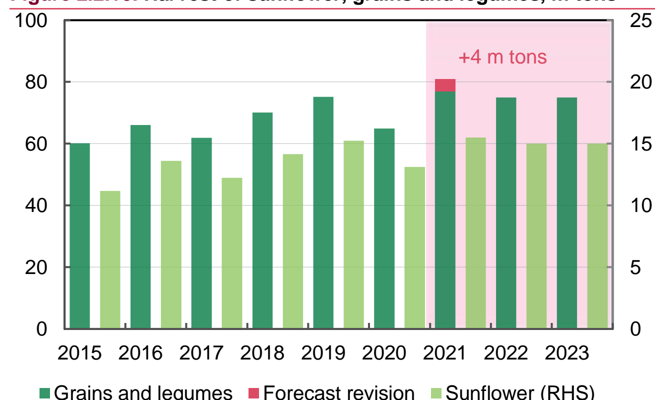
In 2022–2023, along with a slowdown in wage growth (read more in the Section “The Labor Market and Household

Figure 2.2.9. NBU's business activity outlook index, p.



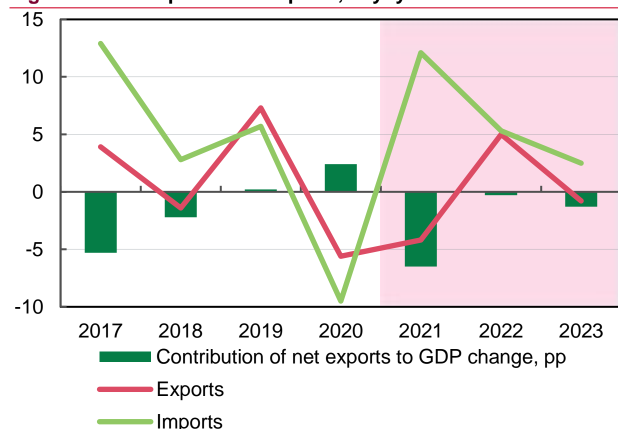
A level above 50 indicates expansion or growth, a reading below 50 signals a contraction.
Source: NBU.

Figure 2.2.10. Harvest of sunflower, grains and legumes, m tons



Source: SSSU, NBU staff estimates.

Figure 2.2.11. Exports and imports, % yoy



Source: SSSU, NBU staff estimates.

Income" on page 22), the growth in private consumption will decelerate slightly (to about 5% annually). At the same, private consumption will be fostered by the continued improvement in consumer sentiment, ramped-up lending to households, and the lifting of quarantine restrictions.

Rebounding investment activity will provide an impetus for continued economic growth

Gross fixed capital formation returned to growth in Q2 (by 14.8% yoy), buoyed by companies' reviving investment activity[9]. The investment revival in Q3 was evidenced by a step-up in the output of some machinery production subsectors, a rise in budget capital expenditure, and the robust growth of investment imports (agricultural machinery, commercial vehicles, and industrial equipment).

Investment activity will remain robust in the coming periods, due to, among other things, improved business expectations, companies' strong financial performance[10], stepped-up lending, and greater public capital expenditures. An important contribution will be made by a decrease in businesses' uncertainty over the impact of the pandemic, thanks to the rollout of vaccination in Ukraine and globally. The liberalization of the land market will also play a role.

Stricter environmental requirements imposed by some countries, in particular for exports to EU countries, along with more intense competition on the global markets, will greatly encourage companies to ramp up investment. More specifically, metallurgical and mining companies are expected to carry out new projects to upgrade their fixed assets. High energy prices will foster investment in the energy sector. Investment in the transportation sector will rise, boosted by the need of Ukrzaliznytsia and other passenger and cargo transportation companies to upgrade their rolling stock.

Conversely, investment growth in 2022 will be curbed by the declining supply of components and other goods as a result of the global shortages of semi-conductors. Overall, capital investment growth is expected to hit about 10% in 2021, and then to slow slightly, to 8%–9% in the medium term. In spite of that, the share of investment in GDP will remain small (up to 15%).

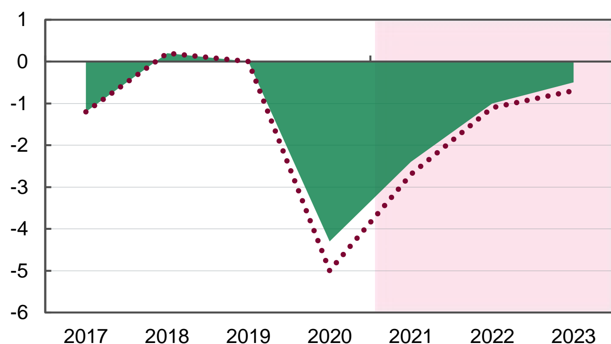
Domestic demand will be met mainly by imports, while the performance of exports will be affected by harvest fluctuations

The 2021 bumper harvest, together with favorable terms of trade, will support exports, cargo turnover and the food industry in H2 2021 and in 2022. After that, grain and oilseed harvests are expected to return to the average values seen in previous years, due to, among other things, higher fertilizer prices. As a result, exports are projected to shrink in 2023.

[9]Capital investment in agriculture and transportation grew more rapidly in Q2. Investment in healthcare more than doubled. Some sectors also started to invest again. These were the construction and trade sectors and, accommodation and food service sector and the industrial sector (including the mining and chemical industries, coke production and crude oil processing, the metals industry and the energy sector).

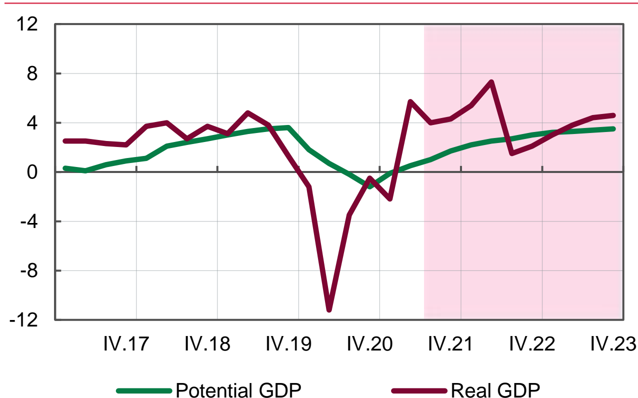
[10]In Q2 2021, profitable companies, such as exporters, earned significantly larger profits, while loss-making companies saw their losses decline. Given the high global prices for Ukraine's exports, Ukrainian companies are expected to make large profits in the coming quarters.

Figure 2.2.12. Output gap, % of potential GDP



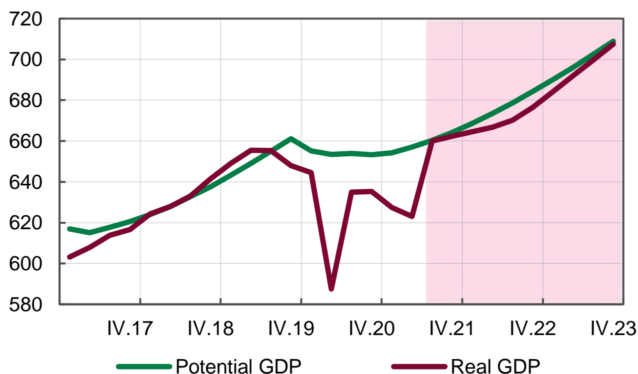
Source: SSSU, NBU staff estimates.

Figure 2.2.13. Real and potential GDP, % yoy



Source: SSSU, NBU staff estimates.

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



Source: SSSU, NBU staff estimates.

Imports will surge, driven by reviving domestic demand and the hryvnia's stronger REER, as was the case in early 2021. In 2021, import growth will exceed 12% in real terms, but will decelerate afterwards, to 3%–6% annually, dragged down by weaker household income growth. Rebounding economic activity will push up demand for high-tech products and other nonenergy imports.

Potential GDP will rise at a faster pace, as investment picks up and people join the workforce again

Potential GDP growth will continue to be fueled mainly by higher labor productivity and the active renewal of fixed assets. The former will, in particular, be fostered by renewed business processes that benefit from the advantages of remote working, while the latter will be facilitated by reviving investment on the back of stricter environmental requirements and companies' need to enhance their competitive edge. At the same time, potential GDP growth will be dampened by unfavorable demographic trends and labor migration.

After widening in 2020, the GDP gap will narrow afterwards (read more in Box 1 "The Assessment of Factors Influencing the GDP Gap" on page 20), while its disinflationary effect will gradually fade.

Box 1. The Assessment of Factors Influencing the GDP Gap

The gap between actual and potential GDP points to the stage of a country's economic cycle. A negative gap indicates that production capacity and the employment rate are below their potential levels, and that aggregate demand is sluggish. A negative GDP gap restrains inflation, while a positive one creates inflationary pressures. That is why assessing the stage of the cycle and its factors of influence is important for taking monetary policy decisions. A GDP gap is an unobservable variable. The NBU uses its Quarterly Projection Model (QPM) to estimate the output gap and assess the factors that have a bearing on it. During the peak of the coronavirus crisis, the economic downturn was caused by a noticeable drop in global demand, while the recovery was largely facilitated by domestic demand and a rebounding labor market. That said, adverse supply shocks restrain economic recovery, as a result of which monetary policy has to balance bringing inflation back to its target against supporting economic activity.

A GDP gap is the difference between actual and potential GDP (the latter being an estimate of the output that an economy would produce if the available production capacity and labor had been employed at their maximum rates). A GDP gap can be both positive (signifies that an economy is overheating and is operating above its full-capacity output) and negative (shows that an economy is cooling).

Monetary policy affects the GDP gap with a view to stabilizing the economic cycle. However, it has no influence on potential GDP, which is determined by the structural characteristics of an economy and the development of its institutions.

Since potential GDP, and consequently its gap, are unobservable variables, they are estimated by using econometric models. Traditional methods include one-dimensional filters, such as the Hodrick-Prescott filter (HP filter) with a simplified autoregressive forecast to prevent a shift in the last point. It is used both for real GDP and for its approximation, on the basis of SSSU-conducted surveys of companies on their capacity utilization rates. However, the QPM the NBU uses to make its forecasts relies on the Kalman filter to measure GDP gaps. It has significant advantages compared to the purely statistical HP filter. The most important advantage is that Kalman's multidimensional filtering technique combines a semi-structural model with actual data, that is, factors in the relationships between observable economic variables – such as the exchange rate, inflation, interest rates – and unobservable ones.

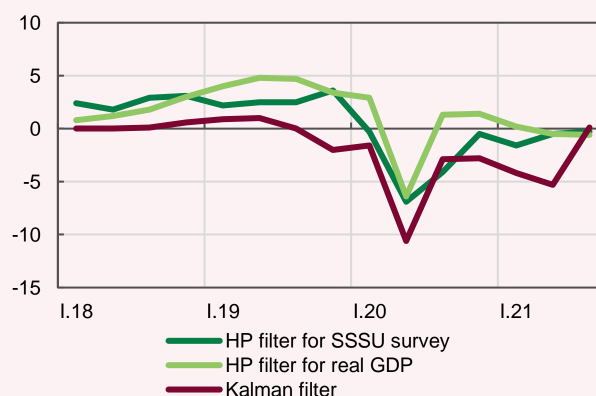
The Kalman filter shows (see Figure 1) that in 2018–2019 the GDP gap in Ukraine was close to zero. The gap turned negative in late 2019 and widened markedly in Q2 2020 when the coronavirus crisis was at its peak. This trajectory is mostly in line with the disinflationary processes seen in those years. In H1 2021, the GDP gap continued to be negative, despite a significant rise in inflation. Other methods are more optimistic due to their statistical nature and the tendency to have a balanced gap, which they tend to close at the end of the studied period, and which does not always correspond to the real situation.

The QPM takes into account internal and external factors when modelling GDP gaps. Internal factors include demand and the impact of monetary policy. Monetary policy uses the key policy rate to change demand for loans, and the exchange rate, which affects the competitiveness of Ukrainian goods, both domestically and abroad. Real wages and fiscal policy also have a bearing on domestic demand.

Ukraine is a small open economy, as a result of which its GDP gap also depends on external factors – the economic development of Ukraine's main trading partners and the terms of trade on the global commodity markets. What is more, external demand is driven by Ukraine's investment attractiveness, which in turn is determined by sovereign risk premium.

Each factor may have a lasting effect on the GDP gap, due to economic activity being somewhat inert – it responds to economic shocks and returns to its equilibrium state only after some time.

Chart 1. Estimates of the GDP gap by different methods, %

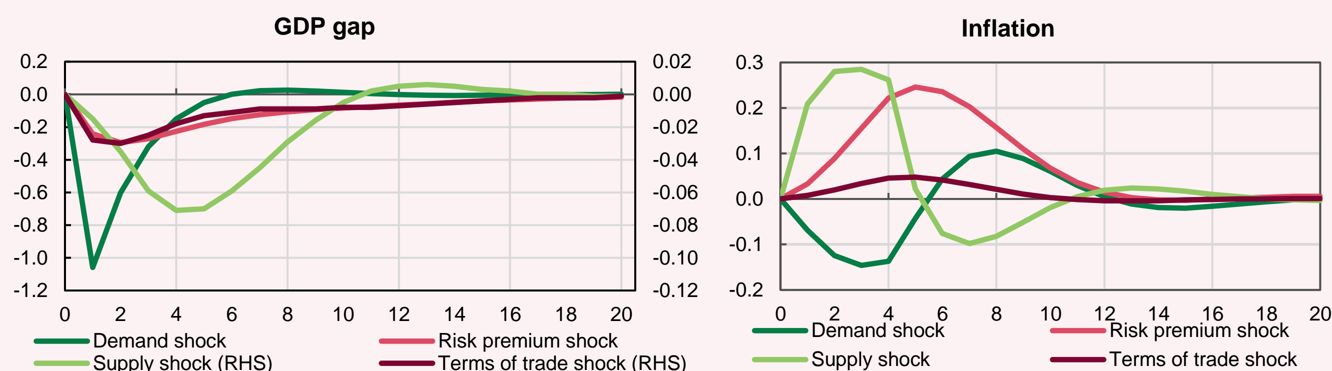


Source: NBU staff estimates

Impulse response functions – the response of macroeconomic indicators to shocks – show the deviation of macroeconomic variables from their equilibrium. Examples of shocks that decrease GDP are negative demand or positive supply shocks, and risk premium or terms of trade shocks (for instance, a fall in ferrous metal prices) (see Figure 2).

Apart from widening the negative GDP gap, a negative demand shock also slows inflation. In response, central banks cut their key policy rates. Apart from acting through the interest rate channel, these cuts also weaken the exchange rate through the monetary transmission channel. Responding to the combined effect of both channels, the interest rate and the FX ones, economic activity recovers, while inflation returns to its target level.

Chart 2. Impulse response functions of GDP gap and inflation to selected shocks, quarterly, size of shock = 1%

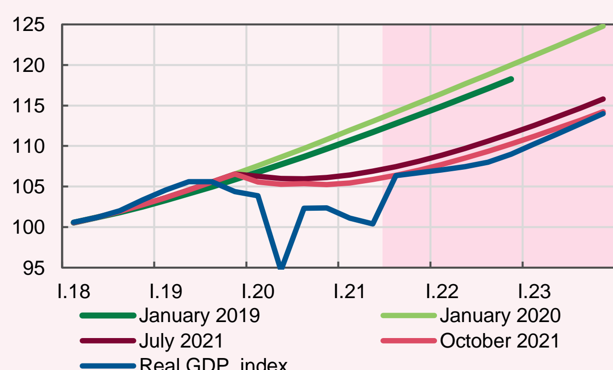


Source: NBU staff estimates

An unexpected rise in inflation, resulting from a supply shock, demonstrates the problem central banks face when choosing between reducing inflation and promoting economic growth. A central bank responds by raising its key policy rate to bring inflation back to its target level, since price stability is the central bank's priority. However, central banks, using the flexibility of inflation targeting, usually opt for longer deviations of inflation from its target, with a view to facilitating economic growth. The exchange rate strengthens in response to higher interest rates and inflation. Tighter monetary conditions open a negative GDP gap. At the same time, weaker aggregate demand and a stronger exchange rate help slow inflation and bring it back to its target level.

Potential GDP estimates may change due to a review of the vision of the economic structure, in particular during crises (see Figure 3). In early 2020, the projected trajectory of growth increased compared to the previous year's estimates, driven by higher real wages (and, consequently, productivity) and large inflows of foreign debt (an improvement in the investment climate). However, the quarantine restrictions imposed in the face of the COVID-19 pandemic not only have a bearing on the current situation, but also longer-lasting effects. Potential GDP estimates for 2020 and over the entire forecast horizon were revised downward. These downward revisions resulted from some people having to leave the workforce due to quarantine restrictions, disruptions to traditional supply chains, and shortages of goods used in production.

Chart 3. Change in potential GDP in NBU's forecasts, IV.17 = 100



Source: NBU staff estimates

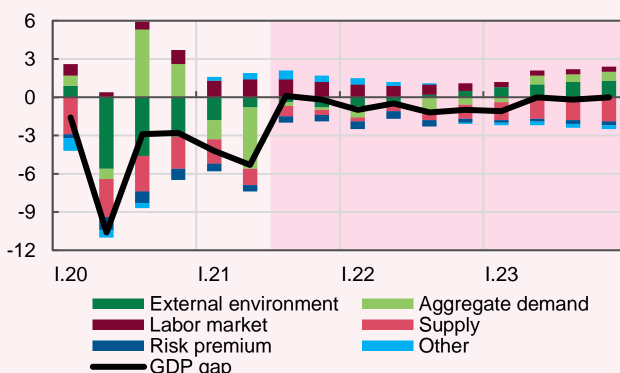
Global demand is one of the important drivers of changes in GDP gaps and economic activity in general. Global demand weakened markedly due to the spread of the pandemic and unprecedented quarantine restrictions imposed worldwide. As a result, the contribution of global demand to Ukraine's GDP gap will remain negative until the middle of 2022, i.e. until Ukraine's main trading partners recover.

Domestic demand also fell in Q2 2020. In spite of that, in H2 2020 it became the locomotive for recovery thanks to pent-up demand. The shift in harvesting seasonality, which moved from Q2 to Q4, had a negative impact on the GDP gap in Q2 2021.

In 2020, adverse domestic and external demand shocks reduced GDP and inflation, resulting in a monetary policy easing. In contrast, supply shocks will remain important in 2021 and over the forecast horizon (e.g. global shortages of microchips will decrease the supply of equipment and machinery), curbing economic recovery. Meanwhile, labor market shocks, in particular those arising from high wage growth, will make a positive contribution to the GDP gap. On the other hand, high risk premiums will restrain economic growth, reflecting a number of risks, such as the armed conflict and delays in cooperation with the IMF.

The decomposition of the GDP gap is important for understanding the nature of economic shocks that prevail at a certain period of time. Supply shocks force central banks to balance the goal of stabilizing inflation against that of promoting economic growth when conducting their monetary policies.

Chart 4. Decomposition of GDP gap by factors, pp



Source: NBU staff estimates

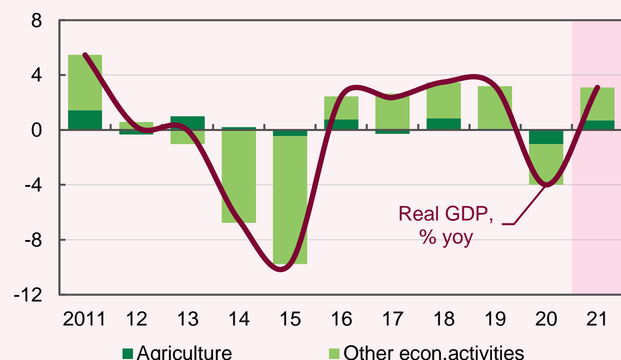
Box 2. Effects of Record Harvests on Ukraine's Economy

Ukraine is expected to gather another bumper harvest of grains and legumes in 2021. This will be the third record-high harvest in the past four years. The large volume of harvested crops is playing an important role as the Ukrainian economy recovers from the COVID-19 crisis. With regard to the harvest's impact on GDP growth, the NBU estimates that its direct contribution alone will be 0.8 pp. This positive effect will also spill over into a number of related sectors and ensure stable proceeds from exports. However, despite significant gains in crop productivity over the past decade, agriculture is still struggling to meet formidable challenges (underinvestment, climate change, and more), which keep it from fulfilling its potential.

The sector has been playing an increasingly important role in the Ukrainian economy thanks to crop farming

Having declined for a long time, agriculture as a share of Ukraine's GDP has over the past decade increased, on average, from 7%–8% in 2010–2012, to 10% over the past five years. Agriculture has one of the highest levels of value added (more than 40% of its total output) of all goods-producing sectors. In terms of impact on GDP, there have been years when agriculture's direct contribution alone provided 25%–30% of real GDP growth. At the same time, the sector has shown significant resilience during the last few crisis episodes, taking the role of something of an economic buffer.

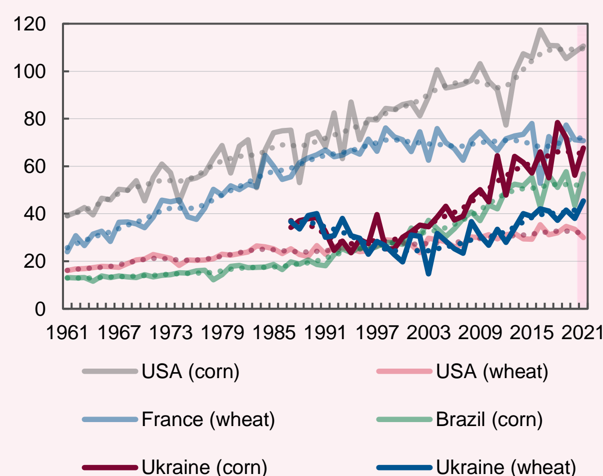
Figure 1. Contributions to the annual change of GDP, pp



Source: SSSU, NBU staff estimates.

This performance, however, has primarily been driven by the development of crop farming. Increasing investment in machinery upgrades, seeds quality, and technology has led to a significant increase in the yields of major crops. The 2018–2019 period saw record harvests, with the yields of major crops in some regions (e.g. corn productivity in Vinnytsia, Chernihiv, and Khmelnytskyi oblasts) almost reaching those of countries that are the leaders in agricultural production. Meanwhile, crop farming output as a share of agricultural production has over the past decade risen by nearly 10 pp, to just shy of 80%. Another record, of 81 million tons of grains and legumes, is expected to be set in 2021 under the NBU's current forecast. Specifically, the harvesting of the largest historical volume of early grains has already been completed. The NBU estimates that a 10% increase in the grain harvest generates an additional 3.4 pp gain in agricultural output, and a 0.3 pp increase in the sector's direct contribution to real GDP growth. As a result, this year's bumper harvest of grain alone will provide 0.8 pp of real GDP growth in 2021.

Figure 2. Yields of wheat and corn in selected countries*, c/ha

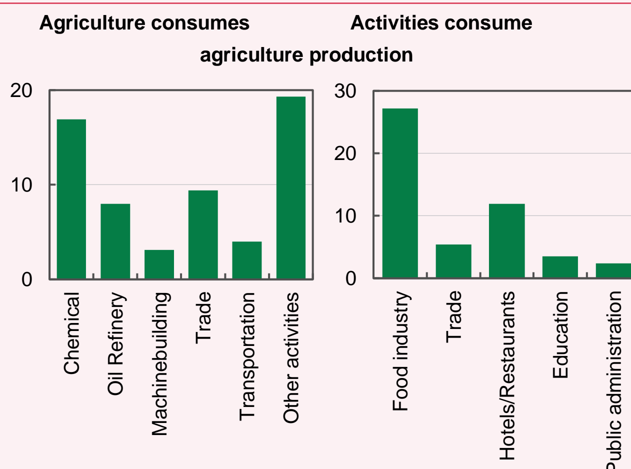


* Dot lines for HP filter.

Source: FAO, USDA, SSSU, NBU staff estimates.

Apart from its direct impact, agriculture also has secondary effects on the economy. Related economic activities that heavily depend on agriculture's performance include transport, trade, the food industry, the hotel and restaurant business, and even public administration, defense, and education. Agriculture itself creates demand for chemical products, petroleum products, and machinery. Overall, every hryvnia's worth of additional agricultural production causes a UAH 2.50 increase in total economic output, according to the input-output table.

Figure 3. Agricultural intermediate consumption and share of agriculture in intermediate consumption of selected activities in 2019, %



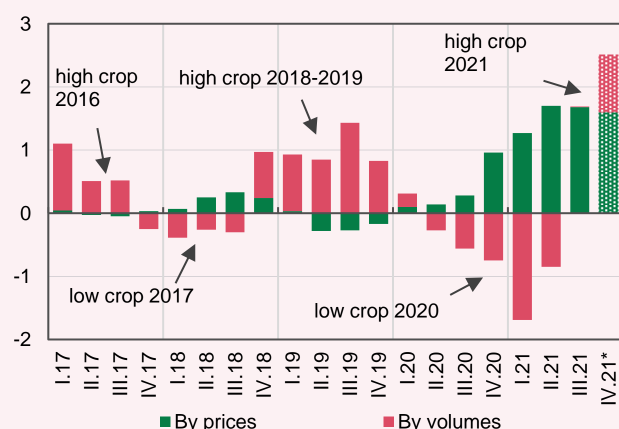
Source: SSSU, NBU staff estimates.

Agriculture has come to play a key role in the generation of export earnings

Recent gains in agricultural productivity have reinforced Ukraine's position as a major player on global markets. Between 2005 and 2020, exports of food products (agriculture and the food industry combined) increased in nominal terms by more than five times, while their share in merchandise exports rose to 49%, up from a mere 13%.

Despite the crop harvest being lower in the marketing year 2020/2021, Ukraine ranked first in the world in sunflower seed exports, fourth in corn and barley exports, and sixth in exports of wheat. Given their lower income elasticity of demand, these types of goods are less vulnerable to economic crises, and have been a stable source of support for merchandise exports according to 2020 data (for details, see the Box "The Factors Behind the Resilience of Ukrainian Goods Exports During the Coronavirus Crisis," October 2020 Inflation Report, page 29).

Figure 4. Absolute annual change in exports of selected goods+, related to crop production, USD bn

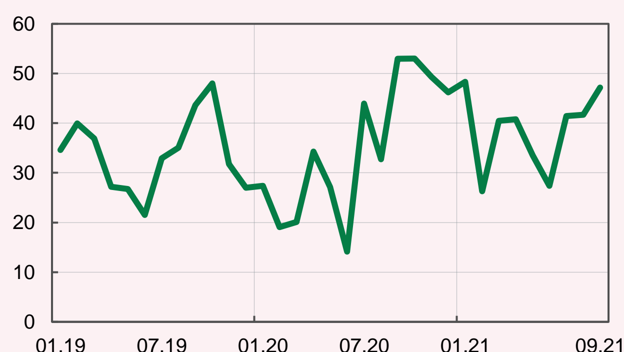


+ tottaling around 90% of foods exports; * based on forecast data.
Source: SCSU, NBU staff estimates.

Despite having expanded its role in foreign markets, Ukraine remains a price taker. The price level in these markets is shaped by the global harvest, which primarily comes from countries clustered in standalone climatic regions (such as the area around the Black Sea). Most of the time, weather is a common factor influencing crop yields across countries in a specific region. As a result, the impact of higher yields is often offset by lower global prices, and the other way around.

However, the weather in 2021 was more favorable for Ukraine than the countries in its vicinity. With other countries experiencing crop failures and, consequently, global prices being high, Ukraine stands to benefit from solid export earnings at the end of this year and in the next year. Specifically, agriculture has in recent months played a key role in creating favorable conditions in the FX market.

Figure 5. Share of agricultural enterprises in total FX supply in the interbank market*, %



* Based on information about the 100 largest sellers of foreign currency.
Source: NBU staff estimates.

On the other hand, agriculture also generates FX demand, as imported goods account for about 30% of the sector's intermediate consumption. The lion's share of these imports are chemicals (fertilizers, insecticides, etc.). As a result, increases in the sector's production also fuel the growth in imports of goods, though to a much lesser extent compared to exports. Thus, while imports of these goods rose almost sixfold in 2005–2020, their share in non-energy imports remains relatively marginal (3.9%).

Further development of agriculture depends on the effective resolution of a number of challenges

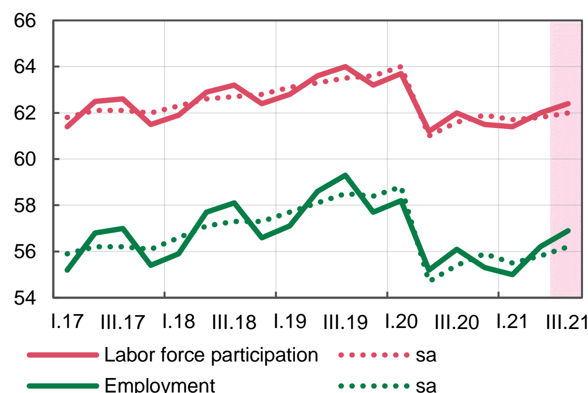
Although investment surged in 2015–2018, agriculture remains underinvested. The cost of fixed assets per hectare of arable land in Ukraine was less than one-twentieth of that in Poland or the Czech Republic, as calculations show. To reduce the sector's vulnerability to climate change (see the Box "Global Climate Change: Impact on Ukraine's Economy," July 2020 Inflation Report, page 47), additional investments (in irrigation systems, soil protection, etc.) are necessary.

The launch of the land market in July 2021 should help address some of these issues. In particular, land can now be pledged as collateral, which will improve the accessibility of funding and thus give a boost to investment growth. In turn, increases in investment in soil protection and the fight against adverse conditions (including land reclamation and drainage) will curb the volatility of both yields and prices of agricultural products. The government can also provide effective support through mechanisms that make it easier for farmers to access credit, insure themselves against agricultural risks, and tap domestic and foreign markets. That being said, it is important to set clear goals, meet transparency and performance standards, and continue to align them with EU practices.

2.3. Labor market and household income

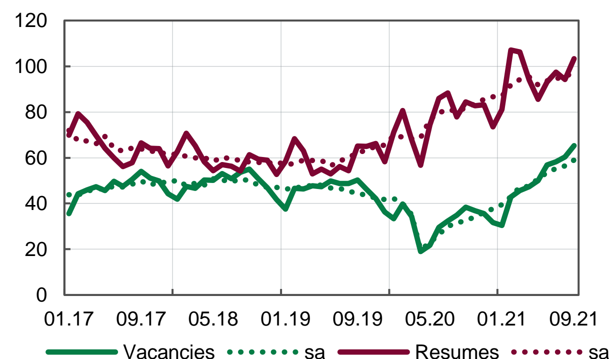
- The labor market improved as the economy recovered: both domestic and external demand for labor increased, employment rose, and unemployment fell.
- Wage growth in Ukraine and labor migrant remittances provided the largest contribution to the increase in household incomes, and fueled consumer demand. Additional support came from social benefits.
- Over the forecast horizon, sustained economic growth and decreased pressure from potential quarantines will stimulate wage growth and return unemployment to its natural level. However, wages will grow more slowly than in 2021.

Figure 2.3.1. **Employment* and labor force participation* rate, %**



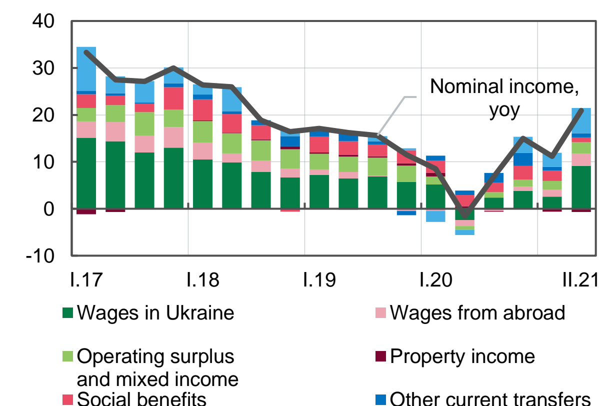
* As a % of total population aged 15–70.
Source: SSSU, NBU staff estimates.

Figure 2.3.2. **New vacancies and resumes from work.ua, thousands**



Sorce: work.ua, NBU staff estimates.

Figure 2.3.3. **Contributions to Annual Change in Nominal Household Income, pp**



Source: SSSU, NBU staff estimates.

Economic recovery boosted employment and reduced the level of unemployment. Unemployment is expected to return to its natural level in 2022

The easing of quarantine restrictions and the retreat of COVID-19 amid the significant financial insecurity of Ukrainian households fueled an expansion of labor supply in Q2 and Q3, but it was slow.[11] Seasonally adjusted labor force participation increased in Q2 compared to the previous quarter, although quarantine measures in "red zones" in many oblasts were still in effect in April.

As the economy recovered and the business expectations improved, labor demand continued to grow. In particular, most companies declared plans to hire more employees, according to the business outlook surveys conducted in Q3.

The number of vacancies has been steadily growing in annual terms since March 2021 in almost all sectors, SESU data show. The largest contribution came from sectors that were steadily recovering (in part due to the low base effect). Those included services, trade and transport, industry, and construction. The vaccine rollout increased, as did demand for Ukrainian workers abroad.

As a result, the additional labor supply was absorbed by the economy: employment increased while unemployment shrank. The imposition of tighter quarantine restrictions in late 2021 may slow the labor market's recovery. However, with businesses and households adapting to restrictions, and vaccinated individuals facing eased restrictions, the impact will not be as strong as at the start of the year.

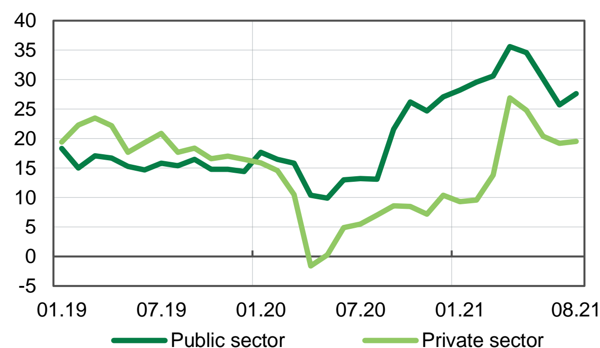
Labor market conditions will improve over the forecast horizon as the economy grows. Unemployment will soon return to its neutral level (8.5%), and the negative output gap will close.

Household incomes are growing at a high pace, driven primarily by wages. Going forward, real wage growth will slow in line with the growth in economic productivity

Wages both in Ukraine and abroad were the underlying factor in the growth of household incomes. In addition, the contribution of operating surplus and mixed income increased, indicating, among other things, an improvement in the financial standing of sole proprietors and their adaptation

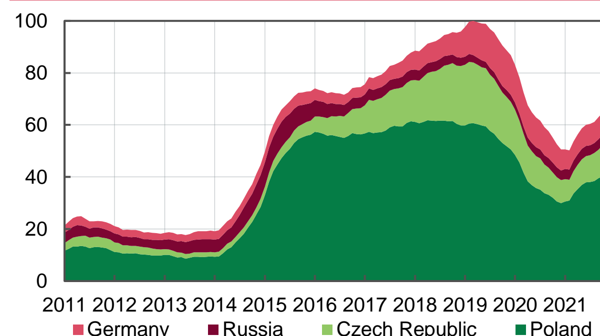
[11]Specifically, this survey shows the financial insecurity of urban residents remaining high. More than half of respondents in February 2021 reported having less than one month's worth of savings, while the share of respondents experiencing financial difficulties was higher than 20%.

Figure 2.3.4. Wages in public and private sectors, % yoy



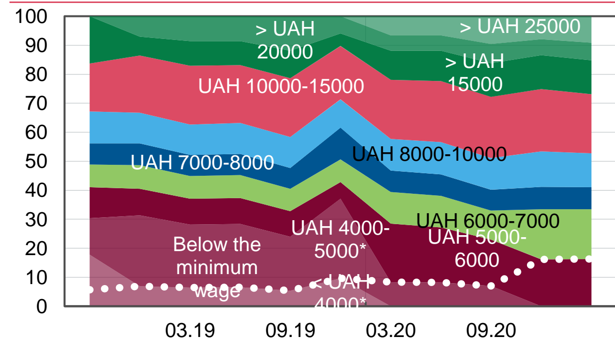
Source: SSSU, NBU staff estimates.

Figure 2.3.5. Job abroad search index



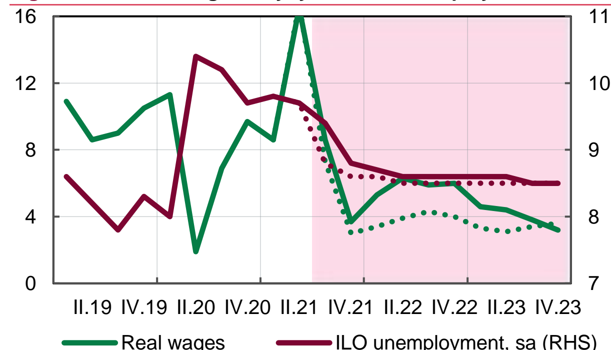
Source: Google Trends, NBU staff estimates.

Figure 2.3.6. The share of full-time employees by wage size, %



* Or number close to minimal wage.
Source: SSSU, NBU staff calculations.

Figure 2.3.7. Real wages, % yoy and ILO Unemployment sa, %



Source: SSSU, NBU staff estimates.

to quarantine conditions.[12] Social support from the government continued to play a significant role, including through the indexation of pensions and COVID-19 relief paychecks. As a result, the growth in real disposable income in Q2 accelerated rapidly to 5.6% yoy, which supported sustained consumer demand.

Wage growth in Ukraine remains high in both nominal and real terms. This is primarily due to the overall economic recovery, the higher minimum wage, supplements for healthcare workers, and wage increases in education. At the same time, the growth in real wages has long outpaced that of economic activity indicators, potentially signaling that other reasons are at play.

First, the pressure in the labor market for workers to migrate is intensifying. The opening of borders, made possible by the vaccine rollout and economic recovery in Europe, is restoring workers' propensity to migrate. In addition, many EU governments have raised the minimum wage in 2021[13]. The hiring of Ukrainians abroad is gradually returning to pre-crisis levels as employers actively step up their recruiting efforts[14].

Second, the quarantine and the resulting economic downturn have reshaped the employment landscape. Although companies did their best to refrain from laying off staff in 2020, the decline in economic activity led to staff reductions. At the same time, it was probably the least efficient and thus the lowest-paid employees that were laid off. Specifically, 60% of all those who became unemployed in 2020 had been working in sectors with wages below the Ukrainian average. This is generally in line with global trends[15]. This probably had a certain statistical effect on the average wage.

Third, disparities between supply and demand in the labor market persist. With the exception of the pandemic period, the lack of qualified personnel has in recent years been steadily gaining weight in business surveys as one of the reasons holding back the growth of corporate earnings. During the COVID-19 crisis, the impact of this factor declined as economic activity cooled. However, the shortage of quality staff has increased again since the start of 2021, affecting the growth in wages.

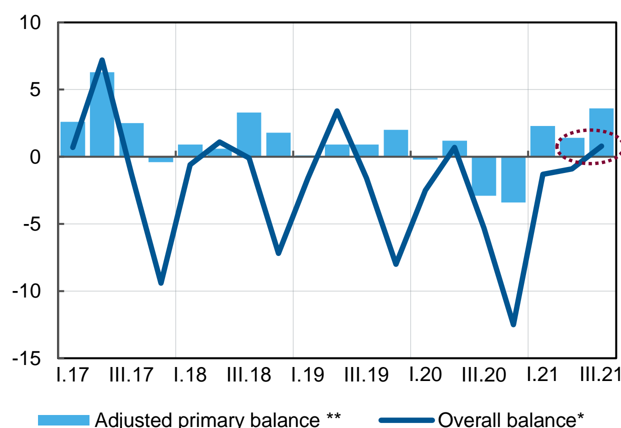
All these factors will continue to have an impact, but the growth in nominal wages will decelerate (to 9%–13% in 2022–2023 from 19% in 2021) along with the slowdown in inflation. In 2022, restrictions on the growth in salaries of public officials will have a certain deterrent effect, while the business outlook for wage growth is quite upbeat. As a result, real wages will grow by 4%–6% per year, which will correspond to higher economic productivity.

[12] The majority of sole proprietors saw their income return to pre-quarantine levels (48% said their income had made only a partial return, 7% said it had risen above pre-quarantine levels, and 17% said their income had been unaffected by quarantine), the survey showed. Thirty four percent of respondents said they were ready for another lockdown in the fall.
[13] Specifically, the minimum wage has since early 2021 increased in Poland (by 7.7%), the Czech Republic (by 4.1%), and Germany (by 1.6%).
[14] One in four businesses in Poland has been hiring Ukrainians in 2021, bringing the total number of these employees to above the pre-pandemic levels of 2019. This can be attributed to the increase in the length of Ukrainian workers' stays abroad (the percentage of those having worked outside Ukraine for more than three straight months has risen to 48% in 2021, up from 39% in 2020). Employers are willing to pay bonuses to Ukrainians and help them apply for work permits and eventually assimilate into their host societies.
[15] Changing employment patterns have been the main reason for wage growth in the U.S. and Europe (White House, Institute for Economic Policy, ILO).

2.4. Fiscal sector

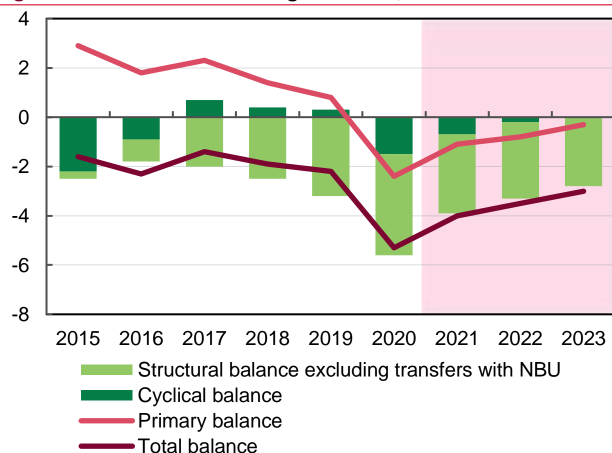
- Fiscal policy in Q3 remained restrained. Tax revenues continued to grow at a fast pace, while expenditures increased moderately. As of late September, the government had accumulated significant funds in its accounts, although debt repayments peaked at the end of the quarter.
- By the end of this year, fiscal policy will ease. However, the deficit is expected to be smaller than planned (about 4% of GDP). Moderate fiscal consolidation will continue.
- Public and publicly guaranteed debt to GDP will be around 50% in the coming years. This debt burden is considered to be acceptable to Ukraine and even leaves room for fiscal stimulation of the economy should the overall economic situation in the country deteriorate.

Figure 2.4.1. General government fiscal balance, % of GDP* and % of potential GDP**



* Overall balance (% of GDP) 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.
Source: STSU, NBU staff estimates.

Figure 2.4.2. Consolidated budget balance, % of GDP



Source: STSU, NBU staff estimates.

The deficit in 2021 will be smaller than planned, and fiscal policy will be tight. Moderate fiscal consolidation will continue in the years ahead

In Q3, the consolidated budget recorded a surplus. With the exception of 2020, this is rather typical for this time of year. The primary balance, adjusted for the position of Ukraine in its economic cycle, remained positive and even slightly increased in Q3 compared to Q2. Tax revenues grew by 31.5% yoy in Q3, while expenditures grew by only 7.4% yoy. All this reflected the restraining effect of fiscal policy on aggregate demand.

On the one hand, this approach enabled Ukraine to successfully pass through the peak of external debt repayments this year, and to accumulate significant funds to finance future expenditures. On the other hand, fluctuations in budget expenditures, which traditionally rise at the end of the year, reduce the effectiveness of measures to support the economy and complicate business planning for enterprises.

Expenditures are anticipated to significantly catch up with planned levels by the end of 2021. However, the budget deficit (about 4% of GDP) in 2021 will be lower than planned, in part due to higher nominal GDP.

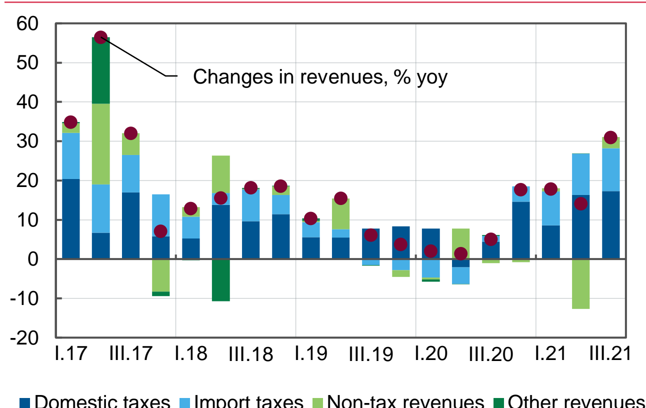
In the years that follow, sustainable economic growth will make it possible to cut the deficit to the parameters foreseen in the Budget Code. The deficit is expected to narrow to 3.5% of GDP in 2022 and to 3.0% in 2023. Financing such a deficit is realistic provided that Ukraine continues to cooperate with the IMF and further improves its investment attractiveness.

Tax revenues grew significantly due to constant demand and high prices on the commodities markets

The spread of COVID-19 eased in Q3, allowing businesses to operate under minor restrictions, which had a positive effect on tax revenues. As in the previous quarter, high commodity prices contributed to an increase in rental income and corporate income tax. The rapid growth in wages is driving the stable growth in PIT. Sustained domestic demand and high imports have contributed to solid proceeds from VAT and excise taxes.

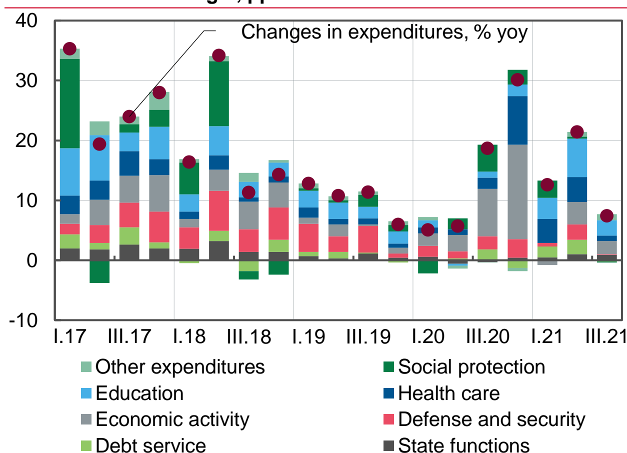
Conditions for the growth in tax revenues (including the high nominal GDP growth rate) will remain favorable until the end of the year. This will offset the drop in nontax revenues in H1 2021, which was due to proceeds from the NBU and dividends from state-owned companies having been lower

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



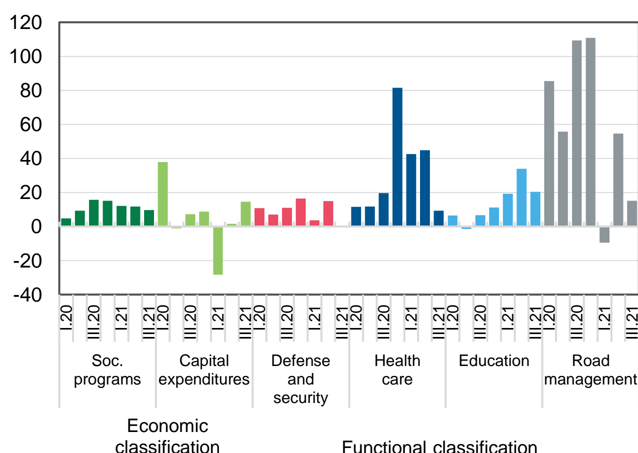
Source: STSU, NBU staff calculations.

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



* Defense and security includes defense and public order, security and the judiciary. Social programs include wages and social care.

Source: STSU, NBU staff calculations.

than last year. Going forward, revenue growth is expected to slow because of a more moderate increase in wages and consumer demand, as well as due to deteriorating terms of trade, which will result in exporters posting weaker financial performance.

Expenditures grew modestly in Q3 due to the easing of the coronavirus pandemic and the high base effect

With the exception of certain areas, expenditures in Q3 grew at a moderate pace and remained lower than planned[16].

Healthcare expenditures remained a priority, but their growth decelerated significantly, in part due to the slower spread of COVID-19 and less spending on vaccination compared to a quarter ago (most vaccine purchases were made in Q2, when the vaccine rollout kicked off). A number of government services, including public administration and defense, were also funded moderately, while the growth in road infrastructure spending slowed and remained uneven throughout the quarter. However, other capital expenditures continued to increase.

The growth in social expenditures decelerated, primarily due to cuts in spending on certain categories of workers as the spread of COVID-19 slowed in the summer months. At the same time, some consumer expenditures of the general government continued to rise rapidly, in particular those on education, culture, and sports.

Debt-servicing costs declined as the hryvnia strengthened, and yields on government securities issued both this year and in previous periods decreased.

In addition, the dynamics of spending were shaped by the high base effect of the COVID-19 fund, which had been actively used since Q3 2020.

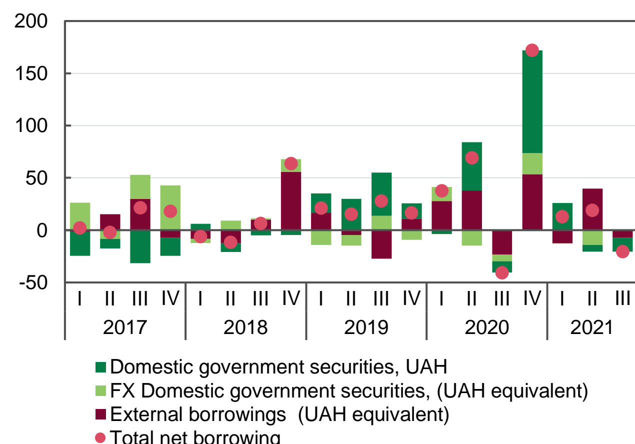
In late Q3 expenditure growth had already begun to accelerate. The usual increase in Q4 is also expected to occur. For the whole of 2021, however, expenditure growth will slow. This will primarily reflect lower spending on some anti-crisis programs and a moderate increase in capital expenditures. The rate of growth in social expenditures, both this year and going forward, will outpace inflation, thus fueling an increase in real income. The slowdown in total expenditure growth will continue in the coming years, reflecting the fiscal consolidation measures taken during the phase of sustainable economic growth, and the countercyclical fiscal policy.

The ratio of public and publicly guaranteed debt to GDP will continue to decline

Borrowing, both in the domestic and foreign markets, was relatively insignificant in Q3, given the anticipated decision and subsequent disbursement of funds from the IMF's SDR allocation and higher-than-planned revenues. However, demand for government securities in the domestic market remained weak.

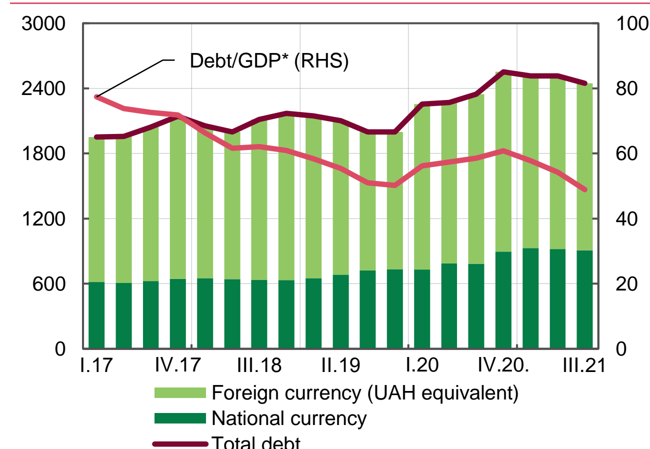
[16] Planned general fund of the state budget.

Figure 2.4.6. State budget net borrowings*, UAH billion



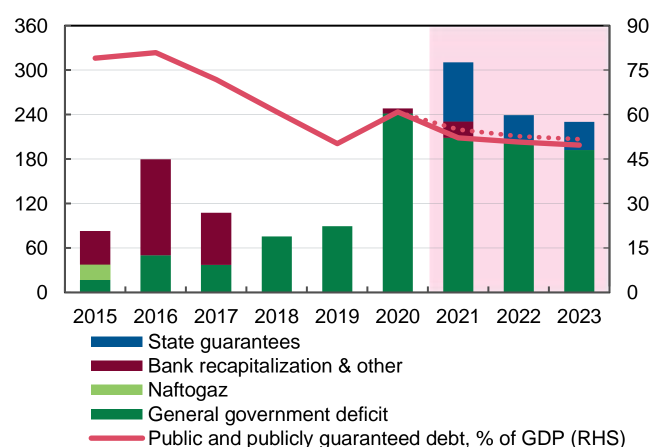
* 2017 borrowings do not include government bonds issued to increase banks' authorized capital. Q3 2020 borrowings do not include government bonds issued to increase banks' authorized capital and Ukraine's GDP-linked securities, Q2 2021 - PRJSC Export Credit Agency.
Source: STSU, MFU, NBU staff calculations.

Figure 2.4.7. Public and publicly guaranteed debt (by repayment currency), UAH bn and % of GDP*



* GDP for 2021 - NBU estimates.
Source: MFU, SSSU, NBU staff estimates.

Figure 2.4.8. Broad public sector deficit, UAH bn and public debt, % of GDP



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

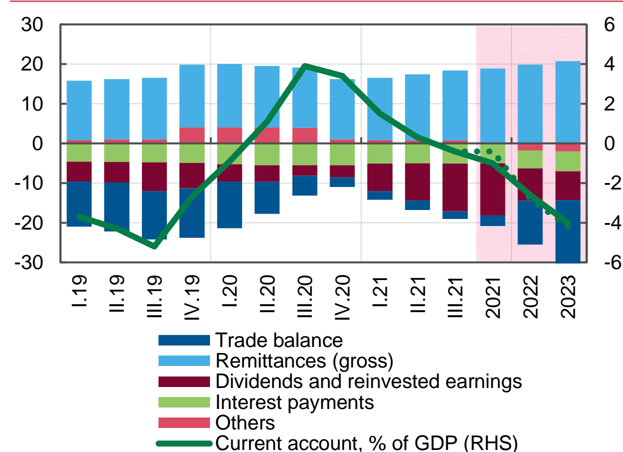
The rollover of principal amount of hryvnia domestic government debt securities was 75%. At the same time, proceeds from the placement of FX domestic government debt securities practically offset repayments. Eurobonds were also placed in Q3, and a portion of the SDRs allocated by the IMF were used. Debt repayments exceeded borrowing, as redemption of external commitments peaked in Q3. Budget needs were thus partially financed with FX funds accumulated earlier. Due to net repayments and the impact of revaluation as the hryvnia strengthened, public and publicly-guaranteed debt declined in absolute terms, as well as it also decreased as a ratio of debt to GDP (to less than 50%, by NBU estimates) because of nominal GDP growth.

By the end of 2021, public and publicly guaranteed debt will edge higher compared to the end of Q3. This will be a consequence of the widening budget deficit. Additional factors at play may be the issuing of domestic government debt securities to capitalize the Ukrainian Financial Housing Company PJSC, the provision of public guarantees, and the covering of payment arrears owed to renewable power producers. With the economy growing and the budget deficit narrowing, public and publicly guaranteed debt will fluctuate around 50% of GDP in the medium term. This debt burden is considered to be acceptable for Ukraine, and even leaves room for providing fiscal stimulus to the economy should the overall economic situation deteriorate.

2.5. Balance of Payments

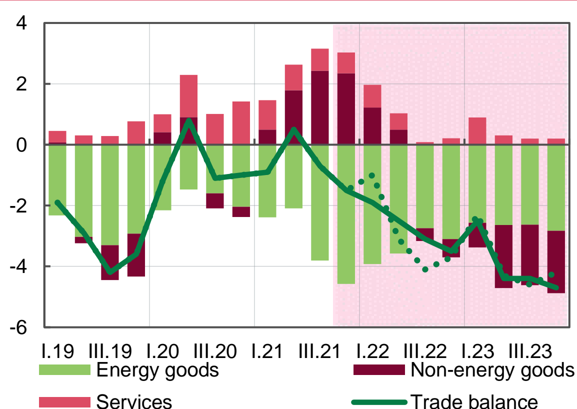
- Despite sustained high global prices for exports, the deficit in the trade in goods widened in Q3, mainly due to larger energy imports, both in price and volume terms. Coupled with large payments of dividend and high reinvested earnings, this generated a current account deficit.
- The current account deficit will persist in Q4 despite this year's bumper harvest. The overall 2021 deficit will be small (1% of GDP) thanks to high export prices. Looking ahead, the current account deficit will gradually widen, to 3%–4% of GDP, amid less favorable terms of trade, stronger domestic demand and a strengthening of the hryvnia's REER.
- Following the capital outflows seen in Q3, capital inflows are expected to resume due to nonresidents' interest in domestic government debt securities and FDIs in equity, on the back of improved macroeconomic conditions. Capital inflows will fully finance the current account deficit, which together with IMF loans will maintain reserves at the level of USD 30–31 billion.

Figure 2.5.1. Current account balance, 4-quarter moving average, USD bn



Source: NBU staff estimates.

Figure 2.5.2. Trade balance, USD bn



Source: NBU staff estimates.

The current account will post only a small deficit in 2021, thanks to high export prices and the bumper harvest. In 2022–2023, the deficit will widen, but will remain moderate

The current account returned to deficit in Q3. The deficit was driven by an increase in energy imports and persistently large payments of dividends and high reinvested earnings, which resulted from companies' strong financial results due to favorable commodity market conditions. The surplus in the trade in services narrowed slightly – the rapid recovery of imports of travel services and decreased gas transit outweighed the ongoing increase in exports of IT and toll-refining services. The current account deficit hit USD 1.4 billion in the first nine months of 2021.

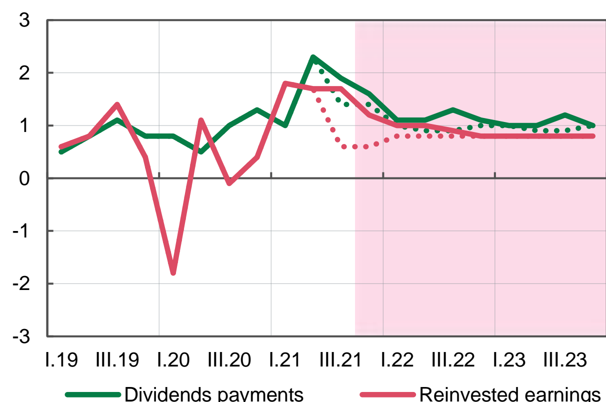
High energy prices and rising chemical imports will widen the deficit in the trade in goods in Q4. However, the current account deficit for the whole of 2021 will be insignificant (1% of GDP) thanks to the record grain harvest. In 2022–2023, the deficit will gradually widen to 4% of GDP, mainly as a result of less favorable terms of trade and rising consumer and investment imports. The NBU also expects a decrease in gas transit, a rebound in foreign tourism, and large investment income. Despite widening, the current account deficit will remain moderate according to the NBU's estimates.

Compared to the previous forecast, the current account deficit for 2021 has been revised downward, while that for 2022–2023 has remained practically unchanged. More specifically, the trade deficit has been revised downward on the back of expected larger grain and oilseed harvests, as well as higher prices for wheat and metallurgical products. What is more, estimated amounts of labor migrants' remittances have been revised upward because of greater demand for labor abroad. Nevertheless, these positive effects will be offset by higher energy prices, larger chemical imports, and increased payments of dividends and high reinvested earnings.

The growth in exports of goods will slow by late 2021, it will decline after, dragged down by price corrections

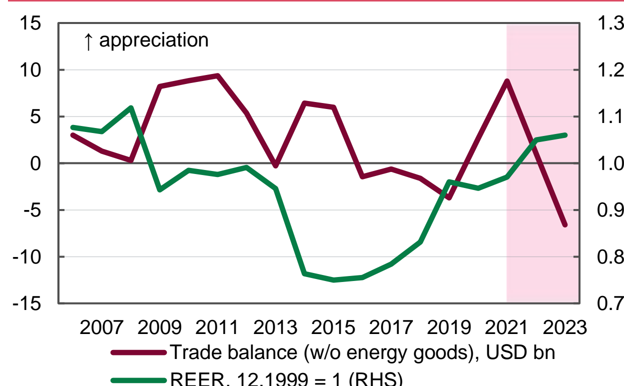
A less benign price environment on the global commodity markets had practically no impact on Ukrainian merchandise exports in Q3 because of lagged effects. The increase in the value of exports was mainly the result of higher prices, although larger volumes also played a role.

Figure 2.5.3. Dividends payments and reinvested earnings, USD bn



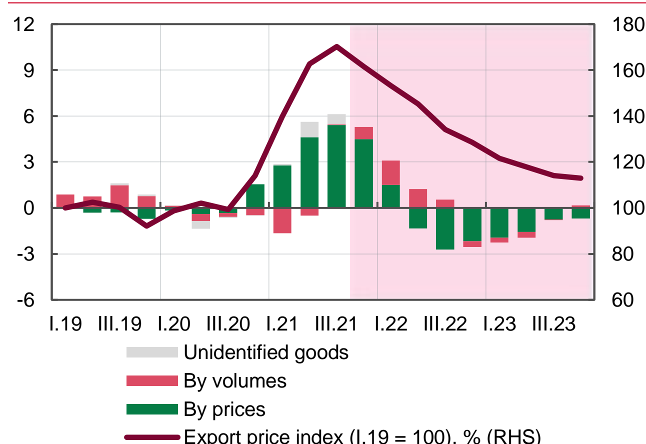
Source: NBU staff estimates.

Figure 2.5.4. REER and trade balance



Source: NBU staff estimates.

Figure 2.5.5. Absolute annual change in prices and volumes of merchandise exports, USD bn



* The export price index used in the updated terms of trade index includes the prices of ferrous metals, iron ores, grains, sunflower oil, covering about 60% of merchandise exports.
Source: SCSU, NBU staff estimates.

Food exports surged in Q3, propelled by the bumper harvest of early grain crops. Exports of wheat and barley reached a record high for this period, buoyed by robust external demand and high global prices. Expanded rapeseed exports helped speed up growth in oilseed exports. Exports of vegetable oils and their residues also grew – a decline in exports of sunflower oil and oil cakes was partly offset by larger exports of rape oil. At the same time, growth in food exports was restrained by agricultural exporters who held back on deliveries in a bid to reap higher gains should global prices rise further.

Exports of iron ores and metals continued to rise at a fast pace on account of prices. Meanwhile, weaker demand from China affected the volumes of these exports. More specifically, despite a drop in ferrous metal exports to China, metallurgical exports more than doubled year-on-year, hitting a high not seen since 2012. In contrast, the growth in iron ore exports decelerated, dragged down by lower export volumes and the slump in iron ore prices in September.

The growth in chemicals exports sped up, propelled by a further increase in fertilizer prices. At the same time, exports of fertilizers shrank amid robust demand from Ukrainian agricultural producers and the halt in operations at some chemical plants. Machinery export growth also decelerated markedly as a result of lower exports of turbojet engines to some Asian countries.

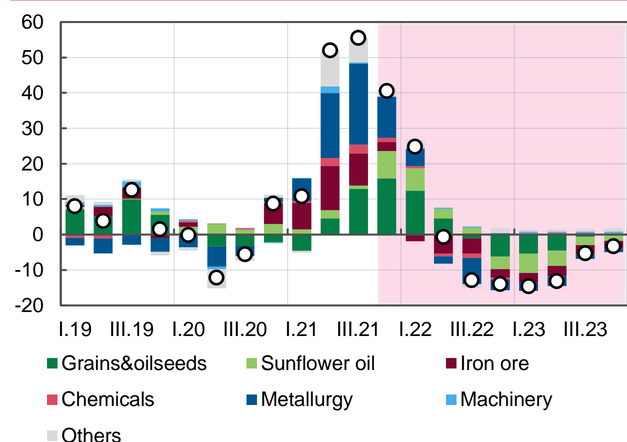
An uptick in wheat sales and the expected bumper harvest of late crops will help push up exports of goods in the coming quarters. However, the materialization of lagged effects from lower prices in Q4 will slow the growth in exports in goods even in late 2021. Exports will contract in 2022–2023 due to the subsequent correction of global prices. Iron ore and metals exports will slump even in late 2021 on the back of decreasing prices and weaker demand from China. The gradual fall in global prices and more intense competition on the external markets will dampen the growth in exports of iron ores and metals in 2022–2023. What is more, following the record high figures of 2021, the harvest and exports of main agricultural crops are expected to drop in the coming years.

The high prices of imported gas will decrease the competitiveness of Ukrainian producers of fertilizers and plastics, which will reduce chemical exports in 2022. However, these exports will recover in 2023, driven by falling natural gas prices. Conversely, exports of machinery will grow at a steady pace, as these products will be brought close to European quality standards.

Energy imports were the main source of import growth in Q3. However, afterwards nonenergy imports will be the main driver

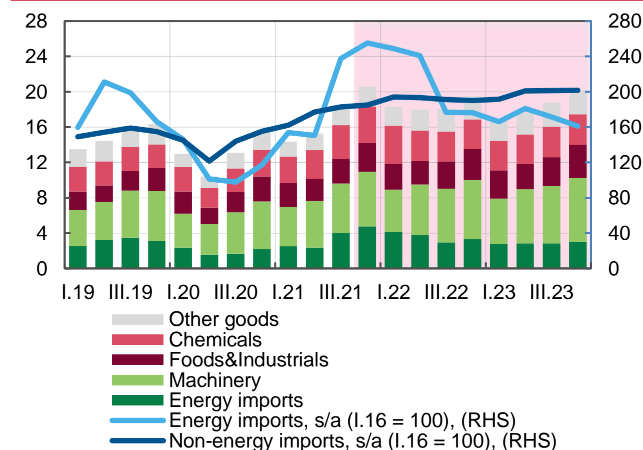
In Q3, energy imports grew at a significantly faster pace, both in price and volume terms. Particularly, the largest contribution was made by imports of natural gas to be pumped into underground gas storages. Imports of oil and petroleum products grew on the back of strong demand from agricultural producers and refineries, as well as due to large-scale construction of roads. Coal imports also grew, fueled by the need of thermal power stations to replenish their low

Figure 2.5.6. Contributions to annual change in merchandise exports, pp



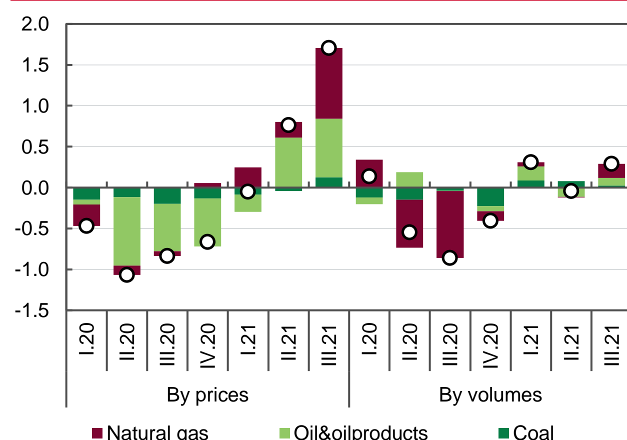
Source: NBU staff estimates.

Figure 2.5.7. Merchandise imports, USD bn



Source: NBU staff estimates.

Figure 2.5.8. Absolute annual change in imports of selected energy products, USD bn



Source: SCSU, NBU staff calculations.

stocks.

In contrast, the growth in nonenergy imports decelerated, largely due to the fading of last year's low base effect. Nevertheless, the values remained substantial. The high investment activity of companies was reflected in their ongoing purchases of cars, trucks, agricultural machinery, and industrial equipment. Another contributor to the growth in vehicle imports was the next stage in the customs clearance of foreign-registered cars. Meanwhile, the global shortages of semi-conductors have started to affect machinery imports. Metallurgical imports grew at a faster pace, propelled by larger imports of components to make companies more environmentally friendly, along with greater imports of certain products ahead of the possible introduction of antidumping duties on them. Imports of fertilizers at higher prices grew on the back of a decline in domestic output. Steady consumer demand supported large imports of foods, industrial goods, and household appliances.

High energy prices, which will persist until the end of the heating season, coupled with low coal stocks, will bolster growth in energy and chemical imports, while also worsening terms of trade in late 2021 and in 2022. In addition, record-high prices for natural gas will push up the prices and volumes of fertilizer imports. In 2023, energy imports will decline, due to global price corrections. As a result, over the forecast horizon, nonenergy imports, buoyed by an increase in domestic consumer and investment demand, will be the key contributor to changes in goods imports. Other contributors will include effects from the strengthening of the hryvnia's REER and robust demand for pharmaceuticals boosted by the ongoing efforts to fight the pandemic.

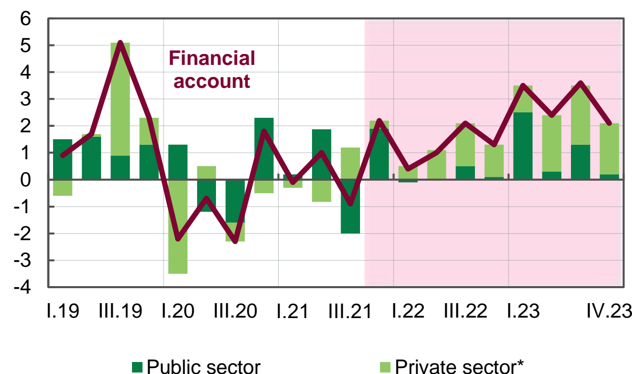
Capital inflows will resume amid improved macroeconomic conditions

The financial account outflows seen in Q3 resulted mainly from the substantial government sector's scheduled debt repayments. In addition, the amount of domestic government debt securities held by nonresidents continued to decrease due to the worldwide weakening of investors' interest in risky assets. Nonresidents' interest in domestic government debt securities is expected to gradually revive in late 2021, boosted by improved macroeconomic conditions and continued cooperation with the IMF.

Moreover, the private sector recorded capital inflows even in Q3. Companies' large reinvested earnings continued to generate significant FDI inflows (USD 2.1 billion). The real sector also raised USD 0.3 billion by issuing Eurobonds. This outweighed an increase in foreign currency cash outside the banking system and repayments of trade credits.

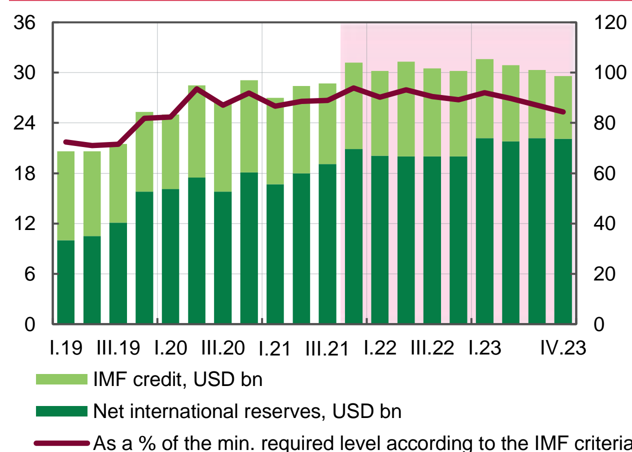
Both debt and FDI inflows in equity are expected to rebound over the next two years. These inflows will fully cover the current account deficit. In addition, outflows of foreign currency cash outside the banks will dwindle away on the back of low volatility of the exchange rate and reduced inflation. This will widen the financial account surplus over the entire forecast horizon.

Figure 2.5.9. Financial account: net external liabilities, USD bn



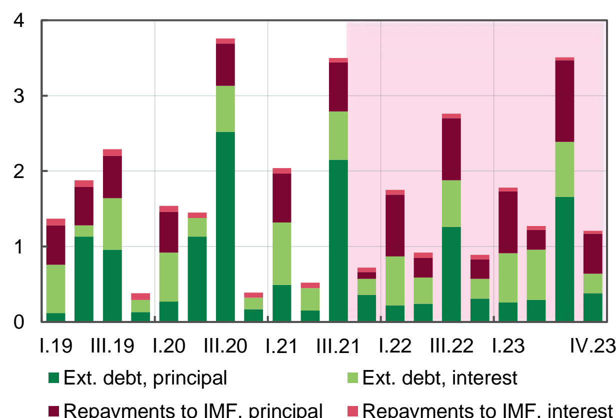
Source: NBU staff estimates.
* Including net errors and omissions.

Figure 2.5.10. Gross international reserves



Source: NBU staff estimates.

Figure 2.5.11. General government external debt repayments, USD bn



Source: NBU staff estimates.

Although Ukraine has successfully come through the period of peak debt repayments, its cooperation with the IMF will continue to support external sustainability

The funds Ukraine received through the SDR allocation enabled it to augment its international reserves to USD 31.6 billion by late August 2021 – a figure not seen since April 2012. This enabled the country to successfully traverse the period of peak debt repayments in September (USD 3.1 billion). Although declining to USD 28.7 billion by late September 2021, reserves remained at a high level, hitting about 90% of the required minimum according to theIMF's ARA (Assessment of Reserve Adequacy) metric Cooperation with the IMF will provide access to other official financing and the international capital markets. More specifically, international reserves are expected to increase by late 2021, hovering between USD 30 billion and USD 31 billion over the next two years, and being at the required minimum according to the IMF's ARA metric.

At the same time, financial account inflows are expected to be slightly smaller than envisaged by the previous forecast, due to nonresidents' weaker demand for hryvnia domestic government debt securities amid tighter monetary policies in advanced economies, and due to decreased borrowing by the private sector.

Risks to external sustainability have not materialized. By the end of H1 2021, Ukraine's external debt to GDP ratio had shrunk to 75.2% (a low not seen since 2014), and 28.4% for the short-term debt by remaining maturity (a low not seen since 2009), thanks to Ukraine's overcoming the crisis without encountering any exchange rate shocks and maintaining access to external financing, in part due to its cooperation with the IMF. These ratios are expected to drop further on the back of continued economic growth and prudent macroeconomic and fiscal policies.

The adequate level of international reserves will continue to act as a safety cushion, while also providing liquidity for external debt servicing. In particular, Ukraine is to repay external debt worth about USD 14 billion in 2022–2023. In this light, continued cooperation with the IMF and structural reforms will enable the country to maintain investors' interest and raise the financing to repay its debts.

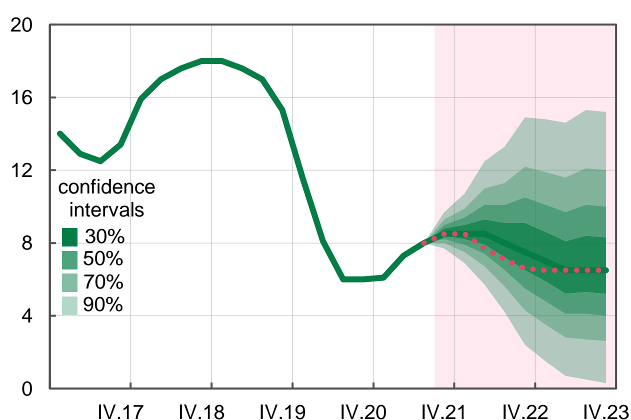
2.6. Monetary Conditions and Financial Markets

- This year's increases in the key policy rate and phasing out of anti-crisis monetary measures have almost offset the stimulating effect of monetary conditions. Monetary conditions are expected to be neutral for the next two years. This will be achieved by keeping the key policy rate at 8.5% at least until H2 2022, when the gradual rate reduction cycle is forecast to begin.
- Monetary policy decisions are gradually reflected in the rising cost of resources on the market. Stronger inertia in bank deposit rates is due to sustained high liquidity, along with the sluggish response of state-owned banks – the deposit policies of which have a defining influence on the deposit market.
- The excess of FX supply over demand helped strengthen the hryvnia and pushed the balance of NBU interventions into positive territory. The real effective exchange rate (REER) of the hryvnia will continue to strengthen over the forecast horizon thanks to an increase in labor productivity and relatively favorable terms of trade amid more active capital inflows.

Monetary policy decisions were aimed at keeping inflation expectations under control and putting inflation back onto the path of steady decline toward the target of 5%	
Gradual increase in the key policy rate from 6% to 8.5%	← *Main instrument*
– four hikes, by a total of 250 bp, in view of stronger underlying inflationary pressures	
Phasing out and then canceling anti-crisis monetary measures	← *Enhancing the effect of key policy rate increases*
Phase 1 (July): reducing terms and volumes of long-term refinancing, and lowering the frequency of auctions and the maximum maturity of interest rate swaps	
Phase 2 (October): suspending long-term refinancing and interest rate swaps	
Stepwise normalization of monetary policy operational design	← *Improving efficiency of monetary transmission*
– maturity of certificates of deposit increased from 7 to 14 days from July	
– interest rate on refinancing loans set at the key policy rate + 1 pp from 23 July	
– maturity of refinancing loans offered in weekly tenders from October reduced to 30 days, down from 90 days	

Table 1. Changes in Monetary Policy in 2021

Figure 2.6.1. Key policy rate, average, %



Source: NBU staff estimates.

In order to bring inflation back to its target of 5%, the NBU will have to maintain its key policy rate at no less than 8.5% until at least H2 2022

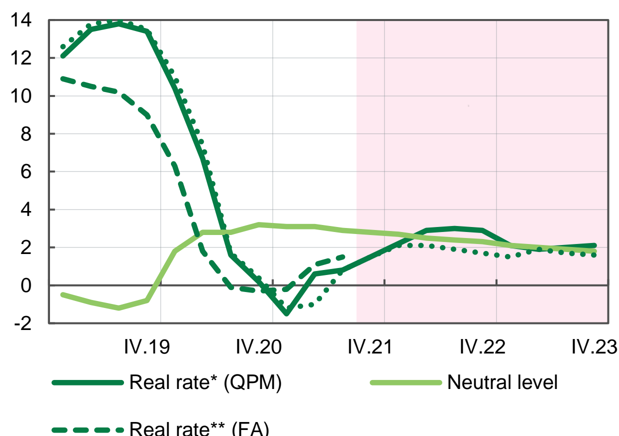
As anticipated in the July forecast, the NBU raised the key policy rate by 0.5 pp in September 2021, to 8.5%, and kept it unchanged in October. At the same time, the NBU signaled its readiness to raise the key policy rate and apply other monetary tools at its meeting in December in the event of the materialization of pro-inflationary factors that pose a threat to attaining the inflation target over the monetary policy horizon.

For inflation to return to the target of 5%, the key policy rate is forecast to remain not less than 8.5% for longer than expected – at least until Q3 2022. In addition, the key policy rate will be cut more gradually in 2022. The rate is expected to stand at 7.5% at the end of 2022, as opposed to 6.5% in the previous forecast.

The shift toward a more restraining key policy rate is driven by the need to neutralize inflationary pressures from the following factors in the medium term:

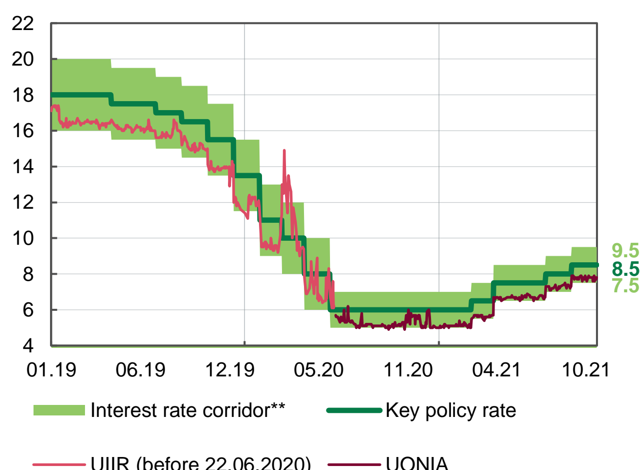
- second-round effects from the rise in natural gas prices

Figure 2.6.2. Real interest rate and its neutral level, %



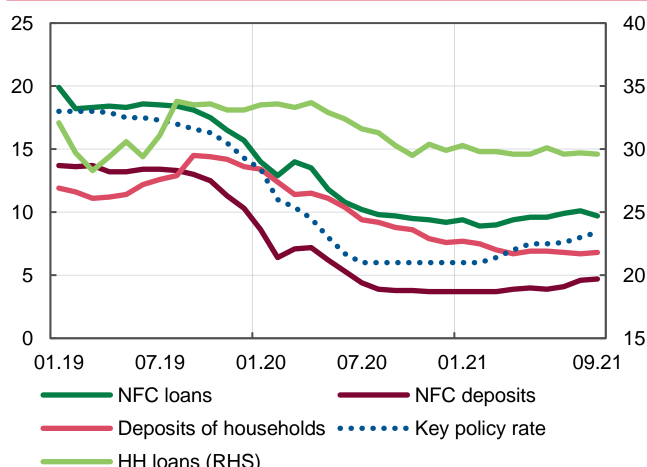
* Deflated by inflation expectations that are based on the QPM.
** Deflated by 12-month-ahead inflation expectations of financial analysts.
Source: NBU staff estimates.

Figure 2.6.3. NBU policy rates and UIIR/UONIA*, %



* As of 27.10.2021.
** Upper bound – interest rate on overnight loans, lower bound – overnight CDs.
Source: NBU.

Figure 2.6.4. Weighted average interest rates on new hryvnia loans and deposits, %



Source: NBU.

- an upward revision of wages, in particular due to labor migration
- a deterioration in inflation expectations.

This year's increase in the key policy rate and phasing out anti-crisis measures have almost offset the stimulating effect of monetary conditions. In early 2022, the monetary conditions will become neutral, ensuring steady disinflation, amid decreasing global raw materials prices, positive effects of agricultural products supply, and the realization of lagged effects on prices due to the recent strengthening of the hryvnia.

Monetary conditions are expected to remain neutral over the next two years. Slower inflation and the stabilization of inflation expectations will enable the central bank to switch to a cycle of key policy rate cuts from the current level of 8.5%, but no sooner than in H2 2022.

The speed of key policy rate transmission to bank interest rates varies

Interest rates on the interbank market correlated closely with the dynamics of the key policy rate. The sustained high liquidity in the banking system kept the Ukrainian Overnight Index Average (UONIA) almost at the level of the lower bound of the NBU's interest rate corridor.

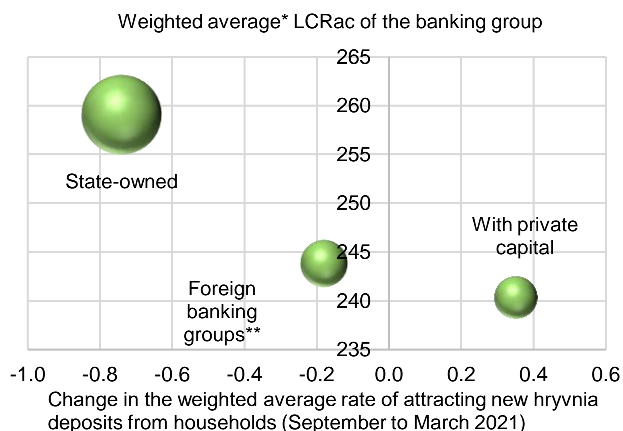
Despite having decreased somewhat, the banking system's liquidity remained high in Q3 2021 (average daily balances of correspondent accounts and certificates of deposit stood at around UAH 200 billion). Liquidity was pushed down mainly by funds accumulated by the government due to transfers of quarterly taxes and restrained budgetary spending. An increase in cash in circulation was another factor, although it was less pronounced compared to both the previous quarter and the same period last year.

The high liquidity of the banking system will be supported by the usual rise in spending from the budget at the end of the year.

The ample liquidity of the banking system lowers the banks' needs to attract customer funds, thus making them reluctant to raise deposit rates. It was mainly private and foreign-owned banks that responded to the monetary policy tightening, whereas state-owned banks were more inert, for the most part having lowered their interest rates on hryvnia deposits since the start of the key policy rate increase cycle. Taking into account the large share of state-owned banks on the retail deposit market (60% of households' hryvnia deposits), other banks also refrained from raising their deposit rates. In the meantime, the dynamics of the indicative rate Ukrainian Index of Retail Deposit Rates in September–October showed that more and more banks are ready to increase their interest rates on deposit products.

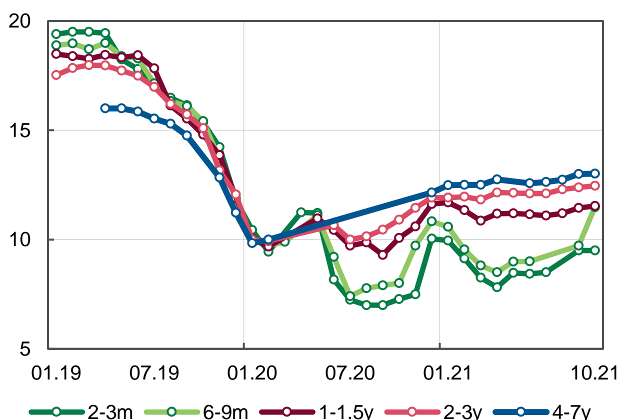
Interest rates on loans to nonfinancial corporations continue to correlate with changes in the key policy rate more closely than deposit rates do. The weighted average interest rate on hryvnia loans increased from 9% in March (when the

Figure 2.6.5. A change in weighted average interest rates on new hryvnia household deposits by banking group and their liquidity coverage ratio for all currencies# (LCRac)



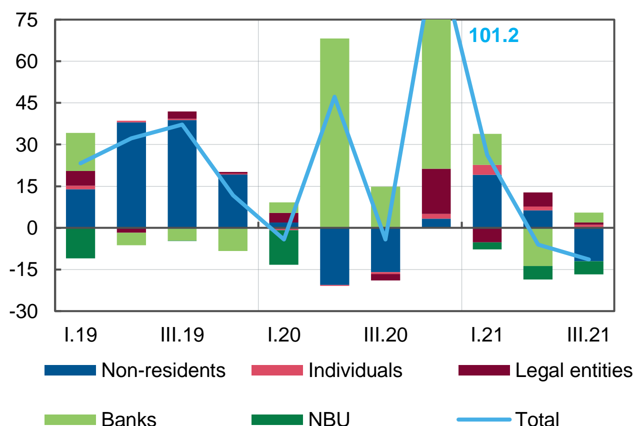
* Weighted by total assets of the bank that belongs to the respective group.
** Excluding some banks with Russian capital, banks that did not attract new hryvnia deposits from households during 2021.
# The size of the bubble reflects the share of the outstanding amount of hryvnia household deposits held by the respective banking group in total household hryvnia deposits.
Source: NBU staff estimates.

Figure 2.6.6. The primary market yields on hryvnia domestic government debt securities, monthly weighted average, % per annum



Source: NBU.

Figure 2.6.7. Change of outstanding hryvnia domestic government debt securities in circulation by holders, UAH bn



Source: NBU.

monetary policy tightening cycle started) to 9.7% in September. Weighted average interest rates on loans to households showed a weak response to changes in the key policy rate, and were high (29.6%–29.7%). This was due to higher risk on consumer loans, which accounted for more than 90% of retail loans.

Growth in yields on hryvnia domestic government debt securities drove a pickup in the government debt market

The government debt market was sluggish throughout most of Q3 2021. The Ministry of Finance took a cautious approach to changing interest rates on domestic government debt securities in view of the above-target budget revenues and receiving funds under external borrowing and the SDR allocation. From end-July, the offered yields were not enough to ensure sufficient demand for hryvnia securities. As a result, inflows were among the weakest recorded this year. A worsening of conditions on the global financial markets also affected the activity of investors, in particular foreign ones. Nonresidents' holdings of domestic government debt securities thus dropped.

An increase in interest rates in September at an initial offering of domestic government debt securities stoked demand for them from domestic investors. In some periods, nonresidents also showed interest in hryvnia bonds, although only rather weakly. Nonresident demand is expected to be modest in the coming years as well, supported by the gradual waning of the perception that investing in Ukrainian assets is risky.

FX supply exceeding demand strengthened the hryvnia exchange rate

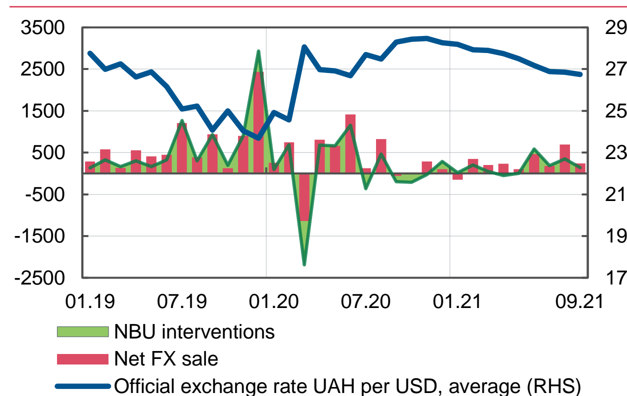
In Q3 2021, appreciation pressures prevailed on the noncash FX market, despite a decrease in nonresident holdings of hryvnia domestic government debt securities. The main sellers of foreign currency were agricultural businesses, the metals-and-mining sector, and large state-owned companies. Proceeds from IT services exports and growth in remittances from labor migrants also generated supplies of foreign currency.

Banks' purchases of foreign currency exceeded sales on the cash market. However, in the second half of the quarter sales exceeded purchases, which was explained by the continuing hryvnia appreciation and expectations of a depreciation in the exchange rate in autumn and winter.

The majority of the NBU's FX market transactions were for purchases of foreign currency. In some periods, there were adjustments to the hryvnia exchange rate caused by situational factors (in particular by the release of pent-up demand for foreign currency after the long holidays in August), and the NBU intervened to sell foreign currency in order to smooth out excessive fluctuations. Overall, the balance of interventions in Q3 2021 was positive, reaching almost USD 0.7 billion (USD 1.5 billion over the first three quarters of 2021).

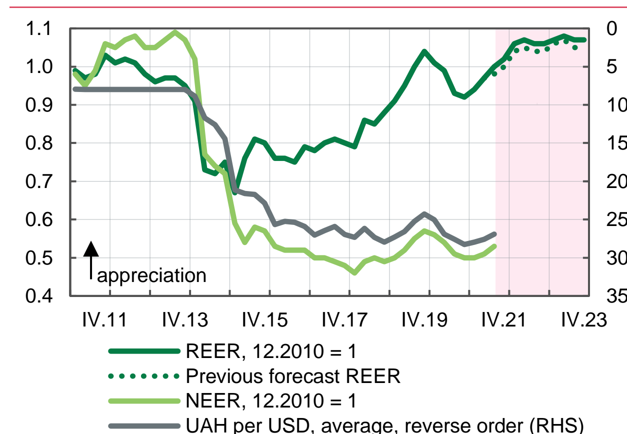
Favorable conditions on the FX market enabled the central bank to continue to liberalize it. Starting on 20 July, businesses were allowed to buy foreign currency within a limit of EUR 100,000 (in its hryvnia equivalent) per day without

Figure 2.6.8. Net FX cash and non-cash* sale by bank clients, USD m



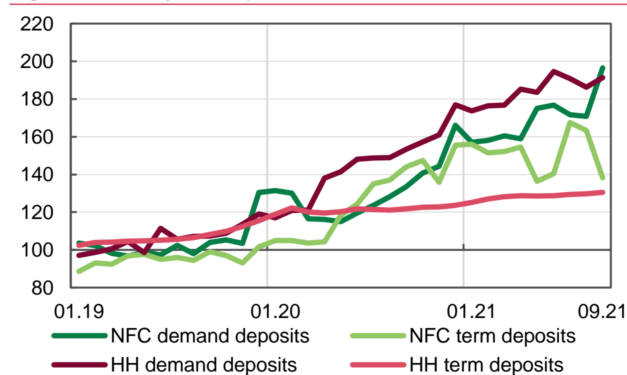
* Tod, Tom, Spot.
Source: NBU.

Figure 2.6.9. Official exchange rate, hryvnia REER and NEER indices



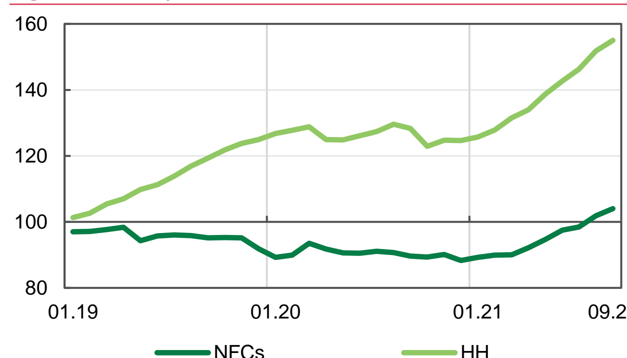
Source: IFS, NBU staff estimates.

Figure 2.6.10. Hryvnia deposits, 12.2018 = 100



Source: NBU.

Figure 2.6.11. Hryvnia loans, 12.2018 = 100



Source: NBU.

having to provide grounds for their purchase or submit supporting documents to the bank.

In Q3 2021, the official UAH/USD exchange rate strengthened on average by 2.5% qoq, or by 6% YTD. As a result, the nominal effective exchange rate (NEER) appreciated as well. Considering that inflation in Ukraine was higher than in its partner countries, the REER of the hryvnia strengthened even more.

The REER of the hryvnia will continue to appreciate thanks to favorable terms of trade, improved productivity in agriculture and IT, and wage levels converging with those of neighboring countries on the back of labor migration. However, the effect of favorable terms of trade will weaken in 2022, which will make further REER appreciation slower. The REER will be somewhat stronger than its equilibrium level over the forecast horizon, which is in line with the moderate widening of the current account deficit.

Bank lending is on the rise

The banks' lending activity continued to gradually recover. Outstanding hryvnia loans issued to nonfinancial corporations grew by 17.8% YTD and reached the pre-crisis level of early 2014. In Q3 2021, the largest growth was seen in hryvnia loans to wholesale and retail trade businesses. They accounted for almost half of the growth in loans to nonfinancial corporations. Outstanding loans to companies in the mining and manufacturing sectors also increased.

Hryvnia lending to households also picked up noticeably. Consumer loans grew by 18% yoy in September, including car loans, which rose by 30%. Banks are also stepping up their mortgage lending. Loans for real estate purchases, construction, and renovation grew by 38% yoy.

Banks' expectations for lending remained positive. This will be supported by high liquidity and upbeat sentiment about consumers' solvency, overall economic activity, and the prospects of the real estate market.

In Q3 2021, growth in hryvnia deposits slowed in annual terms. Higher consumer demand was reflected in the dynamics of retail deposits – balances of demand deposits declined in July–August. This, however, was usual for the holiday season and the period of preparations for the new school year. Deposits are expected to return to growth in autumn, although the growth will be slower due to the low base effect.

Box 3. Transmission of Key Policy Rate Forecast to Selected Market Rates

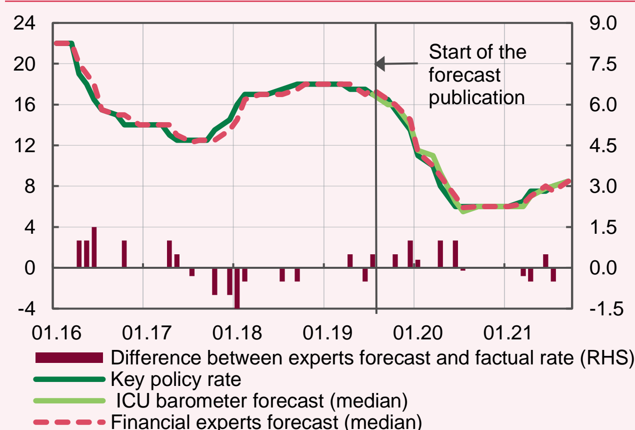
The key policy rate forecast is a part of the NBU's macroeconomic forecast, which, along with the publication of other macroeconomic indicators, increases the transparency and predictability of monetary policy. This enables financial market participants to see how the regulator plans to use its monetary policy to bring inflation to its target. Analysis of the secondary market of domestic government debt securities based on the dynamics of forward rates shows that market participants pay attention to changes in the forecast trajectory of the key policy rate, and react rationally in response. This means that awareness of the central bank's actions has increased and that the transmission mechanism is effective.

In July 2019, the NBU started to publish the forecast trajectory of the key policy rate as part of its macroeconomic forecast. The Ukrainian central bank has thus become the world's eighth inflation targeter to publish such forecasts[17].

Every quarter, the NBU publishes its forecast of the key policy rate for the current and next two years in press releases on monetary policy decisions, and in the Inflation Report a week following these press releases. Along with the traditional forward guidance, which is usually a verbal expression of intentions, the key policy rate forecast helps financial market participants draw conclusions regarding the NBU's further policy steps. The aim of publishing the forecast is to improve economic agents' understanding of future monetary policy and make the impact of the key policy rate on market rates more effective (read more in Box 5 *Publication of Key Policy Rate Forecasts* in the July 2019 Inflation Report).

Before the start of publication of the key policy rate forecast, market expectations of changes in the key policy rate lagged somewhat behind the central bank's view. For example, market participants expected the key policy rate to remain unchanged longer in 2017. Against the backdrop of accelerating inflation, this indicated expectations of looser monetary conditions. As a result, the NBU had to provide a stronger response to inflation risks in order to rein in inflation processes.

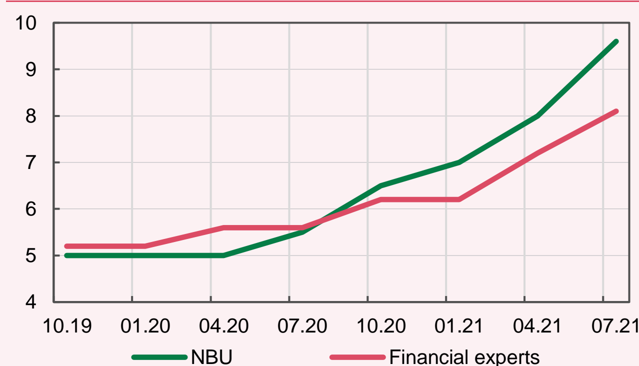
Figure 1. Key policy rate: experts forecast and actual rate, %



Source: ICU, NBU.

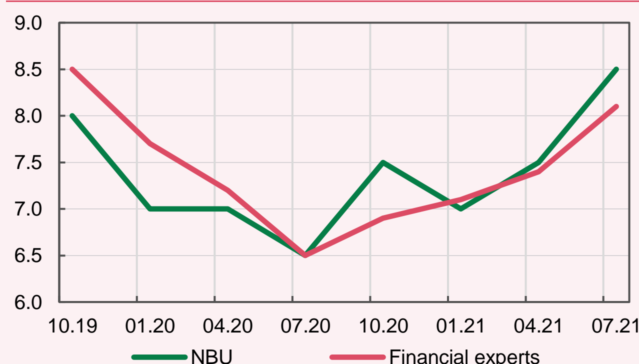
Surveys of financial analysts[18] have shown their predictive capability with regard to the key policy rate has improved considerably (excluding H1 2020). This, however, mostly reflected the NBU's proactivity in the wake of the coronavirus crisis. The slight deviation of analysts' expectations of the key policy rate forecast for the end of this year shows that the majority of analysts are underestimating the risks of rising inflation.

Figure 2. CPI forecast for the end of 2021, % yoy



Source: NBU.

Figure 3. Key policy rate forecast for the end of 2021, %



Source: NBU.

Nevertheless, the overall dynamics of financial analysts' expectations point to an improvement in the understanding by market participants of the logic behind monetary policy decisions.

Forward rates on the market were also analyzed in order to assess the impact of the NBU's key policy rate forecasts on market expectations.

As transactions with forward interest rates are not conducted in Ukraine, the rates were calculated on the

[17] The other seven inflation-targeting central banks publishing such forecasts are: the National Bank of Georgia, the Reserve Bank of New Zealand, Norges Bank, the Bank of Israel, the Central Bank of Iceland, the Czech National Bank, and Sveriges Riksbank. In April 2021, the Central Bank of the Russian Federation also started to publish this forecast.

[18] The NBU conducts surveys of financial analysts' (professional forecasters') current macroeconomic expectations.

basis of the term structure of interest rates[19]. Spot rates were calculated as the weighted average yield on hryvnia domestic government debt securities traded on the secondary market from the first day when monetary policy decisions are announced, to the seventh day after such an announcement[20]. Although no formal tests were performed[21], a graphical analysis indicates that there is transmission of the key policy rate forecasts into market rates, especially in the short run.

Table 1. Term premium across projection horizons

Quarter after policy decisions	1st	2nd	3rd	4th	6th	8th	10th
Average term premium, pp	1.4	3.3	4.8	3.9	4.9	5.9	7.5

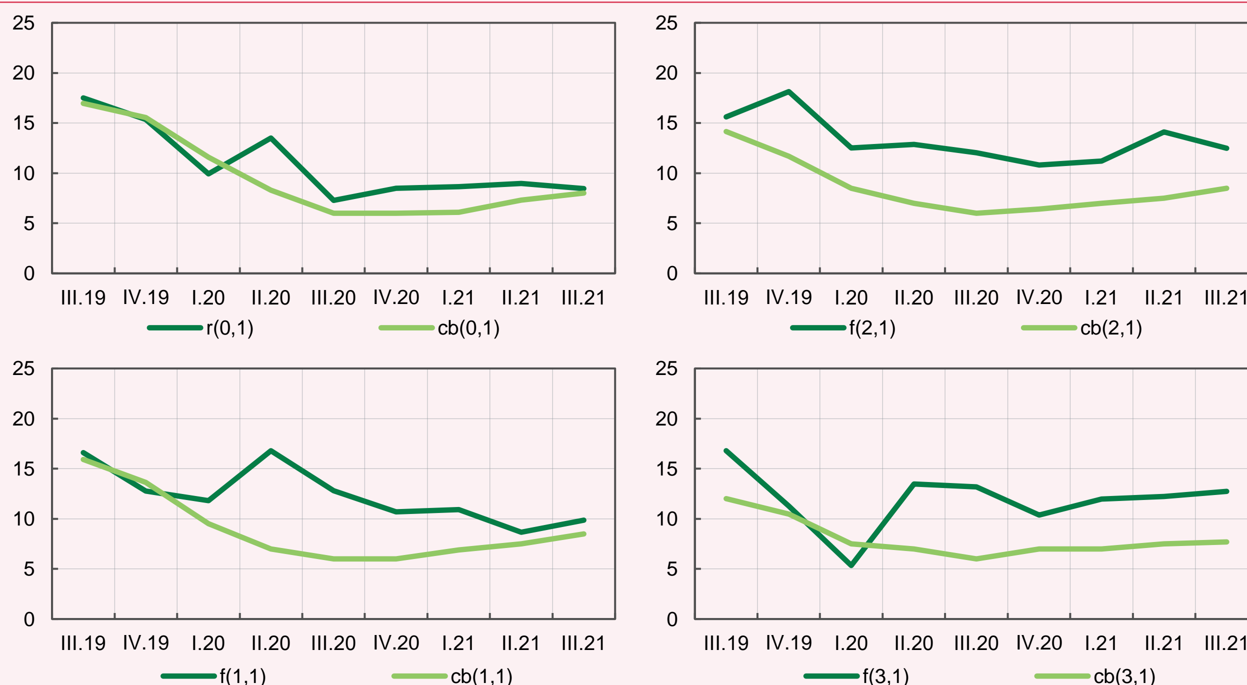
Source: NBU staff calculations.

Forward rates with longer maturities are more volatile but are tending to decline. This is in line with the decrease in the forecast key policy rate. However, the impact of term premiums – defined as the difference between market rates and key policy rate forecasts – rises over a longer period (Table 1).

Under conditions of financial turbulence (e.g., due to the uncertainty related to the spread of COVID-19, capital outflows ahead of the Fed phasing out its quantitative easing programs, etc.), some structural and fundamental factors have more influence on yields on domestic government debt securities than the key policy rate.

However, when the effect of temporary factors wanes and the market returns to normal, market rates on hryvnia domestic government debt securities are generally in line with the trajectory of the key policy rate forecast, especially over the short term.

Figure 4. Key policy rate forecasts and market spot and forward rates on hryvnia domestic government debt securities, %



Source: NBU staff calculations.

[19]The forward rate (x,y) refers to the yield of a financial instrument with a maturity of y quarters in x quarters. For instance, a forward rate of f(1,1) for a forward contract with maturity of one quarter in one quarter is an estimated yield of a forward contract that makes it equally attractive for investors to invest on the spot for two quarters at a spot rate (0,2), or invest for one quarter at a spot rate (0,1) and then for one more quarter at a forward rate (1,1). Therefore, the forward rate was compared with official forecasts of the average key policy rate in two quarters cb(1,1). In order to be comparable with the key policy rate (the main transaction for which is the placement of 14-day certificates of deposit), spot and forward rates were brought to two-week accrual of interest.

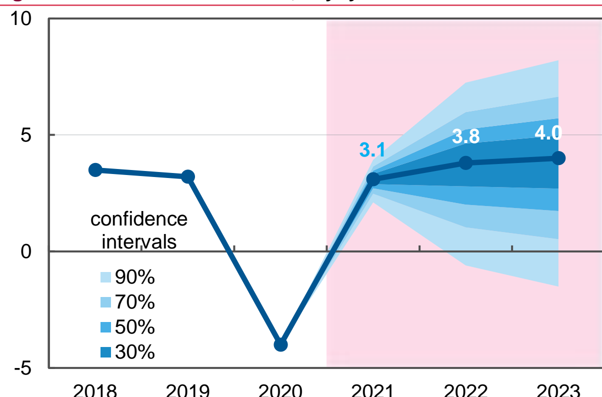
[20]Domestic government debt securities were divided into several groups by maturity: 0–1 quarter, 1–2 quarters, 2–3 quarters, 3–4 quarters, 1–1.5 years, 1.5–2 years, 2–2.5 years. Thus, the spot rate r(0,1) and forward rates f(1,1), f(2,1), f(3,1), f(4,2), f(6,2), and f(8,2) were calculated. Contracts with extreme parameters were excluded from the data on contracts involving domestic government debt securities.
Spot rates r(0,1) moved in parallel with the forecast key policy rate for one quarter cb(0,1). The latter declined from 17% in Q3 2019 to a minimum of 6% in H2 2020, and then grew to 8.5% in Q3 2021 (Figure 1). The large increase in forward rates in Q2 2020 was explained by higher uncertainty due to the spread of COVID-19 and capital outflows from EMs, including from Ukraine. The majority of forward rates on the market spiked in a similar way during that period.

[21]This is due to the short data series (only nine forecasts of the key policy rate are available from the start of the publication) and the Ukrainian market not using forward rate agreements (FRAs) and overnight index swaps (OISs), the data of which are used by other central banks in similar research.

Part 3. Risks to the Forecast

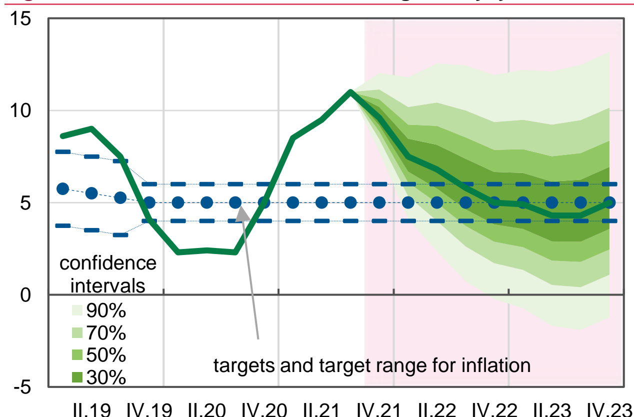
- As before, the underlying assumption of the macroeconomic forecast is that Ukraine will continue to cooperate with the IMF.
- The key risks to the macroeconomic forecast are the imposition of stricter quarantine measures in Ukraine and globally, and a longer and more pronounced than expected surge in global inflation.
- The NBU assesses the balance of risks for its baseline scenario for inflation and the key policy rate to have shifted upward, especially in the medium term.

Figure 3.5.1. **Real GDP forecast, % yoy**



Source: NBU staff estimates.

Figure 3.5.2. **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 key assumption of this macroeconomic forecast is that Ukraine will continue to cooperate with the IMF under the fund's program. The implementation of the existing Stand-by Arrangement will ensure the receipt of official financing in 2021–2022 and provide better terms for external borrowing, while also supporting foreign investors' interest in hryvnia assets. Cooperation with the IMF will help speed up economic growth, stabilize inflation at its target level, and maintain international reserves at USD 30–31 billion in the coming years. A suspension of the IMF program would create problems in securing sources of external financing for the state budget deficit. If external financing sources were to be replaced with internal ones, competition for bank loans would rise between the government and businesses, causing risks of crowding out and slowing economic growth. This might significantly worsen inflation and depreciation expectations, forcing the NBU to tighten its monetary policy. However, in October, Ukraine reached a staff level agreement (SLA) with the IMF regarding revising the Stand-by Arrangement (SBA). This has opened the way for the first revision of the SBA by the IMF Executive Board, and for consideration of the request for the program to be extended. This has increased the likelihood that the key assumption of the macroeconomic forecast will be realized.

A probable tightening of quarantine measures due to the spread of new coronavirus variants and a more prolonged pandemic are among the main risks to the forecast. The baseline scenario of the macroeconomic forecast envisages "red zone" quarantines being imposed in individual regions, but a more adverse scenario is also possible. If a strict lockdown is introduced across Ukraine for one month in order to rein in a surge in disease cases, it would cause additional losses of 0.3 pp of GDP this year. The need for extra budget spending would also rise in the event of a strict lockdown. At the same time, supply would be more affected than demand, which could increase pro-inflationary pressures.

The risk is significant that inflation will be more lasting and higher in advanced economies due to demand growing faster than supply, as a result of the disruption of supply chains, shortages of semiconductors and other intermediate goods, and persisting logistical problems. These factors could cause global stagflation, which would also affect Ukraine. In these circumstances, monetary policy would balance between the need to restrain inflation and avoiding a recession. However, taking into account the importance of retaining control over inflation expectations, there would be no alternative to monetary policy tightening.

Degree of impact on the baseline scenario	Probability that a risk will materialize: Low <15%	Medium 15%–25%	High 25%–50%
Weak			
Moderate	Smaller harvest of main agricultural crops	Intensifying of labor migration and wages growth	
Strong		Escalation of the military conflict Delays in cooperation with the IMF	Deterioration in the terms of trade Tightening of quarantine measures Global inflation hike, stagflation, capital outflows from EM

A sizeable decline in harvests of grains, oilseeds, and fruit and vegetables in Ukraine due to a shortage of fertilizers and adverse weather conditions should be considered as a separate stagflation shock to the country's economy. It would cause risks of slower economic growth coupled with higher inflation. Export prices would increase as expected, but this would not offset the losses from a fall in volumes of supplies. This would put pressure on the hryvnia exchange rate and push up food inflation. The monetary policy response would then balance the need to reduce inflationary pressures against the need to minimize economic losses.

The risk of a de-anchoring of inflation expectations might prompt the leading central banks to switch to tighter monetary policy more quickly. Tighter global monetary conditions would lead to stronger competition for capital among EMs. Competition is rising because advanced economies are recovering more quickly than EM economies, making borrowing more expensive for the latter. Under these conditions, the NBU would have to tighten its monetary policy more than envisaged in the baseline scenario.

A more rapid deterioration in the terms of trade is another important external risk. Further growth in oil and gas prices or a sharp fall in global prices of Ukrainian exports from their current high levels would boost depreciation pressures on the hryvnia exchange rate. An increase in energy prices would additionally impact inflation, both directly through the rise in fuel prices and administered tariffs, and through second-round effects on logistics and production costs. This would require a tighter monetary policy than envisaged in the baseline scenario in order to eliminate excessive inflationary pressures.

Strong demand for labor in Europe amid a further easing of quarantine restrictions might lead to an increase in labor migration from Ukraine. Competition for skilled labor will thus remain high on the domestic labor market, making wages continue to grow more rapidly. Higher demand and labor costs might put additional pressure on inflation and require the central bank to tighten its monetary policy in order to bring inflation to the target.

The risk remains of an escalation of the military conflict in the east of the country, which could markedly worsen Ukraine's investment attractiveness and significantly affect the expectations of all economic agents.

Forecast assumptions

Indicators		2019*	2020*	2021		2022		2023	
				current	previous	current	previous	current	previous
Real GDP of Ukraine's MTP (UAwGDP)	% yoy	2.5	-3.9	5.6	5.5	3.5	3.6	3.2	3.2
Foreign CPI (UAwCPI)	% yoy	2.9	2.1	5.2	4.1	3.0	2.6	2.9	2.6
World prices:**									
Steel price, Steel Billet Exp FOB Ukraine	USD/t	411	389.4	614.1	620.9	562.1	562.1	509.9	509.9
	% yoy	-17	-5.2	57.7	59.5	-8.5	-9.5	-9.3	-9.3
Iron ore price, China import Iron Ore Fines 62% FE	USD/t	93.8	108.9	169.4	177.5	128.8	132.5	95.0	95.0
	% yoy	34.6	16.1	55.6	63.0	-24.0	-25.4	-26.2	-28.3
Steel price, No.1 Hard Red Winter, ordinary protein, Kansas City	USD/t	164	186.2	255.3	231.6	260.0	195.0	254.1	186.8
	% yoy	-12	13.3	37.1	24.4	1.8	-15.8	-2.3	-4.2
Corn price, Yellow #2 Delivery USA Gulf	USD/t	170	165.4	258.3	260.9	219.6	209.3	195.4	194.1
	% yoy	3.5	-2.8	56.2	57.7	-15.0	-19.8	-11.0	-7.3
Oil price, Brent	USD/bbl	64.2	42.3	69.4	66.1	67.1	63.9	62.4	62.4
	% yoy	-9.6	-34.1	64.1	56.3	-3.3	-3.3	-7.0	-2.3
Natural gas price, Netherlands TTF	USD/bcm	161	115.0	540.2	316.2	475.1	253.6	253.6	197.0
	% yoy	-44	-28.7	369.7	175.0	-12.1	-19.8	-46.6	-22.3
Gas transit	bcm	89.6	55.8	45.0	50.0	40.0	40.0	40.0	40.0
Grain and leguminous harvest	m t	75.1	64.9	81.0	77.0	75.0	75.0	75.0	75.0
Minimum wage**	uah	4173	4815	6042	6042	6550	6550	7176	7176

** Actual data.*

*** Year average.*

Macroeconomic forecast (October 2021)

Indicators	2018	2019	2020	2021 I	2021 II	2021 III	2021 IV	2021 current forecast	2021 forecast 07.2021	2022 I	2022 II	2022 III	2022 IV	2022 current forecast	2022 forecast 07.2021	2023 I	2023 II	2023 III	2023 IV	2023 current forecast	2023 forecast 07.2021
REAL ECONOMY, % yoy, unless otherwise stated																					
Nominal GDP, UAH bn	**3560**	**3977**	**4192**	1009	1169	1518	1495	**5190**	4975	1155	1343	1641	1611	**5750**	5485	1256	1469	1803	1772	**6300**	6000
Real GDP	**3.5**	**3.2**	**-4.0**	-2.2	5.7	4.0	4.3	**3.1**	3.8	5.4	7.3	1.5	2.1	**3.8**	4.0	3.0	3.8	4.4	4.6	**4.0**	4.0
GDP Deflator	15.4	8.2	9.8	20.7	26.4	26.0	10.2	20.1	14.3	8.7	7.0	6.4	5.5	6.7	6.0	5.6	5.4	5.3	5.2	5.4	5.2
Consumer prices (period average)	10.9	7.9	2.7	-	-	-	-	9.3	9.4	-	-	-	-	6.7	6.6	-	-	-	-	4.6	4.9
Consumer prices (end of period)	**9.8**	**4.1**	**5.0**	8.5	9.5	11.0	9.6	**9.6**	9.6	7.5	6.8	5.8	5.0	**5.0**	5.0	4.9	4.3	4.3	5.0	**5.0**	5.0
Core inflation (end of period)	8.7	3.9	4.5	5.9	7.3	7.4	7.1	7.1	7.3	6.0	4.5	3.9	3.3	3.3	4.0	3.4	3.6	3.8	4.0	4.0	4.0
Non-core inflation (end of period)	10.7	4.8	5.9	12.4	12.6	16.6	13.1	13.1	12.9	9.2	9.8	8.3	7.4	7.4	6.5	6.7	5.1	5.0	6.2	6.2	6.1
raw foods (end of period)	3.3	3.9	4.1	11.8	5.1	14.2	9.8	9.8	10.6	5.4	6.6	4.1	3.4	3.4	3.5	3.0	2.9	3.8	3.7	3.7	3.6
administrative prices (end of period)	18.0	8.6	9.9	13.0	18.0	17.1	14.6	14.6	14.2	12.7	12.7	12.3	11.3	11.3	9.2	10.4	7.2	6.1	8.3	8.3	8.3
Producer prices (end of period)	**14.2**	**-7.4**	**14.5**	26.3	39.1	45.1	37.0	**37.0**	27.5	20.9	14.5	6.0	5.0	**5.0**	5.0	5.0	5.0	5.0	5.0	**5.0**	5.0
Nominal wages (period average)	24.8	18.4	10.4	16.6	27.1	19.9	14.0	19.2	18.8	13.9	13.6	12.5	11.6	12.9	10.8	9.8	9.2	8.2	8.1	8.8	8.4
Real wages (period average)	12.5	9.5	7.4	8.6	16.5	8.6	3.7	9.1	8.7	5.3	6.3	5.9	6.0	5.9	3.9	4.6	4.4	3.8	3.2	4.0	3.4
Unemployment (ILO, period average)	8.8	8.2	9.5	-	-	-	-	9.4	9.1	-	-	-	-	8.6	8.5	-	-	-	-	8.6	8.5
FISCAL SECTOR																					
Consolidated budget balance, UAH bn	**-67.8**	**-87.3**	**-224**	-	-	-	-	**-209**	-200	-	-	-	-	**-203**	-165	-	-	-	-	**-190**	-181
% of GDP	-1.9	-2.2	-5.4	-	-	-	-	-4.0	-4.0	-	-	-	-	-3.5	-3.0	-	-	-	-	-3.0	-3.0
Public sector fiscal balance (IMF methodology), UAH b	**-75.4**	**-89.2**	**-243**	-	-	-	-	**-209**	-199	-	-	-	-	**-203**	-166	-	-	-	-	**-192**	-183
% of GDP	-2.1	-2.2	-5.8	-	-	-	-	-4.0	-4.0	-	-	-	-	-3.5	-3.0	-	-	-	-	-3.0	-3.0
BALANCE OF PAYMENTS (NBU methodology)																					
Current account balance, USD bn	-6.4	-4.1	5.3	-0.9	0.2	-0.8	-0.4	-1.9	-0.7	-1.2	-1.1	-2.1	-1.3	-5.7	-5.6	-1.3	-2.8	-3.1	-2.3	-9.5	-9.1
Exports of goods and services, USD bn	59.2	63.6	60.7	16.3	19.2	21.8	22.9	80.3	75.8	19.9	19.5	19.7	20.5	79.6	74.4	17.9	17.8	19.4	20.3	75.4	72.9
Imports of goods and services, USD bn	70.6	76.1	63.1	17.2	18.7	22.5	24.5	82.9	79.6	21.8	22.0	22.8	24.0	90.6	86.3	20.4	22.2	23.8	25.0	91.4	88.3
Remittances in Ukraine, USD bn	11.1	11.9	12.0	3.2	3.5	3.7	4.0	14.3	13.3	3.4	3.7	3.8	4.2	15.0	14.1	3.5	3.8	3.9	4.4	15.7	14.8
Financial account, USD bn	-9.3	-10.1	3.3	0.1	-1.0	0.9	-2.2	-2.3	-1.1	-0.4	-1.0	-2.1	-1.3	-4.9	-7.2	-3.5	-2.4	-3.6	-2.1	-11.5	-11.8
BOP overall balance, USD bn	**2.9**	**6.0**	**2.0**	**-1.0**	**1.3**	**-1.6**	**1.8**	**0.4**	0.4	**-0.8**	**-0.1**	**0.0**	**0.0**	**-0.9**	1.5	**2.2**	**-0.4**	**0.4**	**-0.2**	**2.0**	2.8
Gross reserves, USD bn	**20.8**	**25.3**	**29.1**	**27.0**	**28.4**	**28.7**	**31.1**	**31.1**	31.3	**30.1**	**31.3**	**30.5**	**30.2**	**30.2**	31.6	**31.6**	**30.9**	**30.3**	**29.6**	**29.6**	31.7
Months of future imports	3.3	4.8	4.2	3.7	3.7	3.8	4.1	4.1	4.4	4.1	4.2	4.1	4.0	4.0	4.3	4.0	3.9	4.8	3.7	3.7	4.2
MONETARY ACCOUNTS (Cumulative since the beginning of the year)																					
Monetary base, %	**9.2**	**9.6**	**24.8**	2.1	8.2	8.1	14.4	**14.4**	17.9	-0.2	3.8	4.9	8.2	**8.2**	7.9	0.7	1.8	2.8	6.4	**6.4**	6.7
Broad money, %	**5.7**	**12.6**	**28.6**	0.1	3.4	4.1	10.7	**10.7**	13.8	1.0	4.9	6.5	12.5	**12.5**	10.9	2.0	3.8	6.1	10.9	**10.9**	11.5
Velocity of broad money (end of year)	**2.8**	**2.8**	**2.3**	-	-	-	-	**2.5**	2.4	-	-	-	-	**2.5**	2.4	-	-	-	-	**2.5**	2.3

Terms and Abbreviations

GDP	Gross domestic product
GVA	Gross value added
STSU	State Treasury Service of Ukraine
SCSU	State Customs Service of Ukraine
CD	Certificate of deposit
SESU	State Employment Service of Ukraine
SSSU	State Statistics Service of Ukraine
STA	Single Treasury Account
EU	European Union
ECB	European Central Bank
CPI	Consumer Price Index
BAOI	Business Activity Outlook Index
QPM	Quarterly Projections Model
IMF	International Monetary Fund
ILO	International Labour Organization
MFU	Ministry of Finance of Ukraine
NBU	National Bank of Ukraine
NEER	Nominal effective exchange rate
OPEC	Organization of the Petroleum Exporting Countries
MTP	Main trading partner
VAT	Value-added tax
PIT	Personal income tax
FDI	Foreign direct investment
REER	Real effective exchange rate
SDR	Special drawing rights
U.S.	United States of America
Fed	Federal Reserve System
ECPI	External Commodity Price Index
EM	Emerging markets
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	US dollar
p	point
bp	basis point
pp	percentage point
bbl	barrel
yoy	in annual terms; year-on-year change
qoq	in quarterly terms; quarter-on-quarter change
sa	seasonally adjusted
mom	in monthly terms; month-on-month change month-on-month
RHS	Right-hand scale