National Bank of Serbia

February 2023

INFLATION REPORT

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Introductory note

The Agreement on Inflation Targeting between the Government of the Republic of Serbia and the National Bank of Serbia, effective as of 1 January 2009, marks a formal switch of the National Bank of Serbia to inflation targeting as a monetary policy regime. The main principles and operation of the new regime are defined by the Memorandum on Inflation Targeting as a Monetary Strategy.

Since one of the underlying principles of inflation targeting is strengthening the transparency of monetary policy and improving the efficiency of communication with the public, the National Bank of Serbia prepares and publishes quarterly Inflation Reports as its main communication tool. The *Inflation Report* provides key economic facts and figures that shape the Executive Board's decisions and underpin activities of the National Bank of Serbia.

The *Inflation Report* aims to cover information on the current and expected inflation movements and to provide an analysis of underlying macroeconomic developments. It also seeks to explain the reasoning behind the Executive Board's decisions and to provide an assessment of monetary policy effectiveness during the previous quarter. Also integral to this *Report* are the inflation projection for eight quarters ahead, assumptions on which the projection is based and an analysis of key risks to achieving the target.

The information contained in this *Report* will help raise public understanding of monetary policy implemented by the central bank and awareness of its commitment to achieving the inflation target. It will also play a role in containing inflation expectations, as well as in achieving and maintaining price stability, which is the main statutory task of the National Bank of Serbia.

The February *Inflation Report* was considered and adopted by the NBS Executive Board at its meeting of 9 February 2023.

Earlier issues of the *Inflation Report* are available on the National Bank of Serbia's website (http://www.nbs.rs).

Executive Board of the National Bank of Serbia:

Jorgovanka Tabaković, Governor

Željko Jović, Vice Governor

Ana Ivković, Vice Governor

Dragana Stanić, Vice Governor

Nikola Dragašević, Vice Governor

ABBREVIATIONS

bp – basis point
CPI – Consumer Price Index
EBRD – European Bank for Reconstruction and Development
ECB – European Central Bank
EIB – European Investment Bank
EMBI – Emerging Markets Bond Index
EU – European Union
FAO – UN Food and Agriculture Organization
FDI – foreign direct investment
Fed – Federal Reserve System
FOMC – Federal Open Market Committee
GDP – gross domestic product
GVA – gross value added
H – half-year
IFEM – Interbank Foreign Exchange Market
IMF – International Monetary Fund
LHS – left hand scale
mn – million
NAVA – non-agricultural value added
NPL – non-performing loan
OFO – other financial organisation
OPEC – Organization of the Petroleum Exporting Countries
pp – percentage point
Q – quarter
q-o-q – quarter-on-quarter
RHS – right hand scale
RMCP – real marginal cost of processed food production
s-a – seasonally-adjusted
SDR – Special Drawing Right
SORS – Statistical Office of the Republic of Serbia
y-o-y – year-on-year

Other generally accepted abbreviations are not cited.

Macroeconomic projections presented in the Report were concluded on 3 February.

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I Overview

The period since our previous, November *Report* was marked by **somewhat improved global growth prospects**, as inflation has begun to retreat gradually from its multi-decade highs in a number of countries and the carry-over effect from 2022 proved to be stronger due to better-than-anticipated outturns in the second half of the year. In an environment of the energy crisis and tight financial conditions, optimism was reawakened by the falling prices of gas and other energy products in the EU and China's abandonment of the zero-Covid policy. Global growth is certain to slow this year to 2.9% according to the IMF's estimate, from 3.4% in 2022. The key factors behind the slackening include tighter monetary policies of central banks and the continued conflict in Ukraine. Recovery is expected from the latter half of 2023, as economic growth in China accelerates, the energy market in Europe gradually rebalances, global uncertainty recedes, external demand strengthens and global value chain bottlenecks are resolved.

Global growth will slacken this year, but less than anticipated several months ago.

Inflation remains elevated in almost all countries of the world, but it has begun to lose steam, thanks primarily to lower energy prices. However, the indirect effects of elevated prices of energy and industrial raw materials in the past period are, together with a tight labour market, still fuelling core inflation growth in many countries. **Inflation is expected to slow this year** on account of lower energy prices, the improvement of global value chains and weaker demand amid monetary tightening by central banks. Still, according to the IMF's latest assessment from January this year, in 2024 as well global inflation will remain above the pre-pandemic level (from 2017–2019) of around 3.5%. For this reason, leading central banks – **the Federal Reserve and the European Central Bank, have continued tightening their monetary policies**. This has resulted in more stringent global financial conditions, potentially producing negative effects on the public finances and financial stability of emerging economies.

There are signs that global inflation is losing steam, which will continue going forward thanks to lower energy prices, easing of global value chain bottlenecks and subdued demand amid monetary tightening by central banks.

As global cost-push pressures remain robust despite signs of easing, the NBS Executive Board continued to **raise the key policy rate**, though at a more measured pace than before. After rising by 50 bp in December, in January and

The NBS has continued to tighten monetary conditions, though at a more measured pace than before.

February the key policy rate was lifted by 25 basis points each to 5.5% at present. Interest rates on deposit and lending facilities increased by the same amount, to 4.5% and 6.5%, respectively. As a result, monetary conditions were tightened further, containing the second-round effects of elevated cost-push pressures from the international environment on price growth at home through inflation expectations, while also impacting the demand-side pressures. In this way, the NBS has contributed to inflation striking a downward path and retreating within the bounds of the target tolerance band until the end of the projection horizon. At the same time, **by maintaining the relative stability of the dinar exchange rate against the euro,** the NBS has helped limit the effects of the pass-through of rising import prices to domestic prices and sustain macroeconomic stability in the conditions of heightened global uncertainty. At the annual level, the dinar strengthened by 0.2% against the euro in 2022. The NBS intervened in the interbank foreign exchange market by buying EUR 1 bn net, further boosting the country's foreign exchange reserves. **The NBS's foreign exchange reserves** reached EUR 19.4 bn at end-2022, and increased further in January to EUR 20.9 bn. This is the highest level of foreign exchange reserves on record, well exceeding the benchmark values of all reserve adequacy metrics. At such level, foreign exchange reserves are an important buffer against a wide range of risks.

The pass-through of the effects of monetary tightening onto interest rates in the markets of money, loans and savings, indicates the efficiency of the transmission mechanism through the interest rate channel.

NBS's monetary tightening drove interest rates in the interbank money market further up, inducing a rise in rates on dinar loans and savings in the final quarter of 2022. Interest rates on euro-denominated loans and deposits also went up as financial conditions in the euro area were tightened. Together with the high base effect and the maturing of guarantee scheme loans, the rise in lending rates induced a slowdown in lending to the non-monetary sector which grew 7.3% y-o-y in December. Lending growth continued to be led by the rise in corporate lending. **The share of NPLs in total loans** fell to a new low of 3% in December, indicating that the increase in loan repayment costs resulting from higher interest rates did not affect the quality of banks' assets.

Despite more sizeable than planned fiscal revenue, the consolidated fiscal deficit measured 3.1% of GDP in 2022, due to much higher outlays for energy purchases and the need to protect the citizens' living standard. In the medium term, it is expected to decrease gradually, and the share of public debt to stay below 60% of GDP, which will ensure the sustainability of public finances.

According to the estimates of the Ministry of Finance presented in the Revised Fiscal Strategy for 2023 with Projections for 2024 and 2025, **government capital investment expenditures are projected at around 6–7% of GDP p.a., while the share of wages and pensions in GDP, including the increases planned for this year, should not top 10%, which is consistent with the new fiscal rules as well**. Altogether, this should help preserve households' living standard and increase funds disposable for new investments, while at the same time ensuring that the public debt resumes a downward path. The general government deficit is projected at 3.3% of GDP this year as energy outlays are expected to remain high. It is then anticipated to decline to around 1.4% of GDP in 2025, ensuring the decline in public debt to around 54% of GDP at end-2025. According to our estimate, a consistent implementation of new fiscal rules should ensure long-term sustainability of public finances and prevent major demand-side inflationary pressures, which would have a positive effect on both credit rating and risk premium of the country. It is important to note that the Republic of Serbia issued two eurobonds in the international financial market in January – the 5-year eurobond worth USD 750 mn at the coupon rate of 6.25% and the 10-year eurobond worth USD 1 bn at the coupon rate of 6.5%. Taking into account the circumstances in the international financial market which is still characterised by high interest rates and heightened uncertainty, such financing conditions can be considered favourable, especially when compared to investment-grade economies.

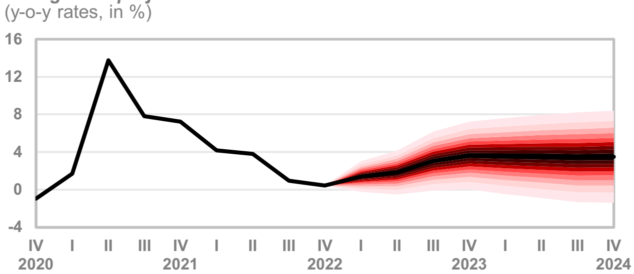
Economic activity at home slackened in H2 2022 as expected, reflecting subdued external demand, heightened global cost-push pressures and drought in the domestic market.

According to the preliminary SORS estimate, **Serbia's real GDP growth measured 2.3% in 2022, which is largely consistent with the NBS's November projection**. Economic activity slackened in H2 2022 as expected due to subdued external demand and elevated global cost-push pressures, as well as the drought at home which led to lower yields of mostly autumn crops. In Q4, the GDP growth rate slowed to 0.4% relative to the same period last year, but, according to our estimate, it was 0.6% higher s-a relative to Q3.

Though the GDP growth rate projected at the range between 2.0% and 3.0% for this year is unchanged from expectations in November, it is now more certain that it will be achieved as risks from the international environment have moderated since November.

Under our new projection, **Serbia's GDP growth rate** will range between 2.0% and 3.0% this year, unchanged from our expectations in November. Still, the risks to the projection are judged to have moderated relative to three months ago as uncertainty regarding the supply of gas to Europe has diminished and economic activity indicators in the euro area for Q4 2022 and early 2023 are better than expected. Economic growth will be led by domestic demand, primarily private consumption owing to a preserved labour market. The contribution of net exports will be negative due to the still expected high-quantity imports of key energy products – gas and oil, as well as lower external demand due to the expected slackening of growth in our key trade partners, notably the euro area. Assuming that the global economy and, by extension, external demand recover as of H2 2023, and in view of the planned implementation of investment projects, primarily in road, railway, energy and utility infrastructure, we expect GDP growth to accelerate from 2024 to the range of 3.0–4.0%, and return to the pre-pandemic growth trajectory of around 4% p.a. thereafter.

GDP growth projection
(y-o-y rates, in %)



The current account deficit in 2022 was lower than projected in November, reflecting primarily a lower trade deficit, and was fully covered by net FDI inflows for the eighth year in a row.

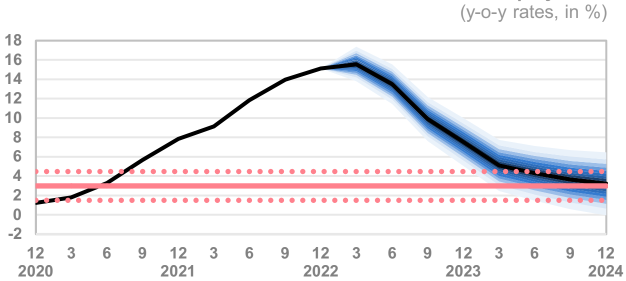
The current account deficit amounted to 6.9% of GDP in 2022 and was much lower than expected in the November projection. The better than anticipated outturn was primarily a result of a lower than projected trade deficit given that imports were lower and exports of goods and services higher than expected in November. The current account deficit was fully covered by net FDI inflows for the eighth year in a row, supporting the sustainability of our external position. Amid heightened global uncertainty, in 2022 **FDI inflows** reached a new record high of EUR 4.4 bn, exceeding our expectations from November. **This year the current account deficit share in GDP is projected to remain similar as in 2022, and to gradually decline to around 5% in the medium run**, reflecting elevated export supply on account of past investment and the recovery of external demand. Though we project somewhat lower FDI inflows compared to last year, of around 5% of GDP, we expect that their high geographic and project dispersion will be preserved and that the bulk of these inflows will remain channelled to export-oriented sectors.

In Q4 y-o-y inflation measured around 15%, slightly less than we expected in November.

Around two-thirds of y-o-y inflation, which measured 15.1% in December, continued to originate from food and energy prices. As in other countries, the contribution of energy prices decreased in Q4, while that of food prices went further up. Though global cost-push pressures eased to a degree, y-o-y growth in producer and import prices remained relatively high, spilling over to core inflation at home which, at 10.1% y-o-y in December, stayed below headline inflation, underpinned by the preserved relative stability of the exchange rate in a highly volatile global environment.

For the first time in the past two years, the February inflation projection for 2023 is lower than anticipated in the previous projection. The effects of the lower projection are visible for 2024 in particular, reflecting primarily the weakening of cost-push pressures generated by global energy prices

Inflation projection
(y-o-y rates, in %)



Under the February central projection, we expect y-o-y inflation to remain elevated in Q1, mostly due to the continued pass-through of high cost-push pressures from the previous period and to the adjustment in electricity and gas prices. It is then expected to strike a downward path, **decline more sharply in H2 2023, and retreat within the bounds of the target tolerance band towards mid-2024**, which is sooner than we expected in our previous projection. Inflation's decline should be supported by past monetary tightening, waning effects of global factors underpinning energy and food price growth in the past period, a slowdown in imported inflation, and subdued external demand amid the anticipated slackening of global growth.

We judge the risks to the new inflation and GDP projection to be symmetric and less pronounced. The NBS will estimate whether there is a need to respond with additional measures.

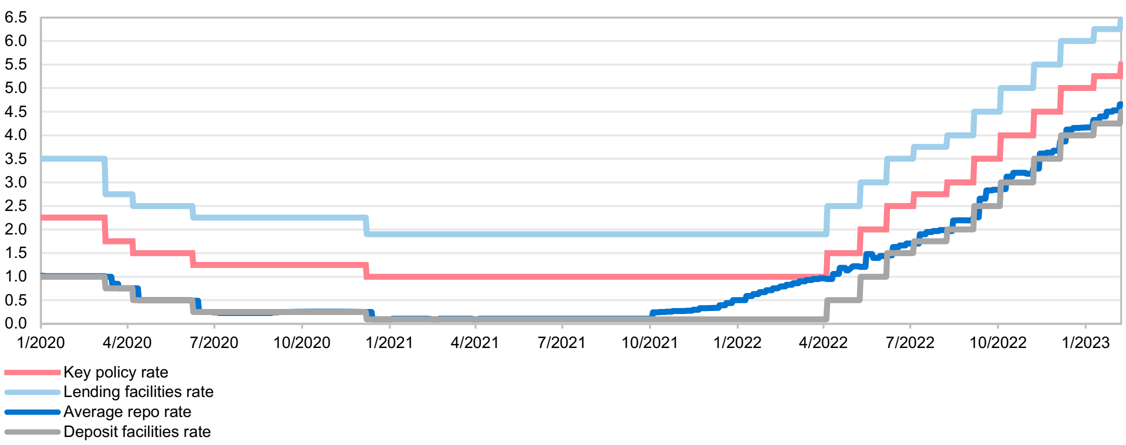
Uncertainty surrounding the inflation and GDP projection has receded since the previous projection and remains largely associated with factors from the international environment. The key risks from the international environment continue to include the global growth outlook, international energy and primary commodity prices, and the degree of monetary policy tightening by leading central banks. At home, the risks to the projection are associated primarily with the outcome of this year's agricultural season, FDI inflows, and recovery of the energy and construction sectors. Overall, the risks to the inflation and GDP projection are now judged to be symmetric. The NBS will continue to monitor and analyse trends in international commodity and financial markets and estimate whether there is a need to tighten monetary conditions further and to what extent, taking into account the expected effects of past monetary tightening on inflation. Going forward, the monetary policy priority will remain to deliver price and financial stability in the medium term, and to support further economic growth and development, as well as a further rise in employment and preservation of a favourable investment environment.

II Monetary policy since the November *Report*

Despite the signs of easing, global cost-push pressures remain elevated, which is why the Executive Board continued to raise the key policy rate, though at a more moderate pace than in the previous period. This further tightens monetary conditions and limits the second-round effects of rising cost-push pressures from the international environment on other prices through inflation expectations, and it also affects some pressures coming from the demand side. Thus, the NBS seeks to ensure that inflation in Serbia strikes a downward path and returns within the target tolerance band by the end of the projection horizon.

In the period since the November *Report*, the NBS Executive Board **continued to raise the key policy rate. Following a 50 bp hike in December, the rate was raised by 25 bp each in January and February, to 5.5%**. It lifted the deposit and lending facility rates by the same amount, to 4.5% and 6.5%, respectively. The key policy rate was raised for the 10th consecutive time in January (starting from April 2022). Concluding with January, it was raised by a total of 425 bp. Since the November Report, the weighted average repo rate also went up by 137 bp, to 4.66% prior to the Executive Board meeting in February. By further raising its interest rates, the NBS responds to the still powerful cost-push pressures, notably from the international environment. The spillover of past key policy rate hikes to the interest rates in the money, loan and savings markets indicates the efficiency of the monetary policy transmission mechanism through the interest rate channel.

Chart II.0.1 **Movement in the key policy rate and average repo rate**
(y-o-y rates, in %)



Source: NBS.

At the same time, **by preserving the relative stability of the EUR/RSD exchange rate**, the NBS gave a significant contribution to limiting the spill-over effect of rising import prices on domestic prices, and to macroeconomic stability amid heightened global uncertainty.

In making a decision to further raise the key policy rate, albeit at a slower pace, the Executive Board had in mind the fact that the **signs of softened inflationary pressures** could be globally assessed as positive, owing to lower energy prices in the previous months, along with transport costs and less persisting global supply chain bottlenecks. Simultaneously, **global growth will slow down considerably this year** amid heightened geopolitical uncertainty and tightened conditions in the international financial market. According to the ECB's December estimate, real **GDP growth of the euro area** should slow down significantly, to 0.5% in 2023 (from 3.4% in 2022), only to return to 1.9% in 2024. However, preliminary indicators signal that, despite the sharp upturn of cost-push pressures and interest rates, as well as pronounced geopolitical uncertainty, the euro area economic activity was more favourable last year than anticipated. Also, according to market participants, the 2023 recession will not be as deep as originally expected.

After raising its policy rate in October 2022 by 75 bp, in its December and February meetings the **ECB** opted for a more moderate hike (by 50 bp, to 3.0%). It also announced that it would further increase its key interest rates. As of March 2023, it will downsize its APP portfolio since the principal payments from matured securities will not be reinvested in full. By tightening its monetary policy, the ECB seeks to lower aggregate demand, as well as the risk of a permanent increase in inflation expectations, given that **the rates of inflation in the euro area, albeit softened, are still relatively high**. It should be noted that inflation receded owing to slower growth in energy prices, while core inflation, excluding volatile categories such as energy and food, alcohol and cigarettes, reached its new historical high in December (5.2% y-o-y). Higher core inflation is explained by the elevated demand-side pressures in some sectors, tightened conditions in the labour market, as well as extended supply chain bottlenecks. As the current inflation drivers weaken with time and tighter monetary policy yields its effects fully, inflation is also expected to subside. According to the ECB's December projection, average inflation rates are expected to decline this year to 6.3% (from 8.4% in 2022), and to additionally decrease thereafter to 3.4% in 2024 and 2.3% in 2025.

The **Fed** continued to raise the federal funds rate in December and February, though at a more moderate pace than in the previous period (by 50 bp and 25 bp, respectively, to the range of 4.50–4.75%). It announced that monetary policy tightening would continue, with central projection rates coming to 5.1% by the end of this year (from 4.6% in September), and then declining to 4.1% by end-2024. Still, **market participants expect that further monetary policy tightening by the Fed will be much slower** given the contraction in the US industrial output and the anticipated recession, as well as gradual softening of inflationary pressures.

Amid expected future monetary policy tightening by the ECB and the Fed, the Executive Board also took into account that **global financial conditions will further tighten, causing inflationary pressures to abate**. The ECB's further restrictive monetary policy should lead to lower external demand and **rising prices of euro-indexed loans in the domestic market**. On the other hand, monetary policy tightening of leading central banks, along with a clouded global growth outlook, may **fuel volatility in the international financial market** and lead to continued rechannelling of global capital flows from emerging economies to advanced ones. As for Serbia, **last year's particularly strong FDI inflow** is encouraging, as is the fact that **Serbia made a successful presentation at the international financial market in January 2023**, when it issued two euro-bonds in dollars, with yield rates more favourable or at the level of those that investors accepted in the days leading up to the issuance in the case of some countries from the investment grade region and EU members.

Geopolitical tensions are still elevated, and the movement of **global energy and food prices** is still volatile under the impact of numerous demand- and supply-side factors. Although the global oil prices and the prices of other primary commodities declined in the prior months due to the intensified recessionary pressures worldwide, the Executive Board took into account that their future movements remain unpredictable and associated with a number of risks. The situation is similar for other primary commodities prices, primarily agricultural commodities.

Overall, the Executive Board assessed that the international environment is still exceptionally challenging, which mandates caution in making monetary policy decisions, along with taking care of economic activity and financial stability.

In the period since the previous *Report*, the Executive Board decisions were based on the **November medium-term inflation projection**, which forecast that y-o-y inflation in Serbia would remain high until end-2022 and early 2023, and strike a downward trajectory thereafter, with a major decline in H2 2023 and return within the target band in H2 2024, i.e. by the end of the projection horizon. As assessed by the Executive Board, the factors that will work toward easing inflationary pressures include past monetary tightening, the weakening of global factors that drove energy and food prices up in the prior period, a slowdown in imported inflation, as well as lower external demand amid unfavourable global growth prospects.

In Q4, inflation was negligibly lower than expected in the November projection, and measured 15.1% y-o-y in December, unchanged from November. Around two-thirds of the growth was still driven by the rising prices of food and energy. In monthly terms, consumer price growth decelerated and edged up by 0.5% in December, which is their lowest monthly inflation rate in 2022. The greatest contribution to monthly inflation stemmed from the prices of processed food and prices within core inflation. Conversely, petroleum products and unprocessed food prices recorded a decline. **Core inflation** (headline inflation excluding the prices of food, energy, alcohol and cigarettes, most affected by monetary policy) measured 10.1% y-o-y in December. It stayed lower than headline inflation, reflecting **relative stability of the exchange rate maintained amid heightened global uncertainty**.

In making its monetary policy decisions, the Executive Board had in mind that the **current tightening of monetary conditions, despite higher cost of borrowing in dinars and euros, and some slowdown in lending activity, would not significantly weaken domestic demand**. Amid positive labour market developments and strong FDI inflow, domestic demand continued to reflect positively on GDP growth. On the other hand, due to lower external demand and higher global cost-push pressures, as well as the drought which contracted agricultural yields, economic activity at home is expected to slow down in H2 2022. According to the SORS flash estimate, **Serbia's real GDP growth** in 2022 came at 2.3%, largely in line with the NBS's November **projection.**

At its February meeting, where decision-making was informed also by the February medium-term projection, t**he Executive Board raised the key policy rate by 25 bp, to 5.5%**. The Board took into account that, despite signs of global inflation retreating from its multi-decade highs, cost-push pressures from the international environment remain powerful. Even though prices in the energy sector and container shipping rates declined and global supply bottlenecks eased, the Board emphasised that caution should be exercised in monetary policy conduct as more robust growth in China would probably push up the prices of energy and other primary commodities and make it more difficult to fight inflation. Besides, the indirect effects of elevated prices of energy and industrial raw materials in the past period are still fuelling core inflation and – along with a tight labour market – are slowing the disinflation process in a number of countries.

As the main risks to inflation and other economic developments continue to emanate from the international environment, the NBS will continue to monitor and analyse trends in the international commodity and financial markets and assess whether there is a need for additional tightening of monetary conditions and to what extent. Delivering price stability in the medium term and preserving the achieved financial stability will remain a priority of the NBS's monetary policy, along with supporting continued growth and development of our economy, a further rise in employment and a favourable investment environment.

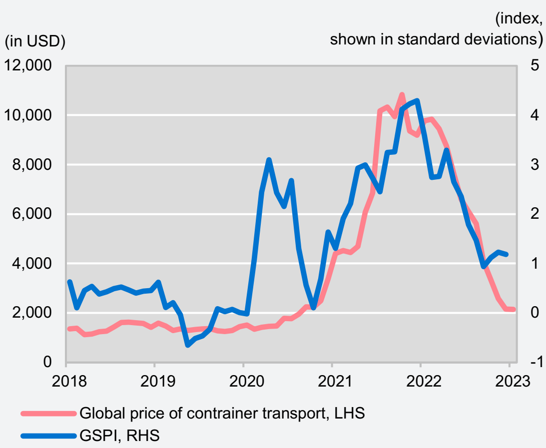
Text box 1: Signals that global inflationary pressures are losing steam

In the second half of 2021 and the major part of 2022, we witnessed a series of global inflationary shocks, initially related to the global economy's bounceback from the pandemic and subsequently to the energy crisis outbreak, culminating in the tightening of geopolitical tensions and the conflict in Ukraine. As a result of these shocks, inflation upsurged all around the world, persistently turning out stronger than expected. Given Serbia's fast-growing trade with the rest of the world, such inflation trends passed through to our country as well.

However, past months have seen more and more signals of inflationary pressures losing steam. The main reasons behind the easing were the slack in global demand due to stepped-up monetary tightening by leading central banks, dented consumer and investment confidence over unfavourable geopolitical developments, as well as the imposed COVID-restrictions in China and the gradual rise in global supply.

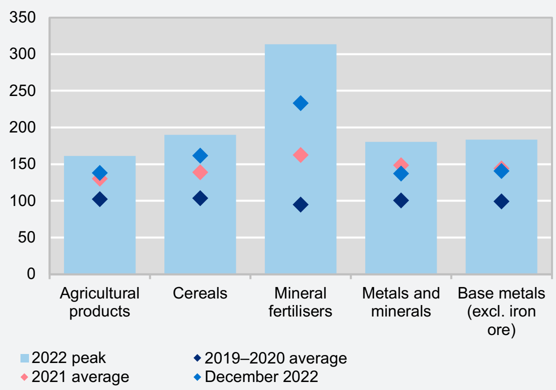
The loosening of inflationary pressures and the reduced imbalance between the supply and demand on a global scale was first signalled by the easing of disruptions in global production chains. Generated during the coronavirus pandemic, these disruptions could not have been addressed faster, due to a sudden increase in global demand and the outbreak of the Ukraine conflict. According to the Global Supply Pressure Index of the New York Fed, which combines several indicators of supply-side pressures, the problems in the functioning of global supply chains culminated late in 2021, only to gradually stabilise in 2022, so this index currently moves just slightly above its multi-year average.

Chart O.1.1 **Global supply chain pressures and overseas container transport prices**



Source: Federal Reserve Bank of New York, Freightos.

Chart O.1.2 **Monthly primary commodity price indices**
(2019 = 100)



Source: World Bank.
Note: The peak for agricultural products and mineral fertilisers is April 2022, cereals – May, and for metals and minerals, as well as base metals March.

The normalisation in this segment is the most obvious in declining costs of the overseas (container) transport, which at end-2021 were around five times higher than before the pandemic, and at end-2022 only slightly above the pre-pandemic level. It should be emphasised that the cost decrease on this account reflected not only normalised production chains, but also the slackening of global demand.

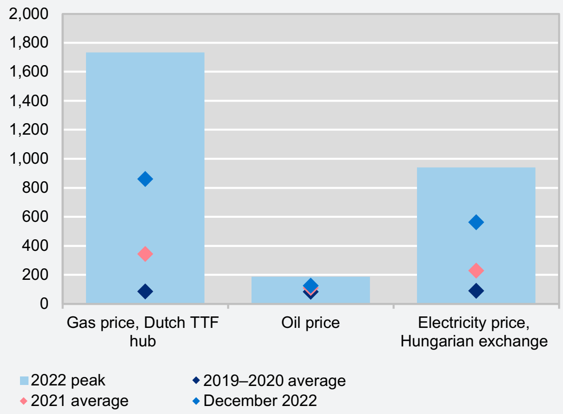
The second half of 2022 saw a turnaround in movement of primary commodity prices, which are highly dependent on a production cycle phase of the global economy. With the outbreak of the Ukraine conflict, the already elevated prices of primary commodities went rocket high. However, as the global recession pressures mounted, a large number of these prices headed down.

Prices of agricultural commodities of special importance for Serbia – wheat, corn, soybean – almost returned to pre-Ukraine conflict levels, mainly thanks to the Russia-Ukraine deal on deblocking trade in these commodities. Also, the last few months have seen a decline in the prices of mineral fertilisers used in agricultural production, though they still trend above multi-year averages, given that the mentioned countries are large producers of fertiliser raw materials.

According to World Bank data, prices of metals and minerals (iron, tin, zinc, nickel and copper) have been on a decline already since April 2022, due to weaker industrial activity in China and Europe, but have turned mildly up with the announced reopening of China.

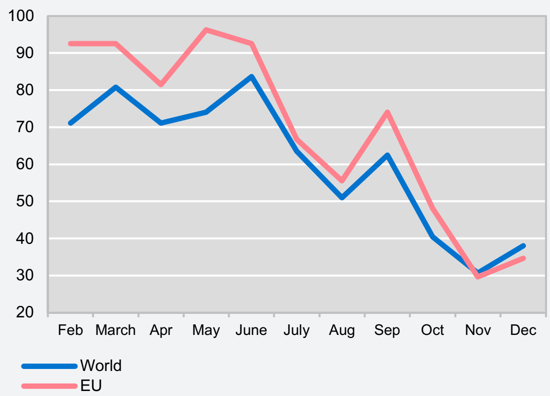
In the energy sector, there are diverging tendencies. On the one hand, in the last quarter of 2022, global oil prices returned to pre-Ukraine conflict levels, owing to oil trade normalisation after the initial shock and the reduced demand due to recession trends. On the other hand, prices of natural gas and electricity, which have been on the rise since end-2021, peaking in August 2022, remain volatile and far above the multi-year average. It can, however, be said that relatively warm weather in the last quarter of 2022, high storage levels and capping of energy consumption in European countries calmed down the energy market to some extent, considerably alleviating the problem compared to what had been anticipated mid-last year.

Chart O.1.3 **Monthly energy price indices**
(2019 = 100)



Source: Refinitiv.
Note: The peak for gas and electricity is August 2022, and for oil – June 2022.

Chart O.1.4 **Percentage of countries with inflation growth in a given month of 2022**
(in %)



Sources: World Bank and Eurostat.

As a result of these trends – normalisation of global production chains and declining prices of primary commodities – advanced economies have also seen a decrease in inflation rates in the past months. US inflation peaked in June at 9.1% y-o-y, trending steadily down thereafter, while core inflation hit the downward path somewhat later, from September. The euro area has also witnessed a fall in y-o-y inflation, after the high reached in October – 10.6%, with core inflation stabilising at around 5%. December y-o-y inflation rates equalling or dropping below the November figure were recorded in 85 out of 137 analysed countries, and looking at EU countries – in 17 out of 27.

Going forward, the most probable scenario in the NBS's view is the one in which the combination of further normalisation of production chains, easing of geopolitical tensions and restrictive monetary policies would lead to further gradual easing of global inflationary pressures, which will work toward lowering domestic inflation as well. Still, the return to extremely low inflation rates which we witnessed until mid-2021 is probably also unlikely, because the current fragmentation of trade flows (international sanctions, trade restrictions, protectionist policies, transition to green economy) will most likely persist.

The already materialised and assumed further weakening in inflationary pressures in the international environment is an important factor of the projected slowdown of Serbian inflation and its return within the bounds of the target by mid-2024, though this projection, albeit less so than the previous ones, is still characterised by risks, especially with regard to the pace of global economic recovery and geopolitical situation.

III Inflation movements

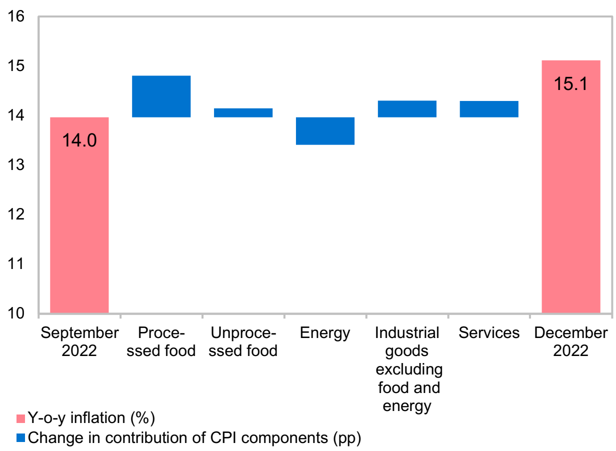
After rising to 15% in October, y-o-y inflation moved at a similar level until end-2022, undershooting slightly our projections from the November Report. Around two-thirds of inflation continued to originate from the prices of food and energy. As in other countries, the contribution of energy prices decreased in Q4, while the contribution of food prices went further up. Though global cost-push pressures eased to some extent, producer and import prices continued recording relatively high y-o-y growth rates, spilling over to domestic core inflation, which remained below headline inflation (10.1% y-o-y in December), underpinned by the preserved relative stability of the exchange rate.

Inflation movements in Q4

Amid still pronounced cost-push pressures, **y-o-y inflation** remained elevated in Q4, measuring 15.1% in December (as in November, vs. 14.0% in September). In Q4, the prices of processed food increased their contribution to y-o-y inflation the most (by 0.8 pp, to 5.1 pp) due to the still high food production and transportation costs, as well as adverse effects of the drought in Serbia and much of Europe. The contribution of unprocessed food prices also edged up, though to a lesser degree (by 0.2 pp, to 2.4 pp). Conversely, the contribution of energy prices decreased in Q4 (by 0.6 pp, to 2.5 pp), which is fully attributable to the lower contribution of petroleum product prices, reflecting a significant slowdown in the y-o-y rise in the global oil price, while the contribution of other energy prices stayed almost unchanged. The prices of industrial products (excluding food and energy) and the prices of services increased their contribution to y-o-y inflation in December by 0.3 pp each relative to September (to 3.0 pp and 2.1 pp, respectively). Due to the still elevated producer and import prices, **y-o-y core inflation** (measured by the CPI excluding food, energy, alcohol and cigarettes) recorded growth in Q4, reaching 10.1% in December.

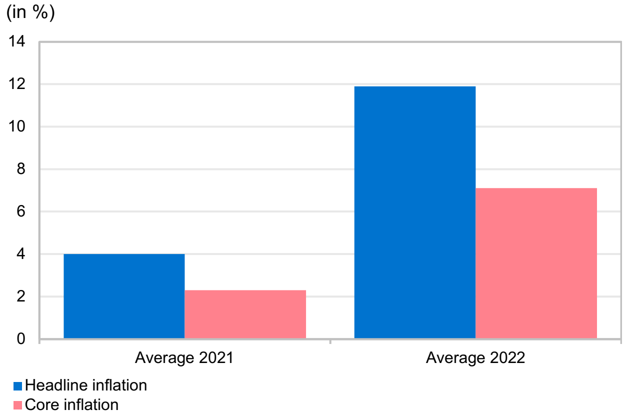
According to SORS estimates, average y-o-y inflation in 2022 equalled 11.9%[1] and average core inflation 7.1%, indicating that inflation in Serbia is largely determined by the supply-side factors, on which monetary policy

Chart III.0.1 **Change in contribution of main CPI components to y-o-y inflation**
(in %, in pp)



Sources: SORS and NBS calculation.

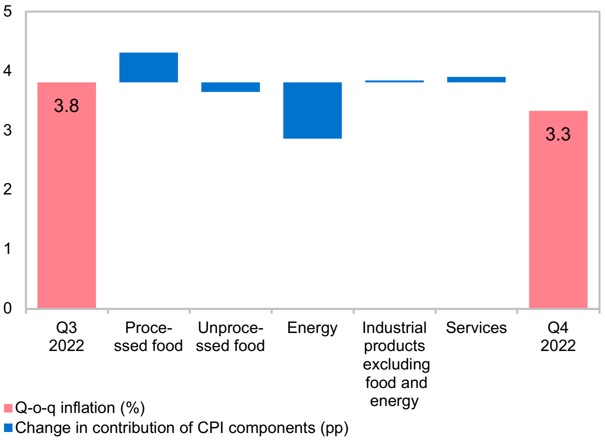
Chart III.0.2 **Inflation in 2021 and 2022**
(in %)



Sources: SORS and NBS calculation.

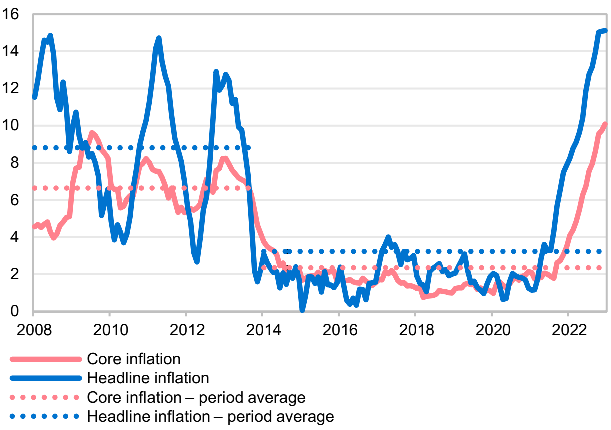
[1] Average CPI is derived as the simple arithmetic mean of 12 published monthly CPIs (month on last year average). Hence the average annual rate reflects not only the change in prices, but also the effect of the change in weights.

Chart III.0.3 **Change in contribution of main CPI components to q-o-q inflation**
(in %, in pp)



Sources: SORS and NBS calculation.

Chart III.0.4 **Headline and core inflation**
(y-o-y rates, in %)



Sources: SORS and NBS calculation.

Table III.0.1 **Growth and contribution of CPI components to consumer price growth in Q4 2022**
(quarterly)

	Growth rates (%)	Contribution (pp)
Consumer prices (CPI)	**3.3**	**3.3**
Unprocessed food	1.8	0.2
Processed food	8.0	1.8
Industrial products excluding food and energy	2.8	0.8
Energy	-0.2	0.0
Services	2.7	0.6
CPI excluding energy, food, alcohol and cigarettes	**3.0**	**1.3**
Administered prices	**1.1**	**0.2**

Sources: SORS and NBS calculation.

measures have a rather small or limited effect. The lower core inflation compared to headline inflation in 2022 was underpinned, inter alia, by the preserved relative stability of the exchange rate in extremely uncertain and unpredictable global conditions.

Quarterly consumer price growth of 3.3% in Q4 was somewhat lower than expected in the November *Report*. Compared to Q3 (3.8%), it slowed down further primarily on account of a significantly lower contribution of energy prices, which recorded a fall (2.2%) in December, for the first time in more than a year. The prices within core inflation continued to move in line with our expectations.

Inflation in Q4 was largely fuelled by the hike in the **prices of food and non-alcoholic beverages** (5.8%, with a 2.0 pp contribution to inflation). **Processed food** prices rose by 8.0%, predominantly due to the higher prices of milk and dairy, bread and cereals, non-alcoholic beverages and meat products (1.4 pp cumulative contribution to inflation). **Unprocessed food prices** grew by 1.8% in Q4, on account of price hikes in fresh vegetables and fresh meat (with a 0.4 pp contribution). A decline in the price of fresh fruit worked in the opposite direction (with a -0.2 pp contribution to inflation).

Energy prices edged down slightly in Q4, by 0.2%, owing to the fall in the prices of **petroleum products** in the domestic market (5.6%, with a -0.4 pp contribution), which was fully registered in December, as a result of the dynamics of their global counterparts. In contrast, the **prices of solid fuels** (firewood and coal) went up in Q4, typically for the season (8.4%, with a 0.3 pp contribution), whereas the prices of electricity and gas for households stayed unchanged.

The prices of industrial products (excluding food and energy) recorded a rise of 2.8% in Q4, driven by the higher prices of furniture, household appliances and maintenance products (5.7%) and the seasonal hike in the prices of clothes and footwear (4.3%, with a 0.2 pp contribution each). The prices of other industrial products also edged up in Q4, though to a lesser degree (with a 0.4 pp cumulative contribution) due to the still elevated production input prices.

The prices of services increased by 2.7% in Q4, driven primarily by the higher prices of rent (10.1%), restaurant and hotel services (5.4%), apartment maintenance and repair, and transport services (with a 0.4 pp cumulative contribution). The prices of other services also rose in Q4, though to a smaller extent.

Administered prices rose by 1.1% in Q4, entirely on the back of an increase in the prices of utility services (3.8%) and accommodation in student dormitories (8.8%), with a 0.2 pp cumulative contribution to inflation. The same factors dictated the acceleration of the y-o-y growth in administered prices to 7.0% in December (from 5.8% in September).

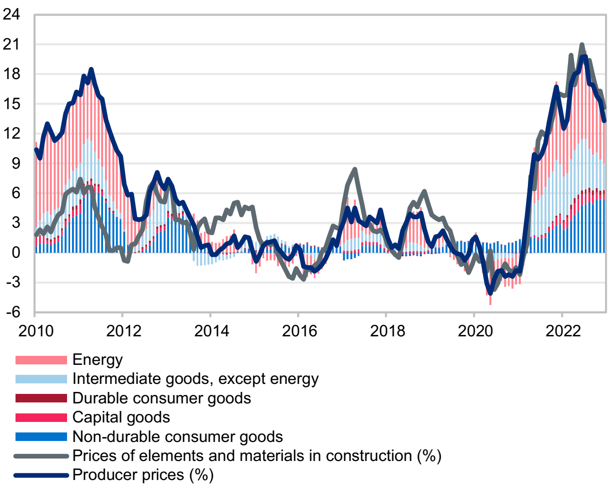
Prices within core inflation increased by 3.0% in Q4, largely on account of the price hike for household cleaning products (7.3%, with a 0.3 pp contribution) and the already mentioned hike in the prices of clothes and footwear and rent.

Producer and import prices

The y-o-y growth in **industrial producer prices in the domestic market** slackened further in Q4, to 13.3% in December (vs. 16.9% in September), primarily owing to the lower contribution of **prices in energy production** (crude oil and petroleum products). The contribution of **the prices of intermediate goods** (metal products, chemical products, rubber and plastic products), the **prices of capital goods and durable consumer goods** decreased in the same period. It was only the higher contribution of the **prices of non-durable consumer** goods (food and beverages) that worked in the opposite direction, on account of the still high import prices of production inputs and adverse effects of the summer drought. At quarterly level, producer prices decreased slightly by 0.3% in Q4, recording the first drop since Q2 2020. Y-o-y growth in the **prices of elements and materials incorporated in construction** slowed down as well, to 14.6% in December (from 17.8% in September). Although cost-push pressures softened on account of lower energy prices and transportation costs in the past months, and gradual easing of global supply chain disruptions, input prices in industry and construction remain high and continue to exert pressure on output prices.

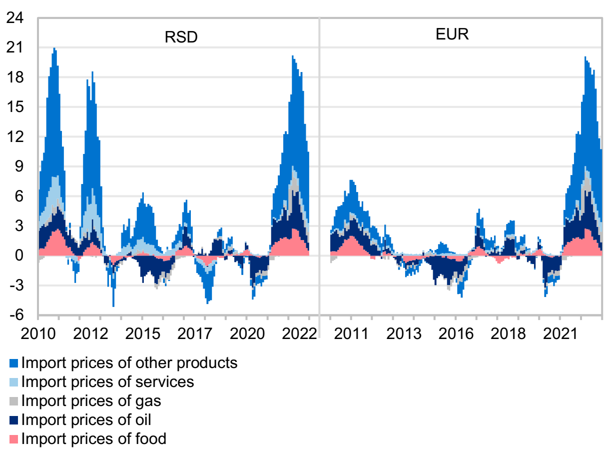
Import prices expressed in dinars[2] slowed down further their y-o-y growth, from 16.6% in September to 10.5% in December, mostly thanks to the much lower contribution of Germany's export prices, which are used for the approximation of the import prices of equipment and intermediate goods. A lower contribution also came from global oil and food prices, while import gas prices and

Chart III.0.5 **Contribution of components to y-o-y producer price growth***
(in pp)



Sources: SORS and NBS calculation.
* Industrial producer prices for the domestic market.

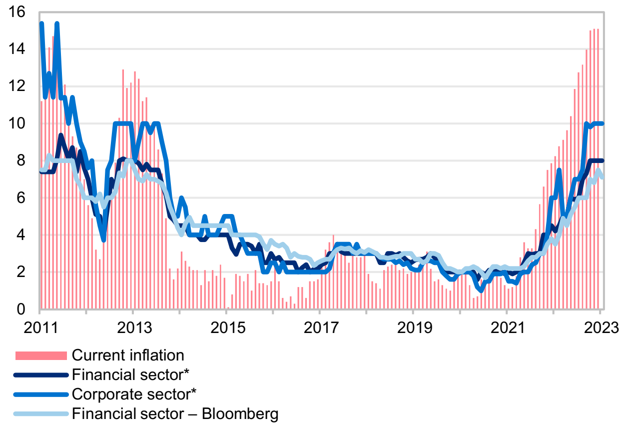
Chart III.0.6 **Contribution of individual components to y-o-y rate of import price growth**
(in pp)



Sources: Destatis, FAO, Bloomberg, Eurostat, SORS and NBS calculation.

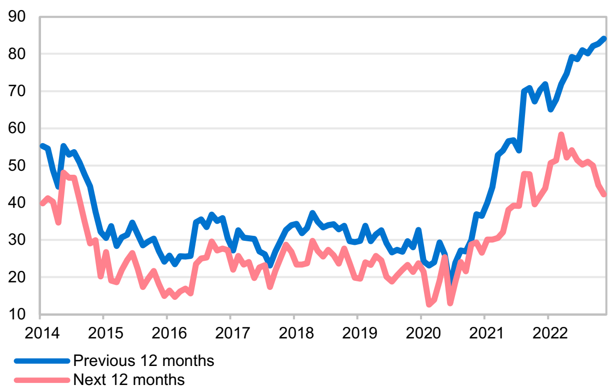
[2] Preliminary data. The weighted average of the global Brent oil price, import gas, food price index (FAO index), euro area consumer prices, and export prices of Germany, one of Serbia's key trade partners, is used as an indicator of import prices. The base year is 2010.

Chart III.0.7 **Current inflation and one-year ahead inflation expectations**
(y-o-y rates, in %)



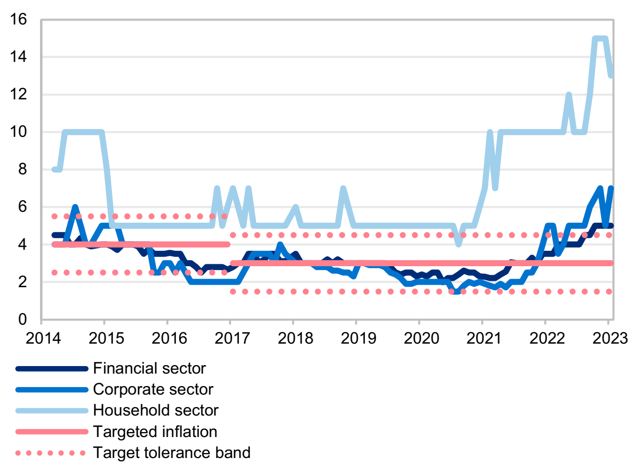
Sources: Gallup, Ipsos/Ninamedia, Bloomberg and NBS.
* Ipsos and Gallup until December 2014, Ninamedia since December 2014, and Ipsos since January 2018.

Chart III.0.8 **Household perceived and expected inflation***
(in index points)



Sources: Ipsos/Ninamedia and NBS calculation.
* Ipsos until December 2014, Ninamedia since December 2014, and Ipsos since January 2018.

Chart III.0.9 **Two-year ahead inflation expectations***
(y-o-y rates, in %)



Sources: Ipsos/Ninamedia and NBS.
* Ipsos until December 2014, Ninamedia since December 2014, and Ipsos since January 2018.

euro area prices within core inflation (measured by the HICP excluding food, energy, alcohol and cigarettes), used for the approximation of the import prices of services, increased their contribution to the y-o-y growth in import prices in December compared to September.

Inflation expectations

One-year ahead inflation expectations of the financial and corporate sectors stabilised in Q4.

According to the **Bloomberg** survey, after rising to 7.0% in October, one-year ahead **inflation expectations of the financial sector** ranged in the following three months from 6.8% in November to 7.1% in January. According to the **Ipsos** survey, after rising to 8.0% in October, they stayed unchanged concluding with January.

One-year ahead **inflation expectations of the corporate sector** were stable at around 10.0%. Also, the percentage of corporates expecting an increase in input prices and the prices of final products and/or services over the next twelve months also stayed broadly unchanged from September – around 70%.

The corporate perception of business conditions improved considerably in Q4. The share of respondents assessing business conditions in the previous three months as deteriorated was more than halved from September and measured 23.1% in January. The percentage of those expecting an improvement in business conditions over the next twelve months rose significantly – from 8.3% in September to 16.9% in January.

One-year ahead inflation expectations of households stayed unchanged (at 20.0%), which is close to the growth rate in the prices of some staples, primarily food, which probably have a major impact on the creation of household expectations. According to the results of the qualitative survey, the index of perceived inflation recorded higher values than the index of expected inflation, which means that households expect that inflation will be lower in the coming 12 months than in the previous year.

Inflation expectations of the financial sector for two years ahead are above the NBS target tolerance band for the first time since their monitoring began (March 2014), and have measured 5.0% since October. Three-year ahead expectations of the financial sector rose to 4% in October and stayed at that level until January. **Corporate inflation expectations for two years ahead** ranged from 5–7% in Q4 and January, while expectations for three years ahead ranged from 4.5–5%. **Two-year ahead inflation expectations of households** climbed to 15.0% in October and stayed at that level until end-Q4, only to decrease to 13.0% in January, while three-year ahead expectations measured 10%.

Text box 2: Inflation expectations surveys: what are the results telling us at the moment?

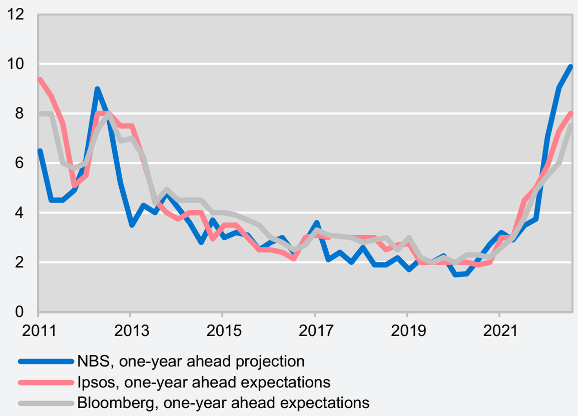
Inflation expectations are an important inflation factor because they affect current decisions. It is for this reason that they are monitored and analysed in detail by inflation-targeting central banks. The expectations channel is also one of the more significant channels in the monetary policy transmission mechanism, i.e. in translating the effects of monetary policy measures to economic activity and inflation. If economic agents' expectations are anchored around the inflation target, financial decisions are planned and made in line therewith, and the certainty of doing business is enhanced, propping up the stability of the economy as a whole. Inflation expectations also reflect the credibility of the central bank, as the confidence of key economic agents and their perception of the central bank's ability to control inflation greatly determine the efficiency of monetary policy.

This text box aims to provide a more detailed analysis of the results of surveys of economic agents' expectations in the conditions of elevated global inflationary pressures. At present, the surveys are conducted by the Ipsos agency for the NBS. We also analysed the results of the Bloomberg survey of financial sector expectations, as well as the expectations of Consensus Economics' professional forecasters. In particular, we highlighted the impact of current developments (coronavirus pandemic, energy crisis, Ukraine conflict) on inflation expectations of the financial, corporate and household sectors.

Financial sector expectations are, as a rule, more stable and consistent with projected inflation than those of other sectors, as the financial sector is generally better informed about the overall economic situation at home and abroad and about the key inflation factors. Moreover, the inflation expectations of other sectors can also be influenced by some specific factors. The results of inflation expectations surveys reveal that, in the period between October 2013 and March 2022, Serbia's financial sector almost uninterruptedly expected inflation to move within the NBS target tolerance band, both for one year ahead and in the medium term. Therefore, even six months after current inflation climbed past the upper bound of the target tolerance band in September 2021, inflation expectations of the financial sector stayed within the target band of 3±1.5%. After the Ukraine conflict broke out and cost-push pressures mounted further, expectations went up as well, especially for one year ahead. Over the past months, they have hovered at around 8%. It is, however, important to underline that financial sector expectations increased less than the expectations of other sectors and less than current inflation. Also, though inflation expectations for three years ahead rose moderately, they continued to move within the bounds of the target tolerance band, measuring 4% in the December survey.

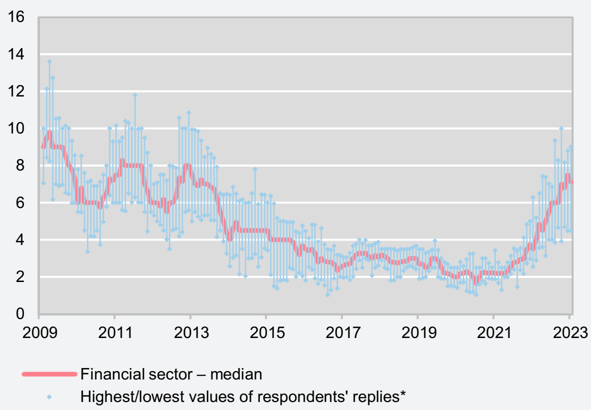
The dispersion of individual expectations of financial sector agents increased in 2022 amid mounting global uncertainty and high unpredictability of future movement in inflation factors, primarily those from the international

Chart O.2.1 **One-year ahead expected and projected inflation**
(in %)



Sources: Gallup, Ipsos/Ninamedia, Bloomberg and NBS.
Note: Ipsos and Gallup agencies until December 2014, Ninamedia agency since December 2014, and Ipsos agency since January 2018.

Chart O.2.2 **One-year ahead inflation expectations of the financial sector**
(y-o-y rates, in %)



Source: Bloomberg.
* In the 5 to 95 percentile range.

environment. Still, the degree of correlation of financial sector expectations and the NBS's one-year ahead inflation projections published in Inflation Reports is high (0.8%), confirming the credibility of our monetary policy.

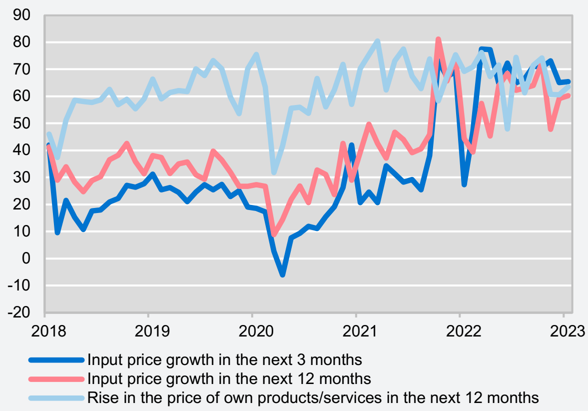
It is particularly important to **monitor inflation expectations of the corporate sector,** as this sector directly affects the general level of prices through the pricing of its products and services and through wage-setting. If corporate expectations are observed over a longer time period, we see that, until end-2021, more than a half of respondents, and often even more than two-thirds, did not expect a change in input prices in the next three months or 12 months, and that the percentage of respondents expecting input price growth in the next 12 months was larger than the percentage of respondents expecting input price growth in the next three months. The volatility of corporate sector's inflation expectations did not increase much due to the coronavirus pandemic, except in the May–August 2020 period (characterised by lockdown, impossibility to carry out some service activities, and intensified global value chain disruptions) when expectations settled around the lower bound of the target tolerance band (1.5%) or even slightly below this. Hence, with minimal deviations (to the downside), corporate inflation expectations were relatively stable at the level of multiyear averages both during and after the pandemic-induced crisis, all the way until late 2021. When the energy crisis broke out in October 2021, corporate expectations underwent a shift.

The net percentage of respondents expecting input prices to go up in the next three months rose to 73% in October 2021, while the percentage of those expecting this to happen in the 12-month period was even higher at 82%. Immediately before the Ukraine conflict broke out, this indicator for three and 12 months ahead fell to below 50%. Thereafter, as primary commodity and energy prices in the global market rocketed, expectations went up again. This indicator did not return to below 50% until the end of 2022 either. Since the Ukraine conflict broke out, the share of corporates expecting input prices to go up in the next three months has generally become larger than the share of respondents expecting prices to grow in a one-year period, signalling intense cost-push pressures in the short term.

Since December 2021, corporates' one-year ahead expectations have been moving above the upper bound of the target tolerance band, ranging between 5.0% and 7.5% until September 2022 and rising to around 10% from September onwards. Observed by sector, inflation expectations were the highest in the sectors that were the most exposed to cost-push pressures (mostly agriculture, manufacturing, construction and energy).

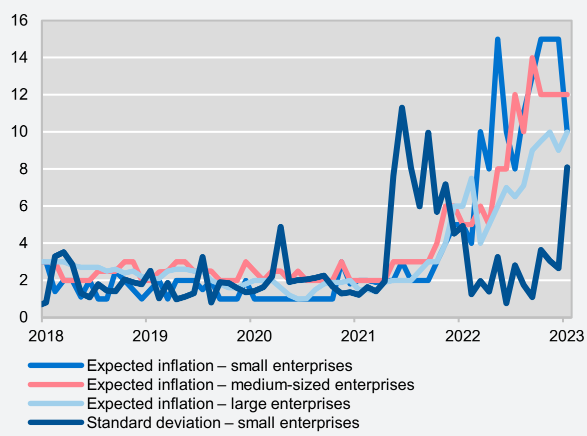
In terms of exposure to cost-push pressures and company size, the dispersion of inflation expectations of small enterprises increased greatly in 2021. As a result, in 2022 the expectations of this segment of the corporate sector moved at a level much higher than the expectations of medium-sized and large enterprises. As the expectations of small enterprises went up, the dispersion of individual survey responses diminished, which indicates that cost-push pressures became more prevalent in 2022.

Chart O.2.3 **Respondents' expectations of movement in input prices in the next three months and of movement in input and finished product prices in the next 12 months**
(in net percent)



Sources: Ipsos, NBS calculation.

Chart O.2.4 **One-year ahead inflation expectations of SMEs and standard deviation in the reponses of small enterprises**
(in %)



Source: Ipsos.

The next aspect of the analysis of corporates' expectations concerns observations of short-term expectations of growth in input prices together with long-term expectations of movement in prices of own products and services. This indicates whether corporates are able to translate higher costs to end-consumers through increased prices of their products and services, which greatly depends on the anticipated demand. Since early 2021, there have been some oscillations in corporates' responses regarding movement in the prices of their products or services. Currently, about 72% of respondents on average expect prices to go up. On the other hand, short-term expectations of growth in "input" prices surged from Q4 2021 onwards, levelling off after the outbreak of the Ukraine conflict around the same level as expectations for "output" prices. Such trends signal that most corporates still have to contend with cost-push pressures, but that there is scope to relieve this burden by shifting a part of the costs onto consumers.

Corporates' two- and three-years ahead expectations have risen more moderately over the past months than the expectations for one year ahead. According to the results of the January survey, expectations for two years ahead stand at 7%, and for three years ahead – at 5%. This suggests that the corporate sector anticipates inflationary pressures to subside in the medium term and inflation to retreat to levels below those recorded in 2022.

Inflation expectations of the household sector are customarily higher than those of other sectors and, as a rule, more sensitive to changes in current inflation, particularly if inflation growth is led by elevated food and energy prices as is the case at the moment. In response to the uncertainty originally caused by the coronavirus pandemic, then the energy crisis and the escalation of geopolitical tensions, short-term household inflation expectations have been double-digit since February 2021, after ranging between 5% and 6% on average in the period from 2015 until end-2020. In February 2022, one-year ahead expectations climbed to 15%. Since April, they have been moving at 20%, reflecting the hefty rise in global food and energy prices. Still, medium-term expectations of the household sector are lower, measuring 10% for three years ahead.

Finally, according to the results of the January survey, **professional forecasters** (Consensus Economics) **expect** inflation this year to be lower than in 2022, averaging 9.9%, while in 2024 it is anticipated to measure 4.7%.

IV Inflation determinants

1 Financial market trends

The NBS's tightening of monetary conditions continued to drive interest rate growth in the interbank money market, and, by extension, interest rates on dinar loans and savings in Q4. The ECB also proceeded with monetary policy tightening, which translated into higher interest rates on euro loans and deposits.

Steady improvement in the global financial market in Q4 and softening of global cost-push pressures led to a gradual decline in the secondary market yield rates.

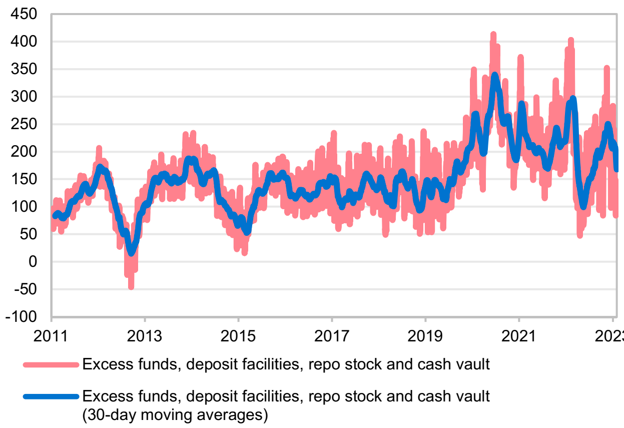
Given the global uncertainty and multiple crises environment, the successful issue of two eurobonds in dollars in the international financial market at relatively favourable terms attest to investors' readiness to invest in Serbia, as well as to the country's preserved favourable macroeconomic prospects.

Interest rates

In Q4, the NBS tightened monetary conditions further by raising the **key policy rate** by a total of 150 bp and then by additional 25 bp in January, to 5.25% (in February, it was raised by additional 25 bp, to 5.5%). Interest rates on lending and deposit facilities were increased to the same degree, measuring in January 6.25% and 4.25%, respectively. The average stock of sold repo securities almost doubled – from RSD 56.5 bn in September to RSD 119.2 bn in December, with the weighted average repo rate climbing by 166 bp relative to end-September, to 4.5% at end-January. At the same time, the average daily amount of overnight bank deposits with the NBS increased considerably – from RSD 81.6 bn in September to RSD 144.8 bn in December.

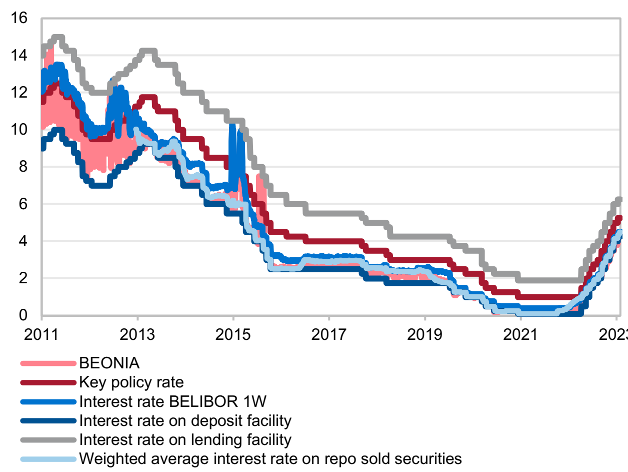
Higher key policy and weighted average repo rate reflected on the further growth of interest rates in the **interbank money market**. In Q4, BEONIA rose by 123 bp, to 4.0% at end-December. Amid higher bank liquidity owing to the NBS FX net purchases in the IFEM, the average daily turnover dropped by RSD 1.0 bn in Q4 relative to Q3 and amounted to RSD 2.3 bn. BELIBOR

Chart IV.1.1 **Dinar liquidity**
(in RSD bn)



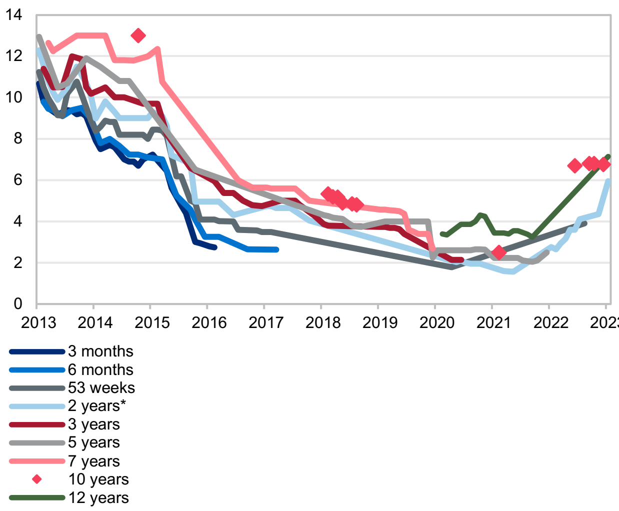
Source: NBS.

Chart IV.1.2 **Interest rate movements**
(daily data, p.a., in %)



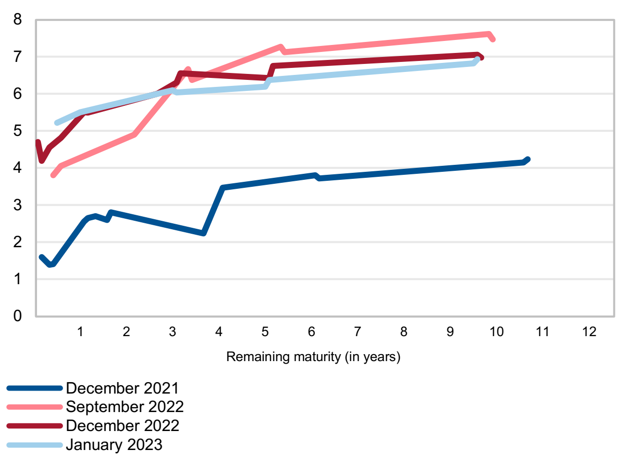
Sources: Thomson Reuters and NBS.

Chart IV.1.3 **Interest rates in the primary market of dinar government securities**
(p.a., in %)



Source: Ministry of Finance.
* Excluding coupon securities with the rate linked to the NBS key policy rate.

Chart IV.1.4 **Yield curve in the secondary government securities market**
(average values, p.a., in %)



Source: Central Securities Depository and Clearing House.

rates of all maturities increased almost to the same extent as the key policy rate in Q4, by around 147 bp on average, moving in the range from 4.08% for the shortest to 5.1% for the six-month maturity at end-December. Interbank market rates continued rising in January.

In the **primary market of dinar government securities**, in Q4 two-year dinar securities were offered in one auction, and ten-year securities in two auctions. At the auction of two-year dinar securities in November, the sale was worth nominally RSD 815 mn, with the yield rate of 4.35%, which is an increase of 25 bp relative to the previous auction of this maturity in July. At the auction of ten-year securities in December, which is the 13th reopening of the issue of 6 February 2018, the yield rate edged down slightly – by 5 bp, to 6.75% relative to the previous auction of this maturity in October. The sale of dinar securities was worth RSD 3.2 bn, in line with the planned sale size. The demand outstripped the supply, amounting to RSD 7.8 bn. As none of the earlier sold securities matured in the meantime, the stock of sold dinar securities increased to RSD 948.2 bn at end-Q4. The stock of dinar securities owned by non-residents decreased further in Q4, by RSD 4.8 bn, accounting for around 14% of the total portfolio of dinar government securities at end-December.

January saw one auction of two-year dinar securities and one auction of 12.5-year securities. At the auction of two-year securities, the sale was worth RSD 27.2 bn, with the yield rate of 5.95%. The auction of 12.5-year securities is the 17th reopening of the issue of 6 February 2018, in which the yield rate increased by 391 bp relative to the previous auction in September 2021, to 7.15%. Securities of this maturity were sold in the nominal amount of RSD 10.1 bn, while the demand amounted to RSD 11.1 bn.

Gradual softening of cost-push pressures in the international environment reflected on the domestic **secondary market of dinar securities**. Q4 saw a decline in yield rates on longer-maturity dinar securities, parallel with an almost unchanged secondary market turnover relative to the previous quarter, which stood at RSD 27.5 bn. The weighted average yields on dinar government securities with the remaining maturities of four, six and ten years decreased in Q4, between 0.3–0.5 pp, to 6.38%, 6.73% and 6.97%, respectively, in December. The yield rates on dinar securities of shorter maturities moved from 4.7% for the remaining one-month to 5.5% for the remaining 14-month maturity.

In Q4, no auctions of government **euro securities** were organised, and since earlier issued securities worth EUR 50 mn fell due, the stock of bonds at end-December stood at EUR 2,367.4 mn. At the auction of two-year euro securities in January, the sale was worth nominally RSD 37.5 mn, with the yield rate equal to the coupon rate (2.5%).

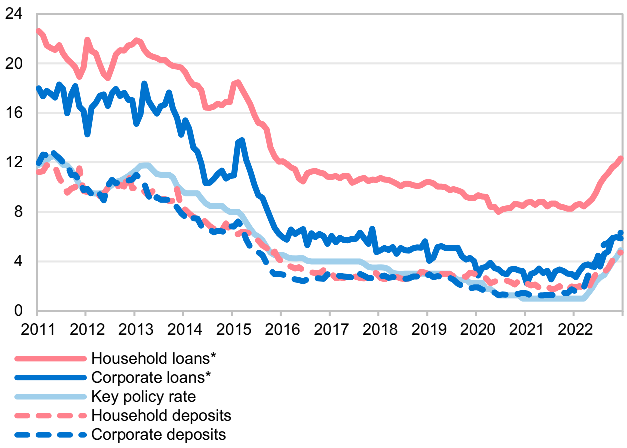
In January, **the Republic of Serbia issued two eurobonds in the international financial market** – a 5-year security worth USD 750 mn, with the coupon rate of 6.25% and a ten-year security worth USD 1 bn, with the coupon rate of 6.5%. Given the circumstances in the international financial market, characterised by still high interest rates, these terms can be considered favourable, especially in comparison with investment grade countries. Moreover, demand for these securities was high, exceeding USD 11.0 bn during the auction. In order to minimise the FX risk coming from EUR/USD exchange rate in the international market, the Republic of Serbia concluded hedging transactions, converting the liabilities arising from the issue of dollar eurobonds to euros.

Driven by the rise in interest rates in the interbank money market, interest rates on **new dinar loans** also recorded growth in Q4. Relative to September 2022, interest rates on dinar household loans edged up by 1.2 pp (12.3% in December), and on corporate loans by 1.1 pp (5.9% in December). Relative to September 2021, when the cycle of monetary policy tightening began, they are higher by 3.9 pp and 2.5 pp, respectively.

The increase in interest rates on new dinar corporate loans was driven by the rising rate on working capital loans (by 1.5 pp to 7.5%), which account for the dominant share of new corporate loans (56%), and on investment loans (by 1.6 pp to 7.6%). The interest rate on other non-categorised loans, with a 38% share, increased to a lesser extent relative to end-Q3, by 0.1 pp, to 3.2% in December. As for the overall interest rate on dinar household loans, its pace almost entirely mirrors the pace of interest rates on cash loans, which in December rose by 1.4 pp, to 13.0%, because these loans account for the dominant share (83%). The rates on housing and other non-categorised loans also increased, by around 1.3 pp, to 11.5% and 10.8%, respectively.

The increase in interest rates on euro-indexed loans in the domestic market reflected the rate hikes in the euro area money market relative to July, three-month EURIBOR up by 2.0 pp, to 2.06%, which was its average in December, and six-month EURIBOR up by 2.1 pp, to 2.56% in December. The weighted average rate on **euro** corporate loans inched up by 1.2 pp from September, to 5.0% in December, driven almost entirely by higher interest rates on working capital and investment loans (up by 1.0 pp, to 5.2%), which together account for around 93% of total

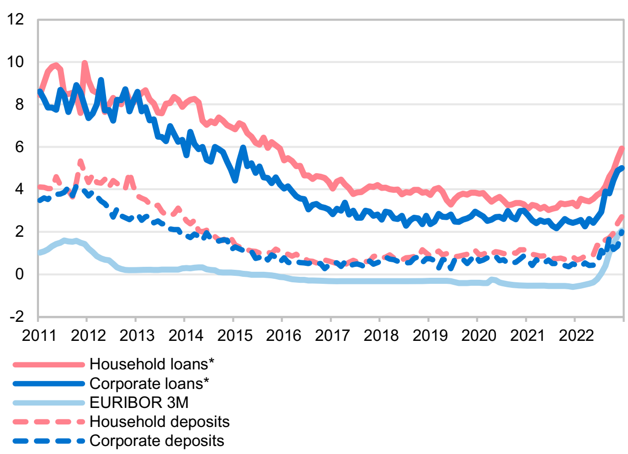
Chart IV.1.5 **Interest rates on new dinar loans and deposits**
(weighted average values, p.a., in %)



Source: NBS.

* Excluding revolving loans, current account overdrafts and credit card debt.

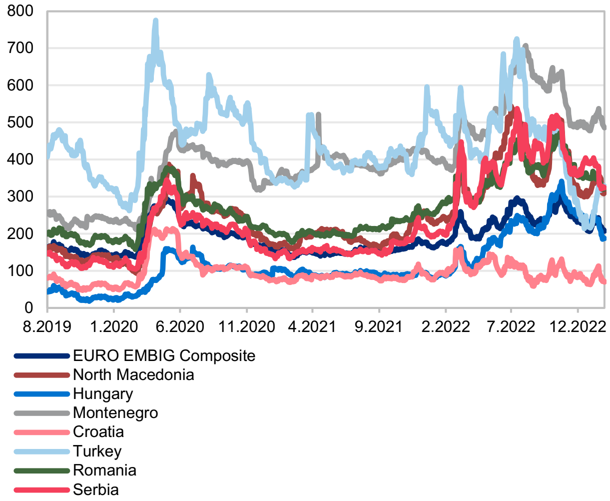
Chart IV.1.6 **Interest rates on new euro and euro-indexed loans and deposits**
(weighted average values, p.a., in %)



Sources: European Banking Federation and NBS.

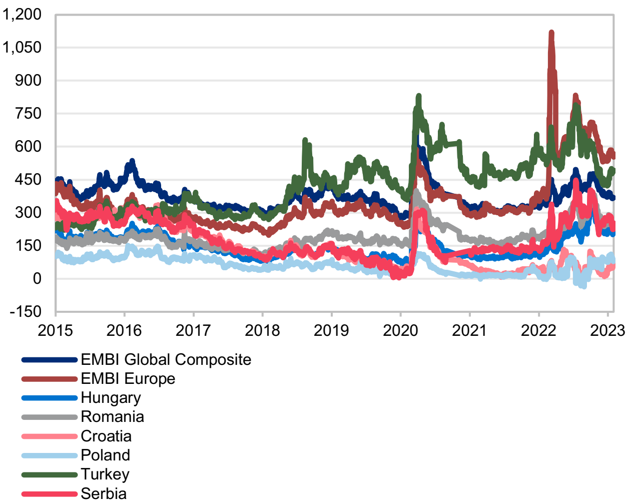
* Excluding revolving loans, current account overdrafts and credit card debt.

Chart IV.1.7 **Risk premium indicator for euro-denominated debt – EURO EMBIG**
(daily data, in bp)



Source: J.P. Morgan.

Chart IV.1.8 **Risk premium indicator for dollar-denominated debt – EMBI**
(daily data, in bp)



Source: J.P. Morgan.

Table IV.1.1 **Credit rating**
(change of rating and outlook)

	2018	2019	2020	2021	2022
S&P	BB /positive[5]	BB+ /positive[5]	BB+ /stable[2]	BB+ /positive[5]	BB+ /stable[3]
Fitch		BB+ /stable[4]			
Moody's		Ba3 /positive[4]		Ba2 /stable[1]	

Source: NBS.
[1] March, [2] May, [3] June, [4] September, [5] December.

corporate lending in euros. In Q4, the average interest rate on euro-indexed household loans went up by 1.3 pp to 5.9% in December, driven by rate increases across all loan categories and primarily the dominant category of euro-indexed housing loans (up by 1.3 pp to 5.1%), and other non-categorised loans (up by 1.1 pp to 8.1%).

Relative to September, interest rate on household dinar **savings** increased by 1.2 pp to 4.7% in December, while the interest rate on euro savings added 1.0 pp, coming at 2.7%. Interest rate on term euro deposits of corporates edged up by 0.3 pp from September (to 2.0%), while the one on term dinar deposits gained 0.8 pp, equalling 6.3% in December.

Risk premium

Global softening of inflationary pressures on account of lower energy prices, along with the easing of global supply chain disruptions, led to a decline in the risk premia of emerging economies in Q4.

EURO EMBIG Composite fell by 67 bp in Q4, to 208 bp at end-December. At the same time, EURO EMBIG for Serbia decreased by 113 bp in Q4, and measured 389 bp at end-December. Serbia's dollar risk premium also fell in Q4 (by 117 bp, to 270 bp), continuing to move below EMBI Composite, which measured 374 bp at end-December. On 31 January 2023, J. P. Morgan included dollar eurobonds of the Republic of Serbia (issued in January) in the EMBI Global.

In December, Standard & Poor's maintained Serbia's credit rating at BB+, one notch below the investment grade, despite pronounced uncertainties in the international environment. The agency also kept the stable outlook, confirming that the domestic economy's built-up resilience to numerous global challenges. In its report, the agency pointed out Serbia's credible macroeconomic policy framework and recognised the adequate level of FX reserves as an important buffer against external shocks. The agency also emphasised the NBS's credible monetary policy and a moderate level of public debt as the key factors of the preserved credit rating. The report further cited that the Serbian banking sector is well-capitalised, profitable and liquid, and that the level of NPLs is at its historical low. Serbia's medium-term prospects remain resilient, supported by the export-oriented growth model.

Foreign capital inflow

The bulk of capital inflow in Q4 originated from FDI, government borrowing, and funds disbursed under the new stand-by arrangement with the IMF. Inflows also came from the rise in corporate and bank borrowing and a decrease in funds in bank accounts abroad, while outflows were recorded only on account of portfolio investments.

Net FDI inflow amounted to EUR 1.5 bn in Q4, driven by the continued FDI inflow to Serbia (EUR 1.4 bn), and partly also by lower residents' investments abroad (EUR 110.7 mn). At the level of the year, FDI to Serbia reached EUR 4.4 bn in 2022 (EUR 4.3 bn net), which is the highest annual level of FDI since monitoring began (1997). Two-thirds of investments were in the form of equity and reinvested earnings, with the bulk of investments going to manufacturing and construction.

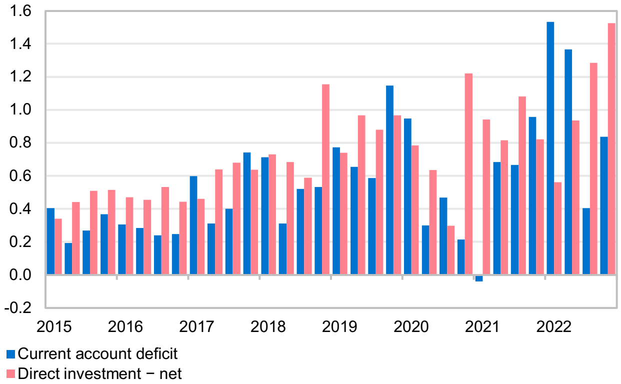
Portfolio investments accounted for a net capital outflow of EUR 182.6 mn in Q4. On the one hand, this was due to the higher residents' investment in foreign securities and, on the other, to the lower non-residents' investment in the securities of the Republic of Serbia amid monetary policy tightening by leading central banks and the ongoing shift of capital flows from emerging to advanced economies. Overall in 2022, a slight net capital outflow was recorded on account of portfolio investments (EUR 64.4 mn).

Loans generated an inflow of EUR 2,158.9 mn in Q4. Most of it came from the disbursement of a portion of funds under the new stand-by arrangement with the IMF (first tranche worth EUR 985.6 mn) and a loan from the United Arab Emirates (EUR 945.8 mn). The arrangement in the amount of 290% of Serbia's quota with the IMF (around EUR 2.4 bn) was approved in December 2022 for a two-year period. A part of the funds is planned to be disbursed in 2023, while the remainder will be treated as precautionary. Net inflow also came from **cash and deposits** (EUR 50.7 mn) as the decrease in the accounts of domestic banks abroad exceeded the decrease in the accounts of non-residents with domestic banks. Trade loans and advances also generated an inflow (EUR 233.9 mn), owing to the collection of export revenue and a simultaneous rise in importers' foreign liabilities.

Trends in the FX market and exchange rate

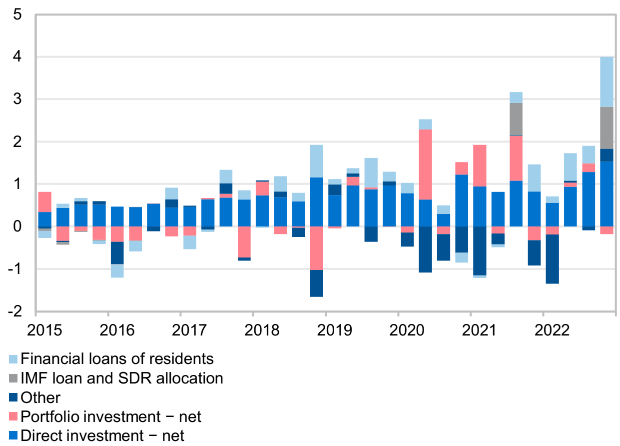
In Q4 as well, the supply of foreign currency in the IFEM outstripped the demand multiple times, reinforcing appreciation pressures which the NBS continued mitigating with net purchases of foreign currency. Observed at period-end, the dinar did not change its value against the euro in Q4, while it gained 0.2% in nominal terms at the level of 2022. At the same time, affected by

Chart IV.1.9 **Current account deficit and net FDI inflow**
(in EUR bn)



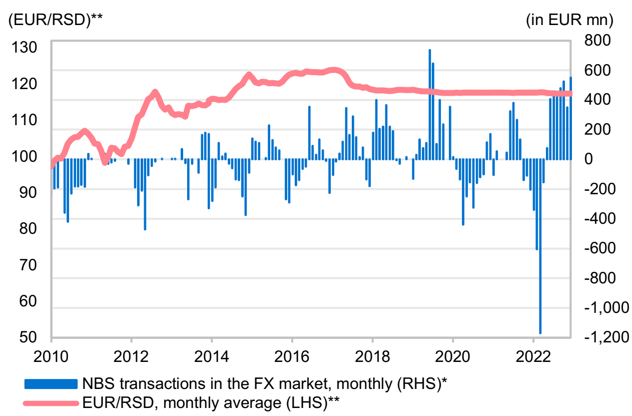
Source: NBS.
Note: Preliminary data for Q4 2022.

Chart IV.1.10 **Structure of the financial account**
(in EUR bn)



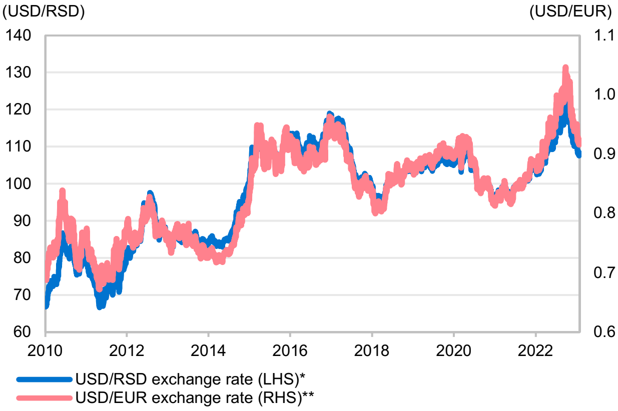
Source: NBS.
Note: Preliminary data for Q4 2022.

Chart IV.1.11 **Dinar exchange rate and NBS transactions in the FX market**



Source: NBS.
* + net purchase; - net sale.
** EUR 1 in RSD.

Chart IV.1.12 **Movements in USD/RSD and USD/EUR exchange rates**



Source: NBS.

* USD 1 in RSD.
** USD 1 in EUR.

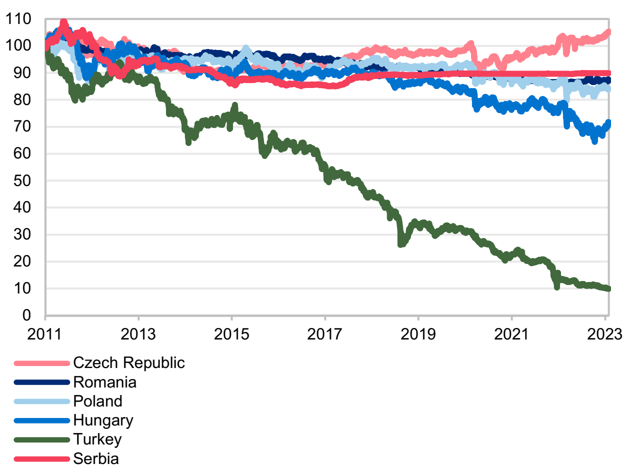
the euro's appreciation against the dollar in the international market, the dinar gained 8.5% against the dollar in Q4. As this softened the impact of the euro's past weakening against the dollar, the dinar depreciated against the dollar by 5.7% at the level of 2022.

The increase in the supply of foreign currency in Q4 was largely driven by the high purchase of foreign cash which exceeded the total net purchase on this account in entire 2021. Supply growth was also supported by the lengthening of banks' position on account of payment card operations and the rise in FX-indexed bank assets in October and November.[3] Further, owing to net sales in October and December, companies were also the net sellers of foreign currency in Q4. Namely, despite persistently high demand of energy importers, the supply from other companies exceeded their demand, largely as a result of continued export growth and FDI inflows. At the level of the quarter, non-residents were the net buyers of foreign currency, though to a smaller extent than in Q3.

To preserve the relative stability of the dinar exchange rate against the euro, the NBS intervened in the IFEM in Q4 primarily on the purchase side, buying EUR 1,425.0 mn net at the level of the quarter. The NBS has been a net buyer in the IFEM since May and already as of October it entirely compensated for the net FX sale in the first four months of 2022. In 2022 as a whole, the NBS bought EUR 1.0 bn net in the IFEM.

Trading volumes in the IFEM[4] averaged EUR 41.8 mn in Q4, slightly lower than a quarter earlier (EUR 42.6 mn). The NBS continued buying/selling foreign currency from/to banks in bilateral swap transactions which were introduced in early 2022 and proved to be efficient support to banks in liquidity management and overcoming the problem of insufficient limits for concluding interbank transactions.

Chart IV.1.13 **Exchange rates of selected national currencies against the euro***
(daily data, 31 December 2010 = 100)



Sources: NBS and websites of central banks.

* Growth indicates appreciation.

Most currencies of inflation-targeting countries in the region gained ground against the euro in Q4: the Hungarian forint by 5.3%, the Polish zloty by 3.8% and the Czech koruna by 1.8%. The value of the Romanian leu remained unchanged, while the Turkish lira weakened by 9.9% amid two policy rate cuts in Q4. At the level of the year, only the Czech koruna strengthened in 2022 (3.1%), the Romanian leu stayed unchanged, while the Polish zloty, the Hungarian forint and the Turkish lira weakened by 1.9%, 7.8%, and 26.2%, respectively.

[3] Aiming to balance their long open foreign currency position and thus reduce the exposure to FX risk, banks sell foreign currency, which results in the strengthening of the dinar.

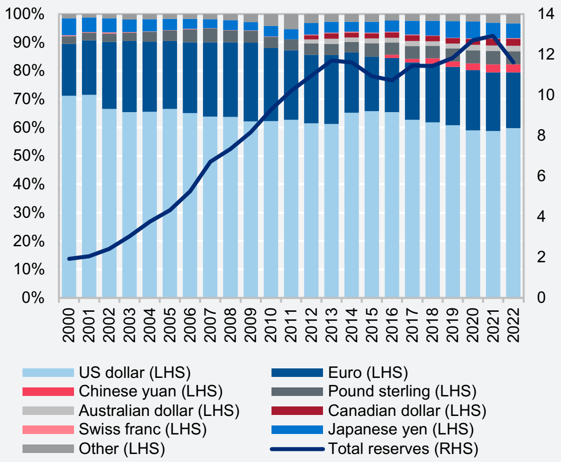
[4] Excluding the NBS.

Text box 3: Recent FX reserve trends, with special emphasis on Serbia

A country's FX reserves are a critical pillar of its defence and resilience against external risks, this being of paramount importance for emerging market economies, especially in times of great turmoil in international commodity and financial markets. The importance of maintaining an adequate level of FX reserves has come particularly to the fore in the past three years when we faced the economic consequences of the pandemic, energy crisis and geopolitical tensions. The role and importance of FX reserves stems from their very definition – the IMF defines them as external assets that are readily available to central banks or monetary authorities for financing balance of payments liabilities, intervening in the FX market and affecting the exchange rate, and other similar purposes.

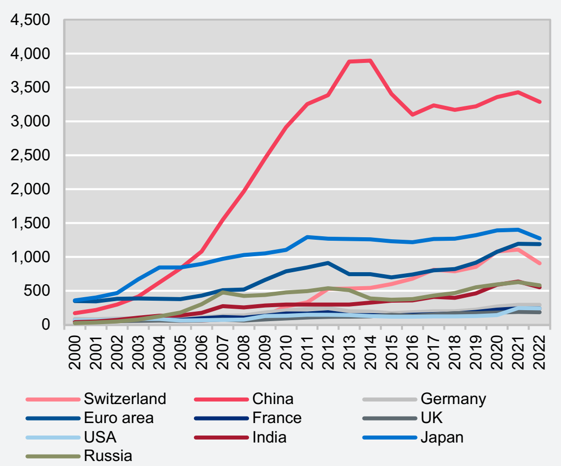
At global level, FX reserves recorded a significant increase over the previous decades, reaching their all-time high of close to USD 13 tn at end-2021 and exceeding by more than six times their level of 20 years ago. The need to maintain a higher level of FX reserves emerged after the failure of the Bretton Woods Agreement, despite the expectation that they would lower as a great number of countries switched from a fixed to a floating exchange rate regime. During that period it was primarily advanced economies that built up their reserves, while emerging economies did the same in the aftermath of the Asian crisis. The strongest increase in reserves was recorded by China (from less than USD 100 bn in the early 2000s to their current level of around USD 3,300 bn at end-2022), while starting from 2005, amid a surge in international primary commodity prices and the consequent widening of the trade surplus, a significant increase was also observed with countries that are primary commodity exporters. Global reserves continued growing after the outbreak of the 2007–2008 global financial crisis, since many countries allowed a sharp depreciation of national currencies against the background of dampened foreign capital inflows. Reserve growth persisted until end-2013, above all under the impact of monetary policy easing by leading central banks, which resulted in abundant liquidity in the international financial market and buoyant capital flows to emerging market economies. After that, when the Fed started tightening its monetary policy stance, a taper tantrum was triggered, portfolio investment into emerging market economies dwindled, and so did their reserves. Additional factors of a global reduction in reserves were the growing protectionism and the nascent trend of deglobalisation, but also a fall in primary commodity prices that weighed on the income of countries exporting oil and other primary commodities. During the first phase of the pandemic, many emerging markets faced a sudden stop to capital flows and a fall in reserves amid increased risk aversion due to global uncertainty. However, large packages of monetary and fiscal stimuli of leading central banks, as well as the IMF's decision to support its members through an SDR allocation proportionate to membership quotas, in the total amount of USD 650 bn, pushed the reserves at global level to unprecedented highs. Nevertheless, in H1 2022 they declined by around USD 1 tn, with over a half of the decline being attributable, according to Bloomberg, to the dollar's strengthening against other world currencies, notably the euro and the Japanese yen, to the highest level in the last two

Chart O.3.1 **Value of total global reserves and structure allocated reserves**
(in USD tn)



Source: IMF (COFER).
Note: concluding with Q3 2022.

Chart O.3.2 **FX reserves by country**
(in USD bn)



Source: World Bank.
Note: data for Switzerland, China and India concluding with November 2022.

decades, which resulted in a reduced dollar amount of the share of reserves held in other currencies, while the remainder of the decline reflects the use of reserves to defend the national currencies from depreciation during the energy crisis.

According to the IMF's data on the **currency composition of official foreign exchange reserves** (COFER), **the US dollar remains dominant**, though its share has declined. Namely, its share contracted from 71% in 2000 to 59% at end-2020, i.e. to its 20-year low. As the value of the US dollar against other reserve currencies stayed almost unchanged during that period, central banks have shifted their long-term focus on other currencies, this being consistent with the gradual diminishing of the role of the dollar in the world economy and competition from other currencies used in international transactions. Though from end-2020 the dollar's share in global reserves increased (to 59.8% in Q3 2022 according to the latest available data), much of this increase can be put down to the dollar's strengthening (as the dollar value of the rest of reserves expressed in other currencies is decreasing, and vice versa – increasing if the dollar is weakening). In the long run, the dollar's share in global reserves is expected to continue down, mainly because of the efforts of emerging economies' central banks to diversify the currency composition of their reserves further. Major shifts in the currency composition of central bank FX reserves might affect the global foreign exchange and securities markets. The dollar, nonetheless, remains dominant in global reserves, while the second most important currency is the euro, with a share of around 20.6% at end-2021, or just shy of 20% at end-Q3 2022. The Japanese yen and pound sterling hold considerably lower shares of 5.3% and 4.6%, respectively (Q3 2022). The shares of other currencies went up over the previous years, notably of the Chinese renminbi, Canadian and Australian dollar, but they are still at just over or below 2%. Given the mounting importance of China's role in the world economy, it seems reasonable to expect that the key change to the currency composition of global reserves will be the further expansion of the share of renminbi. Also, ever since the pandemic broke out, **central banks have boosted the share of gold in the structure of their FX reserves**. According to the IMF data, after dipping to around 9–10% in the period 2013–2016, the share of gold at the global level steadily increased thereafter. The highest share of gold was recorded in 2020 (close to 14%), only to retreat mildly in 2021 and 2022, while still staying relatively high. A higher share of gold in the structure of FX reserves was recorded for advanced economies – over 19% in 2020, after which it receded to close to 18%. At the same time, the maximum share of gold in emerging and developing economies in 2020 was 7.2% on average. According to the report of the World Gold Council, the demand of central banks was particularly prominent in the last two quarters of 2022, owing to which their annual gold purchase soared to 1,136 tonnes – a record level since 1950, i.e. since these data are monitored.

While in the early 2000s, emerging market economies maintained a high level of FX reserves mainly out of **precaution**, in recent years they are doing so also for reasons of implementation of monetary and exchange rate policies. The crises that hit Latin America in the 1980s and Asia in the 1990s, and the experience gained during that period, i.e. sudden stops to capital flows, the collapse of financial systems and substantial and permanent income losses, have reinforced central banks' awareness of the importance of building up reserves in order to fend against potential balance of payments crises and to be able to smoothly service their international liabilities. In times of great turmoil in the international financial market, an adequate level of FX reserves also gives an assurance to foreign investors and creditors that the country has sufficient liquidity in foreign currency and that even in case of a sudden stop to capital flows it is able to service its debts and supply banks with sufficient foreign currency liquidity. According to a BIS estimate,[1] **more than a half of the accumulated FX reserves in the period 2000–2016 can be ascribed to precautionary motives**. In countries pursuing a fixed exchange rate regime, reserves serve as a buffer to cover the monetary base, which is why they need to maintain a higher level of reserves than countries with a floating or managed float exchange rate, where the exchange rate itself can absorb a part of external shocks.

FX reserves also enable central banks to intervene in the FX market and prevent excessive short-term volatility of the exchange rate, thus contributing to price and financial stability. In this way, FX reserves become a **significant instrument of monetary and macroprudential policies**.

Interventions in the FX market are especially important in times of heightened uncertainty, as well as increased costs of international transactions and FX hedging. In such circumstances, FX reserves have **a stabilising role, as they enable smooth functioning of the local FX market and prevent market panic and excessive growth in demand for foreign exchange**. Furthermore, a sufficiently high level of FX reserves can ensure relative stability of the exchange rate, which

[1] Arslan Y. and C. Cantú (2019), "The size of foreign exchange reserves", *BIS Papers* No 104.

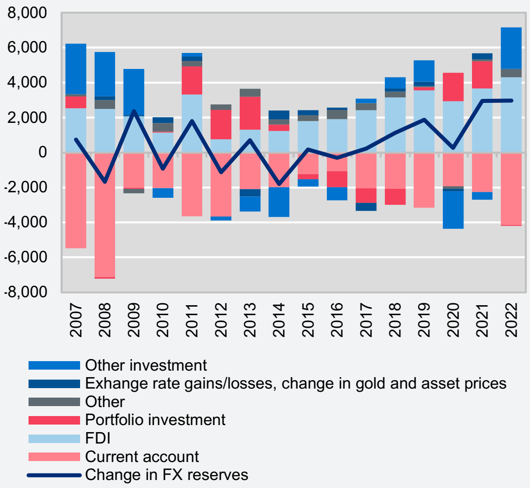
contributes to the certainty of doing business and has a positive impact on confidence, as well as on business and investment decision-making.

One of the motives to accumulate FX reserves is to prevent excessive appreciation of the national currency in periods of high capital inflows (so-called mercantile motive), so as not to undermine the country's external competitiveness and exports.

The NBS was mindful of all the above motives in its FX reserve management and decision-making on interventions in the FX market in recent years. NBS FX reserves are used primarily to settle government liabilities to foreign creditors. The achieved and maintained relative stability of the exchange rate contributes to the price and financial stability and to the certainty of doing business, exerting a positive impact on investment activity and the business environment, as evidenced by the high FDI inflow. In periods of high capital inflows amid accommodative monetary policies of leading central banks, the NBS prevented excessive appreciation of the dinar, detrimental to the country's external competitiveness, this being particularly pronounced between 2017 and the pandemic outbreak. An adequate level of NBS FX reserves also acts as an assurance that Serbia is able to service its foreign liabilities on time, which has a positive effect on the country's credit rating that was maintained at one notch below investment grade despite numerous uncertainties in the international environment. Besides, it was owing to the reserves accumulated in the prior period that the NBS managed to prevent panic with its interventions in the FX market and to ensure the market's smooth functioning once the multifaceted crisis, which has been here for almost three years, erupted.

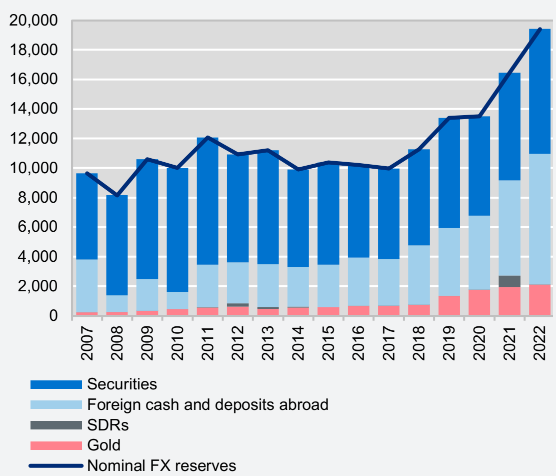
NBS FX reserves have been on a constant rise from 2017. At end-2022, they equalled EUR 19.4 bn, double the amount during the global economic and financial crisis of 2008 and EUR 9.2 bn higher than at end-2016. In 2022 alone, FX reserves went up by close to EUR 3 bn. Looking at the balance of payments, **the main driver of their growth in the previous years were inflows to the financial account, notably FDI** which has provided for more than full coverage of the current account deficit since 2015. During 2020 and 2021, a boost to reserves also came from portfolio investment owing to successful issues of government bonds, whilst in 2022, apart from FDI that reached a new record high of over EUR 4.4 bn, positive contributions also came from a loan of EUR 945.8 mn extended by the United Arab Emirates to the Republic of Serbia, as well as from the first tranche of the IMF loan under SBA in the amount of EUR 985.6 mn. The SBA is worth close to SDR 1.9 bn, equivalent to around EUR 2.4 bn, or 290% of Serbia's quota with the IMF. A part of the total amount will be drawn down in 2023, while the portion intended for 2024 will be treated as precautionary. The arrangement aims to support the financing of external and fiscal needs amid the energy crisis, the maintenance of macroeconomic and financial stability, and further strengthening of the domestic economy and implementation of structural reforms, notably in the energy sector. In the said six years (2017–2022), the NBS was a net buyer of foreign exchange (EUR 5.1 bn) in all years, save the pandemic 2020.

Chart O.3.3 **FX reserve creation flows**
(in EUR mn)



Source: NBS.

Chart O.3.4 **Value and structure of NBS FX reserves**
(in EUR mn)



Source: NBS.

The structure of NBS FX reserves at end-2022 shows the largest share of foreign securities (highly liquid, of the highest credit rating) – 43.6%. When it comes to gold, its share in reserves is around or over 10% since 2019, having almost doubled relative to the years before. At end-2022, the share of gold in FX reserves equalled 10.8%, significantly higher than the average for emerging and developing economies. That gold weighed 38.5 tonnes, of which 1.1 tonnes were bought from domestic manufacturers in 2022. Looking at the currency composition of FX reserves, at end-2022 the share of the euro was 73.6% and of the dollar – 22.8%, compared to 66.4% and 23.8%, respectively, at end-2021. The currency composition of FX reserves matches the composition of the public sector external debt. This is confirmed by the latest available data for Q3 2022 on the 72% share of the euro and the around 20% share of the dollar in total public sector external debt.

The level of NBS FX reserves meets all the adequacy measures typically used to assess the size of FX reserves. The level of FX reserves considered adequate in a country depends on a number of factors: the degree of liberalisation of international capital and financial flows, depth and liquidity of the domestic financial market, exchange rate regime, cost of holding FX reserves etc. Each country's specificities are therefore important in analysing reserve adequacy. **Traditional measures** pertain to FX reserves coverage of: 1) goods and services imports, 2) short-term external debt, and 3) money supply.

Coverage of goods and services imports measures the period (months) during which reserves can sustain imports in the event of a shock, i.e. a stop to hard currency financial flows originating, for instance, from export collection or external financing. A customary benchmark is the coverage of at least three months of imports (average, in the last five years, for instance). This indicator is considered more relevant for the FX reserves of those countries that did not fully liberalise their capital accounts.

The ratio of FX reserves to short-term external debt (at remaining maturity) plays an important role in assessing reserve adequacy as it measures potential demand for foreign currency based on the repayment of debt maturing next year, which must be met even in case of stops to capital flows. It is also often used as an indicator of the risk of a crisis outbreak in countries with large cross-border financial transactions. Greenspan and Guidotti suggest a rule of 100% coverage of short-term external debt, which is the most frequently used standard of reserve adequacy.

The ratio of FX reserves to money supply (assets of domestic non-monetary sectors) measures potential demand for foreign assets from domestic sources. It is used to capture the risk of capital flight in countries with large banking sectors and significantly liberalised balance of payments financial accounts, given that many crises were accompanied with outflows of resident deposits. The benchmark is typically set at 20%.

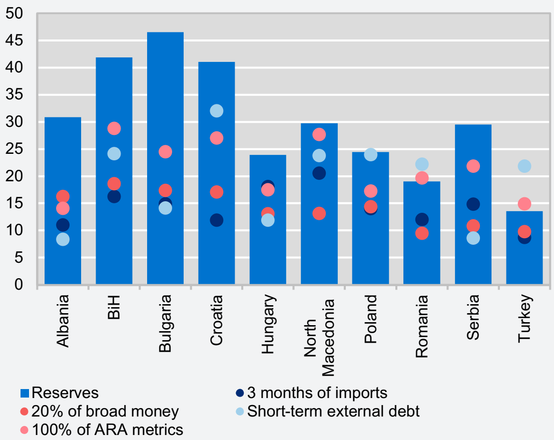
In addition to traditional, there are also **combined measures**, often used to assess reserve adequacy. One of them is the **extended Greenspan–Guidotti rule**, according to which reserves should, in addition to short-term external debt (at remaining maturity), cover the current account deficit (if there is one), i.e. total financial needs of a country that have to be settled over the next 12 months. If there is a current account surplus, there are proposals that it should be taken into account and that the extended Greenspan–Guidotti rule should measure the extent to which reserves cover the value of short-term external debt reduced by the current account balance. This rule is considered a good benchmark for FX reserves, and countries' compliance with it would contain crisis transmission to countries with solid macroeconomic fundamentals.

Models of optimal FX reserves were developed to integrate considerations of the costs and benefits of holding FX reserves. The **Jeanne–Rancière** model is used most often, with the optimal level of reserves determined by balancing the opportunity cost of holding reserves with the gains from smoothing domestic absorption during sudden stops to capital flows. As suggested by these two authors, many emerging economies would optimally hold reserves that cover around 80–100% of short-term external debt and the current account deficit, as well as 70–150% of the ARA metrics.

The IMF defined the **ARA metrics** as a measure supplementing traditional ones. ARA includes a broad set of risks reflecting potential drains on the balance of payments as experience has shown that crises feature multiple channels of market pressure. The ARA metrics has four components: 1) export inflows, to cover potential loss from falling external demand or terms-of-trade shocks; 2) money supply, to capture potential resident capital outflows through liquidation of highly liquid domestic assets; 3) short-term external debt, to cover the risk of debt rollover; 4) other liabilities under debt instruments.

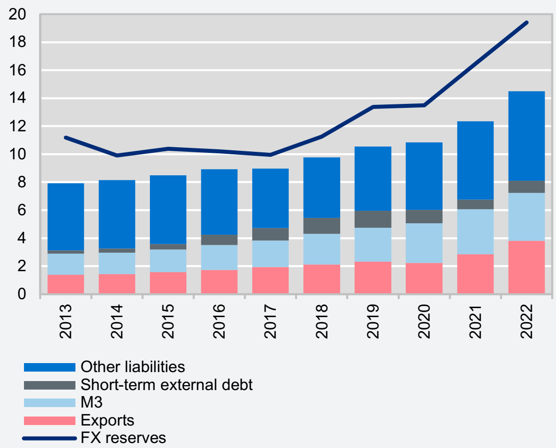
The ARA metrics is adjusted to the country's specificities, i.e. the degree of dollarisation, whether the country has capital controls or if it is a commodity exporter/importer. The benchmark is between 100% and 150% of reserve cover.[2] Measured by ARA, Serbia's FX reserves provide an adequate safeguard of the Serbian economy against external shocks, covering ARA by almost 134% at end-2022 (under Serbia's new SBA with the IMF, the cover should not fall below 80%). Moreover, coverage has been constantly increasing over the past years owing to a faster rise in NBS FX reserves than in the ARA metrics.

Chart O.3.5 **FX reserves compared to the levels desirable under traditional adequacy measures***
(in % of GDP)



Source: IMF.
* Data for 2021.

Chart O.3.6 **Reserve level and decomposed ARA metrics for Serbia**
(in EUR bn)

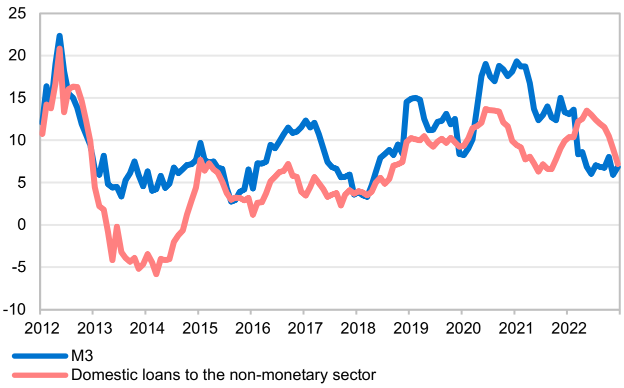


Source: NBS, according to IMF methodology.
Note: NBS estimate for 2022.

To conclude, there is no absolute reference or explicit goal for the level of FX reserves as none of the above measures can fully cover all the factors impacting the country's resilience to shocks. Several measures must be observed and global trends concerning the level and composition of FX reserves followed. The ratio of FX reserves to GDP, money supply and short-term external debt, import coverage and the IMF's ARA metrics suggest that **the level of NBS FX reserves is adequate to cover with certainty a broad set of risks. NBS FX reserves are above the benchmarks of all adequacy measures**, most notably the short-term external debt benchmark. In most regional peers, FX reserves are at levels more or less above adequacy benchmarks, with Turkey and Romania, among the observed countries, not meeting the benchmarks relating to short-term external debt and the ARA metrics.

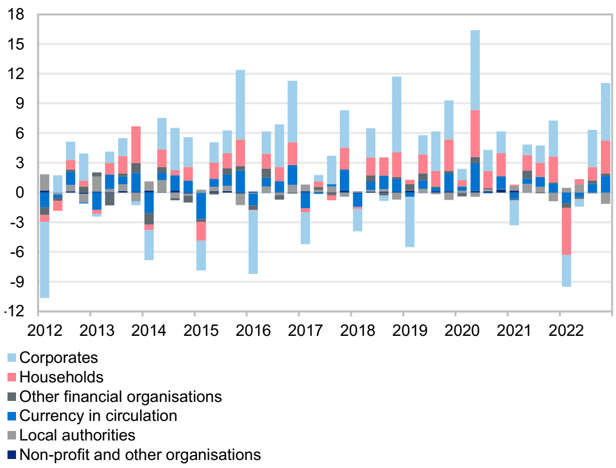
[2] The ARA metrics does not include the current account deficit (or imports). Namely, financing the current account deficit through borrowing under financial loans or portfolio investment increases liabilities under short-term external debt or other liabilities already included in ARA, or both. That is why ARA indicates higher needs for FX reserves in case of a country with the current account deficit even without direct inclusion of the deficit, because financial balance of payments components would be higher due to external deficit financing. On the other hand, FDI-financing of the current account deficit is not included in ARA because in case of a shock, FDI is much more stable than loans and portfolio investment.

Chart IV.2.1 **Domestic loans to the non-monetary sector and M3**
(nominal y-o-y rates, in %)



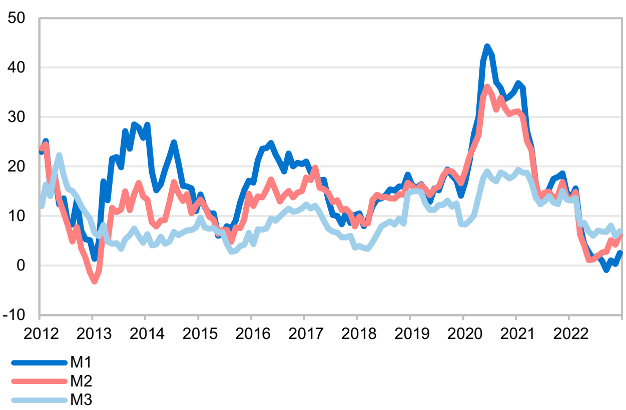
Source: NBS.

Chart IV.2.2 **Contributions to quarterly growth in M2, by sector**
(in pp)



Source: NBS.

Chart IV.2.3 **Monetary aggregate movements**
(nominal y-o-y rates, in %)



Source: NBS.

2 Money and loans

In Q4, growth in monetary aggregates was driven primarily by the dinar component, partly owing to higher attractiveness of dinar savings as the NBS tightened its monetary stance. Domestic lending slowed y-o-y, reflecting the high base, the maturing of guarantee scheme loans and interest rates hike.

Money

The broadest monetary aggregate M3, which apart from dinar money also includes FX deposits of non-monetary sectors, increased by 4.6% in Q4 and by close to 7% y-o-y, receiving positive contributions from both dinar and FX components.

Looking at individual categories, dinar **sight deposits** went up by RSD 97.7 bn in Q4 (but by RSD 19.0 bn annually, due to a deposit decline in H1), driven by the rise in corporate and household transaction deposits. At the same time, **dinar time deposits** added RSD 43.5 bn in Q4 (RSD 73.9 bn in 2022), mostly owing to increased balances in corporate deposit accounts (RSD 37.4 bn). Sector-wise, time deposits of companies in manufacturing, trade and construction gained the most. **Dinar household savings** have been on the rise since June, resuming the upward trend typical of the period before the Ukraine crisis. As a result of the preserved financial stability and relative exchange rate stability even in periods of rampant uncertainty, in Q4 dinar savings recorded the most vibrant quarterly growth in the past nine years (by RSD 8.1 bn). The faster y-o-y growth of total dinar money compared to the quarter before (by 6.1%) was aided by higher attractiveness of dinar savings due to the NBS's monetary policy tightening.

In Q4, **FX deposits** of non-monetary sectors rose more moderately than in a quarter earlier. Household FX savings[5] increased by EUR 56.5 mn in Q4 and by EUR 513.5 mn annually, reaching EUR 12.8 bn at year-end. At the same time, corporate FX deposits added EUR 19.1 mn in Q4 and EUR 722.0 mn annually, thanks to FX inflows from exports, FDI and external borrowing.

Loans

Domestic lending, in y-o-y terms, lost steam in Q4, reflecting the high last year's base, the maturing of

[5] Money supply M3 includes only resident funds. With non-resident funds included, at end-December dinar savings equalled RSD 96.3 bn and FX savings EUR 13.7 bn.

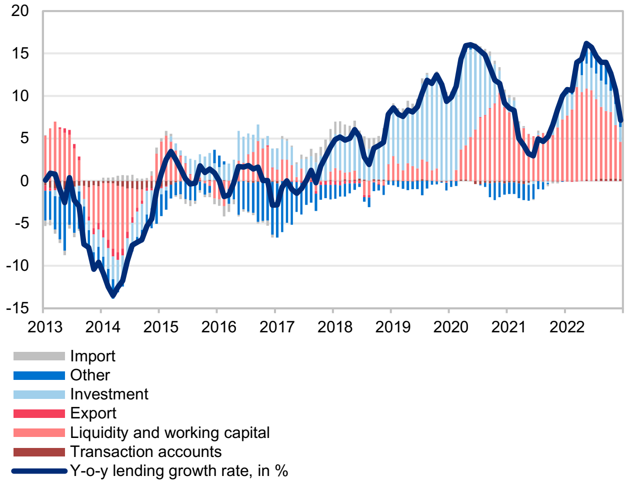
guarantee scheme loans and monetary tightening by the ECB and NBS. Y-o-y, **total domestic loans to the non-monetary sector**, excluding the exchange rate effect,[6] climbed by 7.3% in December. The greatest contribution to the y-o-y rise of domestic loans continued to stem from **corporate loans** (3.7 pp in December), which increased by 7.1%, followed by **household loans**, which provided a 2.9 pp contribution and posted a 6.3% y-o-y growth.

In Q4, **corporate loans**, excluding the exchange rate effect, dropped by RSD 35.1 bn. Non-categorised loans fell most sharply (by RSD 20.6 bn), followed by liquidity and working capital loans (by RSD 18.8 bn), and the contraction partly stemmed from the maturing of guarantee scheme loans. On the other hand, investment loans went up by RSD 7.1 bn in Q4, which drove their share in total corporate loans up to 40.5% in December, with liquidity and working capital loans accounting for 47.3%. Other categories of corporate loans saw relatively minor changes q-o-q. Sector-wise, the most substantial debt decrease was recorded for companies in electricity supply (RSD 14.5 bn), followed by trade and manufacturing (RSD 10.3 bn and RSD 8.7 bn). Debt balance remained broadly unchanged in other sectors. Looking by company size, loans to micro, small and medium-sized enterprises made up 60.6% of total corporate loans in December. A sharper fall in dinar corporate receivables compared to FX-indexed receivables due to the maturing of guarantee scheme loans, predominantly approved in dinars, resulted in lower dinarisation of corporate receivables in Q4 – down by 1.1 pp to 19.4%.

New corporate loans in Q4 reached RSD 316.4 bn, down by 11.5% from the same period last year, which saw a record-high amount of corporate loans approved in a single quarter. In Q4, companies continued to predominantly use liquidity and working capital loans (52.6%), of which over a half was channelled to micro, small and medium-sized enterprises. Investment loans accounted for 28.3% of new corporate loans in Q4, 70.7% of this category going to micro enterprises and SMEs.

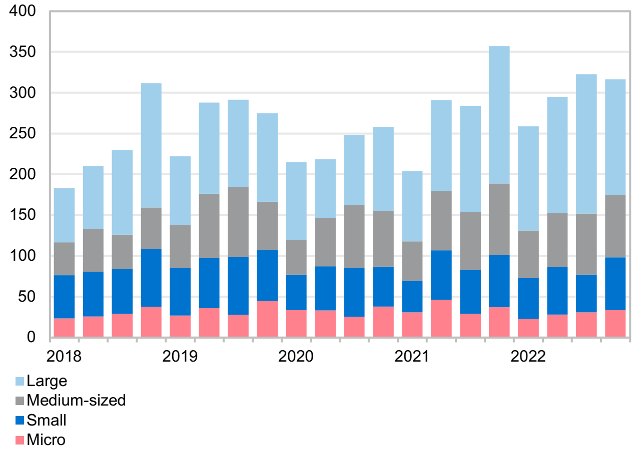
Household loans, excluding the exchange rate effect, went up by RSD 2.9 bn in Q4, driven by the housing loans increase of RSD 9.9 bn. On the other hand, other types of household loans contracted, most sharply cash loans (by RSD 4.5 bn) and transaction accounts debt (RSD 1.6 bn). As a result, the share of housing in total household loans stood at 40.3% in December, while cash loans remained the dominant category (43.7%). Within loans approved to entrepreneurs, liquidity and working capital loans contracted by RSD 1.3 bn in Q4, while investment loans rose by RSD 0.9 bn. In Q4, the degree

Chart IV.2.4 **Contributions to y-o-y corporate lending growth**
(in pp, excluding the exchange rate effect)



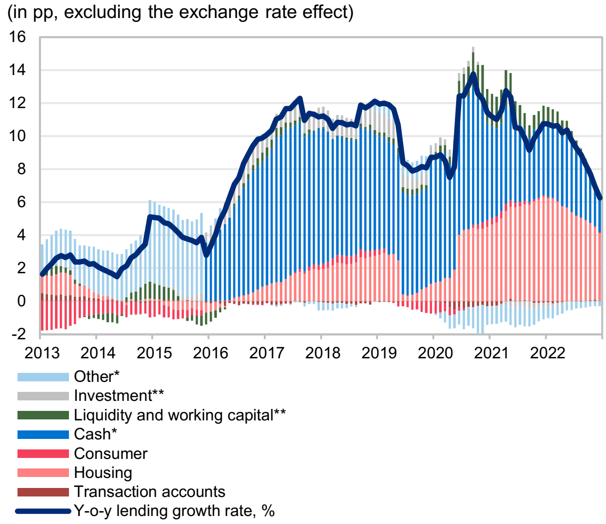
Source: NBS.

Chart IV.2.5 **Structure of new corporate loans, by enterprise size**
(in RSD bn)



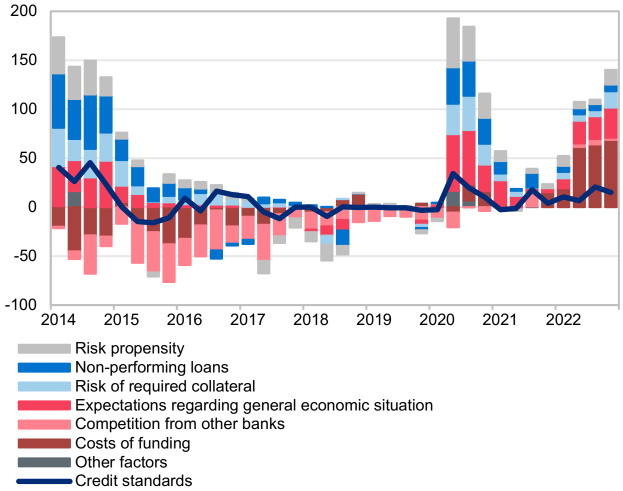
Source: NBS.

Chart IV.2.6 **Contributions to y-o-y household lending growth**
(in pp, excluding the exchange rate effect)



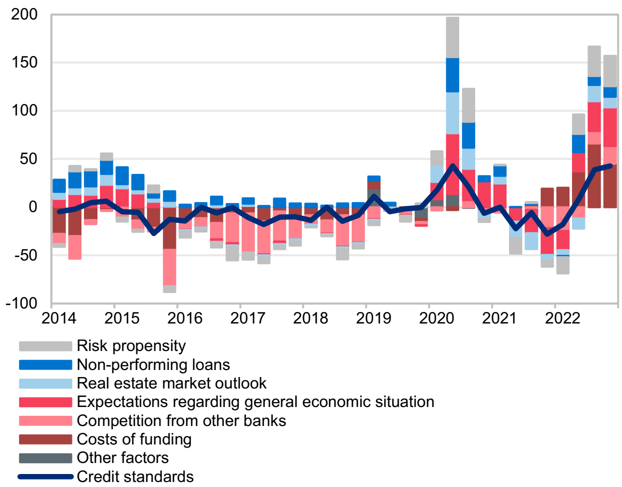
Source: NBS.
* Until December 2015, the contribution of cash loans is shown within the contribution of other loans.
** Loans extended to entrepreneurs.

Chart IV.2.7 **Change in corporate credit standards and contributing factors**
(in net %)



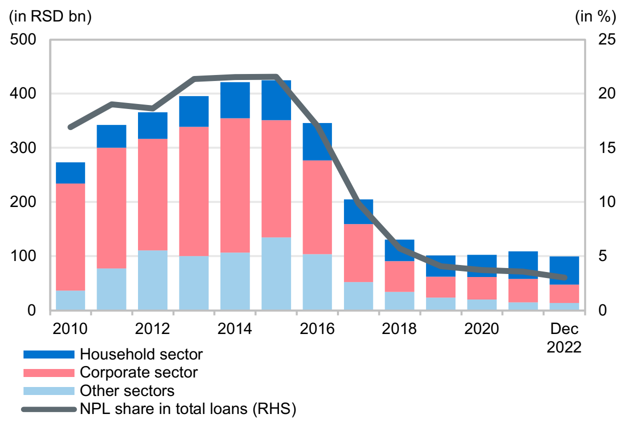
Source: NBS.
Note: Growth indicates the tightening and decline indicates the easing of credit standards.

Chart IV.2.8 **Change in household credit standards and contributing factors**
(in net %)



Source: NBS.
Note: Growth indicates the tightening and decline indicates the easing of credit standards.

Chart IV.2.9 **NPL level and share in total loans, gross principle**



Source: NBS.

of dinarisation of household receivables decreased by 0.7 pp to 53.1%, reflecting a rise in FX-indexed and a decline in dinar receivables.

The volume of new household loans of RSD 132.1 bn in Q4 was 5.9% lower y-o-y. Cash loans made up 53.5% of new loans in Q4, while housing loans accounted for 26.1%. The volume of new housing loans (RSD 34.5 bn) dropped slightly from where it stood a year ago.

The results of the NBS bank lending survey in January[7] show that in Q4 2022 banks continued to tighten corporate and household credit standards, consistent with our expectations. More restrictive standards mainly reflect the higher cost of financing (consistent with the NBS's and ECB's monetary tightening), uncertainty regarding the general economic situation, and the consequently reduced propensity to risk. Banks expect these tendencies to extend into Q1 2023 as well. According to survey results, banks perceive corporate loan demand to have expanded in Q4, but less so than in the previous quarters, and expect further mild growth in Q1. Banks estimate that the main drivers of demand growth were small and medium-sized enterprises, and the key underlying factors working capital financing and debt restructuring. On the other hand, banks assess that households reduced loan demand in Q4 and expect a further fall in Q1, due to the rise in real estate prices and lending rates, which constrain loan taking.

Gross **NPL ratio** dropped by 0.2 pp in Q4, to 3.02% in December, its lowest value on record. Compared to end-Q3, gross NPL ratio of the corporate sector[8] dropped by 0.1 pp, to 2.1% in December, while that of the household sector[9] lost 0.2 pp, coming at 4.0%. NPL coverage remains high – allowances for impairment of total loans equalled 102.1% of NPLs in December, while allowances for impairment of NPLs measured 57.9% of NPLs.

Capital adequacy ratio equalled 19.5%[10] at end-Q3, indicating high capitalisation (regulatory minimum equals 8.0%) and the banking sector's resilience to external and domestic risks.

[6] Calculated at the the programme exchange rate as at 31 October 2022.

[7] The NBS conducts the survey since the beginning of 2014.

[8] Including companies and public enterprises. Looking at companies only, NPL share in total loans in December stood at 2.3%.

[9] With entrepreneurs and private households included, the share of NPLs was 3.9% in December.

[10] According to the latest data available.

3 Aggregate demand

According to SORS estimates, GDP growth slackened to 0.4% y-o-y in Q4. Like in previous quarters, it was led by domestic demand.

Domestic demand

Private consumption growth slowed down, in our estimate, from 3.1% in Q3 to 0.5% y-o-y in Q4. The slowdown is indicated mainly by the slackened increase in real retail trade turnover, which amounted to 2% y-o-y in Q4 compared to 4.8% in Q3 and 8.8% in H1, while rising import prices sustained the relatively high nominal growth in the import of consumer goods (over 20% y-o-y). On the other hand, household consumption in the sector of tourism, measured by the number of domestic tourist arrivals and overnight stays, went up in Q4 by 41.0% and 48.6% y-o-y, respectively, while the real catering turnover growth in October stayed at the level recorded in Q3 (around 25% y-o-y).

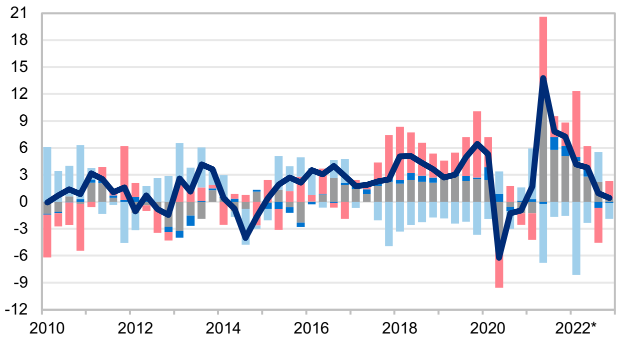
Looking at the sources of household consumption, the wage bill continued losing traction. In the period October–November, the wage bill was 0.7% higher in real, y-o-y terms. Tightened credit standards and higher cost of borrowing dampened the growth in loans intended for consumption, from 5.6% in Q3 to 3.6% y-o-y in Q4. The pace of remittances from abroad also slowed down, to 18.2% y-o-y.

Government consumption is estimated to have declined in Q4, though less so than a quarter earlier (-1.0% vs. -4.5% y-o-y). As a result, total consumption inched up, adding 0.2 pp to GDP growth in Q4.

Amid a mild decrease in government capital expenditure of 3% y-o-y, total fixed investment declined negligibly in Q4 (-0.5% y-o-y), providing a minimal negative contribution to GDP growth of 0.1 pp. Despite persistently heightened geopolitical tensions and cost-push pressures, private investment is estimated to have maintained the positive dynamics in Q4 as well, supported primarily by the increased production of machinery and equipment (18.9% y-o-y), and to a lesser degree by the growth in equipment imports of almost 10% y-o-y. We estimate that **private investment** growth was supported chiefly by the EUR 1.5 bn FDI inflow in Q4, which is an increase of 85.7% y-o-y, while investment loan growth eased to 4.8% y-o-y.

Domestic demand growth continued to be significantly supported by the inventories of energy, food and

Chart IV.3.1 **Contributions to y-o-y GDP growth rate, expenditure side**
(in pp)



Sources: SORS and NBS calculation.
* NBS estimate for Q4 2022.

Table IV.3.1 **Movement in key indicators and sources of household consumption**
(real y-o-y growth rates, in %)

	2022			
	Q1	Q2	Q3	Q4
Household consumption	**6.9**	**3.9**	**3.1**	**0.5** *
Indicators				
Retail trade	11.8	6.2	4.8	2.0
Catering turnover	67.9	56.9	26.2	25.5 ***
Number of domestic tourists	29.6	40.2	20.6	41.0
Number of overnight stays of domestic tourists	18.5	28.0	22.0	48.4
Consumer goods import (BEC classification), nominal	22.5	22.0	21.2	23.7
Sources				
Total wage bill, nominal	16.4	15,9	15,1	15.8 **
Net remittances inflow, nominal	16.9	53.5	69.6	18.2
Stock of loans intended for consumption, nominal	6.8	7.1	5.6	3.6

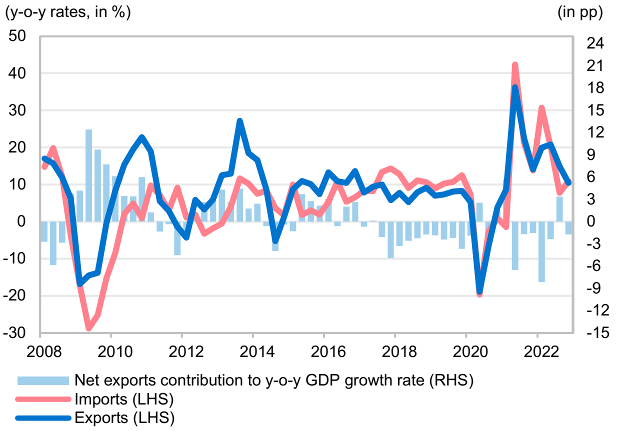
Sources: SORS and NBS calculation.
* NBS estimate.
** October–November.
*** October.

Table IV.3.2 **Investment indicators**

	2022			
	Q1	Q2	Q3	Q4
Real y-o-y growth rates (in %)				
Fixed investment (national accounts)	1.2	1.8	-2.2	-0.5 *
Construction (national accounts)	-5.6	-7.1	-12.4	-18.5 *
Government investment	-10.2	19.1	-50.8	-3.0 *
Number of construction permits issued	28.2	4.2	-8.9	-19.6 **
Production of construction material	3.5	0.2	-5.1	2.3
Value of works performed	-5.9	-8.8	-13.5	
Import of equipment, nominal	12.3	31.4	16.6	9.7
Production of domestic machinery and equipment	7.2	12.3	6.5	18.9
Finished product inventories in industry	-0.2	1.6	-0.1	-1.5

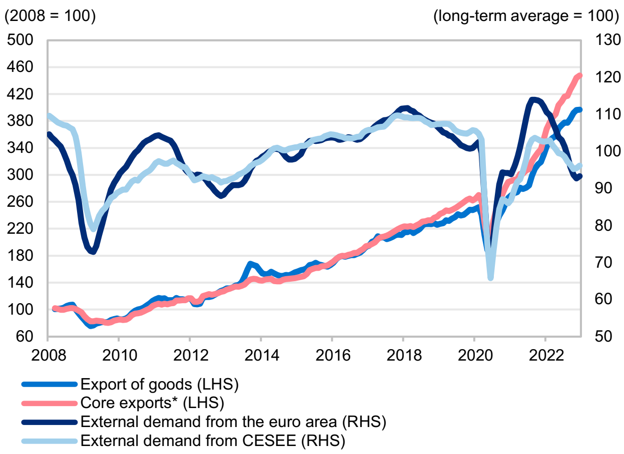
Sources: SORS and NBS calculation.
* NBS estimate.
** October–November.

Chart IV.3.2 **Exports and imports of goods and services (in previous-year constant prices, ref. 2010)**



Sources: SORS and NBS calculation.
Note: NBS estimate for Q4 2022.

Chart IV.3.3 **Movement in external demand indicators for Serbian exports (3M moving average, s-a)**



Sources: European Commission, SORS and NBS.
* Core exports are total exports excluding the export of agricultural products, base metals, motor vehicles, petroleum products and electricity.

Chart IV.3.4 **Movement of key import components**
(contributions to y-o-y growth, in pp)

Sources: SORS and NBS calculation.

industrial products. Inventory growth is in part attributable to lower external demand.

Q-o-q GDP growth of 0.6% s-a is estimated to have been led primarily by investment growth, whose total contribution amounted to 1.9 pp, while private consumption declined by 0.3%, dragging GDP down by 0.2 pp.

Net external demand

According to our estimate, real imports posted a stronger y-o-y rise than exports in Q4 (10.9% vs. 10.4%), resulting in a 1.7 pp negative contribution of net exports to y-o-y GDP growth.

Led by manufacturing, **commodity exports** continued growing in the face of weaker external demand and persistent geopolitical tensions. According to balance of payments data, commodity exports in euro terms increased in Q4 by 21.5% y-o-y, i.e. somewhat less than in Q3 (25.9% y-o-y). Manufacturing exports climbed by 17.5% y-o-y, with the growth registered in nearly all branches, and the largest contribution coming from electrical equipment, other machinery and equipment, motor vehicles, metal products and computers, electronic and optical products. A decrease was registered only for the export of base metals due to reduced production in the Smederevo steel plant because of a blast furnace shutdown in July, and for the export of petroleum products. An impetus to total export growth also came from the export of electricity and mining (led by copper exports), while agricultural exports stayed broadly unchanged from the same period last year.

At the same time, **commodity imports** in euro terms lost further steam in Q4, their growth amounting to 18.2% y-o-y (vs. 26.2% in Q3 and 48.7% y-o-y in H1). Under BEC classification, this growth was driven mostly by the import of intermediate goods, which increased by 18.8% y-o-y, followed by consumer goods and equipment, which expanded by 23.7% and 9.7% y-o-y, respectively. Such trends are also confirmed by the classification of imports by destination, where the main contributors were energy and consumer goods, followed by intermediate and capital goods.

The volume of **trade in services** remained high in Q4, with a stronger y-o-y rise in exports than imports and a record value of the trade surplus (EUR 888.4 mn). Exports of all types of services increased. As before, export growth (44.7% y-o-y) was aided the most by tourist, ICT and business services. Import growth (29.8%

y-o-y) was led by transport and tourist services and to a much lesser extent by business and ICT services, while the import of other services was on a decline.

In 2022 the commodity exports-to-imports ratio measured 74.3%, or 84.4% if services are included, which is a slight increase relative to September,[11] but a decrease relative to end-2021, mainly because of the growth in energy imports.

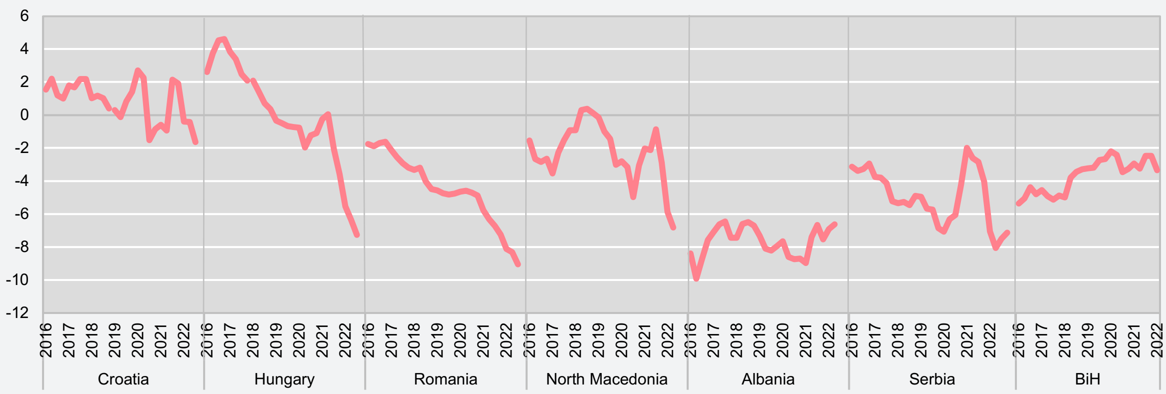
[11] Measured by the 12-month moving average.

Text box 4: Assessment of Serbia's BoP trends in 2022 and factors behind a better than expected outcome

The outbreak of the conflict in Ukraine and energy crisis led to a sharp deterioration in terms of trade for the majority of net energy importers in Europe. This included countries in our region which faced elevated costs of energy imports and consequent worsening of the balance of payments current account. With the current account deficit soaring to EUR 4.1 bn, i.e. 6.9% of GDP in 2022 (from 4.2% of GDP in 2021), Serbia was no exception.

In terms of current account categories, Serbia's deficit widened mainly on account of the increased deficit on trade in goods, which was under a strong impact of rising import prices of energy. The primary income deficit also swelled, while the growing surpluses in services trade and secondary income worked in the opposite direction.

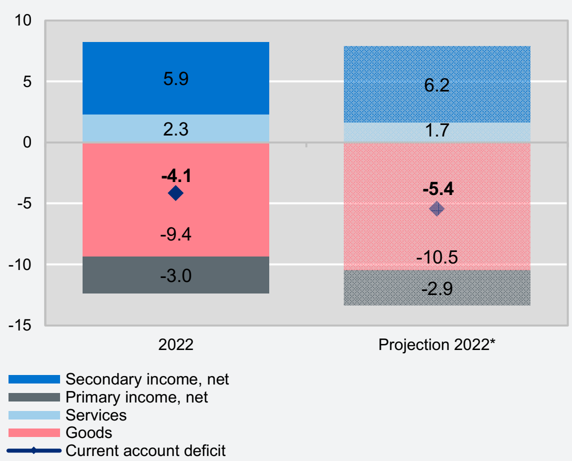
Chart O.4.1 **Current account deficit**
(in % of GDP, moving averages)



Sources: Eurostat, NBS calculation.

However, the 2022 current account deficit (EUR 4.1 bn or 6.9% of GDP) was lower than expected in the November projection (EUR 5.4 bn or around 9% of GDP). The current account deficit was projected at a time when data concluding with September were available, under the assumption of high energy imports in Q4 2022 due to the prior upswing in energy prices and global uncertainty which, coupled with the contracting external demand, were expected to drive up the trade in goods deficit. At the same time, the primary income deficit was expected to increase as a result of a continuous growth in FDI, while the rising surplus on services and secondary income was likely to partially compensate for the widening deficits on goods and primary account. We expected that commodity imports in euro terms would surge by almost 40% and exports by 29% at the annual level, with the negative terms of trade (-5.3 pp), due to import prices rising faster than export prices, bearing in mind the multiple growth in global prices of energy. Nevertheless, euro-denominated imports (34.1%) grew much less than projected, and exports (28.0%) close to what was expected. Such euro-denominated import and export movements were aided by terms of trade that turned out less unfavourable than anticipated, which resulted in a

Chart O.4.2 **Structure of the current account**
(in EUR bn)

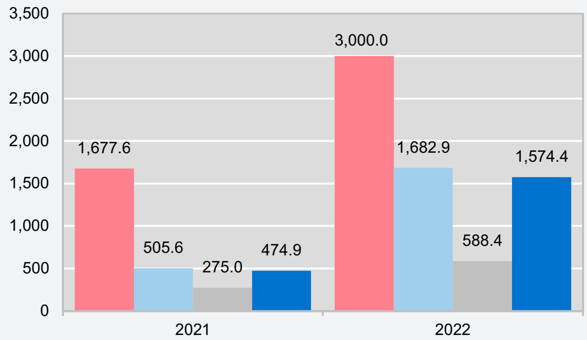


Source: NBS.
* NBS projection from November 2022.
Note: preliminary data for 2022.

lower trade deficit than initially forecast. In addition, the surplus on trade in services, which in 2022 reached its new high (EUR 2.3 bn), turned out considerably higher than expected (EUR 1.7 bn), which also contributed to the lower than projected current account deficit.

Trade in goods deficit came at EUR 9.4 bn in 2022. Since goods imports (EUR 36.3 bn) rose more sharply than exports (EUR 26.9 bn), the deficit increased by EUR 3.3 bn relative to 2021. Expectedly, the increase was mostly due to energy imports (EUR 6.8 bn), which rose by EUR 3.9 bn from 2021. Of this, EUR 2.5 bn worth of imports referred to oil, petroleum products and gas, with around 84% of the increase being attributable to price growth. Apart from energy, imports were also pushed up, though to a lesser extent, by imports of intermediary and capital goods, as well as consumer goods, thanks to a further rise in investment and the rebound in household consumption. On the other hand, even in conditions of contracted external demand, exports continued up, mainly thanks to manufacturing, and to a lesser extent mining and electricity exports, which partly offset the growth in imports. Manufacturing exports went up by 22.8%. This growth was broadly dispersed (in 22 of 23 branches) thanks to high investment into export-oriented sectors, with the key contributions coming from electrical equipment, food and chemical industry.

Chart O.4.3 **Energy imports**
(in EUR mn)

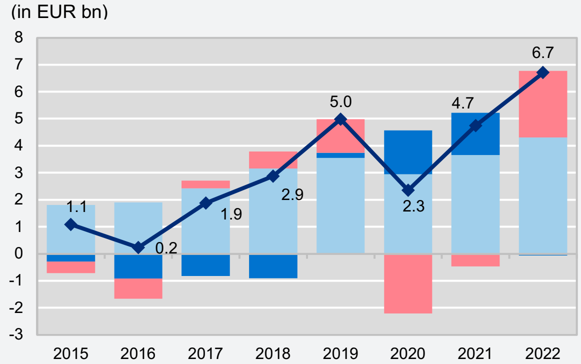


Sources: SORS and NBS calculation.

Trade in services continued up, exerting a dampening effect on the current account deficit. With the growth in exports (by 42.1% to EUR 11.1 bn) being sharper than in imports (by 37.0% to EUR 8.8 bn) and a greater share of exports in services trade, the **services trade surplus** soared to EUR 2.3 bn, marking an increase of 65.6% relative to 2021 and hitting its new record high. The exchange in all types of services expanded in 2022, with the export growth driven mainly by tourist, ICT and business services, and import growth by transport and tourist services.

The **primary income deficit** increased by 46.4%, reaching EUR 3.0 bn in 2022. The increase mainly stemmed from greater expenditure on account of FDI income, which is expected in view of the continuous inflow and rising stock of FDI in Serbia, involving also higher outlays for dividend payments. The amount of reinvested earnings was also higher, confirming investor commitment to stepping up investment in Serbia. At the same time, expenditures on account of interest paid on inter-company and financial loans went up, reflecting the tightening of global financial conditions due to more restrictive monetary policies of central banks. On the other hand, expenditures on account of portfolio investment were lower than in 2021, partly owing to borrowing under more favourable terms in the previous period and the maturing of eurobonds issued earlier at higher interest rates. On the other hand, the **secondary income surplus** increased by 33.9% to EUR 5.9 bn, moderating the rise in the current account deficit. For the most part, the increase is owed to the inflow of remittances from abroad, going up by 38.3% to EUR 5.0 bn. Despite the constant rise, the geographic composition of remittances remained stable, with around 60% coming from Germany, Switzerland, Austria, France and USA.

Chart O.4.4 **Financial account**
(in EUR bn)



Source: NBS.

As for capital flows, the balance of payments financial account continued to record positive movements, such as the ones from previous years. The year 2022 saw a net capital inflow of EUR 6.7 bn, mostly FDI and government borrowing, while the outflow was recorded under trade loans and advances.

Despite heightened geopolitical tensions and multifaceted economic crisis, which slowed down global FDI flows, **FDI inflow** to Serbia reached EUR 4.4 bn in 2022 (EUR 4.3 bn net), the highest annual inflow since FDI monitoring began and 13.6% higher than the previous record level of 2021. Thus, the trend of continuous FDI growth resumed, after being slowed only temporarily in 2020 due to the outbreak of the coronavirus pandemic. For the eighth year in a row, net FDI inflow fully covered the current account deficit (104%), contributing to the long-term sustainability of Serbia's external position. Same as in previous years, FDIs were geographically and project-diversified, with more than a half of the inflows directed at tradeable sectors, mostly manufacturing, the key export sector of the Serbian economy which is poised for robust export growth in the years to come. A favourable business climate, higher share of qualified workforce, free-trade agreements with a number of countries and continued investment in infrastructure development are factors which, along with the achieved and preserved macroeconomic stability, contributed to a continuous FDI inflow and enabled export growth in the face of slackening external demand.

In conditions of tightening monetary policies of leading central banks and the consequent rise in yields on government securities of advanced economies, investors reduced their exposure to emerging markets in 2022. Non-residents sold more securities than they bought in the secondary market, and an outflow was also registered on account of the maturing securities held by non-residents. On the other hand, in June and August foreign investors bought securities in private placement arrangements, which mitigated the outflows under sales in the secondary market and the maturing of securities and resulted in a mild net inflow on account of non-resident portfolio investment in Serbia of EUR 5.4 mn in 2022. Since residents increased their investment in foreign securities, total net outflow under portfolio investment amounted to EUR 64.4 mn.

Residents increased their borrowing from foreign creditors, so a net inflow of EUR 3.4 bn was generated under **loans** in 2022. Of this, the greatest part was government borrowing (loan from the United Arab Emirates) and a drawdown of a part of funds under SBA with the IMF, though bank and corporate borrowing also went up. On the other hand, as foreign account balances of domestic banks grew more than non-resident account balances with domestic banks, **cash and deposits** generated a net outflow of EUR 284.8 mn. In addition, **trade loans and advances** worth EUR 723.8 mn net were approved to non-residents.

Summing up all the above, we may conclude that the balance of payments trends in 2022 were more favourable than expected and that, owing to the decline in global energy prices, and despite the higher than projected FDI inflow, the current account deficit was considerably lower than projected and continued to move around the level which ensures the sustainability of Serbia's external position.

4 Economic activity

Due to lower external demand and high global cost-push pressures, economic growth decelerated to 0.4% y-o-y in Q4. A weaker agricultural season caused by unfavourable weather conditions during the summer months also contributed to the growth slowdown in H2. According to a preliminary SORS estimate, GDP growth in 2022 measured 2.3%, largely in line with our previous projection. We estimate that the construction sector also recorded a decline, while continued growth in services, albeit slower than at the beginning of the year, worked in the opposite direction.

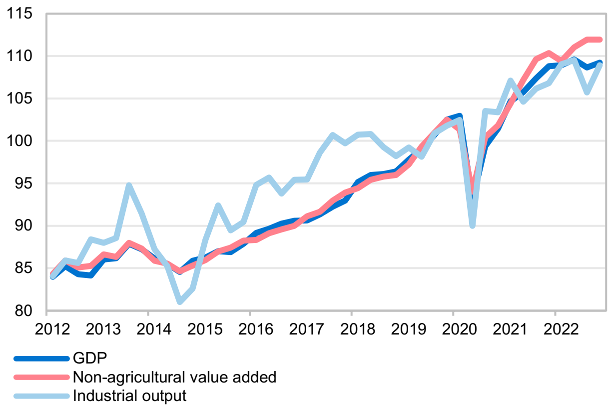
At quarterly level, following a decline in economic activity of 0.8% s-a in Q3, Q4 saw 0.6% growth s-a owing to the rise in services and industry.

According to our estimate, the largest contribution to economic growth in Q4 stemmed from **services**, with their cumulative increase amounting to around 3% y-o-y in Q4 (1.5 pp GDP contribution). This is also confirmed by the key indicators, though real retail turnover growth slowed down further to 2% y-o-y in Q4 (vs. 4.8% in Q3 and 8.8% in H1). On the other hand, the rise in tourism turnover, measured by the number of arrivals and overnight stays, accelerated in Q4, to 55.5% and 47.7% y-o-y, respectively.

According to our estimate, a positive contribution to economic activity also came from **industrial production** (0.1 pp), which grew by 0.7% y-o-y in Q4, primarily owing to the initiated recovery of the electricity sector. Namely, following the accidents in the electricity sector last year and the drought during the summer months which brought down the electricity production, in Q4 the volume of production in the electricity sector went up by 6.2% y-o-y, while the growth in the volume of production in the mining sector accelerated to 16.6% y-o-y. This offset the negative effects of the rise in global cost-push pressures and a decrease in external demand. Hence, industrial output increased despite the 2.2% y-o-y decrease in the volume of manufacturing in Q4. The activity went down in 13 out of 24 branches of manufacturing, with the largest contribution to the fall coming from export-oriented activities – production of base metals and rubber and plastic products. In addition, the food industry recorded a 2.2% y-o-y decline for the second quarter in a row. Among rising sectors, the largest contribution came from the production of machinery and equipment, as well as oil.

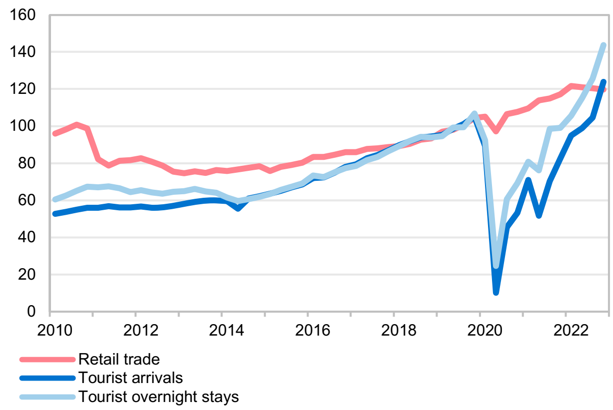
As in previous quarters, the **activity in the construction** sector continued to go down, which can be associated

Chart IV.4.1 **Economic activity indicators**
(s-a, 2019 = 100)



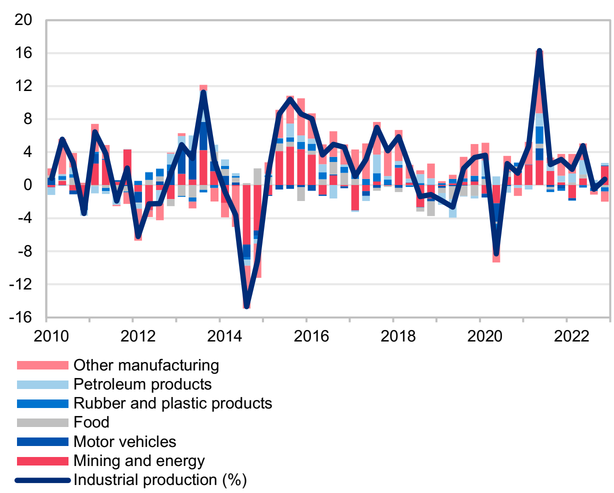
Sources: SORS and NBS calculation.

Chart IV.4.2 **Service sector indicators**
(s-a, 2019 = 100)



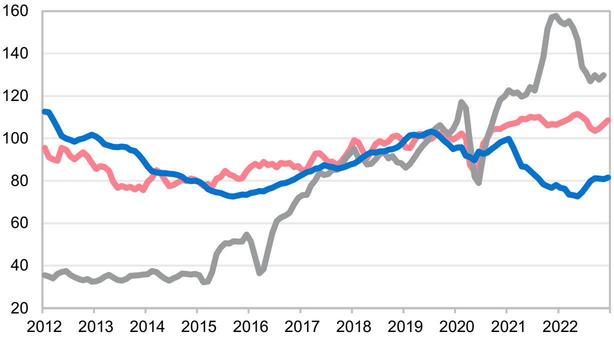
Sources: SORS and NBS calculation.

Chart IV.4.3 **Contributions to y-o-y industry growth rate**
(in pp)



Sources: SORS and NBS calculation.

Chart IV.4.4 **Construction activity indicators**
(quarterly averages s-a, 2019 = 100)



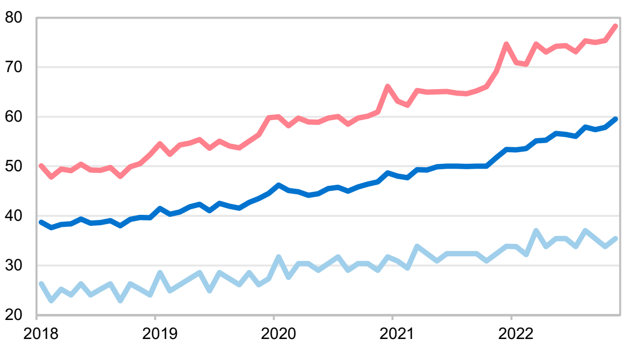
Sources: SORS and NBS calculation.

Table IV.4.1 **Contributions to y-o-y GDP growth**
(in pp)

	2021	2022			
	Q4	Q1	Q2	Q3	Q4*
GDP (in %, y-o-y)	**7.2**	**4.2**	**3.8**	**1.0**	**0.4**
Agriculture	-0.4	-0.4	-0.4	-0.5	-0.5
Industry	0.8	0.5	0.9	-0.1	0.1
Construction	0.9	-0.3	-0.4	-0.7	-1.3
Services	4.5	3.3	3.0	1.9	1.5
Net taxes	1.3	1.3	0.9	0.4	0.2

Sources: SORS and NBS calculation.
* NBS estimate.

Chart IV.5.1 **Monthly wage dynamics in Serbia**
(in RSD thousand)



Source: SORS.
Note: Since January 2018, Tax Administration data have been used for wage calculations.

with the high base last year, when the construction activity struck a record high, but also with the lofty prices of construction material. Accordingly, we estimate that in Q4, the construction decline measured around 18% y-o-y (with -1.3 pp GDP contribution). This is also indicated by the y-o-y decline in the number of issued construction permits (19.6%) in the October–November period, as well as the reduction in capital expenditures of around 3% in Q4. On the other hand, the production of construction materials went slightly up (2.3% y-o-y), while the import of construction material also increased nominally by 2.3% y-o-y, probably on account of rising import prices.

In Q4 again, net taxes provided a slight positive contribution to GDP growth (0.2 pp), partly owing to better tax collection.

In line with our expectations stated in the previous *Report*, extremely unfavourable weather conditions during the summer months reduced the yields, primarily of autumn crops. According to SORS estimate, **agricultural decline** measured 8.0% in 2022.

In quarterly terms, after a fall of 0.8% s-a in Q3, according to our estimate, economic activity went up by 0.6% s-a, thanks to the rise in services and industry (0.7% and 1.0% s-a, respectively), while the decline in the construction and agriculture sectors slowed down to 0.8% s-a.

5 Labour market developments

Favourable labour market trends continued in Q4 2022, as testified by the rising formal employment and declining unemployment which touched a new low in December. Though slower, the y-o-y wage growth remained at a double-digit level, driven by private sector wages.

Wages and labour productivity

In the October–November period, the average nominal net wage amounted to RSD 76,840 (EUR 655), with a slowdown in the y-o-y growth to 13.7% (from 14.8% in Q3). The growth remained driven by the much faster wage increase in the **private** (17.2%) than in the **public sector** (6.2%), which further narrowed the gap between wages in the two sectors to 1.07 in the first 11 months of 2022 (from 1.17 in the same period last year). In October and November, median net wage rose by 15.3% y-o-y (amounting to RSD 58,695) and exceeded

EUR 500 for the first time since we have methodologically comparable data.

October and November saw a further y-o-y rise in average wages in all **sectors of the economy**. Though at a slower pace, wages in the ICT sector[12] continued to record the highest y-o-y growth (20.6% in October and November), followed by professional, scientific, innovation and technical services (18.4%), as well as accommodation and food services (15.4%). Other services dominated by the private sector (except financial services) also recorded double-digit y-o-y growth in average wages, as did manufacturing, construction and agriculture. Branches dominantly belonging to the public sector (public administration, education and, health and social protection) also saw a continuation of the y-o-y increase in average wages.

The y-o-y increase in average wages decelerated in all **Serbian regions** – October and November saw a rise in the average wage by 14.9% in the Belgrade region, 14.4% in Vojvodina, 11.9% in Western Serbia and Šumadija and 11.8% in Southern and Eastern Serbia.

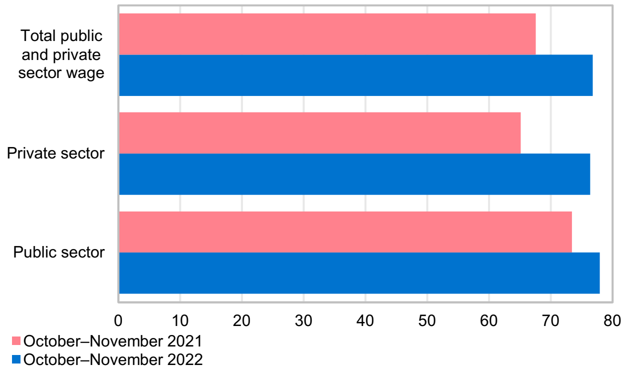
Further increases in wages and formal employment pushed up the total nominal net wage bill, as the main source of consumption, by 15.8% y-o-y in October and November.

Preliminary data suggest that **overall economic productivity** dropped by 1.9% y-o-y in Q4 on account of economic slowdown, while going up by 0.6% at the level of 2022.

Employment

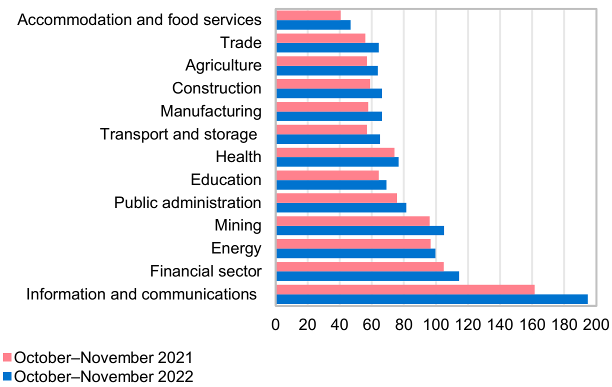
Total formal employment touched a new high in Q4 (around 2.34 million). In December there were around 79 thousand formally employed persons more than a year ago with the y-o-y increase accelerating to 2.4% in Q4 (from 0.9% in Q3). According to SORS data obtained from the Central Registry of Compulsory Social Insurance and the Statistical Business Register, such a y-o-y trend in formal employment in December was driven by further employment with legal entities (by around 67 thousand) and a higher number of private entrepreneurs and their employees (by around 14 thousand), while the number of individual farmers dropped (by around 3 thousand).

Chart IV.5.2 **Average nominal net wage**
(in RSD thousand)



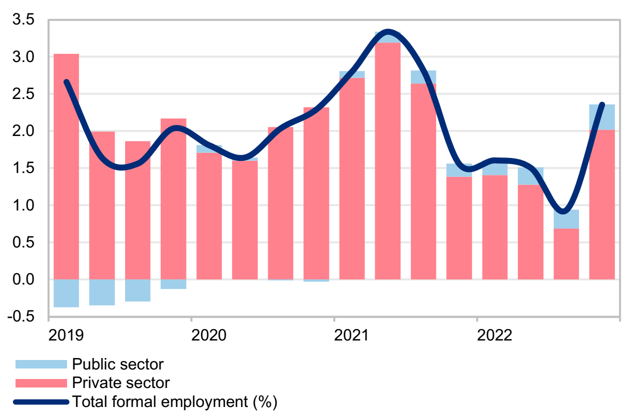
Source: SORS.

Chart IV.5.3 **Nominal net wage by economic sector**
(in RSD thousand)



Source: SORS.

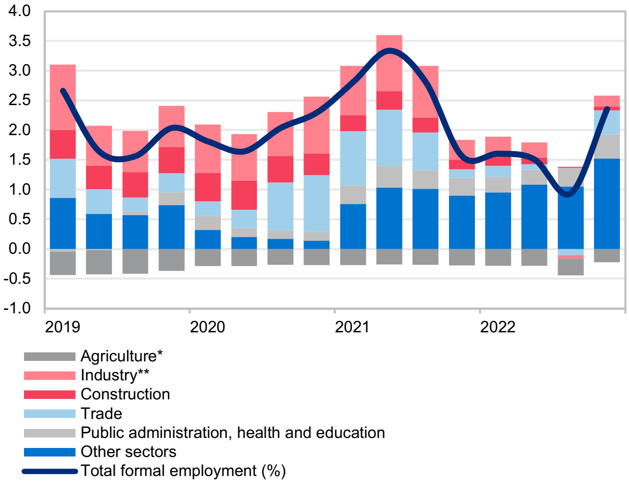
Chart IV.5.4 **Structure of y-o-y growth in total formal employment**
(in pp, quarterly average)



Sources: SORS and NBS calculation.

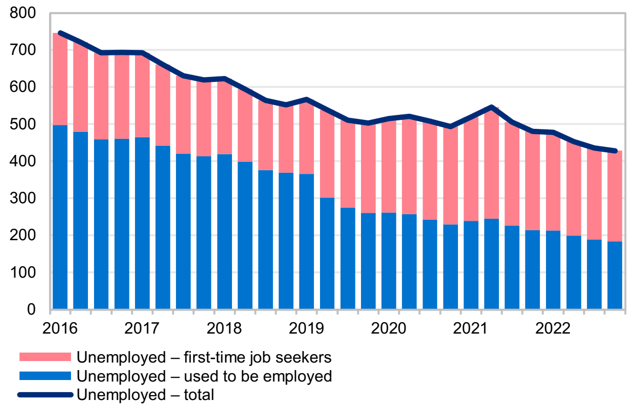
[12] Excluding wages in the ICT sector from the statistical scope, the y-o-y growth rate for the total nominal net wage in the October–November period would measure 11.9% (according to NBS calculation).

Chart IV.5.5 **Contribution to y-o-y growth in total formal employment by economic sector**
(in pp, quarterly average)



Sources: SORS and NBS calculation.
* Includes individual agricultural producers.
** Includes manufacturing, mining, energy and water supply.

Chart IV.5.6 **Movement of registered unemployment**
(in thousand persons, quarterly average)



Source: National Employment Service.

As in the previous period, the bulk of new jobs in Q4 was created in the private sector, which is why **private sector formal employment reached** a new record level of around 1.73 mn. In December around 68 thousand people more were employed than a year ago, of which the majority were registered in the ICT sector (around 17 thousand), professional, scientific, innovation and technical services (around 11 thousand), as well as wholesale and retail trade (around 8 thousand). Employment also increased in other services, manufacturing and construction, while dropping only in agriculture (by around one thousand). Owing to more flexible control of recruitment by public fund beneficiaries, December saw an increase in **public sector formal employment** by around 11 thousand y-o-y.

According to National Employment Service records, **registered unemployment equalled 427,152 in December**, which is around 50 thousand unemployed persons less than a year ago and at the same time the new lowest level on record. In December, unemployment was cut in y-o-y terms in all occupational groups in the production and services sector, though at a somewhat slower pace than in the months before. Based on Q3 data, as the latest available, the unemployment rate stood at 8.9%.

Text box 5: Assessment of Serbian labour market conditions

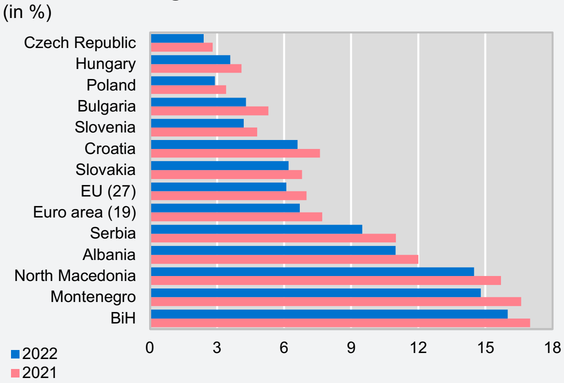
Amid continued high global inflation, mostly caused by supply-side factors, the question of the demand-side factors and labour market indicators is increasingly attracting the attention of economic policy makers. In the USA and the UK, labour market conditions have been tight for some time now and driven by both supply- and demand-side factors. Most euro area countries have also witnessed tight labour market conditions, as have CESEE countries, particularly the Czech Republic, Slovakia and Hungary, though there were signs of gradual relaxation in late 2022 as a result of a slowdown in employers' demand for labour force. **In Serbia, after a short break in the months following the declaration of the coronavirus pandemic, labour market conditions normalised rather fast, with continuation of employment growth in 2021 and 2022.** Thus, **private sector formal emplyoment** reached **record 1.7 mn** in Q3 2022, accounting for around 74% of total employment. At the same time, in H2 2022, economic activity decelerated, but so far this did not negatively affect total employment, which accelerated to 2.4% y-o-y in Q4.

In parallel with employment growth, **registered unemployment dropped** to below 430 thousand since September 2022, for the first time since we have statistically comparable data. In addition to formal sources, the revised Labour Force Survey portrays the same picture – in Q3 2022, the employment rate measured 50.8%, the activity rate 58.8%, and the working age (15–64) participation rate 71.7%, which is close to the record levels of these indicators registered in Q2. **The unemployment rate was maintained at a single-digit level of 8.9%** in Q3, a decrease by 1.6 pp from the pre-crisis level of Q1 2020 and by 12.5 pp from Q1 2010, i.e. since survey data are monitored using the comparable methodology.[1] However, the unemployment rate in Serbia is still higher than in most EU countries (Chart O.5.1), leaving room for further reductions.

According to the National Employment Service, the most demanded occupational profiles in 2022 were those in administration and ICT areas (particularly IT professionals and statisticians) and industry (particularly mechanical and textile workers), followed by construction workers and workers in transport and trade. Some of these have been shortage occupations for quite some time and for this reason Serbia, just like most European and neighbourhood countries, must import workers to fill the gap. Intensified cooperation under the "Open Balkan"[2] regional initiative, launched to provide free movement of goods, services, people and capital according to the EU model, contributes to a greater supply of labour.

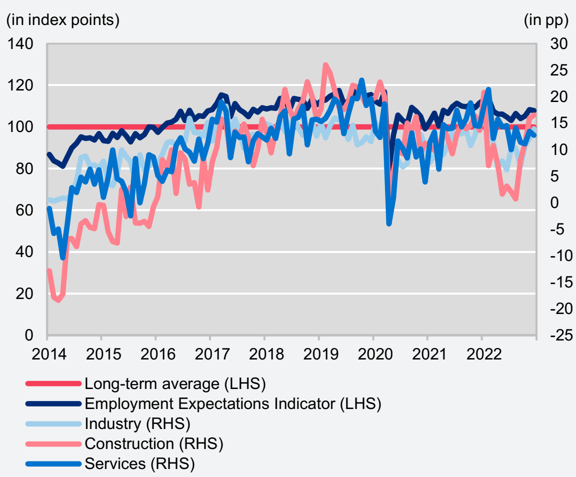
The EC survey also shows that Serbian employers expect further employment growth, as indicated by the **Employment Expectations Index (EEI) for Serbia,**

Chart O.5.1 **Unemployment rate in selected countries and regions**
(in %)



Note: Unemployment rate in Western Balkan countries respresents the average for three quarters of 2022.
Sources: Eurostat and national statistical offices.

Chart O.5.2 **Expected employment in Serbia – total and by sector**



Source: European Commission.
Note: Expected employment by sector is derived as the net percentage of employers' responses, expressed in percentage points.

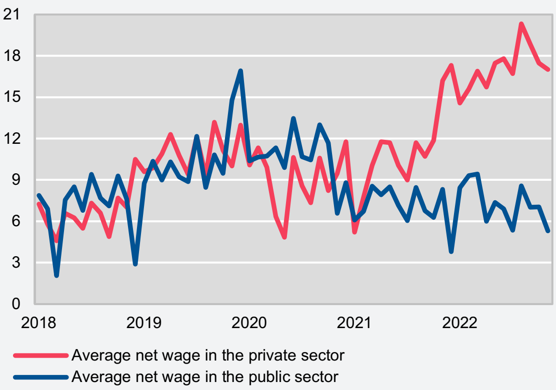
[1] Using EUROSTAT model, as of January 2021 SORS is applying a new Labour Force Survey methodology (data before 2021 have been revised).

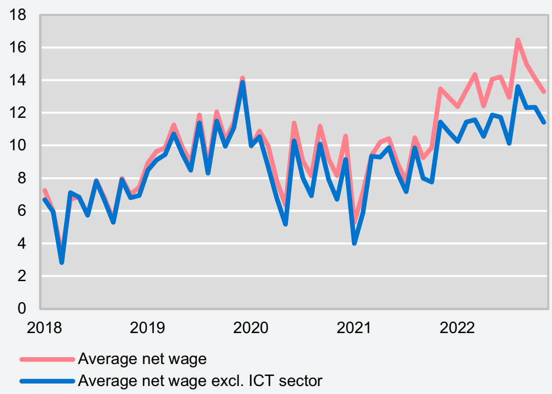
[2] At a summit between Serbia, North Macedonia and Albania, held on 21 December 2021 in Tirana, the Agreement on Conditions for Free Access to the Labour Market in the Western Balkans was signed.

which is still trending above the long-term average (which has the value of 100) and suggesting favourable labour market tendencies (Chart O.5.2). In Q4 2022, Serbian employers' expectations were more optimistic when it comes to additional employment in the coming period, primarily in industry and construction.

The average nominal net wage has also been on the rise in the previous period. At the level of the overall economy, it rose from RSD 49,650 (EUR 420) in 2018 to RSD 65,864 (EUR 560) in 2021 and went further up to RSD 74,078 (EUR 631) in the January–November 2022 period (latest available data). At the same time, the coverage of the average consumer basket with the average wage increased to 86.0% (from 84.7% in the first eleven months of 2021 and 76.3% in the 2018-2020 period), indicating increased purchase power. Furthermore, **in 2021 and 2022, private sector average wages were rising faster than those in the public sector** (Chart O.5.3).

Chart O.5.3 **Monthly dynamics of nominal wages in Serbia**
(y-o-y rates, in %)





Sources: SORS and NBS calculation.
Note: As of January 2018, wages are calculated based on Tax Administration data.

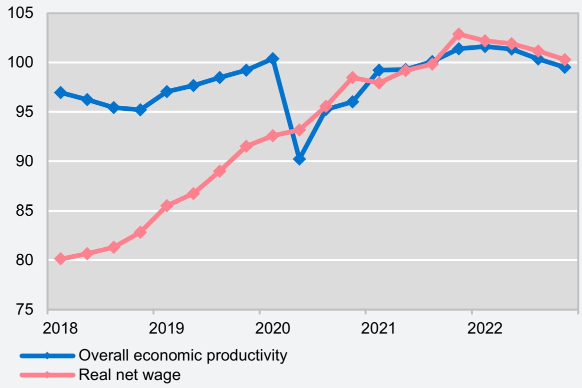
The average wage growth was accompanied by the dynamic economic growth in Serbia, which created room for sustainable wage increases in all sectors of the economy. It should be noted that a **relatively high y-o-y rise in nominal net wage in the recent period** (13.9% on average from January to November 2022) **was dominantly driven by the robust growth in nominal wages in the ICT sector**, which have been significantly higher than wages in other economic sectors for some time now. This is largely a result of a striking demand for this profile, and partly of the base effect, which is a consequence of the legal inclusion of inflows from abroad through Tax Return for Withholding Tax (aimed at curbing the grey economy in our country), which serves as the source of data on average wages. Excluding the average wage in the ICT sector from the statistical scope (Chart O.5.3), the y-o-y growth in nominal net wages in the remainder of the economy is more moderate and equalled 11.6% on average in the January–November period (according to NBS calculation), which is close to average inflation in 2022 (11.9%, according to SORS estimate) and an indicator that stronger inflationary pressures do not stem from the demand, but are primarily driven by factors on the supply side.

In addition, wage growth in Serbia was also accompanied by the increase in overall economic productivity (Chart O.5.4) as the economy grew at a much faster pace than employment, which testifies to the fact that **conditions in the domestic labour market still do not give rise to any major inflationary pressures** and that there is no generation of the wage-inflation spiral on this account.

For the purpose of integral overview and comparison, the **previously analysed labour market performances are graphically presented in the so-called radar diagram or spider chart**. After appropriate statistical data processing, the selected labour market indicators (total of 12) are presented by the value of their cumulative distribution and then normalised so that the *maximum* value of each indicator is 100, *minimum* value is zero, and median value 50, i.e. between the first and third quartile. Reduced to the common measurement scale expressed in quartiles, the obtained values were observed in three selected time periods – Q4 2014, Q1 2020 and Q3 2022, on a single set of data from Q1 2014 to Q3 2022.[3] What can be observed on the radar diagram is that the key indicators of the formal labour market, labour force engagement and wages improved considerably in between the observed periods, with the exception of employment plans, which are somewhat less favourable in late 2022 and early 2023 in the global polycrisis environment than in early 2020.

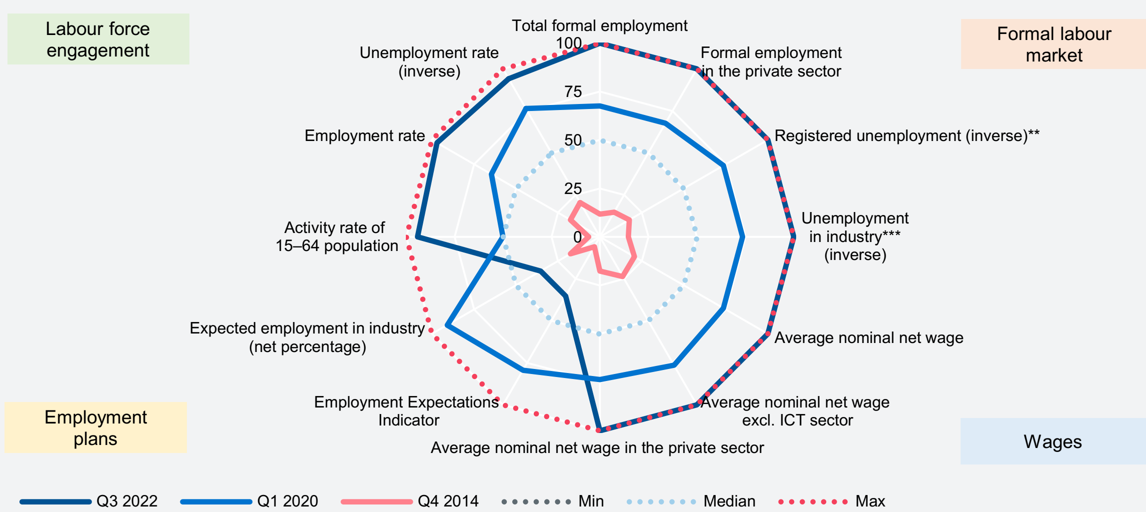
Given the above, it can be concluded that labour market indicators are improving, and that so far they have not been greatly affected by the economic slowdown in H2 2022, but also that it can still not be said that labour market conditions are tight and generating more pronounced inflationary pressures on the demand side.

Chart O.5.4 **Wages and overall economic productivity**
(quarterly, s-a, 2021 = 100)



Source: European Commission.
Note: An estimate of overall economic productivity is given for Q4 2022, while the wage data relate to October and November.

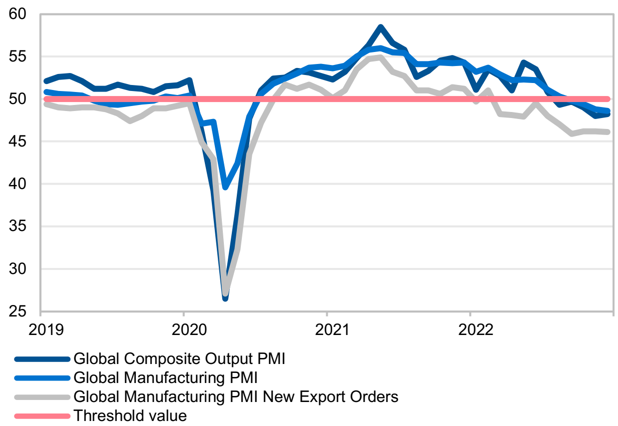
Chart O.5.5 **Radar diagram of the Serbian labour market* in selected periods**



Sources: SORS, NBS, National Employment Service and European Commission.
* Selected labour market indicators are shown as quarterly averages.
** All unemployment indicators are intentionally shown as inverse, given that higher values on the scale point to improvement and lower values to deterioration of performance.
*** Unemployment in the sector of industry includes occupations in the following areas: geology, mining and metallurgy; machine engineering and metal processing; electrical engineering; chemistry, non-metals and graphic engineering; textile and leather.

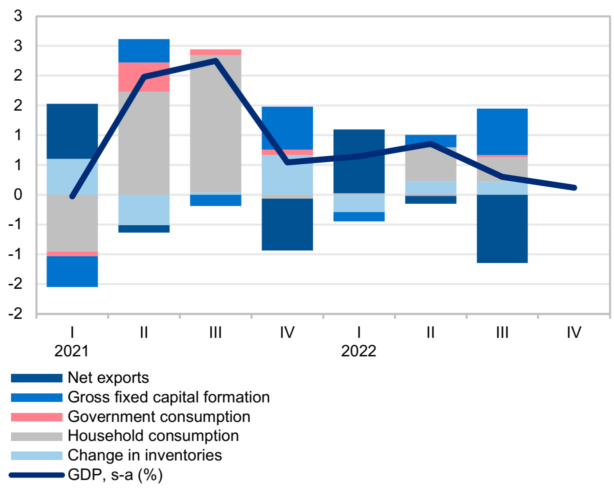
[3] Last quarter of 2022 was not covered as the Labour Force Survey is published later than other labour market data.

Chart IV.6.1 **Dynamics of leading global economic activity indices – PMI indices**
(in index points)



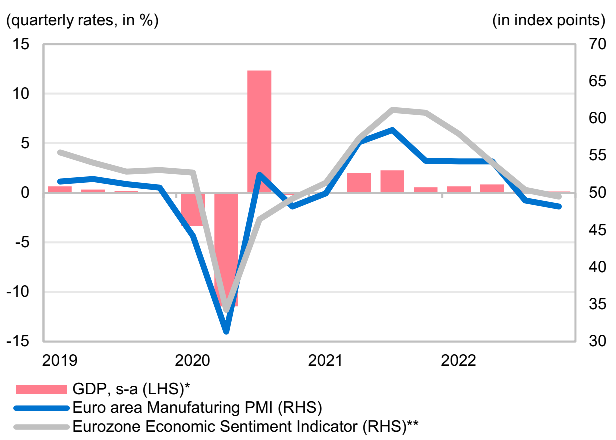
Sources: J.P.Morgan and S&P Global.

Chart IV.6.2 **Contributions of components to the real GDP growth rate in the euro area**
(quarterly, in pp)



Source: Eurostat.

Chart IV.6.3 **Movement of real GDP and leading indicators for the euro area**



Sources: Eurostat, S&P Global and European Commission.
* Eurostat's preliminary flash estimate for Q4 2022.
** ESI is standardised relative to PMI. Threshold value is 50 points (above means expansion, below – contraction).

6 International environment

Rising global inflation during the past year warranted fast and synchronised monetary policy tightening by central banks, which reflected on deterioration of global financial conditions and weakening of global economic growth.

Still, economic performance in the majority of advanced and emerging and developing countries was better than expected in H2 2022, notably in the USA and the euro area, which have dodged recession for now, while the opening of the Chinese economy increased prospects for recovery to unfold faster than forecast.

Economic activity

The rising global inflation and accelerated tightening of monetary and financial conditions (notably during H2), diminishing financial stimuli and frequent disruptions in energy supply to Europe, as well as uncertainty over the consequences of the Ukraine conflict and amplified geopolitical tensions resulted in a **significant slowdown in global economy**, from 5.9% in 2021 **to 2.9% in 2022** (according to the World Bank's January estimate). In its January WEO, the **IMF came out with a 3.4% global growth estimate in 2022**, noting that despite adverse circumstances, the majority of advanced and emerging and developing countries maintained sound economic activity in Q3, though its pace weakened again during Q4 (except in the USA), judging by the dynamics of leading indicators.

Amid elevated inflation and tightened financial conditions, which diminish real household income and raise corporate costs, **euro area economic growth**[13] slowed its s-a growth significantly – from 0.9% in Q2 to 0.3% in Q3 (i.e. 2.4% y-o-y). The achieved s-a growth of GDP in Q3 was driven by an increase in domestic demand (contribution 1.4 pp), notably investments in fixed assets and household consumption, while a fall in net exports worked in the opposite direction (contribution -1.1 pp). **GDP growth in Italy and Germany**, our important trade partners, equalled 0.5% s-a each in Q3, mostly propped by household consumption.

Under the impact of elevated uncertainty over the consequences of the Ukraine conflict, the energy crisis, tighter financing conditions and weakening of global economic activity, in December the **ECB** assessed that

[13] As of 1 January 2023, the euro area includes Croatia, therefore the data refer to a total of 20 countries.

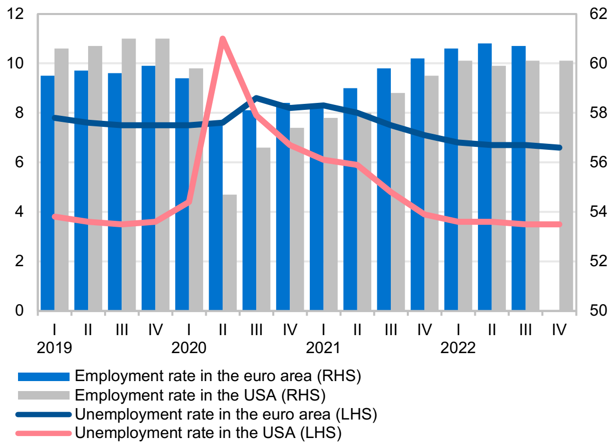
the euro area could go into economic contraction in Q4 2022 and Q1 2023. Still, according to the ECB's estimates and the dynamics of leading indicators (Composite PMI and ESI) during Q4, the recession should be short-term and mild. Favourable labour market conditions, the high level of accumulated household savings during the pandemic and additional fiscal measures for offsetting the adverse effect of higher energy prices on consumers and corporates should work in the same direction. In December, the ECB estimated euro area's GDP growth at 3.4% for the whole of 2022 (0.3 pp above the September projection due to better than expected results in H1). In contrast to the prevailing expectations, according to Eurostat's preliminary flash estimate, euro area's GDP rose 0.1% in Q4 in s-a terms, while in Germany and Italy it edged down 0.2% and 0.1% respectively.

The euro area labour market is still characterised by positive tendencies, as seen by the reduction in the unemployment rate to 6.6% in December (new lowest level), as well as the increase in the number of the employed by around 3 mn persons in Q3 relative to the pre-pandemic level. Given the still pronounced workforce demand and supply gap, the ECB estimates that a wage increase should help preserve consumption and prevent a major slump in the euro area's purchasing power. However, the expected economic contraction will most likely slow down the pace of new job creation and employment.

After falling for two consecutive quarters, whereby it practically entered technical recession, the **US economy** recorded growth of 0.8% s-a in Q3 (3.2% annualised), attributable to an increase in net exports and consumption (with an aggregate contribution to GDP of 1.3 pp), while total investments were on a decline (-0.5 pp contribution to GDP). Though leading US ISM Manufacturing PMI dropped into the contraction zone at end-Q4, mostly under the impact of a decline in new orders and production volume, in December the Fed nevertheless came out with an assessment of modest GDP growth in Q4. According to a preliminary estimate of the Bureau for Economic Analyses, US economic growth in Q4 equalled 0.7% s-a, while at the level of 2022, it was estimated at 2.1%.

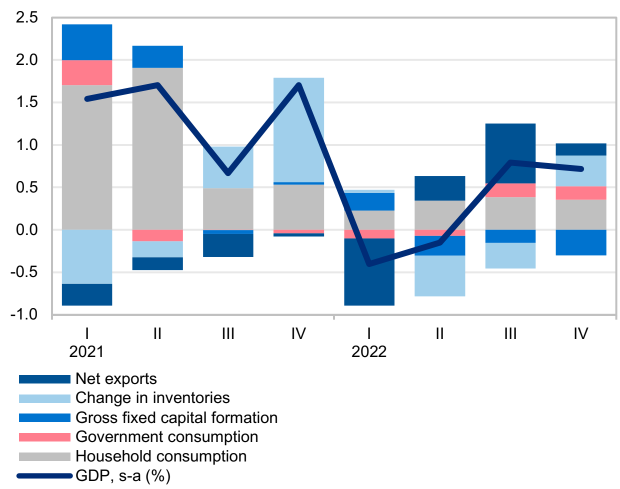
Tight conditions in the **US labour market** were loosened slightly in October and November, only to return to the level from Q3 already in December, as seen by the rates of unemployment, employment and participation being the same as in September (3.5%, 60.1% and 62.3%

Chart IV.6.4 **Movement of employment and unemployment rates in the euro area and the USA**
(s-a, end-of-quarter, in %)



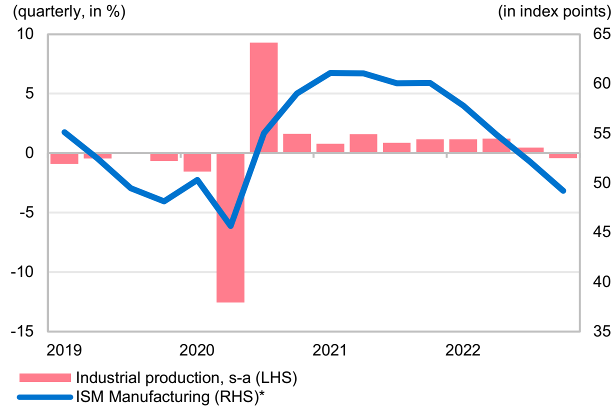
Sources: Eurostat and U.S. Bureau of Labor Statistics.

Chart IV.6.5 **Contribution of components to the real GDP growth rate in the USA**
(quarterly, in pp)



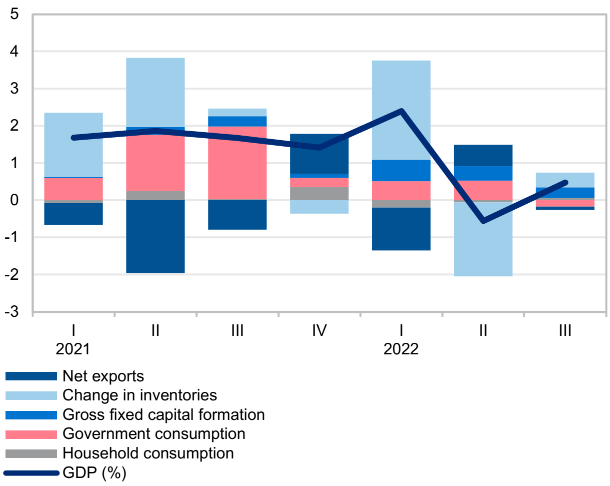
Sources: U.S. BEA and NBS calculation.

Chart IV.6.6 **Movement of selected economic indicators for the USA**
(quarterly, in %) (in index points)



Sources: Federal Reserve Bank of St. Louis and Institute for Supply Management.
* Threshold value is 50 points (above means expansion, below – contraction).

Chart IV.6.7 **Contributions to y-o-y real GDP growth rate in CESEE region***
(quarterly, in pp)



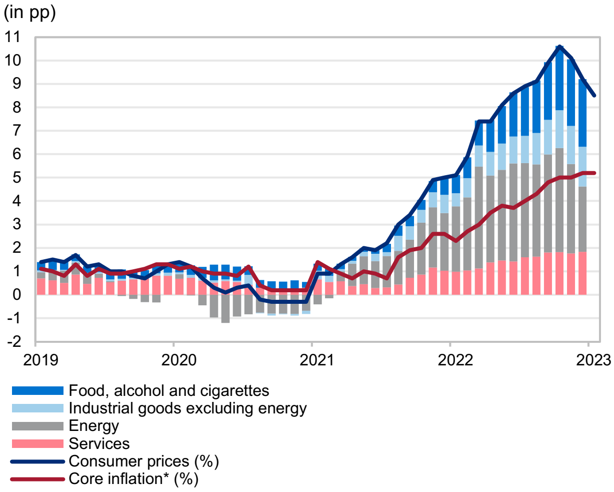
Source: Eurostat.
* Including Bulgaria, Czech Republic, Croatia, Hungary, Poland, Romania, Slovenia and Slovakia.

respectively). In addition, the number of vacancies (non-farm) in Q4, though somewhat lower than in Q3, was by around 3.5 mn above the pre-pandemic level (February 2020), and the average nominal wage in the private sector continued to rise.

At the level of the **CESEE region**, Q3 saw GDP growth of 0.5% s-a (i.e. 3.6% y-o-y), dominantly thanks to a rise in total investments and a slight increment in government consumption (aggregate contribution of 0.75 pp), while household consumption and net exports were on a decline (aggregate contribution of -0.25 pp). Despite amplified geopolitical tensions, slowdown in euro area economic growth and two-digit inflation, in December the Consensus Economics estimated that countries in the region recorded good results in Q3, mostly owing to the pronounced resilience of the labour market which contributes to the preservation of domestic demand. However, early indicators show a weakening of economic activity in Q4, which will probably continue into H1 2023 against the backdrop of existing global recessionary pressures and tightening of financial conditions in the international environment.

According to a preliminary estimate of the National Bureau of Statistics, **China's economic growth** stagnated in Q3 in s-a terms, while y-o-y it slowed to 2.9%. At the level of 2022, GDP growth is estimated at 3.0%. In its January report, the World Bank came out with an even lower estimate (2.7%), stating that China's economic activity lost significant steam during 2022 due to the implementation of the zero-tolerance policy to COVID-19, the consequences of an unprecedented summer drought, as well as recurring problems in the real estate sector which are having a restricting effect on production, consumption and investments.

Chart IV.6.8 **Contributions of HICP components to y-o-y inflation in the euro area**
(in pp)



Sources: Eurostat and NBS calculation.
* HICP excluding energy, food, alcohol and cigarettes.

Inflation movements

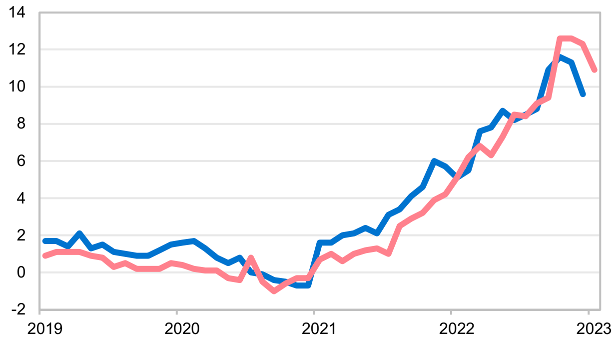
Global cost-push pressures, which were widely distributed by products and service during 2022, began to subside at end last year in an environment of lower energy prices, gradual resolution of halts in global supply chains and central banks' restrictive monetary policies.

Upon touching its historical high in October, **euro area inflation** slowed down its y-o-y growth initially to 10.1% in November and then to 9.2% in December 2022, primarily thanks to the much slower growth in energy prices (25.5% y-o-y in December), under the impact of the effects of high last year's base and lower prices of oil and natural gas in the European market, as well as a series of introduced administrative caps on energy prices. Faster y-o-y growth in food prices during Q4, notably processed food, acted in the opposite direction, while higher prices of services and industrial products (excluding energy) dictated further growth in **euro area's core inflation** (5.2% y-o-y in December). Measured by the change in the HICP, **inflation in Germany** decelerated to 9.6% y-o-y in December, dominantly due to the slower increase in energy prices, under the impact of government subsidies for heating bills, in effect as of September. In December, **inflation in Italy** measured 12.3% y-o-y, slightly lower than in the previous two months, though still above the Q3 level. According to the **ECB's** December estimate, inflationary pressures in the euro area were mitigated at end-2022 in conditions of the gradual resolution of halts in supply and dampened consumer demand. Nevertheless, it assessed that these factors are still having an inflationary effect, coupled with the high costs of food and energy production and the effects of the euro depreciating against the dollar in the previous period. According to the Eurostat's preliminary flash estimate, y-o-y inflation in January equalled 8.5% in the euro area and 10.9% in Italy.

Headline inflation in the USA (measured by changes in the CPI) continued to slow during Q4 and in December measured 6.5% y-o-y, its lowest level since October 2021. Almost all CPI components (except services) contributed to inflation slowing down, notably significantly lower y-o-y growth in energy prices (7.3% in December), where the effect of the high base from the corresponding period last year was evident. The prices of products, especially used and new automobiles, also slowed down their y-o-y growth during Q4, thus contributing to a deceleration in **core inflation** (excluding food and energy prices) to 5.7% y-o-y in December. The additional hike in the prices of services during Q4, notably housing costs, acted in the opposite direction. In December the **Fed** estimated that US inflation, though slower, is still elevated as a consequence of steady imbalance between supply and demand since the outbreak of the pandemic, and the still high prices of food and energy, which are reflected in other prices and make inflationary pressures widely dispersed.

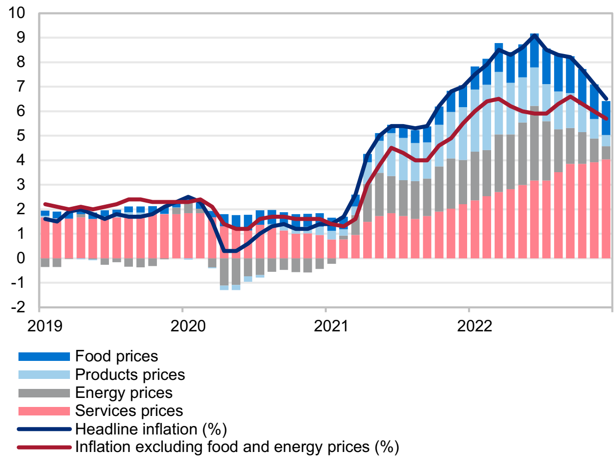
In observed **CESEE region countries**, headline inflation recorded diverging movements during Q4. Y-o-y inflation in **Hungary** stayed on the upward path during Q4, reaching 24.5% in December on account of the hike in the prices of petroleum products, from which the administrative cap was lifted in early December. At the same time, slower y-o-y growth in petroleum product prices was recorded in **Romania**, thanks to which y-o-y inflation decelerated to 16.4% in December. Still, in both countries y-o-y inflation in Q4 trended at a higher level than in Q3 amid continued growth in food prices within

Chart IV.6.9 **HICP for Germany and Italy**
(y-o-y rates, in %)



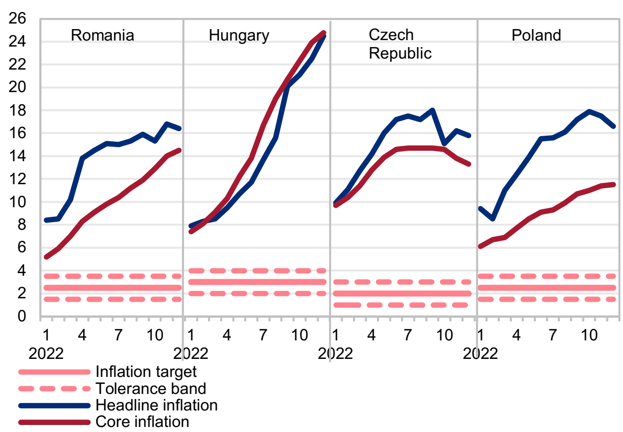
Source: Eurostat.

Chart IV.6.10 **Contributions of ICP components to y-o-y inflation in USA**
(in pp)



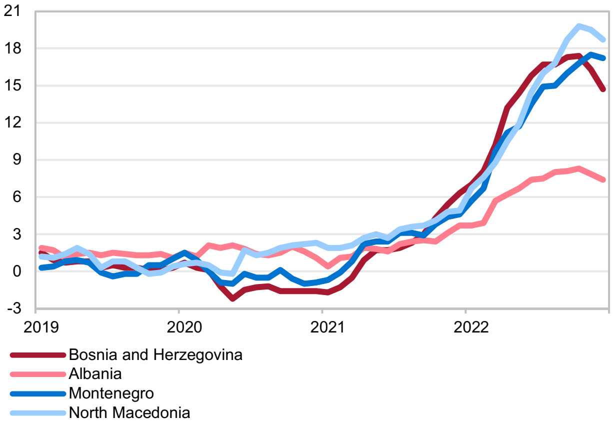
Sources: U.S. Bureau of Labor Statistics and NBS calculation.

Chart IV.6.11 **CPI movements in selected CESEE countries in the previous year (until December 2022)**
(y-o-y rates, in %)



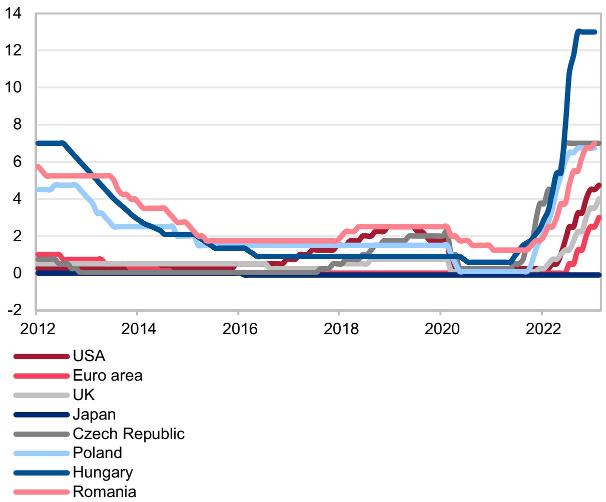
Sources: Central banks of selected countries.

Chart IV.6.12 **CPI movement in Western Balkan countries**
(y-o-y rates, in %)



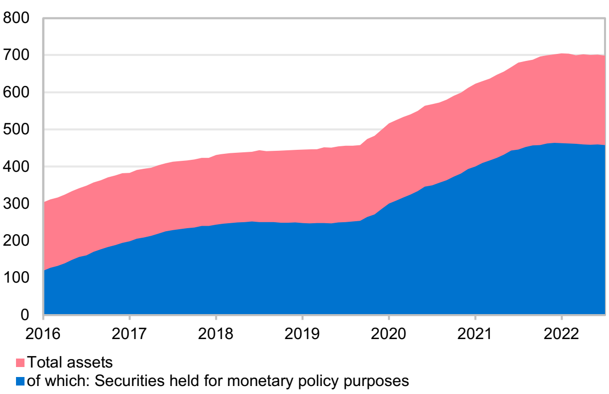
Sources: State statistical bureaus.

Chart IV.6.13 **Policy rates across selected countries**
(p.a., in %)



Sources: Central banks of selected countries.

Chart IV.6.14 **Total ECB assets**
(end-of-month, in EUR bn)



Source: ECB.

core inflation. Y-o-y inflation in the **Czech Republic** struck a downward path in October and December, slowing to 15.8% in December on account of the lower prices of petroleum products. At the same time, from October until end-2022, administrative measures were in place that pertained to the prices of electricity and natural gas, without which, the statistical office assumes, inflation in the Czech Republic in November and December would have been much higher (by around 3.5 pp). As of November, y-o-y inflation in **Poland** slowed down (to 16.6% in December), on account of mitigated growth in the prices of electricity, gas and other fuels. According to the January assessment of Consensus Economics' analysts, in most CESEE region countries, though slowed, inflation will remain elevated for a while longer.

In countries of the **Western Balkan region**, inflation also recorded diverging movements during Q4. In Albania and Bosnia and Herzegovina y-o-y inflation slowed down as of October and equalled 7.4% and 14.7%, respectively, in December. In North Macedonia y-o-y inflation in December rose to 17.2%, while in Montenegro it remained at the September level of 18.7%.

Monetary policy

The **ECB** continued with monetary policy tightening during Q4 and in 2023, and in the meeting at end-October it raised its main interest rates by 75 bp, while in December 2022 and February 2023 the hikes were more moderate (50 bp each). As of July 2022, when the cycle of tightening began, the main refinancing rate was raised five times, by a total of 300 bp and in February it came at 3.00%, while lending and deposit facilities rates equalled 3.25% and 2.50%, respectively.

The ECB announced the beginning of normalisation of the asset purchases as of March 2023 by downsizing the balance sheet at a monthly pace of EUR 15 bn. The decline in assets pertains to the **APP** and it implies that the principal payments from maturing securities purchased within the APP will no longer be reinvested. The same pace of asset downsizing is envisaged for Q2 2023, and if it turns out that markets are handling the QT well, the amount of the decline can be increased. The **PEPP** will not change for now, i.e. the principal payments from maturing securities purchased under the programme will be reinvested until at least the end of 2024, with careful management of the PEPP portfolio to avoid interference with the appropriate monetary policy stance.

Amid abrupt growth in banks' profitability in conditions of elevated interest rates, in the October meeting the ECB

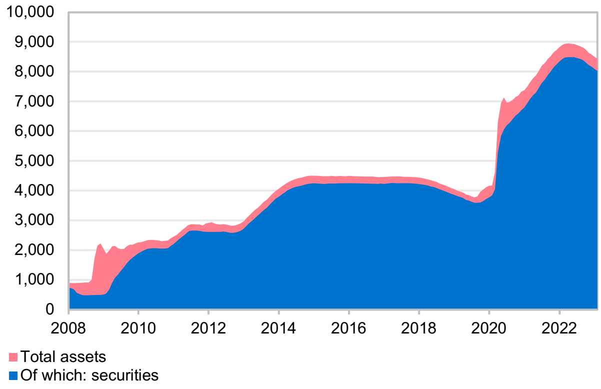
Governing Council decided that remuneration of allocated reserve requirements be calculated at the deposit facility rate as of December, instead of the main refinancing rate, as before. For the same reason, as of November, the interest rate on **targeted longer-term refinancing operations** (TLTRO III) will be indexed to the ECB's applicable key rate (instead of the previous average of the key rate over the entire loan repayment period), which drove interest rates on these loans up by more than 2 pp. Also, the ECB offered the possibility of additional early repayments of securities within this programme.

The **Fed** widened its federal funds rate range additionally in November by 75 bp, while the following increases were more moderate – by 50 bp in December and by 25 bp in February 2023. Thus, since March 2022, the federal funds rate was raised eight consecutive times by a total of 450 bp, to 4.50–4.75% in February. The Fed explained that the continuation of monetary policy tightening was mandated by further strengthening of labour market indicators, with inflation remaining elevated. FOMC members estimated that developments in Ukraine also affect the rising inflation and burden global economic activity.

The **Bank of England** lifted its policy rate by 75 bp in November and by 50 bp each in December 2022 and February 2023. Thus, after ten straight increases since December 2021, the policy rate equalled 4.0% in February, its maximum level since 2008. In addition, in November the Bank of England also launched the direct sale of government bonds from its portfolio whereby it became the first among leading central banks not to rely on maturing securities alone when downsizing its balance sheet. The central bank of **Switzerland** also raised its policy rate further in December (by 50 bp to 1.00%), with a possibility of further hikes at upcoming meetings.

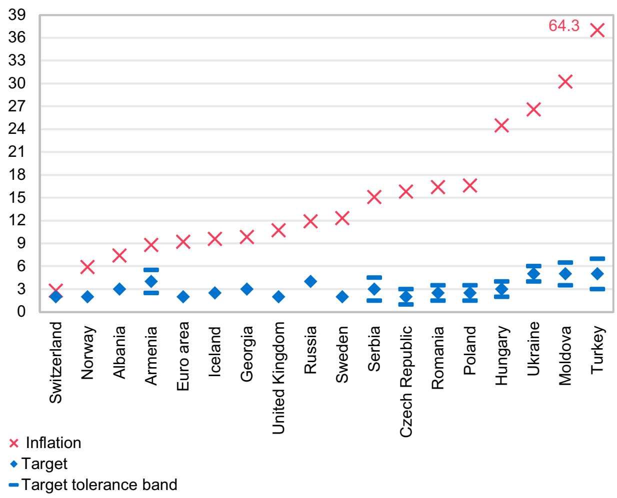
After significant hikes in the past period, many inflation-targeting central banks in the CESEE region kept their policy rates unchanged during Q4 2022 and in early 2023. The central bank of the **Czech Republic** held its rate at the June level (7.0%), and the central bank of **Poland** at the September level (6.75%). The **Hungarian** central bank also kept its rate the same as in September (13.0%), but it used other instruments to achieve monetary policy tightening. As of October, it applies higher reserve requirement rates of at least 5% (compared to the previous 1%), which may go up to as much as 10%. Also, the interest rates corridor was widened by lifting the lending facilities rate by 950 bp to 25.0%, and a decision was made to hold one-day FX swaps and overnight deposit quick tenders at higher interest rates than before. Moreover, in order to alleviate pressure on the forint, the central bank announced that in the coming months it would cover FX

Chart IV.6.15 **Fed's total assets**
(monthly average, in USD bn)



Source: Fed.

Chart IV.6.16 **Inflation and target by country in December 2022**
(p.a., in %)



Sources: Eurostat and central banks of selected countries.

Table IV.6.1 **Inflation, policy rates and inflation targets by country**
(in %)

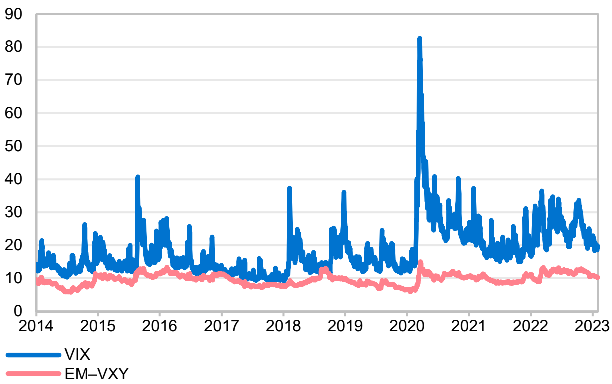
Central bank	Inflation*	Inflation target	Policy rate**
Poland	16.6	2.5 ± 1.0	6.75
Czech Republic	15.8	2.0 ± 1.0	7.00
Hungary	24.5	3.0 ± 1.0	13.00
Romania	16.4	2.5 ± 1.0	7.00
Turkey	64.3	5.0 ± 2.0	9.00

Sources: Central banks of selected countries.
* CPI, y-o-y rates in December 2022.
** Latest available data.

needs pertaining to energy import. Only the central bank of **Romania** continued to raise its policy rate, by 75 bp in October, 50 bp in November and 25 bp in January 2023, to 7.0%. Thus, the policy rate was lifted eleven times since October 2021, reaching its highest level since 2010.

Despite strong inflationary and depreciation pressures, the central bank of **Turkey** trimmed its policy rate further in October and November, each time by 150 bp, to 9.0%, after which it announced that the cycle of policy rate cuts is concluded. During 2022, the policy rate was trimmed four times, by a total of 500 bp.

Chart IV.6.17 **Implied volatility of the global financial market***



Source: Bloomberg.

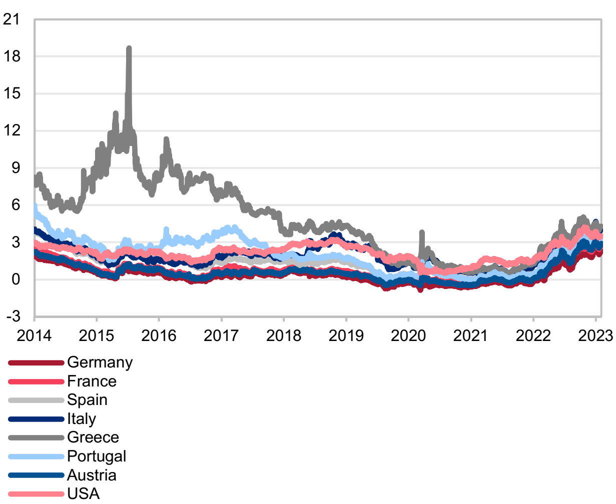
* VIX (Chicago Board Options Exchange Market Volatility Index) measures implied volatility of the S&P 500 index; EM–VXY (J.P. Morgan emerging markets implied volatility index) measures aggregate volatility of emerging market currencies based on three-month forward options.

Financial and commodity markets

Global weakening of inflationary pressures triggered by a decline in energy prices, gradual resolution of issues in global supply chains, with loosening containment measures in China earlier than expected helped alleviate uncertainties in the international financial market to a degree. In this regard, the **implicit measure of financial market volatility (VIX)** declined during Q4 by 10.0 pp to 21.7%. At the same time, **EM–VXY index, which indicates the volatility of currencies of emerging economies**, dipped by 1.5 pp, measuring 10.9% at end-December 2022.

Yields on ten-year government bonds of the majority of advanced economies on average gained around 0.4 pp during Q4, significantly less than in first three quarters of 2022, when yields on this type of securities rose by around 0.9 pp on average. In contrast, yields on ten-year bonds of countries in the region edged down mildly during Q4, thanks to either a lack or a smaller degree of monetary policy tightening by their central banks compared to prior quarters.

Chart IV.6.18 **Yields on ten-year bonds of euro area countries**
(daily data, in %)



Source: Bloomberg.

Amid the expected deceleration of economic activity in the USA and the loosening of inflationary pressures, the prevailing sentiment in the markets is that the Fed would tighten its monetary policy more slowly, while statements by ECB officials speak in favour of further tightening of monetary conditions in a similar volume for the following several months. Coupled with increased investor risk propensity, the anticipated and quite considerable monetary policy tightening by the ECB and Fed worked towards the depreciation of the dollar against the euro, as well as against other leading currencies in the international financial market in Q4.

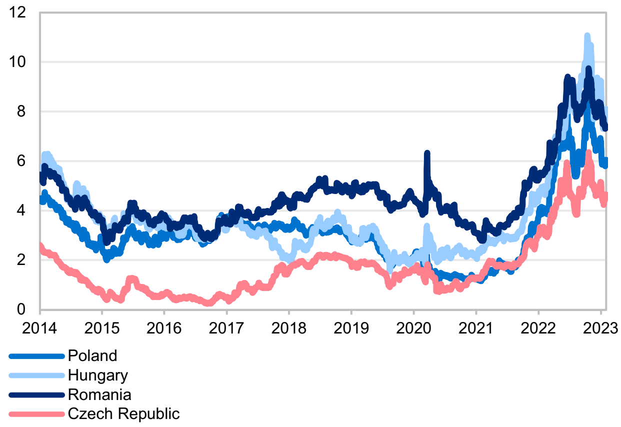
The **global price of oil** trended upward in October, reaching around USD 93 per barrel amid the EU's announcements on capping the price of Russian oil as of December and Russia's response that it would not sell oil to countries that accept the price cap plan, as well as the decision by OPEC+ to decrease output by more than 2 mn barrels a day and the possibility that China, as the world's largest crude oil importer, will loosen its counter-pandemic measures. The same factors drove up the price of oil in early November; thereafter, with the impact of unfavourable global economic prospects, the change of Russia's focus towards Asian markets and increased crude oil inventories in the USA, as well as the fact that Russian oil supply to the EU via the Druzhba pipeline resumed, the price of oil declined by end-Q4 when it reached around USD 85 per barrel. In quarterly terms, the global price of oil in Q4 was lower than in Q3 by around 10.9% on average, though in y-o-y terms it was 11.2% higher. Although the oil price was on an upward trajectory since the second week of January, at the end of the month it was almost at the same level as at end-2022 (USD 85 per barrel) owing to the lifting of China's zero-tolerance policy to coronavirus.

Thanks to favourable weather conditions, coupled by full inventories in gas storage facilities, the **benchmark price of natural gas for Europe** (Dutch TTF hub) continued down during October, reaching around EUR 21 per MWh in early November (equivalent to around USD 224 per 1,000 m^3 of gas by the end of the month).[14] Afterwards, and seasonally common, it posted growth to around EUR 148 per MWh in early December, only to edge down to around EUR 76 per MWh (i.e. around USD 790 per 1,000 m^3 of gas). Thus, the price of gas in Q4 was around 52.5% lower on average than in Q3, though still significantly higher than pre-crisis (for years, the price of gas was very stable and until mid-2021 it averaged around EUR 20 per MWh). The fall in the price of natural gas continued in January, as storage facilities remained full due to the unusually warm weather, therefore at the end of the month it measured around EUR 58 per MWh.

Favourable weather conditions, increased output of electricity from renewable sources and subdued demand in October on account of unusually warm weather led to a decrease in the **benchmark price of electricity for Europe (at the German exchange)** to around EUR 78 per MWh. In the remainder of Q4 the price of electricity reflected the dynamics of the benchmark natural gas price, coming at around EUR 436 per MWh in mid-December, after which it struck a downward path until the end of the month. The price of electricity in the Hungarian exchange, relevant for the domestic market,

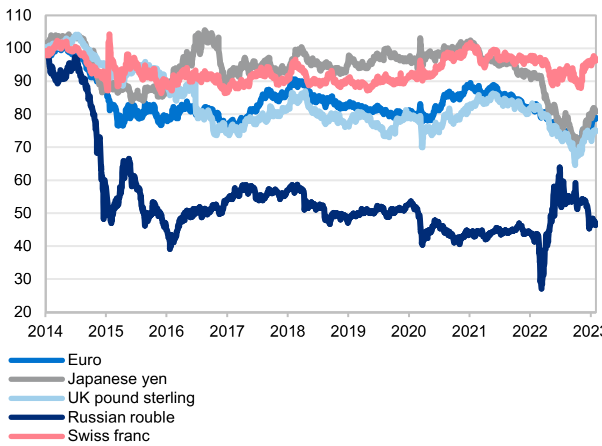
[14] The price expressed in dollars per one thousand cubic metres of gas was calculated based on the production price of gas expressed in MWh, the EUR/USD exchange rate and an appropriate coefficient (10.55 MWh ≡ 1,000 m^3).

Chart IV.6.19 **Yield on ten-year bonds by country (in local currency)**
(daily data, in %)



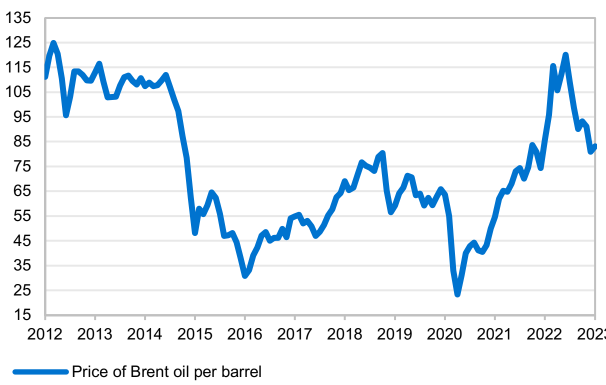
Source: Refinitiv.

Chart IV.6.20 **Exchange rates of selected national currencies against the dollar***
(daily data, 31 December 2013 = 100)



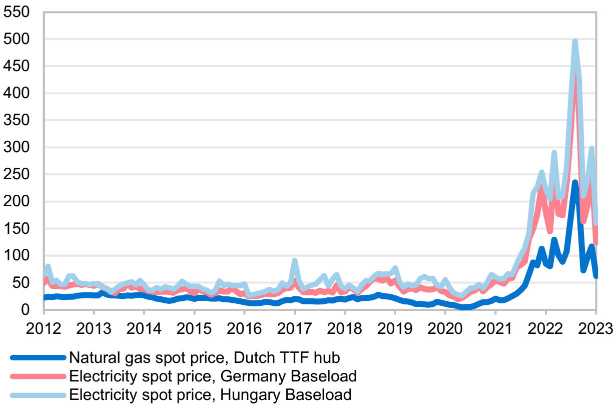
Source: IMF.
* Growth indicates appreciation.

Chart IV.6.21 **World oil price movements**
(monthly average, in USD)



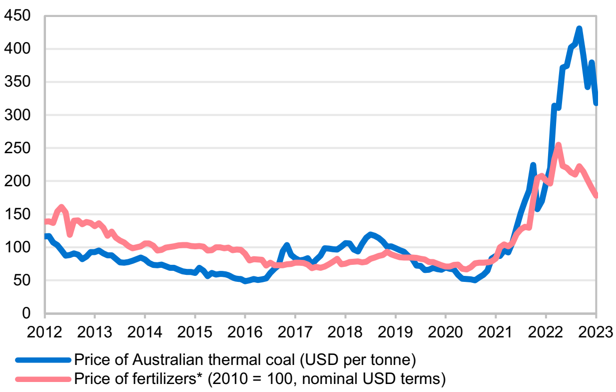
Source: Bloomberg.

Chart IV.6.22 **Movement of benchmark prices of natural gas and electricity for Europe**
(monthly average, in EUR/MWh)



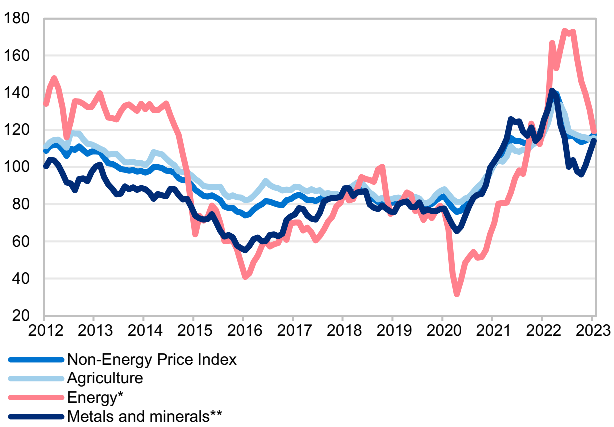
Source: Refinitiv.

Chart IV.6.23 **Prices of thermal coal and mineral fertilisers**
(monthly average)



Source: World Bank.
* Natural phosphate rock, phosphate, potassium and nitrogen.

Chart IV.6.24 **World Primary Commodity Price Index**
(2010 = 100)



Source: World Bank.
* Crude oil, natural gas and coal.
** Copper, aluminium, iron ore, lead, nickel, zinc and tin.

followed the similar dynamics and after dropping to around EUR 136 per MWh at end-October, it rose to around EUR 422 per MWh in mid-December, only to fall to around EUR 81 per MWh at end-Q4. Electricity price in the German and Hungarian exchange during Q4 was on average higher by around 10.7% and 6.2%, respectively, compared to Q4 2021. In early 2023, power price recorded volatile movements, and in January it posted the first y-o-y fall in the German exchange since the start of the energy crisis, around 30.8% on average.

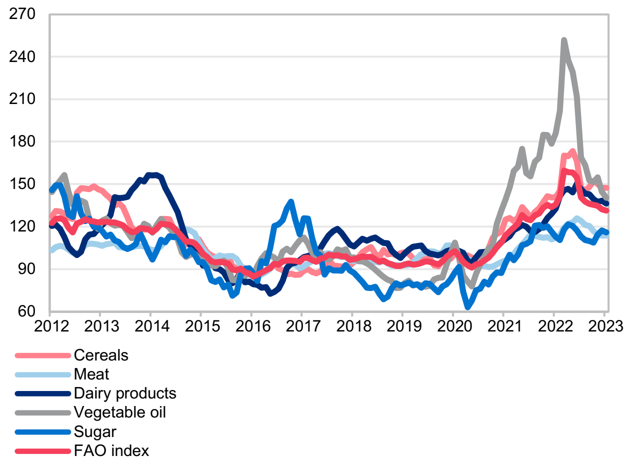
The price of **thermal coal**, as an alternative energy source, moved downward until mid-November, when it stood at around USD 324 per tonne due to increased output in Australia and South Africa and the announced stepped-up production in China, as well as the postponed heating season in Europe and the USA on account of extended warm weather. However, by end-Q4 the price went up to around USD 404 per tonne, under the impact of increased demand in Europe and India, as well as dampened output in Australia attributable to inclement weather, though on average it was 10.4% lower than in Q3. As production in Australia recovered, and European import turned out to be lower than in the same period a year ago, the price of thermal coal resumed its downward trajectory in January and ended the month at around USD 252 per tonne (38% lower than in December).

According to World Bank data, the prices of **mineral fertilisers** decreased during Q4 (6.2% from Q3) amid subdued demand by farmers, as well as due to the lower price of natural gas, which is an important input in the production of nitrogen fertilisers. Though November and December saw them fall in y-o-y terms for the first time in 2022 (1.3% and 8.9%, respectively), mineral fertiliser prices were still high due to the extended conflict in Ukraine, as well as the ban on the export of mineral fertilisers in China. In January, mineral fertiliser prices continued to decline and were around 6.2% lower relative to December.

During October, the prices of the majority of **metals and minerals declined** in response to elevated recessionary pressures. An exception is the price of aluminium, which slightly edged up m-o-m in October (1.3%). However, by end-Q4 the prices of all observed metals and minerals rose under the impact of demand being more resilient than expected, which is also propped by the anticipated slowdown in the degree of the Fed's monetary policy restrictiveness, as well as announcements about the loosening of pandemic measures and stimuli for the real estate market in China. At the quarterly level, the prices of metals and minerals in Q4 on average trended 1.0% higher than in Q3, mostly on account of the rise in the prices of nickel, lead and copper, while the prices of tin, zinc and the iron ore worked in the opposite direction. The prices of metals and minerals maintained the upward path in January as well, thanks to the increased prices of key metals – aluminium the iron ore, copper, tin and zinc, with the prices of nickel and lead working in the opposite direction.

In Q4, the **world food prices** (measured by the FAO index) continued down (2.9% fall from Q3) and in November and December recorded their first y-o-y decline (0.4% and 1.1%, respectively). Such quarterly movements were dictated by the lower prices of vegetable oils (7.0%) and meat (5.6%). Milk and dairy product prices declined during October and November amid subdued demand in China, while in December they struck an upward path on account of lower export from European countries; at the level of Q4 they were 4.1% lower than in Q3. In contrast, the **prices of cereals**, of which Serbia is a net exporter, rose in Q4 (2.0%). In October, the prices of wheat rose on the back of uncertainty regarding shipments over the Black Sea, as well as the US inventories being revised down. Corn prices mirrored these movements due to a poorer season on the Northern Hemisphere, as well as subdued expectations as to outturn of the season in the Southern Hemisphere, notably Argentina. Still, during November and December wheat and corn prices fell as the transport over the Black Sea resumed, and in light of the larger supply in the Southern Hemisphere. In Q4, the price of sugar also rose, going up 2.2% amid unfavourable weather conditions in India, the world's second largest sugar producer, as well as the tardiness in sugar cane crush operations in Thailand and Australia. Food prices in the global market remained on the downward trajectory in January (0.8% lower than in December), reflecting the falling prices of vegetable oils, dairy products and sugar, while the prices of meat and cereals remained largely unchanged.

Chart IV.6.25 **World Food Price Index**
(in nominal terms, 2014−2016 = 100)



Source: UN FAO.

V Projection

Under our new projection, Serbia's GDP is expected to grow between 2.0% and 3.0% this year, unchanged from our expectations in November. The risks to the projection are judged to have moderated relative to three months ago as uncertainty regarding the supply of gas to Europe has diminished, while euro area economic activity indicators performed better than expected in Q4 2022 and early 2023. Assuming a rebound of the global economy and, by extension, external demand as of H2 2023, and the planned implementation of investment projects, mostly in road, railway, energy and utility infrastructure, we expect GDP growth to pick up as of 2024 to the range of 3.0–4.0% and resume its pre-pandemic growth trajectory of around 4% per annum thereafter.

For the first time in the past two years, the February inflation projection is lower than anticipated in the previous projection. The effects of the lower projection are visible for 2024 in particular, reflecting primarily the weakening of cost-push pressures generated by global energy prices. Under the February central projection, we expect y-o-y inflation to remain elevated in Q1, mostly due to the continued pass-through of high cost-push pressures from the previous period and to the adjustment in electricity and gas prices. It is then expected to strike a downward path, decline more sharply in H2 2023, and retreat within the bounds of the target tolerance band towards mid-2024, which is sooner than we expected in our previous projection. Inflation's decline should be supported by past monetary tightening, waning effects of global factors underpinning energy and food price growth in the past period, a slowdown in imported inflation, and subdued external demand amid the anticipated slackening of global growth.

Uncertainty surrounding the inflation and GDP projection has receded since the previous projection and remains largely associated with factors from the international environment. The key risks from the international environment continue to include the global growth outlook, international energy and primary commodity prices, and the degree of monetary policy tightening by leading central banks. At home, the risks to the projection are associated primarily with the outcome of this year's agricultural season, FDI inflows, recovery of the energy sector, pace of construction works performance amid high prices of construction materials, and potential additional measures the government may undertake to ensure domestic demand growth in the coming period. Overall, the risks to the GDP and inflation projection for this and the next year are judged to be symmetric.

Initial conditions and assumptions

Global growth has slowed, but not as much as expected a few months ago. Compared to October 2022, in its January report the IMF revised up the global growth forecast for this year by 0.2 pp to 2.9%, reflecting greater-than-expected resilience in numerous economies, including the USA and the euro area. In 2024, growth is forecast to accelerate to 3.1%. The World Bank also expects global growth to slow this year to 1.7% (1.3 pp less than in July 2022), and to accelerate to 2.7% in 2024. The key factors behind global growth slowdown this year from 3.4% in 2022 are more stringent monetary policies of central banks in response to high and entrenched inflation, tighter financial markets and the continuation of the Ukraine conflict. The key risks to the global growth projection have moderated from three months ago, but remain tilted to the downside on account of

Table V.0.1 **Revision of IMF forecasts of real GDP growth for 2022 and 2023**
(in %)

	2022	2023		2024	
	Estimate	Previous projection	New projection	Previous projection	New projection
World	3.4	2.7	2.9	3.2	3.1
Euro area	3.5	0.5	0.7	1.8	1.6
Germany	1.9	-0.3	0.1	1.5	1.4
Italy	3.9	-0.2	0.6	1.3	0.9
USA	2.0	1.0	1.4	1.2	1.0
Russia	-2.2	-2.3	0.3	1.5	2.1
China	3.0	4.4	5.2	4.5	4.5

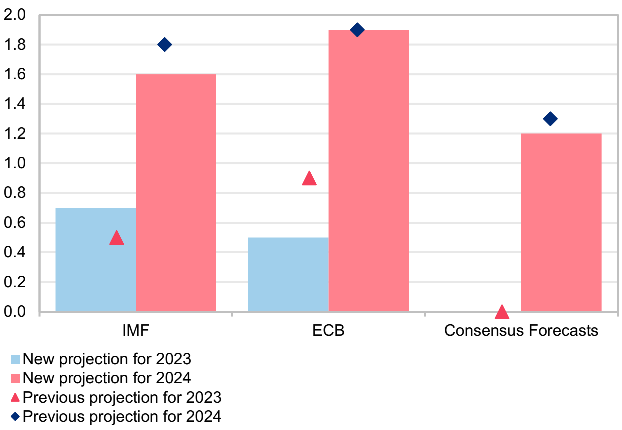
Sources: IMF WEO (January 2023) and IMF WEO (October 2022).

Table V.0.2 **Key projection assumptions**

	2023		2024	
External assumptions	Nov	Feb	Nov	Feb
Euro area GDP growth	-0.3%	0.0%	1.9%	1.2%
Euro area inflation (average)	6.0%	5.7%	2.9%	2.4%
3M EURIBOR (December)	3.0%	3.4%	2.9%	2.8%
International prices of primary agricultural commodities (Q4 to Q4)*	-5.3%	-8.5%	-7.6%	0.3%
Brent oil price per barrel (December, USD)	82	83	77	81
Internal assumptions				
Administered prices (Dec. to Dec)	13.3%	13.7%	8.0%	8.3%

* Composite index of soybean, wheat and corn prices.
Sources: ECB, Consensus Forecasts, Euronext, CBOT, Bloomberg and NBS.

Chart V.0.1 **Revisions of euro area GDP growth projections for 2023 and 2024**
(in %)



Sources: IMF, ECB and Consensus Forecasts.

Table V.0.3 **Economic growth estimate by country**
(real growth, in %)

	October 2022	January 2023	
	2023	2023	2024
Poland	1.1	0.8	3.0
Czech Republic	0.4	0.0	2.8
Hungary	0.1	-0.1	2.9
Romania	2.4	2.5	3.6
Slovakia	1.1	0.7	2.7
Slovenia	1.6	1.3	2.4
Croatia	1.9	1.1	2.7
Bulgaria	1.6	1.1	2.6
Albania	3.2	2.4	3.9
Bosnia and Herzegovina	2.4	1.6	2.9
North Macedonia	1.9	1.3	3.0
Montenegro	3.4	3.2	3.4

Source: Consensus Forecasts.

possibly slower-than-anticipated growth in China due to a resurgence of Covid-19 after the lifting of containment measures, further monetary policy tightening, additional mounting of geopolitical tensions and the possibility of inflation being more durable than expected.

Despite high cost-push pressures, monetary policy tightening by the ECB, dwindling consumer and investment confidence and downsizing of output in some energy-intensive sectors, the **euro area**, which is our most important trade partner, performed better than anticipated in H2 2022. Though H2 growth fell well short of the growth recorded in H1, reflecting gradual dissipation of the effects of the surge in demand for services after lockdown was lifted and value chain bottlenecks were eased, the euro area's economy seems to have proved more resilient to the negative effects of the energy crisis and subdued global demand than anticipated. Leading economic activity indictors in the euro area signal that an economic contraction was avoided in January, mostly owing to more robust activity in the service sector. Under the ECB's December projection, GDP growth will slow to 0.5% in the euro area this year, and rebound to 1.9% in 2024 and 1.8% in 2025. The ECB expects a recovery from H2 2023, as the energy market gradually rebalances, global uncertainty recedes, external demand strengthens and supply bottlenecks are resolved. Consensus Economics expects euro area GDP growth to be lower than that projected by the ECB. In its January projection, it anticipates stagnation this year and growth of 1.2% in 2024. In our new projection, we used Consensus Economics' assumptions, which is a somewhat more favourable outturn for this year than in our previous projection. When it comes to the economic growth of our most important partners in the euro area, Consensus Economics expects economic activity in Germany to contract by 0.5%, as Germany has been more affected by elevated production costs and subdued external demand for goods because of the high share of its manufacturing industry in GDP. This contraction will, however, be smaller than assumed in the previous projection (-0.9%), as supply bottlenecks have eased and cost-push pressures have subsided driven by lower energy prices. Italy's growth is expected to stagnate this year (compared to a slight decline in the previous projection), and fiscal support to the private sector is set to continue, though the 2023 budget raises further concerns about public debt levels.

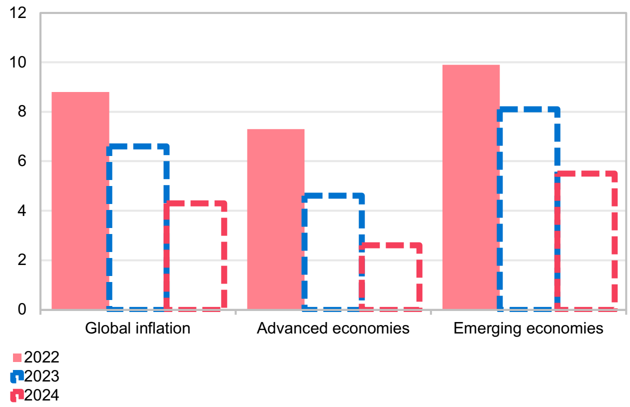
Economic growth in CESEE countries is also expected to slow considerably in 2023. Consensus Economics revised its 2023 projections for most countries of the region further down relative to October. GDP growth is expected to measure 0.5% in Central

Europe and 2.0% in Southeast Europe. It will then accelerate to 2.9% and 3.3%, respectively in 2024 (according to this estimate, Serbia's GDP growth will equal 2.4% in 2023 and 3.3% in 2024). The key factors behind economic growth slackening in 2023 in the CESEE region are tighter financial conditions and high cost-push pressures. Though inflation is expected to slow in this group of countries, it will remain elevated, while investors will continue to be cautious amid uncertainties surrounding gas supplies next winter. In addition to higher costs of public debt repayment, public finances will also be burdened by the economic activity slowdown which will affect tax revenues as well, reducing the scope for more robust government investment in alternative energy sources.

Inflation remains extremely high in almost all countries of the world, but it has begun to slow thanks mostly to energy prices. This year, inflation is expected to slacken further worldwide. In addition to lower energy prices which have already produced some effects, inflation's decline will also be supported by the improvement of global value chains and weaker demand resulting from monetary tightening by central banks. Under its December projections, the ECB expects **euro area inflation to slow** from 10% to 3.6% between Q4 2022 and Q4 2023. Inflation is then expected to decline to an average of 3.4% in 2024 and of 2.3% in 2025. Inflation is anticipated to fall to the inflation target of 2% in H2 2025. The decline in inflation over the projection horizon reflects strong energy-related downward base effects throughout 2023, the impact of the EBC's monetary policy tightening, the weakening of demand due to a poorer growth outlook, the assumed decline in energy and primary commodity prices (in line with the futures), as well as the assumption that longer-term inflation expectations will remain anchored. It should also be noted that the ECB expects inflation excluding energy and food prices to remain above 2% throughout the projection horizon. Its persistence is driven by lagged effects from high energy prices and from past sharp depreciation of the euro, as well as by robust labour markets and inflation compensation effects on wages, which are expected to grow at rates well above historical averages in nominal terms. Our projection assumes euro area inflation to average 5.7% in 2023, and slow to 2.4% in 2024.

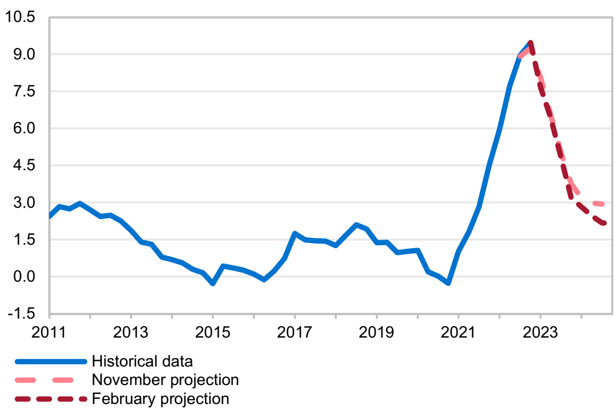
Since core inflation has not yet struck a downward path and headline inflation's return to target will be gradual, the **ECB's monetary policy is expected to remain quite stringent**. In line with the futures, our projection assumes that the three-month EURIBOR will equal 3.4% in late 2023 and 2.8% in late 2024.

Chart V.0.2 **Global inflation projection for 2023 and 2024**
(in %)



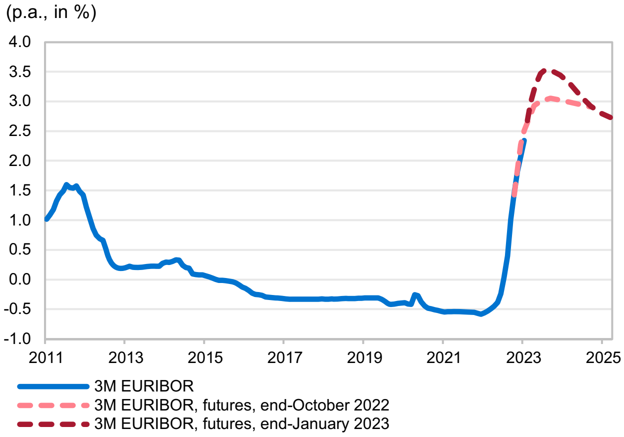
Source: IMF.

Chart V.0.3 **Assumption for euro area inflation**
(y-o-y growth, in %)



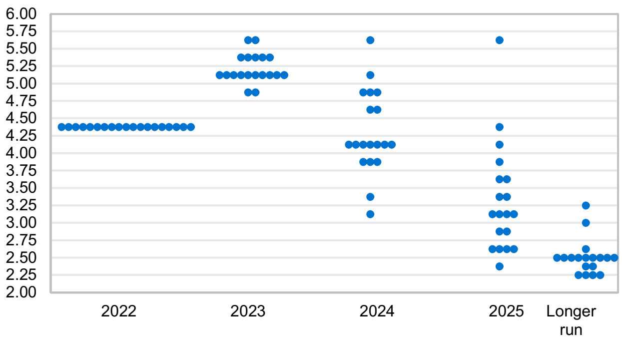
Source: NBS calculation based on projections of relevant institutions.

Chart V.0.4 **Expected 3M EURIBOR**
(p.a., in %)



Source: Bloomberg.

Chart V.0.5 **FOMC participants' expectations of appropriate monetary policy – midpoint of target range or target level for the federal funds rate**
(in %)

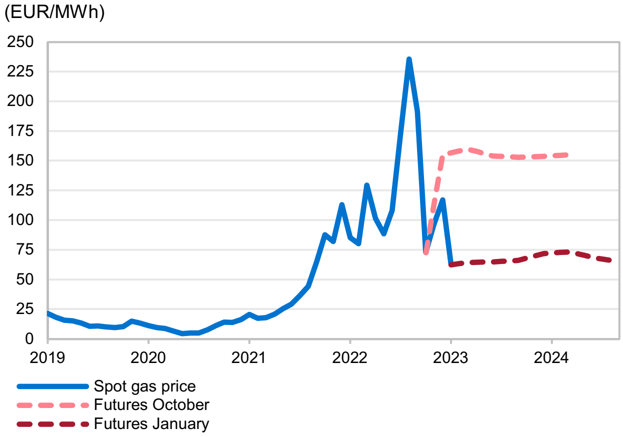


Source: Fed, Summary of Economic Projections, December 2022.

Chart V.0.6 **Assumption for Brent oil prices**
(USD/barrel)

Source: Bloomberg.

Chart V.0.7 **European price of natural gas**
(EUR/MWh)



Source: Refinitiv.

The **Fed** continued to tighten its monetary policy in December and January, though less than in earlier months. Market players expect further rate hikes, but they assume that the Fed will be much more cautious in order to prevent any sharp slowing of economic activity. On the other hand, the Fed has announced its intention to keep the fed funds rate high for a while yet and not reduce it this year. Though both headline and core inflation are gradually subsiding, the key indicators still do not signal that the economy is cooling. In December, the Fed again revised up its forecasts of future fed funds rate movements. The end-2023 median was revised up to 5.1% (from 4.6% in September), while the end-2024 median was lifted to 4.1% (from 3.9% in September). The Fed will also continue to reduce its balance sheet by USD 95 bn per month, in line with the guidelines published in May 2022.

In early December, the **global oil price** fell to its lowest level in 2022. It then picked up slightly, reflecting growing optimism among market players with regard to the global economy and rising demand as lockdown in China was lifted. China's rebound is, however, likely to be deterred by the anticipated surge in the number of Covid-19 cases after the easing of containment measures. Together with tighter financial conditions, this will dampen global oil demand growth in H1 2023. If global GDP growth picks up gradually in H2 and continues in 2024, oil demand will accelerate as well, as the crude oil consumption trend broadly reflects the economic activity trend. On the supply side, uncertainty is associated with oil export from Russia. Crude oil export from Russia to non-European countries is expected to go up, but Russia is anticipated to be more affected by the EU sanctions on the import of seaborne petroleum products from 5 February, as it is harder to find alternative buyers and provide transport and other services for petroleum products than for crude oil. According to end-January oil futures which we used to develop our projection, the anticipated crude oil price trajectory is similar as in the previous projection – we expect the global oil price to measure USD 83 per barrel at end-2023, and decline to USD 81 per barrel by end-2024.

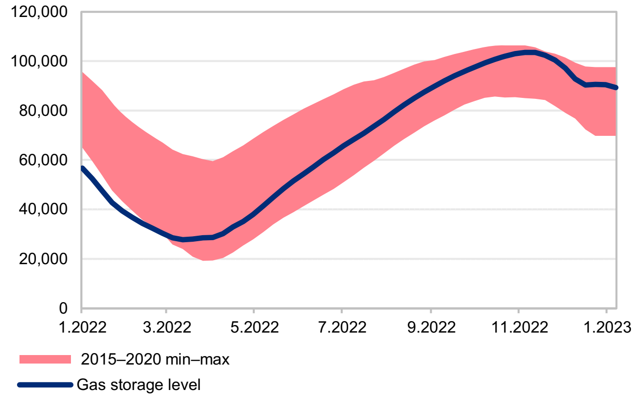
Early this year, **the price of natural gas in the European market** declined to an average of EUR 62 per megawatt hour in January, reflecting reduced supply concerns and high storage levels. Consensus Economics expects the European gas price to go up in Q1 to around EUR 100 per megawatt hour as it will be necessary to replenish supplies consumed during this winter. It will then be relatively stable until mid-2024, when it is expected to go down. According to market futures, the average gas price in 2023 and 2024 is expected to be relatively stable, but lower than projected by Consensus Economics, at around EUR 66 per megawatt hour in 2023, which is 58% lower than we assumed in November, also based on the futures. Still, Europe remains dependent on Russian gas as it is impossible to make a full shift to another market or an alternative source of energy in the short term, which generates further uncertainty regarding the price of this energy product. The risks to the GDP and inflation projection on this account are, therefore, pronounced.

The benchmark electricity price for Europe increased in November, due to the seasonally higher consumption, only to resume a downward path by year-end. In January, it picked up again. According to market futures, the end-2023 electricity price should stay below EUR 200 per megawatt hour, and its further decline is expected in 2024. It will still be higher than pre-pandemic, but much lower than in 2022. The price of thermal coal, as an alternative energy source, resumed a growth trajectory after declining in October. On average, it was 10.4% lower than in Q3. The International Energy Agency expects the thermal coal price to remain high in 2023 as well due to the anticipated rise in Asian countries' demand.

The direct effects of rising global prices of energy, notably natural gas, on Serbia's economy are not large because Serbia has gas supplies sufficient for this heating season and purchases most of its gas (around two-thirds of total needs) at a favourable price. Still, energy prices also produce indirect effects on disposable income and, by extension, on inflation and economic growth, which differ depending on the extent to which energy costs participate in total costs of companies and households, and are therefore harder to estimate. To accommodate the rise in global prices of energy products and their reduced availability in the past period, gas and electricity prices at home increased further by 7.3% and 11%, respectively, in January this year in order to avoid greater losses for companies in the energy sector. As gas and electricity prices will be adjusted further, while cigarette excises will undergo regular adjustment and utility service prices are expected to go up, **administered prices** should increase by 13.7% this year, and around 8.0% in 2024. In order to soften the effects on the domestic economy and protect households' living standards, the Government continued to levy 10% lower excises on fuel, which we assumed will continue this year as well.

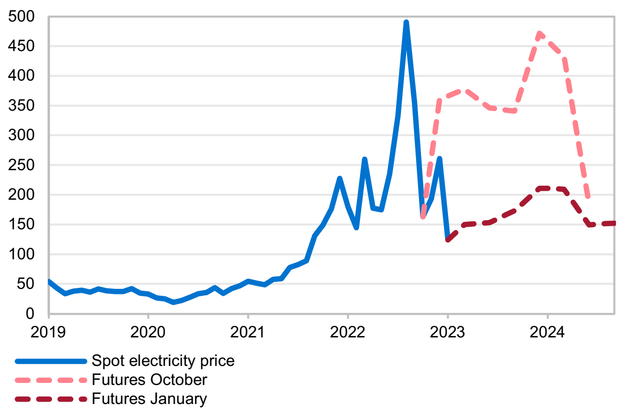
After it was announced that containment measures will be eased in China, the world's major buyer of metals, **global metal prices** struck an upward path in late 2022. Still, Consensus Economics expects that the index of

Chart V.0.8 **EU gas storage levels**
(mn m³)



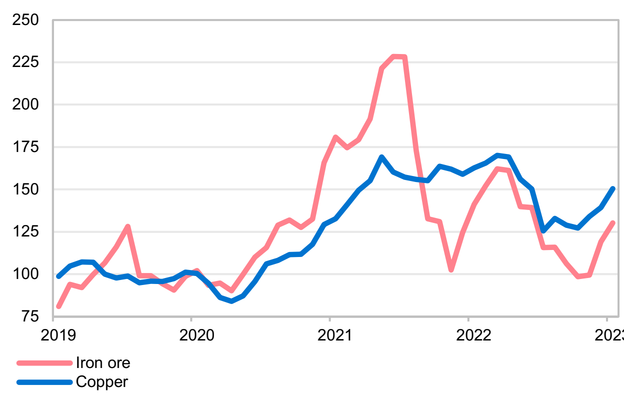
Source: Bruegel.

Chart V.0.9 **European price of electricity**
(EUR/MWh)



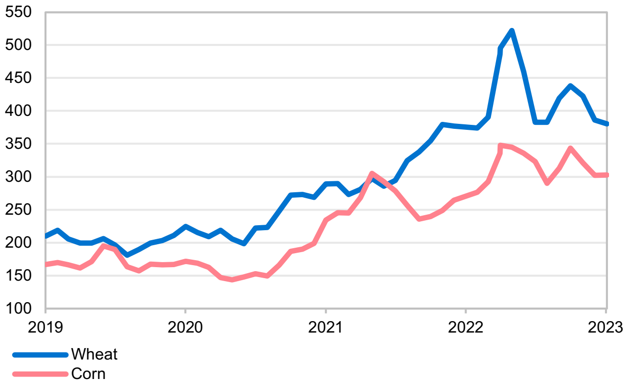
Source: Refinitiv.

Chart V.0.10 **Base metal prices in the global market**
(index points, 2019 = 100)



Source: Commodity Prices, World Bank.

Chart V.0.11 **Wheat and corn prices in the global market**
(USD/mt)

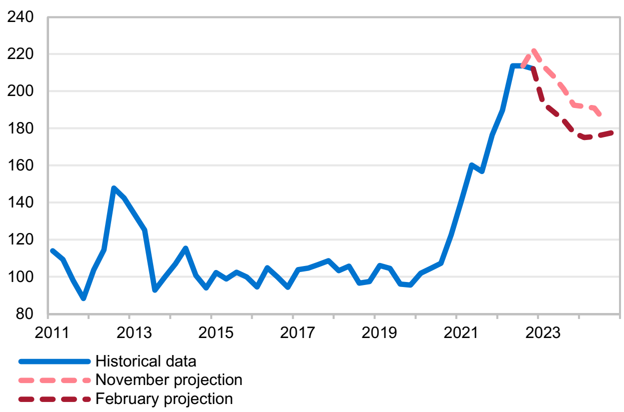


Source: Commodity Price Data, World Bank.

Chart V.0.12 **Assumption for international prices of primary agricultural commodities**
(Q4 2013 = 100)

Sources: CBOT, Euronext and NBS calculation.

Chart V.0.13 **Assumption for domestic prices of primary agricultural commodities***
(Q4 2013 = 100)



Sources: Commodity Exchange Novi Sad, CBOT, Euronext and NBS calculation.
* Measured by the composite index of wheat, corn and soybean prices.

global base metals prices[15] will decline moderately in Q1 this year due to the prevailing recessionary pressures, though it will rebound somewhat in the remainder of the year and be relatively stable next year. On average, these prices will be much lower than last year, and slightly lower than assumed in the November projection, which will help relieve cost-push pressures on producer prices in industry and construction.

After hitting record highs in 2022, the prices of most global **primary agricultural commodities** declined in the past months. The global wheat price slumped in December, as the market was well supplied and competition among exporters was robust. The global price of corn also declined, mostly due to strong competition from Brazil. These prices, however, remain higher than in the same period last year. Going forward, energy prices are expected to subside, as are the prices of other inputs in agricultural production. This should help topple the prices of primary agricultural commodities, though their supply from Ukraine will continue to be limited. Assumptions of these prices in our projection are based on the futures in global stock exchanges, according to which they will be 8.5% lower at end-2023 compared to end-2022, while next year they are anticipated to increase slightly by 0.3%. Consistent with this, we expect **prices of primary agricultural commodities in the domestic market**, which mirror movement in their global counterparts, to display similar dynamics.

In regard to factors influencing domestic demand, wage growth is expected to continue this year, also propped up by a higher minimum wage (by 14.3%) and **the rise in private sector employment**. Additional sources of consumption will include the over 20% rise in pensions (including the end-2022 increase), the 12.5% increase in public sector wages and the anticipated continuation of inflow from remittances.

According to the estimates of the Ministry of Finance presented in the Revised Fiscal Strategy for 2023 with Projections for 2024 and 2025, **government capital investment expenditures** are projected at around 6–7% of GDP p.a., while the **share of wages and pensions in GDP** should not top 10%, even with the increases planned for this year. Altogether, this should help preserve households' living standards and increase funds disposable for new investments, while at the same time ensuring that the public debt resumes a downward path. The general government deficit is projected at 3.3% of

[15] This index has been calculated by *The Economist*, and the shares of individual metals reflect their respective shares in world metal trade: aluminium (37%), copper (32%), nickel (8%), zinc (7%), lead and tin (3% each).

GDP this year as energy outlays are expected to remain high. It is then anticipated to decline to around 1.4% of GDP in 2025, ensuring a continuation of the decline in public debt to around 54% of GDP at end-2025.

Amendments to the Law on the Budget System defined a new set of fiscal rules. The general fiscal rule according to which the level of the general government deficit depends on the level of general government public debt will be applied as of 2025, since the deficit levels planned for 2023 and 2024 are higher than 0.5% of GDP due to the energy crisis and external factors, while the path of fiscal recovery has been defined in line with the new IMF arrangement. Specific fiscal rules regulating the share of outlays for wages and pensions in GDP will be applied as of this year. It will be possible to deviate from these rules only exceptionally and temporarily, in case of natural disasters and external shocks which represent a threat to the health of the population, national security or bring about a substantial decline in economic activity. According to our estimate, a consistent implementation of fiscal rules should ensure long-term sustainability of public finances and prevent major demand-side inflationary pressures, which would have a positive effect on both credit rating and risk premium of the country.

GDP projection

According to the preliminary SORS estimate, **Serbia's real GDP growth** measured 2.3% in 2022, which is largely consistent with the NBS's November projection. Economic activity slackened in H2 2022 as expected due to subdued external demand and elevated global cost-push pressures, as well as the drought at home which led to lower yields of mostly autumn crops. In Q4, the GDP growth rate slowed to 0.4% relative to the same period last year, but, according to our estimate, it was 0.6% higher s-a relative to Q3.

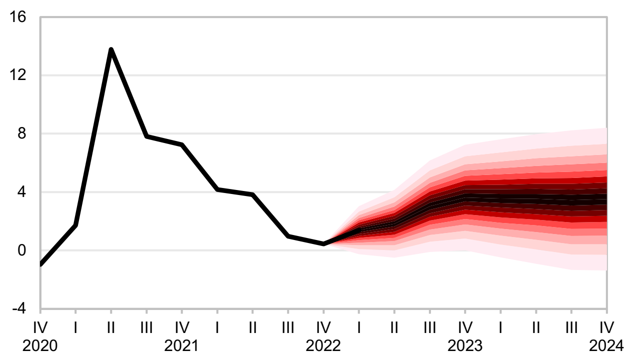
Under our new projection, **Serbia's GDP growth rate will range between 2.0% and 3.0% this year**, unchanged from our expectations in November. The risks to the projection are judged to have moderated relative to three months ago. Uncertainty regarding the supply of gas to Europe has diminished, helped by the effects of a mild winter, while leading economic activity indicators signal that the euro area might avoid the recession expected in Q4 2023 and Q1 this year, since the European economy adjusted to the energy crisis better than anticipated. Still, subdued external demand globally and stubbornly high global cost-push pressures will most

Table V.0.4 **New set of fiscal rules**

General fiscal rules	
Government sector debt, including restitution liabilities, is not to exceed 60% of GDP	
Medium-term deficit target is 0.5% of GDP	
Depending on the level of government sector debt, the deficit is adjusted to the following levels (in % of GDP):	
60% or above	0.0%
55-60%	0.5%
45-55%	1.5%
45% or below	3.0%
Specific fiscal rules	
Share of government sector wages in GDP up to 10%	
Indexation of pensions depending on their share in GDP as follows:	
10.5% or above	Indexed to change in CPI
10-10.5%	Weighted indexation to change in net average wage and change in CPI
10% or below	Indexed to change in net average wage

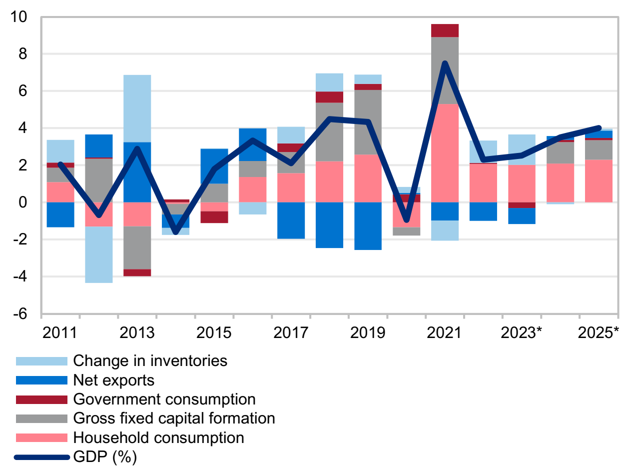
Source: Ministry of Finance.

Chart V.0.14 **GDP growth projection**
(y-o-y rates, in %)



Source: NBS.

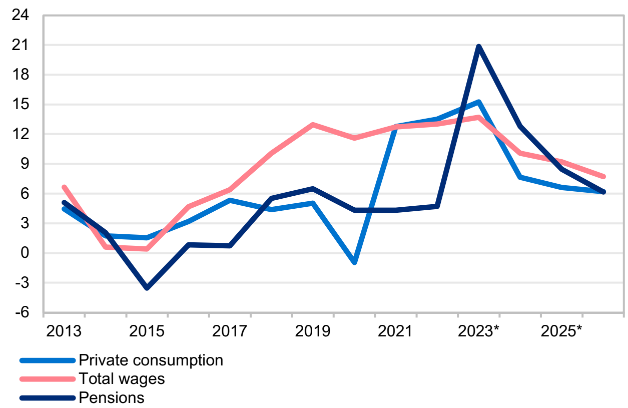
Chart V.0.15 **Contributions to real GDP growth**
(in pp)



Sources: SORS and NBS.
* NBS estimate.

probably drag on our manufacturing output and, by extension, on export, primarily in H1 this year. On top of that, total disposable income for investment and consumption will probably be lower in the short term due to a higher cost of borrowing in dinars and euros. The anticipated weakening of global cost-push pressures and the rise in consumer and investment confidence in response to the expected moderation of global uncertainty from H2 this year should work in opposite direction. In view of this and the anticipated implementation of investment projects, primarily in road, railway, energy and utility infrastructure, we expect GDP growth to accelerate from 2024 to the range of 3.0–4.0%, and return to the pre-pandemic growth trajectory of around 4% per annum thereafter.

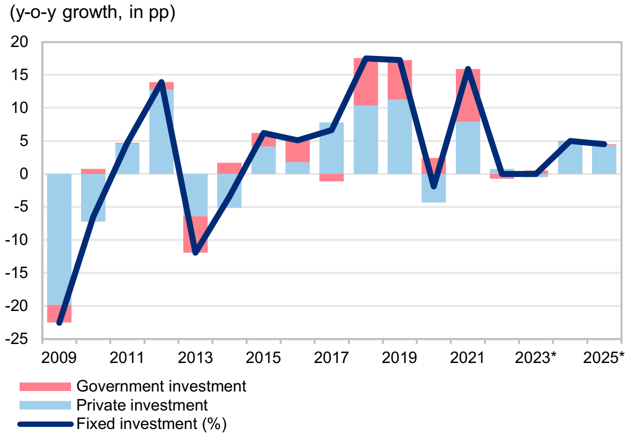
Chart V.0.16 **Rate of growth in private consumption and its sources**
(nominal y-o-y rates, in %)



Sources: SORS and NBS calculation.
* NBS estimate.

GDP growth in 2023 will be led by domestic demand, with **private consumption** expected to contribute the most – around 2 pp, owing to rising wages in the private and public sectors, pensions and employment. Compared to the November projection, consumption growth for this year is projected at a somewhat higher level as labour market trends in late 2022 were more favourable than expected. Still, it should be noted that fiscal rules for public sector wages and pensions have been applied since the start of this year. We expect the share of outlays for public sector wages and pensions to stay below 10% of GDP, which is particularly important for ensuring sustainable economic growth. On the other hand, income disposable for consumption will be negatively affected by the rising cost of borrowing in the domestic market on account of monetary tightening by the NBS and the ECB and, as a result, lower demand for consumption loans and still relatively high outlays for food and energy products. With the expected waning of the effects of cost-push pressures, private consumption will pick up somewhat in 2024, increasing its contribution to GDP to over 2 pp.

Chart V.0.17 **Fixed investment**
(y-o-y growth, in pp)



Sources: SORS and NBS calculation.
* NBS estimate.

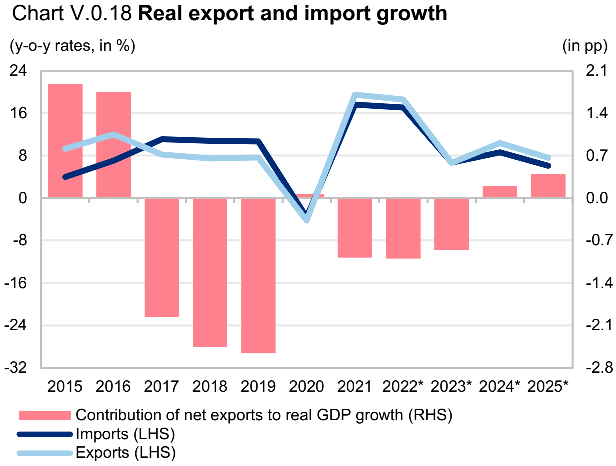
Due to reduced fiscal space, outlays for procurement of goods and services will be lower in real terms this year, which is why we expect a mild negative contribution of **government consumption** (0.3 pp). As the general government deficit is expected to narrow, we expect a somewhat positive contribution of government consumption in the years to come.

Elevated uncertainty over current geopolitical tensions, high operating costs of enterprises in an environment of still relatively strong inflation, dented external demand and tight financial conditions, are reflecting on a lower investment rate globally. In this regard, we expect **fixed investment** to stagnate in Serbia this year as well, with **private investment** providing a mild negative contribution given the persisting risk aversion amid unabated geopolitical tensions and a gloomy global growth outlook. Own sources, including FDI inflows, remain the main source of private investment financing, though company profitability is negatively affected by higher production costs. In addition, credit sources of funding are more expensive, primarily due to continued monetary tightening by the ECB. On the other hand, owing to continued implementation of infrastructure projects, as indicated by high capital government expenditure in late 2022, **government investment** is expected to give a slightly positive impetus this year. Based on the expected reduction in production costs and global uncertainty, continued resolution of global supply bottlenecks and accelerated implementation of transport and utility infrastructure projects, total fixed investment is likely to add around 1 pp to GDP annually starting from 2024 and to maintain its share in GDP at close to 23%.

Inventories are expected to provide a relatively high positive contribution to GDP this year as well. The growth in inventories reflects the build-up of strategic commodity reserves, notably of food and energy products, dampened external demand and global supply bottlenecks in some areas of production which, though weaker, still persist. The depletion of inventories and their neutral contribution to GDP are expected as of 2024 as circumstances concerning the prices and availability of energy and food normalise gradually and supply bottlenecks are resolved.

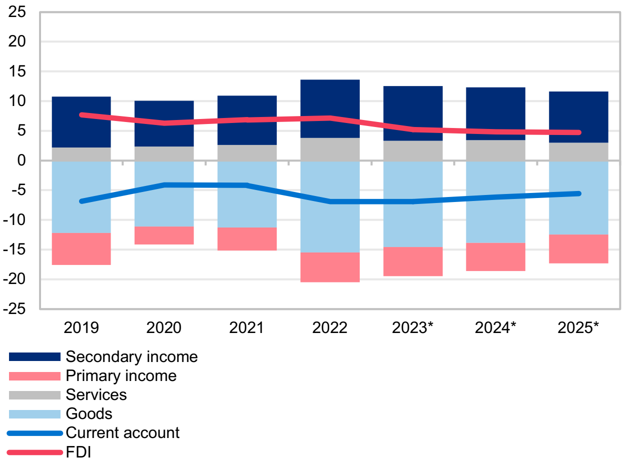
This year as well, **net exports** are expected to contribute around -1 pp to GDP. In our estimate, the negative contribution of net exports will reflect high-quantity imports of key energy products – gas and oil, as well as lower external demand due to the expected slackening of growth in our key trade partners, notably the euro area, which will bear down on our exports. However, external demand, and thus our exports, slowed less than expected in H2 2022, in an environment of negative effects of the energy crisis and mounting recessionary pressures globally, while H2 also saw lower than anticipated energy imports. Furthermore, smaller external demand was partly offset by rising export supply of manufacturing on account of past investment, which is expected to continue this year as well given that FDI inflows in 2022 reached a new record high of EUR 4.4 bn. Owing primarily to rising ICT exports, the surplus on trade in services is likely to be sustained. On the other hand, lower yields of autumn crops from the previous agricultural season will most probably result in smaller agricultural exports in the major part of this year (most probably until September). In the years to come, we expect a slightly positive contribution of net exports,

Chart V.0.18 **Real export and import growth**



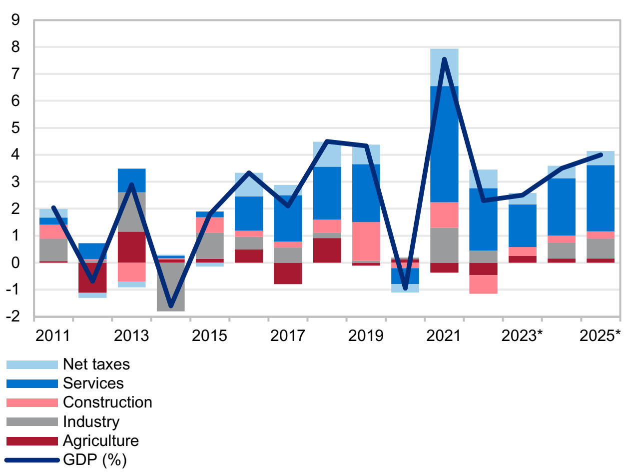
Sources: SORS and NBS.
* NBS estimate.

Chart V.0.19 **Current account and FDI projection**
(in % of GDP)



Source: NBS.
* NBS projection.

Chart V.0.20 **Contributions to real GDP growth, production side**
(in pp)



Sources: SORS and NBS.
* NBS estimate.

supported by the expected recovery of external demand. Another important factor of export growth will be the effects of new investment in export-oriented sectors, which should speed up the growth in real goods and services exports. Net exports are likely to be a positive contributor despite the fact that imports will edge up as well, led by rising imports of equipment and intermediate goods for investment projects, and, to a lesser extent, by the imports of consumer goods and tourist services.

Given the projected movement in net exports and the fact that, according to current futures, average global oil and gas prices are projected at a lower level than expected three months ago, i.e. terms of trade are more favourable, we have lowered our projection of the **share of the current account deficit in GDP** for this year to 6.9% (as recorded in 2022 as well), which is better than we expected in the previous *Report*. In 2022, amid elevated global uncertainty, **FDI inflows** were again higher than we expected in November, amounting to 7.1% of GDP. Though we project somewhat lower inflows over next years, at around 5% of GDP, FDI will continue to largely cover the current account deficit, ensuring external sustainability. Moreover, we expect that the high geographic and project dispersion of FDI inflows will be sustained and that the bulk of these inflows will remain channelled to export-oriented sectors. In the medium run, we expect a gradual reduction in the current account deficit to around 5.0% of GDP in 2026, on account of the expected lowering in the foreign trade deficit share in GDP, reflecting a rise in export supply.

On the **production side**, owing to their high share in GDP and consistent with continued growth in personal consumption, we expect the **service sectors** to provide the strongest positive impulse to GDP growth of 1.6 pp this year and around 2 pp in 2024. **Net taxes** are estimated to be a significant positive contributor (around 0.5 pp) this and next year. Given the still relatively high costs of **agricultural production**, primarily high prices of mineral fertilisers, which is why a smaller than optimal quantity of fertilisers will most probably be used this year as well, we assumed that this year's agricultural season will also be below average, though better than the previous one, when we faced the negative effects of the drought and when, as estimated by the SORS, agricultural production contracted by around 8%. We assumed this year's agricultural production to be higher by around 5% compared to last year's, which should result in its mild positive contribution to GDP of around 0.3 pp. We assumed an average agricultural season and a positive contribution of agriculture of around 0.2 pp to GDP next year. **Construction** is also anticipated to provide a slightly positive impetus this year and in the years to come (0.3 pp annually each), notably as a result of planned implementation of transport and utility infrastructure projects.

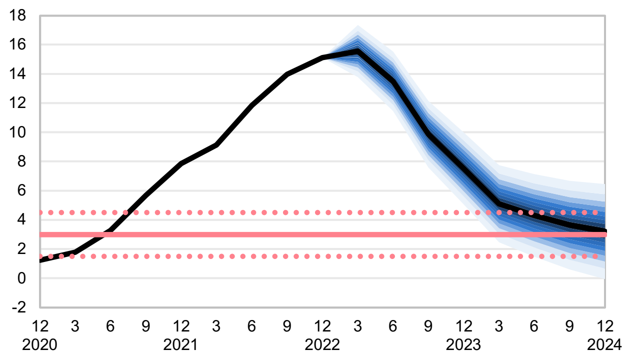
Industry is likely to be a neutral contributor this year. Manufacturing will provide a mild negative contribution, and the mining and energy sectors a positive one. Lower manufacturing will reflect dented external demand and higher production costs, while expanded production capacities, mirroring past investment in tradeable sectors, will work in the opposite direction. Mining will rebound thanks to greater coal and metal ore exploitation, particularly of copper. Reflecting a low base from last year and gradual recovery of production, the energy sector will also be a positive contributor. Industry growth is expected to pick up in the years to come (adding around 0.6 pp to GDP), supported by the activation of new and expansion of existing capacities in manufacturing and the recovery of external demand, including planned structural reforms in the energy sector agreed under the new arrangement with the IMF.

Inflation projection

The period since our last, November projection was marked by a somewhat improved global growth outlook, owing primarily to the signs that **global inflation is gradually retreating from its multi-decade high**. In an environment of the energy crisis and tight monetary and financial conditions, optimism was reawakened by the falling prices of gas and other energy products in the EU and China's abandonment of the zero-Covid policy. Still, caution is needed as China's more vigorous growth would certainly push up the prices of energy and other primary commodities, and make it more difficult to fight inflation. Moreover, the indirect effects of elevated prices of energy and industrial raw materials in the past period are still fuelling growth in core inflation and, together with a tight labour market, slowing inflation's decline in a number of countries. On the other hand, the indicators concerning global supply bottlenecks and container shipping rates have almost returned to their pre-pandemic levels, which is why cost-push pressures on this account are gradually waning.

Consistent with the weakening of global cost-push pressures, primarily on account of lower global energy prices, for the first time in the past two years, our February inflation projection is **on a lower trajectory compared to the previous projection**. The effects of the lower projection are visible for 2024 in particular. Under the central February projection, we expect **y-o-y inflation to remain elevated in Q1**, mostly due to the

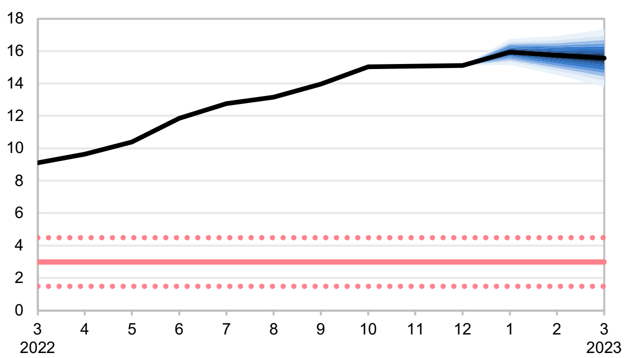
Chart V.0.21 **Inflation projection**
(y-o-y rates, in %)



Source: NBS.

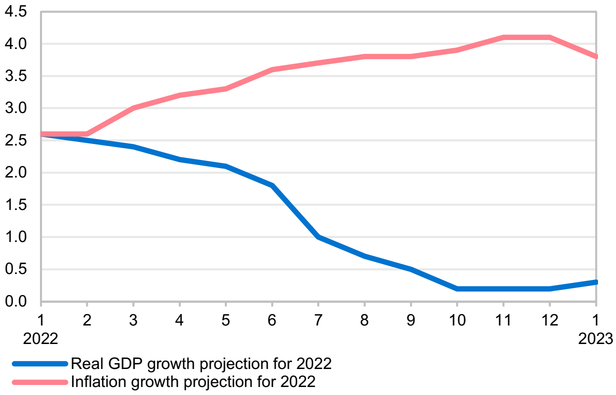
The fan chart depicts the probability of various inflation outcomes in the next eight quarters. The central projection is within the darkest central band and the probability that inflation would lie in it is 10%. Each following shade includes 10% probability, which means that outturns of inflation somewhere within the entire fan chart are expected with probability of 90%. In other words, the probability that inflation in the next eight quarters would lie somewhere outside the band in the chart is 10%.

Chart V.0.22 **Short-term inflation projection**
(y-o-y rates, in %)



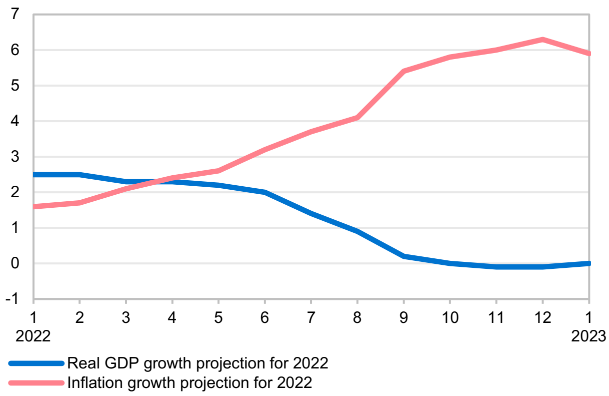
Source: NBS.

Chart V.0.23 **GDP and inflation projections of the USA for 2023**
(in %)



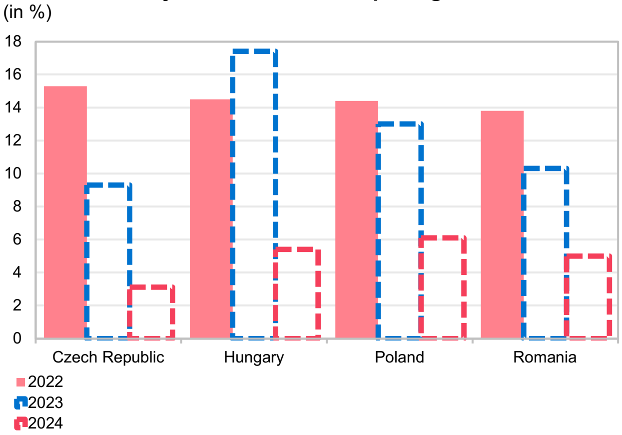
Source: Consensus Forecasts.

Chart V.0.24 **GDP and inflation projections of the euro area for 2023**
(in %)



Source: Consensus Forecasts.

Chart V.0.25 **Projection of consumer price growth**
(in %)



Source: Consensus Forecasts.

continued pass-through of high cost-push pressures from the previous period and to the adjustment in electricity and gas prices. **It will then strike a downward trajectory, decline more sharply in H2 2023 and retreat within the target tolerance band in mid-2024**, sooner than expected in the previous projection. Past monetary tightening, waning effects of global factors underpinning energy and food price growth in the prior period, slowdown in imported inflation and subdued external demand amid the anticipated slackening of global growth are expected to put a drag on inflation.

Although the pass-through to our consumer prices has still not ended, particularly in the case of energy products, almost all cost-push factors from the international environment are likely to lead to a gradual slowdown in inflation in the coming period. **The key assumptions for the expected downward trajectory of inflation are the continued monetary tightening by leading central banks, falling primary commodity prices in accordance with futures, and further calming of inflation worldwide, notably in the euro area.** Central banks across the world responded to high inflation rates by simultaneously raising their policy rates. Monetary tightening is expected to continue, though at a more moderate pace than before, and should contribute to a further reduction in pressures on account of imported inflation on prices in Serbia over the projection horizon, which is an important factor behind inflation's projected return to the target.

Although they are still high and above the level recorded one year ago, global food prices declined over the past months. The expected reduction in primary agricultural commodity prices this year indicates a potential **further decline in global food prices**. This is consistent with the anticipated reduction in the costs of energy and other inputs in agricultural production, notably mineral fertilisers. Expectations are similar for the **global oil price**, which, after rising sharply until mid-June last year, stabilised under the impact of intensified recessionary pressures globally. Going forward, we expect a reduction in the oil price in the international market, which should significantly contribute to a decline in y-o-y inflation in Serbia. Still, the pass-through effect of past hikes in global oil and other energy product prices onto our consumer prices is likely to be sustained in the short run.

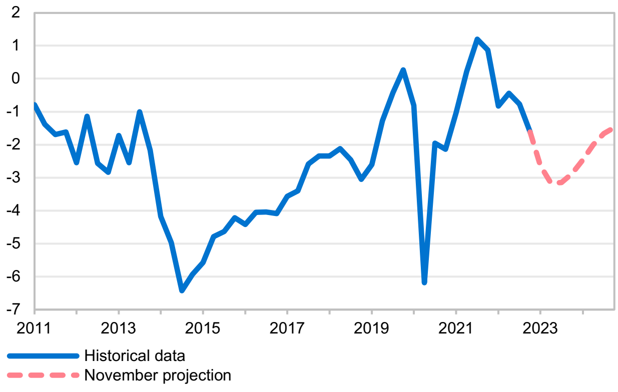
The global growth outlook is somewhat more favourable than three months ago, which is why the estimated output gap, as an indicator of **aggregate demand**, is having a less disinflationary effect than in the previous projection. In regard to domestic demand, somewhat lower income disposable for consumption reflecting monetary tightening by the ECB and the NBS will be partly offset by rising public sector wages and pensions, and continued positive labour market trends. For this reason, after deepening in Q2 2023, the negative output gap is anticipated to gradually narrow as of H2 2023 due to the above factors, but it will not close until the end of the projection horizon.

Observed by inflation category, **petroleum product prices** are expected to be one of the main disinflationary factors, provided the global oil price moves in line with futures. After Q1 2023, the contribution of petroleum products is likely to move to negative territory and stay there until the year-end due to the strong base effect, only to become almost neutral until the end of the projection horizon.

Fruit and vegetable prices are no longer the main disinflationary factor of the projection, though we also expect their contribution to y-o-y inflation to enter negative territory with the onset of the new agricultural season. We took into account the movement recorded in the past period, amid relatively high cost-push pressures generated by the prices of energy, notably natural gas, including mineral fertilisers. Once the new agricultural season sets in as of May, we estimate that their contribution to y-o-y inflation will be reduced by 1 pp and become negligible thereafter, consistent with the assumption about the gradual return of fruit and vegetable prices to their long-term trend.

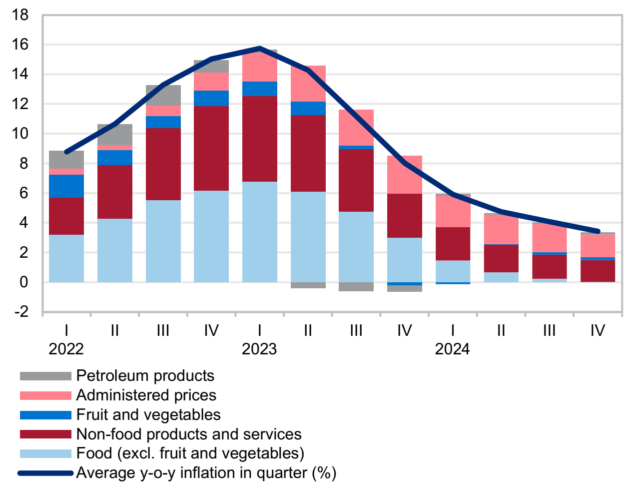
Rising cost-push pressures in food production, reflecting primarily an increase in global energy and primary commodity prices, drove up **food inflation** (food prices excluding fruits and vegetables) in the domestic market. Higher costs fed through to the prices of final food products, which will contribute to y-o-y inflation growth early this year as well. Thereafter, we expect the weakening of the major part of cost-push pressures and a gradual reduction in imported inflation. As a result, the contribution of food prices to y-o-y inflation will be steadily declining until the end of the projection horizon, by almost 7 pp. The dissipation of cost-push pressures in food production is indicated by the further closing of the real marginal costs gap (measured by deviation from trend of the ratio of input prices to prices of final food products). This gap began to close in Q3 last year. The downward trajectory of food inflation, expected until the end of the projection horizon, may possibly be moderated, though not jeopardised, by the imperfect market structure on the supply side, i.e. the absence of any stronger competition in this segment.

Chart V.0.26 **Output gap projection***
(in % of potential output)



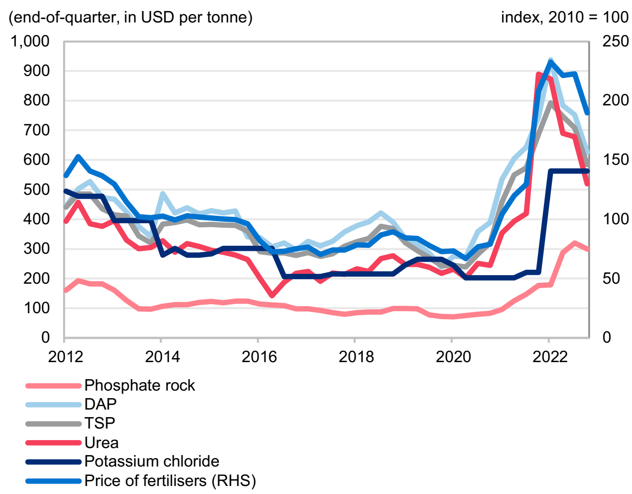
Sources: SORS and NBS.
* Output gap is estimated on the basis of NAVA.

Chart V.0.27 **Contributions to y-o-y inflation by component**
(average y-o-y rates, in pp)



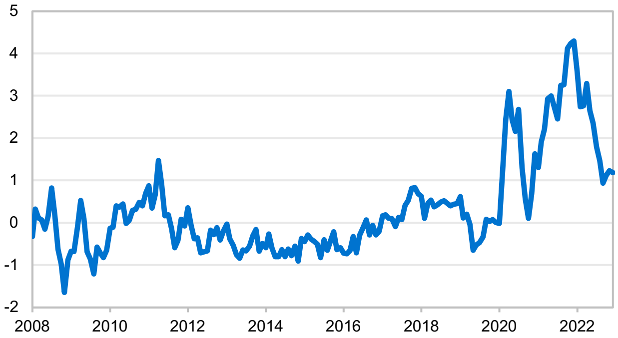
Source: NBS.

Chart V.0.28 **Global mineral fertiliser prices**



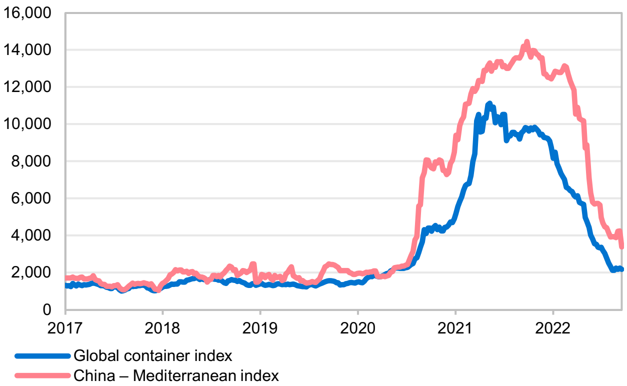
Source: World Bank.

Chart V.0.29 **Global supply-chain pressures**
(index, in standard deviations)



Source: Federal Reserve Bank of New York.

Chart V.0.30 **Container transport price**
(USD)



Source: Freightos.

Non-food inflation is expected to display a similar trend, though its 2023 maximum will be lower than that of food inflation and its decline somewhat slower. The prices of this product category largely depend on the prices of numerous imported products, primarily from the euro area, which is our most important trade partner. The rise in non-food inflation since 2021 corresponds almost entirely to higher import prices, which we approximate to consumer prices in the euro area. With the gradual decline in imported inflation and inflation expectations, the reduction in prices of international transport and industrial raw materials, the easing of global supply bottlenecks and subdued aggregate demand, we expect pressures on domestic prices of non-food products to abate and the contribution of this group to headline inflation to subside gradually until the end of the projection horizon.

The relatively high global energy prices are the key reason behind the expected growth in **administered prices** during the projection horizon. Consistent with our assumption of administered price growth of 13.7% this and 8.3% next year, their contribution to y-o-y inflation will decline gradually to 2.5 pp late this and 1.5 pp late next year.

Risks to the GDP and inflation projection

The risks to our new inflation and GDP projection are less pronounced than in the November projection, and are still mainly associated with factors from the international environment. The global growth outlook, global energy and primary commodity prices, and the degree of monetary tightening by leading central banks remain the key external risks to the projection. When it comes to factors at home, the risks to the projection are associated mainly with the outcome of this year's agricultural season, FDI inflows, continued recovery of the energy sector, the pace of construction works given persistently high construction material prices, and additional measures the Government may undertake to ensure growth in domestic demand going forward. Overall, we judge the risks to the GDP and inflation projection for this and next year to be symmetric.

The impact of geopolitical tensions and the Ukraine conflict is the most pronounced in the European market of **energy, primarily gas**. Although gas shortages in the EU have been, by all odds, avoided this winter, while the gas price is lower than initially expected, problems may emerge in filling gas storage facilities for next winter. Problems may be particularly pronounced if demand from China picks up, as this will push up the gas price in the EU. Even in the absence of direct effects on the gas price in Serbia, imported inflation and, by extension, domestic inflation, would go up. Furthermore, if the initiative on the export of grain, other foodstuffs and mineral fertilisers from several Black Sea ports is not extended, global food prices may also increase. With this in mind, we judge the **risks to the GDP projection associated with the potential escalation of the Ukraine conflict to remain tilted to the downside, and to the inflation projection – to the upside**.

Uncertainty surrounding the **global growth outlook** remains significant, but less pronounced compared to three months ago. It is largely associated with economic activity in China after the country dropped the zero-Covid policy. China's growth may, however, be slower than assumed if the epidemiological situation deteriorates as the vaccination rate in China is still low. The effects on the rest of the world, including Serbia,

Table V.0.5 **Key risks to the GDP and inflation projection**

Risk	Possible channels of influence	Estimate of the risk effect on GDP relative to the baseline scenario	Estimate of the risk effect on inflation relative to the baseline scenario
Geopolitical tensions and events in Ukraine	– Heightening of geopolitical tensions would further inflate the prices of energy and other primary commodities, pushing up production costs and fuelling inflationary pressures. – If the initiative on the export of foodstuffs and mineral fertilisers from several Black Sea ports is not extended, global food prices may increase, resulting in stronger inflationary pressures.	↓	↑
Global economic growth outlook	– Slower economic growth globally, and particularly in the euro area, would result in subdued external demand for our exports and fewer demand-side pressures on inflation.	↓	↓
International oil, gas and electricity prices (Serbia is a net energy importer)	Rising global prices of energy have inflated production costs, trimming funds available for investment and potentially producing second-round effects on inflation, which may partly be offset by subdued demand for these products.	↓	↑
International prices of primary agricultural commodities and metals (Serbia is a net exporter)	The rise in the prices of primary agricultural commodities and metals produces inflationary effects. Though this inflates production costs and decreases income available for investment, the effects on GDP would most probably be neutralised by higher exports, as Serbia is a net exporter of primary agricultural commodities and metals.	↑	↑
Growth in global inflation, particularly in euro area inflation, and monetary policies of leading central banks	– Higher/lower than anticipated global inflation, particularly euro area inflation, leads to elevated/lower imported inflation, raising/diminishing production costs. – Greater and/or faster than anticipated monetary tightening by leading central banks leads to higher risk aversion of investors and reduced capital flows to emerging economies and vice versa.	↓	↑
Agricultural season	A better than assumed agricultural season leads to increased supply of agricultural products and may produce disinflationary pressures.	↑	↓
Pace of domestic demand growth	Higher/lower disposable income on account of faster/slower than expected wage and employment growth due to higher/lower export demand, higher/lower FDI inflows and/or accelerated/slowed implementation of infrastructure projects by the government, would result in faster/slower growth in domestic demand and stronger/weaker inflationary pressures. Higher/lower growth in costs of construction material would accelerate/slow activity in construction and private investment.	↑	↑
Recovery of the energy sector and administered prices	Energy sector reform may have weaker and stronger effects on the volume of production than expected. Due to falling global energy prices over the past months, administered prices may grow less than expected.	↓	↑

Note: ↑ means a more inflationary effect relative to the baseline scenario, ↓ lower economic growth, ↑ higher economic growth, ↓ a more disinflationary effect, and ↕ that the risks to the projection are symmetric relative to the baseline scenario.

would materialise primarily through lower external demand and subdued inflationary pressures, including energy and primary commodity prices. Lower external demand, along with extended global supply bottlenecks in some areas of production, would weigh on domestic manufacturing and exports. China's recovery may also turn out to be faster than expected, while savings accumulated during the pandemic may be used for consumption in a number of countries, which may push up global growth and, by extension, our exports. China's faster than expected recovery would probably drive up the prices of energy and other primary commodities and make it more difficult to fight inflation, while at the same time entailing tighter monetary policy. Still, as estimated by leading international institutions, the risks to global economic growth remain skewed to the downside. On this account, the **risks to the inflation and GDP projection associated with global growth and external demand are more on the downside**.

Taking into account the risks to global growth on the one hand, and risks from geopolitical tensions on the other, we judge the **risks of departure of global prices of primary commodities (agricultural commodities and metals) to be tilted to the upside, which would result in higher than projected inflation and GDP** given that Serbia is a net exporter of these products.

Vigorous growth in oil, gas and food prices may again push up global inflationary pressures. Also, a tight labour market, notably in advanced economies, may result in higher than expected wage growth. This may fuel inflation expectations and trigger **stronger than expected monetary tightening by leading central banks**. If monetary policies of leading central banks are tightened more than anticipated, global financial conditions would become more stringent, reducing capital inflows to emerging economies and generating depreciation pressures on this account. In that case, the higher cost of borrowing in a foreign currency at home would weigh on domestic demand through lower disposable income for consumption and investment, while the preserved relative stability of the dinar exchange rate would greatly diminish inflationary pressures on account of potentially reduced inflows of portfolio investment. If inflation in advanced economies returns to lower levels sooner than expected and/or if economic growth slows more considerably, leading central banks could slow the pace of their monetary tightening or discontinue it altogether, which would result in more favourable than expected global financing conditions. Hence, we judge the **risks on this account to be symmetric**.

When it comes to domestic factors, the **agricultural season** poses a risk to the inflation and GDP projection. We assumed this year's season to be around 5% higher than last year's, but below the long-term average. We judge the **risks to the inflation projection on this account to be tilted to the downside, and to the GDP projection – to the upside**.

The risks to the inflation projection are also associated with the **pace of domestic demand growth**. Lower proceeds from subdued export demand could negatively affect the labour market, i.e. lead to slower than anticipated employment and wage growth, with negative implications for domestic demand. On the other hand, **FDI inflows** could be higher than anticipated as our projections of FDI inflows are quite conservative and FDI outturns in previous years exceeded our projections. This would spur further growth in wages and employment. It should also be noted that higher labour supply is supported by the "Open Balkan" project, which could have further positive effects on our export. There is also a possibility of accelerated implementation of government-financed infrastructure projects to encourage domestic consumption and investment. Conversely, the pace of construction works may slow in an environment of high prices of construction elements and materials. With this in mind, the **risks to the inflation and GDP projection on account of domestic demand are judged to be symmetric**.

Developments in the domestic energy sector are another risk to the projection. Because of problems in the electric energy system, the question is posed whether it will be possible to significantly raise the volume of coal and electricity production at home in the short run and to restore production to the level from earlier years. This creates uncertainty regarding imports of coal and electricity, particularly in view of the volatility of their prices. On the other hand, as reforms and investment in the energy sector are in the focus of the new stand-by arrangement with the IMF, investment in overhauling the energy sector may be higher than assumed. Given all this, the risks to the **economic growth projection are judged to be symmetric**. In case of lower than assumed global energy prices, **some administered price increases in the domestic market may not take place**.

As the key risks to inflation and other economic developments still come from the international environment, the NBS will continue to monitor and analyse trends in international commodity and financial markets and to evaluate their impact on our economy. Depending on geopolitical developments and the movement in key inflation factors from the domestic and international environment in the coming period, the NBS will estimate whether there is a need to tighten monetary conditions further and to what extent, taking into account the effects of past monetary tightening and the time needed for these effects to play out fully. Going forward, the monetary policy priority will remain to deliver price and financial stability in the medium term, because in this way it will contribute to sustainable economic growth and, by extension, to a further rise in employment and a favourable investment environment.

Text box 6: Alternative scenarios for the projection

The period since our last *Report* saw the easing of global cost-push pressures, primarily on account of lower energy prices, further monetary policy tightening by leading central banks, with announcements of additional restrictiveness in the course of this year and a mild improvement in the growth outlook for the euro area and USA, as well as the loosening of containment measures in China. The greatest risk from the November projection, concerning a potential sharp rise in energy prices in the European market and halts in supply, primarily gas, did not materialise owing to high filling levels of gas storages, a relatively mild winter and substitution of Russian gas with liquid oil gas, with additional effect stemming from lower demand from China due to the zero covid tolerance policy over the major part of the period observed. In view of all this, we assess that the risks to the projections of inflation, GDP and current account deficit are less pronounced in the current projection and no longer asymmetric to the upside in case of inflation and current account deficit, as was the case in previous projections.

Having this in mind, apart from the baseline, this time we decided to present two additional projection scenarios in the *Report* – a downside one, but turning out so after a longer period, and an upside scenario compared to the baseline. Under the **downside scenario**, taking into account the unwavering geopolitical tensions between the EU and Russia, the embargo on imports of Russian crude oil to the EU by sea imposed in December and expanded in February to also include petroleum products, and inability to fully ensure alternative energy sources in other markets in the short run, especially in case China's demand goes up, we assumed a full halt of Russian gas supply to Europe. This would drive up natural gas and oil prices at end-2023 to a level higher than assumed in the baseline scenario, though much lower than assumed in the alternative scenario in the previous projection. This scenario also assumes the inability to export cereals via the Black Sea corridor. Coupled with higher mineral fertiliser and fuel prices, this would push global prices of primary agricultural commodities to a higher level than in the baseline scenario. On this account, imported inflation would also be higher, which, given the increased global uncertainty and dented investment and consumer confidence, would reflect on less favourable prospects for euro area economic growth and tighter financial conditions. The assumptions underlying this scenario and the one with lower cost-push pressures and deviations compared to the baseline, are shown in the table below. The ECB presented similar assumptions underlying the downside scenario in its December projection.[1]

Table O.6.1 **External projection assumptions in the baseline and alternative scenarios**

		Baseline scenario	Scenario with higher global energy prices, higher inflation and lower euro area growth	Scenario with lower global energy prices, lower inflation and higher euro area growth
Euro area GDP growth (in %)	2022	3.3		
	2023	0.0	-1.0	0.5
	2024	1.2	0.0	1.8
Average euro area inflation (in %)	2022	8.4		
	2023	5.7	6.7	5.2
	2024	2.4	2.6	2.3
Global oil price (average, USD/barrel)	2022	99.8		
	2023	84.8	118.8	67.6
	2024	80.8	92.5	74.9
Global gas price (average, USD/1000 m^3)	2022	1,224		
	2023	689	1,368	356
	2024	720	1,466	346
Global prices of primary agricultural commodities (y-o-y growth in Q4, in %)	2022	11.9		
	2023	-8.5	8.8	-17.1
	2024	0.3	-14.1	9.7
Quarterly EURIBOR (year end)	2022	2.1		
	2023	3.4	4.4	2.9
	2024	2.8	3.8	2.3

Sources: Consensus Forecasts, ECB and Bloomberg.

[1] Eurosystem staff macroeconomic projections for the euro area, December 2022 (europa.eu).

The materialisation of the above risks would entail less favourable macroeconomic movements in Serbia, with higher inflation and current account deficit and lower GDP growth than in the baseline scenario.

Further growth in global oil prices would have direct effects on **inflation at home** through higher prices of petroleum products in the domestic market. The rise in the global prices of energy and primary agricultural commodities would put an additional upward pressure on domestic inflation. In that case, euro area inflation would also run higher, entailing higher prices of products imported to Serbia. While the rising cost-push pressures drive inflation up, the ECB's monetary tightening and lower demand in the international market would work in the opposite direction. Further, lower external demand and higher interest rates on euro-indexed loans in the domestic market on account of the ECB's monetary tightening would also entail lower demand in the domestic market. At the same time, it should be kept in mind that the rising prices of energy, tightening of global financial conditions and increased uncertainty in the international financial market could drive the country risk premium up and reduce capital flows to Serbia, mainly in the form of portfolio investment, all of which could trigger depreciation pressures. Considering all of the above, the average inflation this year would be 1.1 pp higher than in the baseline scenario, and would return within the bounds of the target band in late 2024.

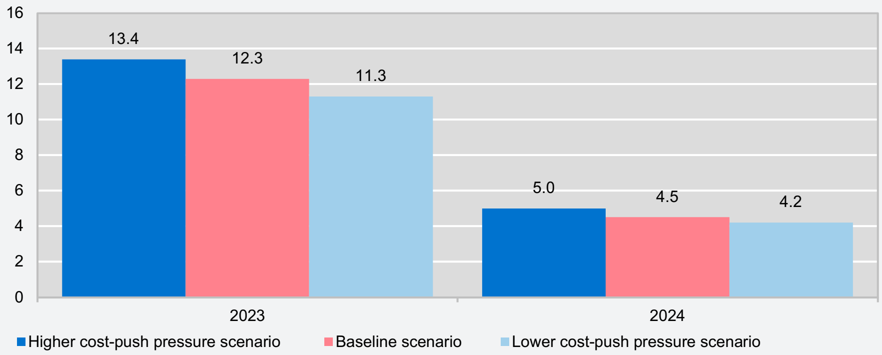
Due to the rising costs of energy purchase and consequently lower disposable income for investment and consumption, subdued external demand, primarily from the euro area, and generally dampened consumer and investor confidence, contracted capital inflows and less favourable financing conditions, **Serbia's economic growth** under this scenario would be 0.5 pp lower than in the baseline, with stronger negative contribution of net exports and private investment and weaker positive contribution of private consumption. Due to necessary energy purchases, there would probably be less room for government spending and investment.

Current account deficit would run around 1 pp higher than in the baseline scenario in 2023, reflecting less favourable terms of trade due to a considerable hike in energy prices and lower external demand, which would partially be offset by lower import of consumer goods and equipment due to contracted domestic demand. Also, greater expenses on account of income would reflect higher dividend outflows, less favourable financing conditions in the international financial market and higher degree of ECB's monetary restrictiveness.

In view of the decline in the global prices of energy and primary commodities in the past months, in the **upside scenario** we assumed that cost-push pressures would continue to weaken more swiftly than assumed in the baseline scenario, and consequently, that imported inflation would also slow down faster than expected in the baseline. The sharper fall in energy and primary commodity prices, in dollar terms, would be triggered by a greater supply of energy products in the global market, China recovering at a pace more moderate than expected (e.g. due to a higher rate of coronavirus contagion after the relaxation of containment measures), easing of geopolitical tensions, agricultural season outperforming the expectations globally or the euro's further strengthening against the dollar. The relaxation of cost-push pressures would also reduce the need for further monetary tightening by leading central banks, primarily the ECB, which, coupled with lower cost-push pressures, would result in better growth outlook for the euro area.

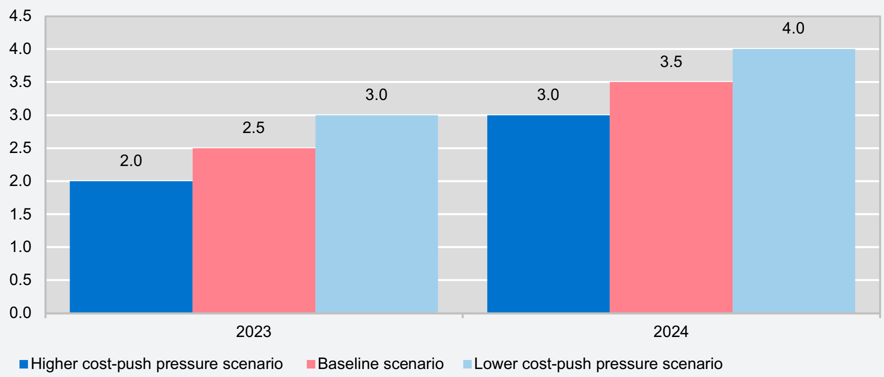
Owing to alleviated cost-push pressures and lower imported inflation, the domestic inflation would also trend 1 pp lower than in the baseline scenario this year, while lower energy import (in value terms, due to lower prices) and more substantial rise in exports, owing to the euro area rebound, would lead to around 0.5 pp better GDP outturn this year and around 0.8 pp lower current account deficit compared to the baseline.

Chart O.6.1 **Comparison of average inflation projections in the baseline and alternative scenarios**
(in %)



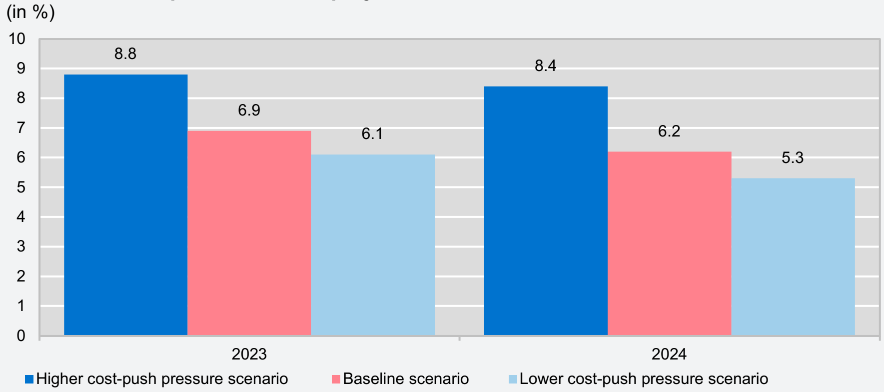
Source: NBS.

Chart O.6.2 **Comparison of GDP projections in the baseline and alternative scenarios**
(in %)



Source: NBS.

Chart O.6.3 **Comparison of CAD projections in the baseline and alternative scenarios**
(in %)



Source: NBS.

Table A
Indicators of Serbia's external position

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
EXTERNAL LIQUIDITY INDICATORS (in %)																		
FX reserves/imports of goods and services (in months)	6.1	9.0	7.5	5.4	9.7	8.4	8.8	7.7	7.6	6.6	6.7	6.2	5.4	5.4	5.7	6.1	5.9	5.2
FX reserves/short-term debt[3]	177.0	265.1	250.6	162.6	220.6	191.2	299.9	237.3	268.6	294.0	256.4	234.0	202.1	210.9	275.6	228.1	245.7	265.9
FX reserves /GDP	22.1	34.8	30.5	22.9	32.6	31.7	34.0	32.4	30.7	27.9	29.1	27.8	25.4	26.3	29.1	28.8	30.9	32.2
Debt repayment/GDP[3]	4.7	9.7	9.6	10.1	12.1	11.3	11.7	12.3	12.6	13.3	11.1	12.3	10.9	11.3	10.0	5.8	9.2	9.0
Debt repayment/exports of goods and services[3]	19.8	36.2	37.5	37.5	48.8	37.5	37.3	36.0	33.0	32.7	25.2	25.9	22.2	22.9	19.7	12.2	17.0	14.2
EXTERNAL SOLVENCY INDICATORS (in %)																		
External debt/GDP[3]	56.2	55.2	55.1	58.8	68.6	74.5	68.1	76.1	70.4	72.4	73.4	72.0	65.1	62.2	61.4	65.8	68.4	68.5
Short-term debt/GDP[3]	12.5	13.1	12.2	14.1	14.8	16.6	11.3	13.7	11.4	9.5	11.3	11.9	12.6	12.4	10.6	12.6	12.6	10.6
External debt/exports of goods and services[3]	234.9	205.7	214.3	218.9	276.9	247.1	216.5	223.6	184.0	177.7	166.8	152.4	132.2	126.0	121.0	138.2	126.6	111.9
FINANCIAL RISK EXPOSURE INDICATORS (in %)																		
FX reserves/M1	290.3	356.1	306.7	300.4	393.4	416.6	429.6	402.1	330.4	278.1	250.2	207.3	176.2	168.0	174.1	130.0	138.1	158.7
FX reserves/reserve money	169.8	179.5	173.8	140.7	190.5	196.4	207.6	197.9	199.9	196.6	193.7	196.6	185.0	171.4	194.1	157.1	180.0	180.2
OPENNESS OF ECONOMY (EXPORTS + IMPORTS)/GDP	67.1	73.0	74.7	78.0	65.1	75.3	78.0	84.5	87.1	91.8	96.2	100.6	106.2	108.2	111.5	103.9	116.7	137.6
MEMORANDUM: (in EUR million)																		
GDP[1]	22,276	25,906	31,551	35,701	32,486	31,546	35,432	33,679	36,427	35,467	35,740	36,779	39,235	42,892	46,005	46,815	53,329	60,365
External debt[3]	12,520	14,291	17,382	20,982	22,272	23,509	24,123	25,645	25,644	25,679	26,234	26,494	25,526	26,662	28,254	30,787	36,488	39,976
External debt servicing[3]	1,054	2,513	3,039	3,594	3,922	3,564	4,154	4,130	4,595	4,728	3,960	4,508	4,285	4,849	4,592	2,710	4,886	1,409
Central bank foreign exchange reserves	4,922	9,020	9,634	8,162	10,602	10,002	12,058	10,915	11,189	9,907	10,378	10,205	9,962	11,262	13,378	13,492	16,455	19,416
Short-term debt[2][3]	951	968	1,044	1,832	1,852	1,758	612	455	196	99	303	672	844	1,401	1,925	1,585	1,612	2,366
Current account balance	-1,778	-2,356	-5,474	-7,125	-2,032	-2,037	-3,656	-3,671	-2,098	-1,985	-1,234	-1,075	-2,051	-2,076	-3,161	-1,929	-2,266	-4,139

CREDIT RATING (change of rating and outlook)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	May/July	Feb	July	March/ Dec	Dec	Nov	March	Aug	July	Jan	Dec	Jan/March/ June/Dec	March/Dec	Dec	Sept/Dec	May	March/Dec	June
S&P	BB- /stable	BB- /positive	BB- /stable	BB- /negative	BB- /stable		BB /stable	BB- /negative				BB- /positive	BB /stable	BB /positive	BB+ /positive	BB+ /stable	BB+ /positive	BB+ /stable
Fitch	BB- /stable			BB- /negative		BB- /stable		BB- /negative		B+ /stable	B+ /positive	BB-/stable	BB /stable		BB+ /stable			
Moody's									B1 /stable			B1 /positive	Ba3 /stable		Ba3 /positive		Ba2 /stable	

Methodological notes:

Foreign exchange reserves/imports of goods and services (in months) - ratio of end-of-period foreign exchange reserves to average monthly imports of goods and services during last 12 months.
Foreign exchange reserves/short-term debt (in %) - ratio of foreign exchange reserves to stock of short-term debt at remaining maturity at end-of-period.
Foreign exchange reserves/GDP (in %) - ratio of end-of-period foreign exchange reserves to GDP.
Debt repayment/GDP (in %) - ratio of debt repayment (excl. early repayment of a part of debt to London Club creditors) to GDP during period under review.
Debt repayment/exports (in %) - ratio of debt repayment (excl. early repayment of a part of debt to London Club creditors) to exports of goods and services during period under review.
External debt/GDP − ratio of end-of-period outstanding debt to GDP.
Short-term debt/GDP − ratio of end-of-period short-term debt at remaining maturity to GDP.
External debt/exports (in %) − ratio of end-of-period outstanding debt to annual value of exports of goods and services.
Foreign exchange reserves/M1 (in %) - ratio of foreign exchange reserves to money supply at end-of-period.
(Exports + imports)/GDP (in %) - ratio of value of exports and imports of goods and services to GDP during period under review.

[1] According to ESA 2010. Data for 2022 is NBS estimate.

[2] At original maturity.

[1] Data for 2022 is data for Q3 2022.

Notes:

1. The Statistical Office revised GDP data for the period 2005-2017, which led to a change in the share of macroeconomic indicators in GDP.
2. Data are subject to corrections in line with the official data sources.
3. Starting from 2007 data on exports and imports of goods and services are shown in accordance with BPM6. Data for 2005 and 2006 are shown according to previous methodology.
4. Starting from 2007 the general trade system of registration of exports and imports of goods is applied. This is a broader concept and includes all goods entering/exiting country's economic territory, apart from goods in transit. Data for 2005 and 2006 are disseminated using the special trade system.
5. External debt servicing does not include advance debt repayments.

Table B
Key macroeconomic indicators

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth (in %)[1)]	5.5	5.1	6.4	5.7	-2.7	0.7	2.0	-0.7	2.9	-1.6	1.8	3.3	2.1	4.5	4.3	-0.9	7.5	2.3
Consumer prices (in %, relative to the same month a year earlier)[2)]	17.7	6.6	11.0	8.6	6.6	10.3	7.0	12.2	2.2	1.7	1.5	1.6	3.0	2.0	1.9	1.3	7.9	15.1
NBS foreign exchange reserves (in EUR million)	4,922	9,020	9,634	8,162	10,602	10,002	12,058	10,915	11,189	9,907	10,378	10,205	9,962	11,262	13,378	13,492	16,455	19,416
Exports (in EUR million)[3)]	5,329	6,948	8,110	9,583	8,043	9,515	11,145	11,469	13,937	14,451	15,728	17,385	19,312	21,166	23,349	22,271	28,818	38,000
- growth rate in % compared to a year earlier	19.1	30.4	-	18.2	-16.1	18.3	17.1	2.9	21.5	3.7	8.8	10.5	11.1	9.6	10.3	-4.6	29.4	31.9
Imports (in EUR million)[3)]	9,612	11,970	15,468	18,267	13,099	14,244	16,487	16,992	17,782	18,096	18,643	19,597	22,343	25,257	27,960	26,370	33,439	45,037
- growth rate in % compared to a year earlier	0.7	24.5	-	18.1	-28.3	8.7	15.7	3.1	4.7	1.8	3.0	5.1	14.0	13.0	10.7	-5.7	26.8	34.7
Current account balance[3)]																		
(in EUR million)	-1,778	-2,356	-5,474	-7,125	-2,032	-2,037	-3,656	-3,671	-2,098	-1,985	-1,234	-1,075	-2,051	-2,076	-3,161	-1,929	-2,266	-4,139
as % of GDP	-8.0	-9.1	-17.3	-20.0	-6.3	-6.5	-10.3	-10.9	-5.8	-5.6	-3.5	-2.9	-5.2	-4.8	-6.9	-4.1	-4.2	-6.9
Unemployment according to the Survey (in %)[6)]						20.9	24.9	25.9	24.0	20.6	18.9	16.4	14.5	13.7	11.2	9.7	11.0	8.9
Wages (average for the period, in EUR)[7)]	210.4	257.8	347.1	402.0	337.8	331.8	372.5	366.1	388.5	379.8	367.9	374.5	394.5	419.8	466.0	510.9	560.2	630.6
RS budget deficit / surplus (in % of GDP)[4)]				-1.6	-3.0	-3.2	-3.8	-5.6	-4.9	-5.9	-2.7	-0.2	0.7	0.6	0.2	-8.3	-4.6	-3.3
Consolidated fiscal result (in % of GDP)[4)]	1.1	-1.4	-1.8	-2.5	-4.2	-4.3	-4.5	-6.4	-5.1	-6.2	-3.5	-1.2	1.1	0.6	-0.2	-8.0	-4.1	-3.1
RS public debt, (central government, in % of GDP)[8)]	47.6	33.9	27.9	26.8	30.9	39.5	42.8	52.9	56.0	66.2	70.0	67.7	57.8	53.6	51.9	57.0	56.5	55.2
RSD/USD exchange rate (period average)	66.87	67.03	58.39	55.76	67.47	77.91	73.34	88.12	85.17	88.54	108.85	111.29	107.50	100.28	105.28	103.03	99.49	111.86
RSD/USD exchange rate (end of period)	72.22	59.98	53.73	62.90	66.73	79.28	80.87	86.18	83.13	99.46	111.25	117.14	99.12	103.39	104.92	95.66	103.93	110.15
RSD/EUR exchange rate (period average)	82.99	84.11	79.96	81.44	93.95	103.04	101.95	113.13	113.14	117.31	120.73	123.12	121.34	118.27	117.85	117.58	117.57	117.46
RSD/EUR exchange rate (end of period)	85.50	79.00	79.24	88.60	95.89	105.50	104.64	113.72	114.64	120.96	121.63	123.47	118.47	118.19	117.59	117.58	117.58	117.32
MEMORANDUM:																		
GDP (in EUR million)[5)]	22,276	25,906	31,551	35,701	32,486	31,546	35,432	33,679	36,427	35,467	35,740	36,779	39,235	42,892	46,005	46,815	53,329	60,365

[1)] At constant prices of previous year. Data for 2022 is SORS preliminary estimate.

[2)] Retail prices until 2006.

[3)] Starting from 2007 data on balance of payments (current account, exports and imports of goods and services) are shown in accordance with BPM6. Data for 2005 and 2006 are shown according to the previous methodology. Due to the break in the series for 2007, exports and imports growth rates are not shown. Starting 2007 the general trade system of registration of exports and imports is applied. This is a broader concept and includes all goods entering/exiting country's economic territory, apart from goods in transit. Data for previous years are disseminated using the special trade system.

[4)] Consolidated (as of 2005) and RS budget level (as of 2008) deficit include payment of called guarantees, bank recapitalisations and debt takeover, in line with IMF methodology.

[5)] According to ESA 2010. Data for 2022 is NBS estimate.

[6)] Data are revised according to the new methodology of Labour Force Survey from 2021. Data for 2022 is data for Q3 2022.

[7)] Until 2018, wages are shown according to the old methodology. Since 2018, wages are shown according to the new methodology and data are based on Tax Administration evidence. For conversion of wages from RSD to EUR, we used the average of the period RSD/EUR exchange rate. Data for 2022 is average of eleven months.

[8)] Data on the share of public debt in GDP were downloaded from the website of the Ministry of Finance.

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Executive Board meetings and changes in the key policy rate

2022

Date	Key policy rate (p.a, in %)	Change (in basis points)
13 January	1.00	0
10 February	1.00	0
10 March	1.00	0
7 April	1.50	+50
12 May	2.00	+50
9 June	2.50	+50
7 July	2.75	+25
11 August	3.00	+25
8 September	3.50	+50
11 October	4.00	+50
10 November	4.50	+50
8 December	5.00	+50

2023

Date	Key policy rate (p.a, in %)	Change (in basis points)
12 January	5.25	+25
9 February	5.50	+25
9 March		
6 April		
11 May		
8 June		
13 July		
10 August		
7 September		
10 October		
9 November		
7 December		

Press releases from NBS Executive Board meetings

Press release from Executive Board meeting held on 8 December 2022

At its meeting today, the NBS Executive Board voted to raise the key policy rate by 50 bp, to 5%. It raised by the same amount the rate on deposit facilities – to 4%, and the rate on lending facilities – to 6%.

By making this decision, the NBS continues to tighten monetary conditions and contain the second-round effects of rising prices through inflation expectations, thus aiding inflation in Serbia to strike a downward trajectory and return within the target tolerance band until the end of the projection horizon. Today's rate hike is the ninth in a row – since April 2022, it has been raised by total 400 bp. The spillover of the effects of past monetary policy tightening onto the rates in the markets of money, loans and savings suggests the efficiency of the transmission mechanism through the interest rate channel. At the same time, the NBS helps contain the effects of the spillover of rising import prices onto domestic prices and contributes to macroeconomic stability amid heightened global uncertainty also by maintaining the relative stability of the dinar exchange rate against the euro.

As emphasised by the Executive Board, the Serbian economy still faces significant cost-push pressures from the international environment, though there are signs that they are easing. The persistently high geopolitical tensions and volatile movement of global energy and food prices in the past months under the influence of numerous factors on the supply and demand side warrant monetary policy caution by the NBS. According to the flash estimate for November, inflation in the euro area, our key trade partner, fell for the first time in the last 17 months to the level of 10.0%, which is an outcome better than expected, owing to the slower growth in energy prices, while the growth in food prices and core inflation has still not decelerated. Euro area economic activity indicators are also better than expected, despite the sharp hikes in interest rates and mounting geopolitical uncertainty, with recession still expected in 2023. The continued monetary tightening by the ECB and the Fed is expected going forward, but it is estimated that the pace of rate hikes will slow, i.e. that the degree of their increase in individual meetings will be smaller than so far. The rising cost of living of households and companies' expenses, alongside monetary tightening by leading central banks, will reflect on global economic activity and a gradual decline in global inflationary pressures next year. Also, global supply halts are being eased, and the global primary commodity prices have declined, notably of energy, which should also help soothe inflationary pressures going forward. The price of natural gas in the European market, which fuelled most concern, has declined significantly since early September, while sufficient quantities of gas will contain its dramatic rise this winter which was initially expected.

Continued monetary tightening is necessary even in an environment of the prevailing influence of supply-side factors on inflation, so as to ensure that it does not get entrenched and broaden further. By deciding to gradually and moderately tighten monetary conditions at home, the NBS Executive Board had in mind that the movement of inflation in Serbia, which in October measured 15% y-o-y, is still mainly determined by global cost-push pressures. Headline inflation will remain elevated until the end of this and early next year, but will thereafter strike a downward trajectory, only to decline more significantly in H2 2023, and return within the target tolerance band until the end of the projection horizon. Past monetary tightening, the anticipated waning of the effects of global factors that drove up the energy and food prices in the past period, and dented external demand amid a clouded global growth outlook will work towards the easing of inflationary pressures.

Real y-o-y GDP growth measured 1.0% in Q3, which is slightly lower than the SORS flash estimate (1.1%). Economic activity slowed primarily due to this year's drought and a much weaker than assumed agricultural season, reduced external demand, and a continued rise in production costs, which reflects primarily on lower production in construction and manufacturing. Due to low water levels, the activity in the energy sector continued down. Mining, however, recorded robust growth. The Board expects GDP to rise by 2–3% in real terms this and next year, and to accelerate to 3.5% in 2024, in parallel with the waning of the effects of factors behind lower external demand, and in light of the planned implementation of investment projects, primarily in infrastructure.

Depending on the global geopolitical situation and the movement of key monetary and macroeconomic factors from the domestic and international environment in the coming period, the NBS will assess whether it is necessary to continue to tighten monetary conditions and to what extent. The priority of monetary policy will still be to ensure price and financial stability in the medium run, while supporting further economic growth.

The next rate-setting meeting will be held on 12 January 2023.

Press release from Executive Board meeting held on 12 January 2023

At today's meeting, the NBS Executive Board voted to raise the key policy rate by 25 bp to 5.25%, and to increase the deposit and credit facility rates by the same amount – to 4.25% and 6.25%, respectively.

The NBS continues to tighten monetary conditions and contain the second-round effects of cost-push pressures on price growth through inflation expectations. It thus helps inflation in Serbia to strike a downward trajectory and return within the target tolerance band until the end of the projection horizon. Today's hike is the tenth in a row – since April 2022, the rate has been raised by 425 bp in total. The hitherto rate hikes have affected the interest rates in the markets of money, loans and savings, signalling the effectiveness of the monetary policy transmission mechanism via the interest rate channel. By maintaining the relative stability of the dinar against the euro, the NBS also significantly contributes to containing the spillover effect of soaring import prices on domestic prices, and to macroeconomic stability amid heightened global uncertainty.

Though inflation remains largely driven by global cost-push pressures in the production of food and energy, on which central banks have little or no effect, with an array of measures the NBS aims to slow inflation and bring it down closer to the target. In addition to tightening monetary conditions by raising the main interest rates and maintaining the relative stability of the exchange rate, the NBS has also adopted a number of measures capping the prices of financial products.

Globally, positive signs include inflation's slowdown influenced by energy price reductions in the past several months, lower transport costs, and increasingly less pronounced global supply halts. Moreover, the price growth in the euro area is slowing, though further proofs of a steady easing of inflationary pressures globally are needed. Geopolitical tensions remain elevated. Global energy and food prices are volatile, under the impact of a number of supply- and demand-side factors, which warrants caution in NBS monetary policy conduct. According to flash estimates for December, euro area inflation continued down for the second month in a row, owing to the slowing pace of growth of energy prices, while food prices and core inflation still haven't lost any traction. Besides, preliminary economic activity indicators suggest that, despite sharply increased cost-push pressures and interest rates, as well as rampant geopolitical uncertainty, euro area economic activity last year was better than anticipated, while market participants estimate that the recession in 2023 will not be as deep as initially expected. In its policy making, the Executive Board also reckoned with the continued tightening of global financial conditions, amid further monetary tightening by the ECB and the Fed. It is expected, however, that the continued tightening of global financial conditions will contribute to further easing of inflationary pressures, underpinned by the sustained fall in primary commodity prices, and that further monetary tightening by the ECB will dampen external demand, but also raise the prices of euro-indexed loans in the local market.

The Executive Board's decision to tighten monetary conditions in the domestic market in a gradual and measured way reflects the view that inflation movements in Serbia are still largely dictated by the global energy crisis, lingering consequences of the pandemic, and the drought that hit our region. Average annual inflation in 2022 was 11.9%. According to SORS flash estimates, y-o-y inflation in December, as in the previous month, equalled 15.1%. The largest contribution to inflation came from the rising food and energy prices. Throughout the year, core inflation moved at a considerably lower level than headline inflation, owing primarily to the years of maintained relative stability of the dinar against the euro. Headline inflation will remain elevated in early 2023 as well, mainly on the back of the announced electricity and gas price hikes, but will strike a downward path thereafter, recording a sharper fall in H2 2023 and returning within the target band by the end of the projection period. Past monetary tightening, the anticipated waning of the effects of global factors that drove up the energy and food prices in the past period, and dented external demand amid a clouded global growth outlook will work towards the easing of inflationary pressures.

According to SORS preliminary estimates, Serbia's real GDP growth in 2022 amounted to 2.3%, as a result of the pick-up in industry and services. A strong contribution to industrial growth came from the rising physical volume of production in mining, but also from manufacturing, despite a hefty rise in global energy prices and persisting supply bottlenecks. On the other hand, agricultural production contracted because of the drought, while construction activity slackened amid soaring costs of construction material and other inputs. The Executive Board notes that despite the construction slack, total fixed investment remains stable owing to the strong inflow of FDI. The labour market continues to display positive trends, with a further rise in employment and wages and a decline in unemployment.

Depending on the future movement of key monetary and macroeconomic factors from the domestic and international environment, as well as on the global geopolitical situation, the NBS will assess whether there is a need to further tighten monetary conditions and to what extent. Delivering price and financial stability in the medium term remains the NBS's monetary policy priority, while supporting further economic growth.

The next rate-setting meeting will take place on 9 February.

Press release from Executive Board meeting held on 9 February 2023

At its meeting today, the NBS Executive Board voted to raise the key policy rate by 25 bp, to 5.5%. The rates on deposit and credit facilities were raised by the same amount, to 4.5% and 6.5%, respectively.

In its decision-making, the Board was guided by the persistently high global cost-push pressures, despite the signs of easing, and the necessity to contain their second-round effects on price growth at home through inflation expectations and to impact a part of demand-side pressures. The NBS thus helps inflation to strike a downward path and retreat within the target tolerance band until the end of the projection horizon. Today's hike is the eleventh in a row – since April 2022, the rate has been raised by 450 bp in total. The transmission of the rate increases so far to the rates in the markets of money, loans and savings signals the effectiveness of the monetary policy transmission mechanism via the interest rate channel. Moreover, by maintaining the relative stability of the dinar against the euro, the NBS also significantly contributes to containing the spillover effect of rising import prices on domestic prices, and to macroeconomic stability amid elevated global uncertainty.

As stated by the Board, the global growth outlook for this year is somewhat better than expected until recently given that there are signs that global cost-push pressures are easing and that China dropped its zero-Covid policy. The weakening of global cost-push pressures reflects falling prices in the energy sector – of gas in Europe and of crude oil globally, the resolution of supply bottlenecks and reduced container shipping rates. Still, the Board emphasises that caution should be exercised in monetary policy conduct as more robust growth in China would probably push up the prices of energy and other primary commodities and make it more difficult to fight inflation, which is showing signs of retreating from multi-decade highs globally. Besides, the indirect effects of elevated prices of energy and industrial raw materials in the past period are still fuelling core inflation and – along with a tight labour market – are slowing the disinflation process in a number of countries.

In late 2022, y-o-y inflation measured 15.1%, with around two-thirds still originating from food and energy prices. As in other countries, over the past months the contribution of energy prices has been declining and that of food prices has continued up. Even though they slowed down, producer and import prices continue to record relatively high y-o-y growth rates, impacting domestic core inflation. However, core inflation continued to move below headline inflation and measured 10.1% y-o-y in December, owing to the relative stability of the exchange rate that was maintained in extremely uncertain global conditions. The Board expects inflation to remain elevated in Q1 this year, as a consequence of continued spillover of the high cost-push pressures from the prior period and the hike in household electricity and gas prices. In the remainder of the year, and especially in the second half, the Board expects inflationary pressures to ease on the back of past monetary tightening, the anticipated waning of the effects of global factors driving energy and food price growth in the prior period, slower imported inflation, and lower external demand.

According to preliminary SORS data, Serbia's real y-o-y GDP growth amounted to 0.4% in Q4 and 2.3% in 2022 overall. The largest contribution to growth in Q4 came from services, owing to continued positive trends in the labour market. Despite headwinds from external demand, industrial production also provided a positive contribution, mainly as a result of the recovery of the electricity supply sector. One the other hand, agricultural production recorded a decline relative to the previous year because of the drought, while construction activity slackened amid a hefty rise in the cost of construction materials and other inputs. The Executive Board judges that lower external demand in the first half of the year, notably from the euro area, will slow down manufacturing and exports, which will however gather pace from the second half of the year as the effects of factors that weighed on external demand dissipate.

Depending on movements in the key monetary and macroeconomic factors from the domestic and international environment, as well as on how the global geopolitical situation evolves, the NBS will assess whether there is a need for additional tightening of monetary conditions and to what extent, while taking into account the expected effects of past monetary tightening on inflation going forward. Delivering price and financial stability in the medium term remains the priority of the NBS's monetary policy, along with supporting further economic growth.

At today's meeting the Executive Board adopted the February Inflation Report with new macroeconomic projections, the details of which will be presented to the public at a press conference on 14 February.

The next rate-setting meeting will be held on 9 March.

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