National Bank of Serbia

November 2022

INFLATION REPORT

2022

November

INFLATION REPORT

NATIONAL BANK OF SERBIA
Belgrade, Kralja Petra 12
Tel: +381 11 3027-100

Belgrade, Nemanjina 17
Tel: +381 11 333-8000

www.nbs.rs
Number of copies: 60
ISSN 1820-9394

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 November *Inflation Report* was considered and adopted by the NBS Executive Board at its meeting of 10 November 2022.

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

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 4 November.

Contents

I Overview

In the period since the previous *Report*, developments in the international environment, which also had a strong bearing on macroeconomic trends at home and monetary policy decisions of the NBS, have been marked by further deepening of geopolitical tensions, rampant global inflation, and stepped-up monetary tightening by a large number of central banks, including, on these grounds, a gloomier global growth outlook. The IMF has not changed its **global growth estimate for this year** as developments in H1 were more favourable than expected. However, elevated cost-push pressures and soaring global inflation, along with the effects of unwinding of monetary and fiscal stimuli applied in the first stage of the pandemic, and the tightening of global financial conditions, including slower than expected growth in China due to its zero COVID-19 policy, are reflecting on the **gloomier global growth outlook for the remainder of this** and next year, with 2023 growth now forecast at 2.7%. As regards the **euro area, according both to the IMF and Consensus Forecasts estimate, the 2023 growth has been revised significantly down**, to 0.5% and 0%, respectively, with recession expected in Germany and Italy, our key trade partners in the euro area.

In the period from the previous Report, the global economy has been marked by a gloomier growth outlook, notably for 2023, a further surge in inflation, and the tightening of financial conditions, prompted by heightened uncertainty in the international financial market, and stepped-up monetary tightening by a large number of central banks.

In most countries inflation continues to move above expectations, still primarily reflecting geopolitical tensions and, in this regard, much higher global energy and food prices, while inflationary pressures in some countries are also generated by domestic demand and labour market factors. In such an environment, **in the past months many central banks have been tightening their monetary policies at a pace faster than initially expected**, revising up their inflation projections and expectations concerning the level and timing of peak inflation. In September and October, the ECB lifted its interest rate by a historical amount (75 bp each). In September and November, the Fed raised its key rates by the same amount. Leading central banks are expected to further tighten their monetary policies as, according to projections, inflation in the euro area and the USA is not likely to reach the target before the end of 2024. Along with a clouded global growth outlook, further monetary tightening by leading central banks may fuel additional volatility in the international financial market and lead to

Inflationary pressures that are stronger and more durable than initially expected and tight labour markets have led to faster than anticipated monetary tightening by leading central banks.

continued rechannelling of global capital flows from emerging to advanced economies. Still, expectations prevail that global inflationary pressures will gradually subside, on account of the effects of monetary tightening by central banks, stabilisation of the primary commodity market, and gradual unblocking of global supply bottlenecks. Though still volatile and significantly higher than a year ago, the global prices of oil and other primary commodities have fallen over the past months, in response to mounting global recessionary pressures, with halts in international supply chains also being eased. In September and October, the global prices of natural gas, coal and electricity, which since late 2021 have been exerting a strong negative effect on macroeconomic developments in Serbia, also declined, thanks to favourable weather and higher than expected gas storage levels in Europe.

As inflation at home is largely shaped by cost-push pressures from the international environment, the NBS continued to moderately tighten monetary conditions.

Persistent global cost-push pressures and a further rise in imported inflation in the period since the previous *Report* influenced the **NBS Executive Board's decision to continue to raise the key policy rate** by 50 bp in September, October and November each, to the current level of 4.5%. The rates on deposit and lending facilities were lifted by the same amount, to 3.5% and 5.5%, respectively. By further raising its interest rates, the NBS aims to contain the second-round effects of rising global food and energy prices on other prices in the domestic market through inflation expectations, so as to ensure that inflation strikes a downward trajectory and returns within 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 also significantly contributes to containing the effects of the spillover of soaring import prices onto domestic prices, and to macroeconomic stability amid elevated global uncertainty caused first by the pandemic and later by geopolitical tensions and the Ukraine conflict. In the year to end-October, the dinar gained 0.2% nominally against the euro. From May until end-October, the NBS intervened in the IFEM by buying EUR 2,370 mn net, offsetting the entire amount of FX sales in the first several months. Thus, from the start of the year and ending with October, the NBS bought EUR 100 mn net. Standing at **record EUR 16.9 bn in late October**, the NBS FX reserves also safeguard financial and overall macroeconomic stability.

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 monetary tightening drove up **interest rates in the money and lending markets, confirming the efficiency of the monetary policy transmission mechanism**. ECB's monetary policy normalisation and, on these grounds, higher euro area money market rates reflected on a rise in euro lending rates at home. However, despite higher borrowing costs, **the approval of loans to the non-monetary sector continued in Q3 at a similar pace as in the quarters before**, although the y-o-y growth in total domestic lending slowed to 11.7% in September under the impact of high last year's base and the maturing of loans extended under the guarantee scheme. Lending is still largely supported by corporate loans, which rose 14% y-o-y, while growth in household loans slowed to 8.3%. Q-o-q, growth in corporate and household lending in Q3 was driven by investment and housing loans, respectively. **The NPL ratio fell to below 3.2% in September – its new record low, down by 1 pp from before the pandemic**, meaning that bank asset quality has not deteriorated even after the government economic support measures were unwound, and does not pose an obstacle to further lending growth.

Despite more sizeable than planned fiscal revenue in the year so far, the consolidated fiscal deficit will most probably exceed the projected level of 3.0% of GDP this year, due to much higher outlays for energy purchases and the need to protect the citizens' living standard.

Developments in the international environment also impacted **public finances** at home. Given the need to ensure funds for energy purchases and infrastructure projects, and to protect the citizens' living standard, the share of the general government deficit in GDP will probably exceed the projected figure of 3.0%, despite revenue outperformance in the year so far. Activities concerning the conclusion of a new two-year stand-by arrangement with the IMF, worth around EUR 2.4 bn, are in the final stage. The proposed arrangement would underpin financing amid global challenges and support economic policy and implementation of structural reforms, with a focus on the energy sector.

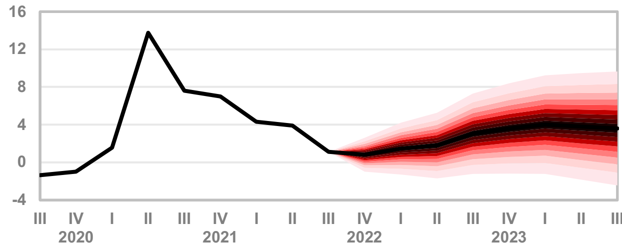
Economic activity at home slackened in Q3, reflecting this year's poorer than anticipated agricultural season, effects of slower global demand and the continued rise in production costs.

After posting relatively high growth of around 4.1% y-o-y in H1, **economic activity slackened in Q3**. According to the preliminary SORS estimate, Serbia's third-quarter GDP growth measured 1.1% y-o-y. Economic activity slowed more than we expected in our previous *Report*, mostly reflecting a much poorer agricultural season this year, reduced external demand and the continued rise in production costs which has dented activity primarily in construction and manufacturing. Activity in the energy sector also continued down due to very low river water levels. On the expenditure side, final consumption provided a positive contribution, though smaller than in previous quarters, while the contribution of total fixed investment was negative due to last year's high base for capital government expenditure and rising cost-push pressures in the corporate sector. By contrast to earlier quarters when net export provided a significant negative contribution due to robust import of energy, according to our estimate in Q3 the contribution of net export was positive as real export of goods and services slightly outpaced import.

Under our new projection, GDP is set to rise by 2.0–3.0% both this and the next year and to accelerate in the medium run, assuming a notable decline in geopolitical tensions, external demand recovery and capital projects implementation.

In view of the above, **we have revised down Serbia's GDP growth projection for this year** relative to our August expectations to the range of 2.0–3.0%. Economic growth will be led by domestic demand, while the contribution of net export will be negative, primarily because of robust energy import, mostly in the first half of the year. As economic activity in the euro area and other countries which are our important trade partners is expected to weaken notably next year, while the carry over effect from this year will be smaller, we have also revised Serbia's GDP growth projection for 2023 to the range of 2.0–3.0%. Once the negative effects of the Ukraine conflict on external demand wear off and the planned investment projects are implemented, mostly in road, railway, energy and utility infrastructure, we expect growth to pick up as of 2024 to around 3.5% and then return to its pre-pandemic growth trajectory of around 4% per annum in the medium term.

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



The entire increase in the current account deficit in the nine months of this year compared to the same period last year results from elevated energy import, but the current account deficit is almost fully covered by net FDI inflows.

The current account deficit of EUR 2.8 bn in the nine months of the year was two times higher than in the same period of 2021 and resulted mostly from elevated energy import due primarily to soaring global energy prices. Though external demand slackened, export of goods and services posted high growth rates this year (32.2% y-o-y), primarily thanks to earlier investments which resulted in a positive contribution of all manufacturing and metal ore export sectors, as well as because of higher export prices. Despite slowing down notably in Q3 mostly due to seasonal reasons, energy import in the nine months of the year measured EUR 4.3 bn, up by EUR 2.5 bn y-o-y, and was the key factor behind the y-o-y growth rate of total goods and services import of 36.6%. A significant negative impact on the current account deficit came from terms of trade, i.e. faster growth in import than export prices, but also from increased expenditures in respect of direct investment income. **The current account deficit in the nine months was almost fully covered by net FDI inflow.** Inflow of FDI to Serbia measured EUR 3.0 bn, the same as in the corresponding period last year, despite heightened investment aversion globally. In the June–September period alone, FDI inflow measured EUR 1.9 bn. At the annual level, we expect the share of the current account deficit in GDP to equal around 9%. Expectations for 2023 are the same. The higher level of the current account deficit this year resulted primarily from elevated energy import, while next year it will result not only from energy import, which will certainly remain high, but also from weaker external demand due to the anticipated slackening of economic growth in our most important trade partners. In the medium run, a continued rise in export capacities, along with the expected wearing off of negative effects of external demand and unfavourable terms of trade, should contribute to a gradual decline in the current account deficit and preservation of external sustainability. External sustainability will also benefit from continued relatively high FDI inflows to Serbia, projected at around EUR 3.8 bn this year, which is more than we previously anticipated.

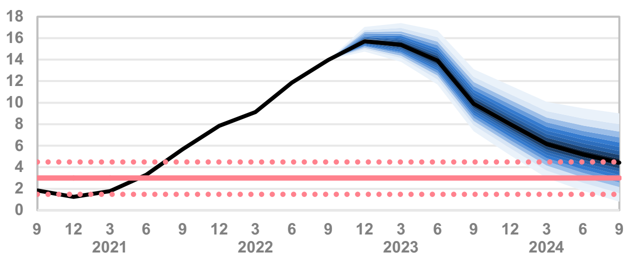
***In Q3, inflation in Serbia moved in line with our expectations presented in the August* Inflation Report.**

Like in other countries, y-o-y inflation in Serbia continued to rise in Q3 amid elevated cost-push pressures and lingering geopolitical tensions. **In September, it measured 14.0%**, which was in line with the NBS's expectations. Relative to June when inflation was 11.9%, the contribution of processed food prices increased the most (to 4.3 pp), due to persistently high global prices of energy, packaging, primary agricultural commodities and other inputs which pushed up production and transport costs, and the negative effects of the drought at home and in most of Europe. Because of last year's high base, the contribution of non-processed food prices, primarily of fresh vegetables, drifted down (to 2.2 pp). Though the contribution of petroleum product prices to y-o-y inflation subsided in Q3 due to the downturn in the global oil price, hikes in the prices of electricity and solid fuels (wood and coal) over risks surrounding their availability in winter months, ramped up the contribution of energy prices to headline inflation to 3.0 pp. Elevated producer and import prices pushed up y-o-y **core inflation** (excluding food, energy, alcohol and cigarettes) to 8.6% in September, though it stayed well below headline inflation. Lower core inflation continues to be supported by the preserved relative stability of the exchange rate in extremely uncertain international circumstances.

Under our new projection, inflation is expected to move at a higher level over the short term, but is still projected to decline more sharply in the second half of 2023 and retreat within the bounds of the target tolerance band in the second half of 2024.

Under the central November projection, y-o-y inflation is expected to stay elevated until late 2022 and early 2023, to decline sharply in H2 2023 and retreat within the bounds of the target tolerance band towards the end of the projection horizon. **Inflation's decline will be supported primarily by the effects of past monetary policy tightening**, slowdown in imported inflation, softening of global cost-push pressures and completion of their pass-through to consumer prices, as well as the disinflationary impact of aggregate demand due primarily to much subdued external demand.

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



The NBS is ready to respond promptly using all available instruments in case of materialisation of any of the risks that would keep inflation above the upper bound of the target tolerance band for a longer period.

The uncertainty surrounding the achievement of the inflation and GDP projection remains **associated mostly with the factors from the international environment,** especially the effects of the Ukraine conflict on energy availability and prices in the world market, including the global growth outlook, which will largely determine international primary commodity prices. When it comes to factors from the domestic environment, the risks to the projection are mostly associated with the outcome of the next agricultural season (which we assumed to be below average for the first time), FDI inflow, recovery of the energy sector and any further measures the Government might take to encourage domestic demand growth in the coming period. Overall, the risks to the GDP growth projection for this and the next year are judged to be pronounced but symmetric, while the risks to the inflation projection are also pronounced but skewed to the upside. The NBS will continue to monitor and analyse trends in international commodity and financial markets and to evaluate whether there is a need to tighten monetary conditions further and to what extent. Going forward, the NBS's monetary policy priority will remain to deliver price and financial stability in the medium term, while supporting further economic growth and development, a further rise in employment and preservation of a favourable investment environment.

II Monetary policy since the August *Report*

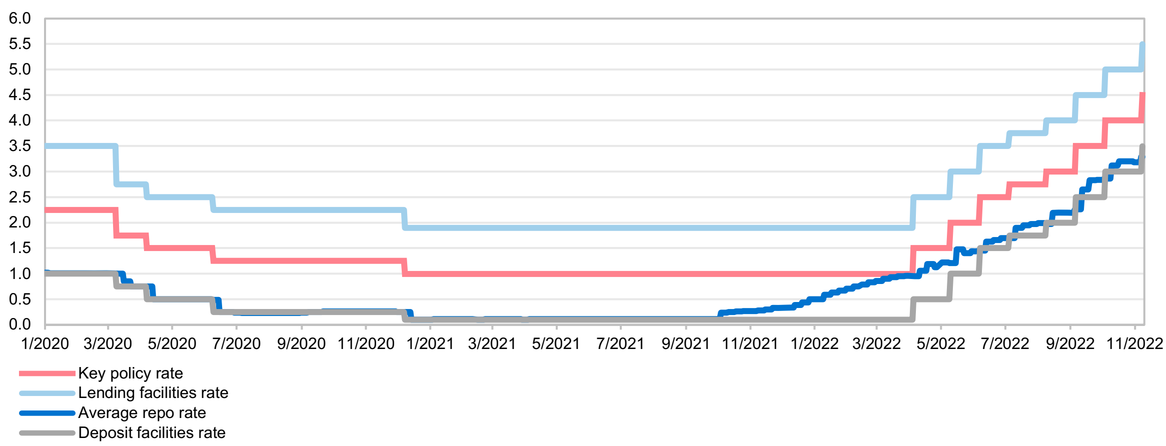
Amid continued cost-push pressures, primarily global ones, and higher imported inflation in the period since the August Report, the Executive Board assessed that it was necessary to further raise the key policy rate and continue with monetary tightening in order to limit the inflationary effects of demand-side factors and the second-round effects of rising food and energy prices on other prices through inflation expectations. 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 August *Report*, the Executive Board **continued to raise the key policy rate**.

In September and October, the rate was raised by 50 bp each, to 4.0%. Since the August Report, the weighted average repo rate also went up by 121 bp, to 3.2% at end-October. By further raising its interest rates, the NBS responds to powerful inflationary pressures, notably from the international environment. At the same time, the NBS helped limit the spill-over effect of rising import prices on domestic prices, and macroeconomic stability largely by **preserving the relative stability of the EUR/RSD exchange rate** amid heightened global uncertainty caused first by the pandemic and later by the energy crisis and geopolitical tensions related to the conflict in Ukraine. From the beginning of the year until end-October the dinar gained 0.2% against the euro in nominal terms and lost 11.8% against the dollar due to the dollar's strengthening against the euro in the international market by 12.0%. Moreover, against the backdrop of persisting appreciation pressures, the NBS has again become a net buyer of FX as of May. Thus, until end-October (buying EUR 2,370 mn net), the NBS fully compensated for the net FX sale in the first four months of the year (EUR 2,270 mn). Overall, in the first ten months of 2022, the NBS bought EUR 100 mn net.

In making its decision to further tighten monetary conditions, the Executive Board primarily had in mind the fact that geopolitical developments and the escalation of the Ukraine crisis have pushed global prices of energy and primary commodities in H1 to their record highs, leading to **much stronger inflationary pressures worldwide**. These pressures were also underpinned by

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



Source: NBS.

persisting global supply chain bottlenecks, still relatively strong global demand and tight labour market in many countries. In such conditions, **many central banks have tightened their monetary policies to a greater degree than previously expected, revising their inflation projections up**, as well as their expectations as to the peak level of inflation and the time it should be reached. After raising its policy rate in July (by 50 bp, to 0.5%), for the first time in 11 years, in its September meeting the **ECB** opted for the biggest key interest rate hike so far (by 75 bp, to 1.25%). Also, because of the risks to smooth monetary policy transmission due to the vulnerability caused by the pandemic, the ECB has retained the flexibility of reinvesting within the PEPP portfolio. 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 the high rates of inflation. **Inflation in the euro area continued** up in September, for the fifth month in a row, and reached its historical high of 9.9%, with prospects of further growth in October. Higher inflation in the euro area, our main economic partner, is primarily a result of higher prices of energy (40.7% y-o-y) and food (11.8% y-o-y). Core inflation recorded an increase of 4.8% in September. Besides a hefty increase in energy and food prices, inflation was also fuelled by elevated demand-side pressures in some sectors due to the opening of the economy, tightened conditions in the labour market, as well as extended supply bottlenecks. Inflation in the euro area is expected to stay above the target for a longer period, and as the current inflation drivers weaken with time and monetary policy yields its effects fully, inflation will also subside. According to the ECB's September projection, y-o-y inflation rates in Q4 each year are expected to be 9.2% in 2022, 3.3% in 2023 and 2.2% in 2024.

In setting the key policy rate, the Executive Board also took into account significant changes in the **Fed**'s monetary policy due to high inflation. The Fed continued to tighten its monetary policy significantly by raising the fed funds rate by 0.75 pp, to the range of 3–3.25% in September, for the third consecutive time. It is announced that monetary policy tightening will continue in the period ahead, so that higher interest rates would soften growing demand and narrow the demand-supply gap that pushes the prices up. After soaring to 9.1% in June (the highest rate since 1981), US inflation rates slightly receded, but remained extremely high, at over 8%. What raises concern is the core inflation that touched in September its 40-year high of 6.6%. **As in the euro area, it is expected that inflation in the US will not return within the target band before 2024.**

Monetary policy tightening of the leading central banks amid weaker global economic growth outlook could cause an **increase in volatility in the international financial market** and further shift of global capital flows from emerging to more developed economies. The international environment is exceptionally challenging for emerging economies, which warrants caution in the pursuit of monetary policy. Sharp appreciation of the US dollar heightens inflationary pressures as it pushes the prices of imported primary commodities in US dollars further up. Faced with growing inflation, **emerging economies also tighten their monetary policies**, taking care of economic activity and financial stability. Besides higher energy prices and other production costs, in the regional peers with which we have important trade ties, double-digit inflation is also driven up by domestic demand, as well as labour market conditions, as evidenced by core inflation in these countries, which remains higher than in Serbia. For this reason, the central banks of these countries tightened monetary conditions in recent months to a greater degree than the NBS did.

Although **global oil prices and the prices of other primary commodities declined in recent months** due to the intensified recessionary pressures worldwide, **the Executive Board took into account that they remain considerably higher than a year ago**. When it comes to global oil prices, their expected movement in the coming period is associated with a number of risks. First of all, the effect of the global economic slowdown in the oil market is uncertain, as well as the agreement of OPEC+ countries to cut production from November until end-2023 by 2 mn barrels a day compared to August. Although this is a significant reduction, the greatest since 2020, the effect on global oil supply is uncertain, as several countries are already delivering oil below their quotas. **Uncertainty persists also in terms of the availability of natural gas in Europe and its price** during winter following further escalation of geopolitical tensions. European gas prices increased more than four times from 2021, and Russian gas supplies to Europe stand at less than 20% compared to their 2021 levels. **Global food prices dropped in recent months, but their future movements remain unpredictable.** Thus, after falling for several months, the global prices of cereals rose again in September, amid concerns over the enforcement of the Ukraine Black Sea grain deal from July beyond November.

In the period since the previous *Report*, the Executive Board decisions were based on the August medium-term inflation projection, which forecast that y-o-y inflation in Serbia would probably peak in September. Inflation was driven up by a hefty increase in global energy prices and a relatively high imported inflation, coupled with the effects of the drought at home and in most of Europe, reflecting on further food price hike. Inflation was expected to **strike a downward trajectory in Q4 this year and in the course of next year** and return within the target band 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 expected gradual weakening of global factors that drove food and energy prices up in the prior period, and to a certain degree, lower external demand amid unfavourable global growth prospects.

In Q3, inflation moved mostly in line with the August **projection**, and measured 14% y-o-y in September, with around 70% of the growth still driven by the rising prices of food and energy. Higher imported inflation also translated into higher **core inflation** (headline inflation excluding the prices of food, energy, alcohol and cigarettes, most affected by monetary policy), which measured 8.6% y-o-y in September. Core inflation stayed considerably 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 would not significantly weaken domestic demand**. Nonetheless, amid global economic slowdown and mounting recessionary pressures in the euro area, our most important economic partner, economic activity at home is expected to slow down as well in the remainder of the year and early next year. However, as assessed by the Executive Board, ramped-up export supply, which reflects past investment in tradable sectors, would, to a certain degree, compensate for the effect of lower external demand on manufacturing exports. This is confirmed by the **continued rise in goods exports at high rates, which measured 23.4% y-o-y in August** and was led by manufacturing and mining, as well as by the recovery of agricultural exports.

At its November meeting, the NBS Executive Board voted to raise the key policy rate by 50 bp, to 4.5%. It lifted the deposit and lending facility rates by the same amount, to 3.5% and 5.5%, respectively. The decision was guided by the fact that global inflationary pressures are stronger and more durable than initially expected. Inflation in the euro area reached its new historical high of 10.7% in October. In October the ECB raised significantly its key rate (by 75 bp to 2.00%). In early November the Fed responded to the same degree, raising its fed funds rates to the range of 3.75-4.00%. Along with a clouded global growth outlook, further monetary tightening by leading central banks may fuel volatility in the international commodity and financial markets.

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.

III Inflation movements

Amid pronounced cost-push pressures based on persistently high global food and energy prices, among other factors, as well as uncertainties regarding their availability due to continued geopolitical tensions, y-o-y inflation in Serbia, as in other countries, continued up in Q3 and measured 14.0% in September.

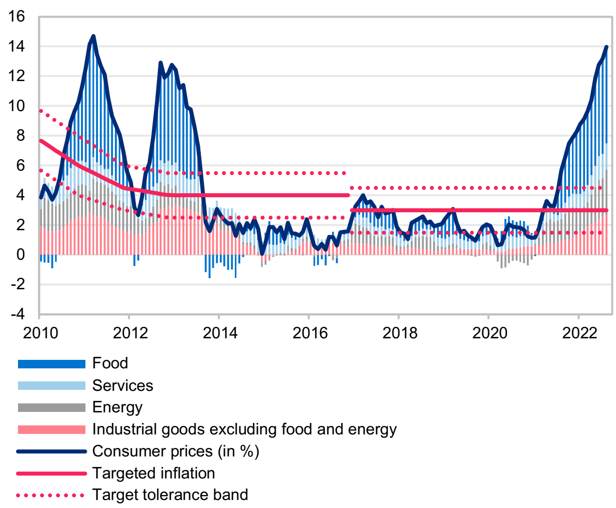
As in the prior period, core inflation, affected more by monetary policy measures, was considerably below headline inflation, and measured 8.6% y-o-y in September. Such outturn remained underpinned by the preserved relative stability of the RSD/EUR exchange rate.

Inflation movements in Q3

In line with NBS expectations from the August *Inflation Report*, amid elevated cost-push pressures and continued geopolitical tensions, **y-o-y inflation** in Serbia, as in other countries, continued on an upward path in Q3 and measured 14.0% in September (after 11.9% in June). In Q3, the prices of processed food increased their contribution to y-o-y inflation the most (by 1.1 pp, to 4.3 pp) due to the still high global prices of energy, packaging, primary agricultural commodities and other inputs which push up production and transportation costs, as well as adverse effects of the drought in the domestic market and much of Europe. In the same period, the contribution of unprocessed food prices edged down (by 0.5 pp, to 2.2 pp), primarily due to a slower rise in the prices of fresh vegetables, which reflect the high base from the same period last year. Although the contribution of petroleum product prices edged down in September relative to June (by 0.4 pp), the contribution of other energy prices edged up (by 1.1 pp) driven by the realised increase in the prices of electricity and higher prices of solid fuels (firewood and coal) due to the risk regarding their availability in the winter months. Higher energy prices spilled over to the prices of industrial products (excluding food and energy) and the prices of services. Their contributions to y-o-y inflation in September relative to June went up by 0.5 pp and 0.3 pp, respectively.

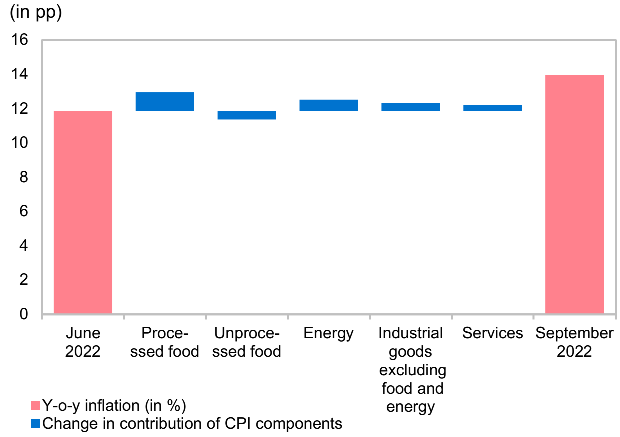
Due to elevated producer and import prices, **y-o-y core inflation** (measured by the change in CPI excluding food, energy, alcohol and cigarettes) recorded growth in Q3 – from 6.7% in June to 8.6% in September. However, it stayed significantly lower than headline inflation. Lower core inflation is still underpinned by the relative stability of the exchange rate maintained even amid extremely heightened global uncertainty.

Chart III.0.1 **Contribution of CPI components to y-o-y consumer price growth**
(in pp)



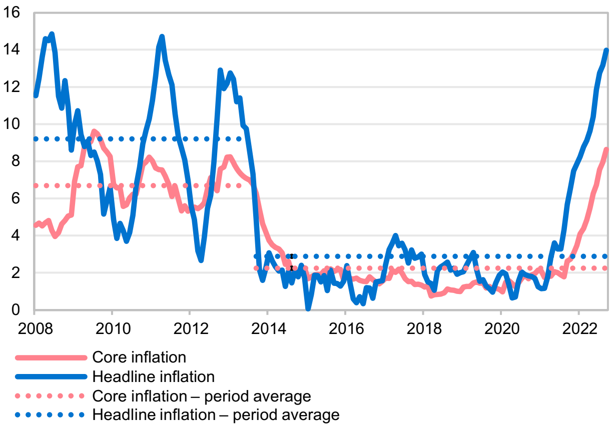
Sources: SORS and NBS calculation.

Chart III.0.2 **Changes in contribution of main CPI groups to y-o-y inflation**
(in pp)



Sources: SORS and NBS calculation.

Chart III.0.3 **Headline and core inflation**
(y-o-y rates, in %)



Sources: SORS and NBS calculation.

Table III.0.1 **Growth and contribution of components to consumer price growth in Q3 2022**
(quarterly)

	Growth rates (%)	Contribution (pp)
Consumer prices (CPI)	**3.8**	**3.8**
Unprocessed food	3.2	0.4
Processed food	5.8	1.3
Industrial products excluding food and energy	2.7	0.7
Energy	5.7	0.9
Services	2.3	0.5
CPI excluding energy, food, alcohol and cigarettes	2.5	1.1
Administered prices	4.8	0.8

Sources: SORS and NBS calculation.

Quarterly **consumer prices growth of 3.8% in Q3** was consistent with our projection in the August *Inflation Report.* Compared to the previous quarter, a somewhat slower growth dynamic was recorded in food and energy prices, and prices within core inflation.

As in the prior period, the greatest positive contribution to inflation in Q3 stemmed from the hike in the **prices of food and non-alcoholic beverages** (4.9%, with a 1.6 pp contribution), primarily on account of widely distributed growth in **processed food** prices (5.8%), mainly milk and dairy, bread and cereals, meat products and non-alcoholic beverages. The prices of **unprocessed food** rose by 3.2% in Q3, predominantly due to a higher than expected increase in the prices of fresh fruit (16.6%), driven chiefly by the much higher prices of tropical fruit amid dampened global supply. A positive contribution to inflation in Q3 on account of price hikes in fresh meat (5.7%) was neutralised by the 8.0% decline in the prices of fresh vegetables, which is typical for the season.

Energy prices grew by 5.7% in Q3, driven by a significant rise in the prices of solid fuels (21.5%, with a 0.6 pp contribution), and implementation of previously announced electricity price hikes in August and September (10.7%, with a 0.5 pp contribution to inflation). The implemented 8.8% rise in natural gas prices for households in August did not reflect significantly on quarterly inflation. For the first time since last year, the prices of petroleum products fell by 2.7% in Q3 (with a -0.2 pp contribution to inflation), mirroring the dynamics of their global counterparts.

The **prices of industrial products (excluding food and energy)** recorded a rise of 2.7% in Q3 (the same as in Q2), mostly driven by the higher prices of furniture, household appliances and maintenance products (4.6%, with a 0.2 pp contribution), and to a lesser degree, of cigarettes (on account of the regular excise adjustment in July), products related to recreation and culture, medical and pharmaceutical products, alcoholic beverages, vehicles and spare parts. The rise in the prices of industrial products also reflected the higher prices of energy used in their production.

The **prices of services** increased by 2.3% in Q3, driven primarily by the services whose prices are administered (utility services, accommodation in student dormitories and public transport), and the higher prices of rent and catering. The prices of other services also rose in Q3, though to a smaller extent.

Administered prices rose by 4.8% in Q3 on account of the mentioned hike in the prices of electricity, natural gas and utility services, which also dictated the acceleration in their y-o-y growth to 5.8% in September (from 1.8% in June).

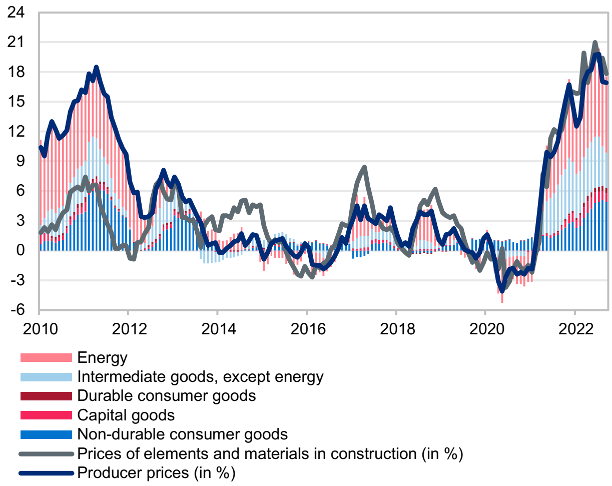
Prices within core inflation increased by 2.5% in Q3 (with a 1.1 pp contribution to inflation), mostly because of higher prices of industrial products (primarily household cleaning products).

Producer and import prices

After mildly accelerating in July, the growth in **industrial producer prices in the domestic market** slackened in the remainder of Q3 and measured 16.9% y-o-y in September (vs. 19.7% y-o-y in June). Such y-o-y dynamics in industrial producer prices were driven by the lower contribution of **energy production prices** (especially crude oil and petroleum products) and the **prices of intermediate goods** (metal products, chemical products, rubber and plastic products), which slowed down their y-o-y growth in Q3, with the prices of base metals even recording a y-o-y fall. Conversely, the **prices of consumer goods** (non-durable and durable) mildly increased their contribution to the y-o-y growth in producer prices in Q3. Y-o-y growth in the **prices of elements and materials incorporated in construction** slowed down to 17.8% in September (from 21.0% in June). Although cost-push pressures in the domestic market softened somewhat in Q3, they are still pronounced in industry and construction.

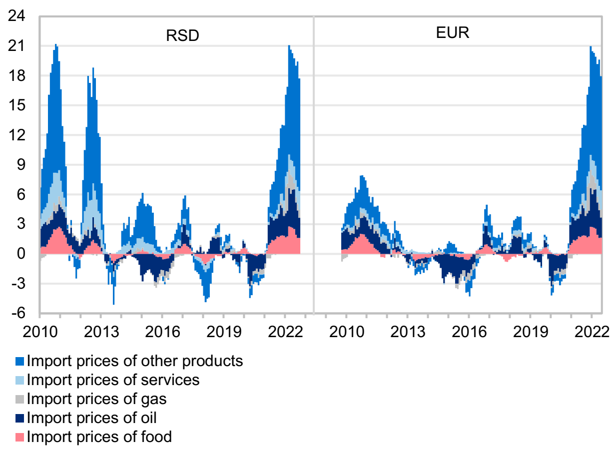
Similar to producer prices, **import prices expressed in dinars**[1] slowed down their y-o-y growth in Q3, from 19.8% in June to 17.7% in September, mostly due to the lower contribution of global oil and food prices. In contrast, export prices of Germany (which are used for the approximation of the import prices of equipment and intermediate goods), euro area consumer prices (used for the approximation of the import prices of services), and import gas prices increased in Q3 their contribution to the y-o-y growth in import prices, which is still relatively high. The dinar's weakening against the dollar, as a consequence of the euro's slide against the dollar in the international market, worked in the same direction.

Chart III.0.4 **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.0.5 **Contribution of individual components to y-o-y rate of import price growth**
(in pp)



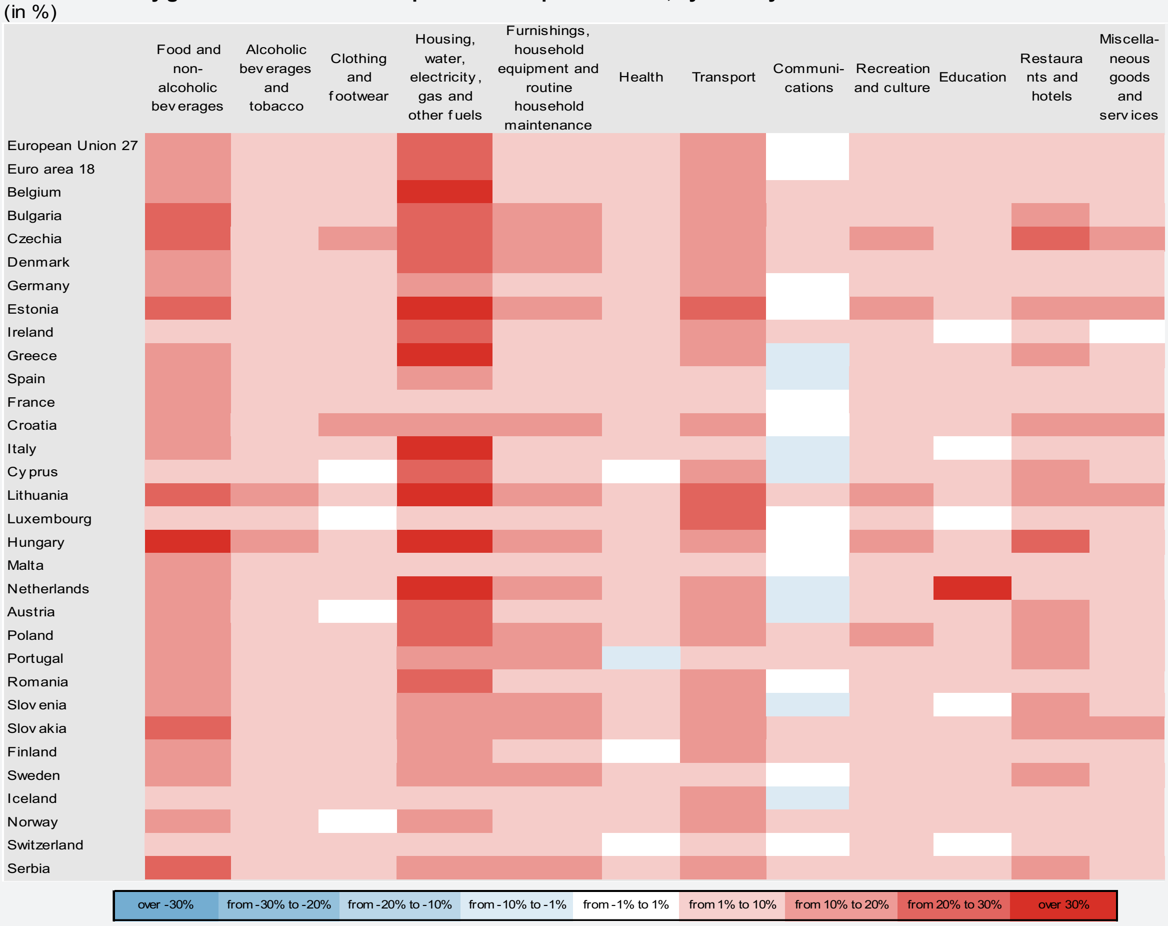
Sources: Destatis, FAO, Bloomberg, Eurostat, SORS and NBS calculation.

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

Text box 1: Analysis of factors behind the deviation of actual from projected inflation in Serbia in 2021 and 2022

Since mid-2021 inflation has trended above central banks' expectations and projections in almost all countries of the world. Last year, most central banks assessed mounting inflationary pressures as transitory because they reflected fiscal and monetary stimuli and a global surge in demand after the coronavirus vaccine discovery and rollout and consequent relaxation of restrictions, to which the supply could not adjust in the short run. These pressures were expected to weaken with the gradual balancing of demand and supply, which would progressively resolve supply bottlenecks and reverse the upward trend of global primary commodity prices. However, the outbreak of the energy crisis in the European market since October 2021 lent additional impetus to producer and import prices, which spilled over onto retail (consumer) prices of a wide range of products and services. The situation in the global energy and primary commodities markets was further complicated in early 2022 with the tightening of geopolitical tensions and the outbreak of the crisis and conflicts in Ukraine. Hence, the prices of these products reached or exceeded their historical highs. Though global prices of oil and other primary commodities, which largely depend on the phase of the global business cycle, declined in the last three months reflecting intensified recessionary pressures in the euro area and the USA, they are still at a much higher level than a year ago and higher than projected by relevant international institutions and indicated by market futures last year and early this year. Furthermore, this time the crisis affected not only the prices of oil and other primary commodities, but also and to a much greater degree the prices and availability of natural gas, coal, electricity and numerous industrial and agricultural raw materials, eroding, at the same time, global business, consumer and investment confidence, especially in those euro area members that we trade with the most and whose supply chains include a significant part of the domestic industry.

Chart O.1.1 **Y-o-y growth rates of HICP components in September 2022, by country**
(in %)



Source: Eurostat.

Bearing all this in mind, we will analyse in this text box in detail why y-o-y inflation outturn in late 2021 and in 2022 deviated from the medium-term NBS projections presented in *Inflation Reports* since November 2020 until August this year.

The actual y-o-y inflation rates have been higher than projected since February 2021. From November 2020, the NBS mainly projected short-term inflation to be similar to or slightly higher than the actual inflation in the quarter of forecasting and one-year ahead inflation to be lower. The greatest difference between the actual and projected inflation for one quarter ahead was recorded in this year's February and May projections, more specifically since the outbreak of the Ukraine crisis. These differences were produced mainly by the deviation of global energy and primary commodity prices from the assumptions underlying our projections based on market futures for these commodities and estimates of relevant international institutions. This is standard practice, and all central banks use the estimates of international institutions such

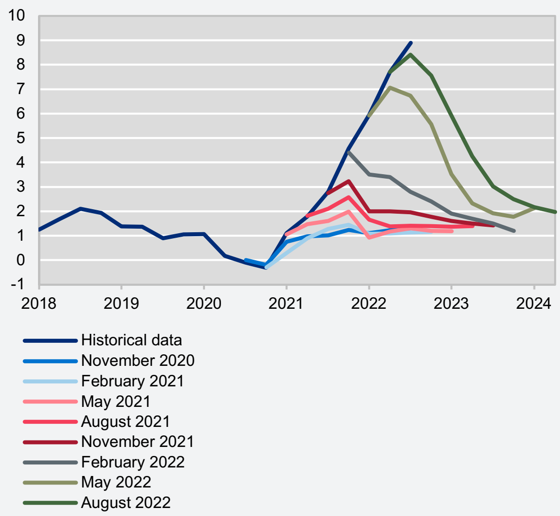
Chart O.1.2 **Assumed and actual movement of global Brent oil price**
(USD/barrel)

Source: Bloomberg.

Chart O.1.3 **Assumed and actual movement of global primary agricultural commodity prices**
(Q4 2013 = 100)

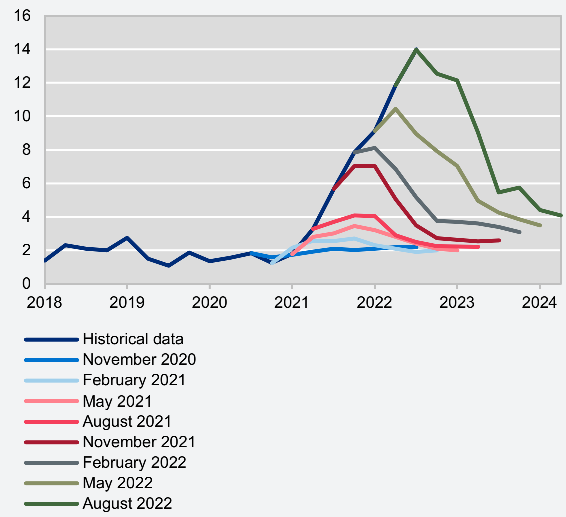
Source: Bloomberg.

Chart O.1.4 **Actual and projected y-o-y inflation in the euro area**
(in %)



Source: NBS calculation based on relevant institutions' projections.

Chart O.1.5 **Actual and projected y-o-y inflation in Serbia**
(in %)



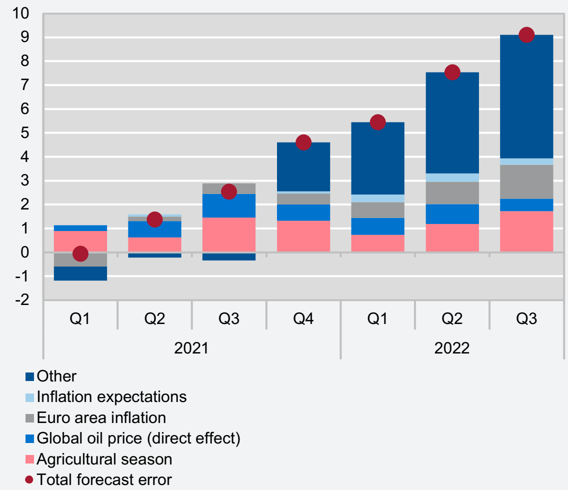
Source: NBS.

as the IMF, WB, Consensus Economics, etc, as well as market futures for the assumed prices of these categories going forward. Due to the shock unprecedented in recent history – the coronavirus pandemic, followed by the energy crisis in Europe and then the conflict in Ukraine – no international institution or market could have predicted such a drastic hike in the prices of energy and primary commodities. For this reason, all central banks, including the NBS, using similar assumptions for the dynamics of the prices of oil and other energy sources (natural gas, coal, electricity), primary agricultural commodities, metals, and other industrial raw materials, underestimated the inflation level in their projections.

Charts O.1.1, O.1.2 and O.1.3 also illustrate that the deviation of the actual inflation from NBS projections was largely a consequence of unrealised external assumptions. Thus, futures indicated that in 2021 the global oil prices would rise on account of higher global demand when economies across the globe opened. However, the hike in global oil prices in 2021 was sharper than expected, because oil supply was capped by OPEC+ decisions. Amid the outbreak of the energy crisis and the Ukraine conflict and soaring global prices of natural gas, the hike in global oil prices not only continued, but also accelerated, driving prices to a level around 70% higher than a year ago. In the past three months these prices receded. Global prices of primary agricultural commodities recorded a similar trend, as following the outbreak of the Ukraine conflict (Ukraine and Russia being significant global exporters of cereals) they reached around 50% higher levels than in the same period of 2021. Since global energy prices skyrocketed, which was felt the most in the euro area, and global supply bottlenecks protracted, inflation in the euro area was also constantly underestimated by the ECB. As the euro area is our most significant trade partner, all of this led to a higher than projected inflation in Serbia as well. At the same time, the impact of the global oil price hike was both direct – on the prices of petroleum products in the domestic market, and indirect – through the rise in the production costs (oil being the key ingredient to a number of synthetic products, such as plastic packaging) and distribution costs of other products. The rise in the prices of primary agricultural commodities through higher costs of food production resulted in the hike in domestic food prices, while the increase in euro area prices, through higher prices of import products, pushed up the prices of food, as well as of other industrial products. The prices of food were also affected by the multiple increase in the prices of natural gas, which conditioned a multiple increase in the prices of fertilisers and overall costs of agricultural production. Further, higher global prices of electricity pushed up the wholesale price in the country, increasing the costs of production of industrial products.

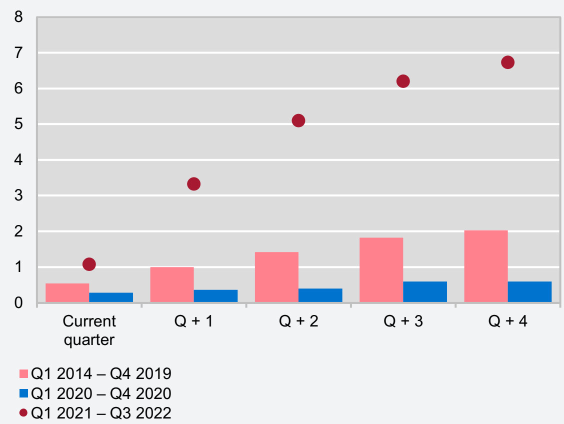
As for assumptions for the domestic environment, a higher level of inflation in the year to date is a consequence of this year's agricultural season, which turned out to be worse not only than average, but also than last year's which was also below-average. The season was worse than forecast in most of Europe, too, which also prevented a satisfactory supply from imports. All this resulted in higher than projected prices of fruit and vegetables in the previous

Chart O.1.6 **Decomposition of inflation forecast error for one year ahead**
(in pp)



Source: NBS.

Chart O.1.7 **Root mean-squared error of NBS inflation forecast**
(in pp)



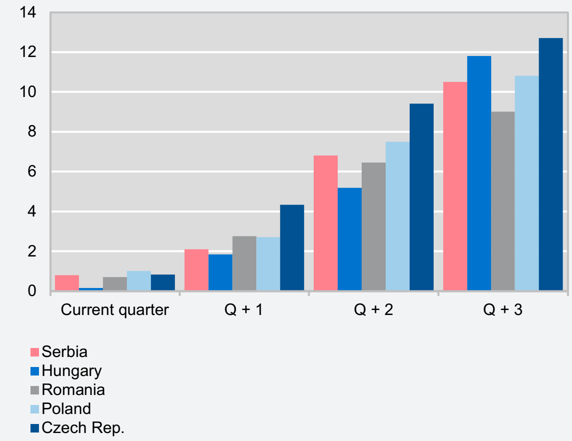
Source: NBS.

months. Furthermore, the increase in administered prices this year will be higher than planned in February and May, given that in conditions of a significant rise in global energy prices it was necessary to adjust energy prices for households.

Chart O.1.6, which decomposes the deviation of the projected one-year ahead inflation from the actual inflation for the last year and three quarters of this year by factor, indicates that close to 50% of the deviation is attributable to the unrealised assumptions for global oil prices, euro area inflation, prices of primary agricultural commodities, and domestic agricultural season. One should bear in mind that the rest of the deviation also involves the indirect effects of these factors, the effects of global supply chain disruptions, the effects of electricity price hike on the costs of production, a portion of imported inflation not explained solely by euro area inflation, as well as other supply-side factors.

That it is difficult to produce an accurate projection of the inflation rate amid heightened global uncertainty and shocks from the international environment faced last year and this year, is confirmed by the root mean-squared error of NBS projection, as well as of other central banks in the region, including the ECB. Thus, the root mean-squared error of NBS projection for the Q1 2021 – Q3 2022 period for one year ahead is more than 6 pp, while for the 2014–2019 period it averaged 2 pp, and during the pandemic 2020 it even went down to only 0.6 pp. Similarly, according to ECB estimate,[1] the root mean-squared error for one-year ahead inflation projection for the Q3 2021 – Q1 2022 period is close to 4 pp. If we compare, for instance, the deviation of the outturn from the projection at end-2021 recorded by the NBS and other inflation-targeting central banks in the region (Chart O.1.8), we will see that deviations are similar, which makes sense as it is precisely the global factors that accounted for the major part of the deviation.

Chart O.1.8 **Deviation from Q4 2021 inflation projections**
(in pp)

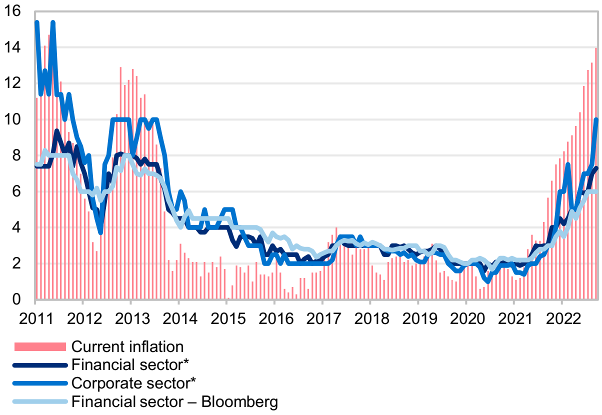


Sources: Central banks of selected countries.

To conclude, amid heightened geopolitical tensions, significantly higher and volatile energy prices, as well as globally intensified cost-push pressures, the risks to inflation projection are huge and pose an additional challenge to monetary authorities in the context of making the right and well-timed monetary policy decisions and preserving credibility. For this reason, the NBS explains the factors behind the deviation of actual from projected inflation in a transparent way and also prepares alternative projection scenarios for inflation and other macroeconomic variables taking into account the potential materialisation of key risks to the projection and takes their effects into consideration when making monetary policy decisions.

[1] https://www.ecb.europa.eu/pub/economic-bulletin/focus/2022/html/ecb.ebbox202203_05~6d1fb8f5b0.en.html.

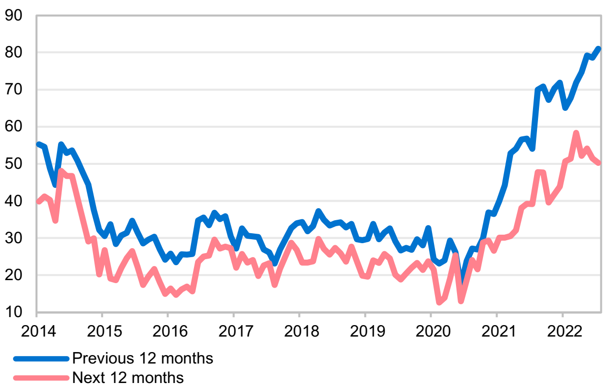
Chart III.0.6 **Current inflation and one-year ahead inflation expectations**
(y-o-y rates, in %)



Sources: Gallup, Ipsos/Ninamedia, Bloomberg and NBS.

* Ipsos and Gallup until December 2014, Ninamedia since December 2014, and Ipsos since January 2018.

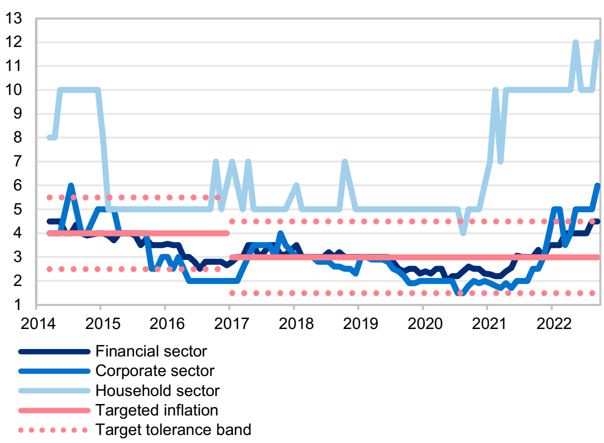
Chart III.0.7 **Household perceived and expected inflation***
(in index points)



Sources: Ipsos/Ninamedia and NBS calculation.

* Ipsos until December 2014, Ninamedia since December 2014, and Ipsos since January 2018.

Chart III.0.8 **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.

Inflation expectations

One-year ahead inflation expectations of the financial and corporate sectors continued on the path of the current inflation in Q3 but remained lower.

According to the Bloomberg survey, **one-year ahead inflation expectations of the financial sector** were stable in August and September, at 6.0%, only to rise to 7.0% in the October survey. According to the Ipsos survey, they rose from 6.0% to 7.0% in August, and then to 7.3% in September.

After standing at 7.0% in July, **one-year ahead inflation expectations of the corporate sector** climbed to 7.5% in August. Amid higher expectations of energy companies and producers of inputs in agricultural production, inflation expectations continued up and measured 10.0% in September.

The corporate perception of business conditions improved slightly in Q3. The share of respondents assessing business conditions as deteriorated in the previous three months fell from around 60% in June and July to around 54% in August, and then to around 51% in September. The percentage of those expecting a deterioration in business conditions over the next twelve months is still moving around the level of several months' average (around 30%).

The net percentage of corporates expecting an increase in input prices over the next three months was stable at around 65% in the July and August surveys, only to rise to 71.1% in September. As for the net percentage of corporates expecting an increase in the prices of their own products and/or services over the next three months, following a significant fall recorded in the July survey (from around 70% in June to around 58% in July), the percentage turned upward again in August and September and approached the June values, standing at 68% now, probably on account of higher energy prices (gas and electricity).

One-year ahead inflation expectations of households stayed unchanged in Q3, at 20.0%, which is close to the growth rate in the prices of some basic foodstuffs that play an important role in the creation of household expectations – y-o-y rise in food (processed and unprocessed) and energy prices is at around 20%. According to the results of the qualitative survey, households expect that inflation will be lower in the coming 12 months compared to the inflation perceived in the previous year.

Medium-term inflation expectations of the financial sector for two years ahead are within the NBS target tolerance band since their monitoring began (March 2014), and they ranged between 3.5% and 4.5% since the beginning of the year. Three-year ahead expectations stayed unchanged from April to August, measuring 3.5%, only to rise slightly in September, by 0.1 pp. Corporate inflation expectations for two years ahead rose from 5.0% in May to 6.0% in September. On the other hand, three-year ahead expectations of the corporate sector returned within the target band in August and September, receding from 5.0% in July to 4.0% (for both months). Two-year ahead inflation expectations of households measured 12.0%, according to the September survey, which is an increase from the period June–August when they equalled 10.0%.

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 the yield rates on dinar government securities in Q3, which translated into higher interest rates on dinar loans and savings. The ECB's monetary policy normalisation contributed to the rise in interest rates on euro loans.

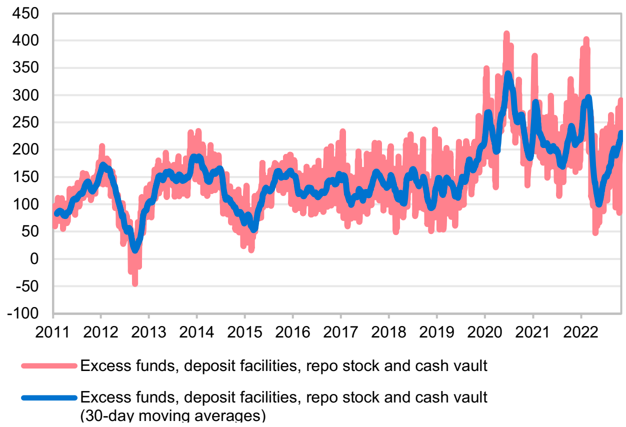
Despite persisting uncertainty in the global financial market and elevated risk premiums of emerging economies, reflecting also the tightening of monetary policies of the world's leading central banks, the domestic FX market saw the prevalence of appreciation pressures. This was largely owing to more favourable balance of payment movements – continued high FX inflows from exports and FDI, as well as smaller energy imports relative to H1.

Interest rates

In Q3, the NBS tightened monetary conditions by raising the **key policy rate** first by 100 bp and then by additional 50 bp in October, to 4%. Interest rates on lending and deposit facilities increased to the same degree, measuring 5.0% and 3.0%, respectively, in October. The average stock of sold repo securities increased considerably – from RSD 12.0 bn in June to RSD 56.5 bn in September, with the average repo rate climbing by 114 bp relative to end-June, to 2.84% at end-September. At the same time, the average daily amount of overnight bank deposits with the NBS increased from RSD 51.5 bn in June to RSD 81.6 bn in September.

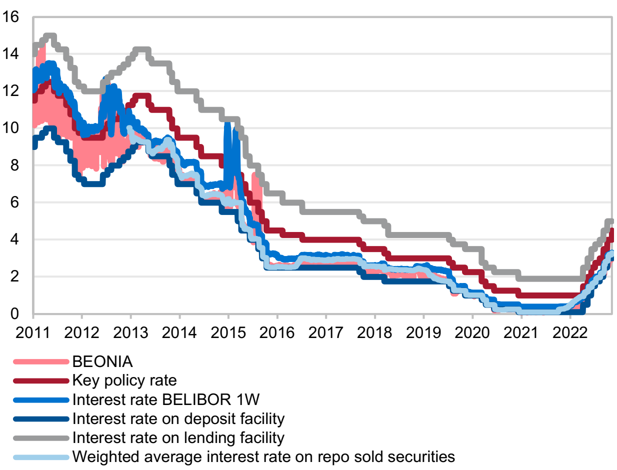
The tightening of monetary conditions continued to impact interest rates in the **overnight interbank money market**, so that in Q3 BEONIA rose more than the key policy rate (115 bp), to 2.77% at end-September. The average daily turnover dropped negligibly in Q3, by RSD 0.6 bn relative to Q2, amounting to RSD 3.3 bn. BELIBOR rates of all maturities increased almost to the same extent as the key policy rate in Q3, by around 104 bp, moving in the range from 2.71% for the shortest to

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



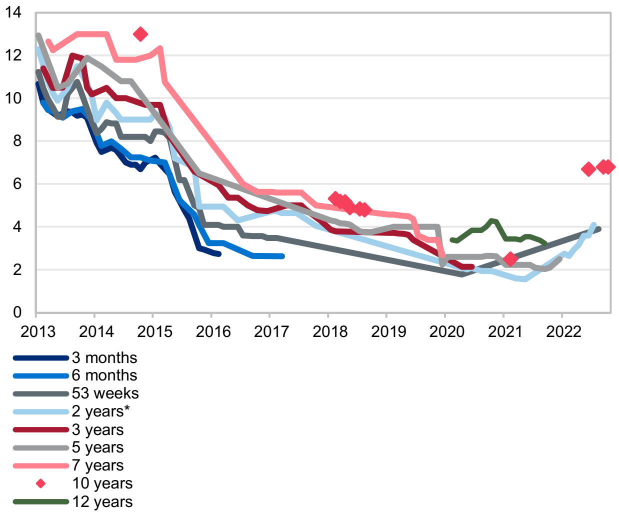
Source: NBS.

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



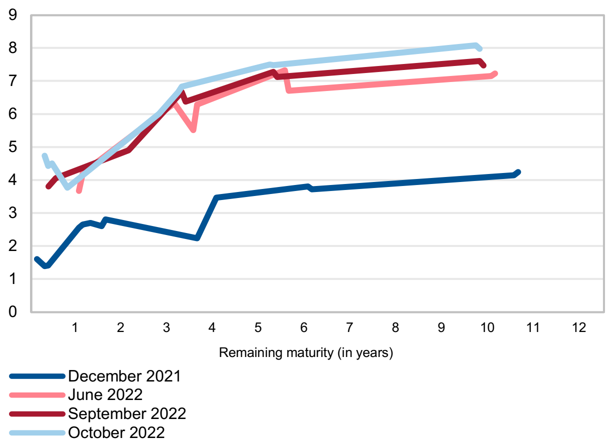
Sources: Thomson Reuters and NBS.

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



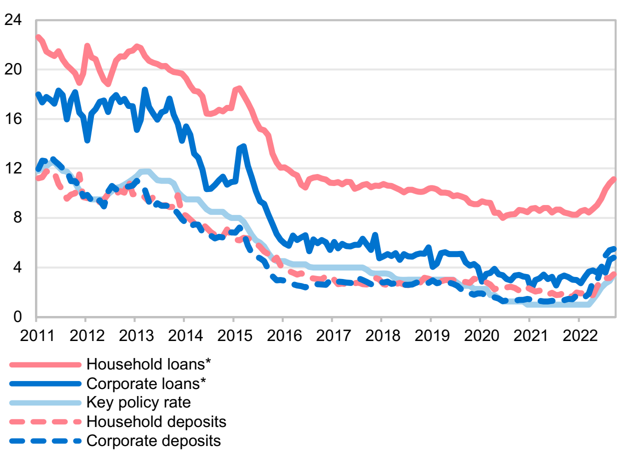
Source: Ministry of Finance.
* Excluding coupon securities with the rate linked to the NBS key policy rate.

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



Source: Central Securities Depository and Clearing House.

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.

3.55% for the six-month maturity at end-September. The rise in interest rates in the interbank money market extended into October.

In the **primary market of dinar government securities**, in Q3 one-year dinar securities were offered in one auction, two-year dinar securities in one auction and ten-year securities in two auctions. At the auction of one-year dinar securities in August, the sale was worth nominally RSD 33 bn (the demand equalling the planned sale size), with the yield rate of 3.9%. At the auction of two-year securities, the yield rate reached 4.1%, which is an increase of 50 bp relative to the previous auction of this maturity in June. The yield rate on ten-year dinar securities went up by 10 bp in the first of the two auctions held in September relative to the previous auction in June, while remaining unchanged (6.8%) at the second auction. October saw another auction of dinar securities of this maturity, with no changes in the yield rate.

Q3 saw the sale of dinar securities worth around RSD 46 bn in nominal terms. On the other hand, as none of the earlier sold securities matured in the meantime, the stock of sold dinar securities increased to RSD 940.5 bn at end-Q3. The stock of dinar securities owned by non-residents decreased further in Q3, by RSD 4.7 bn, accounting for around 15% of the total portfolio of dinar government securities at end-September.

Persistent uncertainty in the international financial market and the tightening of monetary policies by leading central banks reflected on the domestic **secondary market of dinar securities**. Same as the prior period, Q3 saw a rise in yield rates, parallel with the shrinking turnover in the secondary market, which halved to RSD 28.1 bn. The weighted average yields on dinar government securities with the remaining maturities of four, six and ten years increased in Q3, but to a lesser extent than in the quarter before, to 6.65%, 7.14% and 7.50%, respectively. The yield rates on dinar securities of shorter maturities moved from 3.8% for the remaining 5-month to 4.9% for the remaining 26-month maturity.

In Q3, no auctions of government **euro securities** were organised, and since earlier issued securities worth EUR 75 mn fell due, the stock of bonds at end-September stood at EUR 2,417.4 mn.

August saw a private placement sale of two **amortisation government bonds denominated in euros** – a three-year security with the coupon rate of 6M EURIBOR + 3.75 pp and a four-year security with the coupon rate of 6M EURIBOR + 3.95 pp.

Further tightening of monetary conditions and a rise in interest rates in the interbank money market continued to impact interest rates on **new dinar loans**, which recorded growth in Q3. Relative to June, interest rates on dinar household loans edged up by 1.6 pp (11.1% in September), and on corporate loans by 0.8 pp (4.8% in September).

The increase in interest rates on dinar corporate loans was driven by the rising rate on working capital loans (by 1.3 pp to 6.1%) and other non-categorised loans (by 0.6 pp to 3.1%). These two loan categories have almost identical shares, accounting jointly for around 95% of total dinar corporate lending. The rise in interest rates on dinar household loans reflects the rate increases across all loan categories and primarily the dominant category of cash loans (up by 1.5 pp to 11.6%), as well as other non-categorised loans (by 2.6 pp to 9.7%), where these two loan categories make up 97% of total dinar lending to households.

The weighted average interest rate on **euro-denominated** corporate loans edged up by 1.1 pp relative to June, to 3.8% in September. The increase was mainly led by the rising interest rates on working capital loans (by 1.4 pp to 4.0%) and investment loans (by 0.8 pp to 4.1%), which together account for more than 80% of total corporate lending. The average interest rate on euro-indexed household loans inched up by 0.9 pp to 4.6%, driven by interest rates on euro-indexed housing loans (up by 0.9 pp to 3.8%), and other non-categorised loans (up by 0.7 pp to 7.1%).

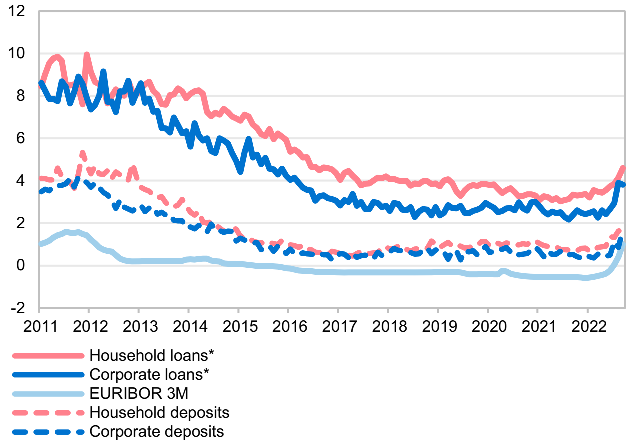
Relative to June, interest rate on household dinar **savings** increased by 0.4 pp to 3.5% in September, while the interest rate on euro savings added 0.3 pp, coming at 1.7%. Interest rate on term euro deposits of corporates went up by 1.2 pp from June (1.7%), while the one on term dinar deposits gained 1.5 pp, equalling 5.5% in September.

Risk premium

Monetary policy tightening by leading central banks, along with further escalation of geopolitical tensions, accelerated inflation and worse global growth prospects led to a stronger risk aversion, pushing up the risk premia of emerging economies in Q3.

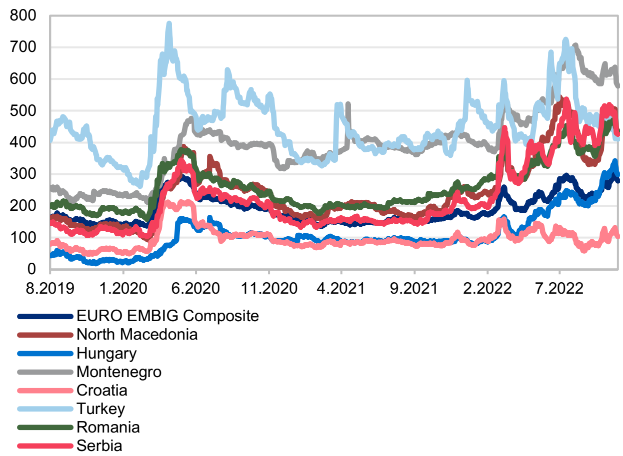
EURO EMBIG for Serbia increased by 62 bp in Q3, to 502 bp at end-September. Risk premia across the region recorded similar movements – Hungary's euro risk premium went up in Q3 by 65 bp, and Romania's by 32 bp. Serbia's dollar risk premium also rose in Q3 (by 75 bp, to 387 bp), continuing to move below EMBI Composite though, which measured 467 bp at end-September.

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



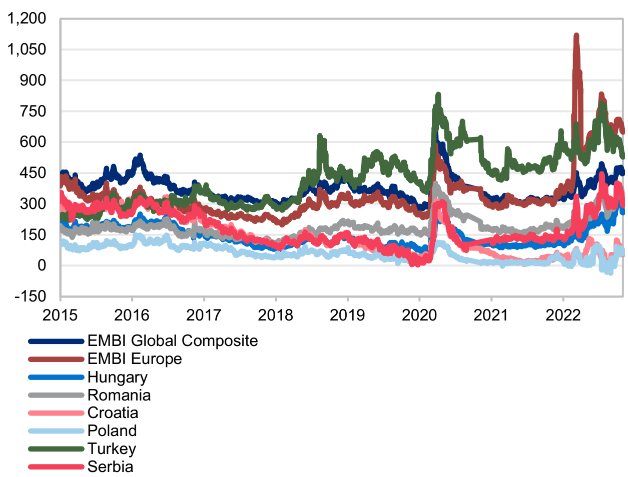
Sources: European Banking Federation and NBS.
* Excluding revolving loans, current account overdrafts and credit card debt.

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)



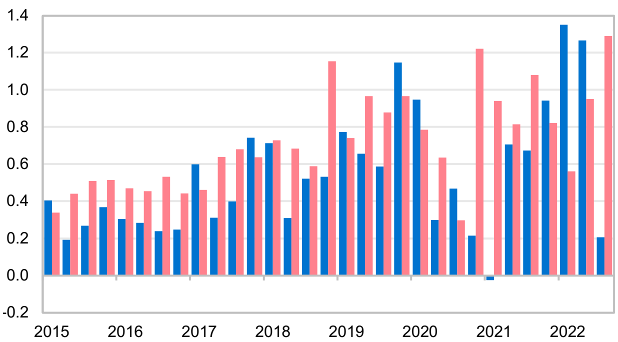
Source: J.P. Morgan.

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]	

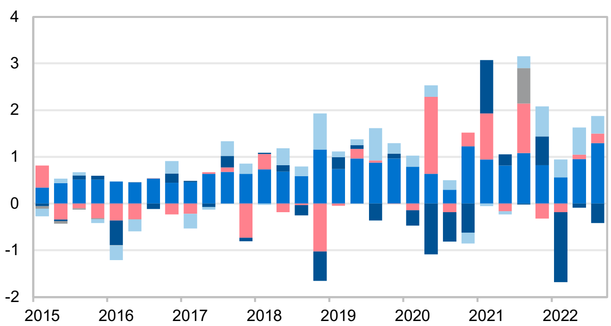
Source: NBS.
[1] March, [2] May, [3] June, [4] September, [5] December.

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



Source: NBS.
Note: Preliminary data for Q3 2022.

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



Source: NBS.
Note: Preliminary data for Q3 2022.

Fitch Ratings maintained Serbia's credit rating one notch below the investment grade, at BB+, despite pronounced geopolitical risks. The agency also confirmed Serbia' stable credit rating outlook going forward. As key factors behind their decision, the agency cited Serbia's credible macroeconomic policy framework, as well as stronger governance, human capital and higher GDP per capita compared to rating peers. They also emphasised the significance of the preserved banking sector's soundness, with a high degree of capital adequacy, adequate liquidity and a further decline in the NPL ratio.

Foreign capital inflow

The bulk of capital inflows in Q3 were FDIs, which by far outstripped the current account deficit in this period. At the same time, inflows from portfolio investments, higher external borrowing and increased non-residents' deposits with banks were sufficient to cover trade loans approved to non-residents and rising bank funds in accounts abroad.

After temporarily decelerating in March and April and recovering thereafter, **FDI to Serbia** gained further traction during summer. According to preliminary data, FDI to Serbia measured EUR 1.4 bn in Q3 (EUR 1.3 bn net), whereby FDI inflow in the first nine months reached EUR 3.0 bn (EUR 2.8 bn net). Around three-fifths of investments took the form of equity capital and reinvested earnings, and the bulk went to tradable sectors, predominantly manufacturing.

Within portfolio investments, the bulk of the inflow was recorded in August in the primary market, following the issue of government securities worth EUR 340.0 mn in private placement procedure. At the same time, non-residents were more active on the sale than on the purchase side in the secondary market of government securities, while residents stepped up their investments abroad. As a result, net inflows under portfolio investment in Q3 came at EUR 205.1 mn.

In Q3, external liabilities of residents on account of **financial loans** rose by EUR 381.4 mn due to intensified borrowing of banks, corporates and government. There was also a net inflow in respect of **cash and deposits** (EUR 11.8 mn), as the increase in non-residents' funds in accounts with domestic banks was bigger than the increase in domestic banks' funds in accounts abroad. On the other hand, trade loans to non-residents amounted to EUR 485.9 mn.

Trends in the FX market and exchange rate

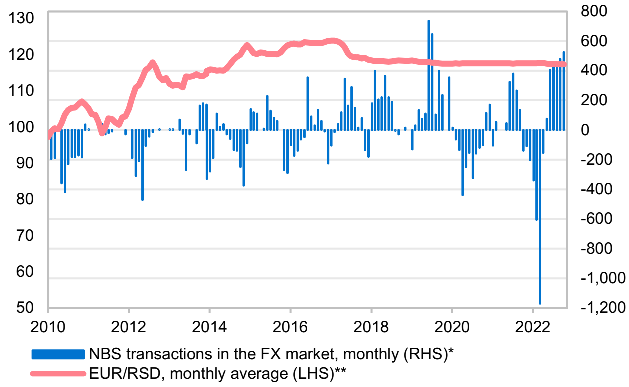
In Q3, the supply of foreign currency in the IFEM by far outstripped the demand, which resulted in stronger appreciation pressures in the domestic market. In order to ease these pressures, the NBS intervened in the IFEM by net purchasing foreign currency, thus preserving the relative stability of the RSD/EUR exchange rate. Observed at period end, the dinar strengthened against the euro in Q3 by 0.1% in nominal terms and by 0.2% since the start of the year. Reflecting the euro's further slide vis-à-vis the dollar in the international market, the dinar weakened against the dollar by 6.1% in Q3 and by 13.1% since the beginning of the year.

The supply of foreign currency went up primarily owing to the high purchase of foreign cash and a rise in FX-indexed bank assets.[2] In addition, the longer positions of banks on account of payment card use pushed the supply up, with high inflows on these grounds exceeding typically high amounts from the summer months in the previous years. At the same time, the demand for foreign currency was lower, as banks sold to both domestic enterprises and non-residents significantly smaller amounts of foreign currency than in Q2. Moreover, non-residents and residents sold more foreign currency than they bought in July and September, respectively. Such movements were facilitated by more favourable foreign trade trends, mostly thanks to lower payments for energy imports, as well as continued growth in export and FDI inflows.

In Q3, the NBS intervened in the IFEM by buying EUR 1,365.0 mn net in order to preserve the relative stability of the exchange rate of the dinar against the euro. Amid appreciation pressures, foreign currency purchases continued into October. Thus, from the beginning of the year until end-October, the NBS bought EUR 100.0 mn net in the IFEM.

Trading volumes in the IFEM[3] averaged EUR 42.6 mn in Q3, similar as in Q2 (EUR 43.6 mn). There was no trading in regular FX swap auctions organised by the NBS in July. As of August, these auctions have been replaced by bilateral swap transactions, which the NBS introduced at the beginning of the year and which proved to be more efficient in providing support in liquidity management for banks and overcoming the problem of insufficient limits for concluding interbank transactions, especially considering greater flexibility compared to

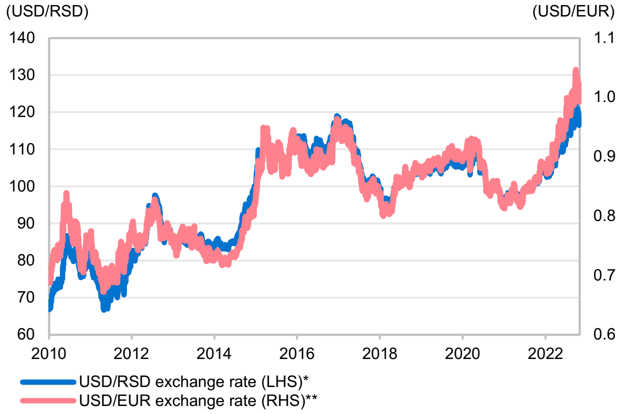
Chart IV.1.11 **Dinar exchange rate and NBS transactions in the FX market**



Source: NBS.

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

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



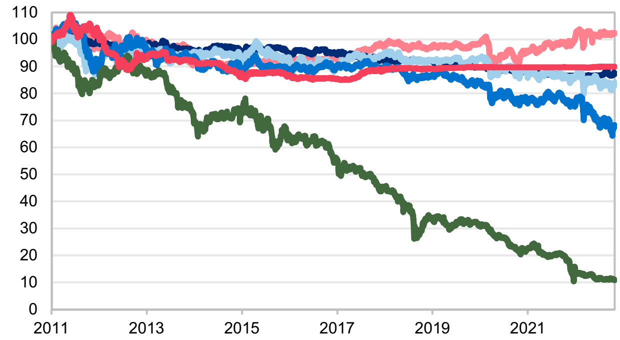
Source: NBS.

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

[2] 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.

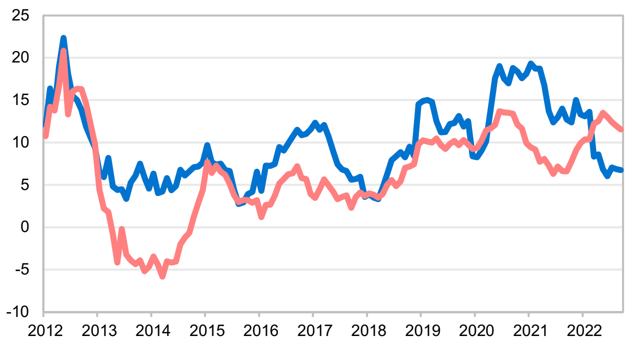
[3] Excluding the NBS.

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



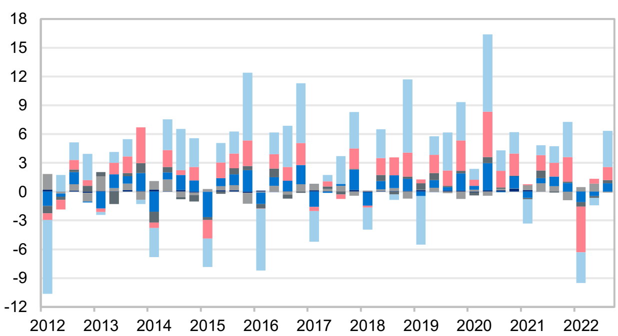
Sources: NBS and websites of central banks.
* Growth indicates appreciation.

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.

regular swap auctions regarding the moment of concluding transactions and their maturity.

Unlike the dinar, most currencies of regional inflation-targeting peers weakened further against the euro in Q3, despite the continued monetary policy tightening by their central banks – the Hungarian forint depreciated by 5.9%, Polish zloty by 3.9% and Romanian leu by 0.1%. Only the Czech koruna strengthened (0.8%). The Turkish lira weakened to a lesser degree compared to previous quarters (-2.2%), even though its central bank cut the key policy rate twice in Q3.

2 Money and loans

The slowing of y-o-y growth rates of broad monetary aggregates was halted in Q3, on the back of rising time dinar deposits of corporates and households. Domestic credit activity continued to post double-digit growth, with a somewhat expected slowdown in y-o-y terms due to the high last year's base and the maturing of loans approved under the guarantee scheme.

Money

At Q3 level, the broadest monetary aggregate M3 increased by 4.3%, receiving positive contributions from all components. Dinar money supply, M2, rose by 6.2% in the same period, with time dinar deposits gaining the most.

In terms of individual category, dinar **sight deposits** added RSD 26.3 bn in Q3, driven by the rise in transaction deposits of households and corporates. At the same time, **dinar time deposits** went up by RSD 59.7 bn in Q3, mainly thanks to higher amounts of corporate deposits (RSD 49.3 bn). Looking by sector, time deposits of companies in manufacturing increased the most. **Household dinar savings** again struck an upward path as of June, reflecting both the preserved financial stability and relative exchange rate stability even in crisis times. In Q3, dinar savings went up by RSD 2.3 bn to RSD 87.6 bn at end-September.

FX deposits went up by EUR 517.5 mn in Q3. Corporate FX deposits recorded the highest increase (by EUR 404.9 mn), thanks to FX inflows from exports, FDI and external borrowing. Rising FX deposits of companies in transport, manufacturing and trade stand out sector-wise. At the same time, FX savings of households increased by EUR 74.5 mn to EUR 12.8 bn at end-September[4].

[4] Money supply M3 includes only resident funds. With non-resident funds included, dinar savings at end-September equalled RSD 88.2 bn, and FX savings EUR 13.5 bn.

In y-o-y terms, the deceleration of monetary aggregates growth was halted in Q3, as a result of the high base from the previous year and spending of the previously accumulated precautionary savings. Money supply M1 lost 0.9% in September, while M2 and M3 added 2.7% and 6.8%, respectively. A stable growth in lending continued to contribute positively to the rise in monetary aggregates in Q3, and higher savings interest rates worked in the same direction.

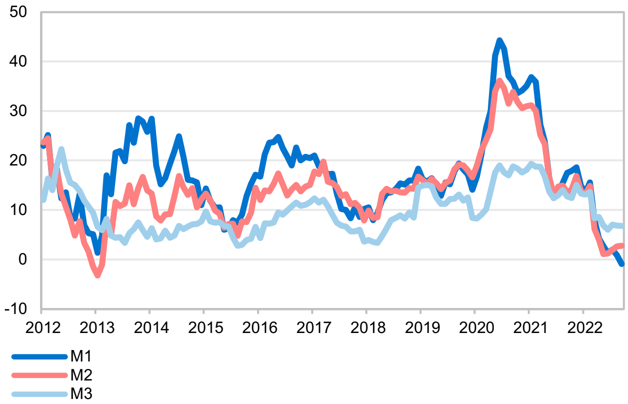
Loans

Y-o-y, **domestic lending** continued to rise at double-digit rates in Q3, reaching 11.7% in September, excluding the exchange rate effect. A moderate slowing of y-o-y growth of total loans reflected the high base from the previous year and the maturing of guarantee scheme loans. The greatest contribution to y-o-y lending growth continued to stem from corporate loans (7.2 pp in September), which increased 14.0% y-o-y, followed by household loans with a contribution of 3.9 pp and a y-o-y growth rate of 8.3%.

At Q3 level, **corporate loans** went up by RSD 31.7 bn, excluding the exchange rate effect. The sharpest growth was recorded for investment loans (RSD 11.9 bn), which accounted for 39.2% of total loans in September. Liquidity and working capital loans made up 47.4% of the total, expanding by RSD 9.3 bn in Q3. Non-categorised loans gained RSD 6.8 bn, while other types of corporate loans saw lower changes in volume relative to end-Q2. Observed by sector, the highest increase was recorded for loans approved to companies in manufacturing, trade and agriculture. At the same time, companies in construction, electricity supply and real estate reduced their credit borrowing, while other sectors saw relatively minor changes in stock compared to Q2. In terms of company size, loans approved to micro, small and medium-sized enterprises made up 60.1% of total corporate loans in September. The rise in FX-indexed corporate receivables and a drop in dinar receivables (largely under the impact of the maturing of loans under the guarantee scheme) led to a decrease in the degree of dinarisation of corporate receivables in Q3 by 2.0 pp, to 20.5% in September.

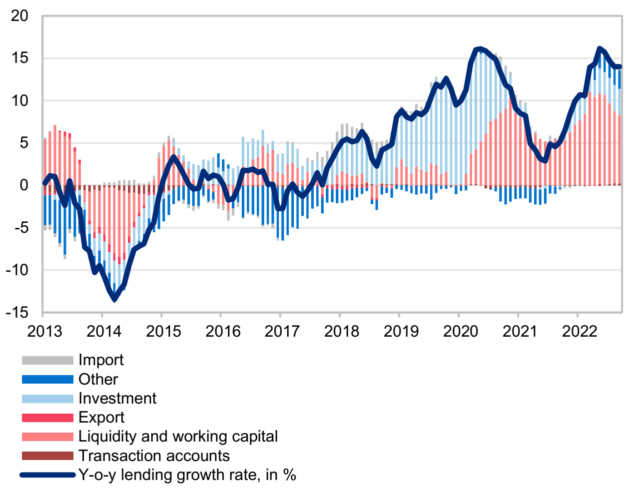
The volume of new corporate loans in Q3 reached RSD 322.8 bn, up by 13.7% compared to the same period last year. Companies continued to mostly use liquidity and working capital loans (59.2%), and almost a half of these loans was absorbed by micro, small and medium-sized enterprises. Investment loans accounted for 24.7% of new corporate loans in Q3, with 57.3% of this category going to micro, small and medium-sized enterprises.

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



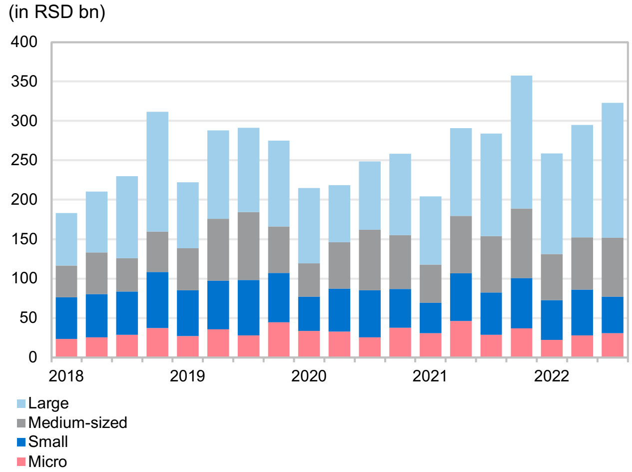
Source: NBS.

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



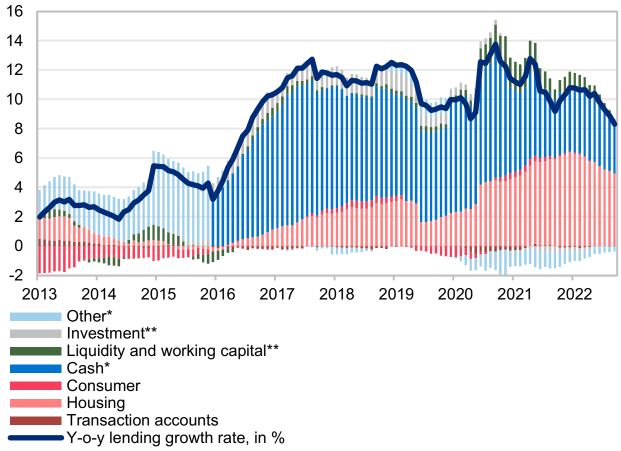
Source: NBS.

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



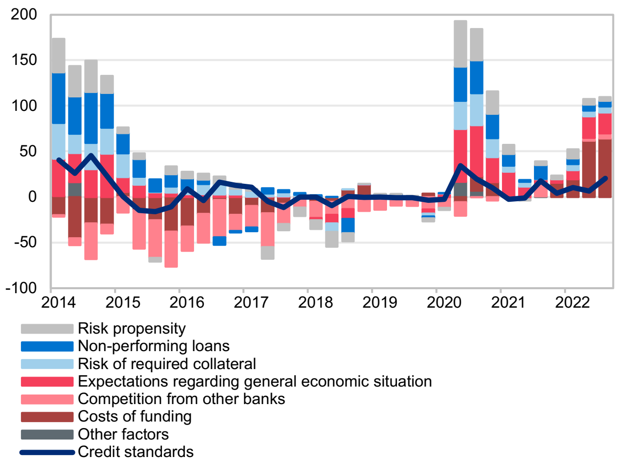
Source: NBS.

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



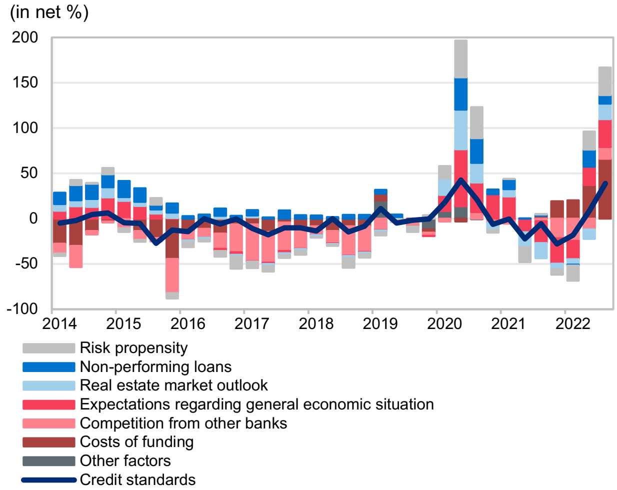
Source: NBS.
* Until December 2015, the contribution of cash loans is shown within the contribution of other loans.
** Loans extended to entrepreneurs.

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.

Household loans gained RSD 21.5 bn in Q3, excluding the exchange rate effect. The greatest increase was recorded for housing loans (RSD 15.9 bn), which extended their steady growth, followed by cash loans which added RSD 7.6 bn. The dominant categories in the composition of household loans were cash and housing loans, with the shares of 43.8% and 39.9%, respectively in September. Within loans approved to entrepreneurs, liquidity and working capital loans declined by RSD 2.4 bn in Q3, while investment loans went up by RSD 0.7 bn. With FX-indexed receivables rising faster than dinar ones in Q3, the degree of dinarisation of household receivables edged down by 0.6 pp to 53.8% in September.

New household loans amounted to RSD 132.9 bn in Q3, dropping by 1.7% relative to the same period last year. Cash loans made up 59.8% of new loans, while almost one-fourth were housing loans. The volume of new housing loans was RSD 30.9 bn in Q3, almost unchanged y-o-y, testifying to a stable growth in household demand for housing loans.

The results of the October bank lending survey[5] show that banks expectedly continued to moderately tighten corporate and household credit standards. The rising costs of sources of funding and higher perception of risk, which is also reflected in lower risk propensity, are the key factors working toward standard tightening, which banks expect to extend in Q4 as well. Banks' view is that loan demand of the domestic corporate sector increased in Q3, though mildly, looking q-o-q, and they expect a further mild growth in Q4. Working capital and capital investment financing were the key factors behind the expanded corporate loan demand. On the other hand, banks assessed that household loan demand tapered in Q3, with further reduction expected in Q4. The situation in the real estate market, along with the lower need to purchase durable consumer goods was the major factor behind weaker household loan demand in Q3, as reported by banks. The use of previously accumulated funds in savings accounts also worked toward reducing loan demand.

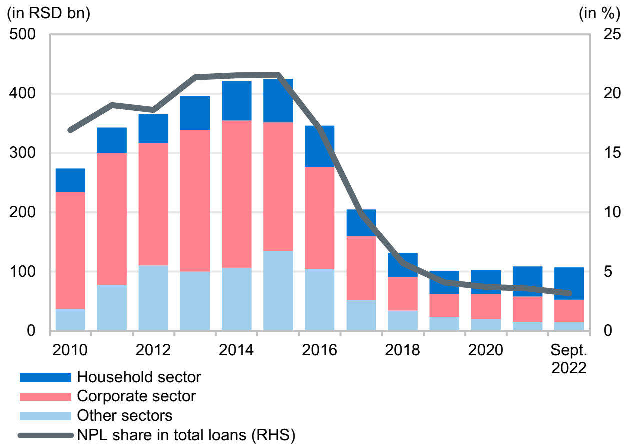
In Q3, gross **NPL ratio** dropped by 0.07 pp, to 3.19% in September, its lowest value on record. Compared to end-Q2, gross NPL ratios of corporate[6] and household[7] sectors remained almost unchanged, at 2.2% and 4.2%, respectively. At the same time, gross NPL ratio of other

[5] The NBS conducts the survey since the beginning of 2014.
[6] Including companies and public enterprises. Looking at companies only, NPL share in total loans in September stood at 2.4%.
[7] With entrepreneurs and private households included, the share of NPLs was 4.1% in September.

sectors[8] declined by 0.5 pp to 3.9% in September. NPL coverage remained high – allowances for impairment of total loans equalled 93.4% of NPLs in September, while allowances for impairment of NPLs measured 57.2% of NPLs.

Capital adequacy ratio[9] measured 19.5% at end-Q3, indicating high capitalisation (regulatory minimum equals 8.0%) and resilience of the banking sector to external and domestic risks.

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



Source: NBS.

3 Aggregate demand

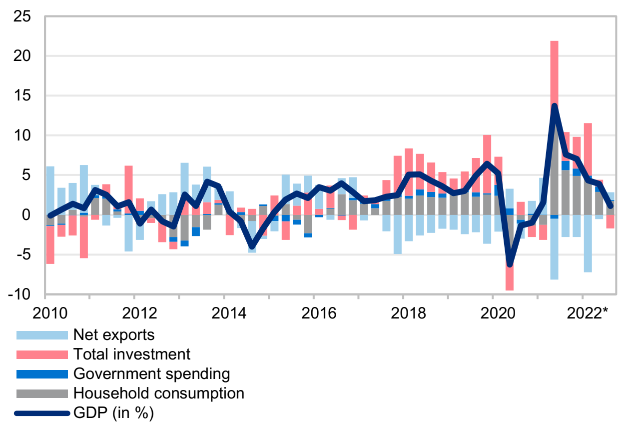
According to a SORS estimate, GDP growth decelerated from 4.1% y-o-y in H1 to 1.1% y-o-y in Q3. We estimate that a positive contribution to aggregate demand in Q3 stemmed from final consumption, but less so than in previous quarters, while total fixed investments provided a negative contribution due to the high base of government capital expenditures from last year. Unlike previous quarters, when a considerable negative contribution of net exports was recorded on account of high energy imports, we estimate that real exports of goods and services grew somewhat faster than imports, resulting in a positive contribution of net exports in Q3.

Domestic demand

Private consumption growth of 2.5% y-o-y is estimated to have powered the rise in domestic demand in Q3. However, with the waning of the pandemic-induced base effect, the growth in private consumption lost steam, reflecting also lower disposable income amid a global rise in cost-push pressures and tightened financial conditions. The deceleration of consumption growth is indicated by the slowdown in real retail trade turnover growth – from 5.9% in Q2 to 4.6% in Q3, while the import of consumer goods rose nominally by 19.6% y-o-y, which can be primarily associated with the hike in import prices. On the other hand, high growth rates in household consumption in the tourism sector were preserved and the number of arrivals and overnight stays increased by 20.6% and 22.6% y-o-y, respectively in Q3, while the increase in real turnover in catering went up by 22.6% y-o-y (July data).

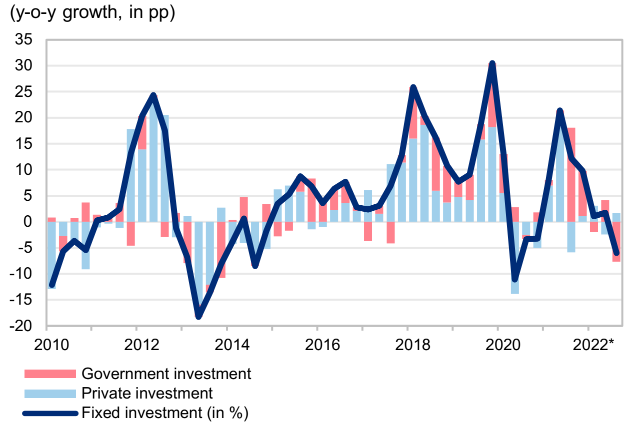
Observing the sources of consumption, wage bill grew by 2.7% in real y-o-y terms, at a slower pace than in H1. In addition, monetary policy tightening and a gradual rise in

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



Sources: SORS and NBS calculation.
* NBS estimate for Q3 2022.

Chart IV.3.2 **Fixed investment**
(y-o-y growth, in pp)



Sources: SORS and NBS calculation.
* NBS estimate for Q3 2022.

[8] Including the sector of finance and insurance, entrepreneurs, general government, foreign persons, private households and other legal persons.
[9] The regulatory framework of Basel III is applied since 30 June 2017.

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

	2021	2022			
	Q4	Q1	Q2	Q3	
Household consumption	**7.2**	**6.9**	**4.0**	**2.5**	*
Indicators					
Retail trade	8.4	11.0	5.9	4.6	
Catering turnover	118.5	72.4	80.1	22.6	***
Number of domestic tourists	39.6	29.6	40.2	20.6	
Number of overnight stays of domestic tourists	23.5	18.5	28.0	22.0	
Consumer goods import (BEC classification), nominal	13.0	21.8	20.0	19.6	
Sources					
Total wage bill, nominal	14.8	16.4	15,9	16.0	**
Net remittances inflow, nominal	14.8	16.9	53.5	69.6	
Stock of loans intended for consumption, nominal	6.7	6.8	7.1	5.6	

Sources: SORS and NBS calculation.
* NBS estimate.
** July–August.
*** July.

Table IV.3.2 **Investment indicators**

	2021	2022			
	Q4	Q1	Q2	Q3	
Real y-o-y growth rates (in %)					
Fixed investment (national accounts)	9.8	1.1	1.7	-6.0	*
Construction (national accounts)	10.9	-5.5	-7.6	-16.0	*
Government investment	26.4	-10.2	19.1	-23.0	*
Number of construction permits issued	34.4	28.2	4.2	-3.7	**
Production of construction material	-0.2	3.5	0.2	-5.2	
Value of works performed	10.4	-5.9	-8.8	-13.5	
Import of equipment, nominal	14.1	11.8	29.7	12.2	
Production of domestic machinery and equipment	7.7	7.1	12.2	6.5	
Finished product inventories in industry	4.0	-0.2	1.6	-0.2	

Sources: SORS and NBS calculation.
* NBS estimate.
** July–August.

interest rates dampened the growth in loans intended for consumption, from 7% in H1 to 5.6% y-o-y in Q3. On the other hand, the inflow of remittances went up by close to 70% y-o-y in Q3, which is primarily attributable to the almost complete lifting of confinement measures in Europe and considerably greater mobility of seasonal workers during the summer period.

According to our assessment, the growth in **government consumption** was also less pronounced in Q3 than in Q2 (1.0% vs. 4.5% y-o-y), so the contribution of total consumption to GDP growth declined from 3.6 pp in Q2 to 1.9 pp in Q3.

We estimate that private sector fixed investments recovered in Q3 and rose by 2.5% y-o-y after Q2, when they dropped by 2.5% y-o-y upon the outbreak of the Ukraine conflict and the consequent heightening of global uncertainty. This is largely indicated by the higher production of machinery and equipment (by 6.5% y-o-y), while the import of equipment went up by 12.2% in nominal terms. Despite heightened global uncertainty, the sources of investment financing recorded positive dynamics. FDI inflow amounted to EUR 1.3 bn in Q3 and was higher by 19.4% y-o-y, while the stock of investment loans increased by 7.0% y-o-y.

According to our assessment, government investments in Q3 declined by over 20% y-o-y, which can be associated primarily with the redirection of funds to energy procurement. Thus, **total fixed investments** dropped by 6.0% y-o-y, providing a negative contribution to economic activity (1.4 pp).

The **increment in inventories** is estimated to have declined from the same quarter last year, dragging economic activity down by 0.3 pp.

The q-o-q fall in domestic demand of 0.3% s-a, in our estimate, was driven by lower consumption and fixed investments, while inventories worked in the opposite direction.

Net external demand

According to our estimate, real exports posted a somewhat stronger y-o-y rise than imports in Q3 (7.0% vs. 6.0%), resulting in a 0.9 pp contribution of net exports to y-o-y GDP growth.

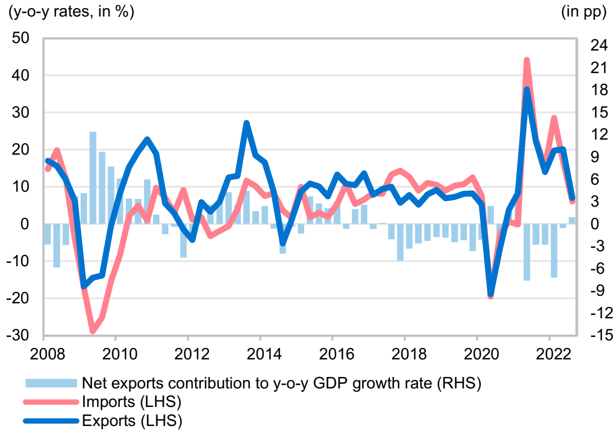
Amid a further slowdown in external demand and escalation of geopolitical tensions, **commodity exports** continued rising, though at a somewhat slower pace than in the previous period. According to the balance of payments data, commodity exports, expressed in euros, went up by 23.7% y-o-y in Q3, driven by manufacturing exports which recorded a broad-based 22.3% y-o-y rise (21 out of 23 branches), with the highest contribution coming from electrical equipment, motor vehicles, food products, other machinery and equipment, as well as rubber and plastic products. At the same time, a temporary shutdown of one blast furnace in the Smederevo steel plant in late July dampened the export of base metals, while a decrease in the export of petroleum products reflects lower exported quantities, partly on account of the Government's temporary ban on the export of diesel fuel. Driven by copper exports, mining continued to provide a positive contribution to export growth, while the export of agricultural products stayed at a similar level as in the same period last year.

The growth in **commodity imports**, expressed in euros, also decelerated in Q3 – to 20.9% y-o-y from 43.6% in H1. In terms of broad economic categories (BEC), the rise in imports was mostly driven by intermediate goods (24.4% y-o-y) on account of higher energy imports. Though energy imports declined considerably from Q2, mostly on account of lower import of gas, the import of crude oil, petroleum products and natural gas remained higher than in same period last year (by EUR 250.2 mn). The increase is entirely attributable to higher import prices, while lower imported quantities worked in the opposite direction. A contribution to import growth also came from consumer goods and equipment (19.6% and 12.2% y-o-y, respectively). Such trends are also confirmed by the classification of imports by destination as the growth in imports received the greatest contribution from intermediate goods and energy, followed by consumer and capital goods.

Foreign **trade in services** went further up in Q3, with a more pronounced y-o-y growth in exports (46.2%) than in imports (38.3%), leading to a foreign trade surplus which more than doubled from the same period last year reaching EUR 473.5 mn. Trade in all kinds of services increased, with the greatest contribution to exports, as earlier, coming from tourist and ICT services, and to imports – from tourist and transport services.

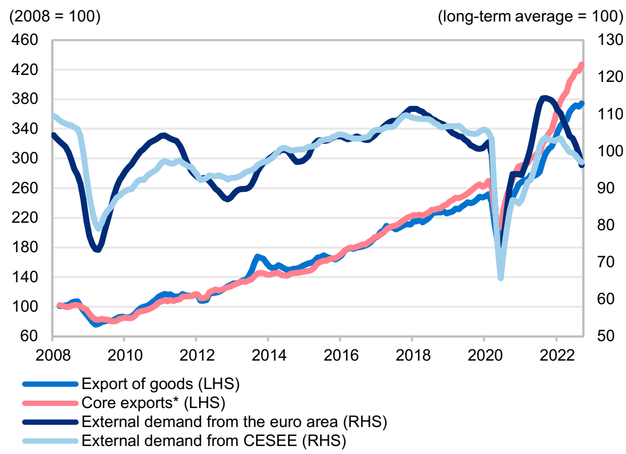
In September, the commodity exports-to-imports ratio[10] measured 75.5%, or 84.4% if services are included, which is an increase from June, but a decrease from end-2021, primarily due to higher energy imports.

Chart IV.3.3 **Exports and imports of goods and services**
(in previous-year constant prices, ref. 2010)



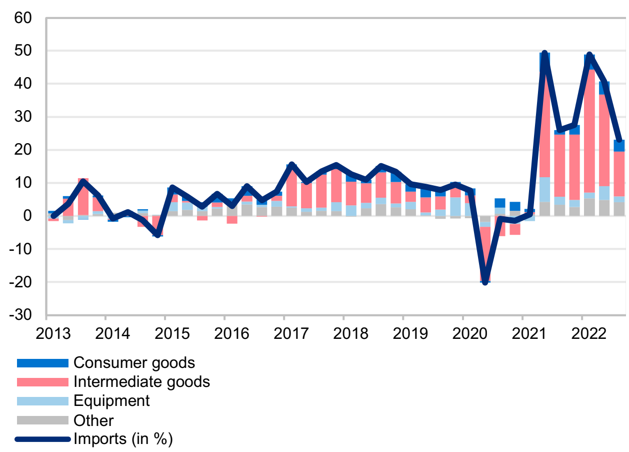
Sources: SORS and NBS calculation.
Note: NBS estimate for Q3 2022.

Chart IV.3.4 **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.

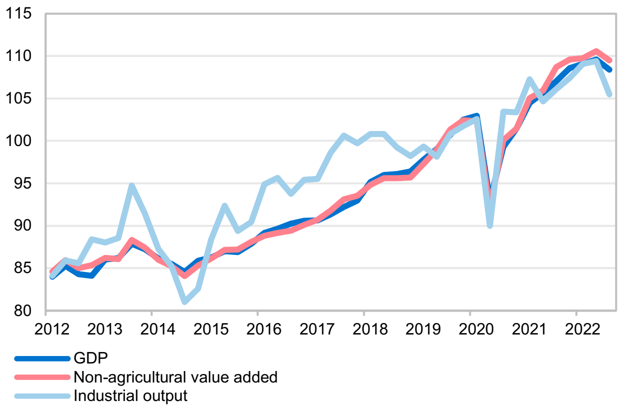
Chart IV.3.5 **Movement of key import components**
(contributions to y-o-y growth, in pp)



Sources: SORS and NBS calculation.

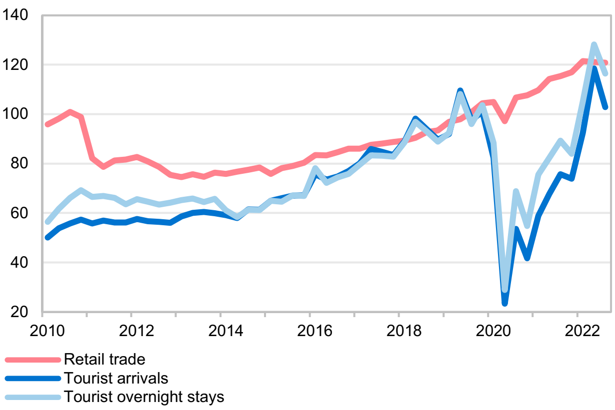
[10] Measured by the 12-month moving average.

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



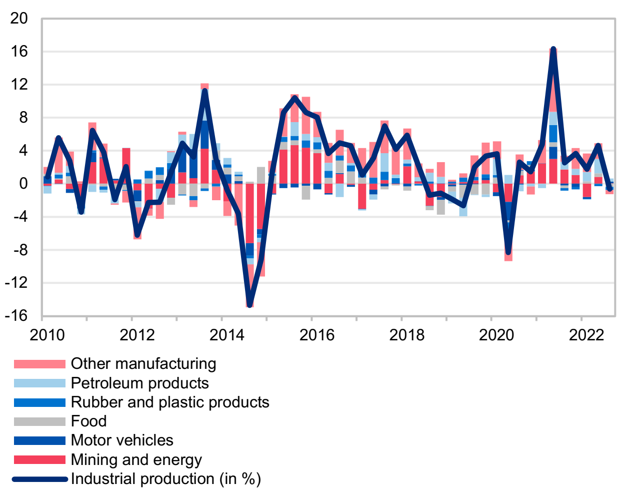
Sources: SORS and NBS calculation.

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.

4 Economic activity

After relatively strong growth in H1 (around 4.1% y-o-y), economic activity slowed down in Q3. According to a preliminary SORS estimate, Serbian GDP growth in Q3 amounted to 1.1% y-o-y. The economic slowdown was sharper than anticipated in the previous* Report*, mainly due to this year's agricultural season which, according to preliminary estimates, turned out to be much worse than assumed, as well as due to dampened external demand, and persistently rising production costs that weigh down heavily on construction and manufacturing. Headwinds also came from the slump in energy sector which continued as a consequence, among other things, of low river levels. Though at a slower pace, further growth in service sectors worked in the opposite direction.

Q-o-q economic growth recorded continuously since Q3 2020 was halted in Q3 2022. According to our estimate, GDP contracted by 1.1% s-a in Q3, reflecting lower external demand and globally high cost-push pressures.

In our estimate, economic activity growth in Q3 was led by **service sectors**, though growth in overall services slowed from 5.9% in Q2 to 3.6% y-o-y in Q3 (contributing 1.8 pp to GDP growth). This is indicated primarily by the real retail trade turnover, which recorded a somewhat weaker growth than in Q2 (4.6% vs. 5.9% y-o-y), while tourism and hotel industry maintained a strong, double-digit growth rate.

A further rise in uncertainty and deteriorated global growth outlook, spurred by high energy prices, led to a decline in external demand, which reflected negatively on **manufacturing**. In Q3, the volume of production of Serbian manufacturing contracted by 0.9% y-o-y, with the largest negative contribution coming from the production of base metals and food (-1.8 pp and -0.5 pp, respectively). Eleven out of 24 branches of manufacturing recorded a decline in activity, while among those recording growth, oil production proved to be the largest contributor (0.5 pp). Unfavourable weather conditions during the summer months strained electricity production in hydro power plants, which, after the problems in the prior period, only further exacerbated activity in the **electricity supply sector**. On the other hand, the 8.5% y-o-y growth in mining eased the fall in the volume of industrial production to 0.6% y-o-y, which dragged GDP down by 0.1 pp.

After the previous, record-breaking year for **construction**, activity in this sector has been weakening from the beginning of the year. Its contraction in Q3 is estimated at around 16% (-0.9 pp contribution to GDP). The contraction is indicated by the reduced production of construction materials (by 5.2% y-o-y in Q3), and by the number of issued construction permits which dipped by 3.4% y-o-y in the period July–August. At the same time, import of construction materials increased by 12.1% y-o-y in nominal terms, as a result of the rise in import prices. The slump in construction also reflects lower government allocations for capital investments (down by 23.0% y-o-y).

Net taxes are also expected to provide a positive contribution to GDP growth in Q3 (0.9 pp), owing in part to the introduction of a new fiscalisation system and the consequently better tax collection.

As extremely unfavourable weather conditions during the summer months caused an 11.0% y-o-y fall in **agricultural activity** in Q3, we have revised our projection that envisaged an unchanged level of agricultural output relative to the year before. The new projection foresees a decline in agricultural output in 2022 by 8.0%.

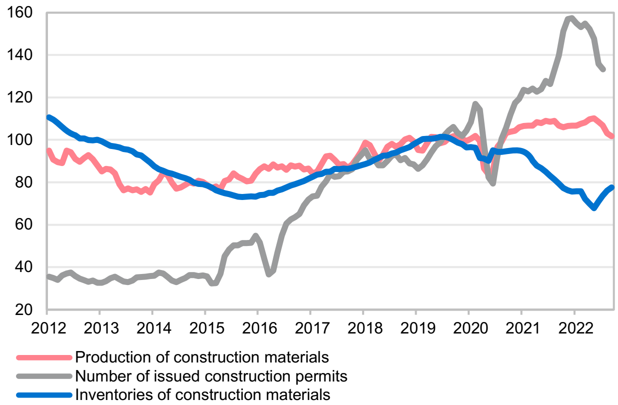
Q-o-q, economic activity is estimated to have declined in Q3 by 1.1% s-a, driven by the fall in all production sectors, while services worked in the other direction, recording a mild rise of 0.2% s-a.

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

	2021		2022		
	Q3	Q4	Q1	Q2	Q3*
GDP (in %, y-o-y)	**7.6**	**7.0**	**4.3**	**3.9**	**1.1**
Agriculture	-0.4	-0.4	-0.2	-0.3	-0.8
Industry	0.5	0.9	0.4	0.9	-0.1
Construction	0.8	0.7	-0.3	-0.4	-0.9
Services	5.2	4.6	3.5	3.0	1.8
Net taxes	1.5	1.3	1.3	0.9	0.9

Sources: SORS and NBS calculation.
* NBS estimate.

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



Sources: SORS and NBS calculation.

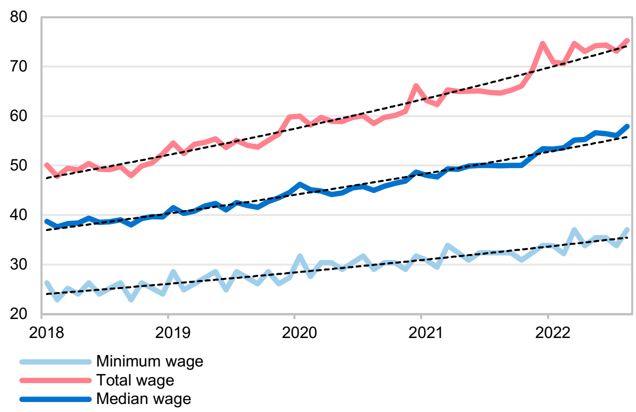
5 Labour market developments

Nominal wages and formal employment went further up in Q3, while unemployment decreased to a new low in September.

Wages and labour productivity

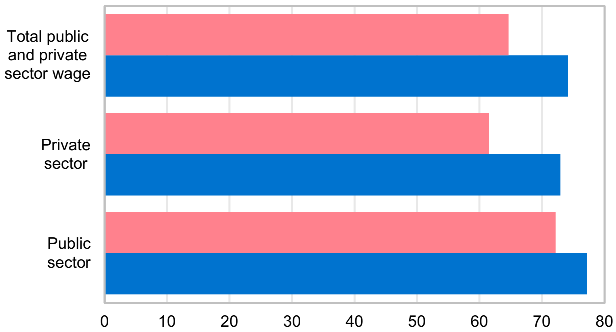
In July and August, the average nominal net wage equalled RSD 74,198 (EUR 632), up by 14.7% y-o-y, driven, as in the previous period, by an average wage rise significantly faster in the **private sector** (18.5%) than in **the public sector** (6.9%). This additionally narrowed the gap in average wages between the public and private sector to 1.09 in the first eight months of the year (from 1.2 in the same period of 2021 and in the 2017–2020 period). Median wage equalled RSD 56,956 in July and August, recording 14% y-o-y growth. **In September, the Government adopted the decision on raising the minimum wage from RSD 201.22 to RSD 230.00 an hour** (starting from 1 January 2023). As a result of this decision, the minimum net wage will measure around RSD 40,000 next year and will cover around 90% of the minimum consumer basket. In addition, there was an announcement of an increase in the untaxable share of the

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



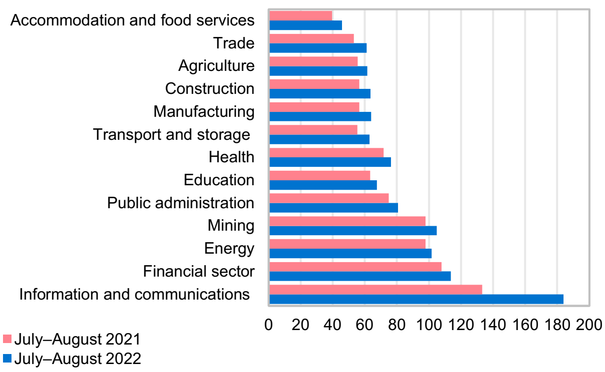
Source: SORS.
Note: Since January 2018, Tax Administration data have been used for wage calculations.

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



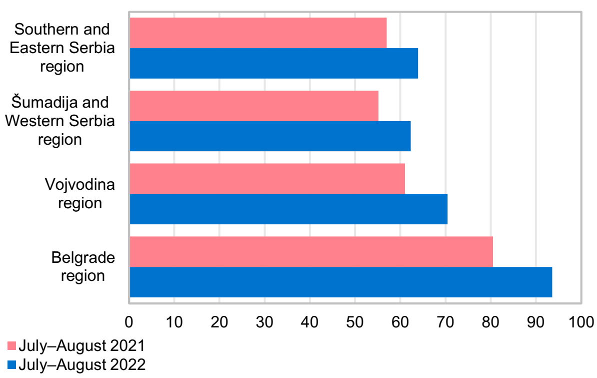
Source: SORS.

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



Source: SORS.

Chart IV.5.4 **Nominal wages by region in Serbia**
(in RSD thousand)



Source: SORS.

wage to RSD 21,712 and a 1.00 pp reduction in the pension and disability insurance contribution rate paid by employers as of next year, which would relieve the burden on the private sector and open room for further sustainable wage growth.

The strongest rise in the y-o-y nominal net wage recorded for some time now is that of the ICT sector[11] (38.1% in July and August) on account of the pronounced demand for labour force with these skills and the legal inclusion of inflows from abroad in the tax return for withholding tax aimed at curbing the grey economy. Other economic sectors dominated by the private sector also recorded a significant y-o-y wage increase in July and August, primarily professional, scientific, innovation and technical services (20.5%), catering (15.6%), trade (14.8%) and transport (14%), as well as administrative and auxiliary services, real estate business, manufacturing and construction. Y-o-y average wage increase in July and August was also registered in prevalently public sector industries (health, education, and public administration). Further public sector wage rises are expected going forward in line with nominal GDP dynamics in order to preserve the living standard and purchase power of households.

The July–August period saw a broad-based y-o-y rise in average wages across **Serbia's regions**, ranging between 16.2% in the Belgrade region and 12.2% in Southern and Eastern Serbia.

Total nominal net wage bill, as the main source of consumer demand, went up by 16.0% y-o-y in July and August on the back of a further rise in average wages and formal employment.

According to a preliminary estimate, **overall economic productivity** went slightly up in Q3 (0.2% y-o-y), as economic growth continued to outpace employment gains.

Employment

According to SORS data, obtained from the Central Registry of Mandatory Social Insurance and the Statistical Business Register, the y-o-y growth in **total formal employment** decelerated noticeably, from 1.5% in Q2 to 0.9% in Q3. Nevertheless, in September, it reached a new high (2.32 mn persons) with around 24 thousand formally employed persons more than a year ago. The September y-o-y growth in formal employment

[11] Excluding the average ICT sector wage from the statistical scope, the y-o-y rate of growth in total nominal net wage in the July–August period would be around 12.0% (according to our estimate).

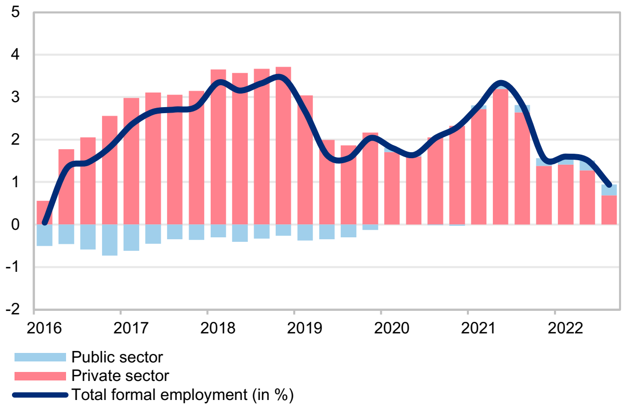
was entirely driven by employment with legal entities (by around 34 thousand), while the number of entrepreneurs (including their employees) and registered individual farmers continued dropping (by around 11 thousand collectively).

Private sector formal employment trended around the record level of 1.7 mn in Q3 as well, accounting for around 74% of total formal employment in Serbia. In September, it went up by close to 14 thousand persons at the level of the year, with the highest numbers of new recruits recorded in services – ICT services (close to 13 thousand), professional, scientific, innovation and technical services (close to seven thousand), and administrative and auxiliary services (around four and a half thousand). In contrast, September saw a y-o-y decline in employment in manufacturing, trade, agriculture and energy (by close to 10 thousand collectively), i.e. activities largely exposed to the impact of the current global unfavourable environment. This is also observable in the euro area which is our main trading partner. In September, **public sector formal employment** was by almost 10 thousand higher y-o-y, primarily in public administration, reflecting more flexible control of employment with public funds beneficiaries (since January 2021).

According to the National Employment Service records, **registered unemployment** dropped to a new low (427,788) in September, with around 64 thousand unemployed people less than in the same period last year. Though at a slower pace, the y-o-y decline in unemployment in all occupational groups continued in September.

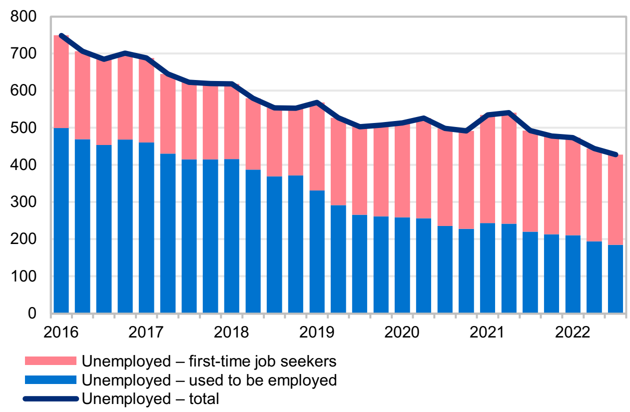
Available data from the revised **Labour Force Survey** confirm favourable domestic labour market trends (both formal and informal labour market segment) as the activity and employment rates reached record levels in Q2 2022 (55.8% and 50.9%, respectively). In y-o-y terms, these indicators went up by 1.5 pp and 2.6 pp, respectively. The participation rate, i.e. the activity rate of working age population (15–64) equalled 72.0% in Q2, with the y-o-y growth rate of 2.2 pp and also the highest level since monitored under the comparable methodology (Q1 2010). In parallel, the unemployment rate was cut again to a single-digit level of 8.9% (y-o-y decline of 2.2 pp). At the same time, the share of long-term unemployment in total active population in Q2 was at the level of Q1 (4.5%) and 0.9 pp lower than a year ago.

Chart IV.5.5 **Structure of y-o-y growth in total formal employment**
(in pp, quarterly average)



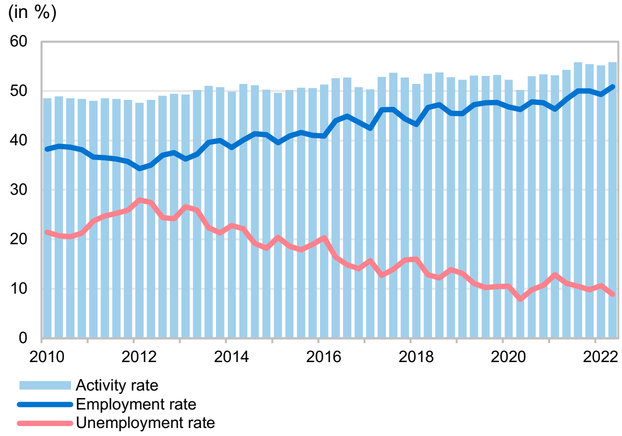
Sources: SORS and NBS calculation.

Chart IV.5.6 **Movement of registered unemployment**
(in thousand persons, end-of-quarter)



Source: National Employment Service.

Chart IV.5.7 **Labour market indicators according to the Labour Force Survey**
(in %)



Source: SORS.

6 International environment

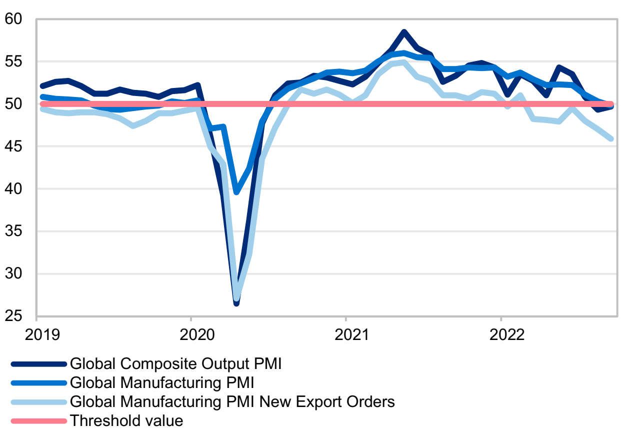
In a challenging and changing environment, accompanied by a high level of uncertainty, the majority of countries are faced with either a significant slowdown or a contraction of economic activity, which reflects global inflation growth, retraction of monetary and fiscal stimuli implemented in the initial phase of the pandemic, and tightening of global financial conditions.

The projected global economic movements, which have been estimated as more unfavourable in the coming period, will largely depend on monetary policies' successfulness in suppressing rising inflation, as well as the way the Ukraine crisis unfolds and the possible further disturbances in supply, caused by the pandemic, notably in China because of its zero-tolerance policy to the coronavirus.

Economic activity

In light of **adverse economic trends in the three biggest world economies** – the fall in US GDP in H1 2022, the anticipated economic contraction in the euro area in H2 2022, and the further spread of the coronavirus and lockdowns, with the exacerbating crisis in the real estate sector in China, in its October WEO the IMF stuck to its July projection which forecast a **slowdown in global economic growth** to 3.2% in 2022 (from 6.0% in 2021). This is the weakest forecast since 2001 (excluding the periods of the global financial crisis and the initial phase of the pandemic). The IMF underlined the geographically broadly distributed weakening in economic activity, given that a third of the global economy is already faced with a fall in GDP for two consecutive quarters, which was largely the result of central banks withdrawing their monetary stimuli in an effort to suppress a steady inflation. In addition, the leading global PMI indices at end-Q3 and the beginning of Q4 were in an area indicating contraction. **Risks to the projection remain pronouncedly skewed to the downside**, notably due to the persisting inflationary pressures despite monetary tightening, spreading of the adverse effects of the Ukraine conflict, and fears of a deterioration in the health situation coupled with the still present halts in supply chains. All of this is accompanied by the still present gap in the degree of monetary policy tightening by leading central banks, which would lead to the further strengthening of the dollar, problems in debt servicing in some emerging countries amid the tightening of global financial conditions, as well as the potential halt in Russian gas supply to Europe and continuation of geopolitical fragmentation that disrupts trade and financial flows.

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



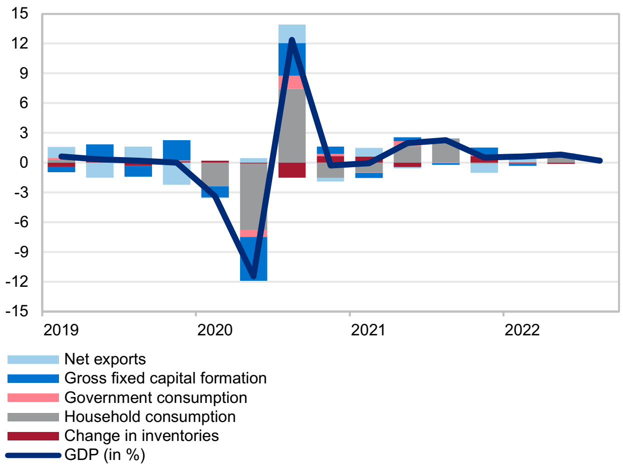
Sources: J.P.Morgan and S&P Global.

In Q2, the **euro area economy** posted growth of 0.8% s-a, notably owing to strong consumer demand for services once containment measures were loosened and European economies opened, primarily the ones in South Europe which rely heavily on tourism and catering. In contrast, the manufacturing sector suffered harsh consequences of high energy costs, halts in gas deliveries and less but still present supply bottlenecks. On the expenditure side, the achieved GDP growth in Q2 was determined by an increase in domestic demand (contribution 0.7 pp), primarily household consumption, and to a lesser degree by an increase in net exports (contribution 0.1 pp). Our main trade partners in the euro area – Germany and Italy – also recorded economic growth in Q2, with **Italy** boasting much more pronounced growth (1.1% s-a) than **Germany** (0.1% s-a).

With the waning of the positive effects of the reopening of the economies and a strong rebound in tourism over the summer months, in September the **ECB** assessed that economic activity in euro area slowed down significantly in Q3. However, according to Eurostat's preliminary flash estimate, contrary to expectations, Q3 saw 0.2% s-a growth in euro area GDP, though movements in leading economic indices during the quarter indicated that the economy would enter a contraction stage – Composite PMI[12] declined from 52.0 points in June to 48.1 point in September, while at the same time the ESI[13] came down from 103.2 points to 93.6 points, their lowest levels since November 2020. In light of the high inflation, weakened consumer and external demand, elevated uncertainty that is fracturing market confidence, and particularly because of difficulties in natural gas supply and broader geopolitical consequences of the deepening of the Ukraine crisis, the ECB expects euro area economic activity to deteriorate further. The projected growth for 2022 is 3.1% under the baseline scenario (or 2.8% under the downside scenario), with risks to the projection skewed to the downside.

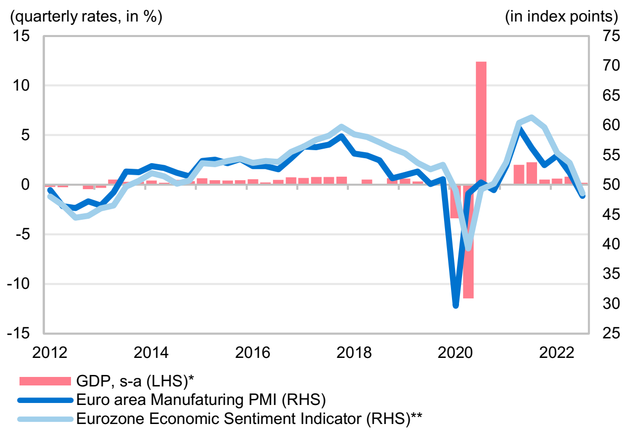
Economic activity in the euro area is still propped by the persistently favourable dynamics in the **labour market**, as indicated by the increase in the participation rate of working age population (15–64 years) and employment rate to 74.7% and 60.9% respectively in Q2, these being their highest levels since the euro area's establishment. Concurrently, the total number of working hours rose further in Q2, exceeding the pre-pandemic level (Q4

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



Source: Eurostat.

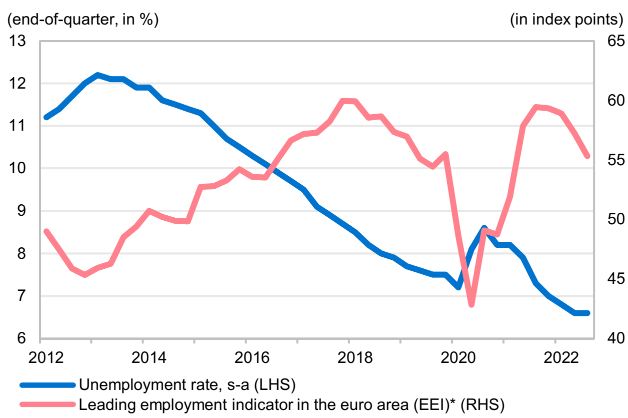
Chart IV.6.3 **Movements in GDP and leading indicators of the euro area**



Sources: Eurostat, S&P Global and European Commission.

* Eurostat's preliminary flash estimate for Q3 2022.
** ESI is standardised relative to PMI.

Chart IV.6.4 **Unemployment rate and leading euro area employment indicator**

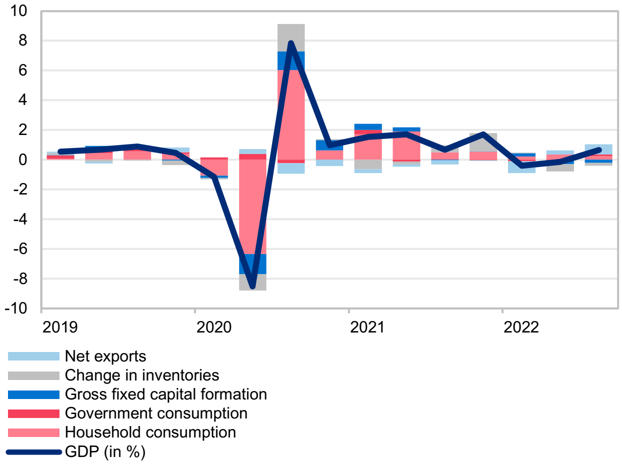


Sources: Eurostat and European Commission.
* EEI is standardised relative to PMI.

[12] The value of Eurozone Composite PMI above 50 points indicates expansion, and below 50 a contraction in manufacturing activity within the euro area.

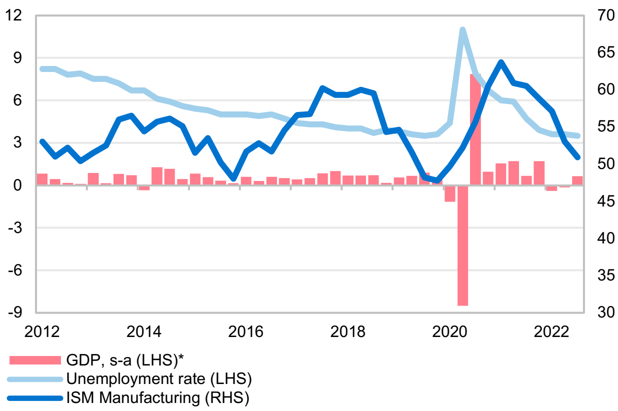
[13] The value of Economic Sentiment Indicator above 100 points indicates improvement, and below 100 worsening of economic expectations.

Chart IV.6.5 **Contributions to s-a real GDP growth rate of the USA**
(quarterly, in pp)



Sources: U.S. BEA and NBS calculation.

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



Sources: U.S. BEA , U.S. BLS and Institute for Supply Management.
* U.S. BEA preliminary estimate for Q3 2022.

2019), while the unemployment rate remained at its historic minimum of 6.6% in September. However, the ECB expects that the projected slowdown in euro area growth in the coming period will be mirrored by poorer performance in the labour market, as indicated by the downward movement in the leading Employment Expectations Indicator (EEI[14]), which fell from 110.2 points in June to 106.6 points in September, notably reflecting the exacerbated employment plans in manufacturing.

For the second quarter in a row, the **US economy** posted a fall – 0.2% s-a in Q2 (i.e. 0.6% annualized), thus technically finding itself in a recession stage. This was dominantly influenced by the contraction in total investments (notably inventories), and to a lesser degree by a fall in government consumption (-0.8 pp aggregate contribution to GDP), while increase in household consumption and recovery of net exports worked in the opposite direction (0.6 pp aggregate contribution to GDP). In September, the **Fed** noted that indicators of business and consumer confidence from end-Q3 suggest a very modest pace of economic activity, as confirmed by the ISM Manufacturing PMI,[15] which stood at 50.9 points in September (after 53.0 points in June). According to a preliminary assessment of the US Bureau for Economic Research, the US economy recorded growth of 0.6% s-a in Q3, which means that for the time being it has left the contraction zone, mostly owing to an increase in external demand. However, bearing in mind that the first part of the year saw weaker performance than previously expected, as well as an aggressive tightening of monetary conditions, in September the Fed slashed its June growth forecast for 2022 – by 1.5 pp to 0.2%. Risks to the projection remained tilted to the downside due to adverse global developments, primarily elevated risk of recession in the euro area, pronounced slowdown in the Chinese economy, and the spill-over of the negative effects of the Ukraine conflict.

The still tight conditions in the **US labour market** are indicated by the record low unemployment rate of 3.5% in September, while the number of job vacancies (non-farm) and the number of employed persons intending to quit their job voluntarily remained significantly above the pre-pandemic level in September, though lower than in June. Also, since the start of the year, activity and employment rates rose more slowly than expected, and

[14] The value of Employment Expectations Indicator above 100 points indicates managers' high employment expectations, while the opposite holds true for values below 100.

[15] The value of ISM Manufacturing PMI above 50 points indicates expansion, and below 50 a contraction in manufacturing in the USA.

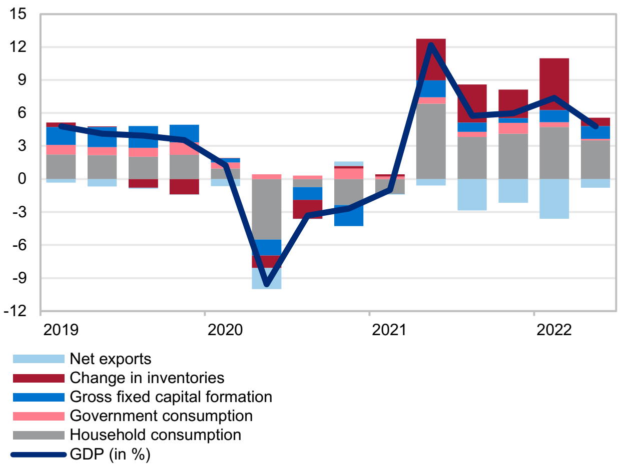
their levels in September (62.3% and 60.1%, respectively) remained 1.1 pp below the pre-pandemic levels. At the same time, the private sector recorded broadly dispersed growth in the average nominal wage across the sector. Still, the Fed estimates that the wage-price spiral in the USA has not been yielded yet, therefore the June unemployment projection for 2022 was revised slightly up in September – by 0.1 pp to 3.8%.

Despite the consequences of the Ukraine crisis and extended supply bottlenecks, the economic growth dynamics in most **CESEE region** countries in Q2 was better than expected thanks to generous fiscal support and the still favourable conditions in the labour market. Though lower than a quarter earlier, economic growth in the region in Q2 equalled 4.8% y-o-y as a result of increased total investments and consumption (5.6 pp aggregate contribution to GDP), while a fall in net exports acted in the opposite direction (0.8 pp negative contribution to GDP). Still, the leading indicators suggest a slowdown in economic activity in Q3 on account of the further decline in external demand, energy shortfall, as well as higher living costs attributable to the rising cost-push pressures. With continued geopolitical tensions, the ECB's and the Fed's monetary policy tightening, as well as the risk of a renewed spread of the pandemic, the economic outlook of the region is uncertain, primarily for the following year.

Against the backdrop of the escalating conflict in Ukraine and the sanctions imposed by Western countries, in Q2 **Russia's GDP** decreased by 4.1% y-o-y, mostly under the impact of contracted activity in the services sector (trade and utilities), and to a lesser extent in manufacturing and mining. Still, in the year to date, performance exceeded the expectations of the government's statistical office and the Russian central bank owing to the strong support of the domestic financial sector, more favourable export results during H1, business environment's adjustment to changed circumstances, and the relatively stable labour market. With this in mind, in October the IMF revised up its projection of Russian economic growth in 2022 – by 2.6 pp to -3.4%.

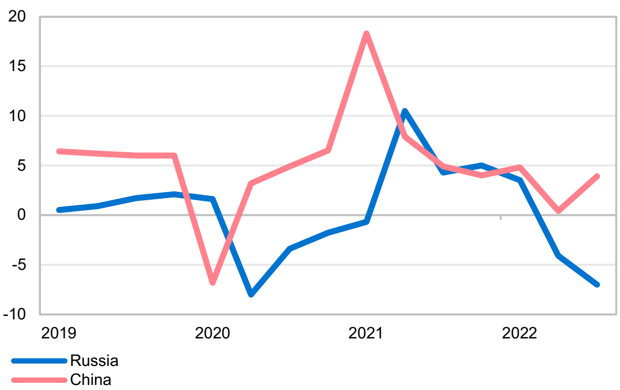
Because of the implementation of zero-tolerance policy to the coronavirus and the associated lockdowns, growth in **China's GDP** decelerated significantly – to 0.4% y-o-y in Q2 (the weakest result since the contraction in Q1 2020). This was mostly a consequence of amplified problems in the real estate business, which accounts for around one-fifth of China's economic activity. As sales contracted, investors in the apartment construction sector were not able to finish the ongoing construction projects,

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



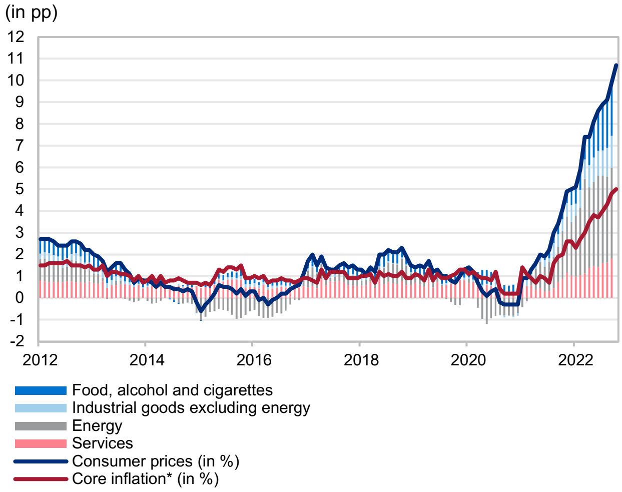
Source: Eurostat.
* Including Bulgaria, Czech Republic, Croatia, Hungary, Poland, Romania, Slovenia and Slovakia.

Chart IV.6.8 **Y-o-y real GDP growth rates of Russia and China**
(quarterly, in %)



Source: National statistics.
* Estimate of the Central Bank of Russia is given for Q3 2022.

Chart IV.6.9 **Contributions of HICP components to y-o-y inflation in the euro area**
(in pp)

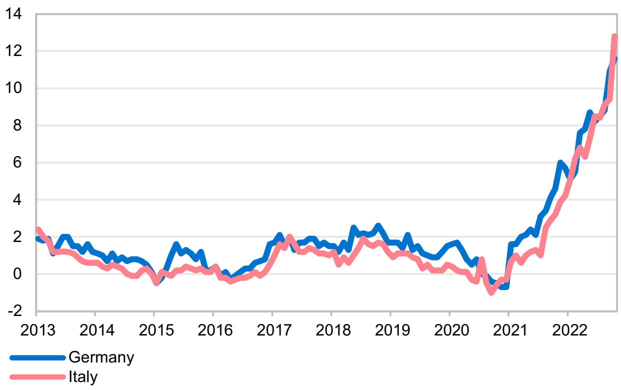


Sources: Eurostat and NBS calculation.
* HICP excluding energy, food, alcohol and cigarettes.

which created pressure on liquidity and prolonged the debt crisis that could reflect on the domestic banking sector as well. According to a preliminary estimate of the National Bureau of Statistics, in Q3 China's GDP picked up to 3.9% y-o-y owing to increased activity in manufacturing, mining and retail trade. Yet, in October, the IMF slightly revised down its July forecast of China's economic growth – by 0.1 pp to 3.2% in 2022, its lowest level in four decades (excluding the initial slump at the onset of the pandemic).

Inflation movements

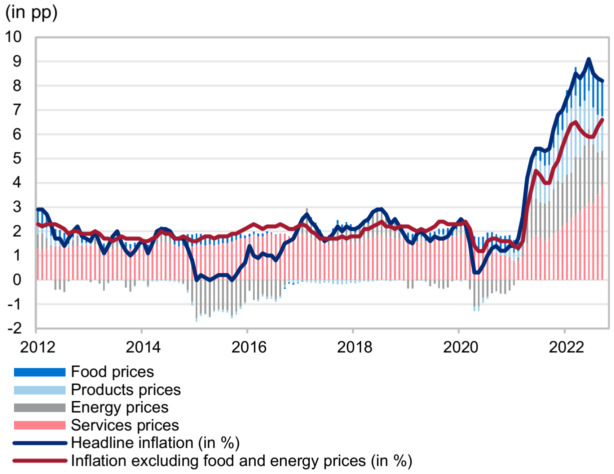
Chart IV.6.10 **HICP for Germany and Italy**
(in %)



Source: Eurostat.

During Q3, **euro area inflation** continued on the upward path and measured 9.9% y-o-y in September, two-thirds of which is attributable to a sharp increase in energy prices (40.7% y-o-y) and a further rise in food prices (11.8% y-o-y) due to the drought that hit most parts of Europe over the summer months and higher prices of fertilisers and transport. The prices of services and industrial products (energy excluded) also posted y-o-y growth during Q3 and dictated the increase in core inflation to 4.8% y-o-y in September. Measured by the change in the HICP, **inflation in Germany** picked up to 10.9% y-o-y in September (more than in the euro area), under the impact of intensive y-o-y rise in food and energy prices, and to a lower extent the higher prices of transport services upon the expiry of the discount for public transport services. **Inflation in Italy** also picked up, reaching 9.4% y-o-y in September, dominantly driven by higher food prices. In September, the ECB noted that cost-push pressures in the euro area are broadly dispersed over CPI components as a consequence of the rising costs of energy and food, the still present production bottlenecks and the effects of the reopening of European economies, which amplifies shocks on the supply and demand sides more than initially anticipated and triggers inflationary pressures. According to Eurostat's preliminary flash estimate, in October y-o-y inflation accelerated to 10.7% in the euro area, 11.6% in Germany, and to 12.8% in Italy.

Chart IV.6.11 **Contributions of ICP components to y-o-y inflation in USA**
(in pp)



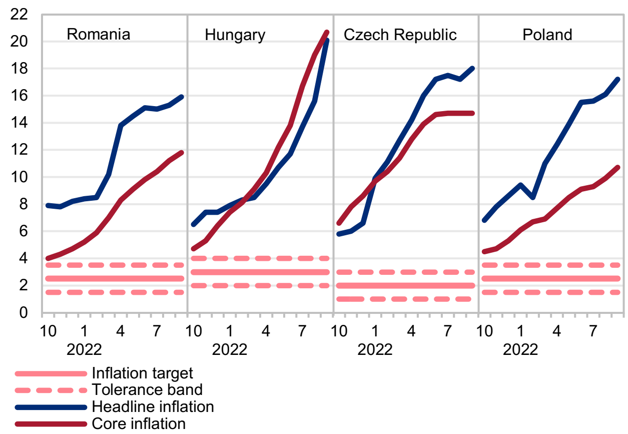
Sources: U.S. Bureau of Labor Statistics and NBS calculation.

As of June, **headline inflation in the USA** (measured by changes in the CPI) gradually slowed down and measured 8.2% y-o-y in September. This is largely attributable to the lower contribution of energy prices, whose growth in September (19.8% y-o-y) was twice lower than in June, and less to the lower contribution of product prices (especially new vehicles). An additional increase in food inflation and further growth in the prices of services (housing, medical and transport services) worked in the opposite direction, thus dominantly dictating an acceleration in **core inflation** (excluding food and energy prices) to 6.6% y-o-y in September, its highest level in 40 years. According to the Fed's September estimate, going forward inflation in the USA will remain elevated under the impact of the persistent imbalance between supply and demand, and the still high prices of food and energy, which translate onto other prices and push inflationary pressures to spread more widely. The tight labour market in the US will act in the same direction, exerting pressure towards an increase in nominal wages, as will extended halts in supply chains. A preliminary estimate of the US Bureau of Labour Statistics states that headline inflation in October was further eased to 7.7% y-o-y, largely due to the slower growth of energy and product prices.

In observed CESEE countries, inflation in September stood at a higher level than in June. The highest level of y-o-y inflation in September was recorded in **Hungary** (20.1%) based on further growth in food prices, notably those of processed food (despite a cap on the prices of some food products), and prices within core inflation (20.7%), as well as the decision by the Hungarian government to abolish the cap on gas and electricity prices (as of August) for households with higher monthly consumption (estimated effect on inflation growth is around 3 pp). Though the prices of petroleum products had a disinflationary effect in the **Czech Republic** and Romania, y-o-y inflation in the Czech Republic accelerated to 18.0% in September amid the continued rise in the prices of other energy sources (solid fuels, electricity and gas), while growth in **Romania's** y-o-y inflation to 15.9% in September was dictated by the higher prices of food and products within core inflation, as opposed to the slower growth in the prices of services. The simultaneous growth in y-o-y inflation in **Poland** to 17.2% was driven by the higher prices of housing and utility services on account of the price hike in electricity, gas and other fuels. According to Consensus Economics' October forecast, inflation's projected approach to its peak in the CESEE region could be prolonged amid amplified negative effects of the Ukraine crisis in the energy sector, especially after the suspension of Russian gas supply to the EU, due to which countries without exit to the sea (Hungary and the Czech Republic) could be hit the hardest.

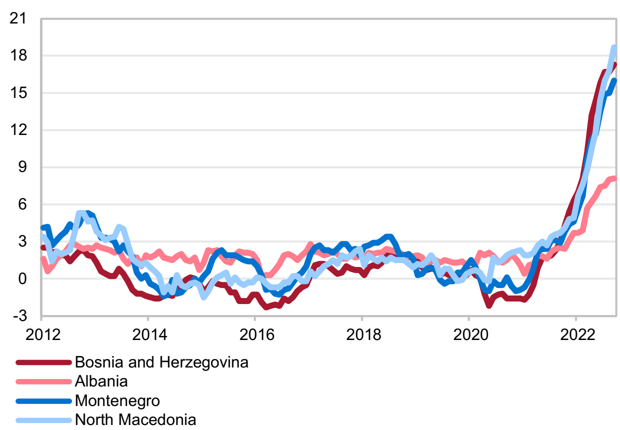
Against the backdrop of elevated food and energy prices, in all **countries of the Western Balkan region** inflation continued to move up during Q3, with the highest growth in y-o-y inflation in September recorded by North Macedonia (18.7%) and Bosnia and Herzegovina (17.3%). Somewhat lower growth in y-o-y inflation in September was recorded in Montenegro (16%), and the lowest in Albania (8.1%).

Chart IV.6.12 **CPI movements in selected CESEE countries (until end-September 2022)**
(y-o-y rates, in %)



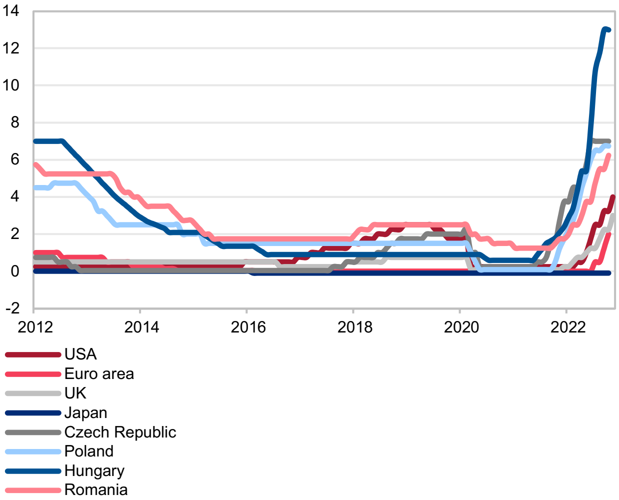
Sources: Central banks of selected countries.

Chart IV.6.13 **CPI movements in Western Balkan countries**
(y-o-y rates, in %)



Source: National statistics.

Chart IV.6.14 **Policy rates across selected countries**
(p.a., in %)



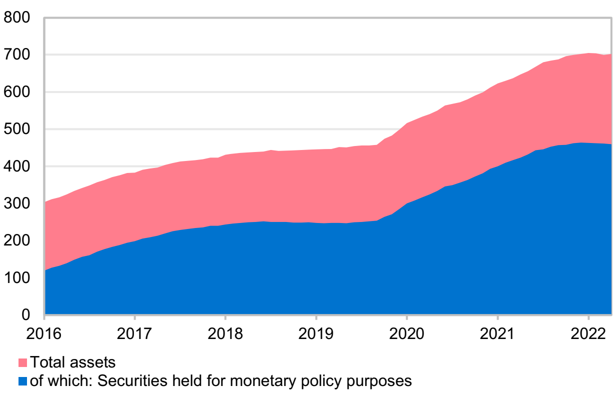
Sources: Central banks of selected countries.

Monetary policy

In July, the **ECB** began a cycle of hikes in key interest rates (by 50 bp), while in the September and October meetings the increase was even more pronounced (by 75 bp each time), when the main refinancing rate reached 2.00%, and rates on credit and deposit facilities 2.25% and 1.50%, respectively. Press releases issued after the July and September meetings said that the rate hikes are marked as a more pronounced increase earlier in the cycle (frontloading), so that rates could later be increased more moderately. The following several meetings are expected to result in further rate increases in order to dampen demand and guard against the risk of an upward shift in inflation expectations. Inflation projections underwent major upward revisions, with inflation most likely to trend above the target for an extended period. Since the deposit facility rate returned to the positive territory after the September increase, the ECB discontinued the practice of the two-tier system, which implied exception of a part of bank deposits from the negative deposit facility rate. In addition, it temporarily removed the 0% interest rate ceiling for remunerating government deposits and the new limit will remain at the deposit facility rate or the euro short-term rate in the money market (€STR), whichever is lower. The measure aims to prevent an abrupt outflow of non-interest yielding deposits and will apply until end-April 2023. Also, in the October meeting the ECB decided to remunerate minimum reserves at the deposit facility rate as of December, instead of the main refinancing rate, which was the case so far.

As for the asset purchase programmes, the principal payments from maturing securities purchased under the **APP** will be reinvested for an extended period of time past the date when the ECB begins raising interest rates, and the principal payments from maturing securities purchased under the **PEPP** until at least the end of 2024, with careful portfolio management in order to secure consistency with the appropriate monetary policy stance. After enabling flexibility in reinvesting redemptions coming due in the PEPP portfolio in June, i.e. a temporary increase in the purchase volume of bonds of some countries, exposure to countries of the periphery increased. Though flexibility under the PEPP was envisaged as the first line of defence in crisis situations, a new instrument was presented in July – the **TPI** (Transmission Protection Instrument), whose goal is to enable purchase in the secondary market of public sector debt securities[16] of those members that are faced with

Chart IV.6.15 **Total ECB assets**
(end-of-month, in EUR bn)



Source: ECB.

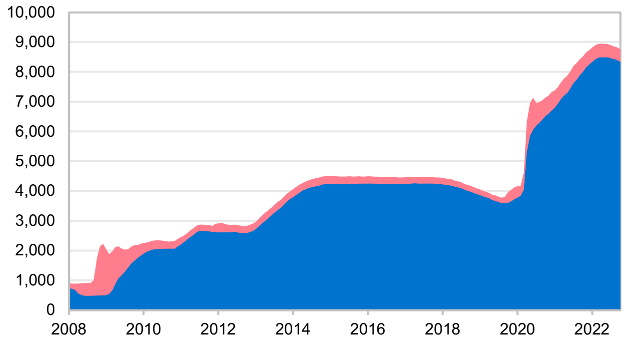
[16] Potentially the private sector securities as well.

deteriorated financing conditions. To ensure consistency with monetary policy normalisation and strengthen the transmission of ECB interest rates onto banks' lending rates, in October the ECB made a decision on recalibrating **targeted longer-term refinancing operations** (TLTRO III) by indexing rates on these operations to the average applicable ECB interest rates as of November. In addition, the possibility of additional early repayment of securities within this programme was also offered.

The **Fed** continued with monetary policy tightening, increasing the federal funds rate range in July, September and November, each time by 75 bp, to 3.75–4.00%, whereby the federal funds rate underwent six consecutive increases since March, by a total of 375 bp. Further federal funds rate hikes are expected in upcoming meetings as well, and after the November meeting it was said that when determining future hikes, the Fed will take into account the cumulative past monetary policy tightening, the lags with which monetary policy affects economic activity and inflation, and financial conditions. Also, in accordance with the guidance published in May, the Fed continued to unwind its balance sheet at a monthly pace of USD 47.5 bn, and as of September the amount was raised to USD 95 bn. The Fed explained that the continued monetary policy tightening is necessitated by further strengthening of labour market indicators, while inflation remains elevated, reflecting the imbalance between supply and demand, higher food and energy prices, as well as cost-push pressures that are increasingly passing through to other products and services. It was estimated that developments in Ukraine are contributing to inflation growth and burdening global economic activity.

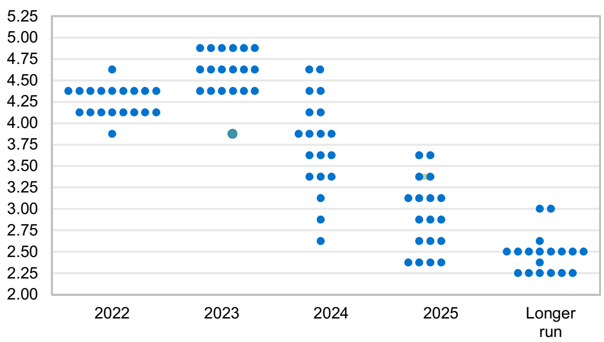
The **Bank of England** also stepped up its monetary policy tightening – in August and September meetings it raised the interest rate by 50 bp each time, and in the November meeting by 75 bp, to 3.0%. Moreover, it decided to wind down government bonds in the Bank of England's portfolio over the next year by GBP 80 bn, partly by a direct sale of securities, whereby it became the first among the leading central banks to rely on other tools, in addition to the maturing securities, when downsizing its balance sheet. Also, the first operation of the sale of government securities that was supposed to be held in early October was postponed until the end of the month due to disturbances in the market caused by the government's plan on fiscal expansion. Moreover, because of the decision on fiscal expansion, the Bank of England was compelled to intervene by purchasing government securities to stabilise the shaken financial

Chart IV.6.16 **Fed's total assets**
(monthly average, in USD bn)



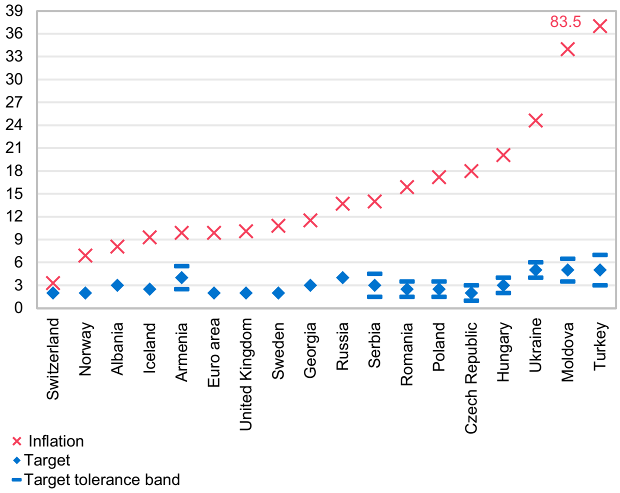
Source: FED.

Chart IV.6.17 **Fed: Expectations of FOMC members about adequate monetary policy – median value of target range or target level of the main rate**
(in %)



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

Chart IV.6.18 **Inflation and target by country in September 2022**
(p.a., in %)



Sources: Eurostat and central banks of selected countries.

market. After another postponement, the first sale of government securities was held on 1 November. In September, the central bank of **Switzerland** raised its policy rate further (by 75 bp to 0.50%), thus returning the rate into positive territory for the first time in eight years, while further hikes in upcoming meetings are also a possibility.

The majority of central banks in the CESEE region continued with monetary policy tightening. The central bank of **Hungary** continued with sharp policy rate hikes, raising it during Q3 by a total of 525 bp to 13.0% in September. As of June 2021, the policy rate was increased 17 times in a row, by a total of 1240 bp. After the September meeting, it was announced that the cycle of policy rate hikes is completed, but that monetary policy will remain restrictive over a longer period by way of withdrawing liquidity and further strengthening the efficiency of the transmission mechanism. As of October, the higher reserve requirement rates of minimum 5% have been applied (compared to the previous 1%), which may even go up to 10%. At an extraordinary meeting in October, the interest rates corridor was expanded by lifting the credit facilities rate by 950 bp to 25.0%, and a decision was made to realise one-day FX swaps and one-day tenders for liquidity withdrawal at higher interest rates than before. Also, in order to alleviate pressure on the forint, in the coming months the central bank will cover the FX demand related to energy import.

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

Central bank	Inflation*	Inflation target	Policy rate**
Serbia	14.0	3.0 ± 1.5	4.50
Poland	17.2	2.5 ± 1.0	6.75
Czech Republic	18.0	2.0 ± 1.0	7.00
Hungary	20.1	3.0 ± 1.0	13.00
Romania	15.9	2.5 ± 1.0	6.25
Turkey	83.5	5.0 ± 2.0	10.50

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

The central bank of **Poland** raised its interest rate in July and September meetings by a total of 75 bp, while in October it kept the rate unchanged at the September level (6.75%). As of October 2021, the policy rate was raised 11 times by a total of 665 bp. The central bank of Poland stated that it would take all the necessary measures to ensure macroeconomic and financial stability, primarily in order to reduce the risk of inflation remaining elevated for an extended period, as well as in order to be able to intervene in the FX market to limit the fluctuation of the zloty towards depreciation. The central bank of **Romania** raised its policy rate three times between July and October, by a total of 250 bp, to 6.25%, i.e. by a total of 500 bp since October 2021.

After an increase in June, in the following two meetings (August and September) the central bank of the **Czech Republic** kept its policy rate unchanged (7.0%). Since June 2021, the policy rate was increased nine times by a total of 675 bp.

In contrast, despite strong inflationary and depreciation pressures, the central bank of **Turkey** trimmed its policy rate in August and September meetings by 100 bp each time, and in October by 150 bp, to 10.5%, explaining that inflationary pressures are a consequence of supply side negative shocks triggered by the hike in the prices of energy, food and primary commodities, and not factors stemming from altered economic fundamentals. It underlined the importance of continued support of financial conditions to positive trends in industrial production and employment.

The central bank of **Russia** continued with policy rate cuts – by 150 bp in July and 50 bp in September, to 7.5%. Between April and September, the policy rate was trimmed by a total of 12.5 pp, and since July the rate has trended below its level before the escalation of the crisis in Ukraine (9.5%). According to September estimates of the Russian central bank, the cycle of policy rate cuts is nearing its end, and in the October meeting the rate was kept on hold.

Text box 2: Tightening of global financial conditions

The international environment is fraught with challenges, particularly for emerging economies. While fighting the consequences of great shocks such as rising global inflation, the energy crisis, Ukraine conflict and the still present negative effects of the pandemic, these countries now also face the problem of a pronounced rise in the costs of external financing. Early this year, the economic growth of emerging economies gained momentum, driven primarily by the rise in external demand, higher prices of primary commodities, the recovery of tourism and increased inflow of remittances. All this more than offset the initiated tightening of global financial conditions. However, with the expected further rise in central banks' interest rates and global economic slack, it will hardly be possible to offset the tightening of financial conditions.

Global financial conditions, reflected in the availability of financing in the international market, deteriorated significantly when **leading central banks launched faster than expected normalisation of their monetary policies** with a view to curbing a surge in inflation and inflation expectations. The Fed raised its policy rate by a total of 3.75 pp since March 2022, announcing further increases. The ECB, which increased its rate by 2.0 pp since July this year, also announced that it would continue raising its interest rates. The Fed raised its interest rate more than the ECB, partly owing to the different inflation dynamics and economic conditions and partly also on account of differences in the volume of fiscal stimuli during the pandemic as well as the impact of the hike in primary commodity prices and changes in private savings. Higher borrowing rates and the consequent rise in the cost of loans, including mortgage loans, are already affecting the demand, primarily in the real estate market which is exhibiting the earliest and the most evident signs of deceleration, notably in the USA.

Other central banks are also increasing their interest rates, and nominal rates are now above pre-pandemic levels in both advanced and emerging economies. Nevertheless, with higher inflation, real interest rates have not yet returned to their pre-pandemic levels. However, tightened global financial conditions reflect not only the rise in interest rates, but also the decline in asset prices and the appreciation of the US dollar. According to the Goldman Sachs global index, **financial conditions have tightened the most since 2009**. Though there are regional differences, according to the IMF too, most countries' financial conditions have already reached levels similar to those that were dominant in April 2020 due to the pandemic and early 2009 due to the global economic crisis.

Chart O.2.1 **Financial conditions in selected regions**
(standard deviation from the mean)

Source: IMF, *Global Financial Stability Report*, October 2022.

In most regions the tightening of financial conditions was greatly induced by the sharp real appreciation of the dollar that brought it to the level from the early 2000s. **Global demand for dollars is one of the indicators for measuring stress in the global economy**, as its growth is driven by instability in asset markets and investors' switching to the US dollar as the reserve currency. A stronger dollar and higher interest rates push up the costs of borrowing for emerging economies already faced with real interest rates that are higher than those of developed countries. Besides, a **stronger dollar inflates the costs of many import goods**, primarily oil and other primary commodities whose prices in the international market are expressed in dollars, thus raising inflationary pressures, too. If geopolitical tensions deepen, the situation might even get worse with the further increase in investments in US Treasuries, which might additionally strengthen the dollar. Also, **the energy crisis fuels heightened financial stress** as the price hike in energy markets raises collateral requirements for trade in energy and contributes to more restrictive dollar liquidity.

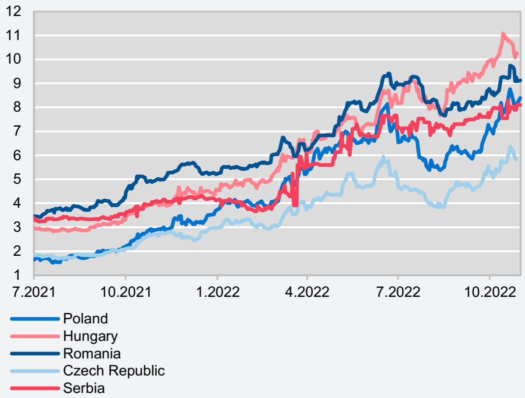
Stricter financial conditions are creating a considerable divide among developed economies in terms of their borrowing rates, let alone among emerging economies. Heightened uncertainty and investors' flight to safe assets has widened the **yield spread** between government securities of a certain country expressed in US dollars (or euros) and US (or German) government securities. We are talking about the risk premium, which has been on the rise for almost all emerging economies in the previous year. The rise was particularly strong for African countries, but also for CEE countries where it reflects reduced investor risk appetite on account of both expected greater effects of the Ukraine conflict and economic downturn in the euro area which is their main trading partner.

A deterioration of financial conditions affected the **tapping of the international financial market and borrowing in the "hard" currency as it has unfolded at the slowest pace since 2015**. The volume of government securities issued in "hard" currencies in the January–September 2022 period dropped by more than 54% compared to the same period in 2021.[1] In previous years, Serbia issued eurobonds in the international financial market at very favourable conditions and the funds raised were used for the early repayment of previously issued securities at considerably higher yield rates. Owing to last years' issues at favourable conditions significant funds were provided for government financing this year.

At the same time, emerging economies face **tightened conditions in the local currency securities market**. Yields on government securities particularly rose in CEE countries. Observing the ten-year maturity, in October, the yields on government securities in local currency went up to 10.40% on average in Hungary, while at the end of the last year they equalled 4.48% which was the average for December 2021. Yields for the same maturity in Romania rose to 9.09%, from 5.40%, in the observed period, in Poland to 7.88%, from 3.33%, and the least in the Czech Republic, to 5.70%, from 2.72%. Comparing Serbia to these countries, one can say that the yields on local currency securities went moderately up. Data on the secondary trading in securities with maturity close to ten years indicate that yields averaged 7.97% in October and 4.20% in December. Pressures in the local currency securities market in emerging economies will probably remain, particularly having in mind that the rise in real interest rates in developed countries reduces the interest rate spread, i.e. spread between yields on the securities of emerging and advanced economies.

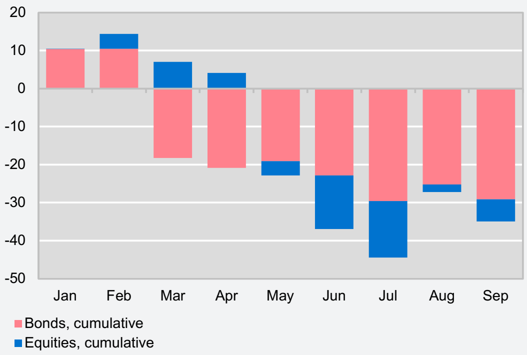
A reduction in interest rate spread may cause an outflow of capital from emerging markets. Tightened financial conditions and fears of global recession have already **affected global capital flows**, primarily portfolio investments in bonds and shares in local currency. Following net inflows recorded from these portfolio investments early this year, foreign investors began exiting emerging markets again. Though moderate recovery was noticeable in August, the situation deteriorated again in September. Non-residents' portfolio investments in emerging economies' debt in local currency (excluding China) stagnated in the last couple of years due to the pandemic. Nevertheless, considerable amounts accumulated over the last decade and this year's outflows make only a relatively small portion of total accumulated inflows. A more significant rise in portfolio

Chart O.2.2 **Yields on sovereign local currency bonds (roughly 10-year maturity)**
(daily data, in %)



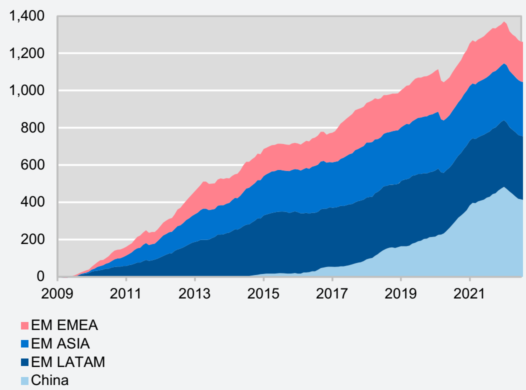
Source: Refinitiv, data for Serbia based on secondary trading.

Chart O.2.3 **Local currency portfolio flows for emerging economies* in 2022**
(cumulative, in USD bn, per month)



Source: IMF, *Global Financial Stability Report*, October 2022.
* Excl. China.

Chart O.2.4 **Cumulative local currency portfolio flows in selected emerging market regions**
(in USD bn)



Source: IMF, *Global Financial Stability Report*, October 2022.

[1] IMF, *Global Financial Stability Report*, October 2022, p. 16.

investments in most emerging economies is not expected going forward as the factors pushing these investments down are still pronounced: volatility in financial and commodity markets (primarily the energy market), persistently strong dollar and heightened economic and political uncertainty.

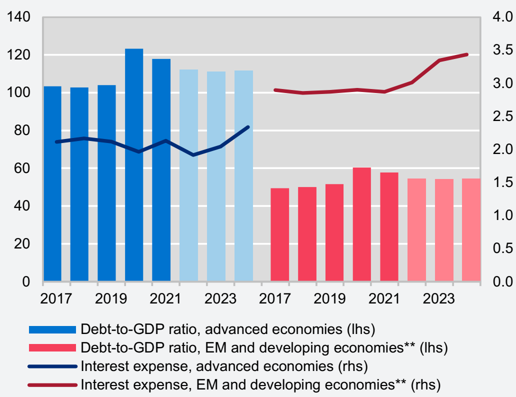
At end-October, foreign investors owned around 14% of the portfolio of dinar government securities **in the Serbian market**. Relative to 2013, when the exit of some investors (caused by the Fed's QE tapering) triggered higher outflows of portfolio investments, **the base of investors in government securities expanded significantly in the meantime in terms of the number and geography**. Further expansion of the investor base is supported by the inclusion of dinar government securities in JP Morgan indices in June 2021 and in Clearstream in October 2021.

Tightened global financial conditions will lead to **lower global economic growth**. The growth is already decelerating almost everywhere, and the concern is that leading central banks might increase their interest rates considerably above the neutral level to contain inflationary pressures. Hopes that a dramatic plunge is avoidable are therefore fading and **investor expectations about the consequent recession in advanced economies are rising**. The USA is already in technical recession, while economic slack and elevated recessionary pressures are expected in the euro area. Most emerging economies will be affected by the US, euro area and Chinese economic slowdown, while many of them will be vulnerable to the potential depreciation of their local currencies, which would increase inflationary pressures and financial costs as well as make access to the lending market even more difficult. Net energy exporters are in a better situation as the prices of oil and gas are expected to remain relatively high in the next period.

The said challenges arise at a moment when the **fiscal position of most countries is rather tight**, particularly bearing in mind that they pursued a strong countercyclical fiscal policy during the pandemic. As a result, governments now have less room for fiscal support to corporates and households (around 60% of low-income countries are at a high risk or have already encountered problems with debt repayment and have no room for fiscal measures). The pressure on public debt also stems from higher borrowing costs and the expected economic slack. The IMF expects a further reduction in the global government debt this year, to 91% of GDP, on account of lower fiscal deficit, GDP growth and inflation surge, but this is still around 7.5 pp above the pre-pandemic level. In the following years, the IMF anticipates stabilisation of the share of public debt in GDP in both advanced, and emerging and developing economies. However, even if the public debt in GDP stabilises, interest expenses relative to GDP are bound to grow in the coming years. These expenses are significantly higher in emerging and developing economies than in advanced economies despite their lower level of debt to GDP.

In Serbia, the share of public debt in GDP has been below the Maastricht criterion (60%) since 2016 and has been lower than in other countries in the Western Balkan region (with the exception of Bosnia and Herzegovina). According to available data, in September the general government debt measured 54.2%, and central government debt 53.7%. **The share of public debt in dollars was significantly cut** – from 33.9% in 2016, to 12.5% in September 2022, which largely reduced the exposure to currency risk on account of the dollar's strengthening in the past months.

Chart O.2.5 **Public debt and interest expenses for advanced and emerging economies, 2017–2024***
(% of GDP, weighted average)



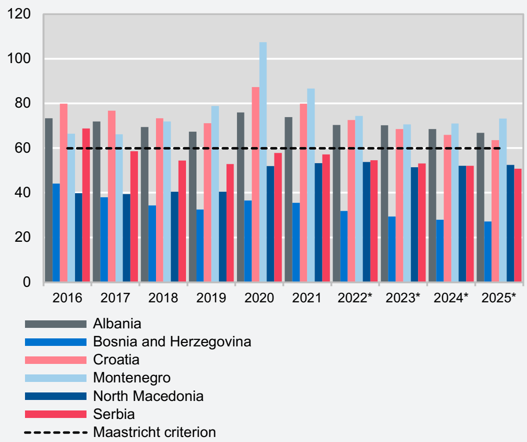
Source: IMF, *Fiscal Monitor*, October 2022.
* Data for 2022–2024 are a projection.
** Excl. China.

Increased costs of debt servicing may exert pressure on **depreciation of local currencies and central banks' FX reserves**. Serbian gross FX reserves rose from around USD 11 bn at end-2016 to around EUR 16.9 bn at end-October 2022, which is their historical high. They make an important element of the Serbian economy's resilience to external risks and provide sufficient room for NBS timely interventions in the IFEM in the period of heightened global uncertainty, without jeopardising the reserve adequacy criterion.

Interconnections between governments of emerging countries and **local banks** intensified in the last two years as the shortfalls needed by governments for financing of the pandemic-related measures were dominantly met by banks. As a result, in 2021, banks in many countries became the largest creditors of governments and considerably increased their

exposure to risks in public debt repayment on that account. Disrupted financing of emerging economies caused by the current crisis might produce a feedback loop due to the public debt-bank nexus – causing problems for governments and banks through multiple channels of influence, with potential adverse impact on the financial soundness of banks and lending to corporates and households. This potentially jeopardises the quality of bank portfolios and overall macrofinancial stability, primarily in countries where the financial sector is characterised by a lower degree of liquidity and capital adequacy. This is particularly important if we have in mind that in conditions of higher interest rates banks increase their net income, on the one hand, while suffering losses on account of the reduced volume of granted loans and higher amounts of unsettled client liabilities, on the other. The balance of these factors will drive the stability of the financial sector in the future. **In case of Serbia**, bank receivables from the government currently account for around 15% of their total receivables and their share has continuously shrunk since 2016, suggesting that the crowding-out effect is not pronounced and that banks in Serbia have sufficient funds for private sector financing. The Serbian banking sector has been highly liquid and capitalised for years, as testified by the average monthly liquidity indicator of 2.1 in December 2021 and 2.0 in September 2022 (regulatory minimum being 1.0), as well as by the capital adequacy ratio of 20.77% in December 2021 and 19.47% in September 2022 (regulatory minimum being 8%).

Chart O.2.6 **General government public debt dynamics in Western Balkan countries**
(% of GDP)



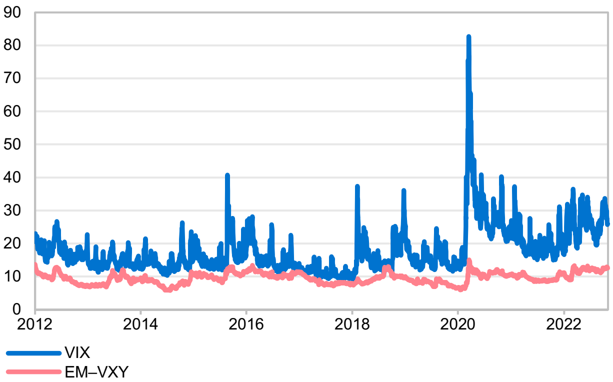
Sources: IMF *WEO* database (October 2022) and Serbian Public Debt Office.
* Estimates for 2022 and projections for 2023–2025.

In general, **monetary and fiscal policies are today pursued in an environment of a multidimensional crisis**, under the pressure of the unfinished pandemic, higher inflation caused by unprecedented energy price hikes, as well as far-reaching consequences of the Ukraine conflict and the related geopolitical tensions. With such developments, which spur price pressures and elevate uncertainty, the context of monetary and fiscal policies has changed abruptly. Up until a year ago monetary policy pursuit by leading central banks was limited by the effective lower bound for interest rates and they implemented quantitative easing programmes for that reason. Their efforts to come close to the targeted inflation levels were also supported by fiscal policy. For the first time in modern history, the central banks of emerging countries were able to pursue countercyclical monetary policy just like their counterparts in advanced countries, and in coordination with fiscal authorities, provide the necessary support to their businesses and households. In the meantime, the situation changed significantly – today, monetary and fiscal policy must address a surge in the general price level that exceeds multi-decade highs, amid geopolitical tensions and the Ukraine conflict, energy crisis, global economic slowdown and high borrowing costs, which creates additional budget constraints and increases the risk of financial crisis even in advanced economies.[2]

Macroeconomic stability and considerable FX reserves in many emerging economies, coupled with greater credibility of central banks and governments, will help to overcome the impact of tighter financial conditions. Monetary and fiscal policy priority is now the same everywhere – to restore price stability and preserve fiscal sustainability while protecting the most vulnerable in order to ease the burden of the global surge in the cost of living. The general character of fiscal policy must, however, remain sufficiently restrictive so that monetary policy could achieve its main task and restore medium-term price stability which is a precondition for further sustainable economic growth.

[2] The best illustration is the case of the UK from end-September this year, when volatility in the government securities market could have caused the collapse of many pension funds, affecting the entire financial system. This did not occur owing to the Bank of England's intervention. When the pound sterling plunged in value relative to the US dollar and the costs of borrowing increased, the Bank of England announced that it would buy an unlimited amount of government securities attempting to stabilise the shaken financial market. Market volatility was triggered by the government's proposal of an enormous package of tax reductions and consumption increases when inflation was already high. This package envisaged more government borrowing amid rising interest rates. Market response was strong, and the yields on long-term government securities rocketed, while the value of the pound sterling collapsed. The spiral in interest rates quickly spilled over to the pension system through the financial system, jeopardising the stability of the financial system at large.

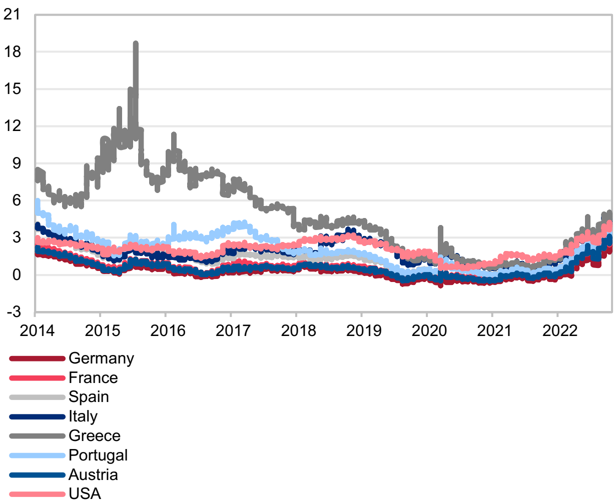
Chart IV.6.19 **Implied volatility of the global financial market***



Source: Bloomberg.

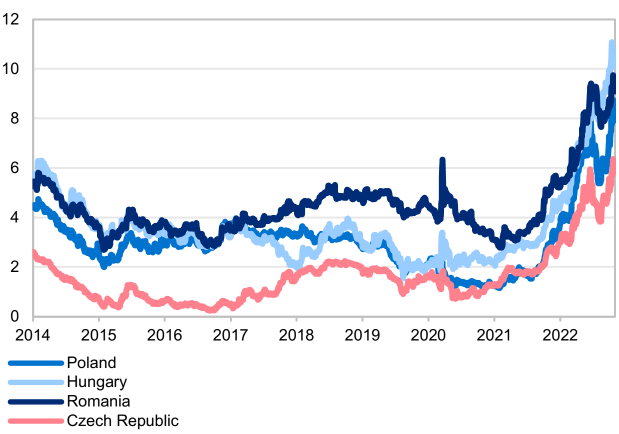
* VIX (Chicago Board Options Exchange Market Volatility Index) measures implied volatility of the S&P 500 index; EM–VXY (J.P. Morgan emerging markets implied volatility index) measures aggregate volatility of emerging market currencies based on three-month forward options.

Chart IV.6.20 **Yields on ten-year bonds of euro area countries**
(daily data, in %)



Source: Bloomberg.

Chart IV.6.21 **Yield on ten-year bonds by country (in local currency)**
(daily data, in %)



Source: Refinitiv.

Financial and commodity markets

Movements in international financial markets in Q3 were under the sway of the rising global uncertainty amid further escalation of geopolitical tensions and the conflict in Ukraine. Inflationary pressures remained pronounced, despite the monetary tightening of leading central banks, which calls for enforcement of even stricter monetary conditions. In regard to this, the implicit measure of **financial market volatility (VIX)** increased during Q3 by 2.9 pp to 31.6%. At the same time, **EM–VXY index, which indicates the volatility of currencies of emerging economies**, rose by 0.6 pp, measuring 12.5% at end-September.

Yields on ten-year government bonds of advanced economies gained 1 pp on average in Q3. The rise in the yields largely reflected past monetary tightening by leading central banks, as well as market expectations that central banks worldwide will continue to step up their restrictiveness to combat surging inflation. Such view is corroborated by statements of Fed and ECB officials, urging for reigning in inflationary pressures even at the expense of stronger economic contraction. Ten-year bonds of countries in the region also recorded a rise in yields due to monetary tightening and policy rate increases by their central banks.

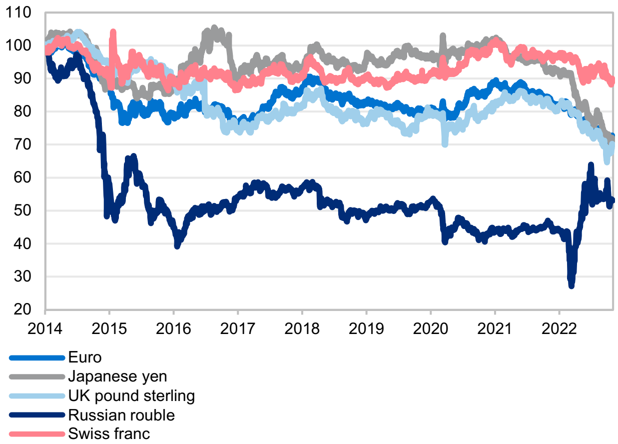
The US dollar's appreciation against other leading currencies in the international financial market continued in Q3. The dollar's strengthening received a key impetus from faster tightening of the Fed's monetary policy compared to central banks of other leading economies, as well as the expected additional increase in the Fed's federal funds rate. In addition, further deepening of the Ukraine conflict and concerns over the slowdown in global economic activity heightened investors' risk aversion and fuelled the demand for dollar as a safe-haven currency.

The dollar's significant appreciation against other leading currencies and stronger than expected tightening in the Fed's monetary policy drove down **the price of gold in the global market** in July and September, while the news on unfavourable global growth prospects, primarily the slowing in China, the world's major buyer of gold, and on the upswing in inflation, precipitated the fall in the price of this precious metal by the end of August. At end-Q3, the price of gold reached around USD 1,670 per ounce, down by 8.0% q-o-q and the lowest value since end-March 2021. The price of gold dropped further in October, to around USD 1,639 per ounce, mainly reflecting further appreciation of the dollar in the international financial market.

The fall in **oil price in the global market** that was triggered in July (to around USD 108 per barrel) extended into August due to heightened global recession pressures and the weakening of economic activity in China, the world's largest importer of crude oil, with the stepping up of OPEC+ output and Russia and Saudi Arabia's export of oil. Though oil price shortly overshot USD 100 per barrel reflecting a series of incidents (interruptions in Russia's oil supply to the EU due to the damage to the Kazakhstan pipeline, extraordinary technical maintenance of Nord Stream 1, interruptions in gas exploitation in Norway and Great Britain), by the month's end it dropped to around USD 96 per barrel, reflecting the rising value of the dollar and yields on US Treasuries. The same factors persisted into September which, together with the reduced oil demand due to fears over recession and China's elevated export of fuel, pushed the oil price down to around USD 86 per barrel, i.e. 25% below the end-Q2 figure and the lowest level since the start of the year. October saw oil price going up (to some USD 93 per barrel at end-month) after EU's announcements that it would ban the import of Russian oil as of December 2022 and potential countermeasures by Russia, as well as the agreement between OPEC+ members on cutting down oil production by more than 2 mn barrels a day.

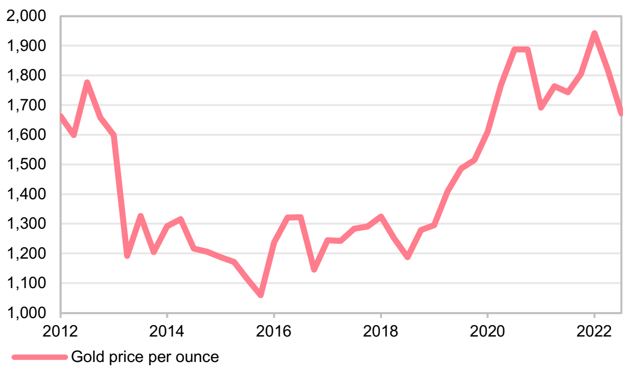
Although European gas storage levels reached around 70% at end-July, **the benchmark natural gas price for Europe** (Dutch TTF hub) surged by around 60% in July on account of lower US liquefied natural gas export and reduced inflow of the Russian gas. After a total halt of Russia's gas supply via Nord Stream 1, the gas price in the last decade of August hit the record EUR 330 per MWh, before dropping to around EUR 230 per MWh at the end of the month (equivalent to around USD 2,450 per 1,000 cubic metres of gas).[17] In parallel with the news on fast filling of storage facilities to over 80% at end-August (above the level planned until end-November), September witnessed the soothing of price pressures on the European gas market, so that at month end the gas price equalled around EUR 164 per MWh (i.e. close to USD 1,700 per 1,000 cubic metres of gas). However, it is uncertain in what manner the announced energy savings measures of EU countries (some of which have already been taken) would impact gas prices going forward, given the mounting concerns over further supply disruptions in winter months. In October, the benchmark price of natural gas for Europe declined to EUR 28 per MWh, primarily

Chart IV.6.22 **Exchange rates of selected national currencies against the dollar***
(daily data, 31 December 2013 = 100)



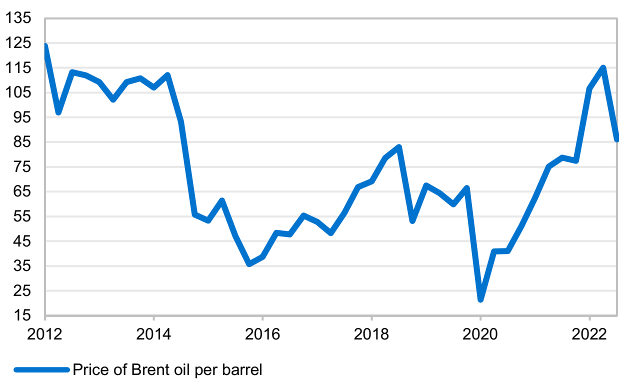
Source: IMF.
* Growth indicates appreciation.

Chart IV.6.23 **World gold price movements**
(end-of-quarter, in USD)



Source: Bloomberg.

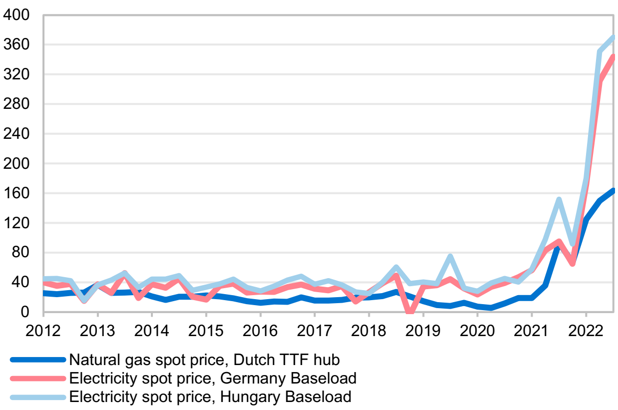
Chart IV.6.24 **World oil price movements**
(end-of-quarter, in USD)



Source: Bloomberg

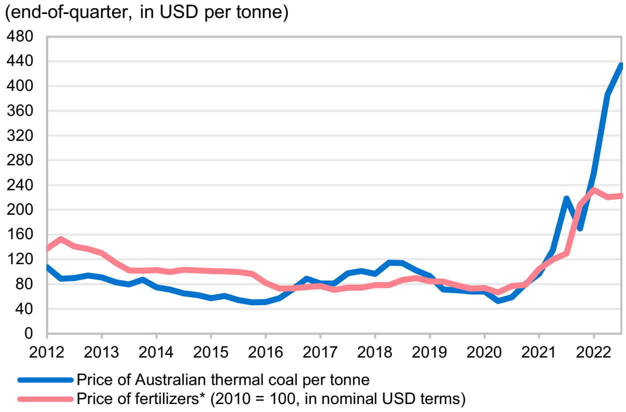
[17] The price expressed in dollars per one thousand cubic metres of gas was calculated based on the production price of gas expressed in MWh, the EUR/USD exchange rate and an appropriate coefficient (10.55 MWh ≡ 1,000 m³).

Chart IV.6.25 **Movement of benchmark prices of natural gas**
(end-of-quarter, in EUR/MWh)



Sources: Refinitiv and World Bank.
* As at 30/09/2022 electricity price was 82 EUR/MWh.

Chart IV.6.26 **Prices of thermal coal and mineral fertilisers**
(end-of-quarter, in USD per tonne)



Sources: Investing.com and World Bank.
* natural phosphate rock, phosphate, potassium and nitrogen.

owing to increased gas inventories in European storage facilities and warmer weather than usual for this period of the year.

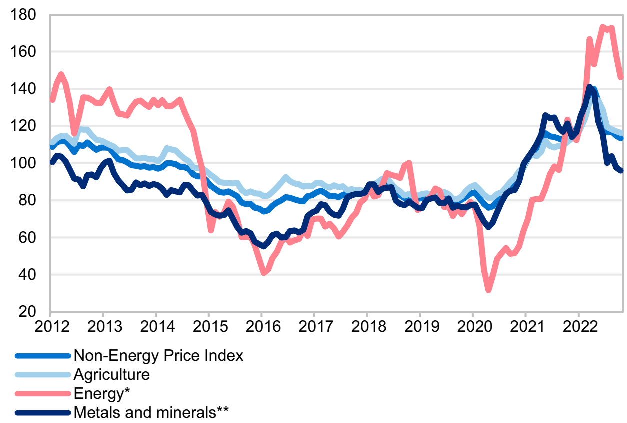
Europe's benchmark power price (at the German exchange) mirrored the dynamic of benchmark natural gas price in Q3, reaching the historical maximum of around EUR 700 per MWh at end-August mostly due to strong demand and interruptions in Russia's gas supply to Germany. In the following two months price pressures subsided considerably, in parallel with the decline in gas price and mild weather for that time of the year, so the power price was slashed to EUR 78 per MWh at end-October. At the same time, **power price at the Hungarian exchange**, also relevant for the Serbian market, remained at the relatively high level of EUR 370 per MWh at end-Q3, up by around 5% compared to end-Q2, but it also dropped to EUR 136 per MWh in October.

Due to the high price of gas in Europe and Asia, the energy sector stepped up demand for **thermal coal** as an alternative energy source, which depleted its inventories in the international market, hence coal price in summer months posted new record levels, reaching around USD 430 per tonne at end-Q3, up by around 12% q-o-q. The International Energy Agency (IEA) estimates that this year's coal demand will mount to around 8 bn tonnes (last time recorded in 2013) and invites European countries to temporarily encourage coal production in order to prevent potential halts in electricity supply to corporates in the coming months, poised for restricted gas imports. Given the EU's insistence on prohibiting coal import from Russia, several European governments unveiled their plans to reactivate coal power plants, in a bid to prevent electricity shortages. The price of thermal coal dropped to around USD 356 per tonne in October, under the impact of greater production and export of coal from South Africa and the announced stepping up of China's production capacities.

Mineral fertilisers prices increased for several months running, mostly due to the Ukraine conflict, since Western sanctions led to a drastic slashing of fertiliser import from Russia (accounting for 20% of global supply in 2021), primarily intended for the European market. Fertiliser prices in Q3 were somewhat higher than in Q2 (0.6%) as a result of an additional hike in the phosphorite price (11%). In the year to October, this price increased by 86% compared to the same period in 2021, and by around 200% relative to 2020. In order to reduce dependence on (non-organic) fertilisers, an increasing number of US and African farmers are opting for organic fertilisers, which have proved to be a better option from the aspect of organic and sustainable agricultural production. The prices of mineral fertilisers decreased in October (by 3.7%) due to a contraction in farmers' demand, which boosted their inventories in the USA and Brazil.

According to World Bank data, the **prices of metals and minerals** declined in July, for the fourth consecutive month, reflecting weaker industrial activity in China and Europe. The fall was halted in August, due to depleted inventories of industrial metals in the London Stock Exchange (primarily aluminium and copper). However, in September all metal and mineral prices hit a downward path again, above all those of iron and iron ore, reflecting a contracted demand from China's industrial sectors. At Q3 level, metal and mineral prices declined by 15.4% from Q2, tin price dropping the most (33.0%), followed by iron (23.7%), zinc and cooper (by 14.0% each). Bucking the trend were nickel prices, rising in August and September amid higher demand for this metal in transition to a green economy. October saw metal and mineral prices dropping further (by 1.7%), mostly reflecting the lower price of the iron ore, tin, zinc, nickel and copper, under heightened recession pressures.

Chart IV.6.27 **World Primary Commodity Price Index**
(2010 = 100)

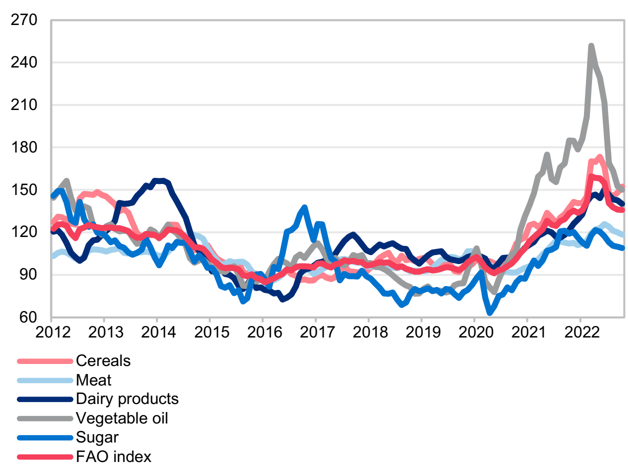


Source: World Bank.

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

Measured by the FAO index, the **global food prices** continued their downward trajectory in Q3, recording a fall of 12.1%, supported by the cheapening of crude oil in the global market. As in the quarter before, Q3 saw a fall in vegetable oil prices (by 28.0%), widely dispersed by main categories. Palm oil prices dropped for the sixth month in a row, on the back of increased output in Southeast Asia, while the fall in sunflower oil prices to the lowest level in the past 14 months is attributed to the smaller import demand and piling of inventories in the Black Sea region. The prices of soybean oil and rapeseed oil also edged down. **The prices of cereals**, of which Serbia is a net exporter, first dropped in July and August (overall by 11.1% in Q3), predominantly due to a significant cheapening of wheat and corn thanks to the unblocking of the main Black Sea ports under Russia and Ukraine deal. Nevertheless, September saw cereal prices going up again due to increased uncertainty as to future Black Sea trading, concerns over the drought in Argentina and the USA, and increased import demand among EU countries. Sugar prices went down by 6.5% in Q3, mostly thanks to the favourable production outlook in Brazil, the world's largest sugar exporter, and the weakening of the Brazilian real against the US dollar. Strengthening of the dollar against the euro and other world currencies passed through also to lower prices of milk and dairy products (by 5.0%), which faced shrinking demand. A drop in meat prices of 4.7% in Q3 was driven by the lower prices of mutton, beef and poultry, while pork became more

Chart IV.6.28 **World Food Price Index**
(in nominal terms, 2014−2016 = 100)



Source: UN FAO.

expensive due to a lower supply of fattening pigs in the EU. In October, global food prices remained practically unchanged relative to September. Cereal prices increased by 3.0% due to higher uncertainty over Black Sea transport and drought in the major part of Europe, while the prices of dairy products, vegetable oils, meat and sugar extended their decline into October.

V Projection

We have revised down Serbia's GDP growth projection for this year compared to August expectations, to the range of 2.0–3.0%. The revision reflects this year's worse than forecast agricultural season, dented external demand and the continued rise in production costs, weighing primarily on lower than expected activity in construction and industry. In light of expectations of much weaker economic activity next year in the euro area and our other important trade partners, we revised down Serbia's GDP growth projection for 2023, also to the range of 2.0–3.0%. Under the assumption of waning negative effects of the Ukraine conflict and overall geopolitical tensions on external demand, and given the planned implementation of investment projects, notably in road, railway, energy and utility infrastructure, we expect GDP growth to accelerate to 3.5% as of 2024 and return to the pre-pandemic growth trajectory of around 4% p.a.

Despite the tightening of monetary and financial conditions globally and the slowdown of the world economy, global inflationary pressures proved to be stronger and more durable than expected, also reflecting on somewhat higher than expected inflation at home in the near term. Under the central November projection, we expect y-o-y inflation to remain elevated until the end of this and early next year, and to strike a downward trajectory thereafter. It will decline more sharply in H2 2023 and return within the target tolerance band in H2 2024, i.e. by the end of the projection horizon. Inflationary pressures are likely to be soothed by past monetary tightening, waning effects of global factors underpinning energy and food price growth in the past period, slowing imported inflation, and subdued external demand amid a clouded global growth outlook.

Uncertainty surrounding the inflation and GDP projection is still largely associated with factors from the international environment, notably the effects of the Ukraine conflict on the availability and world prices of energy products, and the global growth outlook, which will largely influence international primary commodity prices. At home, the risks to the projection are associated primarily with the outcome of the next agricultural season (which we assumed to be below average for the first time), FDI inflows, recovery of the energy sector, and potential additional measures the government may undertake to ensure growth in domestic demand going forward. Overall, the risks to the GDP growth projection for this and the next year are assessed as symmetric, and the risks to the inflation projection as tilted to the upside.

Initial conditions and projection assumptions

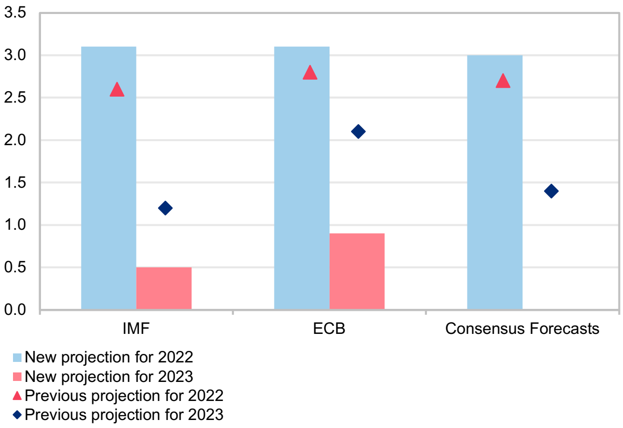
In its October report, the IMF kept the **global growth projection** for 2022 unchanged from July at 3.2%, while revising the 2023 projection down by 0.2 pp to 2.7%. The key factors behind the unfavourable growth outlook next year are more stringent conditions in the international financial market, reflecting monetary tightening in many countries, slower than expected growth in China due to its zero-tolerance COVID-19 policy, and the slowing of the euro area economy amid the escalation of geopolitical tensions. US growth in 2022 was revised down the most, by 0.7 pp, reflecting the unexpected real GDP contraction in Q2 prompted by declining consumption and investment in an environment of higher interest rates.

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

	2022		2023	
	Previous projection	New projection	Previous projection	New projection
World	3.2	3.2	2.9	2.7
Euro area	2.6	3.1	1.2	0.5
Germany	1.2	1.5	0.8	-0.3
Italy	3.0	3.2	0.7	-0.2
USA	2.3	1.6	1.0	1.0
Russia	-6.0	-3.4	-3.5	-2.3
China	3.3	3.2	4.6	4.4

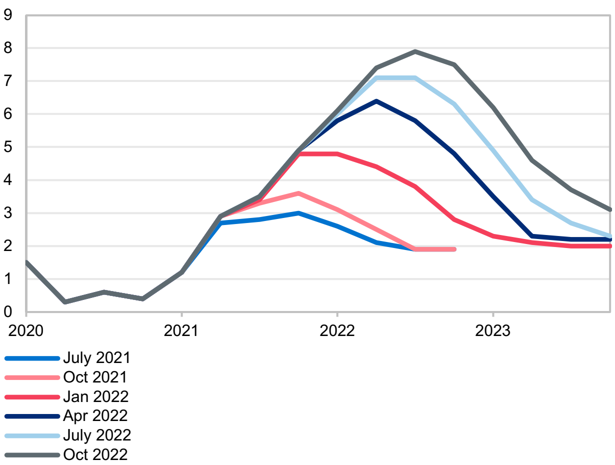
Sources: IMF WEO (October 2022) and IMF WEO (July 2022).

Chart V.0.1 **Revisions of euro area GDP growth projections for 2022 and 2023**
(in %)



Sources: IMF, ECB and Consensus Forecasts.

Chart V.0.2 **Inflation forecasts for developed countries**
(in %)



Sources: IMF, WEO.

GDP growth projections for Russia were revised significantly up for both this and next year, by 2.6 pp and 1.2 pp to -3.4% and -2.3%, respectively, reflecting higher crude oil exports and domestic demand, stimulated by monetary and fiscal policy measures. Euro area growth in 2022 was also revised up on account of stronger-than-projected performance in H1 amid full reopening and recovery of the services sector, though the 2023 growth was revised down because of much higher production costs and the tightening of financial conditions.

The **euro area** performed better than expected in Q2, reflecting a faster rebound of tourism in Italy in Spain after the full reopening of these two economies. Therefore, although the leading indicators (PMI and ESI) signalled contraction, the IMF revised the GDP growth projection for the euro area for this year up by 0.5 pp to 3.1%. The ECB unveiled a similar projection in September, as did Consensus Forecasts (3.0%) in October. All three institutions revised euro area's GDP growth projection for next year significantly down. In September, the ECB forecast 0.9% growth for next year, the IMF 0.5%, while Consensus Forecasts expected stagnation. Given that economic activity indicators PMI and ESI deteriorated further in October, our new projection assumes that the euro area will post a slight decline in 2023 (-0.3%), which is by as much as 1.7 pp lower than we expected in August. The factors behind the economic slowdown include persistent cost-push pressures and further acceleration of inflation, wherefore the ECB is tightening its monetary policy faster than expected, which also reflects on the continued deterioration of financial conditions. The risks of the spillover of effects of the Ukraine crisis remain high, notably in regard to gas supply, which also weighs on euro area's economy. The German economy is hit hard due to a high share of manufacturing, soaring energy prices and potential halts of supply from Russia. According to Consensus Forecasts, Germany will enter recession next year, i.e. its GDP will decline by 0.9%. The 2023 projection for Italy was also revised down, to -0.1%,

Table V.0.2 **Key projection assumptions**

	2022		2023		2024	
External assumptions	Aug	Nov	Aug	Nov	Aug	Nov
Euro area GDP growth	2.7%	3.0%	1.4%	-0.3%	2.0%	1.9%
Euro area inflation (average)	7.7%	8.3%	4.0%	6.0%	2.0%	2.9%
3M EURIBOR (December)	1.1%	2.3%	1.2%	3.0%	1.3%	2.9%
International prices of primary agricult. commodities (Q4 to Q4)*	13.7%	14.1%	-7.8%	-5.3%	-6.7%	-7.6%
Brent oil price per barrel (December, USD)	97	94	87	82	82	77
Internal assumptions						
Administered prices (Dec. to Dec.)	6.2%	6.9%	7.0%	13.3%	6.0%	8.0%

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

mostly reflecting falling private consumption and in part also this year's high base.

The outturn of CESEE countries in H1 was better than expected, with Consensus Forecasts revising up the 2022 projections for most of these countries. However, Consensus Economics and Focus Economics analysts forecast a slowdown in the region's growth for 2023, significantly revising down the projection for next year – on account of uncertainty as to the duration of the Ukraine crisis and the energy crisis, compounded by the suspension of natural gas deliveries via Nord Stream 1 in August and September and the announced ban on Russian oil imports, with a particular bearing on landlocked countries. The subdued euro area growth outlook and tight monetary policies of leading central banks will also contribute to the region's slowdown, amid the expected reduction in trade and foreign capital inflows due to elevated risk premium. Moreover, robust monetary tightening by central banks of CESEE countries in the past period should have a soothing effect on inflation, but may give a negative impulse to GDP growth amid tight conditions in the financial market. Economic growth for 2023 was revised significantly down, notably for the central European region, in the range from 0.9 pp for Romania to 2.3 pp for Hungary, due to strong trade links with the euro area. Consensus Economics adjusted Serbia's growth for 2023 by 1.1 pp to 2.6%.

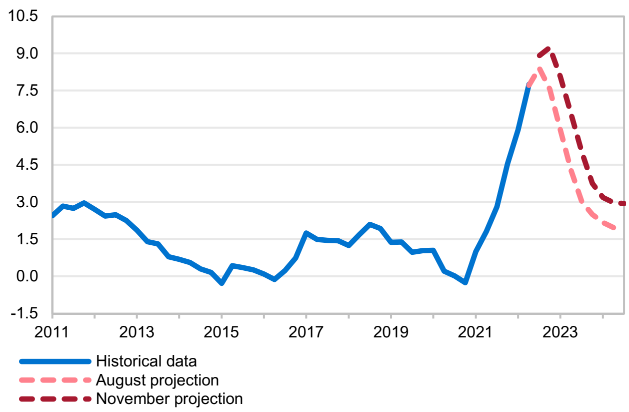
Inflation continues to move above expectations in most countries of the world, reflecting primarily the surge in energy and food prices and, in some countries, domestic demand and labour market factors as well. As global growth weakens and the primary commodity markets stabilise, global inflationary pressures are expected to subside. The IMF expects global inflation to peak in Q3 2022 and slow in 2023. In the euro area, our key trade partner, after reaching a historical high in September, **inflation** is expected to stay above 9% until the end of this year – owing to the simultaneous effect of several factors, notably higher energy and food prices, alongside inflationary pressures as the economy reopened, persistent global supply halts and tightened labour market conditions. Under the ECB September projection, which is much higher than the June projection, y-o-y euro area inflation rates in Q4 each year are forecast at: 9.2% in 2022, 3.3% in 2023 and 2.2% in 2024. The expected decline in inflation from 8.1% on average in 2022 to 5.5% in 2023 and 2.3% in 2024 mainly reflects a vigorous fall in energy and food prices, on account of the high base effect and the decline in primary commodity prices as assumed according to futures. Excluding energy and food, inflation will most probably remain relatively high until mid-2023, when cost-push pressures over high prices of

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

	July 2022		October 2022	
	2022	2023	2022	2023
Poland	4.8	2.4	4.1	1.1
Czech Republic	2.2	2.1	2.4	0.4
Hungary	4.6	2.4	4.9	0.1
Romania	4.5	3.3	5.6	2.4
Slovakia	1.9	3.0	1.7	1.1
Slovenia	4.8	2.5	5.6	1.6
Croatia	4.1	3.0	5.7	1.9
Bulgaria	2.8	2.5	2.9	1.6
Albania	2.6	3.6	2.9	3.2
Bosnia and Herzegovina	2.9	2.8	3.3	2.4
North Macedonia	2.6	3.2	2.6	1.9
Montenegro	3.6	4.0	4.8	3.4
Serbia	3.5	3.7	3.4	2.6

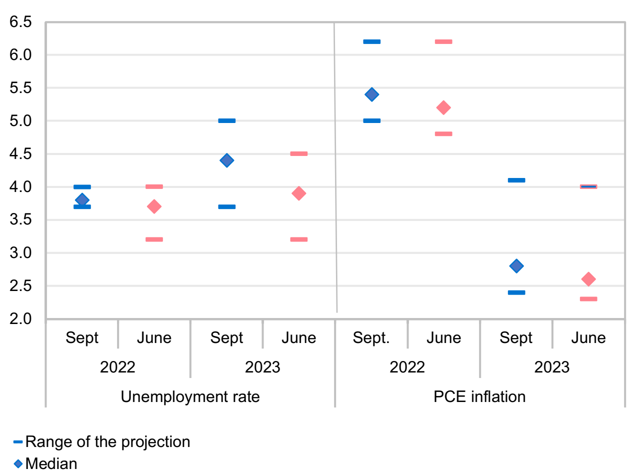
Source: Consensus Forecasts.

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 **US inflation and unemployment rate projections**
(in %)

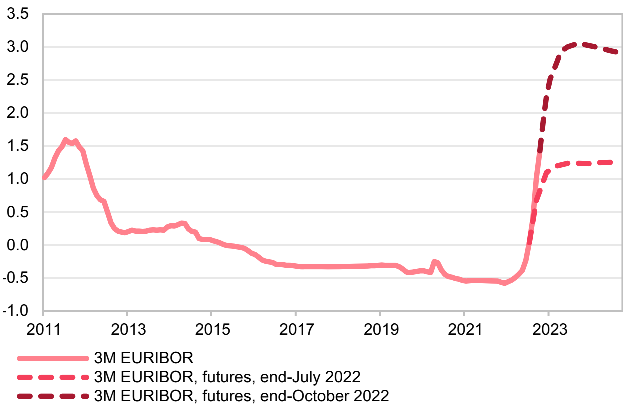


Source: Fed.

energy as inputs are expected to weaken, alongside a waning impact of the reopening of economies and diminished adverse effects of supply bottlenecks. Our projection assumes **euro area inflation** of 8.3% on average this year, and its gradual slowdown to 6.0% and 2.9% in 2023 and 2024, respectively.

The current level of inflation poses a clear risk to macroeconomic stability and its normalisation is the key priority for economic policy makers (central banks). High inflation and its uncertain movement in the medium run encouraged the ECB to tighten monetary policy more aggressively than expected. After the July 50 bp increase, the first since mid-2011 (when the period of negative interest rates ended), in September the ECB lifted its key rate by historic 0.75 pp. In October, the key rate was raised by the same amount, to the current level of 2.0%. Further monetary policy normalisation can be expected at several oncoming meetings, to counter the risk of the spillover of high inflation onto rising inflation expectations. As stated by the ECB Governing Council, a more significant rate rise is appropriate amid high inflation and expectations it will remain at a higher level over an extended period. Market participants changed their estimates of ECB rate hikes, expecting a new 0.50 pp increase in December. In accordance with futures, our projection assumes that three-month EURIBOR will equal 2.3% by the end of this, and 3.0% by the end of next year.

Chart V.0.5 **Expected 3M EURIBOR**
(p.a., in %)



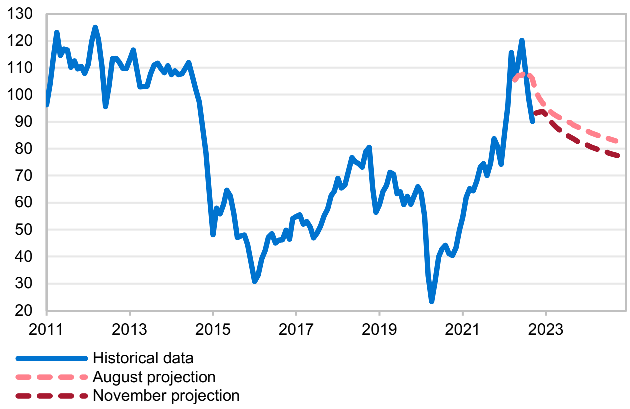
Source: Bloomberg.

The **Fed** continued to tighten its monetary policy, increasing again its fed funds target range in November by 75 bp, to 3.75–4.0%. From March, the rate was raised six consecutive times, by 375 bp in total. The statement issued after the November meeting underlines the Fed's readiness to return the inflation rate to the 2% target and outlines expectations that future hikes would be necessary at the following meetings. At its last meeting in September, the Fed published projections placing the median expected fed funds rate at the range of 4.25–4.50% in late 2022, which is 1 pp above expectations stated in June. Further hikes are expected in 2023, with the median in the 4.50–4.75% range at the year end, while in 2024 the fed funds rate may be lowered and enter the 3.75–4.00% range by the year end.

Faster normalisation of the Fed's compared to the ECB's monetary policy, with pronounced instability in commodity and financial markets, bolstered demand for the US dollar as a reserve currency and triggered the **dollar's appreciation against the euro** and other world currencies. Significant appreciation of the US dollar is fuelling inflationary pressures in most countries, including Serbia, as it further raises the USD prices of imported primary commodities. A relatively stable USD/EUR exchange rate at the current, almost equalised level is projected going forward because, as announced, the ECB will also tighten its monetary policy faster than expected.

The global oil price declined over the last months, chiefly due to mounting recessionary pressures globally, particularly in advanced economies as the largest consumers of oil. Oil futures were also reduced, falling in September to their lowest level since the start of the year, only to recover in October on the back of OPEC+ countries' decision to slash output. To preclude any major fall in global oil prices, OPEC+ countries agreed to cut output by 2 mn barrels per day compared to August, from November until end-2023. Despite this being a significant reduction, the largest since 2020, the effect on global oil supply may not be large as some countries are already delivering oil below their quotas. The global oil price will be determined by several factors – on the one hand, slower than expected growth in oil production and potential supply-side shocks, and a gloomier global growth outlook, on the other. According to end-October oil futures, which we used to develop our projection, the global oil price is expected at USD 94 per barrel by the end of this year, only to decline in the course of the next two years, to USD 82 and USD 77 per barrel, respectively.

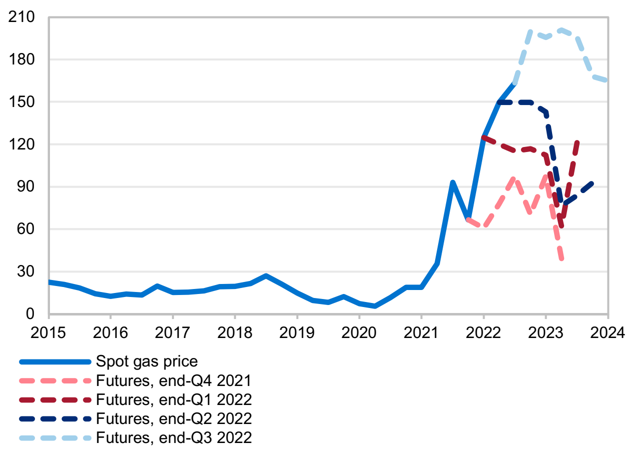
Chart V.0.6 **Assumption for Brent oil prices**
(USD/barrel)



Source: Bloomberg.

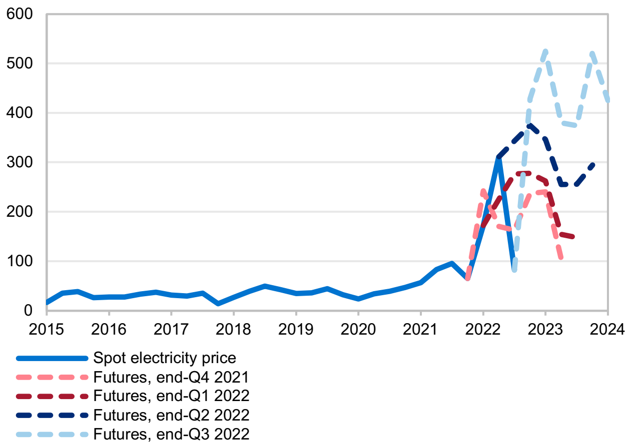
Natural gas is among several primary commodities whose global price continued up in Q3, touching a new record of EUR 330 per megawatt hour in August, on account of the temporary suspension of natural gas supply via Nord Stream 1. Though the deliveries were fully halted in late September due to pipeline damage, the price did not go significantly up as the gas storage level was higher than expected. In late September, the natural gas price fell to EUR 164 and in late October to EUR 28 per megawatt hour, reflecting dented demand due to mild weather for this time of the year and adequate gas storage levels. In early November, when the heating season began, the natural gas price went up again. Unable to fully transition to another market in the short run or tap other energy sources, Europe remains dependent on Russian gas, which will add to price uncertainties. Consensus Forecasts anticipate a decline in the natural gas price after the winter season, and a similar situation is expected according to futures. The return to the pre-crisis level is not expected until the end of the projection horizon. Though Serbia has gas storages for the oncoming season and procures a major portion of necessary gas (around two-thirds of total needs) at an affordable price, new cost-push pressures may escalate if global gas prices shoot up in the coming period.

Chart V.0.7 **Benchmark natural gas price for Europe, Dutch TTF hub**
(EUR/MWh)



Source: Reuters.

Chart V.0.8 **Benchmark electricity price for Europe, German power baseload**
(EUR/MWh)

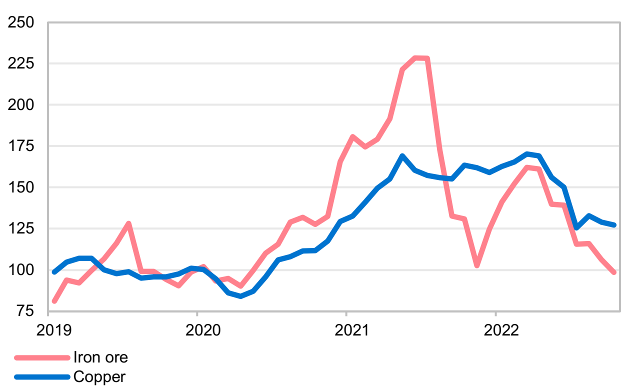


Source: Reuters.

The **price of electricity** (on the German stock exchange), as an alternative source of energy, followed the trend of the natural gas price and reached the historical high of close to EUR 700 per megawatt hour in late August, only to decline in September and October. According to futures, the electricity price is expected to continue down over the projection horizon, though it will most probably stay at the level higher than before the pandemic. The soaring global electricity price also drove up the minimum price for the domestic corporate sector, from EUR 75 to EUR 95 per megawatt hour, though remaining much below the market price. Although not expected according to futures, a potential further rise in the global electricity price would probably exert additional pressure on the electricity price for the corporate sector, particularly given that contracts concluded under much more favourable terms will expire late this year for many companies. In addition to direct effects, higher energy prices will generate 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.

The rise in global prices of energy products and their reduced availability entailed an increase in gas and electricity prices for households as well, in order to avoid any major losses for companies in the energy sector, with total projected **administered price growth** amounting to close to 7% this year. Adjustment of electricity and natural gas prices is expected next year as well, and, according to our estimates, it will be more substantial than this year. As a result, and also due to regular adjustment of cigarette excises and the expected rise in utility service prices, **administered price** growth will equal around 13.3% next year and around 8.0% in 2024.

Chart V.0.9 **Iron ore and base metal prices in the global market**
(index points, 2019 = 100)



Source: Commodity Prices, World Bank.

After reaching their record high in March over the escalation of the Ukraine crisis, the **global prices of metals and minerals** continued down in Q3. Mounting recessionary pressures globally and rising cost-push pressures have resulted in dampened demand for metals and a decline in their prices, given their strong dependence on the stage of the global economic cycle. The economic slowdown of China, the world's largest buyer of metals and minerals, has a special impact on metal prices. As forecast by leading institutions, the prices of metals and minerals are expected to decline further in the period ahead, softening the pressures on producer prices in industry and construction. The response of producers is also expected, primarily in Europe, as they will adjust to dented demand and high energy costs, contributing to gradual balancing of supply and demand.

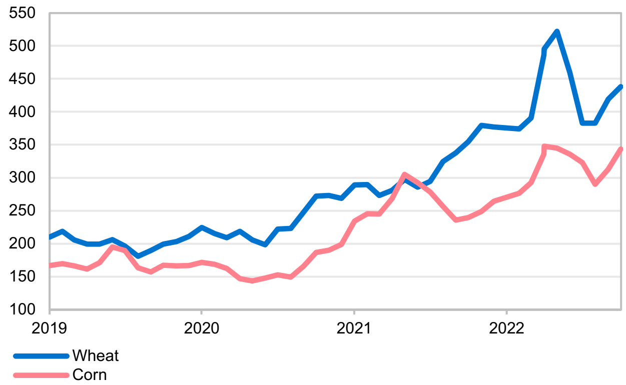
According to the IMF October projection, the prices of base metals will fall by 5.5% on average this year (versus the 9.9% growth expected in April) and by around 12% in 2023, while precious metal prices are expected to decline much less – by 0.9% this and 0.6% next year.

The prices of most global **primary agricultural commodities** declined in the past months. Following a few months of contraction over concerns related to the implementation of the Black Sea deal on grain export from Ukraine after November, global grain prices picked up in September. Uncertainty surrounding world agricultural production is associated with the costs of inputs and their supply in the next season, primarily due to the impact of the Ukraine conflict on the prices of energy, oil and gas, which are used in mineral fertiliser production. Based on two-week average futures prices on global stock exchanges, we assumed in our projection that these prices will be higher by around 14% in late 2022 compared to late last year, while in 2023 they are likely to decline by around 5%. Consistent with this, we expect similar dynamics of the **prices of primary agricultural commodities in the domestic market**, which mirror their world counterparts.

The drought over the summer months had a negative effect on this year's **agricultural season** which was stronger than we assumed in the previous *Report*. Due to multiple price increases, smaller than optimal fertiliser quantities may have been used in the course of the year, which could also have a negative bearing on yields. We assumed in August that this year's agricultural season would be similar to last year's, while we now estimate it will be lower by around 8%. The SORS flash estimate indicates a 9.6% decline in wheat production compared to the last, record year. A much steeper decline is estimated for the production of corn (-25.0%), sugar beet (-22.3%) and soy (-26.2%). Sunflower production is expected to step up (5.9%), owing primarily to larger surfaces under sunflower (18.1%), while the average yields, as for all other crops, are lower than last year (by around 10%). We expect next season to be under-average as well because mineral fertiliser prices remain exceptionally high, which will probably reflect again on their smaller use in production.

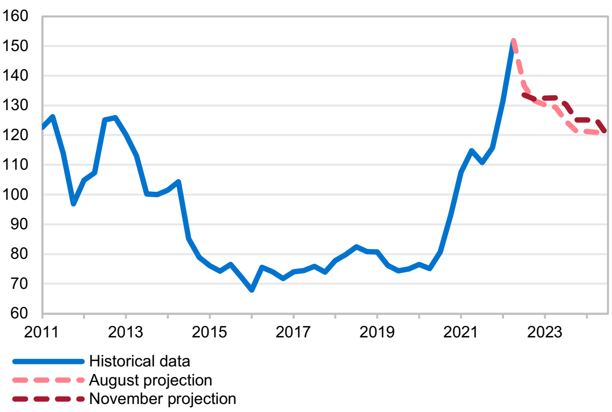
In regard to factors influencing domestic demand, the **wage bill,** as the key source of consumption, increased in the first eight months of 2022 by 16%, primarily on account of rising wages and employment in the private sector. Consumption was also propped by remittances, which will most probably increase by around 50% nominally at the year level. Still, wage and employment

Chart V.0.10 **Wheat and corn prices in the global market**
(USD/mt)



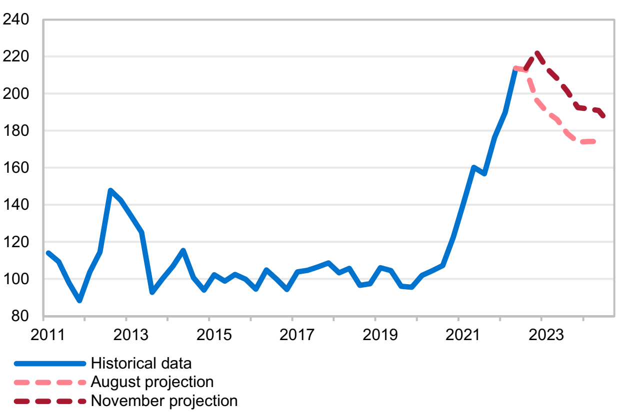
Source: Commodity Price Data, World Bank.

Chart V.0.11 **Assumption for international prices of primary agricultural commodities**
(Q4 2013 = 100)



Sources: CBOT, Euronext and NBS calculation.

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

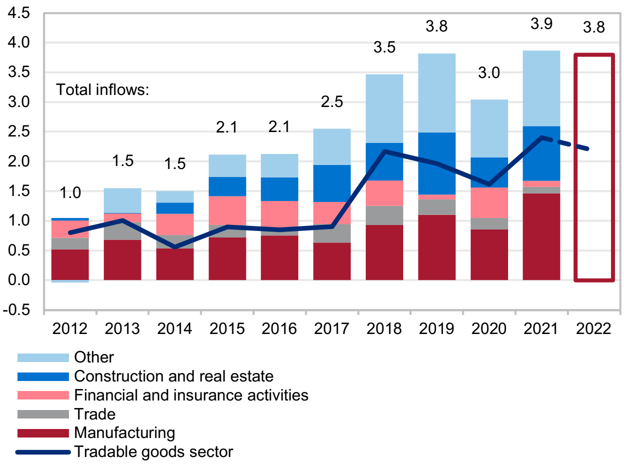


Sources: Commodity Exchange Novi Sad, CBOT, Euronext and NBS calculation.
* Measured by the composite index of wheat, corn and soybean.

growth in the private sector is likely to slow in the period ahead, reflecting heightened global uncertainty over pronounced geopolitical tensions and an adverse global growth outlook. This will be partly compensated by the expected further rise in the minimum labour cost in 2023, followed by a decrease in corporate tax burden, and the announced pension rise by late this and early next year by close to 20%, and the rise in public sector wages by 12.5%. Under the medium-term fiscal strategy, the priority of **fiscal policy** will be infrastructure and capital projects (government outlays for capital investment are projected at around 6–7% of GDP p.a.), and the pension and wage policy, but care will be taken to ensure that the increase in these largest expenditure categories does not raise their respective shares in GDP. All this should help maintain the citizens' living standard and support growth in funds for new investment, while at the same time ensuring that public debt strikes a downward trajectory.

Under our new projection, **FDI inflows** will measure around EUR 3.8 bn this year, more than we expected in August, reflecting primarily higher than expected outturns in the past months. The years to come are likely to see somewhat weaker inflows compared to this year, whilst broad-based geographic and project distribution will be maintained. Lower disposable income for investment, as well as consumption, in the coming period will reflect a higher cost of borrowing in dinars and euros, amid monetary tightening by the NBS and the ECB, while the expected easing of cost-push pressures from the international environment should work in the opposite direction.

Chart V.0.13 **FDI structure by sector**
(in EUR bn)

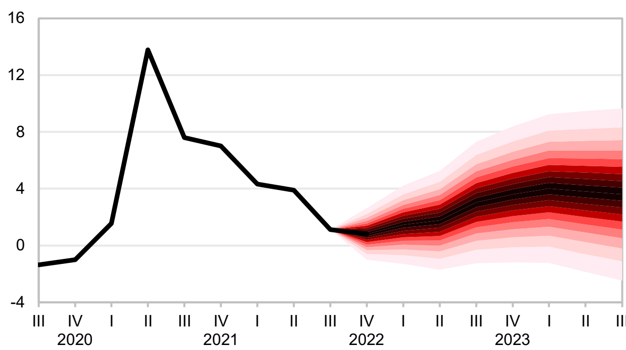


Sources: SORS and NBS.
* Industry, agriculture, transport, warehousing and catering.

GDP projection

After posting relatively high y-o-y growth of 4.1% in H1 according to the SORS estimate, GDP is expected to slow in H2, on the back of a deteriorating global growth outlook and elevated recessionary pressures in the euro area in an environment of soaring prices of energy and industrial raw materials, and tight financial conditions. This is confirmed by the SORS flash estimate of GDP growth of 1.1% y-o-y in Q3. Moreover, though global supply bottlenecks have eased over the past months, they may build up again, against the backdrop of persistently high energy prices, reduced production in China due to its zero-tolerance COVID-19 policy and further deepening of geopolitical tensions.

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



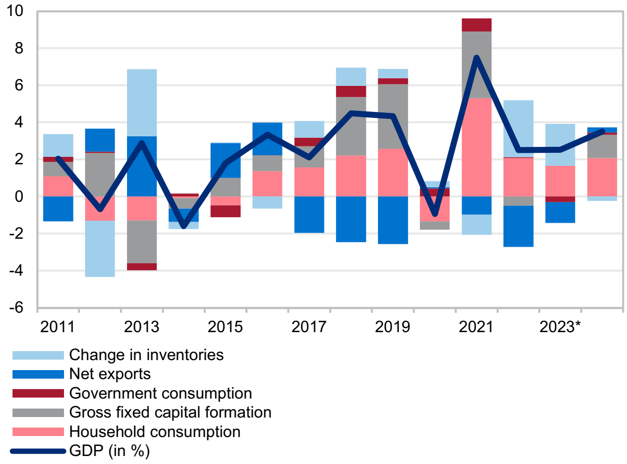
Source: NBS.

Dented external demand globally, contracted industrial production in Germany due to energy problems, and a continued rise in global cost-push pressures will most probably drag on our manufacturing output in the remainder of the year, and, by extension, on exports. On top of that, Q4 2022 and H1 2023 are likely to witness a slowdown in domestic demand, reflecting lower disposable income for consumption and investment, and diminished investor appetite amid pronounced global uncertainty and mounting recessionary pressures. Still, as of H2 next year we expect the growth dynamics to pick up, thanks to the weakening of global cost-push pressures and the end of the winter heating season, when the pressures in regard to energy prices and availability are the strongest due to elevated needs.

Given the above and notably the fact that geopolitical tensions have heightened, that gas supplies to Europe from Russia have been cut by around 80%, and in light of the SORS flash estimate of this year's agricultural season, which was weaker than last year – which were the key downside risks to our August projection – compared to our August expectations, we have revised down the projected GDP growth rate for this year, to the **2.0–3.0% range**. Due to a smaller carryover effect and much weaker projected economic activity of the euro area, we revised down Serbia's growth projection for 2023 also to the **2.0–3.0% range**. With the assumed waning of the effects of the Ukraine conflict and overall geopolitical tensions on external demand, and the planned implementation of investment projects, notably in road, railway and utility infrastructure, **GDP is expected to accelerate to 3.5% in 2024, and return to the pre-pandemic growth trajectory of around 4% p.a. in the medium run**.

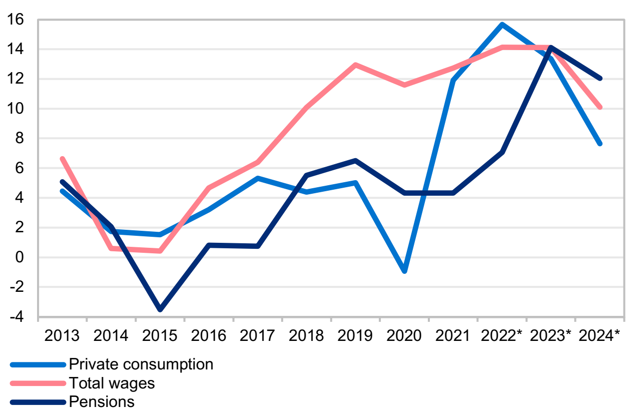
Observed by use, according to our estimate, **private consumption** growth is expected to slacken, but it will remain the key generator of economic growth (contributing around 2 pp this and around 1.7 pp next year). Its slowdown will reflect the anticipated slackening of private sector wage and employment growth, which will partly be offset by a higher minimum wage, the announced hike in pensions late this and early next year, and the rise in public sector wages. Though we expect to see a relatively robust increase in pensions and, to a smaller degree, also in outlays for public sector wages, their share in GDP will not exceed its pre-pandemic level because of nominal GDP growth recorded this and anticipated in the next year. Income disposable for consumption will be somewhat below what we expected in August due to the continued rise in energy and food costs and a somewhat higher cost of borrowing at home due to the NBS's and the ECB's monetary policy tightening. As the effects of cost-push pressures wear off, growth in private consumption will accelerate again in 2024 and its contribution to GDP will pick up to around 2 pp.

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



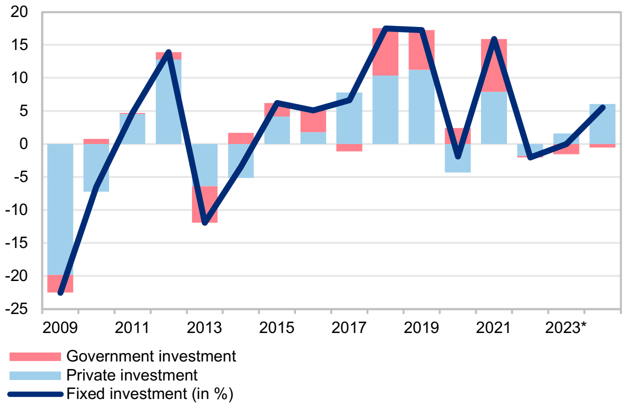
Sources: SORS and NBS.
* NBS estimate.

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



Sources: SORS and NBS calculation.
* NBS estimate

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

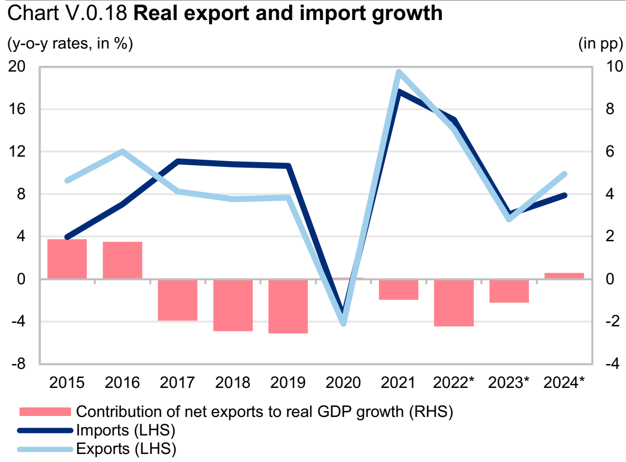


Sources: SORS and NBS calculation.
* NBS estimate.

Government consumption is also expected to provide a mildly positive contribution to GDP this year (0.1 pp). Next year, this contribution will probably be negative (-0.3 pp) since outlays for procurement of goods and services will be lower in real terms, reflecting reduced fiscal space.

The global investment rate has declined in the face of current geopolitical tensions, higher operating costs of businesses due to much elevated prices of energy and raw materials, as well as subdued external demand amid poorer global growth prospects and a mounting risk of stagflation. The investment propensity could also be dented by monetary policy tightening of leading central banks. In such circumstances, we project **fixed investments** in Serbia to decline this year, providing a negative contribution of 0.5 pp to GDP, and to be flat in 2023. This will reflect the subdued contribution of both private and government investment due to the last year's high base, though the share of government capital expenditure in GDP is expected to stay relatively high at around 6–7% p.a. Own sources remain the key source of funding **private investment**, including FDI inflows projected at around EUR 3.8 bn this year (EUR 3.5 bn, net). Thanks to the favourable macroeconomic outlook of the country, FDI inflow is estimated to stay relatively high in the medium term (around 4–5% of GDP per annum) and, as so far, diversified by project and mostly directed at tradable sectors. Funds for new investments in property development and transport and utility infrastructure will also come from loan sources, although a normalisation of the ECB's monetary policy is expected, possibly inflating the cost of borrowing in the foreign currency. Total fixed investment is expected to provide a more substantial positive contribution to GDP growth as of 2024 as production costs and global uncertainty abate, global supply chain disruptions are resolved and implementation of transport and utility infrastructure projects accelerates.

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



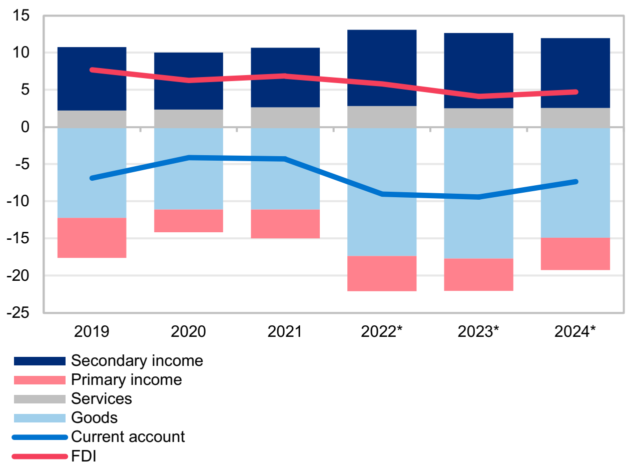
Sources: SORS and NBS.
* NBS estimate.

Inventories are expected to provide a high positive contribution to GDP growth this and the next year. Their rise has been propped up by the forming of strategic commodity reserves, primarily of food and energy products. As energy and food prices and availability gradually normalise and global value chain disruptions are resolved, inventories are expected to decrease as of 2024, providing a negative contribution to GDP.

Net export is anticipated to provide a negative contribution to GDP this and the next year (-2.2 pp and -1.2 pp, respectively). This primarily reflects higher import of all major energy products – gas and oil. Because of issues faced by the energy sector since end-2021, downsized coal exploitation and a poor hydrological situation, Serbia will most likely be importing both electricity and coal in 2022 and 2023. To a smaller extent, the negative contribution of net export also resulted from higher equipment import for the purpose of investment projects implementation and from consumer goods import. Export of goods and services will slow in the remainder of this and during next year because of subdued external demand caused by the poorer economic growth outlook in our key trade partners, most notably the euro area. Softer external demand will partly be offset by rising manufacturing export supply based on earlier investments. Export of autumn crops in the current mercantile year will be lower than anticipated, reflecting a poorer than expected agricultural season and diminished yields. The temporary ban on cereals export early in the year and the forming of strategic food inventories in the domestic market will work in the same direction.

As a result of the above movements in goods export and import and less favourable terms of trade due to substantial energy price hikes globally, the **share of the current account deficit in GDP** will climb to around 9% this year. This should also reflect higher expenditures on account of primary income amid continued growth in FDI inflows, anticipated profit payments to foreign-owned companies and, to a smaller extent, also higher costs of repayment under debt instruments due to monetary tightening by central banks worldwide. The surplus on trade in services, primarily thanks to elevated ICT sector export, as well as the inflow of remittances which in the year so far well exceeded the level recorded in the same period of 2021, will work in the opposite direction. The share of the current account deficit in GDP is expect to stay similar in 2023 and to contract gradually to around 6% in the medium term, helped by more favourable terms of trade, which ought to preserve external sustainability.

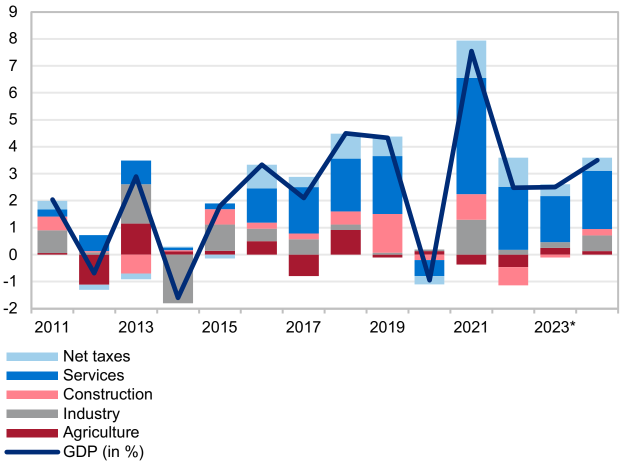
Chart V.0.19 **Current account and FDI projection**
(in % of GDP)



Source: NBS.
* NBS projection.

On the **production side**, service sectors are expected to provide the largest positive contribution of 2.3 pp to GDP growth, reflecting their high share in GDP and continued growth in personal consumption. As personal consumption growth is expected to slacken next year, the contribution of service sectors to economic growth is likely to subside slightly (to 1.7 pp), and then accelerate as of 2024. According to our estimate, net taxes will also provide a high positive contribution this year (around 1.1 pp). A mild positive contribution is expected to come from industry (0.2 pp), mostly reflecting the expansion of activity in the mining sector due to the activation of new production capacities and increased metal ore exploitation, particularly of copper. Though manufacturing industry's contribution to GDP growth will be positive, it will be smaller than we anticipated in our previous projection due to weaker external demand

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



Sources: SORS and NBS.
* NBS estimate.

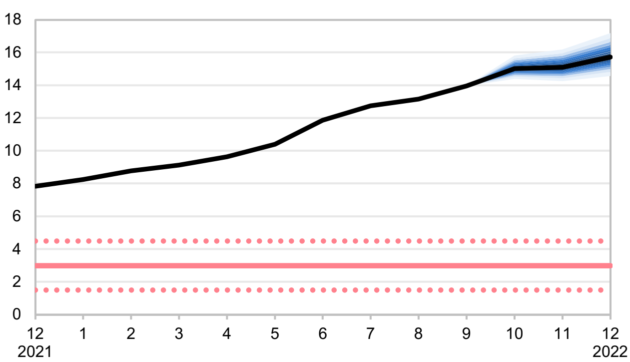
amid mounting recessionary pressures in the euro area and elevated production costs, despite the higher-than-anticipated growth recorded in H1. On the other hand, the energy sector is expected to provide a negative contribution to growth this year, reflecting downsized coal and electricity production earlier in the year and an unfavourable hydrometeorological situation. Industry's contribution is expected to stay broadly the same next year amid poorer global growth prospects and a significant downward revision of euro area growth, while the activation of new and the expansion of existing capacities in manufacturing and the resulting rise in export supply will work in the opposite direction. The contribution of construction will be negative this and the next year, even more than we anticipated in August, due to higher production costs and the globally diminished investment propensity in the face of elevated uncertainty. Still, activity in this sector is expected to accelerate as of 2024, propped up by the planned implementation of infrastructure projects, mostly in the area of transport and utility infrastructure. Agriculture is the key factor behind the revision of the economic growth projection for this year. Instead of being neutral as we anticipated in August, its contribution this year will be negative (-0.5 pp) due to the stronger-than-assumed effects of the drought. Assuming that next year's season will be below average but better than this year's one, agriculture is expected to provide a mild positive contribution next year.

Inflation projection

Short-term inflation projection

Under the central projection, y-o-y inflation should remain elevated over the short term. Observed by component, the contribution of core inflation and vegetable and administered prices to headline inflation is expected to go up further. Conversely, the contribution of industrial and food products is expected to subside because of the high base for fresh meat prices. The contribution of petroleum product prices is anticipated to go down as well.

Chart V.0.21 **Short-term inflation projection**
(y-o-y rates, in %)



Source: NBS.

Over the short term, the risks to the projection are mostly associated with food prices because of the more severe than anticipated drought in most of Europe. Another major risk are the energy prices due to mounting geopolitical tensions over the Ukraine conflict.

Medium-term inflation projection

The period since our August projection was marked by mounting and more persistent than anticipated inflationary pressures globally, further monetary policy tightening by leading central banks and a weakening of global growth prospects. The indirect effects of higher prices of energy and industrial raw materials have lingered and proved stronger than anticipated globally, fuelling core inflation growth and, together with tighter labour markets, resulting in more persistent inflation in many countries. Inflationary pressures stemming from disruptions in global supply chains are gradually abating, but they continue to generate cost-push pressures.

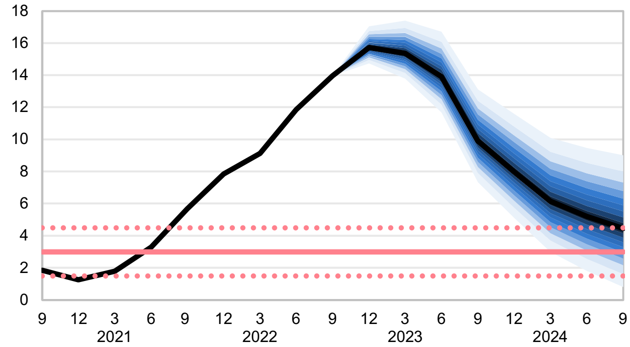
Under the central November projection, y-o-y inflation is expected to stay elevated until end-2022 and early 2023 and strike a downward path thereafter. It should decline more sharply in H2 2023 and retreat within the bounds of the target tolerance band in H2 2024. Inflationary pressures will be soothed by the past monetary tightening, anticipated waning of the effects of global factors underpinning energy and food price growth in the past period, slowing of imported inflation and subdued external demand amid weaker global growth prospects.

Prices from the international environment remain the key generator of inflationary pressures in Serbia. Though global growth has slackened, global inflation has risen still further under the sway of stronger indirect effects of rising energy prices, elevated inflation expectations and lingering supply and demand mismatches. This is compounded by tight labour markets in many countries, persisting relatively high transport costs and extended supply chain disruptions. The much higher inflation posted by almost all countries in the world this year is not transitory as initially thought – it will remain **above the multiyear average and above central banks' targets throughout 2023, and even 2024, and is expected to return to usual levels in 2025**.

Global monetary and financial conditions have tightened[18] in response to higher than anticipated inflation, especially in the USA and leading European economies. More stringent financial conditions were further propped up by the powerful appreciation of the US dollar, also led by the interest rate differential and increased save haven investment due to extreme global uncertainty, which has pushed up US dollar-denominated prices of primary commodities. The synchronised tightening of monetary policies in most countries is expected to produce results and slow inflation in the coming period. This will help relieve pressures from imported inflation on Serbian prices over the projection horizon, which is one of the key factors behind the projected return of inflation to target.

[18] For more details, see: Text box 2, p. 46.

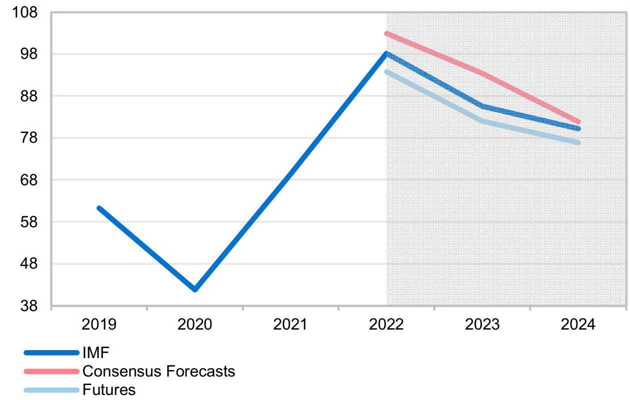
Chart V.0.22 **Inflation projection**
(y-o-y rates, in %)



Source: NBS.

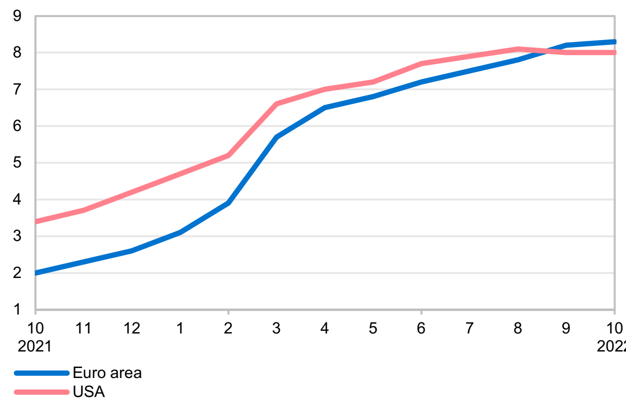
The fan chart depicts the probability of various inflation outcomes in the next eight quarters. The central projection is within the darkest central band and the probability that inflation would lie in it is 10%. Each following shade includes 10% probability, which means that outturns of inflation somewhere 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.0.23 **Global oil price projections**
(USD/bbl)



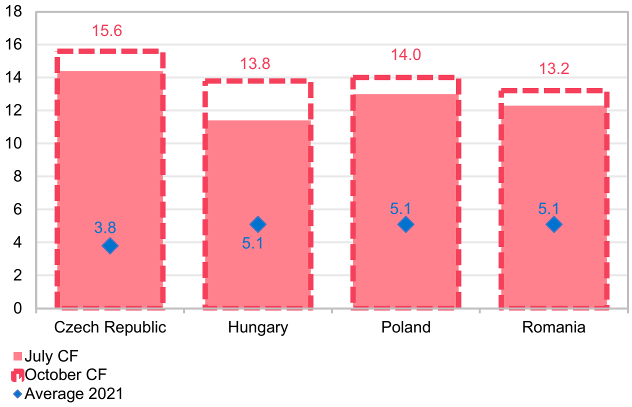
Sources: IMF, Consensus Forecasts, Bloomberg.
Note: Shaded area denotes the projection.

Chart V.0.24 **Projected level of average inflation in the USA and the euro area for 2022 in the past year**
(y-o-y growth, in %)



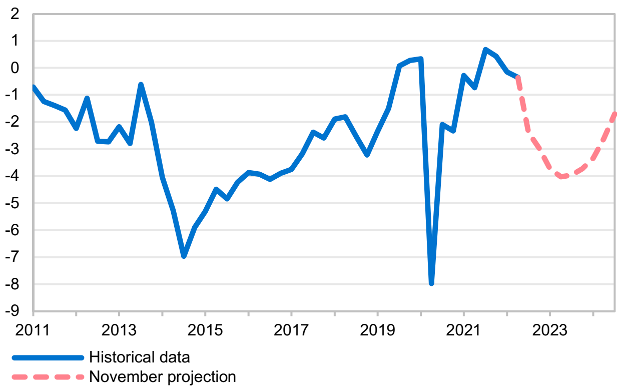
Source: Consensus Forecasts.

Chart V.0.25 **Revision of inflation forecasts for 2022**
(in %)



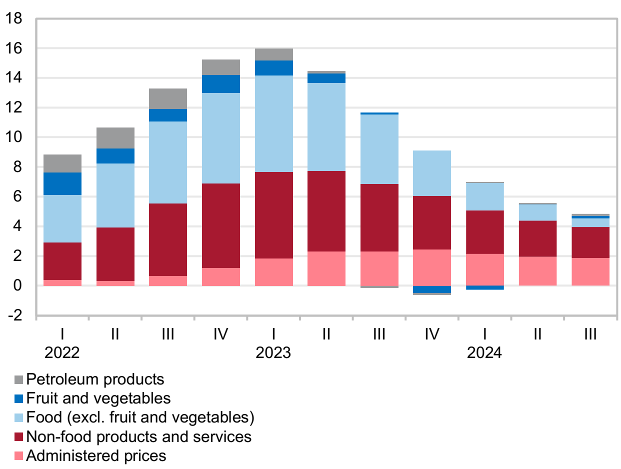
Source: Consensus Forecasts.

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.

Though they are much higher than in 2021, global **food prices** have levelled off over the past months and futures are declining. This was due to a good harvest in Asia and improved weather conditions after the drought in the USA, which offset pressures in the global market caused by concerns over possible halts in deliveries from Black Sea ports. Prices of wheat, corn and beef were the only to increase recently. After rising strongly by 14% this year, **prices of agricultural commodities** ought to decline by around 5% next year, gradually lowering the current, extremely high costs of food production. Expectations are similar for the **global oil price which**, after rising robustly until mid-June, levelled off in response to heightened global recessionary pressures and the powerful hike in interest rates, especially by the Fed. Going forward, the global oil price is expected to drift down, greatly contributing to a fall in Serbia's y-o-y inflation. The deferred pass-through effect of the recent oil price hike in the international commodity market onto consumer prices could, however, continue to spur inflation in the short term. In the EU, this effect is compounded by the energy crisis caused by the Ukraine conflict. There is also concern over the **global price of natural gas**, but its growth is expected to be lower this year as EU gas storage is filled to over 90%. The situation is similar for **coal and electricity prices**.

Global growth prospects are again gloomier than three months ago. As a result, the estimated output gap, as an indicator of **aggregate demand**, is having a somewhat more disinflationary effect than in the previous projection. This will be influenced mostly by subdued external demand, reflecting recessionary trends in leading global economies. Though income disposable for consumption will somewhat diminish due to the ECB's and NBS's monetary policy tightening, this will partly be offset by the announced increase in public sector wages and pensions and continued positive trends in the labour market. For this reason, after deepening in Q2 and Q3 2023, the negative output gap will begin to gradually narrow as of Q4 2023 due to the above factors and the anticipated rise in external demand, but it will not close until the end of the projection horizon.

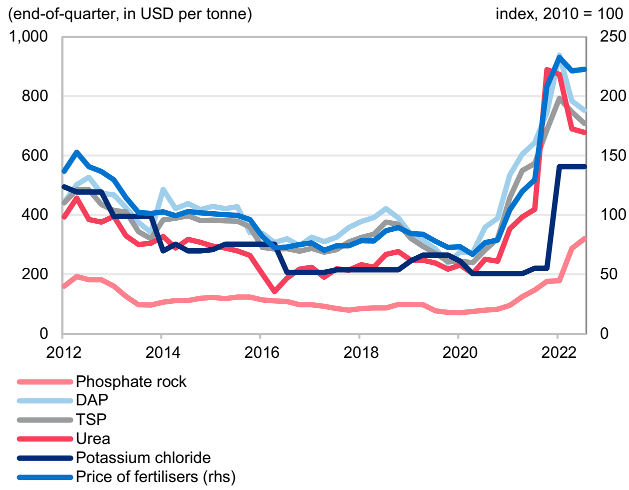
Observed by inflation category, **fruit and vegetable prices** will remain relatively high for some time yet, given their outturns earlier in the year. Due to the drought, vegetable prices increased more and fruit prices decreased less than is expected and usual for the final quarter of the year. We also bore in mind that the costs of agricultural production are further inflated by persistently mounting cost-push pressures fuelled by elevated prices of energy, especially natural gas, and, by extension, of mineral fertilisers. For this reason, our projection assumes that fruit and vegetable prices will provide a somewhat higher positive contribution to y-o-y inflation in Q4 2022 and Q1 2023. Once the new agricultural season kicks in, their contribution to y-o-y inflation is estimated to subside by more than 1 pp and become negligible thereafter, in line with the assumption that fruit and vegetable prices will gradually retreat towards their multiyear trend.

Rising cost-push pressures in food production, resulting mostly from elevated global prices of oil and primary agricultural commodities (corn, wheat, soybean), pushed up other categories of **food inflation** (excluding fruit and vegetables) at home. In addition to energy and input costs, food price growth also reflects rising imported inflation and inflation expectations. We estimate that in Q2 2022 the indicator of cost-push pressures in food production – the real marginal costs gap (measured by deviation from trend of the ratio of input prices to prices of final food products) – reached its highest level on record. It began to close moderately in Q3, indicating that the rise in costs spilled over to prices of final food products, which provide the highest contribution to y-o-y inflation growth of all individual components. As notable departure of the real marginal costs gap from its neutral level customarily signals its decline in the future, we expect the impact of most cost-push pressures to subside with time. This should also be supported by the anticipated fall in the prices of primary agricultural commodities, which will slow food price growth. Food inflation is expected to strike a downward path next year, supported also by the anticipated calming of imported inflation and inflation expectations.

Similarly as in our previous projection, we expect the contribution of **petroleum product prices** to remain relatively high in the short term, and to decline notably after Q1 2023 if the global oil price moves in line with the futures.

Non-food inflation is expected to display a similar trend, though this component's 2022 maximum will be lower than that of food inflation and its decline somewhat slower. The prices of this product category 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. This is also a consequence of the direct spillover from European prices to prices at home, but also of the fact that in both Serbia and the euro area prices are under the impact of elevated prices of the same primary commodities. Quarterly growth in these prices has most probably

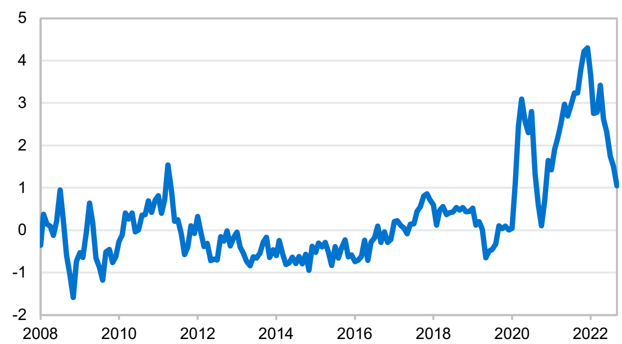
Chart V.0.28 **Global mineral fertiliser prices**



Sources: World Bank.

Chart V.0.29 **Global supply-chain pressures**

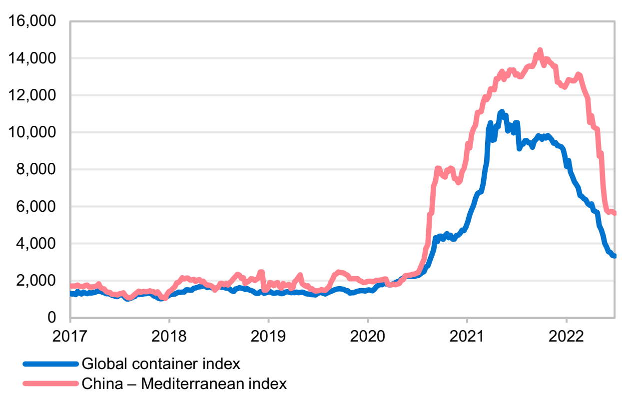
(index, in standard deviations)



Source: Federal Reserve Bank of New York.

Chart V.0.30 **Container transport price**

(USD)



Source: Freightos.

already peaked in Q3, while their y-o-y growth will probably peak in Q1 2023 due to the base effect. With the gradual decline in imported inflation and inflation expectations, the initiated reduction in international transport costs and prices of industrial raw materials, moderation of global value chain disruptions 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 strong leap in global energy prices is the key reason behind higher growth in **administered prices** during the projection horizon. Consistent with our assumption of administered price growth of 6.9% this and 13.3% next year, their contribution to y-o-y inflation will edge up gradually to 1.2 pp late this and 2.5 pp late next year.

Text box 3: Assessment of inflationary pressures based on text analysis

Indicators signalling inflation growth on time gain in importance during periods of high and volatile inflation, such as the one that the major part of the world is grappling with. One of the methods to create such an indicator is the so-called **text analysis**, which turns texts, as qualitative data, into a numerical measure that can be used later on as a leading indicator of a specific economic variable. We can use for that purpose a large body of texts on economic developments available on the internet, such as newspaper articles, statements, blogs, social media posts, etc.

We at the NBS tried to establish whether newspaper texts contain information that can be used as one of the indicators or signals of inflationary pressures. The link between texts on the internet and inflation stems from a simple fact that in periods of large and frequent price swings, the media tend to write about prices more, which is important for our analysis, using words that relate to price changes – either past or those yet to happen.

We analysed 120,000 articles from the economic sections of four Serbian dailies for the period from the beginning of 2007 to September 2022, using a dictionary-based approach, which counts predefined terms. To be more specific, we predefined the list of terms relating to price rises (*price rise, price increase, price hike, higher price, inflation,* etc.) and to price falls (*price fall, price decline, reduced price, lower price, deflation,* etc.), combining words in different grammatical forms. We then counted those terms by month and put the count in relation to the total number of words in the corresponding month.

We thus obtained the newspaper inflation sentiment, which is a measure that quantifies the intensity of the inflation narrative in Serbian newspapers. Chart O.3.1 shows two such measures: the share of price rise terms (PRT) and the difference between price rise and price fall terms (price change terms – PCT).

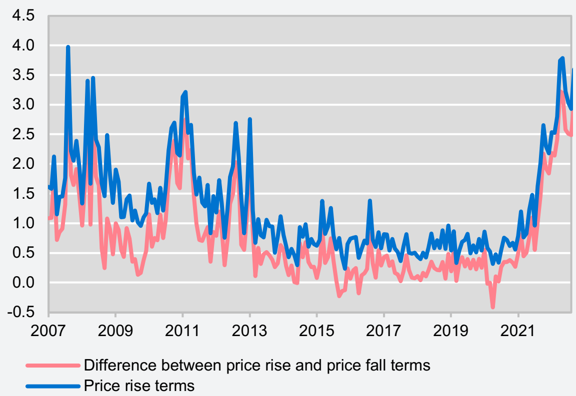
Although these time series are rather noisy, one can clearly observe four major cycles in the inflationary sentiment during the period observed. Both series peak in 2008, 2010, 2012, and 2022, at over 2.5‰ in case of the PRT, and 2‰ in case of the PCT. In the period 2013–2021 the series were relatively stable, most of the time between 0‰ and 1‰.

The relationship between inflation and inflationary sentiment is striking during periods of high inflation volatility. In the observed period inflation had four major upswings, with double-digit peaks in 2008, 2011, 2012, and 2022 (Chart 0.3.2). All these inflation cycles were preceeded or accompanied by a significant increase in the frequency of price rise-related terms in the newspapers to over 2.5‰ of the total number of words. It is noticeable that in the ongoing cycle compared to previous inflation cycles the rise in inflationary sentiment is stronger than in inflation. This can be put down to the fact that current inflation, unlike in the previous cycles, is led by global factors, so sentiment measures partly reflect price movements in the international environment.

Also, during the eight-year period of inflation stability (from mid-2013 to mid-2021), the newspaper inflationary sentiment remained comparably low, never exceeding 1.5‰, although it seems that during that period

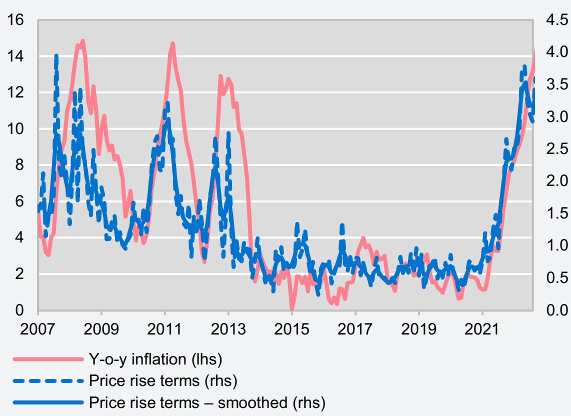
Chart O.3.1 **Newspaper inflationary sentiment based on word count**

(share in total number of words, per mill)



Source: NBS.

Chart O.3.2 **Inflation and newspaper inflationary sentiment**



Sources: SORS and NBS.

the two series (inflationary sentiment and inflation) occasionally diverged. Like, for instance, in 2015 when the newspaper mention of price rises was not followed by inflation pick-up, or in early 2017 when it was impossible to predict based on newspaper articles that inflation would record a temporary rise to 4%.

In addition to the two sentiment measures, we included in the analysis their HP-smoothed versions, while also examining how inflationary sentiment correlates with y-o-y and seasonally-adjusted monthly inflation rates. Econometric analysis has confirmed a strong correlation between different sentiment measures and inflation.[1]

The key findings of the analysis are as follows:

– Inflationary sentiment measures are highly correlated with inflation over the full sample. The correlation is stronger with y-o-y inflation (around 0.8) than with m-o-m inflation (around 0.6). On the other hand, if we take a look only at the period of low and stable inflation (from mid-2013 to mid-2021), the correlation coefficient falls to 0.2–0.3, which is much lower than for the whole sample.

– Granger causality test shows that in all the combinations of inflationary sentiment and inflation, causality goes from the former to the latter, although in some cases it goes both ways. Besides, the impulse response function from VAR model with price rise terms and inflation suggests a one-way causal relationship, where a 1‰ jump in price rise terms predicts a 4% rise in inflation.

– The coefficient for sentiment measure included in the estimated inflation model with relevant inflation factors[2] proved to be statistically significant, suggesting that the sentiment provides additional information for inflation forecasting, even relative to its main factors.

Taking everything into account, we concluded that newspaper inflation sentiment is a good indicator of inflationary pressures, above all in periods of elevated inflation, which is why the NBS will continue to follow it closely.

[1] For details see the *NBS Working Papers Bulletin*, September 2022.

[2] Model described in the paper "Estimation of the impact of global and domestic factors on inflation in Serbia", *NBS Working Papers Bulletin*, March 2022.

Risks to the GDP and inflation projection

International developments, primarily **geopolitical events relating to the Ukraine situation**, continue to be the main source of uncertainty surrounding our new macroeconomic projections. The impact of geopolitical events is particularly felt in global **energy markets**, especially in Europe. Europe remains greatly dependent on Russian gas as it has proved impossible to transition to other suppliers or other energy products in the short term, and this will continue to generate uncertainty about the price and availability of this energy product. Compared to our previous projection, however, the risks on this account have diminished, as gas supply to the EU through other channels has increased in the meantime which, together with lower consumption due to favourable weather and diminished gas demand from China, pushed up European gas storage levels more than anticipated. Oil price movements greatly depend on the global growth outlook, as well as on the output of OPEC+ countries other than Russia. We judge the **risks to the GDP projection on account of global energy prices to continue to be tilted to the downside, and to the inflation projection – to the upside**.

Downside risks to **global economic growth** have intensified further since the previous *Report*, primarily reflecting geopolitical uncertainty, higher than anticipated global inflation, and tighter financial conditions. Lower global growth, and most notably subdued euro area growth, would additionally dent export demand for our products and, by extension, slacken growth in manufacturing and exports. Moreover, if the epidemiological situation gets worse, the zero-Covid policy in China could aggravate global value chain disruptions which have improved over the past months. On the other hand, lower external demand would bring down inflationary pressures both in the euro area and at home. With this in mind, we judge the **risks to the inflation and GDP projection in respect of global economic growth and weaker external demand to be skewed to the downside**.

Subdued global growth could drag primary commodity prices down, as they greatly depend on the stage of the global economic cycle. On the other hand, as Russia and Ukraine are large producers and exporters of **primary agricultural commodities, metals and minerals**, further deepening of geopolitical tensions could slash their global supply. Russia is also the dominant producer of mineral fertiliser components, the prices of which greatly affect the costs of agricultural production worldwide, Serbia included. For these reasons, we judge **the risks of departure of global prices of primary commodities (agricultural commodities and metals) to be symmetric in the case of both inflation and GDP projection**. When it comes to the impact on GDP, it should be noted that elevated global prices of primary commodities have pushed up production costs and lowered income disposable for investment, while at the same time contributing to stronger export of agricultural commodities and metals, of which Serbia is the net exporter.

Since global value chain disruptions and the energy crisis could be extended, **there is a risk of more durable inflationary pressures in the euro area, leading to a further rise in production costs in Serbia, lower economic growth and higher inflation**.

Robust inflation growth in the most advanced global economies in the prior period makes it increasingly likely that **leading central banks will tighten their monetary policies more than the markets expect**. 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 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 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 **character of the agricultural season** is a risk to the inflation and GDP projection next year. Due to persisting high prices of mineral fertilisers, we have assumed next year's season to be below average. We judge the risks to GDP projection on this account to be tilted to the upside, and to the inflation projection – to the downside, as in that case the level of fruit and vegetable prices at home would be lower than we assumed in our central projection.

The risks to the projection are also associated with the **pace of domestic demand growth**. Lower proceeds from subdued export demand could lead to slower than anticipated employment and wage growth, with negative implications for domestic demand. On the other hand, **FDI inflow** could be higher than anticipated as our projections of FDI inflow 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 **greater fiscal support to the most vulnerable population categories or of accelerated implementation of government-financed infrastructure projects** to encourage domestic consumption and investment. With this in mind, we estimate that domestic demand could rise more quickly than projected. As a result, GDP growth and, to a smaller extent, inflation growth could be faster than assumed in the baseline scenario.

Developments in the energy sector are another risk to the projection. Because of problems in the electric energy system during the previous winter, it is uncertain whether it will be possible to continuously raise the volume of coal and electricity production at home in the next season and to restore production to the level from earlier years in the medium term. This creates uncertainty regarding imports of coal and electricity, particularly in view of the extreme volatility of their prices. Moreover, if there is a substantial increase in the prices at which the portion of gas exceeding the level defined in the agreement with Russia is imported, production costs of energy companies would go notably up, calling for **higher than projected hikes in gas and electricity prices for households, and electricity prices for corporates**, in order to ensure energy security in the domestic market. This is certainly an **upside risk to the inflation projection and a downside risk to economic growth**.

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, taking into account the effects of past monetary tightening and the time needed for these effects to play out fully. Going forward, the NBS's 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. The NBS stands ready to respond promptly using all monetary policy instruments at hand in case of materialization of any of the risks that would keep inflation above the upper bound of the target tolerance band until the end of the projection horizon.

Table V.0.4 **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	– Further conflict escalation and stricter sanctions could weigh on external demand for our products; – Heightening of geopolitical tensions would inflate production costs amid continued rise in the prices of energy and primary commodities and deepening of global supply chain disruptions.	↓	↑
Global economic growth outlook, particularly euro area growth prospects	– 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 than anticipated global inflation, particularly euro area inflation, leads to elevated imported inflation, raising 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.	↓	↑
Agricultural season	A better than assumed below-average agricultural season leads to increased supply of agricultural products and may produce disinflationary pressures.	↑	↓
Disposable income	Higher disposable income led by faster than expected growth in wages and employment, on account of higher FDI inflows and/or accelerated implementation of infrastructure projects by the government, and on account of fiscal support to the most vulnerable categories of the population, would result in faster growth in domestic demand and more inflationary pressures.	↑	↑
Administered prices, Government measures to cap energy prices	Higher growth in administered prices leads to higher inflation and less disposable income for consumption and investment.	↓	↑

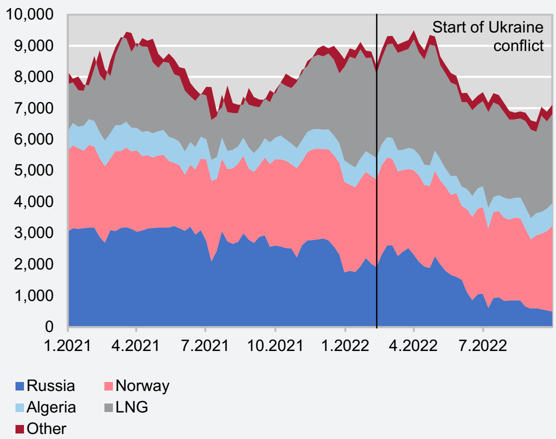
Note: ↑ means a more inflationary effect relative to the baseline scenario, ↓ lower economic growth, ↑ higher economic growth, ↓ a more disinflationary effect, and ↕ that the risks to the projection are symmetric relative to the baseline scenario.

Text box 4: Alternative projection scenario with the assumed higher global energy and primary commodity prices

The key risks to macroeconomic projections for Serbia continue to emanate from the international environment. They relate to a higher than expected global inflation and lower than expected global economic growth, as a consequence of mounting geopolitical tensions, surging energy prices, disrupted global supply chains, and tighter financial conditions worldwide. We have therefore again developed an alternative scenario for inflation, GDP and CAD projections, taking into account the effects of the said external risks.

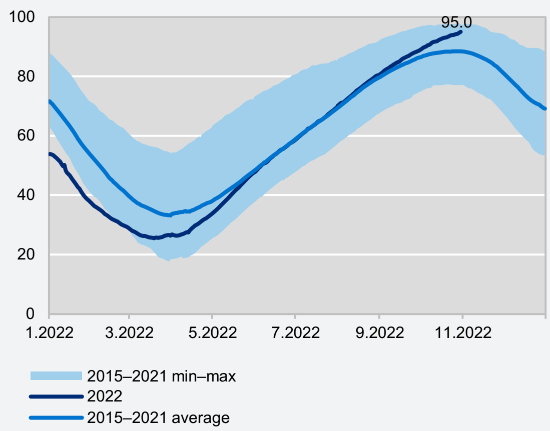
As for the risks to macroeconomic projections associated with surging global energy prices and a possibly cutoff gas supply from Russia to the EU, they continue to feature prominently, though less so than at the time of the August projection. This is due to the fact that Russian gas supplies to Europe have been already reduced considerably. In the prior three months, weekly gas supplies from Russia were slashed to under 20% of last year's levels, with gas flows through the Nord Stream halted altogether. Besides, gas inventories are currently at a much higher level than typical for this time of the year – gas storages are around 95% full now, which is above the multiannual average and reflects in part the favourable weather conditions. However, the winter heating season has only begun, and geopolitical tensions between the EU and Russia are tightening further, primarily over oil supplies, which could trigger a stronger than expected rise in the prices of natural gas and electricity over the coming months, and avert the expected decline in global oil prices. At the same time, as the EU remains dependent on Russian energy and cannot find a complete alternative in the short run, the question of gas availability and prices for the next heating season looms large, even more so than for the current season, for which high inventories, primarily of natural gas, have been secured.

Chart O.4.1 **EU gas imports**
(weekly data, in million m³)



Source: Bruegel.

Chart O.4.2 **EU gas inventories**
(in %)



Source: Bruegel.

The second risk in the international environment, identified in the August projection as well, was the possibility of a recession in the euro area in H2 this year and Q1 next year. Preliminary data for individual member states for Q3 suggest that the bloc managed to dodge recession for the time being and to delay it for late 2022 and early 2023, contrary to the movement of leading monthly indicators, which signalled a contraction in economic activity. It appears that the effects of the full opening of euro area economies and the pandemic-related monetary and fiscal stimuli continued to impact positively on the growth in private consumption and service sectors, notably tourism. However, leading international institutions have reduced their euro area growth forecasts for the next year considerably, assessing the risks to be tilted to the downside due to stronger and more persistent than expected inflationary pressures, faster monetary policy tightening by the ECB and high prices of energy, weighing down on investment and consumer confidence.

Given that high global energy prices affect the production costs and investment and consumer confidence, constraining economic activity globally, this time our alternative scenario combined the risks of higher than expected energy prices and higher euro area inflation on that account compared to the baseline scenario, which would involve a faster than expected tightening of the ECB's monetary policy and hence also the strengthening of recession pressures in the euro area. Should the above risks materialise, Serbia would face more adverse macroeconomic movements, with higher inflation and current account deficit than in the baseline scenario and lower GDP growth.

Specifically, in this scenario we assumed that natural gas price for Europe would be higher than assumed in the baseline (the assumption relying on the latest available futures for end-October) by around 40% at end-2022, and by around 32% at end-2023 and -2024. The average global oil price would exceed the baseline level by around 20% next year. The rise in fuel and mineral fertiliser prices would put an upward pressure on the prices of primary agricultural commodities which at end-2023 would exceed this year's level by around 13%, while in the baseline scenario we assumed their slight decrease. In that case, average euro area inflation next year would trend around 1.5 pp higher than in the baseline scenario, while euro area GDP would experience a deeper recession (-1.3% instead of -0.3% assumed in the baseline).

Table O.4.1 **External projection assumptions in the baseline and alternative scenarios**

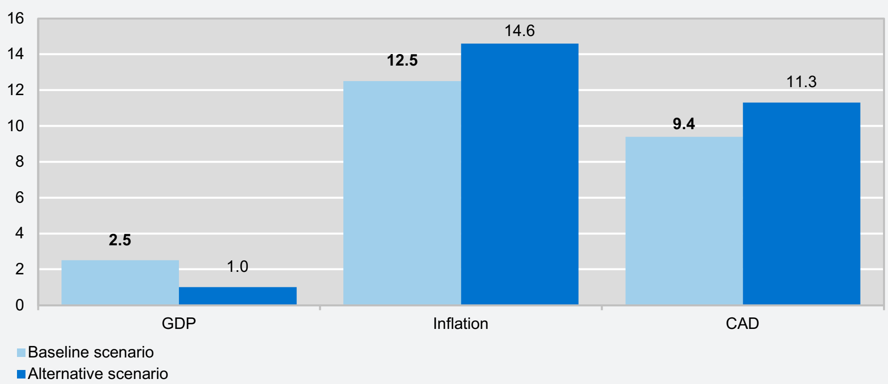
		Baseline scenario	Scenario with higher energy prices, higher inflation and lower euro area growth
Euro area GDP growth (in %)	2022	3.0	2.7
	2023	-0.3	-1.3
	2024	1.9	1.9
Average euro area inflation (in %)	2022	8.3	8.3
	2023	6.0	7.4
	2024	2.9	3.1
Global oil price (average, USD/barrel)	2022	101	101
	2023	86	102
	2024	79	83
Global oil price (year end, USD/barrel)	2022	94	94
	2023	82	92
	2024	77	81
Global gas price (average, USD/m3)	2022	1,174	1,314
	2023	1,659	2,230
	2024	1,190	1,597
Global gas price (year end, USD/m3)	2022	1,799	2,518
	2023	1,670	2,204
	2024	1,089	1,437
Global prices of primary agricultural commodities (y-o-y growth in Q4, in %)	2022	14.1	14.1
	2023	-5.3	13.3
	2024	-7.6	-20.0
Quarterly EURIBOR (year end)	2022	2.3	3.3
	2023	3.3	4.3
	2024	3.1	4.0

Sources: Consensus Forecasts, ECB, Bloomberg.

Further growth in global oil prices would have direct effects on **domestic inflation** (through higher prices of petroleum products in the domestic market), as well as indirect effects (through higher cost-push pressures, i.e. higher imported inflation), due to the additional rise in global prices of energy and primary agricultural commodities. This would push euro area inflation to higher levels, which would partly be offset by the effects of the ECB's monetary tightening and lower demand in the international market. Lower external demand and rising interest rates on euro-indexed loans in the domestic market on account of the ECB's more restrictive monetary policy would entail also lower demand in the domestic market. At the same time, surging prices of energy, tightening of global financial conditions and heightened uncertainty in the international financial market would result in higher energy imports in value terms, rising country risk premium and lower capital inflow to Serbia, mainly in the form of portfolio investment, which would also lead to the strengthening of depreciation pressures. All these factors would push inflation around 2 pp above the baseline figure in the next year and postpone its return within the bounds of the target.

Due to the increased costs of energy purchase and the reduced disposable income for investment and consumption on that account, as well as lower external demand, primarily in the euro area and the generally reduced consumer and investment confidence, lower capital inflow and less favourable financing conditions, **Serbia's economic growth** would turn out lower under this scenario, primarily in 2023. Looking at growth composition, the contributions of private consumption and investments would be lower than in the baseline scenario, as well as of net exports against the background of dampened external demand, which would negatively affect manufacturing production and exports. Energy purchase needs would probably narrow the room for government consumption and investment. On the other hand, due to higher global uncertainty and lower external demand, inventories would probably provide a higher contribution, at least in the short run. In such a case, it is estimated that the next year's GDP growth, with lower carry-over effect from Q4 2022, would be scaled down by 1.5 pp compared to the baseline scenario (with the central projection of 1%). This is still a somewhat smaller adjustment to economic growth compared to the adjustment for the euro area because of the fact that energy supply in the domestic market would not be jeopardised thanks to the measures undertaken to ensure sufficient gas reserves, including the reaching of an agreement on a gas price considerably more favourable than the market one, for the major quantity of imported gas.

Chart O.4.3 **Comparison of baseline scenario and scenario with higher energy and primary commodity prices, higher inflation and lower euro area GDP for 2023**
(in %)



Source: NBS.

The **current account deficit** would run higher than in the baseline scenario, by around 2 pp in 2023, reflecting also the unfavourable terms of trade amid a major upsurge in energy prices and depressed external demand, but this would be partly offset by the lower imports of consumer goods and equipment. Also, higher income expenses would reflect greater dividend outflows, less favourable financing conditions in the international financial market and more stringent tightening of the ECB's monetary policy.

Let us conclude – the materialisation of the risks from the international environment would represent a less favourable scenario of macroeconomic projections for Serbia, as it would result in higher inflation and current account deficit and lower economic growth than in the baseline scenario. Still, it should be borne in mind that we also adjusted the baseline projections on this account, recognising that these risks have already materialised in one part, so the adverse risks currently seem less pronounced than assumed in August.

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	Q1 2022	Q2 2022	Q3 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	6.0	4.7	4.5	4.7
FX reserves/short-term debt	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	259.7	232.1	251.3	
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	26.1	26.1	28.2
Debt repayment/GDP	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	9.4	12.0	
Debt repayment/exports of goods and services	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	17.1	14.9	19.3	
EXTERNAL SOLVENCY INDICATORS (in %)																				
External debt/GDP	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	67.5	67.7	
Short-term debt/GDP	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	11.9	11.2	10.4	
External debt/exports of goods and services	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	127.7	121.1	116.2	
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	131.3	136.7	147.8
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	164.4	167.3	172.7
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	115.7	139.4	139.1	131.2
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	13,055	14,837	15,676
External debt	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	36,986	38,287	
External debt servicing	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	1,223	1,784	
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	14,296	14,776	16,502
Short-term debt[2]	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	1,762	2,029	
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	-2,296	-1,351	-1,266	-207

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, Q1, Q2 and Q3 2022 are NBS estimate.

[2] At original maturity.

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. Data for Q1, Q2 and Q3 2022 are NBS estimate.
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	Q1 2022	Q2 2022	Q3 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	4.3	3.9	1.1
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	9.1	11.9	14.0
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	14,296	14,776	16,502
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	28,583	8,200	9,240	9,711
- 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	28.3	31.5	35.1	30.0
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	33,109	9,995	11,405	10,855
- 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	25.6	48.0	39.9	24.7
Current account balance3)																				
(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	-2,296	-1,351	-1,266	-207
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	-4.3	-10.3	-8.5	-1.3
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	10.6	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	612.7	627.9	632.1
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	-4.7	2.1	2.5
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	-4.4	3.0	3.5
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	50.9	51.9	53.7
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	104.94	110.35	116.51
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	105.50	112.26	119.55
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	117.62	117.56	117.36
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	117.75	117.41	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	13,055	14,837	15,676

1) At constant prices of previous year. Data for Q1 and Q2 2022 is SORS preliminary estimate. Data for Q3 2022 is SORS flash 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 2005 and 2006 are disseminated using the special trade system.

4) Includes below-the-line items (payment of called guarantees, bank recapitalisations and debt takeover) in line with IMF methodology, as of 2008 on RS budget level and as of 2005 on consolidated level.

5) According to ESA 2010. Data for Q1, Q2 and Q3 2022 are NBS estimate.

6) Data are revised according to the new methodology of Labour Force Survey from 2021.

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 Q3 2022 is the average of two months.

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

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 official data sources.
3. Source for the data on unemployment: Labour Force Survey, Statistical Office.
4. Source for public debt: MoF.

Index of charts and tables

Charts

Table

Charts in text boxes

Table in text box

Executive Board meetings and changes in the key policy rate

Date	Key policy rate (p.a, in %)	Change (in basis points)
14 January	1.00	0
11 February	1.00	0
11 March	1.00	0
13 April	1.00	0
13 May	1.00	0
10 June	1.00	0
8 July	1.00	0
12 August	1.00	0
9 September	1.00	0
7 October	1.00	0
9 November	1.00	0
9 December	1.00	0

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		

Press releases from NBS Executive Board meetings

Press release from Executive Board meeting held on 8 September 2022

At At its meeting today, the NBS Executive Board voted to raise the key policy rate by 50 bp to 3.5%. The rates on deposit and credit facilities were raised by the same amount – to 2.5% and 4.5%, respectively.

The Executive Board continued to tighten monetary conditions, adequately responding to stepped-up inflationary pressures, without prejudice to further economic growth.

As assessed by the Board, in an environment of continued cost-push pressures and soaring imported inflation, it is necessary to continue to tighten monetary conditions at home. By making such decision, the NBS will contribute to inflation hitting a downward trajectory and returning within the target tolerance band until the end of the projection horizon. This also helps contain the second-round effects of rising food and energy prices on other prices through inflation expectations. Since October last year, the NBS has been gradually, but continuously tightening monetary conditions in the domestic market. In addition to raising the main policy rates and tightening the conditions of dinar liquidity, the NBS contributes to medium-term price stability also by maintaining the relative stability of the dinar exchange rate against the euro, by containing the spillover effect of rising imported prices on domestic prices.

In making the decision, the Executive Board had in mind that geopolitical events and the escalation of the Ukraine conflict led to global energy and primary commodity prices moving at their highest levels in H1 2022, pushing global inflation further up. This is why over the past months many central banks, including the most influential ones – the Fed and the ECB, were tightening their monetary policies at a faster than expected pace. Over the past weeks, the leading central banks have been sending clear signals concerning a decisive fight against inflation and are announcing further tightening of their monetary policies. The above factors may cloud the global growth outlook and trigger higher volatility in the international financial market and the shift of global capital flows from emerging to advanced economies. Though the global prices of oil and other primary commodities have been falling over the past two months due to elevated recessionary pressures globally, they are still at significantly higher levels than one year ago, while the prices of natural gas and electricity in the European market even touched new record highs in August.

A considerable upswing in global energy prices and relatively high imported inflation, along with effects of drought at home and in major part of Europe, driving food prices further up, led to a continued rise of Serbian inflation. Y-o-y inflation in July stood at 12.8%, as around 70% of contributions again stemmed from food and energy prices. The rise in imported inflation reflected also on an increase in core inflation (headline inflation excluding prices of food, energy, alcohol and cigarettes), which measured 7.5% y-o-y in July. It is important to note that core inflation remains much lower than headline inflation, as well as than core inflation experienced by regional peers running the same monetary policy regime. The lower core inflation continues to be underpinned by the preserved relative stability of the exchange rate in extremely uncertain global conditions and the anchored medium-term inflation expectations of the financial sector, moving within the bounds of the target.

According to the August projection of the NBS Executive Board, y-o-y inflation is likely to peak during the current quarter, only to turn downward thereafter. A soothing effect on inflationary pressures will come from the past monetary policy easing, the expected weakening of the effects of global factors which fuelled energy and food price growth in the past period, as well as the lower external demand amid the unfavourable global growth outlook. In the short run, inflationary pressures will also be calmed by the adopted government measures capping the energy and food price growth in the domestic market.

Despite the contraction in external demand amid the tightening of geopolitical tensions, the first half of the year saw the maintenance of a relatively high GDP growth rate, at 4.1% y-o-y. The main contributors were investments in tradeable sectors in the past years, which increased the production and exports of the manufacturing industry, as well as triggered further growth in employment and wages, coupled with a drop in unemployment, which reflected in higher personal consumption and increased activity in services on that account. In conditions of strengthening recession pressures in the euro area, we expect Serbia’s economic growth to slow down in the remainder of this and beginning of the next year, so that under the baseline scenario it should range between 3.5 and 4.5% in 2022 and 2023, though facing risks more heightened than usual and tilted to the downside.

Depending on the global geopolitical situation and movement in key monetary and macroeconomic factors from the domestic and international environment in the period ahead, the NBS will assess if there is a need for further monetary tightening. The maintenance of price and financial stability remains the monetary policy priority in the medium term, with support to future economic growth.

The next rate setting meeting will be held on 6 October.

Press release from Executive Board meeting held on 6 October 2022

At its meeting today, the NBS Executive Board voted to raise the key policy rate by 50 bp, to 4%. The rates on deposit and credit facilities were also raised by 50 bp, to 3% and 5%, respectively.

Amid continued, primarily global, cost-push pressures and rising imported inflation, the Executive Board voted to further raise the key policy rate and continue to tighten monetary conditions. By making such decision, in an environment of the prevailing inflationary impact of supply-side factors on which monetary policy measures have little or no influence at all, the NBS aims to contain the inflationary effect of demand-side factors and the second-round effects of rising food and energy prices on other prices through inflation expectations. The NBS strives to ensure that inflation hits a downward trajectory and returns within the target tolerance band until the end of the projection horizon. The Executive Board highlighted that the NBS has been incrementally but continuously tightening monetary conditions in the domestic market since October last year, while also focusing on economic growth. Today's increase in the key policy rate is the seventh in a row. Since April this year, the rate has been raised by 300 bp. In addition to raising the main interest rates and tightening the conditions of dinar liquidity, the NBS significantly contributes to price stability in the medium run by maintaining the relative stability of the dinar exchange rate against the euro, by limiting the spillover of elevated import prices on domestic prices.

The Board expects inflation to move largely in line with the latest, August NBS projection, according to which y-o-y inflation will peak most probably in September and decline below its current figure by the year end. It is expected to continue down in the course of next year, and return within the target band by the end of the projection horizon. Inflationary pressures will subside owing to past monetary tightening, the expected waning of the effects of global factors driving up the energy and food prices in the past period, and lower external demand amid a gloomier global growth outlook. In the near term, inflationary pressures will calm also on account of the government economic measures capping the rise in food and energy prices in the domestic market.

In an environment of global slowdown and mounting recessionary pressures in the euro area, our most important economic partner, we anticipate that domestic economic activity will slow in the remainder of this and early next year. In H1 2022 the GDP growth rate was relatively high, at 4.1% y-o-y. At the year-level, the Executive Board projects it will move within a 3.5–4.5% range, though there are downside risks stemming from potentially weaker than expected growth in the euro area and our other important trade partners, including a less favourable agricultural season at home. However, as assessed by the Executive Board, stronger export supply, supported by investment in tradable sectors in earlier years, will offset, to an extent, the effect of dented external demand on manufacturing exports, as confirmed by the continued, two-digit y-o-y growth in goods exports in July and August.

When making the decision, the Executive Board was aware that geopolitical developments and escalation of the conflict in Ukraine drove global energy and primary commodity prices to their maximum levels in H1 this year, thus leading to further growth in global inflation. Against such backdrop, over the past months a number of central banks tightened their monetary policies more dynamically than initially expected, revising up their inflation projections, as well as expectations as to the maximum level inflation would reach and when it should reach it. In September the European Central Bank opted for the highest increase in its main refinancing rate ever (75 bp), and a similar hike is expected in October, too. This is also indicated by the fact that euro area inflation continued up to its new historic maximum (two-digit level in September). The Fed also raised its federal funds rate to the same extent in September. Monetary policy tightening is expected to continue going forward, given the expectations that inflation in the euro area and the USA is not likely to return within the target tolerance band before 2024. Coupled with unfavourable prospects of global economic growth, a further tightening in the Fed's and ECB's monetary policies may result in increased volatility in the international financial market and the continuation of the already present rerouting of global capital flows from developing to more advanced economies. Elevated recession pressures globally drove the global prices of oil and other primary commodities down over the previous months; however, these prices are still volatile and at a significantly higher level than a year ago. Uncertainty is particularly high in relation to the availability of natural gas in Europe and its price during winter due to the additional exacerbation of geopolitical tensions.

Inflation in Serbia continues to rise, fuelled by the significant hike in global energy prices and a relatively high imported inflation, coupled with the effects of drought in the local market and most of Europe which are driving food prices further up. Y-o-y inflation measured 13.2% in August, around 70% of the increase still being attributable to food and energy prices. Higher imported inflation also reflected on higher core inflation (headline inflation excluding the prices of food, energy, alcohol and cigarettes) that reached 7.9% y-o-y in August. It is important to note that core inflation remains much lower than headline inflation, as well as than core inflation experienced by regional peers running the same monetary policy regime. The lower core inflation continues to be underpinned by the preserved relative stability of the exchange rate in extremely uncertain global conditions and the anchored medium-term inflation expectations of the financial sector, moving within the bounds of the target.

Depending on the global geopolitical situation and movement in key monetary and macroeconomic factors from the domestic and international environment in the period ahead, the NBS will assess if there is a need for further monetary tightening. The maintenance of price and financial stability remains the monetary policy priority in the medium term, with support to further economic growth.

The next rate-setting meeting will be held on 10 November.

Press release from Executive Board meeting held on 10 November 2022

At its meeting today, the NBS Executive Board voted to raise the key policy rate by 50 bp, to 4.5%. It lifted the deposit and lending facility rates by the same amount, to 3.5% and 5.5%, respectively.

The continued rise in cost-push pressures and inflation, reflecting primarily import price growth, influenced the Executive Board's decision to further raise the key policy rate and thus tighten domestic monetary conditions. In making such decision, the NBS will contribute to limiting the second-round effects of rising prices through inflation expectations and will ensure that inflation strikes a downward path and returns with the bounds of the target tolerance band until the end of the projection horizon. Today's rate hike is the eighth in a row – the rate has been increased by total 350 bp as of April this year. The spillover of the effects of monetary tightening on interest rates in the markets of money, loans and savings indicates the efficiency of the transmission mechanism through the interest rate channel. By maintaining the relative stability of the dinar exchange rate against the euro, the NBS also considerably contributes to containing the effects of the spillover of rising import prices on prices at home, and to macroeconomic stability amid heightened global uncertainty.

The decision was also guided by the fact that global inflationary pressures are stronger and more durable than initially expected. Inflation in the euro area, our key trade partner, is the highest since the block's inception, and its return within the target band is not expected before late 2024. High inflation is largely the consequence of soaring energy and food prices, while inflationary pressures in some countries are also generated by domestic demand and labour market factors. In such an environment, over the past months many central banks have been tightening their monetary policies at a more robust than expected pace, revising up their inflation projections and expectations concerning the level and timing of peak inflation. In October the ECB raised significantly its key rate (by 75 bp to 2.00%). In early November the Fed responded to the same degree, raising its fed funds rates to the range of 3.75-4.00%. Along with a clouded global growth outlook, further monetary tightening by leading central banks may fuel volatility in the international financial market and lead to continued rechannelling of global capital flows from emerging to advanced economies. Still, expectations prevail that global inflationary pressures will gradually subside, on account of the effects of monetary tightening by central banks, a further decline in global primary commodity and energy prices, notably of oil, and the ongoing easing of global supply bottlenecks.

Opting for a gradual and calibrated tightening of monetary conditions in the domestic market, the Executive Board took into account that inflation in Serbia is still largely determined by global cost-push pressures, while core inflation (8.6% y-o-y in September), also rising in the past months on the back of higher imported inflation, still trends considerably lower than headline inflation (14% y-o-y in September). A supportive factor is the preserved relative stability of the exchange rate in these extremely uncertain international circumstances. According to the November medium-term projection, headline inflation will remain elevated by the end of this and beginning of the next year, only to strike a downward path thereafter, falling sharply in H2 2023 and returning within the bounds of the target by the end of the projection horizon. Past monetary tightening, the expected weakening of the effects of global factors which drove energy and food price increases in the past period, as well as the lower external demand in conditions of less favourable global growth outlook will work to calm down inflationary pressures.

After relatively high growth in H1 2022, of around 4.1% y-o-y, economic activity slowed down in Q3 – according to the preliminary SORS estimate, y-o-y growth of Serbian GDP measured 1.1%. Economic slowdown was sharper than expected, mostly reflecting this year's drought and an agricultural season considerably underperforming the assumptions, the reduced external demand and a further rise in production costs, translating primarily into lower construction and manufacturing output. Also, due to the low water levels, the energy sector contracted further. The Executive Board expects the domestic economic activity to continue at a slow pace in the remainder of 2022 and early 2023, but to gain momentum thereafter, with the waning of effects of factors which impacted lower external demand and owing to the planned implementation of investment projects, primarily in infrastructure.

Depending on the global geopolitical situation and movement of key monetary and macroeconomic factors in the domestic and international environment in the coming period, the NBS will assess if there is a need to further tighten monetary conditions and to what degree. The ensuring of price and financial stability in the medium term, along with supporting further economic growth, will remain the priority of monetary policy going forward.

At today's meeting the Executive Board adopted the November Inflation Report with new macroeconomic projections, the details of which will be presented to the public at the press conference on 15 November.

The next rate-setting meeting of the Executive Board will be held on 8 December.

CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

336.71(497.11)

INFLATION Report / National Bank of Serbia. - 2006- . - Belgrade (Kralja Petra 12) : National Bank of Serbia, 2006- (Beograd : Zavod za izradu novčanica i kovanog novca "Topčider") . - 30 cm

Tromesečno
ISSN 1820-9394 = Inflation Report (National Bank of Serbia)
COBISS.SR-ID 155775244