INFLATION REPORT

2022
MARCH

'... wise is the man who can put purpose to his desires.'

Miklós Zrínyi: The Life of Matthias Corvinus

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Pursuant to Act CXXXIX of 2013 on the Magyar Nemzeti Bank, the primary objective of Hungary's central bank is to achieve and maintain price stability. Low inflation ensures higher long-term economic growth and a more predictable economic environment, and moderates the cyclical fluctuations that impact both households and companies.

In the inflation targeting system in use since August 2005, the Bank has sought to attain price stability by ensuring an inflation rate near the 3 percent medium-term target. The Monetary Council, the supreme decision-making body of the Magyar Nemzeti Bank, performs a comprehensive review of expected developments in inflation every three months, in order to establish the monetary conditions consistent with achieving the inflation target. The Council's decision is the result of careful consideration of a wide range of factors, including an assessment of prospective economic developments, the inflation outlook, financial and capital market trends and risks to stability.

In order to provide the public with a clear insight into how monetary policy works and to enhance transparency, the Bank publishes the information available at the time of making its monetary policy decisions. The Report presents the inflation forecasts prepared by the Directorate Economic Forecast and Analysis, the Directorate Monetary Policy and Financial Market Analysis, the Directorate for Fiscal and Competitiveness Analysis and the Directorate Financial System Analysis, as well as the macroeconomic developments underlying these forecasts. The forecast is based on the assumption of endogenous monetary policy. In respect of economic variables exogenous to monetary policy, the forecasting rules used in previous issues of the Report are applied.

The analyses in this Report were prepared under the direction of Barnabás Virág, Executive Director for Monetary Policy and Economic Analysis. The Report was prepared by staff at the MNB's Directorate Economic Forecast and Analysis, Directorate Monetary Policy and Financial Market Analysis, Directorate for Fiscal and Competitiveness Analysis and Directorate Financial System Analysis. The Report was approved for publication by Barnabás Virág, Deputy Governor.

The Report incorporates valuable input from other areas of the MNB and the Monetary Council's comments.

The projections are based on information available for the period ending 17 March 2022.

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The Monetary Council's key findings related to the Inflation report

The primary objective of the Magyar Nemzeti Bank (MNB) is to achieve and maintain price stability. Without prejudice to its primary objective, the Magyar Nemzeti Bank preserves financial stability and supports the Government's economic policy, as well as its policy on environmental sustainability.

The Russia-Ukraine war that broke out at the end of February fundamentally changed the global economic outlook. Due to its geographical proximity and a larger share of trade with the two parties involved, the expected effects may be stronger in Europe, especially in the Central and Eastern European region. Inflation rose further in several countries, reaching decade highs. The war causes further inflation risks through rises in commodity and energy prices, which is aggravated by increasing disruptions in supply.

In the fourth quarter of 2021, the annual economic growth rate slowed in China, while it picked up in the US and in the euro area. GDP rose by 4.0 percent in China and by 5.6 percent in the United States. In the fourth quarter of 2021, the euro area and the EU saw a year-on-year economic growth of 4.6 and 4.8 percent, respectively. Euro area GDP reached its pre-pandemic level. Of the countries in the region, economic performance in Poland and Romania outstripped the level seen before the coronavirus crisis, while the output in Slovakia and the Czech Republic still falls short of it. However, the outbreak of the Russia-Ukraine war at the end of February deteriorates the outlook for growth through several channels.

In parallel with the economic recovery, inflation has risen to decade highs in many countries in recent months. The increase in inflation is primarily attributable to steady rises in commodity, crop and energy prices, while supply disruptions in an increasing number of markets also contributed to it. As a result of persistently high inflation, the consumer price index has been above the central bank target in several countries for a longer period. In the United States and in the euro area, inflation in February rose to 7.5 and 5.8 percent, respectively. In the CEE region, consumer price index exceeds the upper bound of the central bank tolerance band multiple times in the Czech Republic, Poland and Romania. As a result of the Russia-Ukraine war, currencies in the region depreciated, further increasing inflation risks.

The world's leading central banks adopted a tighter monetary policy stance even amid increasing risks to economic growth and inflation. The majority of central banks in the region continued to tighten monetary conditions.

At their March meeting, Federal Reserve decision makers raised the target band of the policy rate by 25 basis points to 0.25-0.50 percent. Decision makers noted that they may begin to reduce the stock of government securities and mortgage-backed securities at their next meetings. Based on their forward guidance, a steady increase in the interest rate is necessary to achieve the central bank's objectives. Consistent with its earlier communication, the European Central Bank will discontinue its Pandemic Emergency Purchase Programme (PEPP) from March 2022. In addition, the Governing Council decided to withdraw its asset purchase programme (APP) in March, at a faster pace than earlier planned.

In the CEE region, the Czech central bank raised its policy rate by 75 basis points to 4.50 percent in February. In the first three months of the year, the Polish central bank raised the interest rate on its main policy instrument by a total of 175 basis points to 3.50 percent. The Romanian central bank raised its base rate by 25 basis points in January, and by 50 basis points in February, to 2.50 percent. The MNB has increased the base rate by 200 basis points, and the one-week deposit rate by 185 basis points in the first quarter of 2022.

Investor sentiment in developed markets has deteriorated significantly over the past quarter on account of the Russia-Ukraine war. As a result of the invasion commodity prices rose, which, looking ahead, may raise global inflation significantly. Meanwhile, volatility in emerging bond and foreign exchange markets also increased considerably.

At the beginning of the quarter, risk appetite was relatively stable, which was followed by a drastic deterioration in global financial market sentiment due to the Russia-Ukraine war. Markedly high commodity and energy prices caused inflation concerns to increase further. US and German government bond yields rose at the beginning of the year in line with tighter monetary policy expectations, but as safe-haven assets, they underwent a correction in the second half of the period as risk appetite deteriorated. The US dollar and the Swiss franc, regarded as safe haven currencies, appreciated significantly against both developed and emerging market currencies, in parallel with capital withdrawals from emerging markets. Developed market stock exchange indices significantly declined over the past quarter.

Rises in energy and commodity prices are expected to raise domestic inflation on the expenditure side again, the degree of which will largely depend on the evolution of the war.

At the beginning of the year, companies repriced their products to a significantly higher degree than the average of previous years due to increases in energy and commodity prices last year, which led to a rise in domestic inflation. After the manifestation of first-round effects, inflation was expected to decline in the next months; however, the Russia-Ukraine war generated an additional major cost shock. The short-term path of inflation will depend on the duration of the war, the extent and persistence of sanctions, as well as the governments' responses. Rises in energy and commodity prices are expected to raise inflation further on the expenditure side. As a result, inflation will begin to decline later, in the second half of the year. Provided that the market shock caused by the war subsides, inflation may decline due to the base effect and the expected commodity price correction. Annual average inflation is expected to be between 7.5 and 9.8 percent. In our projection, we assumed the duration and the subsequent phasing out of the fuel price cap and the food price freeze as announced by the Government.

Over the medium term, after the wear-off of the repeated price shock, anchoring inflation expectations at a level consistent with the inflation target will play a crucial role in achieving price stability. According to our expectations, with the fading of the first-round effects of war tensions, the decrease in external inflationary effects as well as a result of the central bank's proactive measures, inflation is expected to return to the central bank tolerance band in the second half of 2023 before reaching the central bank target of 3 percent in the first half of 2024. The consumer price index is expected to be 3.3-5.0 percent in 2023 before meeting the inflation target from 2024.

The Hungarian economy continues to have a strong ability to grow; however, a high degree of uncertainty surrounds the short-term economic outlook. Rising commodity and energy prices and the increasing disruptions in supply chains also slow economic growth.

Following a record high economic growth in 2021, the economy also grew dynamically at the beginning of the year. In the coming quarters, economic activity will be strongly influenced by the war, the policy of sanctions implemented and the governments' responses to this extraordinary situation. The repercussions of the war have their strongest restraining effect on economic growth directly through trade channels and disruptions in international production chains. In addition, rising commodity prices and corporate costs, as well as the generally high level of uncertainty also restrain growth.

The duality that characterises the structure of growth will persist in the coming period. As a result of external factors, exports are expected to slow, having a smaller positive impact on GDP in 2022 because of the fragmentation of supply chains. However, in parallel with the recovery of external markets and production chains, exports may increase significantly again from the end of 2022, which will also be supported by the utilisation of new export capacities built in recent years. Domestic demand is strong, household consumption will be bolstered by an increase in wages and by the government measures aimed at boosting household income. Investment growth is likely to slow, however the investment rate remains high. Depending on the course of the war and the policies of sanctions over time GDP is expected to grow by 2.5–4.5 percent in 2022, by 4.0–5.0 percent in 2023 and by 3.0–4.0 percent in 2024.

Credit growth in the private sector remained strong, reflecting buoyant demand, banks' ample lending capacities and subsidised credit facilities.

The entire financial intermediary system's outstanding lending to the corporate sector rose by HUF 460 billion in the fourth quarter of 2021, and consequently, the annual growth rate of the stock of loans reached 10.9 percent in December, having risen by 1.3 percentage points. Taking into account corporate bonds subscribed by banks, credit institutions' loans and bonds outstanding vis-à-vis the non-financial corporate sector increased by 18.4 percent at the end of the fourth quarter, year-on-year. Outstanding lending to the SME sector increased by 16.8 percent year-on-year in the same period. Throughout the quarter, an increasing share (nearly four fifths) of the newly disbursed corporate loans was on a market basis. The Russian and Ukrainian exposures of the Hungarian banking sector are of manageable size. Therefore, after the economic impacts of the Russia-Ukraine war, which are difficult to project, lending capacities are expected to remain ample and will be able to support lending. Due to the impacts of the Russia-Ukraine war on the real economy, the annual growth rate of outstanding lending to non-financial corporations may slow down overall in the second half of the year before returning to around 8 percent in 2024.

In the fourth quarter of 2021, outstanding lending of the entire financial intermediary system to households rose by HUF 193 billion, leaving the annual growth at 14.2 percent at the end of December. The number of housing loans granted by credit institutions in the fourth quarter of 2021 fell slightly short of the historic high seen in the previous quarter by 14 percent; however, it exceeded the value in the same period of 2019 by 37 percent. The new housing subsidies, available from 2021, contributed significantly to the persistently high volume of housing loan disbursements. From October, the Green Home Programme also supported housing loans, with a quarterly disbursement of roughly HUF 33 billion. As a result of the programme, the ratio of loans for the construction and purchase of new homes within new housing loans rose to 27 percent by the end of 2021. Based on the responses to the Lending Survey, banks reported a pick-up in demand for both housing loans and consumer loans in the quarter and they expected additional growth looking ahead. In the fourth quarter, new prenatal baby support loan contracts also greatly contributed to strong growth in the amount of HUF 123 billion. However, new disbursements of the product show a declining trend: in the first half of 2021 roughly 1,000 contracts per week were concluded, in the fourth quarter the average number of contracts was about 800. Due to the real economic risks of the Russia-Ukraine war, the rise in household lending growth may slow to around 7 percent by the second half of the year; however, it may return to the double-digit territory from the second half of 2023.

The current account deficit is likely to rise in 2022, reflecting the effects of the war.

In 2022 current account deficit will rise, reflecting the combined effects of poor external demand on the export side and high energy prices on the import side, which both point towards a deteriorating trade balance. Overall, the current account balance is expected to deteriorate this year. From 2023, developments in the external balance may start to improve rapidly, and the current account balance may turn positive as a result by the end of the forecast horizon.

According to the preliminary financial account data released by the MNB, the accrual-based government deficit was 7.3 percent of GDP in 2021, which is more favourable than previously expected, while the government debt-to-GDP ratio fell to 77.3 percent at the end of 2021 from the 2020 year-end level of 80.0 percent. The government's target included a lower deficit path in December 2021 than previously planned, which presumed a deficit of 4.9 percent for 2022, 3.5 percent for 2023 and 2.5 percent for 2024 as a percentage of GDP. On the other hand, the Russia-Ukraine war has increased budgetary risks through several channels. Following a gradual decline, the government debt-to-GDP ratio is expected to fall to 70 percent by the end of the forecast horizon, primarily due to economic growth.

In the deteriorating international sentiment, the forint depreciated along regional currencies.

Yields on government securities in the CEE region rose as a result of increasing global yields, interest rate expectations and spreads. The interbank yield curve also shifted upwards. From mid-February, the currencies in the region depreciated against the euro amid high volatility, which was followed by a partial correction in the last two weeks.

The outlook for inflation is mostly surrounded by upside risks.

The Monetary Council highlighted three alternative scenarios around the baseline projection in the March Inflation Report. The alternative scenario that presumes higher energy and commodity prices entails higher domestic inflation and lower growth paths than the baseline forecast. In the scenario with a faster easing of global supply chain disruptions, lower inflation and higher growth paths will materialise compared to the baseline scenario. The scenario that presents rise in the risk of second-round inflation effects is in line with higher inflation path compared to the baseline scenario. In addition to the highlighted scenarios, the Monetary Council discussed paths that assume persistently higher risk premium, higher growth in wages and consumption, and faster implementation of competitiveness reforms as alternative scenarios.

SUMMARY TABLE OF THE BASELINE SCENARIO

(Forecast based on endogenous monetary policy)

	2021	2022	2023	2024
	Actual		**Projection**	
Inflation (annual average)[1]				
Core inflation	3.9	7.9 - 9.4	3.7 - 5.1	2.7 - 3.3
Core inflation excluding indirect tax effects	3.9	7.9 - 9.4	3.7 - 5.1	2.7 - 3.3
Inflation	5.1	7.5 - 9.8	3.3 - 5.0	2.5 - 3.5
Economic growth				
Household consumption expenditure	4.3	3.9 - 5.7	3.0 - 3.7	2.8 - 2.9
Government final consumption expenditure[6]	4.4	1.8 - 2.0	1.1 - 1.2	1.0 - 1.2
Gross fixed capital formation	6.0	0.8 - 2.4	3.9 - 4.3	2.5 - 3.7
Domestic absorption	5.6	2.4 - 3.7	2.7 - 3.2	2.2 - 2.6
Exports	10.1	2.5 - 5.8	6.6 - 7.9	4.6 - 6.6
Imports	8.2	2.3 - 4.8	4.9 - 5.8	3.5 - 4.8
GDP	7.1	2.5 - 4.5	4.0 - 5.0	3.0 - 4.0
Labour productivity[5]	4.3	1.4 - 2.8	3.7 - 4.9	3.2 - 3.4
External balance[2]				
Current account balance	-3.0	(-5.3) - (-2.8)	(-1.5) - 0.1	(-1.0) - 0.8
Net lending	-1.0	(-3.1) - (-0.7)	0.4 - 1.9	0.3 - 2.0
Government balance				
ESA balance	-7.3	-4.9	-3.5	-2.5
Labour market				
Whole-economy gross average earnings[3]	8.7	10.8 - 12.2	7.0 - 7.1	7.4 - 7.5
Whole-economy employment	0.8	0.3 - 0.9	(-0.1) - 0.1	(-0.1) - 0.6
Private sector gross average earnings[3]	7.8	9.8 - 10.4	8.1 - 8.7	7.9 - 8.4
Private sector employment	0.6	0.6 - 1.0	0.1 - 0.4	0.3 - 0.8
Unemployment rate	4.1	3.7 - 4.1	3.4 - 4.0	3.3 - 3.4
Private sector nominal unit labour costs	2.1	4.1 - 5.3	3.4 - 3.6	3.9 - 5.0
Household real income[4]	2.8	2.7 - 5.1	2.8 - 3.7	2.9 - 2.9

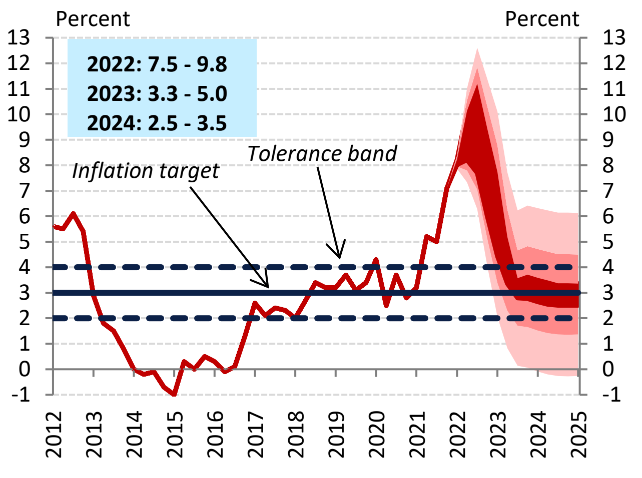
[1] Based on seasonally unadjusted data.
[2] GDP proportionate values, partly based on forecast.
[3] For full-time employees.
[4] MNB estimate.
[5] Whole economy, based on national accounts data.
[6] Includes government consumption and the transfers from government and non-profit institutions.

1. Inflation and real economy outlook

1.1 Inflation forecast

The year-on-year rate of increase in consumer prices rose to 8.3 percent in February. After the repricing at the beginning of the year, inflation was expected to decline in the coming period, but the war between Russia and Ukraine generated yet another major cost shock. The conflict, the sanctions imposed on Russia and the geopolitical tensions further push up commodity prices, and thereby inflation as well. The likely path of inflation depends on the degree and duration of the geopolitical and market tensions, as well as the government's countermeasures. As a result of external impacts, inflation will remain above 8 percent in the first half of the year and may rise to above 10 percent in an unfavourable scenario. Similarly to the development of inflation, the rate of core inflation will rise further in the months ahead due to the pass-through of cost factors into prices. Along with transport costs, the high commodity and energy prices rapidly appeared in the prices of food and industrial goods. If the intensity of the war decreases and the market shock eases, inflation may decline in the latter half of the year due to the expected commodity price correction. In addition, as the central bank's proactive steps take effect, core inflation excluding indirect taxes will embark on a downward path from the end of this year. According to our expectations, inflation may return to the tolerance band in 2023 H2. Due to the higher-than-usual uncertainty, annual average inflation in 2022 is expected to fall within a range of 7.5 to 9.8 percent. According to our forecast, the consumer price index in 2023 and 2024 will be 3.3–5.0 percent and 2.5–3.5 percent, respectively. Our forecast suggests that core inflation excluding indirect tax effects will amount to 7.9–9.4 percent this year, 3.7–5.1 percent in 2023 and 2.7–3.3 percent in 2024.

Chart 1-1: Fan chart of the inflation forecast

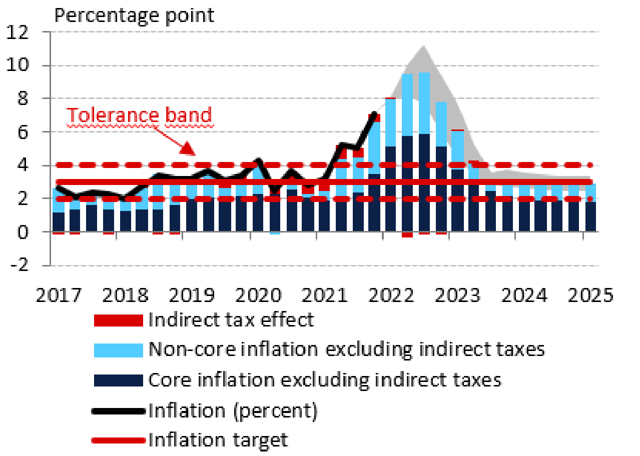


Note: Based on seasonally unadjusted data.
Source: HCSO, MNB

The year-on-year rate of increase in consumer prices rose to 8.3 percent in February. The armed conflict between Russia and Ukraine and the geopolitical tensions further push up commodity prices, and thus inflation as well. According to our forecast, inflation may return to the central bank's tolerance band in 2023 H2. The higher rate of repricing (two to three times as high as the levels seen in previous years) is a general phenomenon, which is attributable to the fact that the rise in global commodity and energy prices appears swiftly in the consumer prices of a wide range of products. After the repricing at the start of the year, inflation was expected to decline in the subsequent period, but the conflict between Russia and Ukraine generated yet another significant cost shock.

The likely path of inflation depends on the degree and duration of the geopolitical and market tensions. As a result of external impacts, inflation will remain above 8 percent in the first half of the year and may rise to above 10 percent in an unfavourable scenario. Price developments are also influenced by the duration and course of the price caps on fuels and certain foods. The prices of the products involved are crucial in terms of inflation expectations and also have a psychological impact. If no substantial correction takes place in the commodity market, after the phase-out of the measures a large rise is expected in the price of products with capped prices. In the medium term, anchoring inflation expectations at a level consistent with the inflation target will play a key role in achieving price stability after the recurrence of the renewed

Chart 1-2: Decomposition of our inflation forecast



Note: The decomposition is based on the midpoint for the forecast range.
Source: HCSO, MNB

price shock. If the intensity of the war decreases and the market shock eases, inflation will decline as a result of the base effect and the expected commodity price correction. According to our expectations, inflation may return to the tolerance band in the latter half of 2023. In 2022, the consumer price index is surrounded by even greater uncertainty than usual, and according to our expectations the annual average may be between 7.5 and 9.8 percent. The consumer price index in 2023 and 2024 will be 3.3-5.0 percent and 2.5–3.5 percent, respectively, in the baseline scenario of our forecast (Chart 1-1).

Similarly to inflation, the rate of core inflation will continue to rise in the coming months due to the rapid pass-through of the indirect effects of cost factors. These effects contribute to higher core inflation via food and industrial goods prices. The rise in energy prices (gas and electricity) and in the world market price of oil will primarily appear in the consumer prices of food and industrial goods, via enterprises' increasing costs, which may cause further increases in core inflation. According to our forecast, the high price dynamics seen in processed food and industrial goods may persist in the coming period, thereby contributing to a rise in underlying inflation developments. Inflation of industrial goods may be around 8–9 percent in the months ahead, which is well above the normal periodic historical average for these goods, which is usually around 1.0 percent. As the central bank's proactive steps take effect, core inflation excluding indirect taxes will embark on a downward path from the end of this year. According to our forecast, core inflation excluding indirect tax effects may be 7.9–9.4 percent this year, 3.7–5.1 percent in 2023 and 2.7–3.3 percent in 2024.

Indirect tax changes point to decreasing inflation in the short run and will be fully eliminated from 2023 H2 (Chart 1-2). With regard to this year, the decline in tax content of inflation stemmed partly from the fact that for the period from 28 February to 15 May 2022 the Government reduced the excise tax on petrol and diesel fuel by HUF 5 and HUF 4.65, respectively, and starting from 11 March 2022 the tax was lowered by an additional HUF 20 for these fuels. Moreover, the fuels are exempted from the membership contribution payable to the Hungarian Hydrocarbon Stockpiling Association (known as the "KKSZ fee") for March, April and May 2022, which results in a further decline of HUF 4.1 and HUF 3.9 per litre for petrol and diesel fuel, respectively. According to our estimation, the new measures may reduce inflation this year by 0.1 percentage point on average. The inflationary effect of the indirect tax changes may be 0.1 percentage point next year after the phase-out of the government measures and

Table 1-1: Details of the inflation forecast

		2022	2023	2024
Core inflation excluding indirect tax effects		7.9 - 9.4	3.7 - 5.1	2.7 - 3.3
Core inflation		7.9 - 9.4	3.7 - 5.1	2.7 - 3.3
Non-core inflation	Unprocessed food	11.5 - 18.5	4.5 - 9.2	2.3 - 5.7
	Fuel and market energy	13.5 - 26.1	1.6 - 10.3	1.8 - 5.5
	Regulated prices	1.6	2.0	2.0
	Alcohol and tobacco	5.9	3.1	3.1
	Total	6.8 - 10.5	2.7 - 5.1	2.4 - 3.6
Inflation		**7.5 - 9.8**	**7.5 - 9.8**	**3.3 - 5.0**

Note: Percent. Based on seasonally unadjusted data. The table is based on the midpoint of the forecast range.
Source: MNB

reinstatement of the tax rates, while in 2024 indirect taxes will have neutral effect on inflation.

In the case of non-core inflation items, prices of fuel and unprocessed food are expected to increase considerably next year. The significant rise in fuel prices is mitigated in the short run by the price cap of HUF 480 per litre, which was introduced for petrol and diesel prices and then subsequently extended until 15 May. In the short run, this measure mitigates the inflationary impacts of world oil prices, which rose considerably versus December. According to our expectations, upon the expiry of the price cap, fuel prices will return to the levels justified by futures prices and by the end of the forecast horizon inflation in this product group will fall to the range around the historical average. Unprocessed food may register double-digit inflation this year. The recent effects of higher global food prices, the sharp increases in wheat and maize prices due to the Russia-Ukraine conflict and rising energy and raw material prices have been reflected in the inflation of this product group (e.g. costs of artificial fertilizer production surged due to gas prices). Consequently, unprocessed food inflation rose to above 11 percent by February and it will exceed our expectation in the coming period, despite the fact that the government's price stop measures temporarily curb the rate of increase in food prices. The inflation of alcohol and tobacco products will gradually decline over the forecast horizon, in line with the disappearance of tax effects from previous periods and the more significant market price rises. Regulated energy prices will not change until the end of the forecast horizon, whereas the price dynamics of non-energy regulated prices are expected to be similar to our December forecast. Overall, after the cost effects have faded out, the price dynamics of non-core inflation items will be around 3 percent at the end of the forecast period (Table 1-1).

Box 1-1: Assumptions applied in our forecast

Hungary is a small, open economy, and as such our forecasts for the most important macroeconomic variables are fundamentally influenced by developments in external factors. The purpose of this brief presentation of the changes in external assumptions is to make our forecasts more transparent (Table 1-2).

Table 1-2: Main external assumptions of our forecast

Technical assumptions	2022		2023		2024		Change		
	Previous	Current	Previous	Current	Previous	Current	2022	2023	2024
EUR/USD	1.13	1.10	1.13	1.10	1.13	1.10	-2.4%	-2.9%	-2.9%
Oil (USD/barrel)	70.0	95.7 - 120.8	68.1	85.8 - 110.6	68.1	85.4 - 110.0	36.7 - 72.7%	26.0 - 62.5%	25.6 - 61.6%
Oil (EUR/barrel)	61.9	86.7 - 109.6	60.2	78.1 - 100.8	60.2	77.8 - 100.2	40.1 - 77.2%	29.8 - 67.4%	29.3 - 66.5%
Euro area inflation (%)	3.2	5.1 - 5.9 - 7.1	1.8	2.0 - 2.1 - 2.7	1.8	1.6 - 1.9 - 1.9	1.9 - 2.7 - 3.9 pp.	0.2 - 0.3 - 0.9 pp.	(-0.2) - 0.1 - 0.1 pp.
Euro area real GDP (%)	4.2	2.3 - 2.5 - 3.7	2.9	2.3 - 2.7 - 2.8	1.6	1.6 - 1.9 - 2.1	(-1.9) - (-1.7) - (-0.5) pp.	(-0.6) - (-0.2) - (-0.1) pp.	0.0 - 0.3 - 0.5 pp.
GDP growth of Hungary's main export partners* (%)	3.5	2.5 - 3.3	3.3	3.0 - 3.5	2.4	2.6 - 3.2	-1.0 - (-0.2) pp.	(-0.3) - 0.2 pp.	0.2 - 0.8 pp.

Note: Annual average in the case of oil prices. *Growth rate of Hungary's 21 most important export partners, weighted by share in exports.
Source: Bloomberg, Consensus Economics, MNB, ECB

In 2021 Q4, economic growth showed a mixed picture across the world. Economic growth decelerated in China, while it accelerated in the United States and in the euro area. Year-on-year GDP growth amounted to 4.0 percent in China, 5.6 percent in the United States, 4.6 percent in the euro area and 4.8 percent in the European Union. Of the EU Member States, more than two-thirds already exceeded their pre-crisis economic performance, while Germany – as Hungary's most important trading partner – still falls short of it. In 2021, both the euro area and the EU-27 economy registered growth of 5.3 percent, while economic growth in Germany was 2.9 percent. In addition to the impacts of the coronavirus pandemic, the armed conflict in Ukraine also undermines the international economic recovery.

Euro area inflation is higher compared to the December forecast. In 2022, the higher inflation is driven by the sharp rise in energy prices, the war in Ukraine, stronger wage growth, the persistence of supply disruptions and the anticipated minimum wage increase in Germany. According to the ECB's new inflation forecast, euro area inflation moves in a wide range due to uncertainty caused by the Ukrainian war, depending on the outcome of the war and on the sanctions imposed. Consumer price index may be 5.1–5.9–7.1 percent in 2022, 2.0–2.1–2.7 percent in 2023 and 1.6–1.9 percent in 2024. Euro area GDP growth in 2022 may be more restrained compared to the previous expectation.

In January, the average world market price of Brent crude oil was USD 85.5 per barrel, with the price rising gradually from the end of the month. From the end of February, after the outbreak of the war in Ukraine, the pace of increases in the world market price of Brent crude oil rose sharply. The price level reached a 10-year high, and price increase may reach 36–73 percent this year compared to the average of 2021. The rise in January was attributable to geopolitical tensions, news related to the coronavirus pandemic and the impact of the OPEC+ decision related to oil production. Oil price was further increased in early February by market worries concerning insufficient supply amid boosting demand. Following the outbreak of the Russian-Ukrainian war and the imposition of sanctions on Russia, world market price of oil increased further, as Russia is one of the world's leading oil producers. At its meeting held on 2 March, OPEC+ noted that the significant market volatility was caused by the geopolitical situation rather than by the fundamentals. A decision was reached at the meeting, according to which OPEC+ will increase daily production in April by 400,000 barrels. The world market price of Brent crude oil reached a 10-year high in early March. The world market price of Brent crude oil fell significantly in mid-March, dropping below USD 100 per barrel, driven by hopes about the Ukrainian-Russian negotiations, easing demand-side pressure due to lockdowns caused by the most recent coronavirus wave in China, and expectations concerning the Fed's interest rate decision.

As a result of developments on global markets, oil prices in euro, which determine changes in fuel prices in Hungary, are significantly higher compared to our December assumption. Our assumption for the EUR/USD cross rate is lower compared to the December projection.

Following a better-than-expected preliminary figure of 7.3 percent in 2021, the budget deficit may fall to 4.9 percent in 2022 and 2.5 percent by the end of the forecast horizon. According to the preliminary financial account data disclosed by the MNB, in 2021 the accrual-based budget deficit was 7.3 percent of GDP, which is better than previously expected, while the government debt ratio fell to 77.3 percent at the end of 2021 from 80 percent registered at the end of 2020.

In December 2021, the government's target contained a lower deficit path than planned previously, projecting a deficit of 4.9 percent for 2022, 3.5 percent for 2023 and 2.5 percent for 2024 as a percentage of GDP. However, the geopolitical and market tensions represent a risk, which could be addressed by using up the internal reserves of the budget for this purpose.

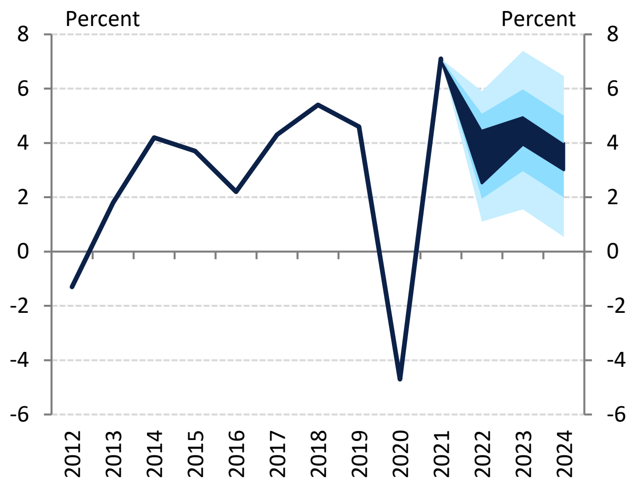
According to our expectations, in 2022, following approval of the Recovery and Resilience Plan (RRP) and the Partnership Agreement, the absorption of funds under the 2021–2027 programming period may commence. At the same time, the distribution across years of the amount of the absorption of funds related to the cohesion and recovery programmes remains highly uncertain.

1.2 Real economy forecast

Following the rapid recovery last year, the Hungarian economy grew extremely dynamically in early 2022 as well. The coming quarters will be determined by the course of the war and the consequent sanctions that have been introduced as well as the government responses to the extraordinary situation, and thus we expect economic growth to be more subdued compared to our December projection. According to our calculations, Hungary's GDP may expand by 2.5–4.5 percent this year, by 4.0–5.0 percent next year and by 3.0–4.0 percent in 2024. Household consumption continues to grow, supported this year by a double-digit increase in wages and government measures aimed at boosting household income. Despite the higher inflationary environment, on the whole real income will grow at a moderate rate in 2022. Due to the surge in energy and commodity prices resulting from the war between Russia and Ukraine, and the more moderate external demand, growth in investments may continue at a slower pace than previously expected. On the other hand, the investment ratio will stabilise at a high level of around 26–27 percent over the forecast horizon. Slower growth in investments is also attributable to the corporate loan dynamics falling short of our earlier projection as a result of uncertainties in the real economy and declining risk appetite. The short- and medium-term development of export performance is impaired by the conflict between Russia and Ukraine and the sanctions imposed on Russia, via direct and indirect external trade relations. As a result of the geopolitical developments, compared to our earlier assumptions, the existing difficulties in international production chains worsened, and commodity and energy prices also rose further. Recent events may hinder the recovery of international tourism in the region and may also undermine Hungary's performance in services exports. In parallel with the recovery of external markets and supply chains, from the end of 2022 export prospects may also improve significantly again, supported by new export capacities as well. On the other hand, exports are surrounded by significant risks.

Following the record high growth of 7.1 percent in 2021, the Hungarian economy continued to grow dynamically at the beginning of this year as well. The performance of the Hungarian economy exceeded its pre-pandemic level by 3.3 percent in 2021 Q4. The strong carry-over effect from last year has a positive effect on this year's economic growth, and – based on the high-frequency data – robust economic growth continued in the first two months of the year.

Chart 1-3: Fan chart of the GDP forecast



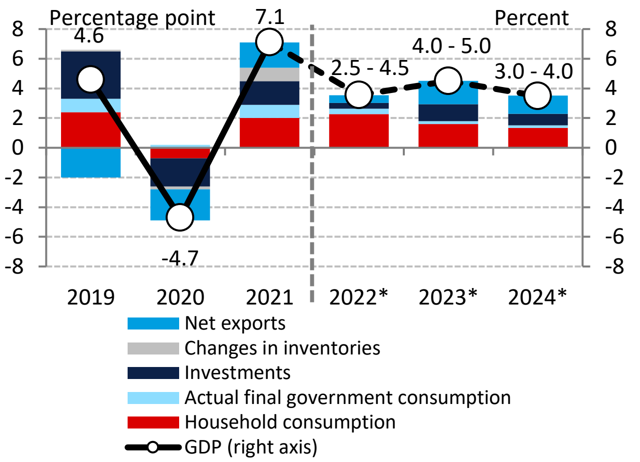
Note: Based on unadjusted data.
Source: HCSO, MNB

External impacts decelerate the expansion of GDP. Economic growth may amount to 2.5–4.5 percent this year and 4.0–5.0 percent next year (Chart 1-3 and 1-4). The conflict between Russia and Ukraine undermines the prospects for the coming quarters, via direct and indirect external trade channels. The war and the sanctions hinder growth from the supply side by exacerbating existing difficulties in international supply chains and boosting corporate costs. Downside risks to growth have strengthened compared to the December Inflation Report, and thus we revised down our forecast for this year's economic growth to 2.5–4.5 percent. Hungarian GDP may expand by 4.0–5.0 percent in 2023 and 3.0–4.0 percent in 2024.

However, the convergence of the Hungarian economy to the euro area will continue in the coming years. The Hungarian economy's growth surplus compared to the euro area may be 1.1–1.6 percentage points.

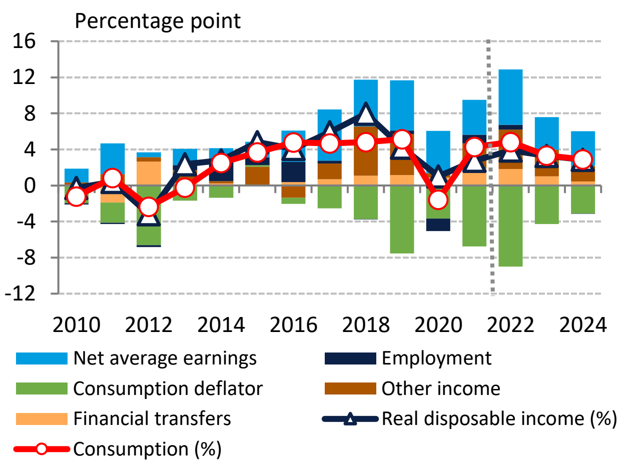
Growth in household consumption continues, supported by rising wages and government measures. In addition to

Chart 1-4: Expenditure-side decomposition and forecast of GDP



Note: *MNB forecast. The values represent the middle of the forecast range. Actual final government consumption includes government consumption and transfers from government and non-profit institutions.
Source: HCSO, MNB

Chart 1-5: Evolution of household disposable income



Note: Based on the mean of the forecast band.
Source: HCSO, MNB

the increase in the minimum wage, the tight labour market also helps to maintain brisk wage growth. Substantial growth in the net wage bill and households' disposable income ensures a rise in purchasing power, despite inflation exceeding the expectations (Chart 1-5).

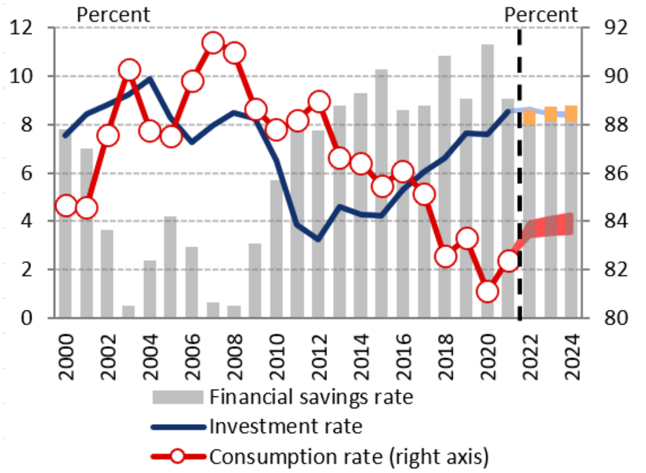
Growth in household income is supported by government disbursements in early 2022, the aggregate amount of which exceeds HUF 2,200 billion. Households may use a significant part of the one-off, non-recurring surplus income to augment savings or deleverage, and the demand-boosting effect of the measures may be moderate (see Box 3-3).

The household consumption rate may rise this year, precautionary savings will be integrated and the investment ratio will stabilise at a high level. The "absorb-or-save" decisions related to households' income may also be influenced by the psychological effect of the war, which generates significant uncertainty in consumption. Higher inflation raises households' consumption expenses, which is expected to be most strongly reflected in a decline in savings, since – with the exception of the bottom income decile – even households in the lower income decile have become net savers, due to the real wage increases in recent years. The consumption ratio will rise over the forecast horizon, and the investment ratio will stabilise at a high level, while the savings rate will decline (Chart 1-6).

Lending to households may fall substantially due to the real economic effect of the war and the rising interest rate environment. The growth rate of outstanding household borrowing may fall short of our previous expectations, as households' propensity to borrow may be reduced by the negative real economic impacts of the conflict between Russia and Ukraine, and the sanctions introduced to curb it, together with the increasing interest environment resulting from rising inflation (Chart 1-7). These effects may be partly offset by the fact that subsidised loan products may support growth in outstanding borrowing in the future as well. It should be noted that in our forecast we incorporate the impact of the subsidised credit schemes which are available pursuant to current legislation. Accordingly, a potential extension of the subsidies aimed at first-time homebuyers which are slated to end in 2022 may further boost the expected growth rate of outstanding household borrowing.

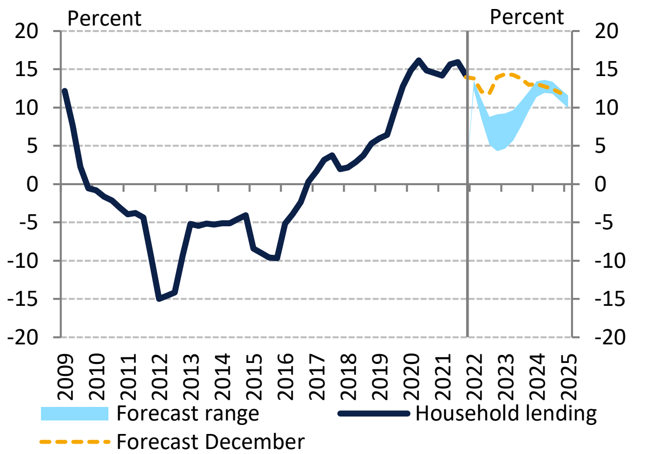
Due to the surging energy and commodity prices resulting from the conflict between Russia and Ukraine, and the more moderate external demand, growth in investments may continue at a slower pace than previously expected. The geopolitical tensions are driving further increases in commodity prices and transport costs, and boosting

Chart 1-6: Evolution of households' consumption, investment and financial savings rates as a percentage of disposable income



Note: The savings rate in 2021 illustrates the underlying processes, as a result of which the effect of the PIT refund has been eliminated.
Source: HCSO, MNB

Chart 1-7: Annual changes in lending to households



Note: Transaction-based, year-on-year data. Q3 2019 data adjusted for transactions of lombard loans.
Source: MNB

Table 1-3: Evolution of gross fixed capital formation and investment rate

	2022	2023	2024
Gross fixed capital formation	0.8 - 2.4	3.9 - 4.3	2.5 - 3.7
Government investments	4.9	-1.4	-7.6
Private investments	-0.3 - 1.7	5.4 - 5.9	5.2 - 6.8
Investment rate	26.8 - 27.2	26.5 - 26.7	26.6 - 26.7

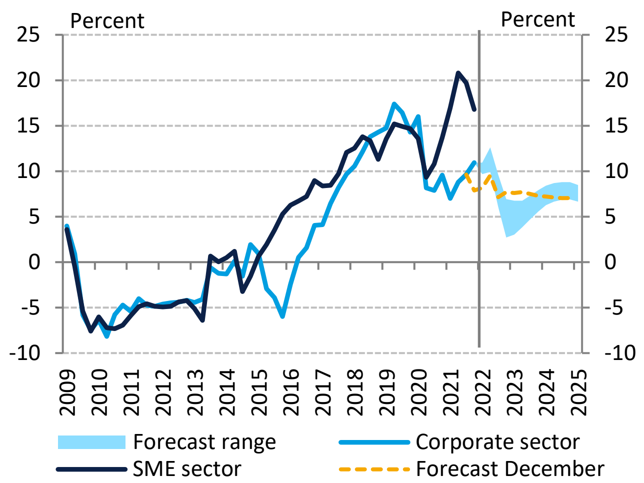
Note: The values represent the middle of the forecast range. Year on year growth for gross fixed capital formation and investment rate as proportion of GDP.
Source: MNB

enterprises' operating expenses through these factors, leading to the postponement or reduction of certain investments. At the same time, the investment ratio will stabilise at a high level of around 26–27 percent over the forecast horizon (Table 1-3).

Domestic banks have ample lending capacity, but due to the increased real economic uncertainty and waning risk appetite, we have lowered our corporate credit forecast. In light of the actual data for the fourth quarter, the annual growth rate of outstanding lending to non-financial corporations exceeded our expectations in 2021: the recovery of the real economy, the still-low real interest rate and banks' ample lending capacities helped to maintain strong corporate credit growth at the end of the year (Chart 1-8). In addition to other government credit and guarantee schemes, the pick-up in corporate finance and investments was also supported by the Bond Funding for Growth Scheme with a volume of HUF 1,550 billion. However, the vast majority of new corporate loan contracts were already concluded on a market basis. Due the rising energy and commodity prices resulting from the war between Russia and Ukraine, corporations' demand for working capital loans may actually increase in the short run, but overall, due to the uncertain environment resulting from the war and the sanctions, the annual growth rate of outstanding lending to non-financial corporations may decelerate in the second half of the year and only return to around 8 percent by 2024. Banks' Russian and Ukrainian exposures are manageable, and the potential loss from direct exposures is limited. Accordingly, banks' lending capacities are still capable of maintaining the financing of real economic actors (for more information on the situation of the banking sector, see Box 4.1).

In 2022, corporate investment activity may fall short of our expectations due to the surging energy and commodity prices and more moderate external demand. The cost-increasing impact of energy prices at the end of last year may have already had an impact on corporate profits, especially in industry and agriculture. Despite the higher energy costs, the MNB's February business sentiment survey – which did not yet reflect the impact of the escalation of the Russian-Ukrainian conflict – showed the highest level of investment plans since the survey began in December 2020 (Chart 1-9). Rising energy and commodity prices as a result of the war between Russia and Ukraine will further increase corporate operating costs, which – combined with the high level of uncertainty in the region – could lead to the postponement of certain investments and

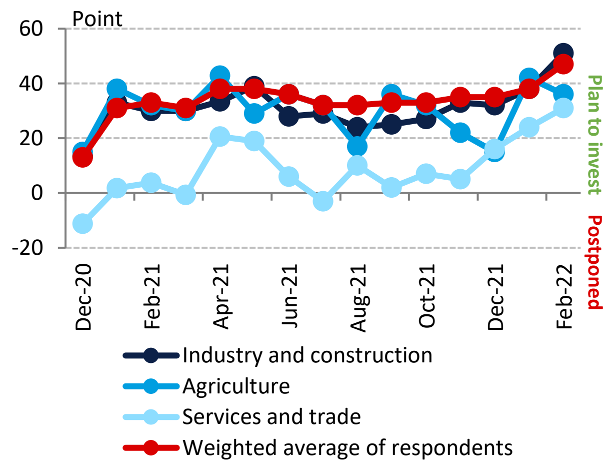
Chart 1-8: Annual changes in lending to non-financial corporations and SMEs



Note: Transaction-based, year-on-year data. The SME sector does not include the self-employed. The growth rate of the overall corporate sector is based on the total amount of outstanding credit to the entire financial intermediary system.

Source: MNB

Chart 1-9: Share of companies planning investments in the next three months



Note: The index is the difference between the shares of positive and negative answers.

Source: MNB

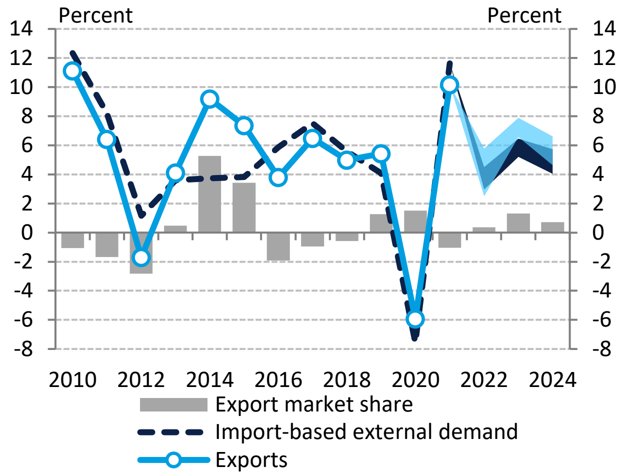
fewer new investments. Corporate investment activity may pick up again after the easing of the geopolitical tensions.

On average, the volume of public investments will rise in 2022, although we expect a decline from the second half of the year. According to available information, government investments contracted significantly at the end of last year, with the build-up of additional budgetary reserves also playing a role in this regard. We project an increase in 2022 compared to previous year. According to our forecast, public investments will decline from 2022 H2, primarily due to the drop in investments realised from own funds.

Despite higher inflation, households' disposable income will increase, but to a lesser degree than previously expected, which may reduce households' investments. This year, home-creation measures continue to support growth in households' investments. On the other hand, rising inflation decelerates the growth in real income, and thus households may also increase their investments, along with consumption, to a smaller degree than previously expected. Rising energy and commodity prices have a negative impact on construction as well, and thus the cost of home building and improvement may continue to rise. Capacity in the construction sector is tight, and production is hindered by labour shortages, which also tend to push up prices, possibly resulting in more moderate growth in household investments.

The short- and medium-term development of export performance is strongly impacted by the conflict between Russia and Ukraine. Accordingly, our forecast for Hungary's exports contains major uncertainties. On the one hand, geopolitical risks curb export performance via direct and indirect external trade relations with Russia and Ukraine. On the other hand, as a result of the geopolitical developments, compared to our earlier assumptions, the existing difficulties in international production chains have worsened, and commodity and energy prices have also continued to rise. The deteriorating terms of trade resulting from the adverse developments for Hungary and the interruptions in supply chains continue to put intense pressure on the goods balance. In light of the foregoing, Hungary's exports are surrounded by major uncertainties. The nearby conflict also has a direct impact on Hungary's exports, while the decline in trade with the countries involved reduces the import demand of the country's export partners, which may further exacerbate the impacts on Hungary. The events also hinder export performance by exacerbating existing difficulties in international production chains. The global semiconductor shortage has a significant

Chart 1-10: Changes in export market share



Note: Export market share based on the average of the forecast range.
Source: HCSO, MNB

impact on the automotive industry and the manufacture of electronic products, producing mostly for exports. In addition, the conflict between Russia and Ukraine has driven the already high commodity and energy prices even higher, causing a significant increase in corporate costs. Recent events may hinder the recovery of international tourism in the region and may also undermine Hungary's performance in terms of services exports.

Hungary's export market share in 2022 may also decline if the interruptions in supplier chains persist; however, from 2023 we once again anticipate growth (Chart 1-10). As a result of the temporary slowdown in exports, reflecting the effects of external factors, and stronger domestic demand, net exports will only have a marginally positive impact on GDP growth in 2022. In parallel with the recovery of external markets and supply chains, export prospects may improve significantly again from the end of 2022, supported by new export capacities as well. Following resolution of the conflict, the recovery of commodity and energy markets along with production chains will commence, with a concomitant favourable impact on economic activity.

Box 1-2: Channels of the macroeconomic impacts of the conflict between Russia and Ukraine

The current war between Russia and Ukraine has an immediate impact on the financial and commodity markets, in addition to which the role of the real economic channel is gradually increasing (Chart 1-11). The war, and the economic sanctions introduced in response to it, raise inflation across Europe and have a negative impact on economic growth. The degree of the impacts is also influenced by the length of the conflict, and the extent and duration of sanctions.

The exclusion of certain members of the Russian banking sector from the SWIFT international interbank communication network has significant financial and economic impacts. The sanctions were intended to make it more difficult to finance the Russian economy and to cut off access to international settlements, as 80 percent of the Russian banking sector's foreign exchange transactions and 50 percent of Russian trade settlements are conducted in US dollars. Russian banks' international activity, and thus their liquidity, has been strongly impacted, contributing substantially to the disruption of trade settlements. **If the EU's restrictive measures and sanctions imposed in the wake of the Russia-Ukraine crisis remain in place even after the immediate conflict has been resolved, it will have a longer-term impact on international commodity markets and global supply chains.**

The escalation of the conflict between Russia and Ukraine into a war was followed by immediate financial and commodity market effects, as Russia plays a significant role in the markets of commodities and fuels that are essential for the production of many industrial goods and microchips, which exacerbates the difficulties of supply chains. The world market price of Brent crude oil rose to exceed USD 100 / barrel, a level unprecedented since 2014. Russia is the world's second largest oil producer. It sells its crude oil mostly to European oil refineries, and thus further developments in the conflict carry material risk with regard to the world market oil price developments. The most recent, March futures quotes on the largest European natural gas exchange, the Dutch TTF, were significantly higher compared to the level of around EUR 70–80 per MWh, observed in the first half of December. Commodity markets also registered significant price increases. Quotes at the London Metal Exchange exceeded the high values last quoted in 2008.

Wheat and maize quotations rose on the grain exchanges. It should be noted that from a European and global perspective Russia and Ukraine are major players in the export markets for agricultural products, especially grains (see Box 3-1). Together, they account for 26 percent of the world's total exports of wheat, 25 percent of barley and 16 percent of maize.

As risk aversion increased in the market, stable value assets appreciated for investors. This is evidenced by the purchase of safe haven currencies and assets, and by the rise in gold prices, attributable to the first reactions of the market.

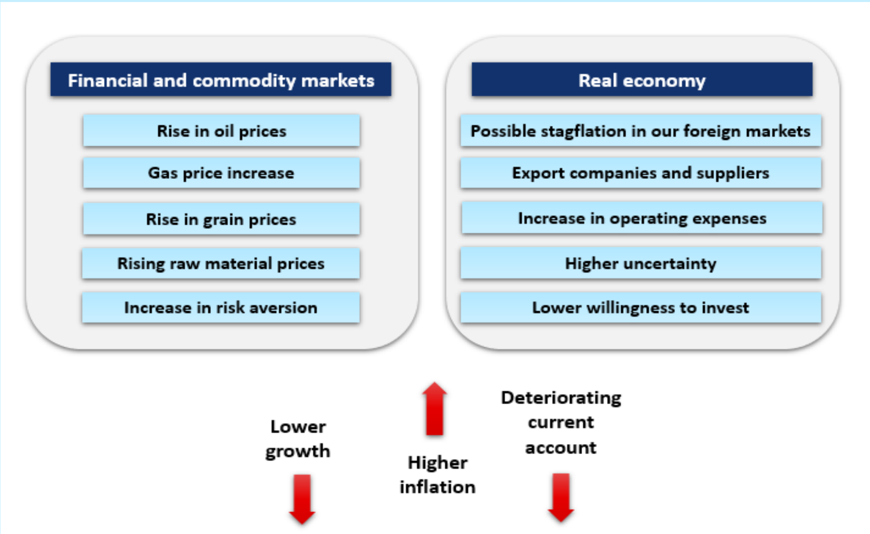
The war and the commercial sanctions exacerbate the difficulties in international supply chains. A total of 5.3 percent of the European Union's exports outside the EU is for the Russian and Ukrainian markets, accounting for 4.1 and 1.2 percent, respectively (see Box 3-2). 2.3 percent of Germany's exports are directed to these two countries, of which 1.9 percent is to Russia and 0.4 percent to Ukraine. Western Europe is a net energy importer, and thus its terms of trade are also significantly impacted by the surge in commodity market prices. As a result, the growth rate of Hungary's export markets is expected to slow down, which will also have an adverse effect on domestic economic developments.

Hungary's exports to Russia and Ukraine may fall sharply. Moreover, the conflict may also have indirect negative impact on the performance of the Hungarian economy through the sanctions and supplier relations. Roughly 1.7 percent and 1.5 percent of Hungary's exports are directed to the two affected countries (with regard to services, 2.8 percent in total). In 2020, the main articles of goods exports to Russia included chemical products and food (3.9 and 2.3 percent of the total exports of Hungary in the respective product segment, respectively); on the other hand – primarily through the German supplier chains – Hungary's vehicle exports may also be affected.

Europe is significantly exposed to natural gas and crude oil imports from Russia. Natural gas and crude oil imports from Russia play a major role in Europe's energy supply. In 2019, almost one-third (26.9 percent) of crude oil imports from outside the European Union and almost half (41.1 percent) of natural gas imports and 46.7 percent of solid fuels (mostly coal) came from Russia.

The rise in the operating expenses of domestic corporations and the higher uncertainty surrounding the region may result in the postponement of certain investments and in fewer new investments.

Chart 1-11: Macroeconomic impacts of the conflict between Russia and Ukraine

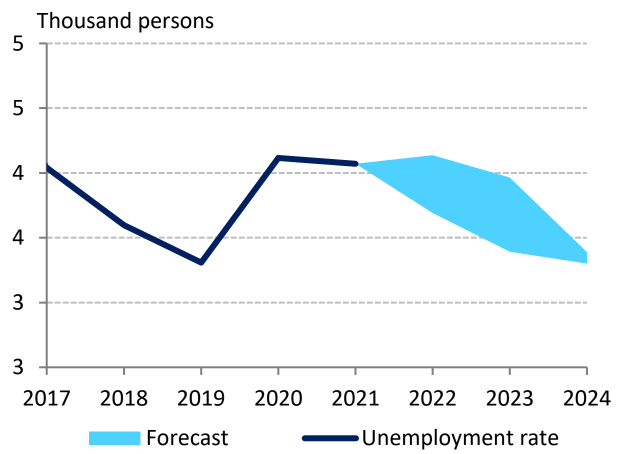


Source: MNB

1.3 Labour market forecast

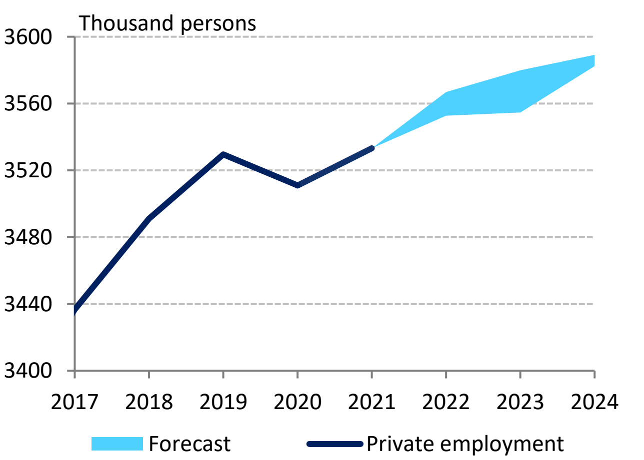
Labour market expansion may continue at a slower pace than expected. Rising commodity and energy market tensions due to the conflict between Russia and Ukraine undermined companies' profit prospects through an additional increase in corporate expenditures. Mounting difficulties in supply chains may entail a slowdown in production, which may reduce labour demand. The number of employed in the private sector is expected to increase by 20,000–34,000 persons (0.6-0.7 percent) in 2022, before expanding by another 2,000–13,000 persons (0.1–0.4 percent) in 2023. Wage dynamics in 2022 are determined by the minimum wage increase at the beginning of the year, the tight labour market and households' elevated inflation expectations. According to our forecast, wages once again may register double-digit growth in 2022, and strong wage dynamics of around 8.0–8.5 percent are expected to persist over the entire forecast horizon. Despite the higher inflationary environment, real wages in Hungary will stay stable with a moderate rise. However, the growth will be smaller this year than in recent years.

Chart 1-12: Change in the unemployment rate



Source: HCSO, MNB

Chart 1-13: Change in employment in the private sector



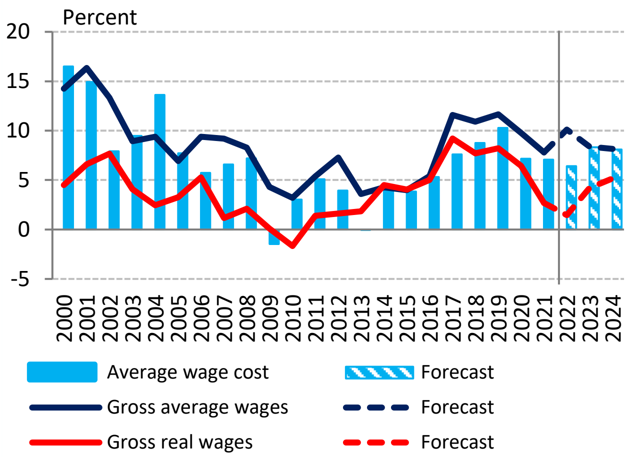
Source: HCSO, MNB

Corporate labour demand may grow further, but downside risks have strengthened recently. The ESI survey – monitoring employment prospects – reflected favourable corporate outlooks until February: corporations planned to increase the headcount in all key sectors in the coming months, and an increasing number of enterprises cited labour shortage as a production bottleneck. However, mounting commodity and energy market tensions resulting from the conflict between Russia and Ukraine undermine corporate profit prospects through further increases in corporate expenditures. In addition, increasing supply chain difficulties may entail a slowdown in production, which may also reduce labour demand.

Future developments in employment largely depend on the persistence of demand and supply frictions and disturbances in international supply chains. In 2021 H2, the number of whole-economy employees reached a high and based on seasonally adjusted data it is still at a peak for the market economy period. However, as a result of the global demand and supply frictions, we anticipate more moderate growth in labour demand, and through that also in employment, and in parallel with this unemployment rate may fall permanently below 4 percent more slowly than previously expected. In 2021 Q4, the seasonally adjusted unemployment rate was 3.9 percent. According to our forecast, in 2022 the unemployment rate may be between 3.7 percent and 4.1 percent (Chart 1-12). The Hungarian labour market may come closer to full employment by 2023, later than expected in December. In the event of faster resolution of the frictions in global supply chains, the unemployment rate may already reach the pre-pandemic figure of 3.4 percent by early 2023.

Based on our forecast, private sector employment will increase by 20,000–34,000 persons (0.6–1.0) percent in 2022. Based on seasonally adjusted data, private sector employment reached the level registered before the coronavirus pandemic in 2021 Q4. Additional growth – depending on corporate investments and the number of employees permanently returning from abroad – may be as high as 0.6–1.0 percent in 2022, and increase by a further 0.1–0.4 percent in 2023 (Chart 1-13).

Chart 1-14: Annual changes in gross average wages and average labour cost in the private sector



Source: HCSO, MNB

Private sector wage dynamics in 2022 are determined by the large minimum wage increase at the beginning of the year, the tight labour market and the elevated inflation expectations. The increases of 20 percent and 19 percent in the minimum wage and guaranteed wage minimum, respectively, may have an impact on earnings up to the level of the average wage as a result of wage compression. According to our calculations, this may result in average wage growth exceeding the baseline scenario by 2.0-2.5 percent. In addition to the large rise in administrative wages, the higher-than-expected wage increases of 8-10 percent implemented by large corporations may also have a wage-raising effect. The tight labour market and the households' elevated inflation expectations also point to higher wage growth than previously expected (Chart 1-14).

According to our forecast, wages once again may see double-digit growth in 2022. Significantly rising commodity and energy prices and mounting frictions in international production chains undermine corporations' profit prospects, which may jeopardise the implementation of yet unannounced wage increases. According to our latest projection, private sector wage growth in 2022 may be 9.8-10.4 percent, followed by persistently strong, 8.0-8.5 percent, wage growth over the rest of the forecast horizon.

Table 1-4: Changes in projections compared to the previous Inflation Report

	2021	2022		2023		2024	
	Actual	Projection					
		Previous	Current	Previous	Current	Previous	Current
Inflation (annual average)[1]							
Core inflation	3.9	5.3 - 5.5	7.9 - 9.4	2.9 - 3.5	3.7 - 5.1	2.7 - 3.3	2.7 - 3.3
Core inflation excluding indirect tax effects	3.9	5.3 - 5.5	7.9 - 9.4	2.9 - 3.5	3.7 - 5.1	2.7 - 3.3	2.7 - 3.3
Inflation	5.1	4.7 - 5.1	7.5 - 9.8	2.5 - 3.5	3.3 - 5.0	2.5 - 3.5	2.5 - 3.5
Economic growth							
Household consumer expenditure	4.3	5.5 - 6.1	3.9 - 5.7	3.0 - 3.9	3.0 - 3.7	2.4 - 3.5	2.8 - 2.9
Government final consumption expenditure[6]	4.4	0.9 - 2.0	1.8 - 2.0	0.2 - 1.4	1.1 - 1.2	0.3 - 1.4	1.0 - 1.2
Gross fixed capital formation	6.0	2.5 - 4.7	0.8 - 2.4	1.7 - 4.6	3.9 - 4.3	1.6 - 4.5	2.5 - 3.7
Domestic absorption	5.6	3.6 - 4.4	2.4 - 3.7	2.1 - 3.3	2.7 - 3.2	1.9 - 3.1	2.2 - 2.6
Exports	10.1	4.5 - 6.1	2.5 - 5.8	6.4 - 8.3	6.6 - 7.9	4.2 - 5.9	4.6 - 6.6
Imports	8.2	3.9 - 5.5	2.3 - 4.8	4.7 - 6.8	4.9 - 5.8	2.9 - 4.8	3.5 - 4.8
GDP	7.1	4.0 - 5.0	2.5 - 4.5	3.5 - 4.5	4.0 - 5.0	3.0 - 4.0	3.0 - 4.0
Labour productivity[5]	4.3	2.8 - 3.8	1.4 - 2.8	2.9 - 4.3	3.7 - 4.9	2.5 - 3.9	3.2 - 3.4
External balance[2]							
Current account balance	-3.0	(-2.5)-(-3.4)	(-5.3) - (-2.8)	(-1.5)-(-2.4)	(-1.5) - 0.1	(-0.6)-(-1.5)	(-1.0) - 0.8
Net lending	-1.0	(-0.2)-(-1.1)	(-3.1) - (-0.7)	0.0-0.9	0.4 - 1.9	0.2-1.1	0.3 - 2.0
Government balance							
ESA balance	-7.3	-5.9	-4.9	-3.9	-3.5	-3.0	-2.5
Labour market							
Whole-economy gross average earnings[3]	8.7	10.2 - 11.2	10.8 - 12.2	5.6 - 6.8	7.0 - 7.1	5.3 - 6.5	7.4 - 7.5
Whole-economy employment	0.8	0.6 - 1.0	0.3 - 0.9	0.0 - 0.8	(-0.1) - 0.1	(-0.1) - 0.7	(-0.1) - 0.6
Private sector gross average earnings[3]	7.8	9.7 - 10.7	9.8 - 10.4	7.5 - 8.7	8.1 - 8.7	6.8 - 8.0	7.9 - 8.4
Private sector employment	0.6	0.8 - 1.2	0.6 - 1.0	0.1 - 0.6	0.1 - 0.4	(-0.1) - 0.5	0.3 - 0.8
Unemployment rate	4.1	3.5 - 3.7	3.7 - 4.1	3.1 - 3.7	3.4 - 4.0	2.8 - 3.8	3.3 - 3.4
Private sector nominal unit labour cost	2.1	2.6 - 4.0	4.1 - 5.3	2.8 - 4.6	3.4 - 3.6	0.8 - 2.6	3.9 - 5.0
Household real income[4]	2.8	5.0 - 6.0	2.7 - 5.1	2.8 - 4.0	2.8 - 3.7	2.2 - 3.4	2.9 - 2.9

[1] Based on seasonally unadjusted data.
[2] GDP proportionate values, partly based on forecast.
[3] For full-time employees.
[4] MNB estimate.
[5] Whole economy, based on national accounts data.
[6] Includes government consumption and the transfers from government and non-profit institutions.

Table 1-5: MNB baseline forecast compared to other forecasts

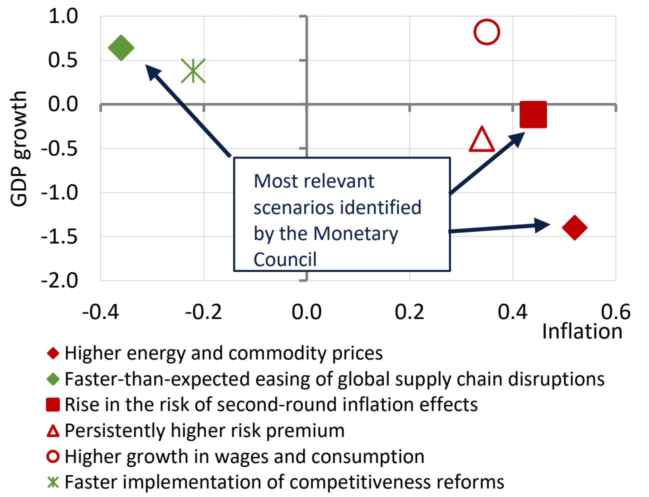
	2022	2023	2024
Consumer Price Index (annual average growth rate, %)			
MNB (March 2022)	7.5 - 9.8	3.3 - 5.0	2.5 - 3.5
Consensus Economics (February 2022)[2]	4.1 - 5.7 - 6.6	2.9 - 3.6 - 4.5	
European Commission (February 2022)[2]	5.4	3.6	
IMF (October 2021)	3.6	3.3	3.0
OECD (December 2021)	6.0	4.0	
Reuters survey (March 2022)[1]	7.5 - 8.2 - 9.1	3.1 - 4.4 - 5.2	3.0 - 3.5 - 4.0
GDP (annual growth rate, %)			
MNB (March 2022)	2.5 - 4.5	4.0 - 5.0	3.0 - 4.0
Consensus Economics (February 2022)[2]	4.1 - 4.9 - 6.0	2.6 - 3.8 - 5.4	
European Commission (February 2022)[2]	5.0	3.2	
IMF (October 2021)	5.1	3.8	3.2
OECD (December 2021)	5.0	3.0	
Reuters survey (March 2022)[1]	3.5 - 4.5 - 5.8	3.4 - 3.8 - 4.4	3.4 - 3.8 - 4.2
Current account balance[3]			
MNB (March 2022)	(-5.3) - (-2.8)	(-1.5) - 0.1	(-1.0) - 0.8
European Commission (November 2021)	-2.4	-1.9	
IMF (October 2021)	0.9	1.5	1.1
OECD (December 2021)	-0.7	-1.5	
Budget balance (ESA 2010 method)[3]			
MNB (March 2022)	-4.9	-3.5	-2.5
Consensus Economics (February 2022)[2]	(-7.0) - (-5.3) - (-4.0)	(-5.0) - (-3.9) - (-3.0)	
European Commission (November 2021)	-5.7	-3.8	
IMF (October 2021)	-5.9	-2.9	-2.2
OECD (December 2021)	-5.8	-3.9	
Reuters survey (March 2022)[1]	(-8.0) - (-5.5) - (-4.5)	(-5.5) - (-3.8) - (-3.0)	(-3.2) - (-2.8) - (-2.5)
Forecasts on the GDP growth rate of Hungary's trade partners (annual growth rate, %)			
MNB (March 2022)	2.5 - 3.3	3.0 - 3.5	2.6 - 3.2
ECB (March 2022)	2.3 - 2.5 - 3.7	2.3 - 2.7 - 2.8	1.6 - 1.9 - 2.1
Consensus Economics (February 2022)[2]	3.7	2.8	
European Commission (February 2022)[2]	4.1	3.1	
IMF (January 2022)[2]	4.0	2.7	2.1
OECD (December 2021)[2]	4.2	2.8	

[1] For Reuters and Consensus Economics surveys, in addition to the average value of the analysed replies, we also indicate the lowest and the highest values to illustrate the distribution of the data.
[2] Values calculated by the MNB; the projections of the named institutions for the relevant countries are adjusted with the weighting system of the MNB, which is also used for the calculation of the bank's own external demand indices. Certain institutions do not prepare forecast for all partner countries.
[3] As a percentage of GDP.
Source: Consensus Economics, ECB, European Commission, IMF, OECD, Reuters poll, MNB

2. Effects of alternative scenarios on our forecast

The Monetary Council highlighted three alternative scenarios around the baseline projection in the March Inflation Report. The alternative scenario that presumes higher energy and commodity prices entails higher domestic inflation and lower growth paths than the baseline forecast. In the scenario with a faster easing of global supply chain disruptions, lower inflation and higher growth paths will materialise compared to the baseline scenario. The scenario that presents the rise in the risk of second-round inflation effects is in line with higher inflation compared to the baseline scenario. In addition to the highlighted scenarios, the Monetary Council discussed paths that assume persistently higher risk premium, higher growth in wages and consumption, and faster implementation of competitiveness reforms as alternative scenarios.

Chart 2-1: Risk map: effect of alternative scenarios on the baseline forecast



Note: The risk map presents the average difference between the inflation and growth path of the alternative scenarios and the baseline forecast over the monetary policy horizon. The red markers represent tighter and the green markers represent looser monetary policy than in the baseline forecast.
Source: MNB

Higher energy and commodity prices

Growth in Hungary's external markets will decelerate as a result of the measures taken to contain the war between Russian and Ukraine and the fight against inflation. The sanctions related to trading with the Russian economy reduce Europe's economic performance directly as well. Russia is significant actor in the commodity market, and thus the sanctions imposed could lead to a renewed increase in frictions in production chains even if tensions are quickly resolved.

In recent months inflation rose globally, which is attributable to demand-supply imbalances and to rising commodity prices. The world market price of oil rose to a 7-year high in February, exceeding USD 95 per barrel, followed by an additional rise to over USD 110 as a result of the war between Russia and Ukraine, before correcting back to around USD 100 per barrel in mid-March. European gas and electricity prices also surged similarly, before correcting slightly lower from their previously very high levels.

The war between Russia and Ukraine also contributes significantly to the persistence of the high global inflationary environment. The war may give rise to a further increase in commodity prices, and supply constraints may become more widespread, raising external inflation further.

Overall, the war causes the economic growth in Hungary to slow down and inflation and risk premium to rise. Through rising food and fuel prices the consequences hit Hungary directly and it is also affected indirectly in the form of deteriorating investor sentiments and deepening global supply chain problems.

In our alternative scenario, global supply constraints and prolonged geopolitical tensions result in larger supply chain disruptions, as a result of which we assume lower external demand than in the baseline scenario and, in parallel with that, more moderate domestic export dynamics. The global semiconductor shortage curbs industrial output and export sector performance, which results in lower economic growth than assumed in the baseline scenario. In addition, stronger supply chain disruptions give rise to a significant increase in global commodity prices. If this alternative path materialises, the external inflation environment will be higher than expected, which will feed through into domestic prices. If the rise in domestic inflation proves to be permanent, tighter monetary conditions may be justified compared to the baseline scenario.

Faster-than-expected easing of global supply chain disruptions

Production trends continue to be negatively impacted by material supply problems. Last year, the global semiconductor shortage caused disruptions also in the Hungarian automotive industry. The correction in transport costs commenced at the end of last year, but the cost level is still high. However, looking ahead, it is a positive sign that China's producer price index, which had been rising in conjunction with supply problems, has decreased slightly in recent months.

The most significant obstacles hindering domestic output include the base material and chip shortage along with transport costs. Despite the unfavourable circumstances, industrial production at the end of the year developed more positively than previously assumed.

The war between Russia and Ukraine and the economic sanctions imposed on Russia resulted in a renewed rise in frictions in the commodity market. In addition, the chip shortage and the increase in transportation lead times and costs may exert a negative impact on production this year as well.

In our **alternative scenario**, the recovery of the supply side is faster than the assumption in the baseline scenario as a result of the faster development of alternative procurement routes. Production also restarts earlier with a faster easing of the shortage of parts and base materials. All of this boosts Hungary's export performance and GDP growth, while the resolution of supply problems reduces global inflation.

Rise in the risk of second-round inflation effects

Early this year, the rise in inflation and core inflation continued in Hungary. In the first months of the year, the rate of the monthly price change was almost three times higher than the average rate observed in this period in the previous decade. Both inflation (8.3 percent) and core inflation (8.1 percent) continued to rise in February.

Based on inflation data from early this year, major price rises are increasingly widespread. This is attributable to the fact that the rise in global commodity and energy prices appears swiftly in the consumer prices of a wide range of products. With strong domestic demand, enterprises are able to integrate the higher base material and wage costs in their prices in a relatively short time. Repricing in the first quarter will be a key factor in the dynamics of inflation and core inflation this year.

Households' inflation expectations are above the central bank’s tolerance band. Expectations also foreshadow a continued rise in retail sales prices and the price of the services. In the present higher inflationary environment, the war between Russia and Ukraine and the introduction of economic sanctions strengthen upside risks to inflation.

It is particularly important to shape inflation expectations and prevent the development of a price-wage spiral. In Hungary, government measures (capping fuel prices, excise tax cuts, freezing the prices of some certain staple food items, and utility tariff cuts) played a significant role in curbing the pass-through of commodity prices. The prices of the products concerned are key for inflation expectations and also have a psychological impact.

According to the **alternative scenario**, the risk of second-round inflationary effects evolving materialises: the current higher wage dynamics become included in economic agents’ expectations. Accordingly, high inflation persists longer than expected in the baseline scenario and core inflation is also expected to decline only later.

Other risks

In addition to the scenarios highlighted above, the Monetary Council considered three other alternative scenarios. In the alternative scenario that assumes a persistently higher risk premium we expect that risk aversion will rise more steadily and sharply vis-à-vis emerging markets, including Hungary, than in the baseline scenario. As a result of this, major capital outflows and further rise in inflation may occur. According to our assumption anticipating higher growth in wages and consumption, wage dynamics and households’ consumption will grow faster than assumed in the baseline scenario, which points to a further rise in inflation and calls for tighter monetary policy conditions. In the scenario assuming the faster implementation of competitiveness reforms, the improvement in competitiveness provides further stimulation to the domestic economy primarily from the supply side. Competitiveness may improve to a greater degree compared to the assumption in the baseline scenario if further proposals are implemented out of the 330 steps presented by the Magyar Nemzeti Bank for improving competitiveness. Implementation of the targeted measures leads to a significant increase in productivity, resulting in a lower cyclical position in the domestic economy. This is consistent with a lower inflation path and higher economic output.

3. Macroeconomic overview

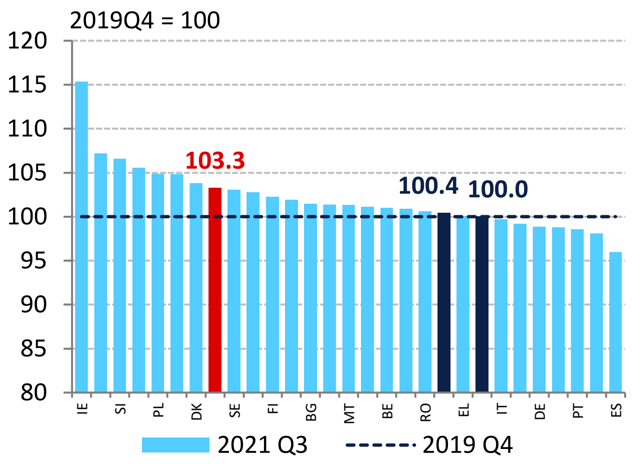
3.1. Assessment of macroeconomic trends

In 2021 Q4, economic growth varied at the global level. Of the EU Member States, more than two-thirds already exceeded their pre-crisis economic performance, while Germany – as Hungary's largest trading partner – still falls short of it. In addition to the impacts of the coronavirus pandemic, the nearby war also undermines the international – and particularly the regional – economic outlooks and may disrupt the already fragile international recovery process. Outlooks for industrial production are hampered by the fact that the conflict amplifies disruptions in global supply chains, and the already high commodity prices may increase further. In addition, rising uncertainty and deterioration in sentiment also negatively impacts the slowly recovering services. In the past period, in reaction to the mounting inflation, the majority of the central banks under review continued to tighten monetary conditions. The Fed ended its net asset purchases and raised its key rate in March, while the ECB closed its PEPP programme and announced that the APP asset purchase programme could end as early as 2022 Q3. However, the Russia-Ukraine war has further increased the uncertainty related to central banks' future measures. In response to rising inflation, the level of interest rates continued to rise in the countries of the region. Looking ahead, the path of interest rates priced-in for the markets of the region will rise due to further increases in commodity and energy prices, deterioration in financial and capital market sentiment and rising bond and foreign exchange market volatility.

3.1.1. International activity trends

In 2021 Q4, economic growth varied at the global level. Growth in China decelerated further, with its economy expanding by 4.0 percent compared to 2020 Q4. By contrast, the US economy grew faster than in the third quarter, expanding by 5.6 percent. By the end of 2021, GDP reached its pre-pandemic level in the euro area as well. In the fourth quarter, the economy of the euro area and of the EU-27 countries grew by 4.6 percent and 4.8 percent respectively, in year-on-year terms. In more than two-thirds of the EU-27 countries economic activity exceeded its pre-crisis level. Germany, Hungary's most important trading partner, is at the end of the European ranking, with its economic performance still falling short of the pre-crisis level (Chart 3-1).

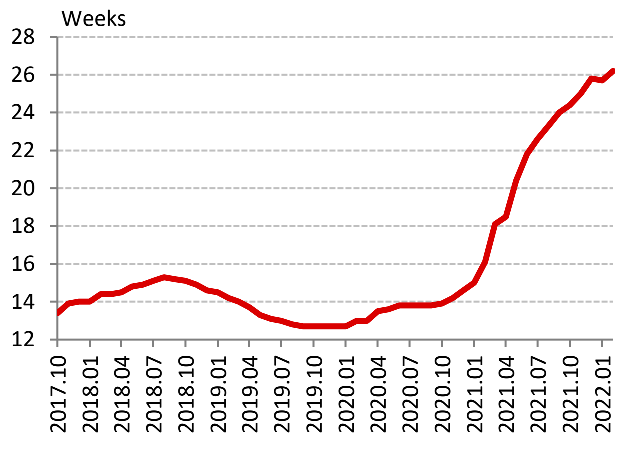
Chart 3-1: Development of the level of GDP



Note: Based on seasonally and working day adjusted data.
Source: Eurostat, Trading Economics

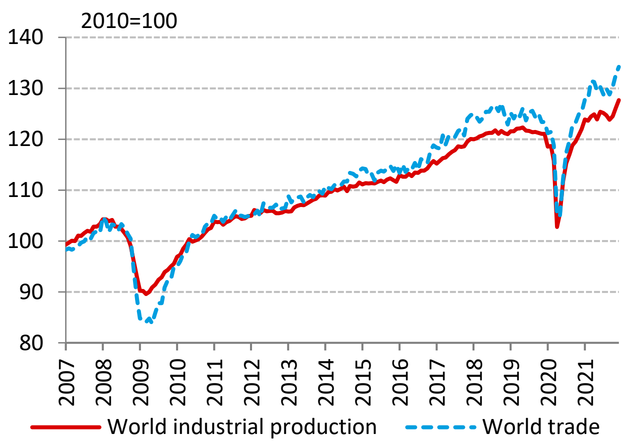
In addition to the impacts of the coronavirus pandemic, the war in the neighbouring country also worsens the international – and particularly the regional – economic outlooks. The conflict may exacerbate disruptions in supply chains, and the already high energy and commodity prices have continued to rise. For a detailed analysis of the macroeconomic impacts of the conflict on Hungary, see Box 1-1. As a result of the global semiconductor shortage, the delivery lead time for microchips doubled in the span of two years (Chart 3-2). The shortage of semiconductors and disruptions in supply chains mainly impact production units in developed economies, where supplier delivery times have also increased significantly in the recent past. The manufacturing of vehicles and electronic products are the sectors most hindered directly by the shortage of

Chart 3-2: The time between ordering a chip and delivery



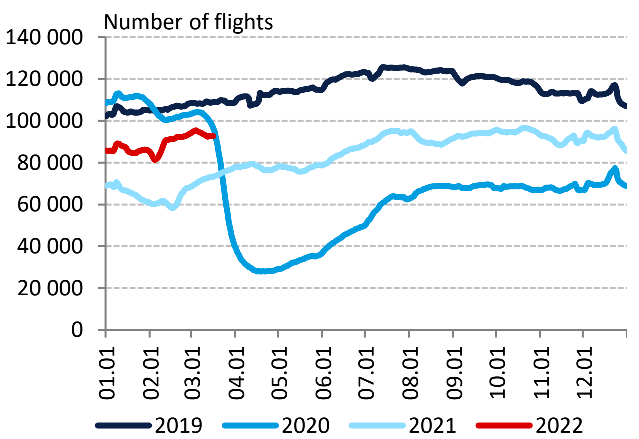
Source: Bloomberg, Susquehanna Financial Group

Chart 3-3: Development of world industrial production and world trade



Note: Based on seasonally adjusted data.
Source: CPB

Chart 3-4: Total number of global commercial flights



Note: The index is based on 7-day moving averages.
Source: Flightradar24

semiconductors, and this represents a bottleneck for German industry, which is a key factor in Hungary's export performance. In addition, disruptions in supply chains hinder the availability of a wide range of base materials.

Moreover, the world is experiencing the largest energy price increase in recent decades, which is also fuelled by the conflict between Russia and Ukraine. This may curb economic growth through the decisions of corporations as well (production cuts or postponement of investments due to increased costs). Rising energy prices have a considerable negative impact on both the terms of trade and the current account balance, primarily for net energy importers like most countries in the region, including Hungary.

World industrial production has exceeded its pre-pandemic level since September 2020, and after a pause of a few months, it once again started to rise at the end of 2021 (Chart 3-3). World trade is moving on a similar path, as it had also started to expand before the war, despite supply chain issues.

As regards services, tourism is still the most impacted sector: in addition to the recurring waves of the pandemic, recovery in this sector is also hindered by the war on the edge of Europe. In conjunction with the prevailing restrictions, international tourism has only strengthened gradually. The daily number of commercial flights is around 90,000–95,000, which remains below the 2019 figure (Chart 3-4). Rising uncertainty and deteriorating sentiment also negatively impact the prospects of slowly recovering services.

3.1.2. International monetary policy, inflation and financial market trends

Global inflation continued to rise in recent months. In the past period, the rate of inflation was well above central bank target values in most advanced economies (Chart 3-5). In response to this, most central banks started or continued to tighten monetary conditions, ended their asset purchases and raised key interest rates, while certain central banks also commenced shrinking their balance sheets.

Escalation of the Russia-Ukraine conflict into a war significantly raised the uncertainty surrounding the monetary policy measures of central banks. Western powers decided to exclude certain Russian banks from the SWIFT international interbank communication and transaction network. In addition, based on the EU's decision, all financial transactions with the Russian central bank are suspended and its assets are frozen. The sanctions and the escalation of the events may lead to temporary disruptions in liquidity.

3.1.3. Developments in the euro area

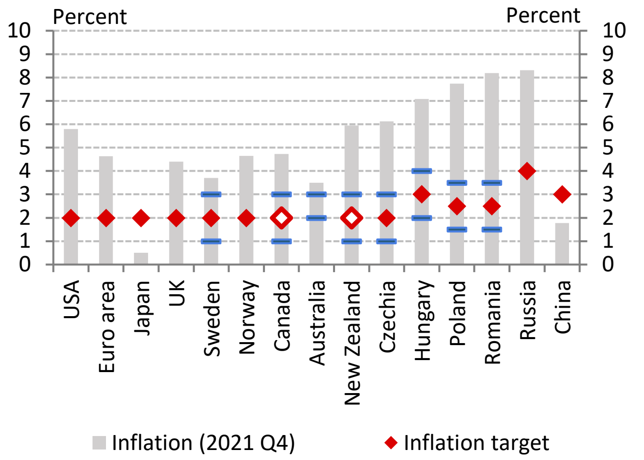
Inflation advanced to 5.8 percent in the euro area in February 2022. From the beginning of 2021, inflation gradually approached the 2-percent target and then exceeded it in July. Economic recovery in the euro area continued and the labour market situation improved. On the other hand, in the last quarter of the year – and presumably also at the beginning of 2022 – growth continued at a slower pace than before due to deterioration in the pandemic situation, the prolonged supply side constraints and rising energy prices, as well as the Russia-Ukraine conflict.

At its March 2022 rate-setting meeting, the ECB left the key policy rates unchanged, while it may close its APP asset purchase programme earlier than previously expected. The ECB's asset purchases under the APP programme may end earlier in 2022 Q3, depending on incoming data. Monthly net purchases under the APP will amount to EUR 40 billion in April, EUR 30 billion in May and EUR 20 billion in June. After that, the calibration of net purchases for the third quarter will be data-dependent. If the incoming data support the expectation that the medium-term inflation outlook will not weaken, the Governing Council will conclude the net purchases under the APP in the third quarter. The ECB confirmed that its asset purchases under PEPP will end in March 2022. The Governing Council intends to reinvest the principal payments from maturing securities purchased under the PEPP until at least the end of 2024. Policy rates will stay at the current levels until inflation consistently reaches the 2-percent inflation target well before the end of the forecast horizon, and underlying inflation developments comply with the medium-term stabilisation of inflation at 2 percent. The ECB will make every effort to ensure price and financial stability, provide liquidity and enforce the sanctions imposed by the EU. The balance sheet total of the ECB rose to EUR 8,687 billion (72.5 percent of GDP) by mid-March 2022 (Chart 3-6).

3.1.4. Developments in major global economies

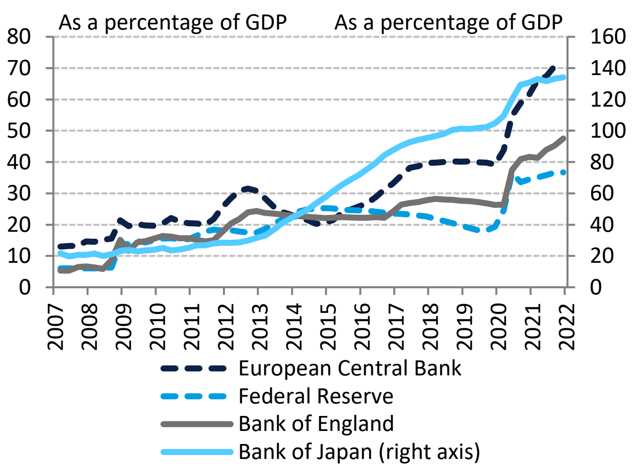
Due to mounting inflation risks and faltering economic growth, the US central bank began tightening monetary conditions starting from November 2021. At their latest rate-setting meeting in March 2022, Fed policymakers decided to raise the target range for the federal funds rate by 25 basis point to 0.25 to 0.50 percent. According to the forward guidance, the Fed anticipates that ongoing

Chart 3-5: Inflation targets of central banks and actual inflation



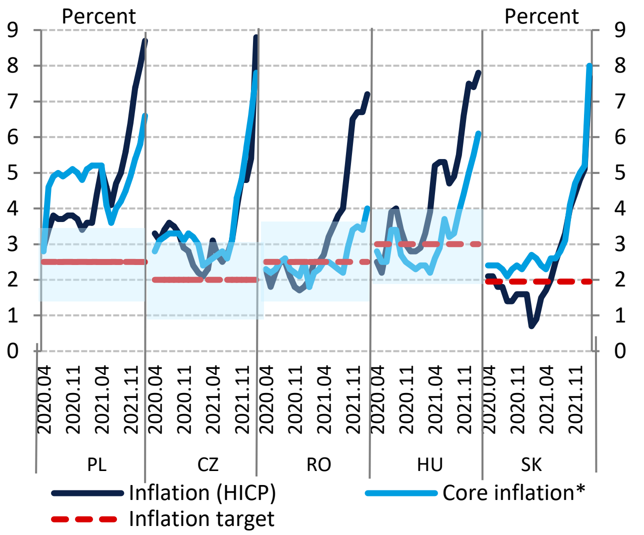
Note: The blue lines represent the inflation control range in Australia, Canada and New Zealand, while in other countries they mark a permissible fluctuation band. In Canada and New Zealand the mid-point of the target band is accentual, which is marked by empty diamond.
Source: OECD, FRED, National Institute of Statistics Romania

Chart 3-6: Central bank balance sheet totals in developed countries



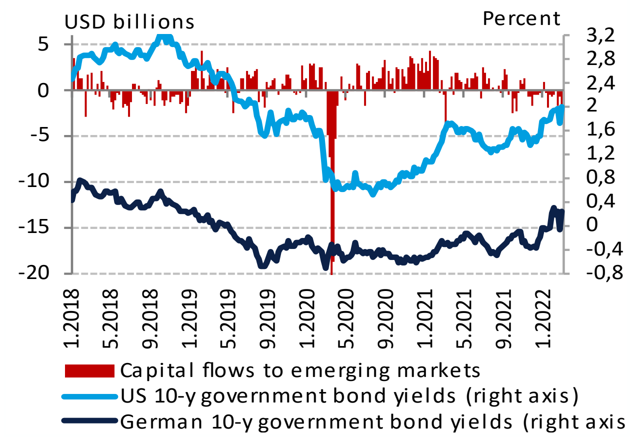
Source: Databases of central banks, Eurostat, FRED

Chart 3-7: Inflation and core inflation in the region



Note: Annual change, percent. *In the case of core inflation, we use the definiton of the Eurostat (inflation excluding energy, food, alcohol and tobacco). The blue area indicates the tolerance band around the inflation targets.
Source: Eurostat

Chart 3-8: Capital flows to emerging markets (weekly) and US and German 10-year government bond yields



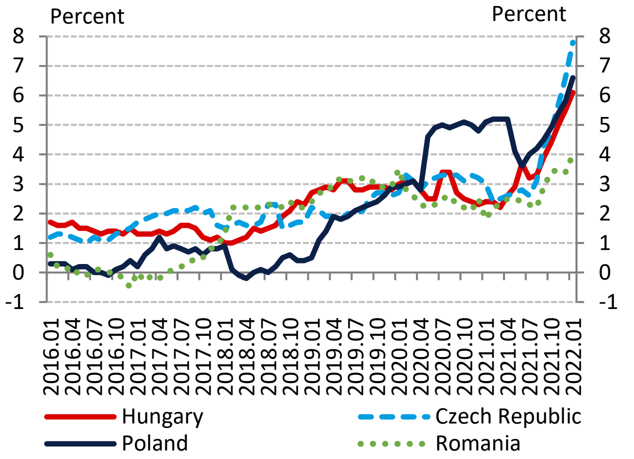
Source: EPFR, Bloomberg

increases in the target range will be appropriate to achieve their goals. By the end of 2022, six more 25-basis point increases can interpreted from the FOMC forecast. The FOMC expects that inflation will return to the 2-percent target rate over the longer run and that the labour market will remain robust. Compared to the December forecast, one difference in the new FOMC is that the Fed's policymakers expect considerably lower growth and higher inflation in 2022. Following the next meeting of the Federal Open Market Committee, the Fed may start reducing its holdings of Treasury securities and agency mortgage-backed securities. Job gains have been strong in recent months, and the unemployment rate has declined substantially. Inflation remains elevated, reflecting supply and demand imbalances related to the pandemic, higher energy prices and broader price pressures. The implications of the Ukraine-Russia conflict for the US economy are highly uncertain. The Fed will continue to monitor incoming information that is relevant to the economic outlook. The balance sheet total of the Fed rose to USD 8,960 billion (37.3 percent of GDP) by mid-March 2022 (Chart 3-6).

Developed market investor sentiment weakened significantly in the past quarter, in parallel with the war and rising volatility on the bond and foreign exchange markets. Due to rising tensions, commodity and energy prices increased significantly again, also raising the interest rate path priced in the emerging markets. In the first half of the period under review, investor sentiment weakened somewhat, as reflected by a minor rise in risk indicators as well. However, the risks related to the coronavirus pandemic were increasingly mitigated by the favourable incoming news and data concerning the omicron variant, which also bolstered investor sentiment via favourable expectations related to economic recovery. In the second half of the period, however, the direct and indirect effects of the war between Russia and Ukraine significantly undermined market sentiment, while inflation expectations were revised higher and growth forecasts were reduced both for the developed and emerging economies.

Deteriorating market sentiment was accompanied by rising volatility both in the financial and capital markets. Developed equity indices fell significantly, with the major US and European stock exchange indices registering declines of 5–12 percent. Stock exchanges in emerging countries fell by 13 percent on average. The US dollar mostly strengthened versus developed and emerging currencies, including the currencies of the narrower region, appreciating by 2.3 percent against the euro and 4.7 percent versus the Japanese yen, while gaining 1.2 term

Chart 3-9: Development of inflation excluding energy, food, alcohol and tobacco in the countries of the region



Source: Eurostat

bond yields increased, and the 10-year US government security rose 70 basis points (Chart 3-8). Emerging market bond yields, including the yields in the region, increased, supported by monetary policy steps as well as by rises in yields in developed markets.

For much of the period, market pricing still indicated increasingly aggressive hikes by developed central banks, but the Russia-Ukraine conflict and its consequences also reduced expectations related to rate hikes. Based on market pricing, expectations with regard to interest rate hikes by Fed rose further. At the end of the period, expectations of an earlier 50-basis point increase in March started to unwind. Based on market pricing, the ECB's current interest conditions may be tightened during the summer, at the earliest. Expectations with regard to the increase by the end of the year are now close to 45 basis points.

3.1.5. Developments in the CEE region

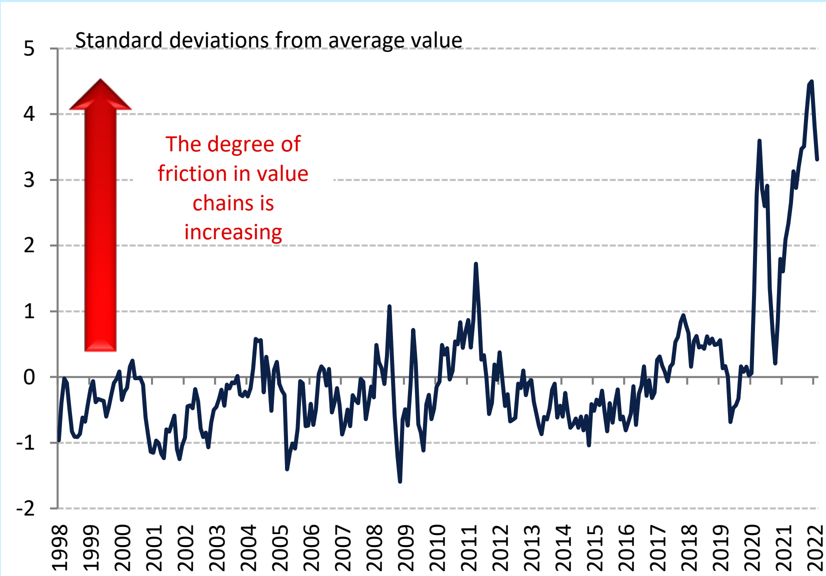
Of the central banks in the region, the Polish and the Czech central bank decided on a 75-basis point interest rate increase at their latest meeting, while the Romanian central banks raised its rate by 50 basis points. As regards the harmonised index of consumer prices and core inflation, the the last few months saw a fast increase in all countries of the region (Chart 3-9). Looking ahead, the impact of the conflict between Russia and Ukraine is the dominant factor which raised the path of interest rates in the markets of the region as well, by further increasing commodity and energy prices, undermining financial and capital market sentiment and triggering higher volatility on the bond and foreign exchange markets.

Box 3-1: Situation and prospects of global production chains

Production trends continue to be negatively impacted by the base material supply problems resulting from the coronavirus pandemic. Escalation of the conflict between Russia and Ukraine into a war and the economic sanctions imposed on Russia caused a renewed rise in frictions in the base material market. The friction in global supply chains reached a historic high at the end of 2021 (Chart 3-10). Earlier analyses (Bloomberg, European Commission, OECD) expected gradual easing in 2022, but the supply chain problems appear to be more persistent than previously assumed and the war between Russia and Ukraine represents yet another turning point.

A correction in transport costs commenced at the end of last year, but the cost level is still high. The cost of transporting base materials corrected significantly at the end of last year, but the cost of transporting containers is still at a high level. Analysts at Morgan Stanley believe that the quarantine and travel restrictions on key transcontinental routes could remain in place throughout the year, and they do not expect capacity to increase until late 2023. This will be exacerbated by labour shortages in the transport sector, which will put further pressure on transport costs during 2022. The long-term removal of pressures in supply chains will require investment, technology and a rethinking of global business incentives. The IMF cited, among other things, supply chain problems when it downgraded its forecast for world economic growth in 2022 from 4.9 percent to 4.4 percent. On the positive side, however, China's producer price index, which had been rising in conjunction with supply problems, has fallen slightly in recent months.

Chart 3-10: Changes in the Global Supply Chain Pressure Index (GSCPI)



Note: The index is comprised of indicators that are able to capture the pressure on global supply chains based on both domestic and international criteria. These include the transport cost indices and certain subindices of purchasing manager indices (e. g. transportation time, inventories, etc.).
Source: Federal Reserve Bank of New York

The most significant obstacles hindering domestic output include the base material and chip shortage, along with transport costs. Despite the unfavourable circumstances, at the end of the year industrial production developed more positively than previously assumed. For the time being, it is difficult to estimate the impact of the war between Russia and Ukraine on supply chains; however, serious shortages of certain base materials and food may develop, if economic sanctions directly impact these products.

Table 3-1: Share of Russia and Ukraine in the world's grain exports, percentage (2020)

	Russia	Ukraine	Altogether
Wheat	18.1	7.9	26
Barley	12.7	11.8	24.5
Maize	2.6	13.1	15.7
Rapeseed	2.6	9.1	11.7
Sunflower seed	10.5	1.2	11.7
Cereals and cereal preaparations	**5.9**	**5.2**	**11.1**

Source: UNCTAD, FAO

Taking advantage of its geographical endowments, Russia is one of the world's largest agricultural producers. Russia's wheat exports account for more than 18 percent of the world's total exports, and for 26 percent together with Ukraine. The two countries together account for 24.5 percent of the world's barley exports (Russia 12.7 percent, Ukraine 11.8 percent) and 15.7 percent of maize exports (Russia 2.6 percent, Ukraine 13.1 percent). Ukraine has higher weight in rapeseed exports (9.1 percent), while the two countries together have a share of 11.7 percent. In the case of sunflower, Russia and Ukraine account for 10.5 and 1.2 percent of total exports, respectively (Table 3-1). Accordingly, the war takes place in one of Europe's most important croplands, which could have a major impact on the supply of the aforementioned food and processed foodstuffs made of those, and thus indirectly on their prices.

Table 3-2: Share of Russia and Ukraine in fuel and metal exports, percentage (2020)

Share in global exports	Russia	Ukraine	Total
Palladium	20.7	0	20.7
Coal	17.2	0	17.2
Petroleum oil	12.7	0	12.7
Iron	11.4	4.4	15.8
Sulphur derivatives	10.4	0	10.4
Nickel	10.2	0	10.2
Platina and silver	8.7	0	8.7
Aluminium	4.8	0.1	4.9
Copper	4.1	0.1	4.1
Natural gas	3.5	0	3.5
Phosphorous (2019)	6.7	-	6.7
Rhodium (2019)	5.1	-	5.1
Rare earth metals (2019)	2	-	2
Rare earth metals reserves (2019)	10.4	-	10.4

Source: OEC, UNCTAD, Visual Capitalist, World's Top Exports

Russia is a key player in energy products, which dominate its goods exports. It is the world's third largest coal exporter, accounting for 17.2 percent of total coal exports. Russian oil exports account for 12.7 percent of global oil exports. Russia is the world's second largest oil producer, selling its crude oil mostly to European refineries. Natural gas, which bears importance primarily due to its export to Europe, accounts for 3.5 percent of the world's exports (Table 3-2). Although Russia's role in global gas exports can be deemed moderate, it supplies roughly 40 percent of Europe's gas imports. Accordingly, its importance in Europe considerably exceeds its position in the global ranking.

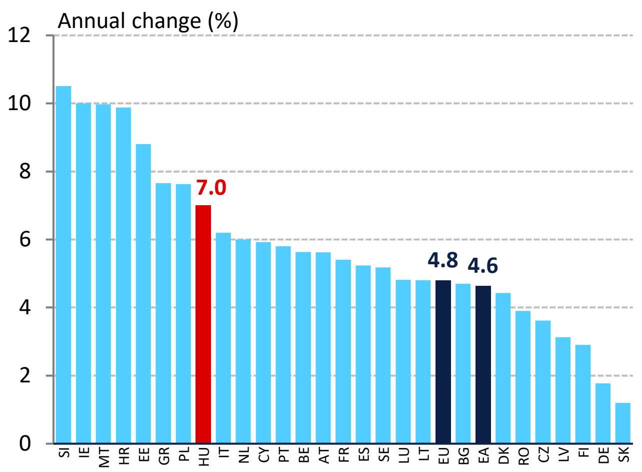
In addition to energy, Russia also has dominant presence in other commodity markets. Russia accounts for 20.7 percent of palladium exports used for catalysts, 11.4 percent of pig iron exports, 10.4 percent of sulphur derivatives exports and 10.2 percent of nickel exports. The Russian economy accounts for 2 percent of rare earth element exports, while Russia has 10.4 percent of the global reserves. Russia also provides almost 5 percent of world aluminium exports. The EU is particularly import-dependent in some critical base materials, many of which it obtains entirely through imports, partly from Russia. Russia has higher weight in world exports of phosphorus (6.7 percent) and rhodium (5.1 percent) (Table 3-2). Ukraine's share in the fuel and metal markets is negligible, while it produces around 70 percent of the world's neon gas exports, and the purified version of this gas is of major importance for the semiconductor industry. With the war dragging on, further disruptions in supply chains may occur, which could also cause problems for imports of base materials from other countries.

Even before the outbreak of the war, the outlook was clouded by negative risks, which have now increased further. Chip shortages and possible shortages in the markets of certain critical base materials as well as increasing delivery lead times and costs, may have a negative impact on production this year as well.

3.2. Analysis of the production and expenditure side of GDP

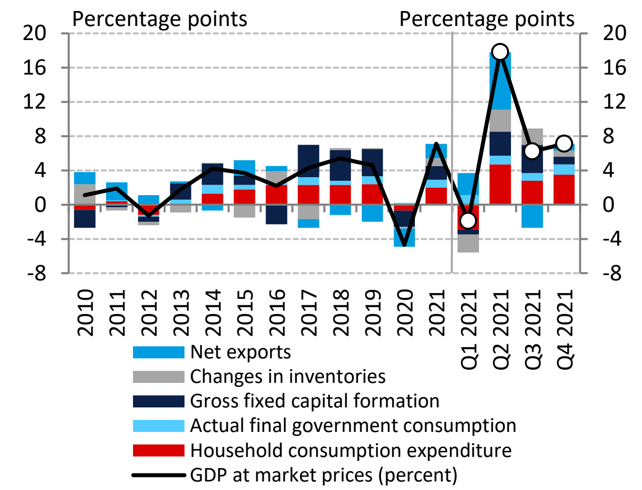
Following a successful restart, the Hungarian economy continued to grow at an accelerating rate, with gross domestic product expanding at a year-on-year rate of 7.1 percent in 2021 Q4. Hungarian economic output exceeded its pre-pandemic level by 3.3 percent. Domestic demand continued to recover, and household consumption accounted for almost half of the growth on an annual basis. Corporate sector investments grew in the fourth quarter, while investments by budgetary organisations declined. The goods balance adjusted for VAT residents was persistently negative in recent months, mainly due to the deteriorating terms of trade, but also as a result of rising imports borne by dynamic domestic demand.

Chart 3-11: 2021 Q4 annual GDP change in EU countries



Note: Based on seasonally and calendar adjusted data.
Source: Eurostat

Chart 3-12: Contribution to annual GDP growth



Note: Actual final government consumption includes social transfers in kind from government and NPISHs. Changes in inventories includes acquisitions less disposals of valuables.
Source: HCSO

Following a successful restart, the Hungarian economy continued to grow at an accelerating rate. In 2021 Q4, gross domestic product expanded by 7.1 percent in year-on-year terms. Hungary's economy grew by 7.0 percent year-on-year according to the seasonally and calendar adjusted series used in international comparison, while the economies of the euro area and the EU-27 countries expanded by 4.6 percent and 4.8 percent, respectively, year on year (Chart 3-11). Hungary's growth surplus compared to the euro area was 2.4 percentage points in 2021 Q4.

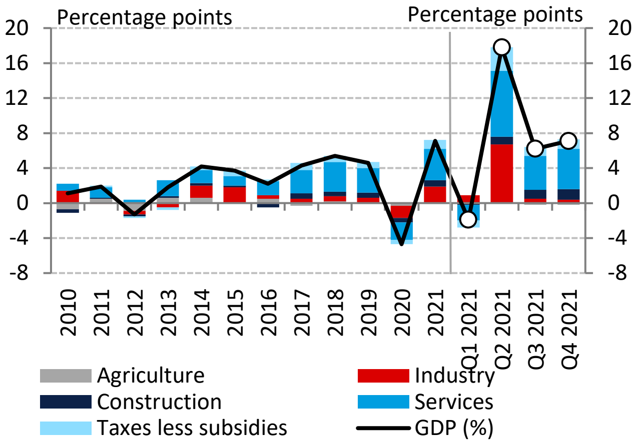
All items of the expenditure side made positive contributions to annual GDP growth (Chart 3-12). **Households' consumption expenditures increased by 7.7 percent in year-on-year terms.** The strongest growth was registered in services consumption (+13.6 percent). Actual final government consumption rose by 5.3 percent on an annual basis.

Value added of gross fixed capital formation increased by 3.3 percent compared to the same prior-year period. The volume of investments in buildings rose, while the volume of investments in machinery and equipment declined. After a rise of 0.1 percentage point compared to 2020, the investment rate stood at 26.9 percent in 2021. Changes in inventories made a similar positive contribution to growth as in the third quarter.

Growth in the volume of exports (+3.2 percent) was higher than that in imports (+2.3 percent). In connection with the deepening of the chip shortage at the end of the year, goods exports fell by 1.5 percent, while services exports grew by 28.3 percent in year-on-year terms.

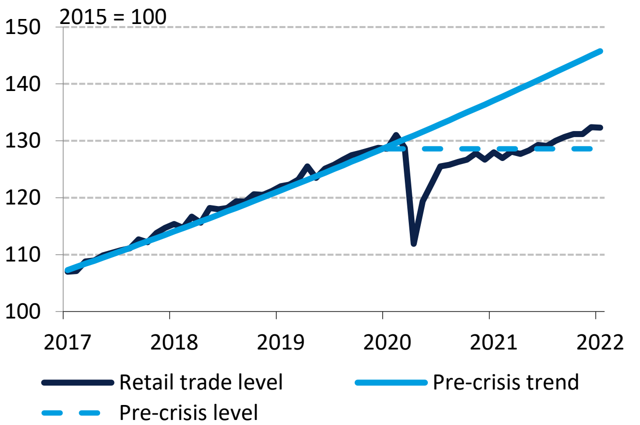
With the exception of agriculture, the performance of all national economy branches improved in year-on-year terms, while the pattern of growth varies compared to the previous quarter (Chart 3-13). The performance of industry rose 2.1 percent compared to the same period of the previous year. Of the manufacturing sectors, the expansion registered in the products of metal processing and food industry were the strongest contributors to annual growth in industry. Construction's value added rose by 21.4 percent, while that of agriculture fell by 6.1 percent, in year-on-year terms. Services' value added rose by

Chart 3-13: Decomposition of change in production-side GDP



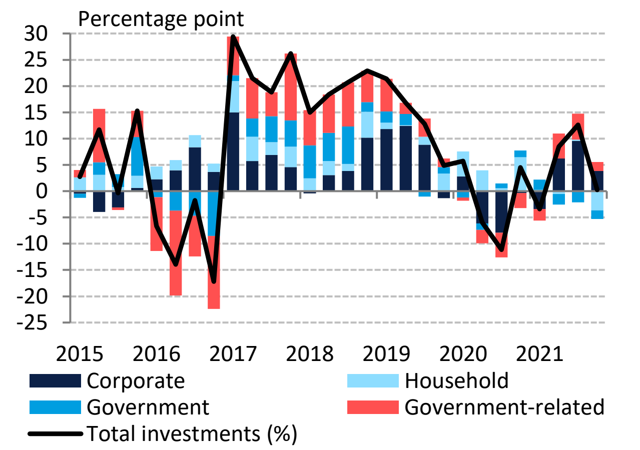
Source: HCSO

Chart 3-14: Evolution of retail trade and pre-crisis trend



Note: Seasonally and calendar adjusted data. The pre-crisis trend is an extension of the trend from January 2017 to January 2020.
Source: HCSO, MNB

Chart 3-15: Decomposition of annual change in investments



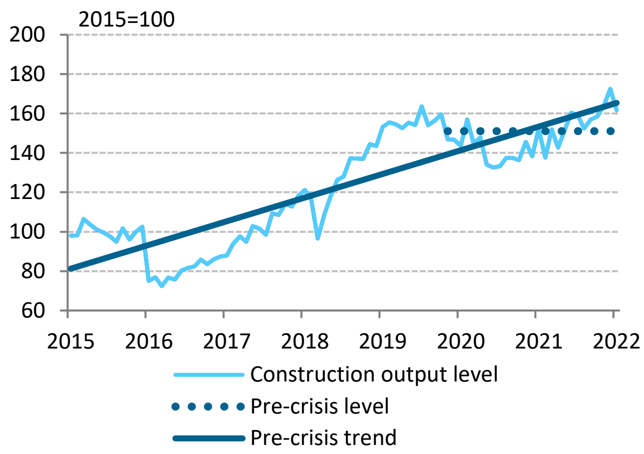
Source: HCSO

8.1 percent. The strongest growth, due to last year's low bases, was registered in the accommodation services and hotels and restaurants national economy branches.

In 2021 Q4, retail sales were already above the pre-crisis level, but still fell short of the growth trend from past years (Chart 3-14). In January 2022, the sales volume of retail shops showed a year-on-year increase of 4.5 percent according to raw data and 4.1 percent in calendar adjusted data. The recovery of services continued. This is implied by the fact that the online cash register data, which also contain certain services, show a more favourable picture than retail sales measured by the HCSO. These sales grew by 20.5 percent in nominal, year-on-year terms.

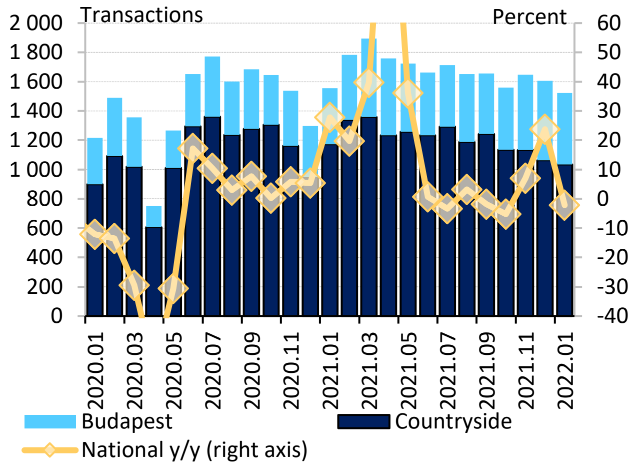
Disbursement of housing loans substantially exceeded the pre-pandemic disbursements. In 2021 Q4, household loans outstanding vis-a-vis the financial intermediary system as a whole expanded by HUF 193 billion as a result of transactions, and thus household loans outstanding increased by roughly 14.2 percent in 2021. From November 2021, the moratorium's instalment-reducing effect declined materially: instead of the previous 28 percent only 6 percent of outstanding household debt remained in the programme, which was continued with a narrower scope. The volume of housing loan contracts concluded by credit institutions in 2021 Q4 was a modest 14 percent lower than the historic high registered in the previous quarter, but exceeded the figure registered in the same period of 2019 by 37 percent. Disbursements of personal loans fell slightly short of the pre-pandemic volume, by 12 percent. The new housing subsidies available from 2021 provided substantial support for the consistently high volume of housing loan disbursements. From October, the Green Home Programme also supported lending for housing purposes, with quarterly disbursement of roughly HUF 33 billion. As a result of the programme, the ratio of loans for the construction and purchase of new homes rose to 27 percent by the end of 2021. In the quarter under review, young married couples concluded prenatal baby support loan contracts in the amount of HUF 123 billion. However, new disbursements in the product show a declining trend: while in 2021 H1 roughly 1,000 contracts per week were concluded, in the fourth quarter the average number of contracts was 800. According to the Lending Survey, in 2021 Q4 banks' left their housing loan standards broadly unchanged, while in the area of consumer loans 10 percent of banks, in net terms, tightened conditions and one third of them plan further tightening in 2022 H1 as well. Respondent institutions perceived rising demand for both housing and consumer loans and expect a further upturn in 2022 H1 as well, partly due to the new government

Chart 3-16: Evolution of construction output and pre-crisis trend



Source: HCSO, MNB

Chart 3-17: Monthly number of transactions completed by housing market intermediaries



Note: Compared to the same period of previous year.
Source: Housing intermediary database

programmes launched in 2021 for the housing market and partly to the increased demand for the pre-financing of the home improvement subsidy and keen interest in the Green Home Programme launched in October 2021.

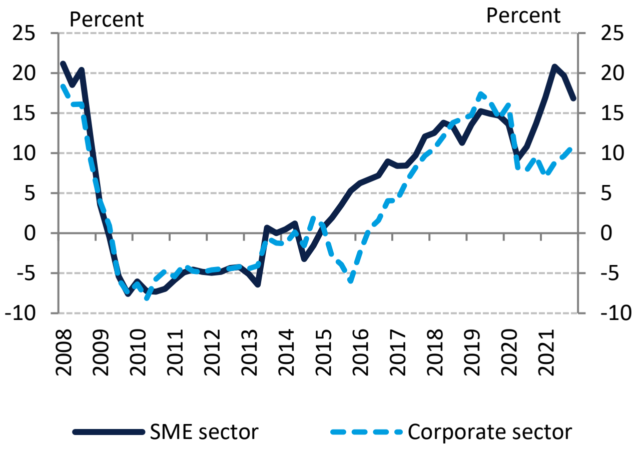
In 2021 Q4, the volume of whole-economy investment rose at a year-on-year rate of 0.2 percent based on investment statistics (Chart 3-15). Machinery and equipment investments declined, while construction investments rose on an annual basis. The volume of investments by budgetary organisations fell 15.9 percent, which – according to information provided by the HCSO – was also attributable to the formation of additional budgetary reserves at the end of the year. The volume of investment by medium-sized and large enterprises employing at least 50 people grew by 6.0 percent, with a strong contribution from developments implemented by non-resident enterprises. Investment in manufacturing, which represents the highest weight, increased by 16.7 percent. In 2021 Q4, home constructions declined year-on-year. In the fourth quarter, 7,256 new homes were completed.

In 2021 Q4, construction output increased by 19.2 percent in year-on-year terms. The construction of buildings and other structures expanded by 21.8 percent and 17.2 percent, respectively, year on year in 2021 Q4. Based on seasonally and calendar adjusted data, the volume of construction output exceeded the pre-crisis production level between October and January (Chart 3-16). In January, construction output fell short of the growth trend of recent years.

Based on the housing intermediary database, the number of transactions in 2021 Q4 exceeded the year-on-year value at the national level. In the last quarter of last year, on an annual basis the number of transactions in the capital rose 38.8 percent, while it fell 2.4 percent in the countryside. As a combined result of these two figures, it rose 7.4 percent at the national level (Chart 3-17). In January 2022, it was mainly the regional breakdown of transactions that changed in year-on-year terms, as the number of sales transactions rose by 27.1 percent in the capital, while it declined by 11.7 percent in rural settlements. Preliminary data suggest that house prices rose further in 2021 Q4 both on a national average and in the capital, appreciating by 5.2 percent on a national average and by 2.0 percent in Budapest.

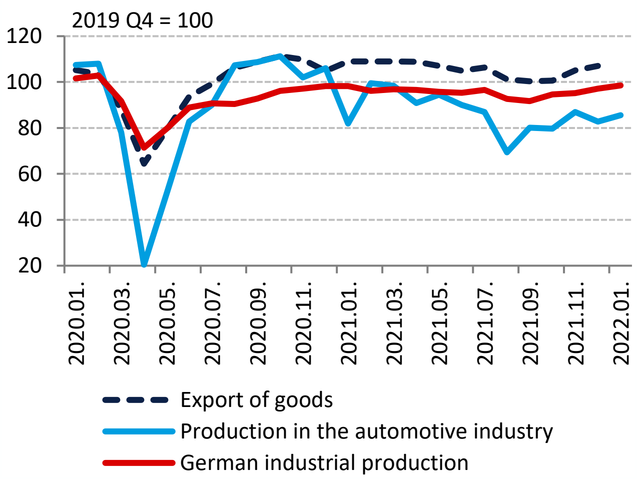
Corporate loans outstanding increased dynamically in the fourth quarter. In the balance sheet of the entire financial intermediary system, corporate loans outstanding increased by HUF 460 billion in 2021 Q4, and thus the

Chart 3-18: Annual changes in lending to non-financial corporates and SMEs



Note: Data for the corporate sector are based on transactions with the total financial intermediary system. The SME sector does not include the self-employed.
Source: MNB

Chart 3-19: Production in the automotive industry



Source: Destatis, HCSO

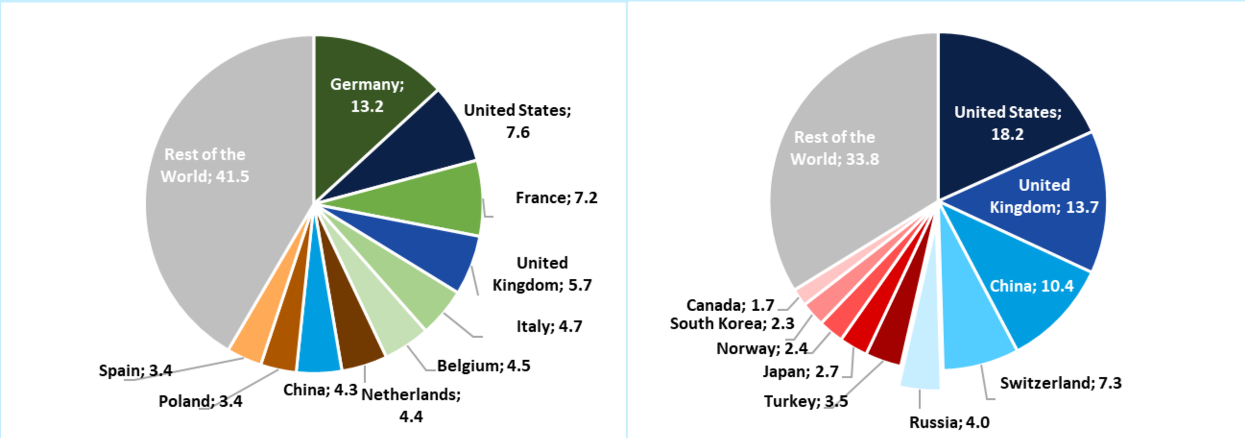
annual growth rate amounted to 10.9 percent (Chart 3-18). Also taking into account the corporate bonds subscribed by banks, credit institutions' loans and bonds outstanding vis-à-vis the non-financial corporate sector increased by 18.4 percent in 2021. Within corporate lending, the annual growth rate of SME loans outstanding was 16.8 percent in December. In the quarter under review, an increasing ratio – i.e. 78 percent – of new corporate loans were concluded on a market basis. This ratio is only marginally lower than the 85–90 percent recorded in the pre-pandemic period. In November, 2 percent of the outstanding corporate loans was participating in the narrower moratorium on payments available to corporations that suffered a significant loss of revenues, down substantially versus the earlier participation ratio of 17 percent. In 2021 Q4, large transactions (over HUF 5 billion) significantly supported growth in outstanding lending. Despite rising interest rates, a net 12 percent of the banks participating in the Lending Survey reported stronger demand in 2021 Q4 and expect demand to rise in 2022 H1 as well.

In the fourth quarter, Hungary's industrial production rose 1.6 percent in quarter-on-quarter terms. In January, output improved in year-on-year terms in most manufacturing subsectors. Automotive industry output – representing the largest share – grew again (Chart 3-19). Dynamic growth in battery manufacturing continued, while electric motor production declined. The merchandise trade balance adjusted for VAT residents still exhibited a deficit in January. The terms of trade deteriorated on an annual basis in December due to the rising price of mineral fuels.

Box 3-2: Russia's weight in the external trade of the European Union and Hungary

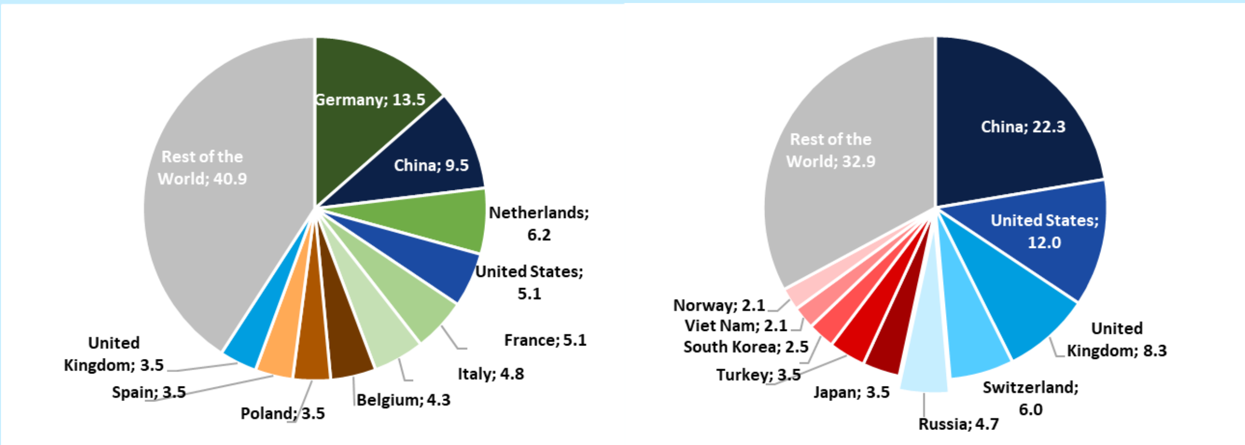
The outbreak of open, armed conflict between Russia and Ukraine in late February and the economic sanctions that followed Russia's action have focused attention on the continent's trade with these two countries. The sanctions also have a direct effect on goods trade with Russia. Accordingly, this Box analyses the composition and key products in the EU's and Hungary's external trade in goods.

Chart 3-20: Total goods exports of the EU (left) and to countries outside the EU (right) by country of destination (2020, percent)



Source: UNCTAD

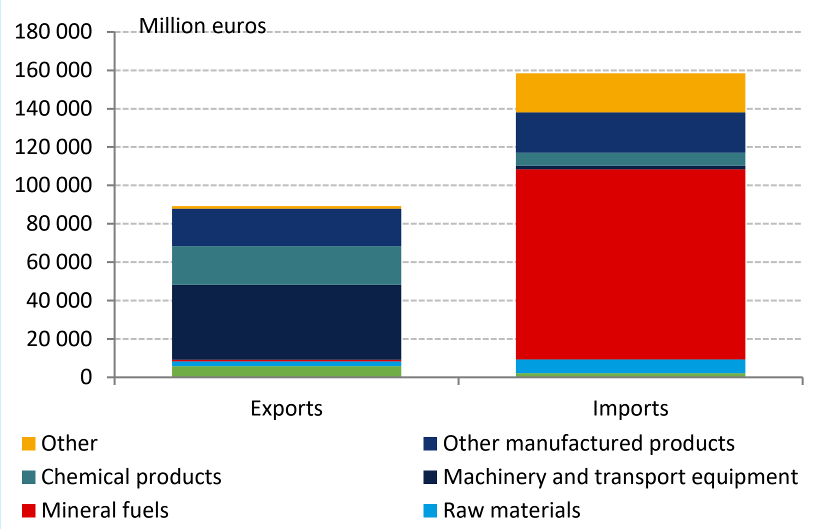
Chart 3-21: Total goods imports of the EU (left) and from countries outside the EU (right) by country of origin (2020, percent)



Source: UNCTAD

The weight of exports by EU countries to the East shows a mixed picture; however, Member States tend to rely to a lesser extent on goods exports to Russia (or Ukraine). 1.7 percent of the aggregate exports of EU countries are directed to Russia, while 2.0 percent of imports come from there. Naturally, regional differences should not be ignored. While the weight of Russia within goods exports exceeds 8 percent in each of the Baltic states (13.4 percent for Estonia), it is only 0.3 percent in Ireland, which is geographically far away. The share of Russia and Ukraine is larger on the import side, mainly due to fuels, with the Baltic states, Malta and Finland being the most affected. The main non-EU member trading counterparties include the United States, China and the United Kingdom, while trade with Switzerland is also higher than with Russia in terms of volume on average in the EU (Charts 3-20 and 3-21). 4.0 percent of goods exports outside the EU are directed to Russia, while roughly 4.7 percent of goods imports come from there.

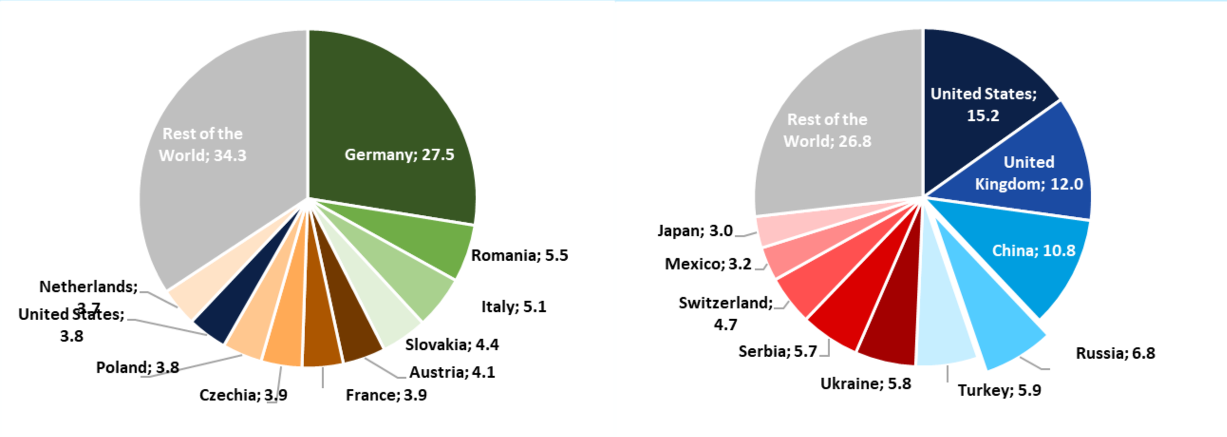
Chart 3-22: External trade of the EU and Russia by product group (2021)



Source: Eurostat

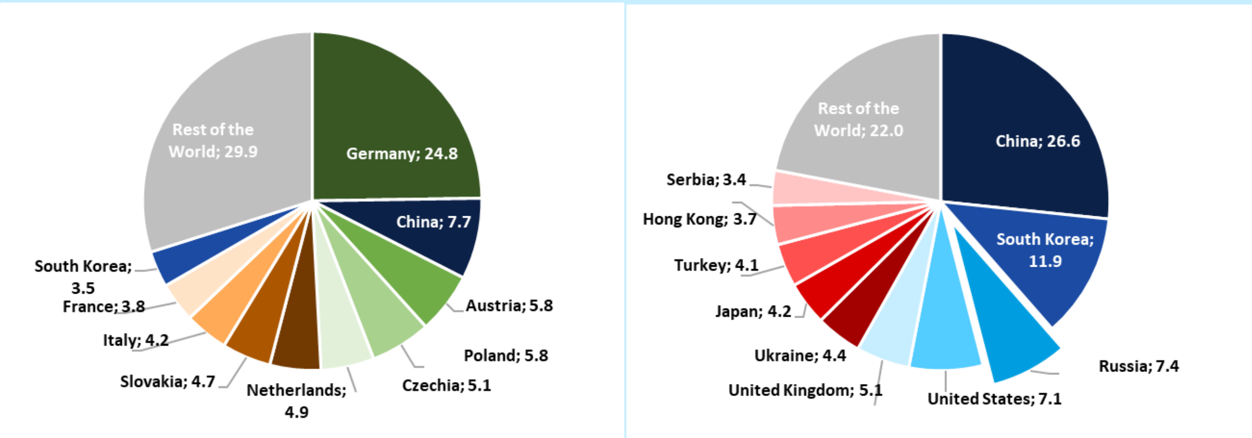
However, partnership with Russia is of key importance primarily due to the energy and base material dependency rather than to its nominal value. Roughly 40 percent of Europe's gas imports and 27 percent of its oil imports come from Russia, and these figures are much higher for the countries in Hungary's region. Accordingly, fuels account for almost two thirds of imports from Russia (Chart 3-22). In addition, Russia also has a global role in the export markets of numerous base materials of critical importance and scarce supply, a large percentage of which is acquired by the EU through imports (for a more detailed analysis of this, see Box 3-1). Exports from the EU include manufactured goods, chemical products, with the largest share represented by machinery and transport equipment, where Germany, as Russia's second most important import partner, plays a prominent role. In addition, technology exports to Russia are also significant due to foreign direct investments and business cooperation.

Chart 3-23: Total goods exports of Hungary (left) and to countries outside the EU (right) by country of destination (2020, percent)



Source: UNCTAD

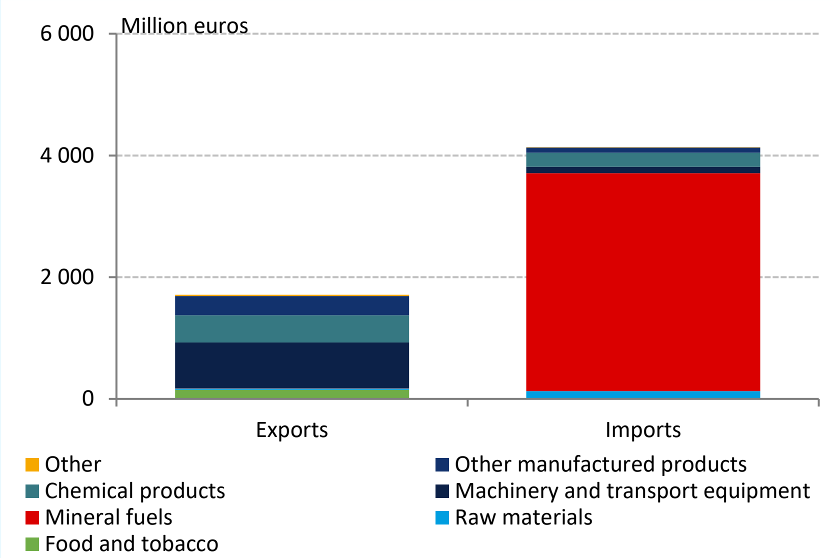
Chart 3-24: Total goods imports of Hungary (left) and from countries outside the EU (right) by country of origin (2020, percent)



Source: UNCTAD

In terms of direct external trade relations, Hungary's most important export partner is traditionally Germany along with other EU Member States. Of the 10 most important countries of destination, only the United States is not an EU member. Russia is ranked 15th among Hungary's export partners in terms of direct trade in goods, with 1.7 percent of total exports directed to Russia (3.2 percent together with Ukraine). Germany is also ranked first in imports, with a major weight, followed by China and Austria; the 10 most important partners also include South Korea as a non-EU country. In terms of goods import, Russia is Hungary's 13th most significant partner, with the third largest weight among non-EU countries (Charts 3-23 and 3-24).

Chart 3-25: External trade of Hungary and Russia by product group (2021)



Source: Eurostat

In line with the European pattern, Hungary's goods exports to Russia mostly comprise processed goods, chemical products and for the most part, machinery and transport equipment, which form the backbone of domestic industry (Chart 3-25). Within its own product group, the most important is the exports of chemical products to Russia, as Russia is the 7th largest export market of the domestic chemical industry (with a weight of 3.9 percent). The war and subsequent sanctions and uncertainty also affect the pharmaceutical industry, despite the fact that the weight of the Russian and Ukrainian target markets has declined significantly over the past decade. The sanctions are expected to have only a minor direct impact on Hungary's vehicle exports, as exports to Russia account for only 1.2 percent of machinery and transport equipment exports. However, the indirect impact of the war and sanctions – via increased frictions in production chains, amongst other things – could significantly outweigh the direct effects (see Box 1-1 for more details on the channels of the conflict's impact).

Table 3-3: Breakdown of Hungary's energy imports by country of origin (percentage, 2020)

Mineral fuels			Crude oil and oil preparations			Natural gas and its preparations		
Rank	Country	Share	Rank	Country	Share	Rank	Country	Share
1.	Russia	31.7	1.	Russia	42.4	1.	Russia	38.4
2.	Austria	22.9	2.	Austria	21.5	2.	Austria	32.1
3.	Slovakia	10.9	3.	Slovakia	7	3.	Ukraine	13.7
4.	Croatia	8.4	4.	Croatia	6.4	4.	Slovakia	4
5.	Ukraine	5.8	5.	Szlovénia	3.1	5.	Bulgaria	3
6.	Serbia	2.9	6.	Czechia	3	6.	Romania	2.3
7.	Romania	2.7	7.	Germany	2.4	7.	Croatia	1.7
8.	Czechia	2	8.	United Kingdom	1.7	8.	Poland	1.6
9.	Slovenia	1.5	9.	Romania	1.6	9.	Germany	0.7
10.	United States	1.5	10.	Netherlands	1.2	10.	Belgium	0.4
Russia and Ukraine together		37.5	Russia and Ukraine together		42.7	Russia and Ukraine together		52.1
Estimated total share		55-65	Estimated total share		60-70	Estimated total share		70-80

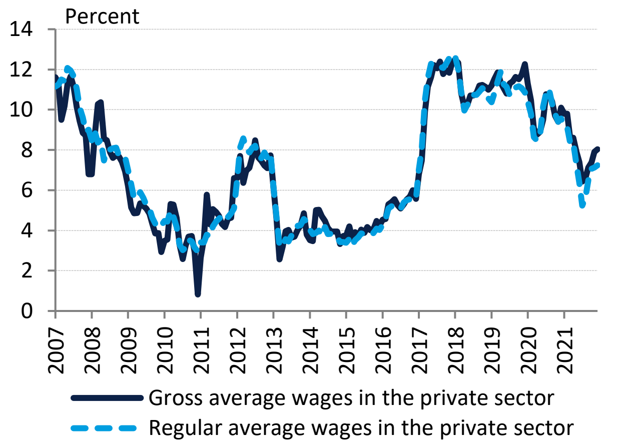
Source: UNCTAD

The import of fuels accounts for the vast majority of Hungary's imports from Russia (Table 3-3). International goods trade settlement shows the direct import of goods. However, the vast majority of fuels imported from most of the countries in the region also comes to Hungary's neighbours from Russia via Ukrainian pipelines. When also considering indirect imports of fuels, up to two thirds of the oil and three quarters of the natural gas received by Hungary may be of Russian origin.

3.3. Labour market

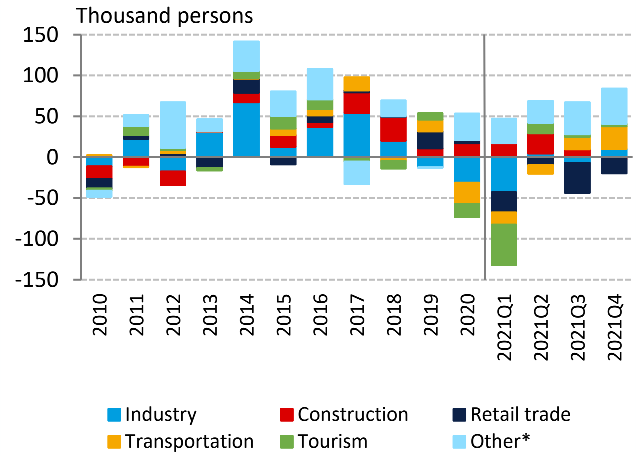
In 2021 Q4, gross average earnings in the private sector rose 8.0 percent in year-on-year terms. Among the countries of the region, Hungary's wage index was one of the highest. In 2021 Q4, the average number of employed in the whole economy amounted to 4.684 million, up 62,000 on the same prior-year period. Labour market recovery continued in the past months, and employment remains at a historical high, while the number of vacancies has also increased. Corporate labour demand is growing mainly in manufacturing and the service sector.

Chart 3-26: Annual change in gross average wages in the private sector



Note: Quarterly moving averages.
Source: HCSO

Chart 3-27: Decomposition of annual changes in private sector employment



Note: *Agriculture, other industry and market sector branches.
Source: HCSO

3.3.1. Wages

In 2021 Q4, gross average earnings in the private sector rose 8.0 percent in year-on-year terms, exceeding the figures registered in the second and third quarters by almost 1 percentage point (Chart 3-26). Regular average earnings rose by 7.2 percent year-on-year, while bonus disbursements were substantially higher than in the same period of last year. In the fourth quarter, most private sector industries registered an annual wage growth of 7-10 percent. Wages in tourism and real estate transactions rose by 12 and 14 percent, respectively. Wage growth was more moderate, i.e. 1–3 percent, in the transportation, warehousing and electric energy sectors. As a result of the wage review of doctors and nurses, gross wages in the health sector rose by 26.6 percent on an annual basis in the last quarter.

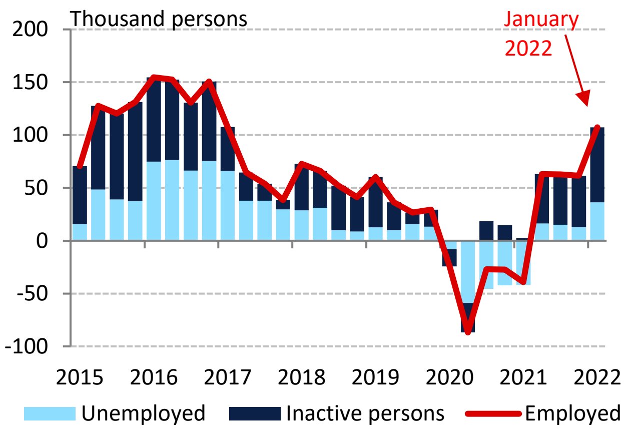
Based on Q4 data, wage growth was the second highest in Hungary among the countries in the region after Poland. The comparison is complicated by the fact that the wage statistics of other countries also include part-time workers. After adjusting the Hungarian figure for this, wage growth was 9.6 percent in the fourth quarter. By contrast, wages in Poland, Slovakia and Romania rose by 9.8, 8.1 and 6.6 percent, respectively, in annual terms.

3.3.2. Employment and unemployment

In recent months, despite the new waves of the coronavirus, the labour market continued to expand. Central bank and government measures (loan repayment moratorium, wage subsidies), which have already been partially completed, also contributed to this. The Labour Force Subsidies to Companies programme, which is meant to support vulnerable groups, contributed to the creation of 43,000 new jobs until early February, mostly among micro and small enterprises. Companies were able to preserve the jobs of 207,000 people with the job protection wage subsidy and 181,000 people with the sectoral wage subsidy, while 49,000 new jobs were created using the job creation wage subsidy.

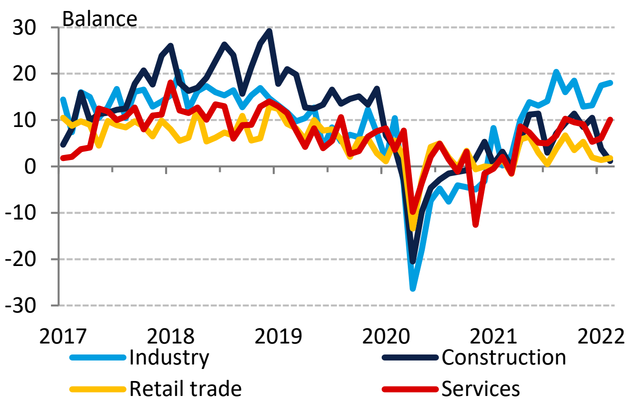
According to the Labour Force Survey, employment expanded by 62,000 in 2021 Q4 in year-on-year terms. The average number of whole-economy employees amounted

Chart 3-28: Decomposition of annual changes in whole-economy employment



Note: Instead of 2022 Q1, monthly data for January is available. Changes in the number of unemployed and economically inactive have the opposite sign. Source: HCSO

Chart 3-29: Employment expectations in the ESI business survey



Note: The balance is positive (negative), if the majority of companies plans to hire (lay off). Seasonally adjusted data. Source: European Commission

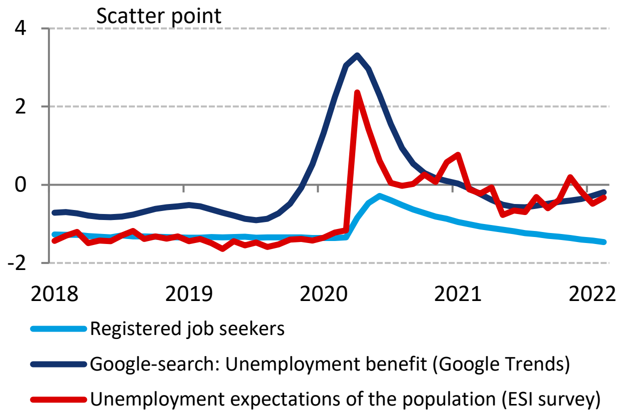
to 4.684 million in these three months. The number of fostered workers increased by 9,000, while those employed at places of business abroad declined by 10,000 versus one year ago. Accordingly, the growth in employment was attributable to the primary labour market. Private sector employment increased by 1.8 percent in year-on-year terms and by 0.5 percent compared to the previous quarter. The number of hours worked increased slightly, and thus the full-time equivalent (FTE) headcount rose by 1.5 percent in year-on-year terms. In the private sector, the number of employees grew substantially on an annual basis in transportation and in certain market services subsectors (finance, information and communication), while it declined in agriculture and trade (Chart 3-27). In the public sector, the decline in the number of employees in health care was offset by an increase in the number of those employed in administration and education.

In January 2022, whole-economy employment amounted to 4.644 million, exceeding the number recorded a year earlier by 107,000 (Chart 3-28)**.** According to seasonally adjusted data, the number of employed was up 4,000 compared to the previous month. The seasonally adjusted unemployment rate remained at its Q4 level of 3.9 percent in January. Unemployment in Hungary is still considered low in an international comparison.

Data show that labour market tightening continued at the beginning of the year as well. According to the ESI business survey, which monitors economic sentiment, in early 2022 companies' expectations regarding employment were positive, and headcount increases were planned in all major sectors. Labour demand was higher than before the pandemic both in manufacturing and in the service sectors (Chart 3-29). In 2021 Q4, the number of vacancies in the competitive sector continued to rise, with 56,000 vacancies currently waiting to be filled, only 1,000 fewer than in 2019.

In February, the number of the registered unemployed was 252,000, which corresponds to the pre-pandemic level of 2019 (Chart 3-30). The Google Trends indicator concerning unemployment benefits is low in a historical comparison. According to the ESI household survey, households' fear of unemployment decreased slightly at the beginning of the year compared to 2021 Q4.

Chart 3-30: Indicators capturing the short-term evolution of unemployment



Note: Standardised values. Source: NES, ESI, Google

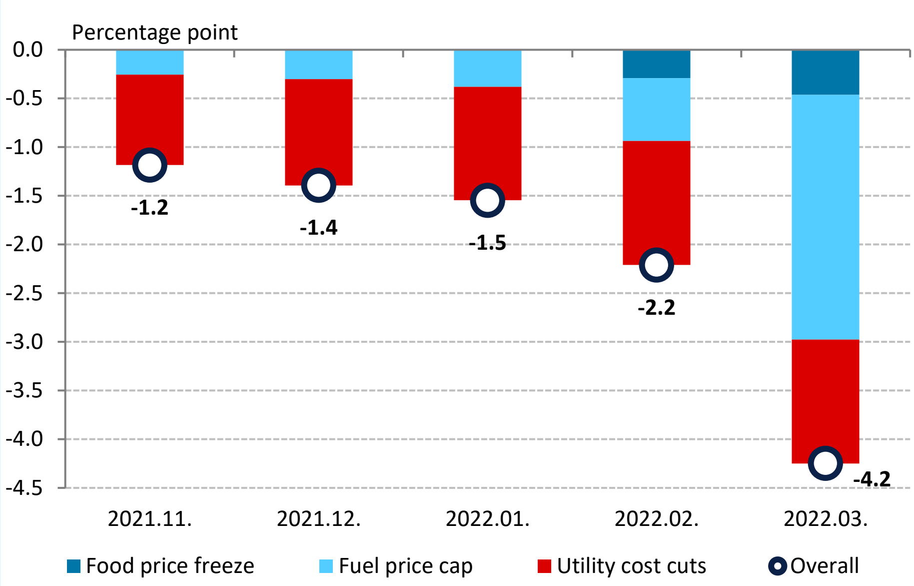
Box 3-3: Impacts of price caps and budgetary measures that increase income

In addition to the fixing of household energy prices for almost 10 years, the government has also set a cap on the prices of additional products in recent months due to extraordinary developments. Starting from 1 February 2022, the prices of seven staple foods are capped for three months at the level of 15 October. Based on the 2022 weights, the weight of these items in the consumer basket is 1.7 percent. In addition, from 15 November 2021 the government maximised the per litre fuel prices, initially for three months, at HUF 480, and then prolonged this measure by three months until 15 May.

Government measures to curb inflation will save households an average of HUF 12,000 a month between November and March, leaving HUF 60,000 on average with households in total. Fuels account for 6.5 percent of household expenditures, while the weight of services affected by the utility tariff cuts (district heating, gas and electricity) is 4.2 percent. Overall, the administrative price measures announced in recent months and the utility tariffs frozen in 2013–2014 at present account for 12.4 percent of total household expenditures. Overall, as a result of the measures, on average households will save 2.1 percent of consumption in the period November to March, amounting to roughly HUF 250 billion.

The prices of the products involved are key for inflation expectations and also have a psychological impact. In Hungary, government measures (capping fuel prices, excise tax cuts, freezing the prices of certain staple foods and utility tariff cuts) played a significant role in curbing the pass-through of commodity prices (Chart 3-31).

Chart 3-31: Impact of government measures on inflation



Note: In the case of utility tariff cuts, we assumed that utility costs in Hungary would increase at the utility inflation rate observed in the EU Member States from February.

Source: MNB calculation based on MNB and Eurostat data

Growth in household income was supported by government disbursements in early 2022, the aggregate amount of which is close to HUF 2,000 billion (Table 3-4). We assume that a significant part of the one-off, non-recurring surplus income will be used to augment savings or deleverage, and the demand-boosting effect of the measures may be moderate. Accordingly, the inflationary effect of the income-increasing measures may fall short of that of the disinflationary measures.

Of the government disbursements, the measures affecting regular incomes may make higher contribution to consumption growth than the one-off benefits. The increase in the minimum wage and the guaranteed wage minimum as well as the reintroduction of the 13th month pension will generate significant additional income for households.

Table 3-4: Impact of income-increasing measures in Hungary

Income-increasing measures	Additional net income (HUF bn)
Reintroduction of the 13th-month pension	370
Minimum wage increase and wage compression	325
Arms money	160
Sectoral wage increases	300
Personal income tax reimbursement for parents raising children	680
Under 25s PIT exemption	140
Overall	**1975**

Note: Net amount

Source: MNB

Relying on a questionnaire-based survey, the MNB continuously monitors households' attitudes on saving, and within this framework we also obtained a detailed picture of the utilisation of the personal income tax reimbursement. In January 2022, more than ten percent of those concerned intended to use the reimbursed amount for the repayment of their loans, while roughly 30 percent of them intended to save at least part of it. According to the January data, almost 60 percent of households planned to spend the personal income tax reimbursement, which represents a moderate increase compared to the October survey. Within that, almost 30 percent of families plan to make larger purchases from their additional income, while another 30 percent will spend it within one year. The ratio of the latter households – using the reimbursement to cover day-to-day expenditure – rose by more than 5 percent. Based on the data received to date, it can be stated that a large portion of the additional income increased the stock of liquid assets, namely cash and retail deposits, mostly at the beginning of the year.

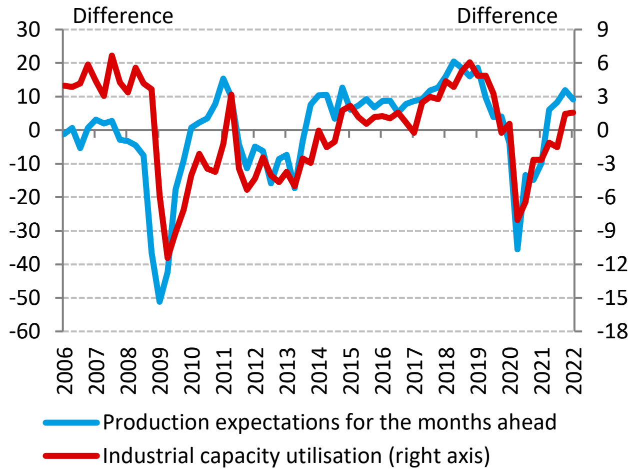
3.4. Cyclical position of the economy

The Hungarian economy continued to recover in 2021 Q4. The cyclical position of the economy has improved in recent quarters, allowing output to reach its potential level. Changes in the cyclical position involve even greater uncertainty than usual, and the quantification and separation of demand and supply effects is difficult in the current situation. Looking ahead, the war between Russia and Ukraine further increases uncertainty, as new supply problems may emerge in the commodity market. Pressures on global supply chains may once again increase, and difficulties in shipping point to an increase in inflation.

According to our estimation, the cyclical position of the economy has improved in recent quarters, allowing output to reach its potential level. Changes in the cyclical position involve even greater uncertainty than usual, and the quantification and separation of demand and supply effects is difficult in the current situation. Looking ahead, the war between Russia and Ukraine further increases uncertainty, as new supply problems may emerge in the commodity market. Pressures on global supply chains may once again increase, and difficulties in shipping point to an increase in inflation.

According to the questionnaire-based surveys, the capacity utilisation of manufacturing companies has significantly increased in recent months (Chart 3-32). However, the survey was performed before the outbreak of the war between Russia and Ukraine, and reflects the economic situation before the war in the neighbouring country. Outlooks for global economic performance have deteriorated, and the related uncertainty remained high, primarily due to the escalation of the Russia-Ukraine conflict and the sanctions introduced in response. In addition, surging energy prices and the global semiconductor shortage also cause significant difficulties.

Chart 3-32: Capacity utilisation and production expectations in manufacturing



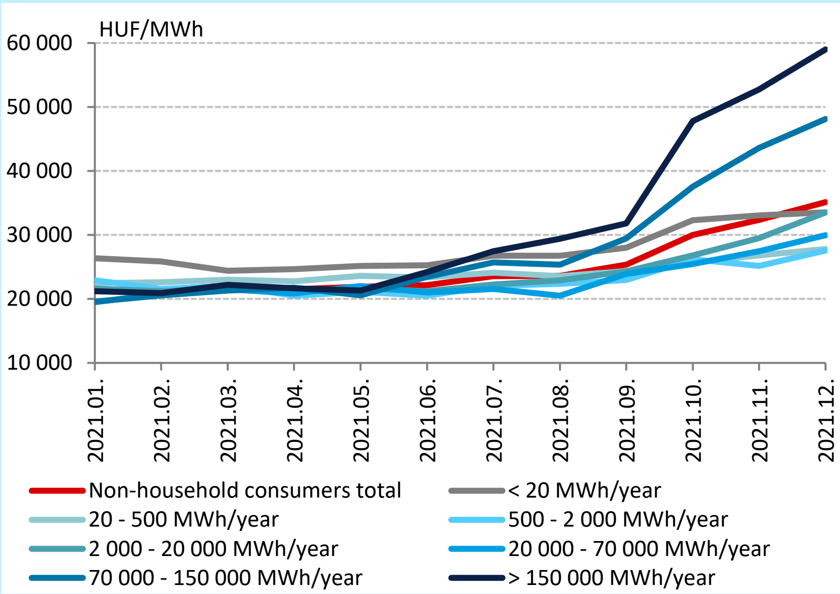
Note: Deviation from historical average.
Source: MNB based on ESI

Box 3-4: Varying repricing pattern at the beginning of the year

As regards the repricing typically seen at the start of the year, it may be stated in general that the most important information related to price developments in the respective year comes from the data of the first months of the year. This can be mainly observed in the case of core inflation excluding indirect taxes, which captures long-term inflation trends, and within that market services, which account for one third of it. Based on historical experiences, in the case of market services repricing by companies typically appears in consumer prices at the beginning of the year. It typically affects the period of January and February and based on the experiences from previous years the higher (lower) price increases in January and February are often followed by higher (lower) price dynamics throughout the year. Particularly in the second half of the year considerable rise or fall in prices is usually caused by idiosyncratic factors, as it has been the case on several occasions in recent years for mobile phone and internet services.

Excluding the price of fuels, which are sensitive to world market oil prices, and administered prices, the monthly price change of the consumer basket was 1.6 percent in January and 1.3 percent in February. The repricing rate calculated in this way at the beginning of the year was almost three times higher than in the last decade. The higher repricing rate was a general phenomenon, which is attributable to the fact that the rise in global commodity, crop and energy prices appears swiftly in the consumer prices of a wide range of products. The stoppages caused by the coronavirus pandemic, the rise in energy prices and factors such the global chip shortage decelerate the supply-side recovery. The supply-demand imbalance caused significant price increases in certain subareas already in the acute phase of the pandemic, which then spread to an increasing range of products. Skyrocketing prices in the energy market also caused faster price increases in recent months. Indeed, by the end of the year the price of energy actually paid by companies was 1.5–2.5 times higher than the level at the beginning of last year (Chart 3-33). This rise first appeared in producer prices, but in recent months it also had an upward impact on price developments in food and finished products.

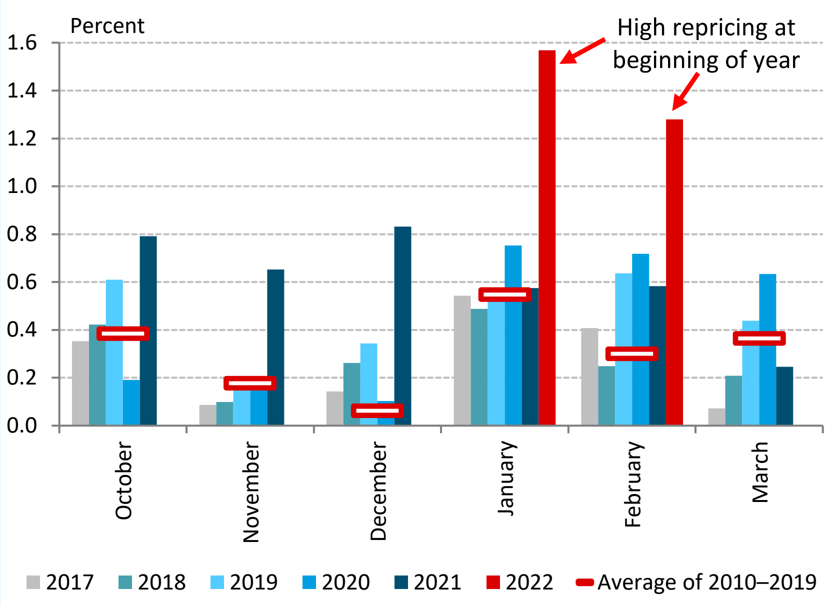
Chart 3-33: Changes in energy price by consumption category



Source: Hungarian Energy and Public Utility Regulatory Authority (MEKH), MNB calculation

However, the higher repricing compared to previous years already commenced at the end of last year. Based on the consumer price patterns, there were only minor price changes at the end of the year. Last November and December this pattern changed, however, and the data show that the highest repricing in 2021 took place at the end of the year, affecting a wide range of products and services (Chart 3-34).

Chart 3-34: Monthly changes in consumer prices excluding fuel prices and administered prices

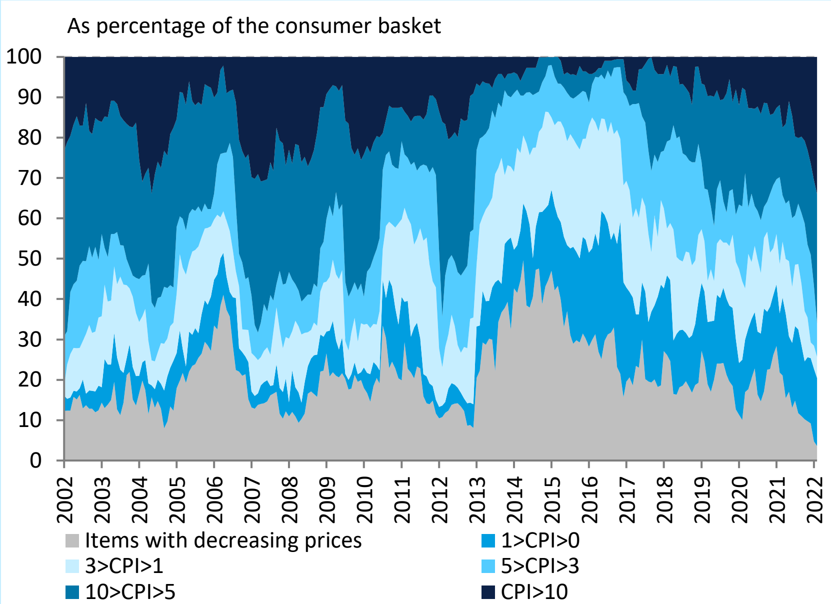


Note: Seasonally unadjusted monthly changes excluding indirect tax effects.

Source: MNB calculation based on HCSO data

Based on data from recent months, an increasing range of products are characterised by substantial price increases. Looking at the February data, prices in 66 percent of the product groups rose by more than 5 percent; within that, the price of 34 percent of the items increased by more than 10 percent in one year. The higher price rise attributable to global effects is reflected primarily in the price of industrial goods and food. Compared to December, food prices rose by 5.8 percent, thus exceeding the price rise registered in the first months of the previous years by more than one and a half times. The growth in the unprocessed food price index is primarily attributable to poultry and seasonal products. The growth in processed food price inflation was attributable to a wide range of products, but the largest increase – in line with the world market commodity prices – was registered in the price of cooking oil and dairy products. The price of the products (sugar, flour, sunflower oil, pork leg, 2.8% UHT milk, chicken breast) affected by the price cap introduced by the government on staple foods dropped in February compared to the previous month, which as a whole decreased food price growth. However, in spite of the food price cap, prices compared to the previous year still increased by 11.9 percent. Industrial goods inflation is dominated by the increase in the prices of durable goods, where prices in February rose by 8.3 percent. The price of used cars continued to rise substantially, while television, technical goods and household appliances also registered significant price increases. The rise in the price of technical goods implies that the global chip shortage also contributes substantially to the price increase.

Chart 3-35: Breakdown of the consumer basket by the rate of inflation



Note: Not seasonally adjusted annual price changes excluding indirect tax effects.
Source: MNB calculation based on HCSO data

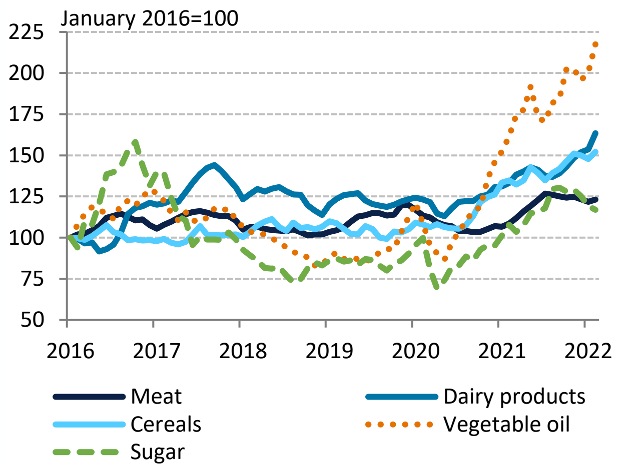
3.5. Costs and inflation

The rate of price increases rose to 8.3 percent at the beginning of the year. The underlying reasons for the significant increase in inflation observed in recent months primarily include the rise in food prices and the significant repricing of industrial goods and market services. A large part of the price increase in Hungary continues to be explained by external factors. The higher repricing rate, which substantially exceeds that observed in recent years, is a general phenomenon, which is attributable to the fact that the rise in global commodity and energy prices appears swiftly in the consumer prices of a wide range of products. Core inflation excluding indirect taxes rose to 8.1 percent at the start of the year. The indicators capturing longer-term inflationary trends have been continuously rising in recent months.

3.5.1. Producer prices

Following an increase last year, world market food prices remained high at the beginning of the year. The high level of unprocessed food prices in the recent period stemmed from surging demand in conjunction with low global supply, labour shortages resulting from the pandemic and rising costs. The largest increase was registered in the market of oilseed crops, where the price level was almost one third higher in the early months of this year. The price of other products rose on average by about 15 percent in an annual comparison (Chart 3-36). As a result of the war between Russian and Ukraine and the sanctions imposed on Russia, the price of wheat and maize rose further at the end of February.

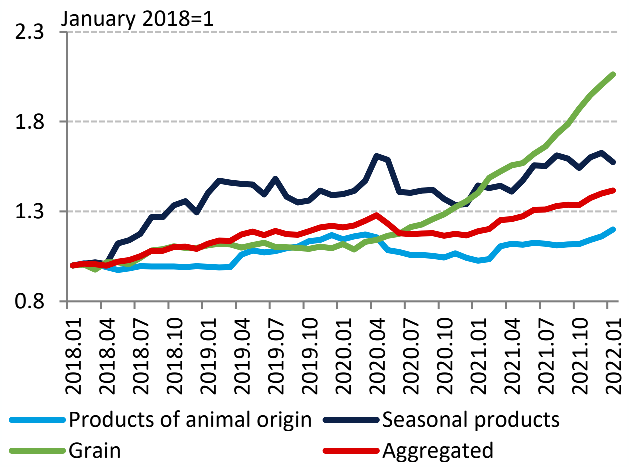
Chart 3-36: Development of world market prices of food



Note: Real price indices.
Source: FAO

Compared to the previous quarter, domestic agricultural producer prices rose further, showing a year-on-year increase of almost 20 percent at the end of 2021. The largest rise is still observed for grains, where prices grew by one and a half times in year-on-year terms. The rise was equally attributable to wheat and oil crops. The price of products of animal origin rose further compared to 2021 Q3, which was mainly attributable to the rise in poultry and milk prices. Meanwhile, there was a moderate correction in fruit prices, which only partially offset the further substantial rise in potato prices (Chart 3-37).

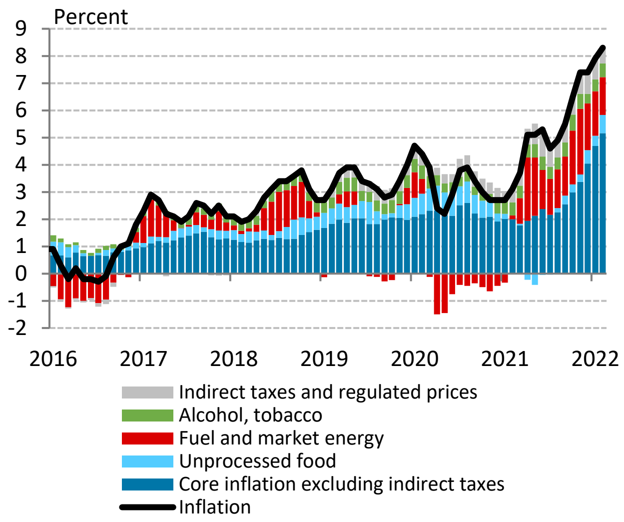
Chart 3-37: Development of agricultural prices



Note: Based on seasonally adjusted data.
Source: HCSO

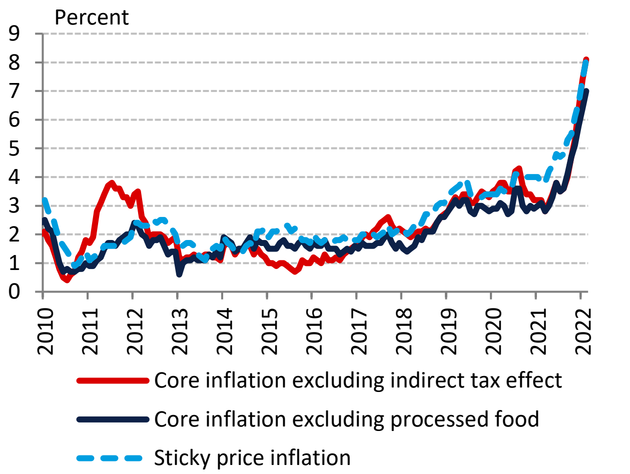
In the case of consumer goods, the rise in domestic industrial producer prices substantially exceeded the historical average early this year. The domestic sales prices of industry as a whole showed a year-on-year increase of around 35 percent, which was several times higher than the historical average and was mainly attributable to the energy-producing sectors, in line with the rise in global energy prices. At the end of last year, the price of electricity sold to consumers purchasing on the open market rose 1.5-2.5 times (see Box 3-4). Since then, the conflict between Russia and Ukraine has resulted in further significant increases in global energy prices.

Chart 3-38: Decomposition of inflation



Source: MNB calculation

Chart 3-39: Underlying inflation indicators



Note: Core inflation excluding processed food, is unchanged from previous demand-sensitive inflation. The reason for the new name is that, during periods of significant cost shocks that are generally effective, the previous name may be misleading.
Source: MNB calculation based on HCSO data

3.5.2. Consumer prices

The rate of price increases rose to 8.3 percent at the beginning of the year. The underlying reasons for the large increase in inflation observed in recent months primarily include the rise in food prices and the significant repricing of industrial goods and market services (Chart 3-38). The repricing rate at the beginning of the year was three times higher than in recent years. The higher repricing rate is a general phenomenon, which is attributable to the fact that the rise in global commodity and energy prices appears swiftly in the consumer prices of a wide range of products.

Core inflation excluding indirect taxes rose to 8.1 percent at the beginning of the year. The rise in core inflation is attributable to the rise in the prices of processed food and the repricing of industrial goods and market services. The indicators capturing longer-term inflationary trends have been continuously rising in recent months (Chart 3-39).

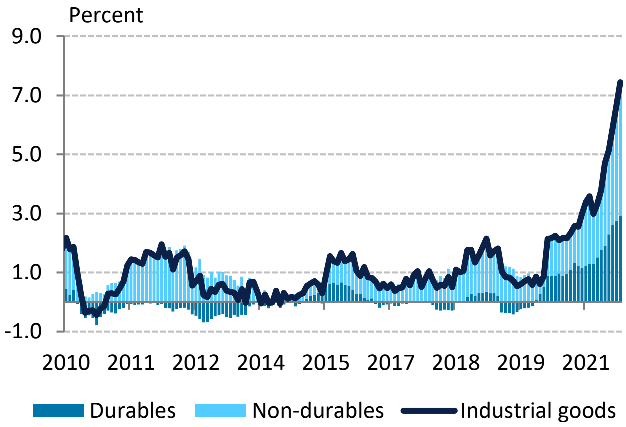
At the beginning of the year, inflation of industrial products rose close to 7 percent; the annual price increase is considerably higher than the average of previous years. The price increase is in line with international trends. In January and February, prices rose by 0.8 and 1.0 percent, respectively, in a monthly comparison, instead of the decline observed in previous years. The global semiconductor shortage and the high level of base material prices also pointed to a rise in the consumer prices of the product group. Within this product group, both the price index of durable and non-durable goods rose. The sharp increase in prices of new and used cars observed in recent months contributed significantly to the increase in durable goods prices (Chart 3-40).

Market services inflation was around 6 percent at the beginning of the year. The price increase was significantly higher than the usual repricing in January and February, which characterised a wide range of services. As in December, prices of food-related services rose further at the start of the year (Chart 3-41).

Inflation of alcohol and tobacco products has gradually declined in recent months. The fall in the price index of this product group is attributable to the gradual disappearance of the impact of earlier excise duty hikes. However, in February the observed relevant increase in prices compared to January caused a rise in the annual price index of this product group.

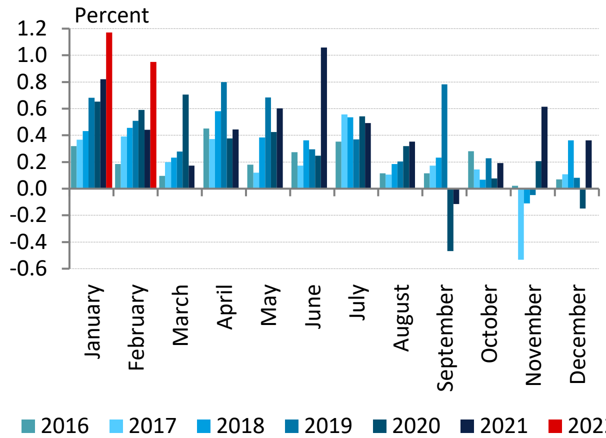
Food inflation rose to nearly 12 percent, exceeding the historical average of this product group. Inflation of both unprocessed and processed food registered a double-digit increase. The rise in the inflation of the product group is

Chart 3-40: Inflation of industrial goods



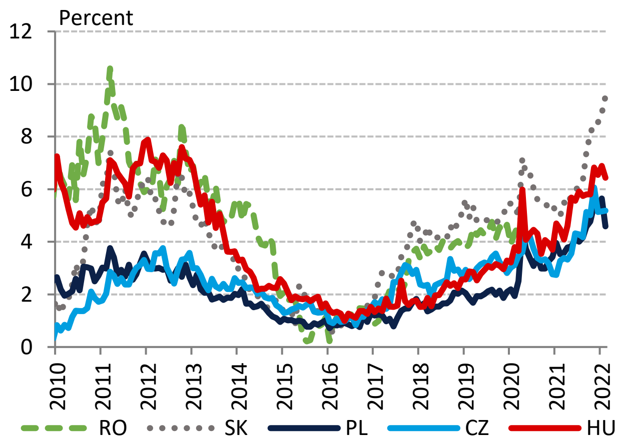
Note: Annual change, excluding the effect of indirect taxes.
Source: MNB calculation based on HCSO data

Chart 3-41: Monthly price change of market services



Note: Not seasonally adjusted monthly price changes excluding indirect tax effects.
Source: HCSO, MNB

Chart 3-42: Inflation expectations in the region



Note: No data are available for Romania since May 2020.
Source: MNB calculations based on European Commission data

attributable to surging fodder and energy prices as well as to high transport costs. The January rise in the unprocessed food price index is primarily attributable to poultry and seasonal products. The increase in prices of processed food was attributable to a wide range of products, but the price cap introduced by the government in February on staple foods curbed the rate of the price increase (Box 3-3).

In the past period, fuel price indices were affected by base effects and government measures. Although the inflation of the product group fell in January as a result of the base effect of the substantial price increase registered last year, it still contributed substantially to inflation. In addition, in recent weeks, the price cap of HUF 480 substantially mitigated the inflationary effect of the increase in the world price of crude oil.

Based on data from recent months, inflation was higher than the forecast in the December Inflation Report. It is a global phenomenon that actual figures regularly override previous forecasts. The underlying reasons for the sharp increase in inflation include supply-demand imbalances and energy market disturbances. The rise in energy prices first appeared in fuel prices, followed by an increase in producer prices and then in the prices of finished products.

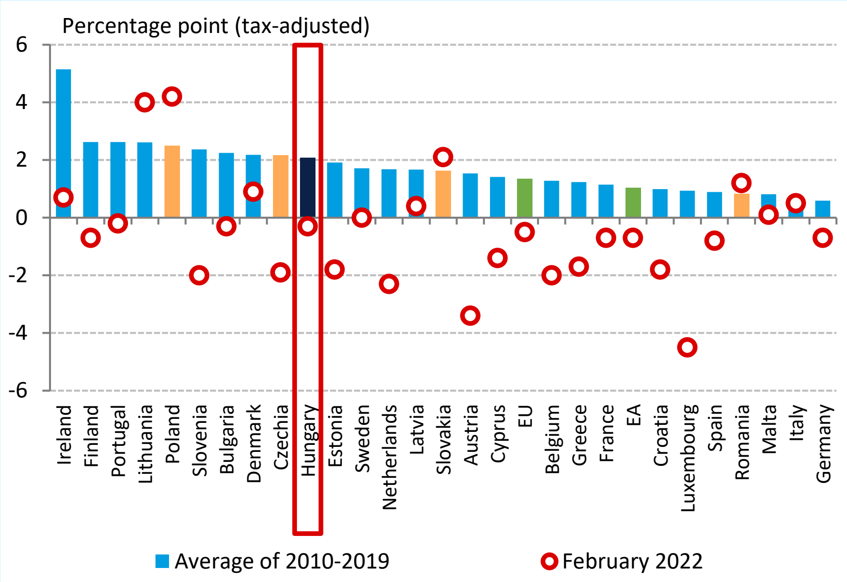
3.5.3. Inflation expectations

In Hungary, households' inflation expectations remained broadly unchanged compared to the end of the year, but they still exceed the central bank's target band. Overall, expectations in the countries of the region varied, which may be attributable to the combined effect of the recently rising inflation and the price rise curbing measures announced in the meantime (Chart 3-42). In Slovakia, households' expectations of price increases remain well above the regional average.

Box 3-5: Change in the structure of inflation as a result of the coronavirus pandemic

According to traditional economic wisdom, in parallel with the convergence of the economy, convergence to the price level of developed countries can be also observed, which essentially materialises through the inflation of services. Due to this, there is a positive inflation gap between market services and industrial goods. The industrial sector is capital-intensive and is exposed to stronger competition than the service sector, which is characterised by higher labour intensity and lower competition. International data also confirm that in the past decade services inflation was usually higher than that of industrial goods. However, the coronavirus crisis restructured inflation globally, as the positive inflation gap has disappeared in recent months, and even turned around in most of the countries (Chart 3-43).

Chart 3-43: Gap between the inflation of market services and industrial goods in an international comparison

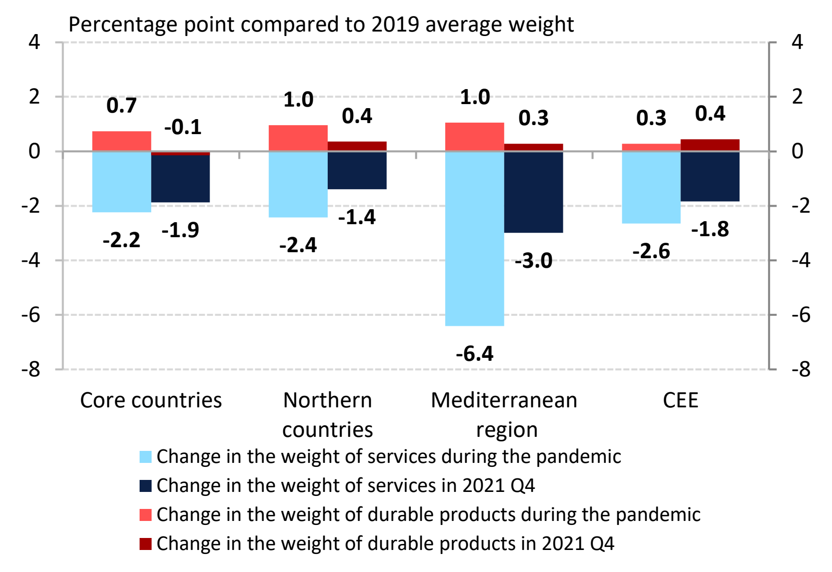


Note: Based on HICP data excluding indirect tax effects.
Source: Eurostat, MNB calculation

The change in the structure of inflation is essentially attributable to two reasons: on the one hand, the recent cost shocks substantially increase the inflation of industrial goods, and on the other hand, the changing consumption structure resulting from the pandemic also supports the narrowing of the inflation gap. In the past decades, based on the growth patterns, it was a general phenomenon that the weight of services increased continuously in parallel with economic growth. This trend was broken by the coronavirus pandemic, as the structure of consumption shifted from services to durable goods after the pandemic (Chart 3-44).

The recovery of services lost has started, but the degree of this varies. In the core countries (Germany, France, Netherlands and Austria) the services-to-consumption ratio recovered by a total of 0.3 percentage points in 2021 Q4 compared to the negative change (-2.2 percent) observed in the acute phase of the pandemic. The Northern countries (Denmark, Finland, Sweden) registered a larger recovery than that, i.e. + 1 percentage point. In 2021 Q4, the strong decline in services improved by 3.4 percentage points in the Mediterranean region (Italy, Malta), which rely on tourism to the largest degree, and by 0.8 percentage point in the CEE region (Czech Republic, Hungary, Estonia, Latvia, Romania). The surge in the weight of durable goods during the crisis has largely moderated. The share of durable goods in consumption continued to increase in the CEE region (+0.1 percentage points), while it declined in the core countries (-0.8 percentage point), in the Nordic region (-0.6 percentage point) and in the Mediterranean region (-0.7 percentage points) in 2021 Q4, compared to the increase during the pandemic.

Chart 3-44: Change in the structure of consumption by product groups

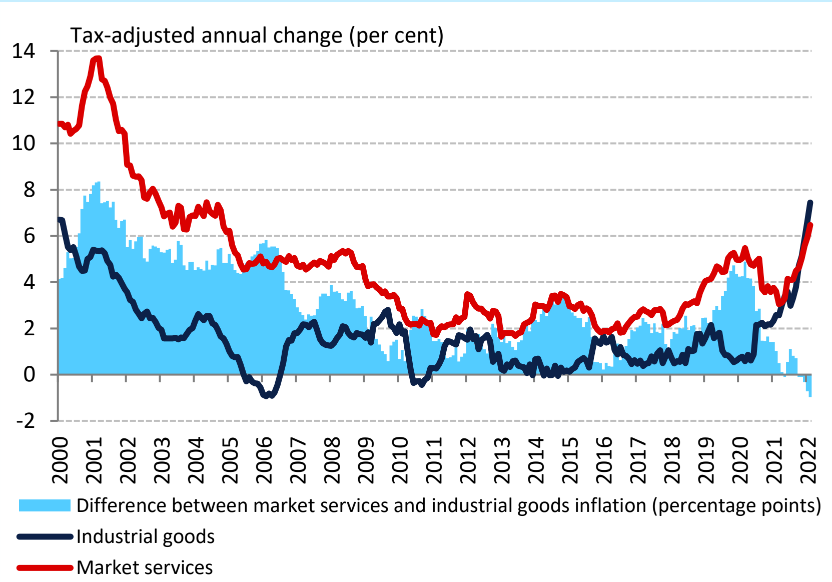


Note: Seasonally and calendar adjusted series. The change shows the value compared to pre-crisis level. Core countries: Germany, France, Netherlands, Austria. Northern countries: Denmark, Finland, Sweden. Mediterranean region: Italy, Malta. CEE: Czech Republic, Hungary, Estonia, Latvia, Romania.

Source: Eurostat, Macrobond

Recently we have witnessed global supply shocks, as a result of which in the past months inflation of industrial goods caught up with or even outstripped the inflation of market services in some countries. The price of gas in January and February exceeded the average of 2019 more than 4.5 times and 11 times by mid-March. The price of electricity in the same periods was four and more than eight times higher, respectively. The world market price of oil following the breakout of the war between Russia and Ukraine rose to USD 130 per barrel in the first week of March, after which it declined to around USD 100 per barrel at mid-month. Maritime transport costs from Asia to Europe were on average ten times higher than in 2019. In addition, the global chip shortage and the supply chain problems also pointed towards a rise in the price of technical products. Accordingly, inflation of industrial goods in Hungary rose to 7.4 percent in February, which represents a historically high value (Chart 3-45).

Chart 3-45: Inflation of market services and industrial goods in Hungary



Note: Price change excluding indirect tax effects.

Source: HCSO, MNB calculations

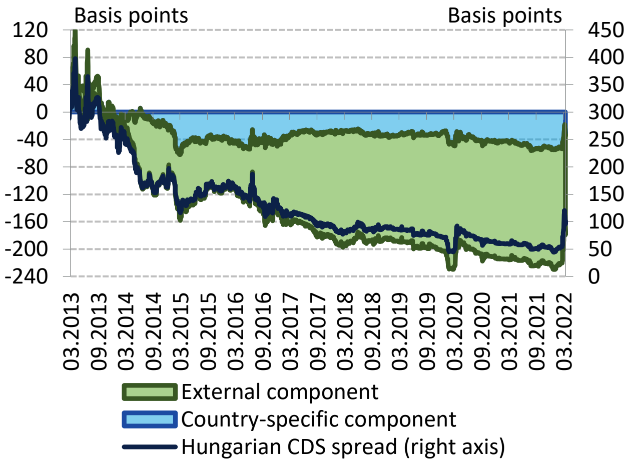
4. Financial markets and interest rates

4.1. Domestic financial market developments

Financial and capital market sentiment deteriorated significantly in the past quarter, particularly in the second half of the period, in parallel with the war and rising volatility on the bond and foreign exchange markets. Due to rising tensions, commodity and energy prices once again increased sharply, which also raised the interest rate path priced in the regional markets.

Hungary's credit risk spread rose significantly but remains at a low level over a longer horizon. As a result of increasing global yields, higher inflation and central bank interest rate hikes, government bond yields rose in the region and thus in Hungary as well. The interbank yield curve also shifted upwards. Compared to the currencies in the region, the forint depreciated to a greater extent against the euro, weakening by 1.7 percent. In the region, Polish zloty depreciated to a similar degree as the forint, while the Czech koruna appreciated against the euro by 2 percent.

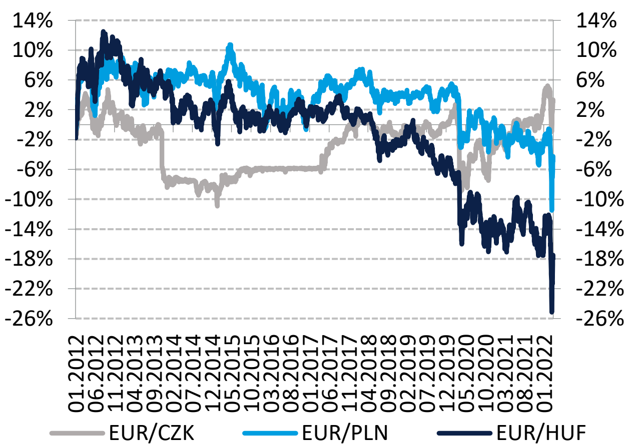
Chart 4-1: Components of 5-year Hungarian CDS spread



Note: The decomposition method used can be found in the MNB Bulletin: Variance decomposition of sovereign CDS spreads, Kocsis–Nagy (2011).

Source: Bloomberg

Chart 4-2: Exchange rates in the region



Note: Changes compared to beginning of 2012. Positive values mean appreciation of the currency.

Source: Bloomberg

4.1.1. Risk assessment of Hungary

Hungary's risk spread decreased slightly at the beginning of the period, followed by a significant increase (Chart 4-1). During the period under review, the international factor raised the CDS spread to a larger degree than the domestic factor, although both pointed to a rise. At present, the indicator stands at 102 basis points.

4.1.2. Developments in foreign exchange markets

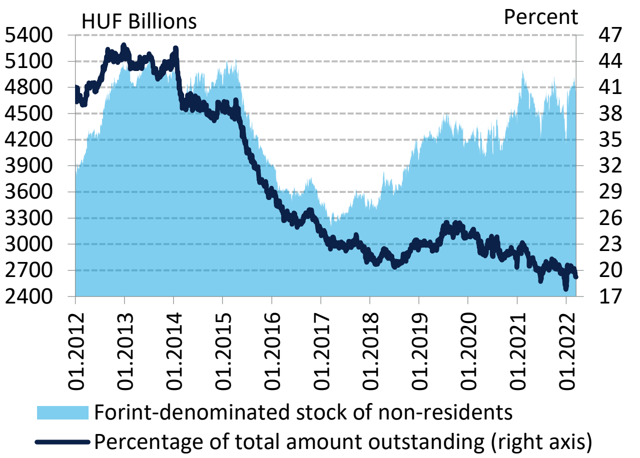
Compared to the currencies in the region, the forint depreciated to a greater extent against the euro, weakening by 1.7 percent. In the region, the Polish zloty weakened to a similar degree, while compared to this the Czech koruna appreciated by 2.3 percent (Chart 4-2). In the first half of the period, the currencies of the region strengthened substantially, followed by sharp depreciation after the outbreak of the Russia-Ukraine conflict. The forint and zloty depreciated against the US dollar by almost 4 percent, while the Czech koruna strengthened against the US currency by 0.6 percent.

4.1.3. Government securities market and changes in yields

Non-residents' HUF-denominated government securities holdings increased in the past quarter (Chart 4-3). Non-residents' forint government securities holding declined last year, while they started to increase from early this year. Holdings grew by nearly HUF 150 billion in the past three months. The ownership share within HUF-denominated government securities declined slightly to 19 percent.

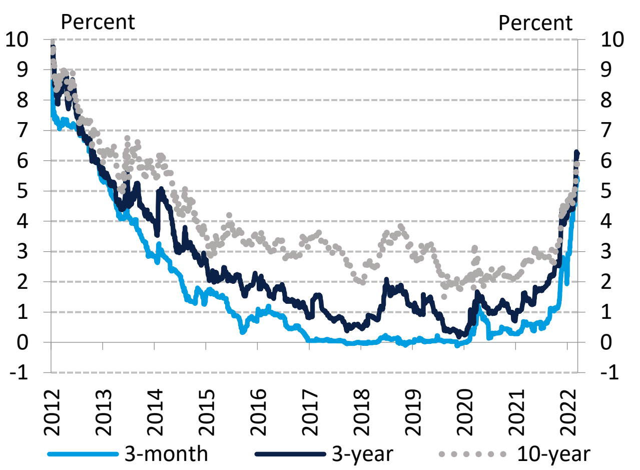
During the period, the Debt Management Agency accepted bids for higher amounts than announced at the government bond auctions, although from time to time lower-than-announced issuances also took place. Average auction yields rose at all maturities in the past quarter, in line with the increase in the secondary market yields. Average

Chart 4-3: HUF-denominated government securities held by non-residents



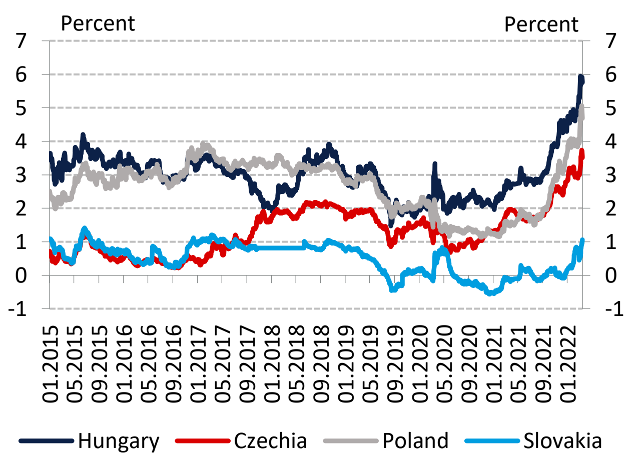
Note: The chart shows the stock of T-bills and T-bonds.
Source: MNB

Chart 4-4: Yields of benchmark government securities



Source: Government Debt Management Agency (ÁKK)

Chart 4-5: 10-year government benchmark yields in CEE countries



Source: Bloomberg

auction yields increased by 301 basis points at the 3-month discount treasury bill auction and by 98 basis points at the 10-year auction. Accordingly, average auction yields were at 5.57 percent and 5.58 percent, respectively, at the end of the period.

Yields increased over the entire government securities market yield curve. Yield increases were typical of the entire period, but the rise was stronger for shorter maturities at the end of the period (Chart 4-4). On the whole, during the quarter, 3-year and 10-year yields rose by 214 and 105 basis points, respectively, with global factors and interest rate hikes in the region as contributors. Of the interbank yields, the 3-month BUBOR rose by 254 basis points to 6.2 percent.

Long-term reference yields in the region also increased during the period (Chart 4-5). The 10-year Polish yield rose by 150 basis points, while the 10-year Czech yield advanced 112 basis points versus the end of the previous quarter. Slovak (euro) yields also rose by 110 basis points.

Box 4-1: Stable fundamentals of the Hungarian banking sector facilitate the maintenance of lending

Hungarian banks met with the outbreak of war between Russia and Ukraine in a stable position. Banks' adequate capital and liquidity reserves make them resilient to external shocks. In 2021, the Hungarian banking sector realised record high profit (HUF 820 billion consolidated after-tax profit), and its capital adequacy is close to 19 percent, while its operative liquidity reserve was around HUF 18,000 billion at the beginning of 2022. The sector's Russian and Ukrainian exposures are manageable in size, and potential losses from direct exposures are limited. On the whole, Hungarian banks' significant lending capacities are capable of maintaining the financing of real economic agents.

Over the past 15 years, the Hungarian banking sector was hit by several significant economic and financial shocks. However, the sector's response to individual shocks varied significantly depending on the soundness of banks at the time when they were impacted by the given shock. In the case of a banking sector with low capitalisation and a stretched balance sheet, the impact of the materialisation of a stress scenario is manifested in the fall of lending capacities, and ultimately in the deteriorated performance of the real economy.[1] For example, the 2008 financial crisis – through the forced adjustment of Hungarian banks which were then in a stretched situation – exerted much larger negative effect on the real economy than that observed in 2020, when banks' sound balance sheet structure facilitated supporting the fund raising of real economic actors through lending.

The 2008 financial crisis hit the Hungarian banking sector in an unstable situation in several respects. In that period banks were characterised by relatively low liquidity and unstable funding structure. The credit-to-deposit ratio was 152 percent, and foreign liabilities accounted for roughly one third of the total balance sheet (Table 4-1). These two indices imply that the activity of the sector was financed in large part by less stable liability components, often with extremely short maturity. Capital adequacy was slightly over 10 percent, which somewhat exceeded the minimum regulatory requirement, but reflected a low level of buffers over that. Household loans were dominated by a high, two-thirds proportion of variable rate foreign currency loans while high-risk project financing loans had a significant weight within corporate lending. The high risk of banks' balance sheet prompted domestic financial institutions to adjust, which also had a negative impact on the financing opportunities of real economic agents.

As a result of adjustment, at the onset of the coronavirus pandemic the sector already had a much more stable balance sheet and it also maintained this stability over the past two years. The loan-to-deposit ratio of well below 100 percent, the ratio of foreign liabilities of below 15 percent and the 18-percent consolidated capital adequacy all contributed to maintaining the stability of the sector, despite the significant real economy shock. Losses were also limited by the sound loan portfolio: foreign currency loans to households practically disappeared from banks' balance sheet, and the ratio of variable rate loans also significantly dropped along with the shrinking of speculative corporate project financing loan portfolio. The macroprudential rules introduced by the MNB in recent years contributed significantly to financing in a sound structure and also to the high quality of the loan portfolio.

[1] For more details, see: Drabancz, Áron – Marosi, Anna – Palicz, Alexandr (2021): Hitelezés válsághelyzetben – 2008 vs 2020 (Lending in crisis – 2008 vs. 2020) Polgári Szemle (Civic Review, Journal of Economic and Social Sciences), 17(4-6), p. 84-103.

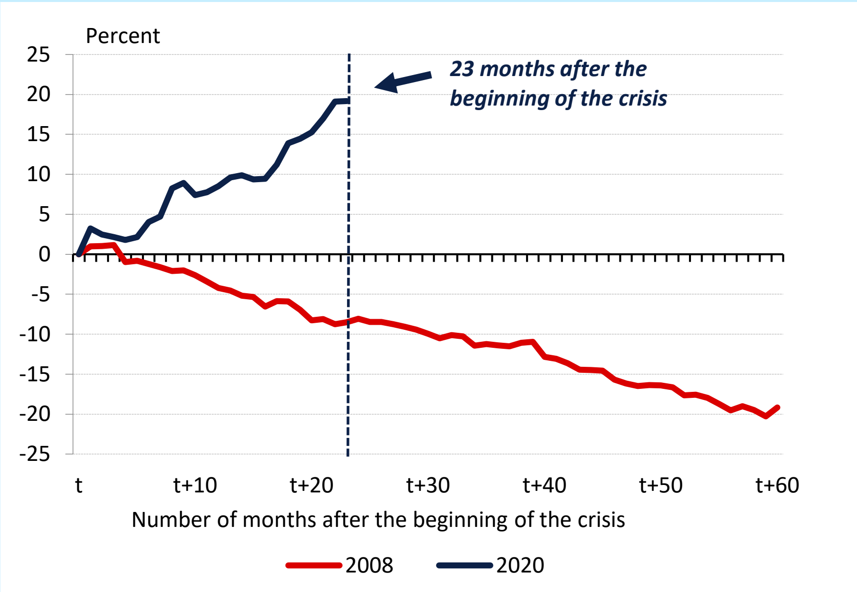
Table 4-1: Certain indicators of the Hungarian banking sector in 2008, 2019 and 2021

	2008	2019	2021
Liquid assets / total assets	10.0%	30.9%	39.3%
Credit / deposit ratio	152%	75%	66%
Foreign liabilities / total liabilities	33.9%	12.7%	7.5%
Capital adequacy ratio of the banking sector (consolidated)	11.2% (12.9%)	22.5% (18%)	20.8% (18.6%)
Rate of loans overdue for more than 90 days	4.6%	2.1%	1.0%
Net NPL / own funds	16.0%	2.1%	1.2%
Return on equity	11.3%	11.6%	11.0%
Operating expenses as a ratio of total assets	2.4%	2.0%	1.7%
Ratio of foreign currency loans - household loans	66.3%	0.7%	0.4%
Proportion of variable rate mortgages - households	77.5%	48.7%	30.1%

Source: MNB

The stable capital position and adequate funding background along with the economic policy responses to the coronavirus (state credit and guarantee schemes, moratorium on loan instalments, central bank lending schemes) contributed strongly to the substantial growth in the outstanding borrowing of corporations after February 2020, in contrast to the years after the 2008 crisis. Accordingly, less than two years after the outbreak of the coronavirus crisis, corporate loans outstanding are roughly 19 percent higher than at the start of the crisis, while after the 2008 crisis by this time a contraction of almost 10 percent could be observed (Chart 4-6). Retail lending also followed similar trends when comparing the two crises. Developments in the Financial Conditions Index also imply favourable trends, as it remained close to 0 even after the emergence of the coronavirus, i.e. the banking sector neither fuelled nor curbed economic growth. On the whole, it can be stated that the war between Russia and Ukraine has hit the banking sector in a stable position; Hungarian banks' significant lending capacities are capable of maintaining the financing of real economic agents.

Chart 4-6: Changes in corporate loan outstanding following the outbreak of the 2008 financial crisis and the 2020 coronavirus crisis

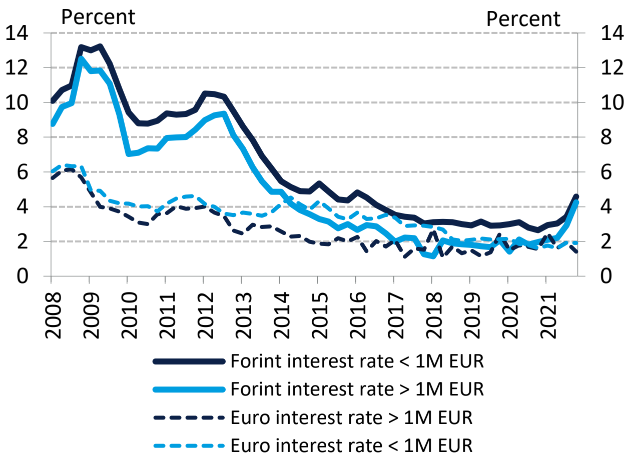


Source: MNB

4.2. Credit conditions of the financial intermediary system

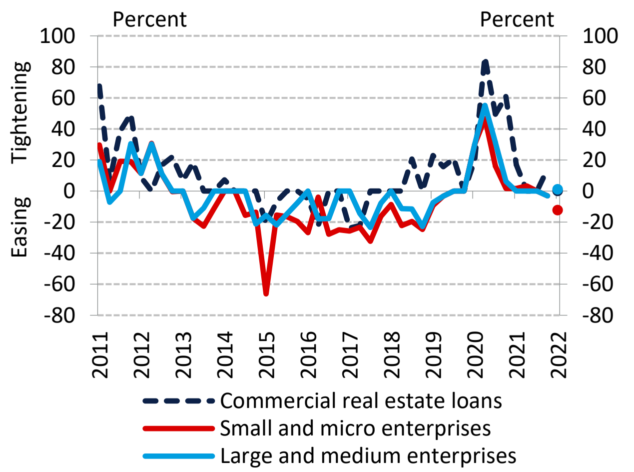
In 2021 Q4, the average interest rate on forint loans rose significantly as a result of rate increases by the central bank. Corporate lending conditions did not change substantially in any of the enterprise size categories, while a small portion of the respondent credit institution tightened conditions in commercial real estate financing and looking ahead an easing of credit standards may be expected in the SME segment. Standards of household loans did not change significantly in 2021 Q4, while tightening of consumer loans may be expected in 2022 H1. The average cost of funds of corporate HUF-denominated loans as well as the APR on long-term fixed-rate housing loans increased in the period under review. Nearly two thirds of the housing loan contracts concluded during the quarter were certified consumer-friendly housing loans (CCHL), ensuring the long-term predictability of instalments.

Chart 4-7: Interest rates on new corporate loans



Note: Loans with variable interest rate or with up to 1-year initial rate fixation. From 2015, based on data net of money market loans exceeding EUR 1 million.
Source: MNB

Chart 4-8: Changes in credit conditions in corporate sub-segments



Note: Net percentage balance of respondents tightening/easing credit conditions weighted by market share. Forecast for 2022 H1.
Source: MNB, based on banks' responses

4.2.1. Corporate credit conditions

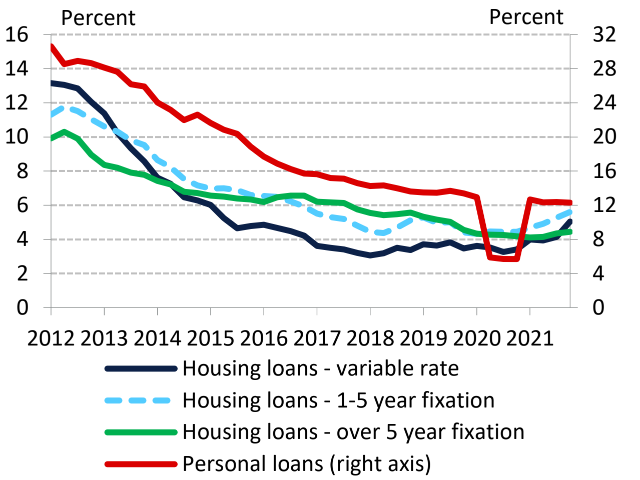
In 2021 Q4, the average interest rate on forint loans rose significantly as a result of rate increases by the central bank. Excluding money market transactions, the smoothed average interest rate level on new corporate HUF loans with interest rates variable within one year (largely market-based loans) rose by 115 basis points in the case of low-amount loans and 133 basis points in the case of high-amount loans compared to the previous quarter (Chart 4-7). Accordingly, within the loans the interest rate of which is variable within one year, the average interest rate on forint loans amounted to 4.3 percent in December. During the quarter, the interest rate level on low- and high-amount euro loans decreased by 2 and 54 basis points, respectively, and thus the average cost of funds of euro loans stood at 1.4 percent at end-December. The increase in forint interest rates is attributable to the rising interest environment, while the change in euro interest rates is mostly caused by the change in spreads.

Standards did not change significantly during the quarter in any enterprise size category, while looking ahead, some easing can be expected in the SME segment. Banks participating in the Lending Survey did not significantly change the conditions of access to credit in any of the enterprise size categories in the fourth quarter, although a net 14 percent of the respondent credit institutions tightened conditions on commercial real estate financing. No substantial change is expected in corporate credit conditions in 2022 H1 either: banks do not anticipate any major change in the standards applicable to commercial property financing and large and medium-sized enterprises, while a net 12 percent of banks plan some easing for small and micro enterprises (Chart 4-8).

4.2.2. Household credit conditions

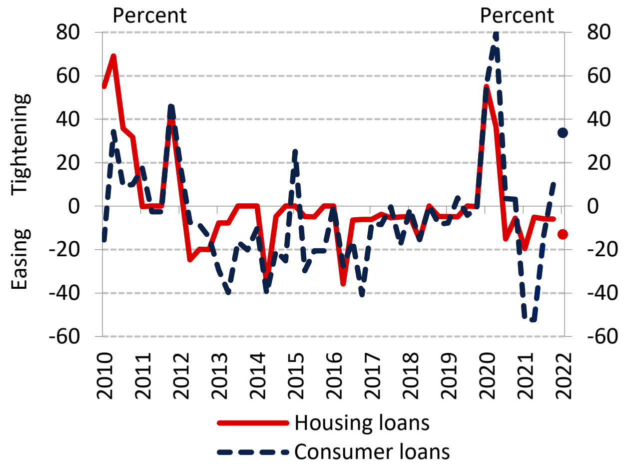
Banks only partly reflected the increase in the yield environment in their pricing during the quarter. The average interest rate spread on housing loan contracts concluded in 2021 Q4 declined in all interest rate fixation categories. At the end of the quarter, following increases of

Chart 4-9: Annual percentage rate of charge on new household loans



Note: Quarterly average of lending rates on newly disbursed loans.
Source: MNB

Chart 4-10: Changes in credit conditions in the household sector



Note: Net percentage balance of respondents tightening/easing credit conditions weighted by market share. Forecast for 2022 H1.
Source: MNB, based on banks' responses

34 and 10 basis points, the average APR level on housing loan contracts concluded during the quarter stood at 5.6 and 4.5 percent for loans with interest rate fixation of 1–5 years and for maturities exceeding 5 years, respectively (Chart 4-9). The spread on certified consumer-friendly housing loans dropped 87 basis points to 0.4 percentage point at end-December 2021, and this product accounted for 66 percent of the quarterly housing loan issuance. Decreasing slightly, the average APR on personal loans reached 12.3 percent by the end of the period under review.

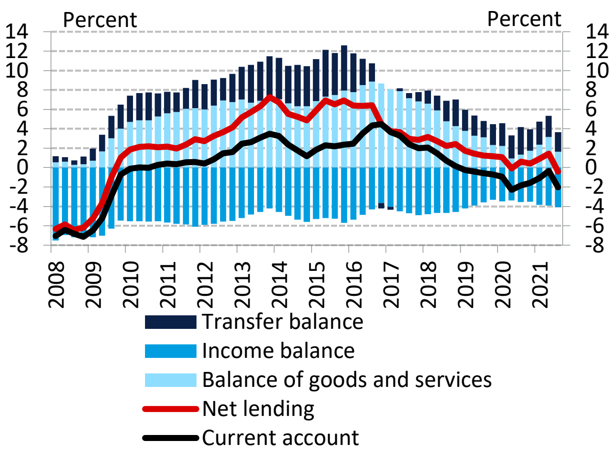
Looking ahead, banks plan to ease standards on housing loans and tighten consumer loan standards. According to responses to the Lending Survey, banks did not make any major changes to housing loan standards in 2021 Q4. In terms of partial conditions, however, more than half of the respondent institutions indicated the lowering of spreads, while roughly one third of them already tightened disbursement fees. Looking ahead to 2022 H1, a net 13 percent of banks plan to ease housing loan conditions, but as regards partial conditions, a net 33 percent of banks anticipated raising the spread between the loan interest rate and cost of funds (Chart 4-10). As far as consumer loans are concerned, a net 10 percent of credit institutions tightened conditions of access to loans in the fourth quarter. Looking ahead to the next half year, a net 34 percent of the banks plan further tightening in the standards in the market of consumer loans, primarily by raising spreads.

5. Balance position of the economy

5.1. External balance and financing

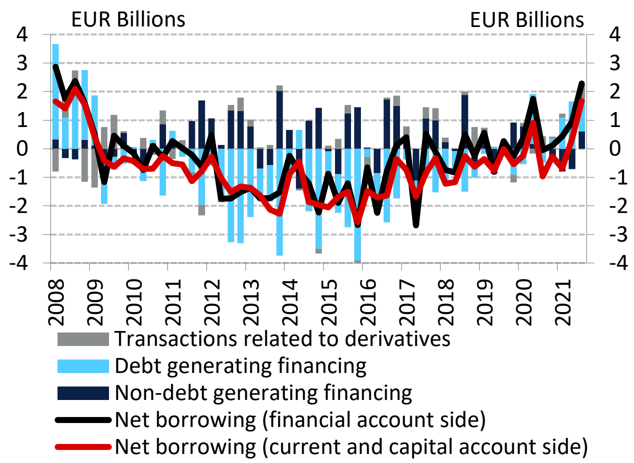
In 2021 Q3, the current account deficit once again increased, giving rise to the development of modest net borrowing. On the whole, the global semiconductor shortage and weakening external demand on the exports side and the strengthening of domestic demand and increasing fuel prices on the imports side were reflected in a decline in net exports. According to the preliminary monthly data, in the fourth quarter the trade surplus continued to narrow, leading to a further decrease in the current account and net lending. According to the financial account, in the third quarter – and, based on preliminary monthly data, also at the end of the year – net foreign direct investments increased substantially, accompanied by a rise in net external debt, primarily linked to the general government.

Chart 5-1: Changes in net lending and its components



Note: Cumulated four-quarter values, as a percentage of GDP.
Source: MNB

Chart 5-2: Structure of net lending



Note: The net lending from the financial account side corresponds to the sum of the current account, the capital account and the balance of statistical errors and omissions. From an economic point of view, fundamental developments in the dynamics of debt ratios are not affected by the switch between gold bullion and unallocated gold accounts and thus this technical effect is excluded from the time series.
Source: MNB

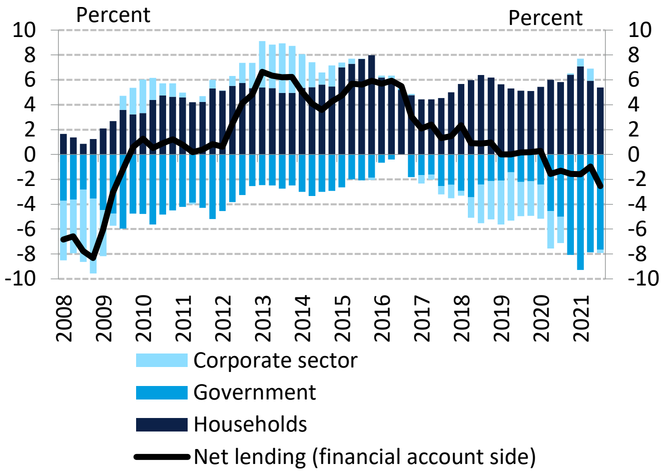
5.1.1. Developments in Hungary's external balance position

In 2021 Q3, the four-quarter current account deficit rose to 2 percent of GDP, while Hungary's external balance position turned into net borrowing (Chart 5-1). The underlying reasons for the economy's external balance developments included the decline in trade surplus: the global semiconductor shortage and the weakening external demand were reflected in falling exports, while soaring energy prices appeared in rising imports. In parallel with this, the rise in the income balance deficit (due to the declining income of those temporarily working abroad) and the decreasing absorption of EU transfers also contributed to the deterioration in external balance indicators. Based on the preliminary monthly data, the current account deficit and net borrowing rose to 3 percent and 0.9 percent of GDP, respectively, in the fourth quarter. The deterioration was partly the result of base effects: in the fourth quarter, the goods balance substantially fell short of the year-on-year figure, although it improved somewhat in quarter-on-quarter terms. In addition, the income balance deficit increased slightly, while the transfer balance surplus rose substantially.

5.1.2. Developments in financing

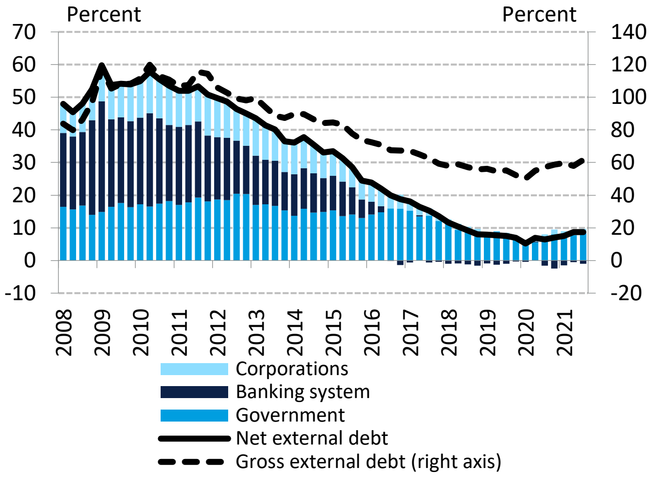
In 2021 Q3, both net foreign direct investment and the economy's net external debt rose (Chart 5-2). The rise in net non-debt liabilities was mostly linked to reinvestments by non-resident companies, while resident sectors continued to purchase foreign mutual fund shares. Net inflow of debt liabilities was attributable to the general government, dominated by items reducing foreign exchange reserves (utilisation of the central bank's euro liquidity-providing swaps in excess of the previous quarter, declining stock of fine-tuning swap instruments) and non-residents' purchases of forint government securities. Based on preliminary monthly

Chart 5-3: Decomposition of net lending by sector



Note: Four-quarter cumulation, as a percentage of GDP.
Source: MNB

Chart 5-4: Development of net external debt by sector



Note: From an economic point of view, fundamental developments in the dynamics of debt ratios are not affected by the switch between gold bullion and unallocated gold accounts and thus this technical effect, as well as intercompany loans, is excluded from the time series. As a percentage of GDP.
Source: MNB

data, net foreign direct investments rose considerably in the fourth quarter, mostly due to reinvested earnings. Non-residents' portfolio equity investments fell significantly, while households continued to purchase foreign mutual fund shares and equities. Debt liabilities grew further, mostly linked to the general government, also supported by the discount bond issued by the MNB to mitigate swap market tensions.

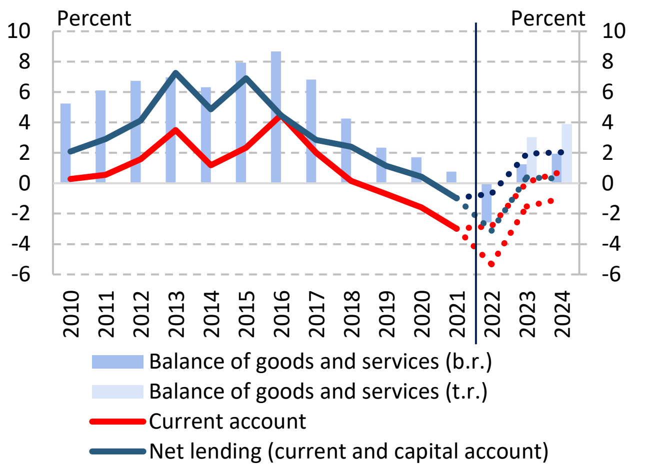
In 2021 Q3, in conjunction with the general government's high but steady net borrowing, the net financial savings of the private sector declined (Chart 5-3). In the third quarter, the net financial position of the private sector declined somewhat further, in line with the recovering domestic absorption. At the same time, the net borrowing of the government remained high, resulting overall in rising net borrowing of the economy. Based on the preliminary financial accounts, the decline in the private sector's net savings exceeded the fall in the budget deficit in the fourth quarter, and thus the four-quarter external balance position decreased substantially.

At the end of September 2021, the net external debt of the economy stabilised at 8.7 percent of GDP (Chart 5-4). Meanwhile, gross external debt rose to nearly 62 percent of GDP, which was attributable to the issuance of foreign currency bonds – with a neutral effect on the net indicator – and to the IMF's SDR allocation, with some contribution by non-residents' purchases of forint government securities.

5.2. Forecast for Hungary's net lending position

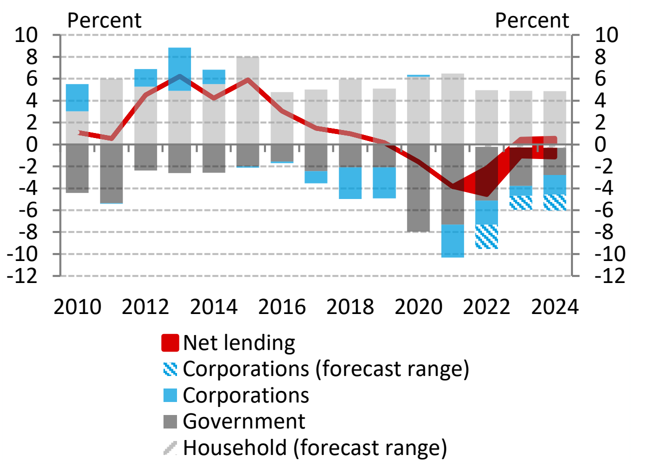
The current account deficit will temporarily rise and then improve from 2023 onwards. The size of the deficit depends on the degree and duration of the geopolitical tensions. The degree of deterioration in the goods balance – via weakening export performance and worsening terms of trade – depends on the length of the geopolitical tensions, while the income balance deficit may remain broadly stable as a combined result of contrasting trends. Overall, the current account deficit in 2022 may amount to 2.8–5.3 percent of GDP. Depending on the length of geopolitical tensions, the current account may – amidst gradual improvement – come close to a balanced position towards the end of the forecast horizon and may show a surplus again at the end of the forecast horizon. Looking ahead, the improvement in the Hungarian economy's net lending according to the sectors' savings approach is due to the net savings of households stabilising at a high level and the declining general government deficit. The latter is primarily attributable to the end of the expenditure-raising effect of the anti-pandemic measures and rising tax revenues in parallel with recovery in economic growth.

Chart 5-5: Evolution of net lending



Note: As a percentage of GDP* The sum of the balance of the current transfers and the capital account balance.
Source: MNB

Chart 5-6: Changes in the savings of sectors



Note: As a percentage of GDP. * Net financial saving of households does not contain the pension savings of those who return to the public pension system. The official net saving is different from the data in the chart. ** We expect that 'Net errors and omissions' (NEO) will return to the historical average.
Source: MNB

The current account deficit will temporarily continue to rise in 2022, followed by improvement from 2023. The size of the deficit depends on the degree and duration of the geopolitical tensions (Chart 5-5). Looking ahead, trade balance developments are essentially determined by the consequences of the armed conflict between Russia and Ukraine and the sanctions imposed on Russia as well as the potential protraction of the geopolitical tensions remaining after the war. The degree of the deterioration in the goods balance depends on the duration of geopolitical tensions. Disruptions in supply chains and waning external demand curb exports and, in parallel, soaring oil prices result in significant growth in imports. As external demand recovers and oil prices correct in parallel with the easing of geopolitical tensions, net exports will improve. On the other hand, increased uncertainty also slows down the recovery of tourism after the coronavirus pandemic. Declining export revenues slightly reduce the income balance deficit by decreasing the profit of foreign companies, which may, however, be offset by the rising interest expenditures resulting from financial market tensions. Overall, the current account deficit in 2022 may amount to 2.8-5.3 percent of GDP. Depending on the length of geopolitical tensions, the current account may – amidst gradual improvement – come close to a balanced position towards the end of the forecast horizon and may also show a surplus again at the end of the forecast horizon.

As regards the sectors' savings developments, the projected improvement in the external position is due to households' savings stabilising at a high level and to the declining general government deficit (Chart 5-6). Looking ahead, general government net borrowing will gradually decline. The end of health expenditures and economy protection measures connected to the pandemic point to a fall in the budget deficit, which will be temporarily decelerated by the income-raising expenditures paid in the first quarter (armed forces benefits, 13th month pension). Rising tax and contribution revenues resulting from the recovery of economic growth will be reflected from 2023 in a decline in the budget deficit. As a result of rising incomes and the one-off benefits disbursed in 2022, households' net financial savings stabilise at a high level. Corporations' net borrowing – depending on the persistence of market tensions – will increase in 2022 due to deteriorating external demand and terms of trade, followed by a moderate decline in line with the correction of external demand and the inflow of EU funds.

5.3. Fiscal developments

According to the preliminary financial account data disclosed by the MNB, in 2021 the accrual-based budget deficit amounted to 7.3 percent of GDP, which is more favourable than previously expected, while the government debt ratio fell to 77.3 percent at the end of 2021, from 80 percent registered at the end of 2020. Owing to the fast recovery of the Hungarian economy and the announced fiscal consolidation, the government's target contained a lower deficit path in December 2021 than planned previously, which projected a deficit of 4.9 percent for 2022, 3.5 percent for 2023 and 2.5 percent for 2024 as a percentage of GDP. The war and related market tensions raise the budget deficit by 0.6 percent of GDP, which can be covered by the favourable underlying developments and the earlier rescheduling of expenditures. However, further escalation of geopolitical tensions poses a risk, which could be addressed by using up the internal reserves of the budget for this purpose. The deficit may come close to the 3 percent deficit criterion in 2023 already and fall below 3 percent in 2024. By the end of the forecast horizon, the government debt ratio may decrease to 70 percent.

5.3.1. Main balance indicators

According to preliminary financial account data, the government sector's accrual-based deficit as a percentage of GDP amounted to 7.3 percent in 2021 (Table 5-1). As a result of dynamically growing tax revenues due to the rapid, strong economic recovery and the investments postponed by the government in December, the budget balance developed more favourably in 2021 than previously expected.

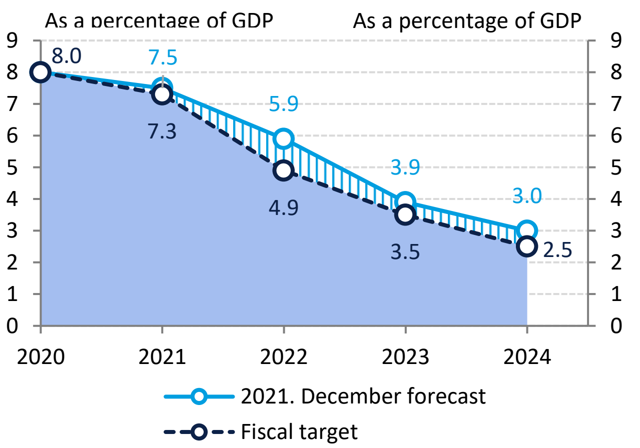
Table 5-1: General government balance indicators

	2021	2022	2023	2024
ESA balance	-7.3	-4.9	-3.5	-2.5
Primary ESA balance	-5.1	-2.3	-0.8	0.2
Fiscal impulse*	-1.3	0.0	-3.4	-1.2

Note: As a percentage of GDP. *Change in the augmented (SNA) primary balance.
Source: HCSO, MNB

In December 2021, the government target specified for 2022 was 4.9 percent of GDP, which is lower than previously planned, and to this end significant expenditure cuts were decided upon, primarily affecting investments (Chart 5-7). In addition to the expenditure cuts, favourable trends in 2021 also improved deficit path prospects. We deem the deficit target realisable, despite the conflict between Russia and Ukraine and the related consequences to date. However, should geopolitical tensions grow, the deficit target may be achieved by using up the internal reserves of the budget for this purpose. The deficit-to-GDP ratio may fall to 2.5 percent by the end of the forecast horizon.

Chart 5-7: Development of the deficit path



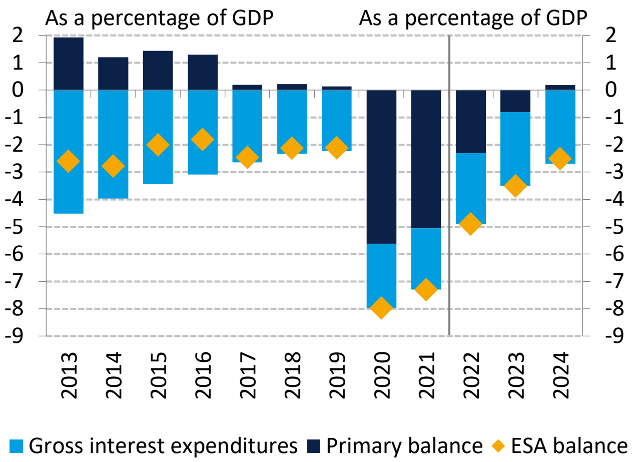
Source: Ministry of Finance, MNB

The application of the general escape clause, temporarily easing the European Union's fiscal rules, will remain in place at least until the end of 2022. Accordingly, the 3-percent deficit criterion set forth in the Stability Act and the rule regarding the medium-term budgetary objective were also suspended until end-2023. When preparing its usual spring forecast, the European Commission examines whether it is justified to prolong the application of the general escape clause.

5.3.2. Budget balance in 2021

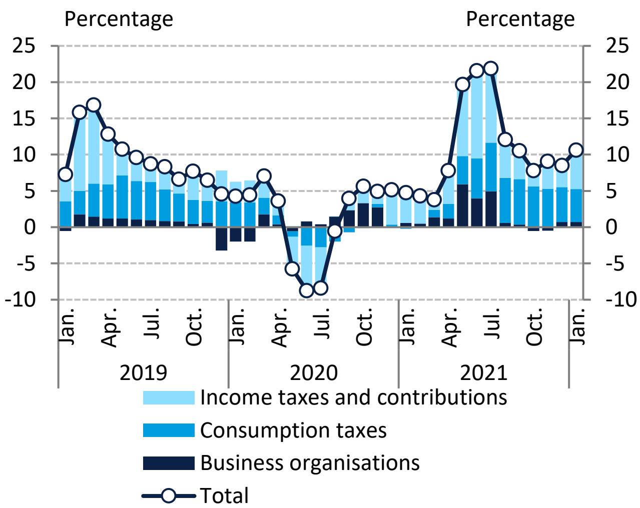
In 2021, based on the preliminary financial accounts, the accrual-based budget deficit amounted to 7.3 percent, which is lower than the 7.5 percent deficit target specified in the Budget Act (Chart 5-8). The recovery of the

Chart 5-8: Changes in the fiscal balance and government interest expenditures



Source: HCSO, MNB

Chart 5-9: Changes of tax and contribution revenues during the period of 2019–2022, year-on-year, 3-month moving average



Source: HST, MNB

Hungarian economy was rapid and strong, as a result of which tax revenues grew dynamically (Chart 5-9), and most of the economy protection measures were also phased out. On the other hand, a significant part of the surplus revenue was consumed by the expenditures realised under the Central Reserve for Pandemic Prevention and the Economy Restarting Action Plan. In view of the strong economic growth, a significant pension premium, reaching 0.4 percent of GDP, was disbursed in November 2021, with all beneficiaries receiving the maximum amount of HUF 80,000. On the other hand, expenditures were reduced at the end of the year by the government's decision in December to postpone public investments in the amount of roughly 0.6 percent of GDP.

According to the preliminary financial account data published by the MNB, the accrual-based deficit of the last quarter amounted to 12.3 percent of the quarterly GDP (Chart 5-10), which fell short of the year-on-year figure by almost 5 percentage points.

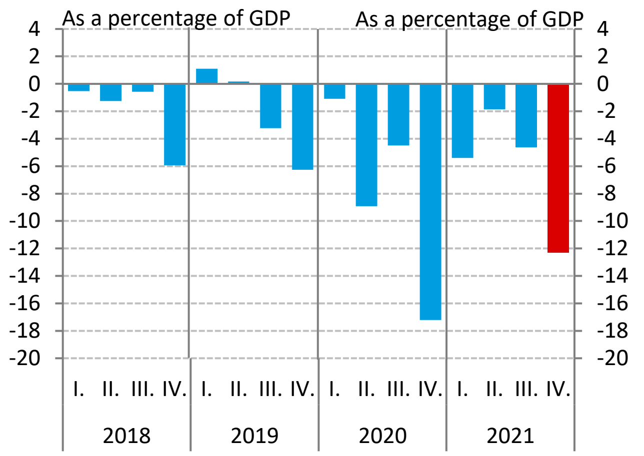
5.3.3. Budget balance in 2022

In December 2021, the government's deficit target for 2022 was 4.9 percent of GDP, which is lower than previously planned (Chart 5-8). The intra-year development of the 2022 deficit is likely to differ from the pattern of previous years, since the measures adopted in 2021 result in high one-off expenditures, most of which are concentrated in the first quarter.

Significant one-off disbursements were made in February, improving households' income position. This year, employees with children were reimbursed their personal income tax paid in 2021, up to HUF 809,000 per beneficiary, the budgetary impact of which corresponds to roughly 1 percent of GDP. From 2022, the 13th month pension is paid in the full amount of one month's pension, resulting in a disbursement of 0.6 percent of GDP. The one-off benefit for police and national defence workers, equivalent to six months' salary, was also paid earlier than originally planned, in February 2022, representing an expenditure of 0.4 percent of GDP. In addition, the government decided on wage increases for a wide range of public employees, which will increase the expenditure of budgetary organisations by a total of 0.8 percent of GDP, in gross terms.

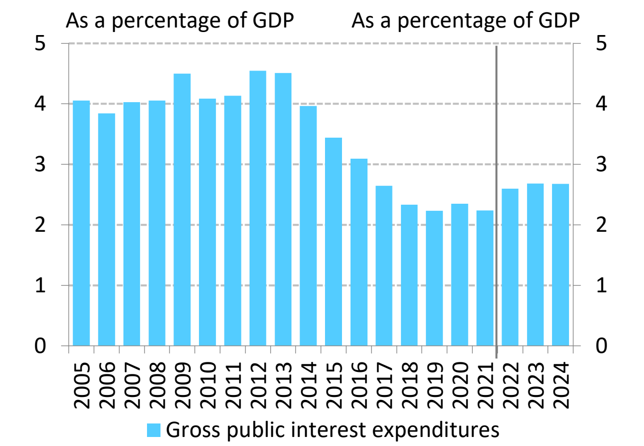
Substantial tax cuts also support households and enterprises. The budget assumes the wage costs of the private sector by significantly reducing employers' public dues (social contribution tax, vocational training contribution, small enterprise tax, local business tax), which would result in a revenue shortfall of 1 percent of GDP;

Chart 5-10: Accrual balance of the general government sector



Note: The Q3 2021 data shows the net lending capacity of general government as reported in the preliminary financial accounts published by the MNB.
Source: HCSO, MNB

Chart 5-11: Gross public interest expenditures



Note: Based on the midpoint of the macroeconomic forecast range.
Source: HCSO, MNB

however, the surplus payments made in respect of the higher wage outflow reduce this effect. From 1 January, employees below 25 are exempted from the personal income tax, which leaves an amount with young people corresponding to 0.2 percent of GDP.

Due to a more favourable macroeconomic outlook for 2021 than expected by the government, growth in the tax bases will significantly increase budget revenues, providing the necessary coverage for this measure. The stability of the 2022 budget is also strengthened by the government decision adopted at the end of 2021 on reducing government expenditures and rescheduling certain public investments, which involves expenditures amounting to almost 1.2 percent of GDP.

The favourable macroeconomic fundamentals and the previously decided expenditure rescheduling will provide coverage for the expenditures that are expected to increase due to the geopolitical and market tensions. Even if the tensions ease more rapidly, we project surplus expenditures reaching 0.6 percent of GDP as a consequence of the extra expenditures to support refugees, rising energy prices, higher inflation and rising government interest expenditure resulting from financial market tensions (Chart 5-11).

5.3.4. Budget balance in 2023–2024

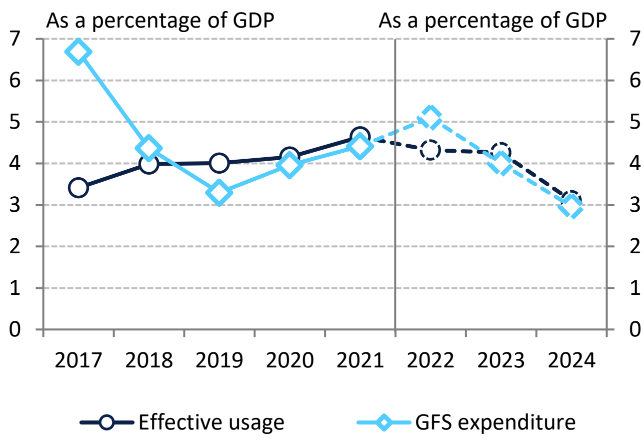
In the absence of appropriations, we prepare a technical projection for 2023 and 2024, according to which the declining deficit path is still a feasible objective and by the end of the horizon the deficit may fall below the 3 percent Maastricht deficit criterion, in line with the government's objective. On the other hand, the long-term persistence of negative global economic impacts entails substantial upside risks to the deficit in 2023 as well.

5.3.5. Risks surrounding the baseline scenario

The intensity and duration of the geopolitical and market tensions represent a risk for our forecast. The rise in expenditures related to national defence and refugee support, the surge in commodity prices and the lost tax revenues are risks pointing to a higher deficit. As a combined result of the aforementioned developments, the growth and longer-term persistence of geopolitical and market tensions may result in extra expenditure of 0.6–1.6 percent of GDP in the 2022 budget. According to our assumptions, the budget is able to address the risks by using up the internal reserves of the budget for this purpose.

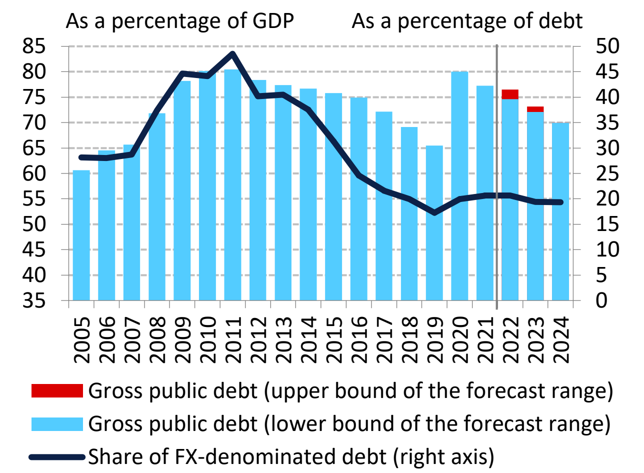
Developments in our forecast involve substantial uncertainties regarding the amount of fund inflows from

Chart 5-12: Effective usage of EU grants and development of cash payments



Note: Based on the midpoint of the GDP forecast range.
Source: MNB, Budget laws

Chart 5-13: Gross public debt forecast



Note: Data for 2021 was calculated with the preliminary financial accounts and the latest GDP data.
Source: MNB, GDMA

the European Union. The absorption of transfers affects the accrual-based balance and real economy developments, while the further advance subsidies and their receipt influence the changes in government debt (Chart 5-12).

5.3.6. Expected developments in public debt

According to preliminary data, at the end of 2021 the gross government debt-to-GDP ratio fell to 77.3 percent. Accordingly, the debt ratio declined by 2.7 percentage points compared to the end of 2020. The fall in government debt is primarily attributable to the rise in GDP. In 2021, the average term to maturity of government debt grew by almost one year, making the debt more sustainable as a result of the more favourable maturity structure.

According to +our forecast, gross government debt as a percentage of GDP may decrease to the range of 74.6-76.5 percent by the end of 2022 (Chart 5-13)**.** The debt ratio is expected to steadily decline over the forecast horizon. According to our projection, government debt may fall on average by 2.4 percentage points annually and thus by the end of 2024 it may decrease to 70 percent.

The changing EUR/HUF exchange rate affects the debt ratio due to the revaluation of FX debt, and thus a 1-percent change in the EUR/HUF exchange rate modifies the debt-to-GDP ratio by 0.2 percentage points. The share of foreign currency within central government debt rose from 19.9 percent at the end of 2020 to 20.6 percent by the end of 2021 as a result of last year's foreign currency bond issuance. According to our projection, the foreign currency ratio of the central government debt will be around 20 percent, which corresponds to the target of the Debt Management Agency.

6. Special topics

6.1. Assessment of central bank projections for 2021

The purpose of this analysis is to present the accuracy of our forecasts for the main macroeconomic variables for the previous calendar year. In addition, we look at how the central bank's forecasting performance compares with market analysts. We first made a forecast for the 2021 variables in December 2018. Due to the uncertain situation resulting from the coronavirus pandemic, starting from the Inflation Report of March 2020 our forecast temporarily presents a range estimation. Overall, inflation in 2021 exceeded our forecast, economic growth and the number of employees in the private sector were slightly higher than our forecast, while private sector wages were in line with our forecast. The central bank was one of the first to draw attention to the anticipated rise in inflation in 2021 by issuing repeated warnings after December 2020 about the expected surge in inflation in 2021.

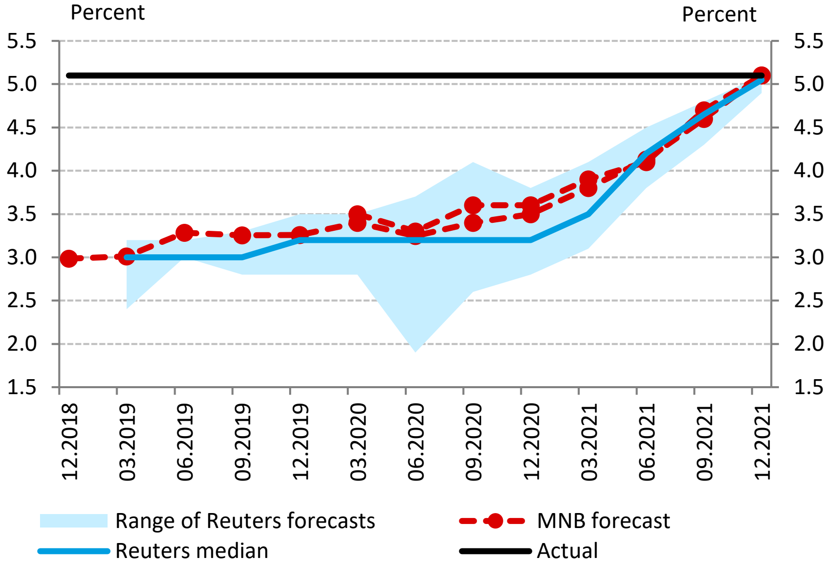
6.1.1. Inflation

In 2021, inflation increased as a result of external effects and annual average inflation was 5.1 percent. Intra-year developments in inflation were significantly affected by the rise in commodity prices and the phases of the fight against the global coronavirus pandemic, causing higher volatility in consumer price changes than in previous years. Accordingly, our forecast was primarily determined by the reopening after the pandemic and the effects of the rising energy and commodity prices.

By the end of 2020, we projected price dynamics close to the central bank's 3-percent inflation target. Although the coronavirus pandemic has significantly rearranged demand and supply conditions of certain markets, based on the lessons learnt from previous crises we expected that the disinflationary impacts of slack demand would gradually appear in the underlying inflation developments as well. Accordingly, our inflation forecast was initially determined by the joint result of supply and demand frictions as well as the disinflationary effect of the weak demand. Since December 2020, we have continuously emphasised and were among the first to warn about an expected surge in inflation in 2021 Q2.

On the other hand, in 2021 due to the inflationary effects of economic reopening and later as a result of rising commodity and oil prices, we gradually revised the forecast higher. International experiences show that the countries characterised by faster reopening of the economy registered a higher price increase. At the time of the global opening of the economy, supply was unable to keep abreast with soaring demand. Due to this, bottlenecks first developed in the commodity and shipping markets. Energy prices rose significantly from the middle of the year. Rising commodity prices first affected producer prices and finally also impacted the price of finished products. Due to the recovery in demand, we expected that this would increase corporations' room for manoeuvre, and thus the rise in wage, transportation and base material costs would also appear in consumer prices. The gradual recovery of consumption, high wage growth as well rising transportation costs and base material prices fostered higher underlying inflation developments for 2021. In 2020, the uncertainty of forecasts increased, also evidenced by the fact that the expectations of the market analysts participating in the Reuters survey varied widely starting from 2019 Q3 (Chart 6-1).

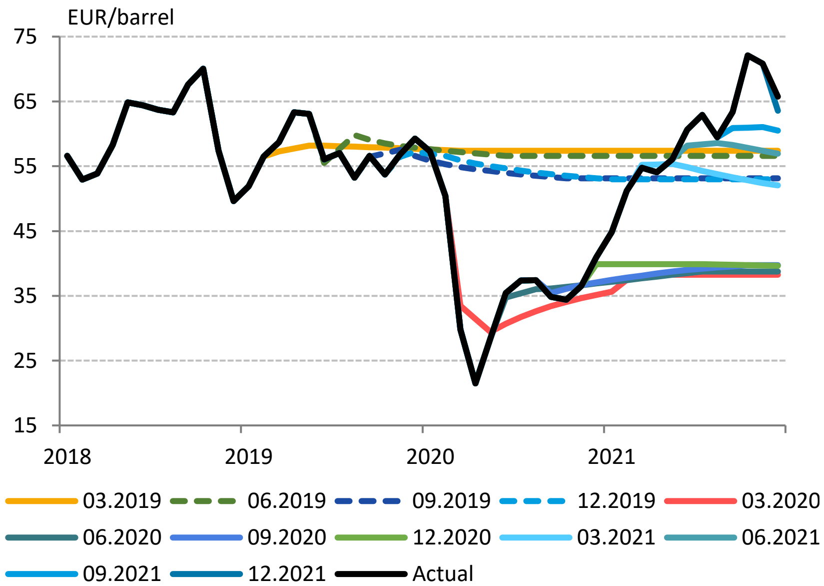
Chart 6-1: Evolution of MNB and market forecasts for 2021 inflation



Note: The band shows the range of economic experts' forecasts surveyed by Reuters. From the March 2020 Inflation Report on, due to the uncertain situation caused by the pandemic, we temporarily suspended the practice of structuring our forecast around a preferential baseline scenario, and therefore a forecast range was published.
Source: HCSO, MNB, Reuters

The revision of our forecasts for 2021 was primarily caused by the rising commodity and energy prices resulting from reopening of the economy after the coronavirus pandemic (Chart 6-2). The EUR-denominated world market price of Brent crude oil, which determines fuel prices in Hungary, increased significantly in 2021 after a sharp fall in early 2020. This is attributable to the fact that, in parallel with the reopening of the economies, global markets were characterised by significant excess demand. While in April 2020, during the first wave of the coronavirus pandemic, the oil price per barrel was EUR 22, a year later it more than doubled, rising to EUR 54 per barrel. Last year's record was registered in October 2021 at EUR 72 per barrel. We revised our mid-year inflation forecast for 2021 considering these factors.

Chart 6-2: Change in oil price assumptions

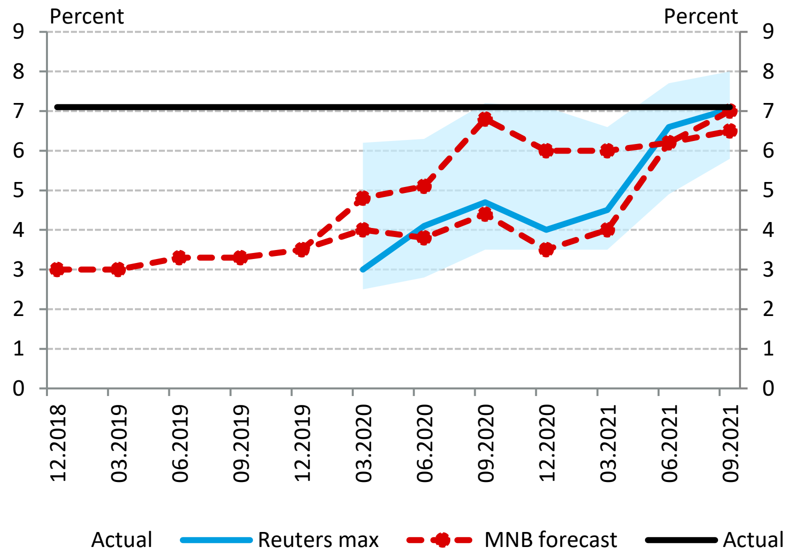


Source: Bloomberg

6.1.2. Economic growth

In 2021, Hungary's GDP grew at a year-on-year rate of 7.1 percent during the fast recovery of the economy. Until the end of 2019, we revised our forecast moderately upwards, expecting that growth may take place in a balanced structure: in conjunction with dynamic export growth – in line with the favourable financing environment – we anticipated buoyant investment activity and rising consumption supported by favourable income trends. After the onset of the coronavirus pandemic at the start of 2020, the change in our forecast for 2021 was determined by the economic impacts of the pandemic (global semiconductor shortage and soaring energy prices) as well as our assumptions related to the reopening of the economy. Anticipating a fast correction in the economy, we raised our forecast for 2021; however, the speed of the recovery and the expected date of the wide availability of the vaccine were surrounded by substantial uncertainty, and thus in 2020 we published a range estimation for economic performance.

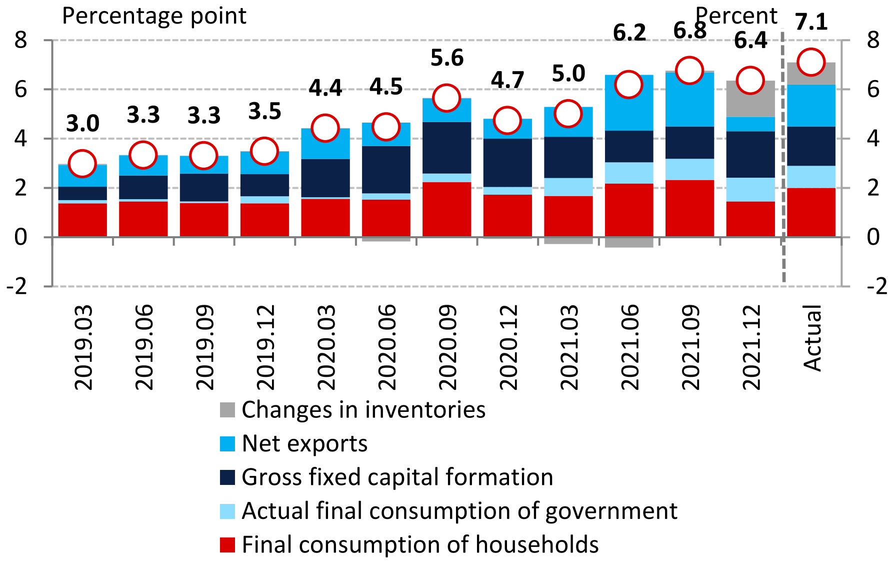
Chart 6-3: 2021 growth forecasts by the MNB and the market



Note: The band shows the range of economic experts' forecasts surveyed by Reuters. From the March 2020 Inflation Report on, due to the uncertain situation caused by the pandemic, we temporarily suspended the practice of structuring our forecast around a preferential baseline scenario, and therefore a forecast range was published.
Source: HCSO, MNB, Reuters

From June 2021, the uncertainty of growth prospects was reduced by the robust expansion of Hungarian economic output at the start of the year, the wide vaccination coverage and the fast opening of the economy. We raised our forecast, similar to market expectations, to over 6 percent, which thus was close to the actual figure. The average forecasting error of the projection over the past two-year horizon was somewhat smaller than the median of market analysts. In our projection, we revised upwards the contribution of net exports, assuming a fast recovery by our trading partners' import-intensive sectors and improving performance by Hungarian industry. In addition, due to the fast opening of the economy, we assumed faster recovery of consumption, also supported by government measures, in addition to the favourable income trends and the strong rise in net financial wealth (Chart 6-4).

Chart 6-4: Expenditure side decomposition of the MNB's GDP forecast

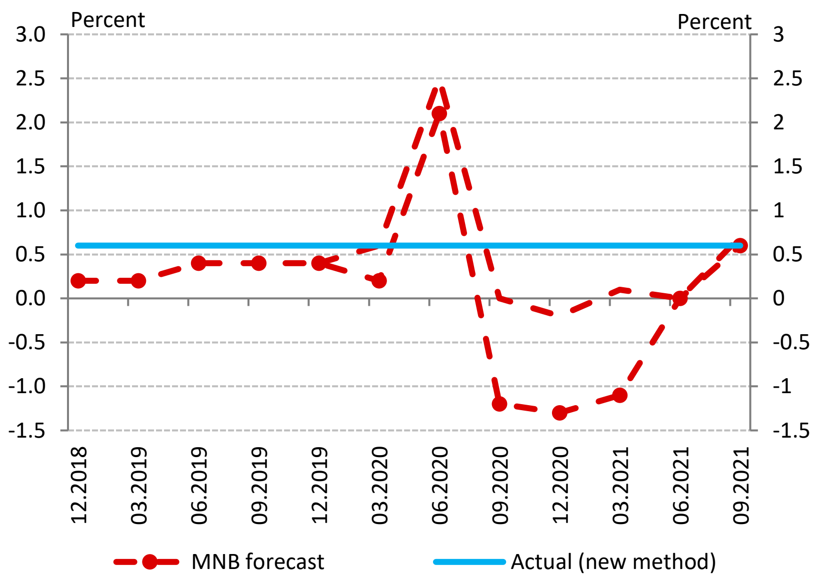


Note: For the Inflation Reports in which the GDP forecast involves a range estimation, the chart shows the values for the midpoint.
Source: HCSO, MNB

6.1.3. Labour market

Private sector headcount rose by 0.6 percent in 2021. In our forecasts until December 2019, we assumed a low increase in employment due to demographic constraints becoming increasingly effective. Our projection in 2020 Q2 assumed that the pandemic would have a large impact on the labour market in 2020, and – assuming a correction for 2021 – it forecasted temporarily outstandingly high growth. From September 2020, due to the uncertainty surrounding the emergence of new waves of the pandemic, we anticipated a wave of redundancies. Then, **from June 2021, in line with the more favourable labour market situation resulting from the wide vaccination coverage, the lifting of restrictions and growth in labour demand, we forecasted modest growth in the number of people in employment, as indeed has come to pass.** Our pre-pandemic forecasts related to the increase in the number of people in private sector employment for 2021 slightly underestimated the actual growth. Our estimations during the coronavirus pandemic were surrounded by major uncertainties, but by the end of the year our projection essentially converged to the actual level (Chart 6-5).

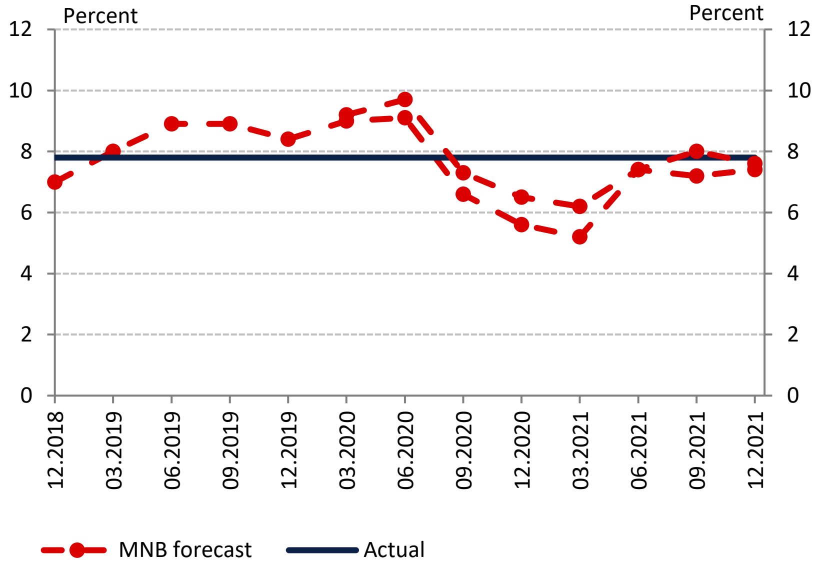
Chart 6-5: MNB forecasts for 2021 private employment growth



Source: HCSO, MNB

According to the wage agreement concluded in 2018, the minimum wage and the guaranteed wage minimum both increased by 8 percent in 2020. As a result, we gradually revised our private sector wage forecast upwards until mid-2020. From September 2020, we assumed that enterprises would also adjust wages to the coronavirus pandemic, and thus we projected lower private sector wage growth versus our previous forecast. In June 2021, as a result of the wage increases at the beginning of the year, we revised our projection upwards. Overall, our projections related to private sector wage growth in 2021 **were close to the actual wage increase** (Chart 6-6).

Chart 6-6: MNB forecasts for 2021 private wage growth



Source: HCSO, MNB

7. Breakdown of the average consumer price index for 2022

Table 7-1: Decomposition of inflation to carry-over and incoming effects (percentage points and percent respectively)

	Effect on CPI in 2022		
	Carry-over effect	Incoming effect	Yearly index
Administered prices	0.1	0.1	0.2
Market prices	2.8	4.5 - 6.8	7.3 - 9.6
Indirect taxes and government measures	0.1	-0.1	0.0
CPI	**3.0**	**4.5 - 6.8**	**7.5 - 9.8**

Note: The tables show the decomposition of the yearly average change of the consumer price index forecast range. The yearly change is the sum of so-called carry-over and incoming effects. The carry-over effect is the part of the yearly index, which can be explained by the preceding year's price changes, while the incoming effect reflects the changes in the recent year. We decomposed these indices to the sub-aggregates of the consumer price index and calculated their inflationary effects. The subgroups may not sum to the aggregate figure due to rounding.
Source: MNB

Table 7-2: Detailed decomposition of our inflation forecast into carry-over and incoming effects (percentage points and percent respectively)

	2022				
	Average carry-over effect	Carry-over indirect tax effect	Average incoming effect	Incoming indirect tax effect	Yearly index
Food	3.6	0.0	8.5 - 13.0	0.0	12.1 - 16.6
non-processed	0.9	0.0	10.6 - 17.6	0.0	11.5 - 18.5
processed	4.9	0.0	7.5 - 10.8	0.0	12.4 - 15.7
Tradable goods	3.2	0.0	4.0 - 4.9	0.0	7.2 - 8.1
durables	4.2	0.0	5.7 - 7.9	0.0	9.9 - 12.1
non-durables	2.7	0.0	2.8 - 3.0	0.0	5.5 - 5.7
Market services	2.2	0.0	3.9 - 5.0	0.0	6.1 - 7.2
Market energy	6.0	0.0	1.3	0.0	7.3
Alcohol and Tobacco	1.9	0.8	3.2	0.0	5.9
Fuel	7.3	-0.5	9.2 - 23.2	(-1.7) - (-1.6)	14.3 - 28.4
Administered prices	1.0	0.0	0.6	0.0	1.6
Inflation	**2.9**	**0.1**	**4.6 - 6.9**	**-0.1**	**7.5 - 9.8**
Core inflation	3.2	0.0	4.7 - 6.2	0.0	7.9 - 9.4

Note: The tables show the decomposition of the yearly average change of the consumer price index forecast range. The yearly change is the sum of so-called carry-over and incoming effects. The carry-over effect is the part of the yearly index, which can be explained by the preceding year's price changes, while the incoming effect reflects the changes in the recent year. We decomposed these indices to the sub-aggregates of the consumer price index and calculated their inflationary effects. The subgroups may not sum to the aggregate figure due to rounding.
Source: MNB

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Mátyás Hunyadi

(23 February 1443 – 6 April 1490)

He ruled from 1458 to 1490 as King of Hungary, and had been Czech king from 1469 and Prince of Austria from 1486. Hungarian tradition regards him as one of the greatest Hungarian kings whose memory is preserved in many folk tales and legends. He is also known as Matthias Corvinus, King Matthias the Just or officially as Matthias I, but commonly he is simply denoted as King Matthias.

His father, János Hunyadi, the regent of Hungary, was one of the most outstanding military leaders and strategists in the country's medieval history who triumphed at the Battle of Nándorfehérvár in 1456. Matthias' mother was Erzsébet Szilágyi, and he had an elder brother, László Hunyadi. The future king was brought up by his mother and nurse until the age of six, and was subsequently placed under the supervision of his tutors. János Hunyadi did not have a chivalrous education in mind for his son: first, it was a Polish humanist, Gergely Szánoki who introduced him to the realm of knowledge, then this task was assigned to János Vitéz. Mátyás was brought up and educated in a humanistic spirit to become a versatile and curious-minded person who had been taught canon and constitutional law, arts and Latin. In addition to Hungarian, he also spoke German and Czech.

After the death of László V, his uncle, Mihály Szilágyi, and the armed forces supporting Hunyadi exercised pressure to have Matthias crowned as King of Hungary on 24 January 1458. Even in the early years of his reign Matthias had troubles both with the magnates of the country and Emperor Frederick III of the Holy Roman Empire. As the king was still a minor, parliament appointed Mihály Szilágyi to act as regent on his behalf. However, Matthias did not tolerate any guardianship and pushed his uncle to the background who devised a plot against the king in response. Returning from battle with the Turks, the king had the rebels captured and he imprisoned his uncle in the castle of Világos.

Upon his ascension to the throne the annual income of the treasury hardly exceeded 110 to 120 thousand forints. During his rule spanning thirty-two years the king managed to multiple revenues from taxes. Considering the average of the taxes levied, less the revenues from the Czech and Austrian provinces, this yearly amount approximated 628,000 forints and may as well reached 900,000 gold forints in the most prosperous years. This was still much less than the annual revenue of the western powers of the age. In order to raise the low income of the treasury, reform-like and comprehensive financial actions were needed. Matthias recognised that a centralised, nationwide financial system was the only solution to the problem, and that the royal revenues had to be directed to a single person, the treasurer. The reforms of Matthias were adopted by parliament and his decrees were promulgated on 25 March 1467.

We can get a glimpse of the cultural life in the royal court, which represented the elite of European civilisation at the time, at the partly reconstructed Royal Palace in Visegrád. The most distinguished pieces of the cultural legacy of Matthias are the Corvinian books, richly illustrated volumes of the former royal library.

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