INFLATION REPORT

2021
DECEMBER

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

Miklós Zrínyi: The Life of Matthias Corvinus

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Published by the Magyar Nemzeti Bank

Publisher in charge: Eszter Hergár

H-1013 Budapest, Krisztina körút 55.

www.mnb.hu

ISSN 2064-8723 (print)

ISSN 2064-8774 (on-line)

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 3percent 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 were prepared under the general direction of the acting director responsible for Economic Analyses and Competitiveness. 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, Directorate Financial System Analysis and Directorate for International Monetary Policy Analysis and Training of Economic Sciences. The Report was approved for publication by Barnabás Virág, Deputy Governor responsible for monetary policy and economic analysis.

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 11 December 2021.

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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 global economic recovery has slowed in the third quarter of 2021, while the fourth wave of the coronavirus pandemic and the emergence of the new variant of the virus led to a renewed increase in risks surrounding the recovery. Inflation rose to levels not seen for several decades in a number of countries, which was further aggravated by disruptions in supply across a growing range of markets, in addition to persistent rises in commodity and energy prices.

In the third quarter of 2021, the US and Chinese economies both expanded by 4.9 percent year-on-year. Unlike in the two largest economies of the world, the economic performance of the European Union remains below its pre-crisis level. In the third quarter, the economy of the European Union and the euro area grew by 4.1 percent and 3.9 percent, respectively, year on year. In the CEE region, economic performance exceeded its pre-crisis level in Romania and Poland already in the previous quarter. The fourth wave of the coronavirus pandemic and the appearance of the new virus variant cause a renewed increase in the risks around economic recovery.

In the past months, inflation in many countries rose to highs unseen for decades. The increase in inflation is mainly attributable to the persistent rise in commodity and energy prices, with contributions from supply difficulties observed in more and more markets as well as effects stemming from the reopening of economies in the first half of the year. As a result of this sustained rise, the consumer price index fluctuated above the central bank target in several countries. It increased to 6.8 percent in the United States in November, while the November preliminary inflation rate in the euro area rose to 4.9 percent. In CEE region, the consumer price index exceeds the upper bound of the central bank tolerance band in Czechia, Poland and Romania as well.

The policy stances of the world's leading central banks have become tighter in the past period. The majority of central banks in CEE region tightened their respective monetary conditions.

The policymakers of the Federal Reserve left the target range of the policy rate unchanged at a level of 0–0.25 percent. In line with its November decision, the central bank started phasing out its asset purchase programme. Accordingly, the monthly rate of asset purchases declined from the previous USD 120 billion to USD 105 billion in November and to USD 90 billion in December. In the opinion of the central bank, the tapering of asset purchases does not provide information regarding the expected path of the target range, and the decision-makers do not discuss any interest rate hike until the labour market reaches maximum employment. Nevertheless, based on the Bank's communication at the end of November, the phasing out of asset purchases might proceed at a faster pace than earlier announced, which is expected to be discussed at the December policy meeting. The European Central Bank left the policy rates unchanged, and confirmed that it would continue the purchases under the Pandemic Emergency Purchase Programme (PEPP) at a moderately lower pace than in the second and third quarter of this year. According to the current guidance, the PEPP may end in March 2022. According to the European Central Bank's communication, the Bank will take a decision in December on the future use of the asset purchase programme.

In CEE region, the Czech central bank raised the policy rate by 75 basis points in September and by 125 basis points in November. In addition to that, the central bank confirmed its previous indication that the decision-makers are ready to raise the policy rate further, in line with the autumn forecast. At its rate-setting meetings in October, November and December the Polish central bank raised its policy rate by 40, 75 and 50 basis points, respectively. The Romanian central bank raised the base rate in October and November by 25 basis points each, to 1.75 percent, and, in addition, it widened the interest rate corridor from 100 basis points to 150 basis points in November.

Developed market investor sentiment remained practically unchanged in the past quarter, but at the same time the volatility of emerging bond and FX markets increased in parallel with the strengthening in inflation risks and the tightening messages of central banks of developed countries.

Risk appetite in the past quarter was determined by rising inflation trends and the related monetary policy messages as well as the spreading of the delta and omicron variants of the coronavirus. The significantly increased commodity and energy prices contributed to a further rise in inflation fears. US and German government securities yields increased in most of the period, although at the end of it they adjusted, coming close to their September level due to the uncertainty related to the appearance of the omicron variant. The yield increase typical of most of the period was observed particularly in the case of longer maturities. The dollar appreciated against both the developed and emerging market currencies, while capital withdrawal from emerging markets started in parallel with that. Developed stock exchange price indices showed a mixed picture in the past quarter.

Inflation reached its peak in November, and it is expected to fall gradually from December, and returning to the central bank tolerance band in 2022 Q4.

Inflation reached its peak in November, and it is expected to fall gradually from December. Short-term developments in inflation are determined by the fading impact of base and tax effects, the introduction of a cap on fuel prices and the extent of repricing at the beginning of the year. Consumer prices are expected to rise by 5.1 percent in 2021 as a whole. Core inflation will rise in the coming months and will be close to 6 percent by mid-2022, reflecting the rise in commodity and energy prices, increases in freight costs, and increasingly wider supply disruptions. Over the medium term, anchoring inflation expectations at a level consistent with the inflation target will play a crucial role in the achievement of price stability.

Core inflation excluding the effects of tax changes is expected to follow a downward path from the second half of next year as a result of the Bank's proactive measures and as the effects of the pandemic and the external inflation environment fade gradually. Inflation is expected to return to the central bank tolerance band in the fourth quarter of 2022, before reaching the 3 percent central bank target in the first half of 2023. The consumer price index is projected to be 4.7–5.1 percent in 2022 and to be consistent with the inflation target from 2023.

The Hungarian economy has a strong ability to recover.

Economic growth is expected to continue at a slower pace, while the structure of growth shows a dichotomy. Disruptions in international production chains, as well as rising commodity and energy prices, lead to a slowdown in the economic recovery, while the further strengthening in domestic demand cushions the effects of external factors. Household consumption growth continues, supported by the increase in the minimum wage next year and the government measures aimed at boosting household income. In addition to the increase in the minimum wage, the tight labour market also helps to maintain rapid wage growth.

Higher commodity and energy prices, and weaker external demand are likely to hold back corporate investment activity in 2022. However, the investment rate is expected to stabilise at a high level even compared to the EU. As a result of the temporary slowdown in exports, reflecting the effects of external factors, and stronger domestic demand, net exports are likely to have a nearly neutral impact on GDP growth in 2022. In the second half of next year, exports are expected to rebound quickly as external markets and supply chains recover, which will also be supported by new export capacities. The GDP will expand by 6.3–6.5 percent in 2021. Growth will be slower in the first half of 2022 than in the previous quarters, then it will accelerate again in the second half of the year, and will be 4.0–5.0 percent on annual average in 2022.

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

The financial intermediary sector's outstanding lending to the corporate sector rose by HUF 475 billion in the third quarter of 2021, and consequently, the annual growth rate reached 9.4 percent in September, rising by 0.9 percentage points. 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 15 percent year-on-year at the end of the third quarter. Outstanding lending to the SME sector increased by around 20 percent year-on-year in the same period. According to preliminary data, 2 percent

of corporate loans outstanding have been participating in the payment moratorium since November, which is lower than the earlier 17 percent participation ratio. After the restart of the economy, banks' ample liquidity and strong capital position will allow them to meet the private sector's borrowing requirement on a market basis. During the quarter, an increasing portion (nearly three quarters) of the newly disbursed corporate loans was on a market basis. The annual growth rate of corporate loans outstanding may decelerate in the next quarter due to the depletion of the allocation for the FGS Go! and in view of the newer waves of coronavirus pandemic, but may return to the level of around 8 percent as of 2022.

The stock of household lending by the financial intermediary system rose by HUF 395 billion in the third quarter of 2021. As a result, annual lending growth amounted to 15.6 percent at the end of September. Lower capital depreciation due to the moratorium on repayments and the unprecedented size of housing loans contributed to the increase in the stock of household loans. According to preliminary data, as opposed to the previous 28 percent, 5 percent of household loans outstanding remained in the moratorium, which goes on in a narrower form. The volume of housing loan disbursements reached a historical high during the third quarter, while the disbursement of personal loans was by 11 percent below the pre-pandemic figure.

Banks expect additional growth in both housing loans and consumer loans. This is partly attributable to the new government programmes concerning the housing market and launched in 2021, the increased demand for the pre-financing of the home renovation subsidy as well as to the significant interest in the MNB's Green Home Programme launched in October 2021. Prenatal baby support loan contracts, amounting to HUF 139 billion, also greatly contributed to strong growth in the third quarter, which, looking ahead, may support household lending until the Programme ends in 2022. As a result of a supportive environment, household lending growth is expected to expand by more than 12 percent in the next two years.

The current account balance will be around this year's level in 2022, before improving gradually until the end of the forecast period.

The current account balance is likely to worsen due to the temporary effects of the pandemic, but to increase as external markets and supply chains recover, which will be supported by new export capacities built up in recent years. As a result, the current account balance is expected to show a deficit of three percent of GDP this year and next, and then to improve gradually toward the end of the forecast horizon. At the same time, the economy's net lending is likely to increase following a temporary decline in 2021 and 2022, and will be around 1 percent of GDP at the end of the forecast horizon.

The amendment of the 2021 Budget Act and the 2022 Budget Act contain a deficit-to-GDP ratio of 7.5 percent in 2021 and 5.9 percent in 2022. From 80.1 percent at the end of last year, the government debt ratio is expected to decline to 79.8 percent this year and to around 75 percent by the end of the forecast period.

Yields on Hungarian government securities rose and the forint depreciated against the euro.

Similarly to those in CEE region, on the whole, the Hungarian government securities yield curve shifted upwards. The largest rise was observed in the long and middle sections of the curve. Interbank rates and swap yields grew in parallel with the increase in the base rate. The forint weakened to a greater degree against the euro than the currencies of the region. The Hungarian currency reacted to the end-November and December central banks steps with strengthening.

Risks around inflation continue to be on the upside.

The Monetary Council highlighted three alternative scenarios around the baseline projection in the December Inflation Report. The alternative scenario that presumes a persistently high external inflation environment entails higher domestic inflation and lower growth paths than the baseline forecast. In the scenario with a faster easing of global supply disruptions, lower inflation and higher growth paths will materialise compared to the baseline scenario. The scenario that presents the risks of second-round effects and a rise in inflation expectations is in line with higher inflation and higher growth paths compared to the baseline scenario. In addition to the scenarios highlighted above, as further alternatives, the Monetary Council discussed scenarios that assume more subdued external demand, stricter-than-expected external monetary policy conditions and mounting risk aversion as well as the implementation of competitiveness reforms.

SUMMARY TABLE OF THE BASELINE SCENARIO

(Forecast based on endogenous monetary policy)

	2020	2021	2022	2023	2024
	Actual		Projection		
Inflation (annual average)[1]					
Core inflation	3.7	3.9	5.3 - 5.5	2.9 - 3.5	2.7 - 3.3
Core inflation excluding indirect tax effects	3.7	3.9	5.3 - 5.5	2.9 - 3.5	2.7 - 3.3
Inflation	3.3	5.1	4.7 - 5.1	2.5 - 3.5	2.5 - 3.5
Economic growth					
Household consumption expenditure	-1.6	3.0 - 3.1	5.5 - 6.1	3.0 - 3.9	2.4 - 3.5
Government final consumption expenditure[6]	0.6	4.1 - 4.3	0.9 - 2.0	0.2 - 1.4	0.3 - 1.4
Gross fixed capital formation	-6.9	6.9 - 7.1	2.5 - 4.7	1.7 - 4.6	1.6 - 4.5
Domestic absorption	-2.6	5.8 - 5.9	3.6 - 4.4	2.1 - 3.3	1.9 - 3.1
Exports	-5.9	7.6 - 7.8	4.5 - 6.1	6.4 - 8.3	4.2 - 5.9
Imports	-3.5	7.0 - 7.3	3.9 - 5.5	4.7 - 6.8	2.9 - 4.8
GDP	-4.7	6.3 - 6.5	4.0 - 5.0	3.5 - 4.5	3.0 - 4.0
Labour productivity[5]	-3.7	3.6 - 3.8	2.8 - 3.8	2.9 - 4.3	2.5 - 3.9
External balance[2]					
Current account balance	-1.6	(-3.0)-(-3.4)	(-2.5)-(-3.4)	(-1.5)-(-2.4)	(-0.6)-(-1.5)
Net lending	0.4	(-0.7)-(-1.1)	(-0.2)-(-1.1)	0.0-0.9	0.2-1.1
Government balance					
ESA balance	-8.0	-7.5	-5.9	-3.9	-3.0
Labour market					
Whole-economy gross average earnings[3]	9.7	8.1 - 8.3	10.2 - 11.2	5.6 - 6.8	5.3 - 6.5
Whole-economy employment	-0.9	0.8	0.6 - 1.0	0.0 - 0.8	(-0.1) - 0.7
Private sector gross average earnings[3]	9.8	7.4 - 7.6	9.7 - 10.7	7.5 - 8.7	6.8 - 8.0
Private sector employment	-0.5	0.6	0.8 - 1.2	0.1 - 0.6	(-0.1) - 0.5
Unemployment rate	4.1	4.0	3.5 - 3.7	3.1 - 3.7	2.8 - 3.8
Private sector nominal unit labour costs	12.5	2.3 - 2.5	2.6 - 4.0	2.8 - 4.6	0.8 - 2.6
Household real income[4]	0.7	3.0 - 3.2	5.0 - 6.0	2.8 - 4.0	2.2 - 3.4

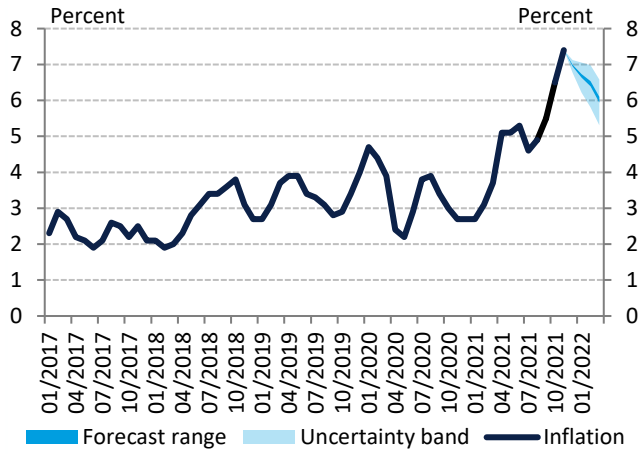
[1] Based on seasonally unadjusted data.
[2] GDP-proportionate values, partly based on forecast.
3 For full-time employees.
[4] MNB estimate.
[5] Whole economy, based on national accounts data.
[6] Includes government consumption and the transfers from government and non-profit institutions.

1. Inflation and real economy outlook

1.1 Inflation forecast

With the publication of the November inflation data, we are past the inflation peak. If our current assumptions hold, inflation will start to decline gradually after November. The short-term evolution of inflation is determined by the fading-out of the base and tax effects, the price cap introduced on fuel prices and the extent of repricings at the beginning of the year. Core inflation will rise in the coming months and will be close to 6 percent by mid-2022, due to the significant rise in commodity and energy prices, and the effect of increasing transportation costs, as well as the pass-throuh of the more and more widespread supply difficulties. Following that, core inflation is expected to fall in the second half of 2022, due to tightening monetary conditions and the expected resolution of global supply shocks from mid-next year. According to our expectations, with the alleviation of bottlenecks due to the pandemic, inflation will return to the tolerance band in 2022 Q4 and the target will be reached in 2023 H1. Consumer prices are expected to rise by 5.1 percent this year on annual average, 4.7–5.1 percent in 2022, while from 2023 onwards, inflation will be in line with the central bank target. According to our projection, core inflation excluding indirect taxes will be 3.9 percent this year and between 5.3–5.5 percent in 2022, 2.9–3.5 percent in 2023 and 2.7–3.3 percent in 2024.

Chart 1-1: Monthly evolution of the near-term inflation forecast

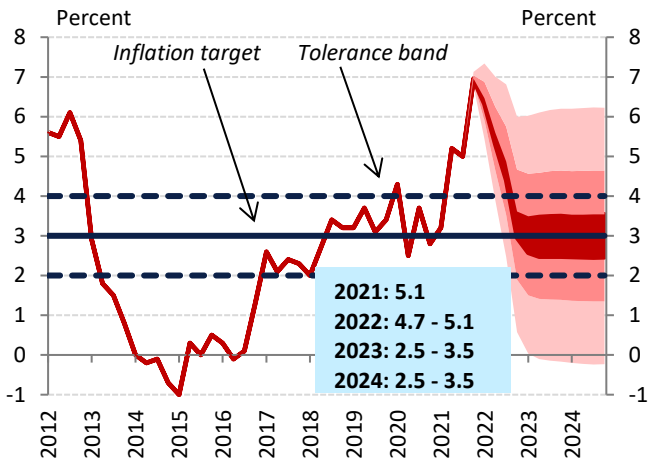


Note: Annual change. The uncertainty band shows the uncertainty around the forecast range with regards to the root mean squared error of previous years' near-term forecasts.
Source: HCSO, MNB

The growth rate of consumer prices peaked at 7.4 percent in November, and thus we are past the inflation peak. If our current assumptions hold, inflation will start to decline gradually after November, although it will remain above 6 percent in the early months of 2022. The short-term evolution of inflation is determined by the fading-out of the base and tax effects, the price cap introduced on fuel prices and the extent of repricings at the beginning of the year. According to our forecast, inflation will decline into the central bank tolerance band again in 2022 Q4 (Chart 1-1). In the short run, several factors contribute to the deceleration in inflation. Inflation is reduced by both the base effect of the significant fuel price increase one year ago as well as the effect of the fading-out of the two-step (January and April) tobacco excise tax increase from the base. At the same time, high commodity and fuel prices are gradually passing into the prices of a wide range of products, and thus food and industrial goods price increases are expected to persist in the coming quarters. The effects of the central bank tightening cycle will already become clearly perceptible in 2022. According to our expectations, with the alleviation of the bottlenecks due to the pandemic, inflation may return to the tolerance band in 2022 Q4, while the target will be reached in 2023 H1, one half year later than projected in the September Inflation Report. This year, consumer prices are expected to rise by 5.1 percent on annual average. According to our forecast, inflation will amount to 4.7–5.1 percent in 2022 and between 2.5–3.5 percent in 2023 and 2024 (Chart 1-2).

External inflation accelerated, and according to the latest forecasts of the countries in the region prices are expected to increase further in the short run before inflation takes a declining path. According to preliminary data, which

Chart 1-2: Fan chart of the inflation forecast



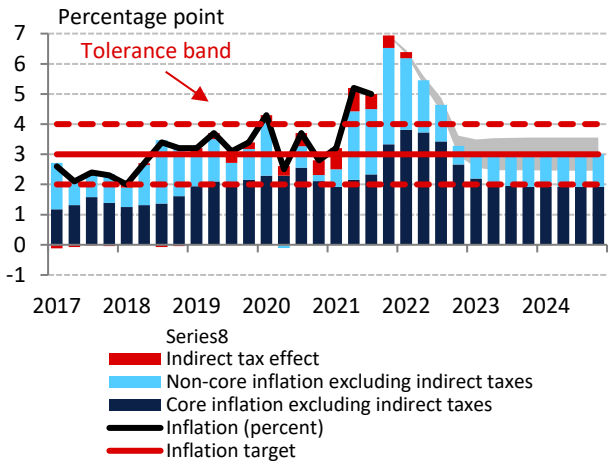
Note: Based on seasonally unadjusted data.
Source: HCSO, MNB

exceeded analysts' expectations, euro area inflation rose to a historically high level of 4.9 percent in November, primarily due to surging energy and commodity prices. Core inflation, which captures the underlying inflation trends in the euro area, is 2.6 percent at present, following a rise of 0.7 percentage point since September.

Inflation is following a similar pattern in the countries of the region, but may start to decline earlier in Hungary. In addition to Hungary, inflation may also reach its peak at the end of this year in Poland (due to a temporary reduction of VAT on gas, district heating and electricity for households as well as waiving the retail tax and environmental fee in the case of fuels), while in the other countries the index is expected to continue rising even in 2022 Q1. In Romania, inflation is expected to peak in mid-2022, when it may reach 8.6 percent.

Core inflation will rise in the coming months and will be close to 6 percent by mid-2022. High commodity and energy prices as well as transportation costs are gradually passing into the prices of a wide range of products, with these effects contributing to higher core inflation via food and tradables prices. In the case of processed food, it is expected that the sharp price increase from the past period as a result of global trends will persist in the coming quarters as well, after which – according to our expectations – these extraordinary inflationary effects will gradually cease by the end of the forecast period. The high price dynamics typical of industrial goods in recent months may persist in the coming period, while market expectations suggest that global supply anomalies may subsequently ease from the second half of next year. As a result, the price index of industrial goods is expected to gradually decline. The price index of market services advanced to 5.0 percent in the autumn months. Based on typical corporate repricing habits, significant price changes may occur in early 2022. The repricings at the beginning of the year will be of great importance for the further development of inflation. Following that, the price index of market services may increase in line with the historical average over the forecast horizon. The expected expansion of domestic consumer demand due to dynamically rising wages and income-increasing government transfers suggests rising core inflation. Based on previous experiences, the cost-side inflationary effects of the minimum wage increase are offset by the reduction of corporate tax burdens. From 2022, the proactive central bank steps will have an effect, and thus core inflation excluding indirect taxes will embark on a downward path starting from the second half of next year. Our current forecast suggests that core inflation excluding

Chart 1-3: Decomposition of our inflation forecast



Note: The decomposition is based on the midpoint for the forecast range.

Source: HCSO, MNB

Table 1-1: Details of the inflation forecast

		2021	2022	2023	2024
Core inflation excluding indirect tax effects		3.9	5.3–5.5	2.9–3.5	2.7–3.3
Core inflation		3.9	5.3–5.5	2.9–3.5	2.7–3.3
Non-core inflation	Unprocessed food	2.5	6.5	4.3	4.2
	Fuel and market energy	20.3	5.8	2.2	3.6
	Regulated prices	0.6	2.1	2.1	2.1
	Alcohol and tobacco	10.9	4.5	3.0	3.0
	Total	7.2	4.2	2.7	3.0
Inflation		**5.1**	**4.7–5.1**	**2.5–3.5**	**2.5–3.5**

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

Source: MNB

indirect tax effects will amount to 3.9 percent this year, 5.3-5.5 percent in 2022, 2.9–3.5 in 2023 and 2.7–3.3 percent in 2024.

In the short run, the annual price index will fall as indirect tax changes enter the base (Chart 1-5). In line with harmonisation with EU legislation, the excise tax on tobacco products rose in two steps this year, in January and April. The tax content of inflation this year was reduced somewhat by the fact that – as a result of the rise in oil prices – the excise tax on fuels was lowered from 1 April 2021, in accordance with excise tax rules. On the whole, indirect tax effects added almost 0.6 percentage point to inflation in 2021 and have neutral effect in 2022 and 2023.

In the case of non-core inflation items, significant fuel, alcohol and tobacco price rises were recorded this year, and unprocessed food prices are expected to increase considerably next year. Fuel price inflation advanced to nearly 40 percent as a result of the increase in global oil prices. Starting from 15 November 2021, the government capped the per litre prices of fuels at HUF 480 for 3 months. This measure mitigates the inflationary effect of the high oil prices in the short run. According to our expectation, inflation in this product group will decline to around the historical average by the end of the forecast period. Unprocessed food inflation may exceed our previous expectations in the short run. Recent increases in global food prices and the indirect effects from rising energy and commodity prices appeared in the inflation of this product group (e.g. costs of artificial fertilizer production surged due to gas prices). Consequently, unprocessed food inflation exceeded 5 percent in November and will be at a high level in the coming period as well. As the inflationary effects from global developments fade, price dynamics are expected to be around the historical average from 2023. The inflation of alcohol and tobacco products will exceed 10 percent this year, before declining considerably from next year as the tax effects fade. 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 September assumption. On the whole, after the cost effects have faded out, the price dynamics of non-core inflation items will be at 3 percent at the end of the forecast horizon (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	2021		2022		2023		2024	Change		
	Previous	Current	Previous	Current	Previous	Current	Current	2021	2022	2023
EUR/USD	1.19	1.18	1.18	1.13	1.18	1.13	1.13	-0.9%	-4.5%	-4.5%
Oil (USD/barrel)	68.3	70.2	68.9	70.0	67.6	68.1	68.1	2.8%	1.5%	0.7%
Oil (EUR/barrel)	57.3	59.5	58.3	61.9	57.1	60.2	60.2	3.8%	6.2%	5.4%
Euro area inflation (%)	2.2	2.5	1.7	2.3	1.5	1.5	1.6	0.3 pp.	0.6 pp.	0 pp.
Euro area real GDP (%)	5.0	5.1	4.6	4.2	2.1	2.3	1.6	0.1 pp.	-0.4 pp.	0.2 pp.
GDP growth of Hungary's main export partners* (%)	5.5	4.6	4.2	3.5	2.4	3.3	2.4	-0.9 pp.	-0.7 pp.	0.9 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

Economic recovery continued in 2021 Q3, but growth decelerated in most countries with the disappearance of last year's extremely low base. In 2021 Q3, the performance of the US economy fell short of expectations, primarily as a result of decelerating household consumption and investment. Both the United States and China expanded by 4.9 percent year on year. The economy of the European Union grew by 4.1 percent in 2021 Q3, and the level of GDP still remains slightly below its pre-crisis figure. The economic performance of Germany, which is Hungary's main trading partner, was below analysts' expectations. Growth prospects of the German economy deteriorated gradually in the past period, mainly due to the global shortage of semiconductors.

Euro area inflation is higher compared to the September forecast. In addition to rising energy prices, the higher inflation is mainly attributable to the demand- and supply-side constraints evolving with the reopening of economies as well as the base effects related to last year's oil price decline and German VAT cut. According to the ECB, the protracted supply constraints entail the risk that inflation will not decline as fast and to the degree previously expected. The ECB's new inflation forecast will be published after the closing of our data deadline, but according to market analysts' expectations, euro area inflation may be 2.5 percent in 2021, 2.3 percent in 2022, 1.5 percent in 2023 and 1.6 percent in 2024. Euro area GDP growth in 2022 may be more restrained compared to our previous expectation.

The world market price of Brent crude climbed to above USD 80 per barrel in October, but then fell to nearly USD 70 per barrel by early December in reaction to news about the fourth wave of the pandemic and the appearance of the new variant. Excess demand evolved in the oil market in view of the lifting of the containment measures. Despite oil prices rising to a high unseen for many years, the OPEC+ countries decided not to increase production at their early October and November meetings. In the second half of November, the US Department of Energy announced that it would start to sell some of its strategic crude oil reserves in December to contain the oil price increase. At the end of November, the fourth wave of the pandemic and the appearance of the new virus variant raised the risks to economic recovery again, and the world market price of Brent crude suddenly dropped by more than 10 percent. Compared to the October peak, the world market price of Brent crude dropped by some 20 percent due to the announcement of the release of strategic reserves and the appearance of the new virus variant. According to the latest, November forecast of the US Energy Information Administration (EIA), global oil demand may still exceed supply at the end of this year, and in parallel the world market price of Brent crude may remain above USD 80 per barrel. However, according to the EIA's calculations, global oil prices will drop again in 2022, as a result of an expected increase in both OPEC+ production and US output, and thus oil market supply will catch up with demand. At their December meeting, the OPEC+ countries decided to boost their output. Accordingly, they will raise production by 400,000 barrels a day from January.

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

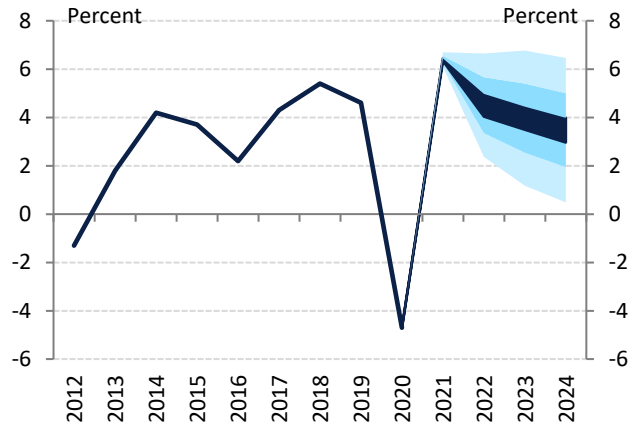
According to our forecast, the budget deficit may be 7.5 percent in 2021 and then decline to 5.9 percent in 2022 and 3 percent by the end of the forecast period. Economic performance this year may be more favourable than assumed in the budget, and thus there may be additional revenues from taxes and contributions, which are forecast to be used up completely. In 2021, the additional revenues finance the uniformly raised pension premium disbursement, in addition to the costs of managing the pandemic and restarting the economy, whereas in 2022 they will mainly cover the full 13th-month pension, the refund of the personal income tax of those who have children, the partial tax exemption of people under the age of 25 as well as the fiscal tax cuts adopted to offset the significantly higher minimum wage.

According to our projection and taking the budget appropriations as a basis, the actual absorption of EU funds may increase in 2022. At the same time, the distribution across years of the amount of the absorption of funds related to the cohesion and recovery programmes is highly uncertain.

1.2 Real economy forecast

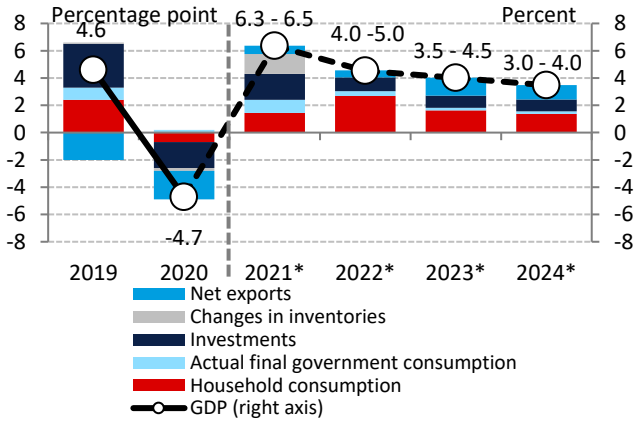
In 2021 Q3, Hungarian GDP expanded more slowly than expected, growing by 6.1 percent year on year. The resilience of the Hungarian economy is still strong, but the global semiconductor shortage and the surge in energy prices had unfavourable effects, and thus we expect more restrained economic growth compared to our September projection. Hungarian GDP may expand at a rate of 6.3–6.5 percent this year, 4.0–5.0 percent next year, 3.5–4.5 percent in 2023 and 3.0–4.0 percent in 2024. In the short run, the structure of growth is shifting towards domestic demand. The recovery in household consumption next year will be boosted by the significant increases in the minimum wage and the guaranteed wage minimum as well as by income-rising government measures. At the same time, uncertainty has risen due to the fourth wave of the pandemic and the appearance of new virus variants. Although higher commodity and energy prices, along with more restrained external demand, undermine corporate investment activity in 2022, the investment rate nevertheless stabilises at above 28 percent over the forecast horizon. Growth in corporate loans outstanding is projected to remain buoyant. In our forecast, Hungarian exports may increase more slowly than previously presumed, in line with the global shortage of semiconductors, surging energy prices and the deterioration in the pandemic outlook. According to our assumptions, global supply disruptions may ease from 2022 H2, after which we expect rapid growth in exports. As a result of temporarily weaker exports and more buoyant domestic demand, net exports may support growth only moderately in 2021 and 2022, before making a stronger contribution again.

Chart 1-4: Fan chart of the GDP forecast



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

Chart 1-5: Expenditure-side decomposition and forecast of GDP



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

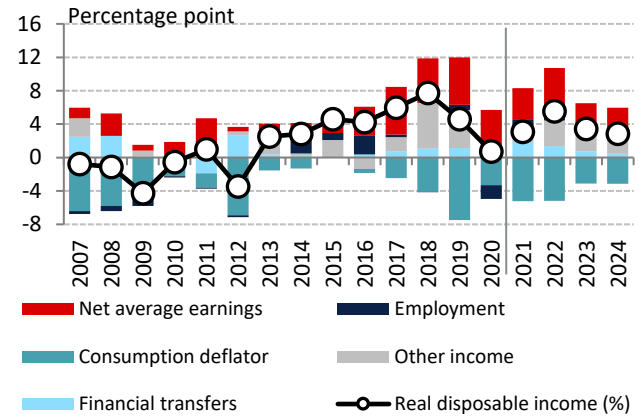
Following a successful restart, the Hungarian economy continues to grow at a decelerating rate. In 2021 Q3, Hungarian GDP expanded to a smaller degree than expected, growing by 6.1 percent year on year.

GDP growth may reach 6.3–6.5 percent this year and 4.0-5.0 percent next year (Chart 1-4 and Chart 1-5). Downside growth effects strengthened as a result of the global shortage of semiconductors, the new wave of the coronavirus pandemic and the surge in energy prices. Consequently, we expect more restrained economic growth compared to our September projection. Hungarian GDP may expand by 3.5–4.5 percent in 2023 and 3.0 – 4.0 percent in 2024.

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 will remain positive, but will decline in relation to the 2.2-percent surplus registered in the pre-crisis period between 2013–2019.

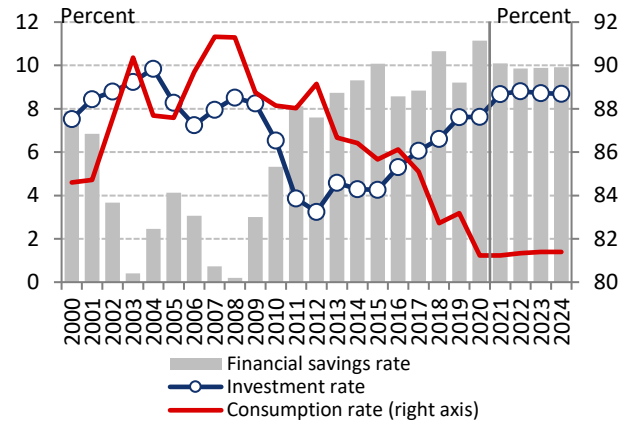
In 2021, households' disposable income will be boosted by the historically high employment, favourable income developments and various government measures (Chart 1-6). In 2022, the significant increases in the minimum wage and the guaranteed wage minimum will result in additional income amounting to HUF 325 billion for households. The macroeconomic effect of the minimum wage increase is discussed in more detail in Box 1-3. Gradual reintroduction of the 13th-month pension started in February 2021, representing additional benefits amounting to HUF 86 billion for those receiving pensions or pension-like benefits this year. In 2022, the full one-month amount of the 13-month pension, totalling HUF 360 billion, will be disbursed (instead of the two-week amount in the

Chart 1-6: Evolution of household disposable income



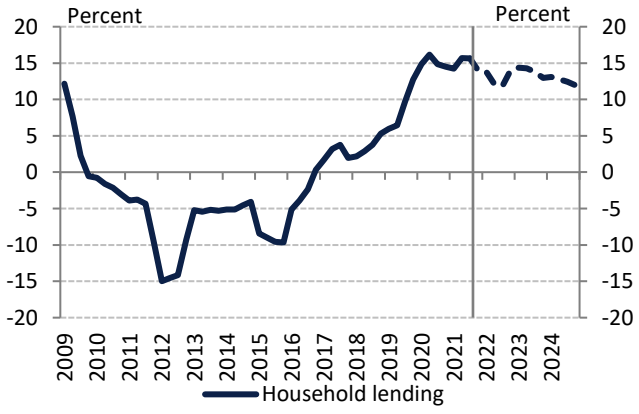
Note: Based on the mean of the forecast band.
Source: HCSO, MNB

Chart 1-7: Evolution of households' consumption, investment and financial savings rates as a percentage of disposable income



Source: HCSO, MNB

Chart 1-8: Annual changes in lending to households



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

previous schedule), which is HUF 180 billion higher than what was previously calculated. Moreover, a pension premium of unprecedented size was disbursed in November 2021. In view of the rapid economic recovery, pensioners received a pension premium amounting to HUF 200 billion this year. This year, those who are entitled to a pension uniformly received maximum disbursement of HUF 80,000 per person.

The recovery of household consumption will accelerate next year. Household consumption expenditure expanded further in 2021 Q3, but still did not reach its 2019 Q4 level. Services (which expanded by 10.4 percent compared to last year's low base) were the main contributor to consumption growth. Next year, the dynamic expansion in household consumption will be supported by the minimum wage increase and government transfers, in addition to favourable labour market developments. The recovery of consumption may be hindered if negative expectations related to the pandemic strengthen. This is also seen in the fact that, in parallel with the generally favourable corporate confidence indices, household confidence is still restrained, which also reflects increasing uncertainty due to the new virus variant and the fourth wave of the pandemic.

In parallel with a decline in the savings rate, the household investment rate is rising, while the consumption rate is stable this year (Chart 1-7)**.** Consumption is expected to increase proportionally with incomes this year, and thus the consumption rate will remain stable. Income from previously accumulated forced savings may have primarily been spent by households on home-related investment. The household investment rate will stabilise at a high level.

Household lending may continue to grow at double-digit rates. In addition to the state-subsidised credit schemes, the upswing in demand and the rise in housing prices also point to an upturn in lending to households (Chart 1-8). Developments in lending expected over the forecast horizon may contribute to stronger household consumption.

Investment growth will continue over the forecast horizon (Table 1-3). Nevertheless, the growth rate of investment may be lower than the double-digit dynamics typical in the pre-crisis period. The slower expansion of investment compared to our previous expectation is primarily explained by the surge in energy prices and weaker external demand, as a result of which corporate sector investment activity may temporarily be more restrained.

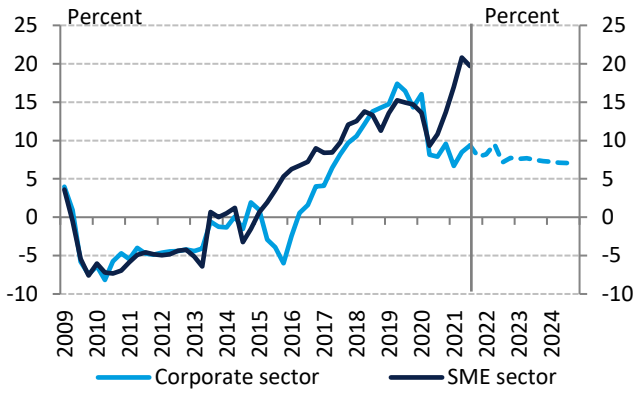
From the financing side, corporations do not face barriers regarding their investments since the annual growth rate of corporate loans outstanding may be above our previous

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

	2021	2022	2023	2024
		Projection		
Gross fixed capital formation	7.0	3.6	3.2	3.0
Government investments	1.7	4.5	-6.4	-5.9
Private investments	8.7	3.3	6.1	5.4
Investment rate	28.2	28.6	28.6	28.6

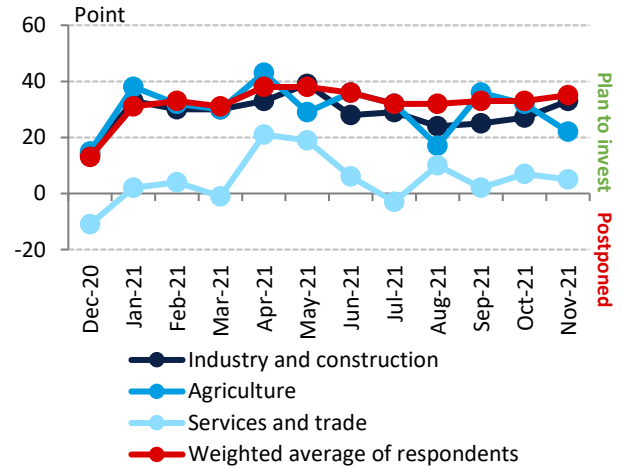
Note: The values represent the middle of the forecast range. Year-on-year growth for gross fixed capital formation and investment rate as a proportion of GDP. Source: MNB

Chart 1-9: 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 1-10: Share of companies planning investments in the next three months



Note: The index is a difference of the shares of positive and negative answers. Source: MNB

expectation in 2021 (Chart 1-9). Despite the contraction in supported programmes, corporate lending was favourable in Q3. The share of market loans was around 75 percent, which is close to the pre-pandemic value.

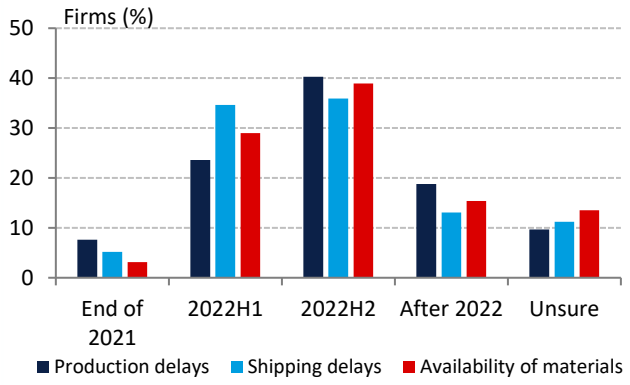
In 2022, corporate investment may temporarily grow only at a low rate as a result of the surge in energy prices and the more subdued external demand. Looking ahead, we do not expect the double-digit corporate investment dynamics typical prior to the crisis to return. For the time being, the MNB's business activity survey shows a positive picture in the short run: the ratio of companies planning investment in the next quarter is still at a high level. Prospects improved in industry and construction, while they deteriorated in agriculture, services, and trade in November (Chart 1-10). Our calculations suggest that the increase in energy prices has a negative effect on Hungarian GDP primarily via investment and more subdued external demand, and therefore through exports. However, corporate investment dynamics are expected to be buoyant again from 2023.

The volume of public investment will decline after 2022. Development projects implemented by the government sector rise at a moderate pace this year and next year. According to our forecast, public investment may peak in 2022, but a substantial decline is then expected, primarily as a result of a fall in investment implemented from own funds.

Household investment will continue to increase as a result of favourable income developments and the Government's home creation programmes. In 2020, household investment expanded by more than 13 percent due to a sharp increase in the number of new homes completed. We expect a further increase this year as a result of the home purchase subsidy schemes. Expansion in household investment will primarily be supported by the home improvement programme in 2021 and the increase in home construction in 2022. At the same time, downside risks are also identified, as the demand and supply anomalies evolving in view of economic restarting and limited construction capacities led to major price increases. Home construction costs may stabilise at higher levels than before, which may result in a more restrained growth rate of household investment. The investment rate will continue to increase, stabilising above 28 percent over the forecast horizon (Table 1-3).

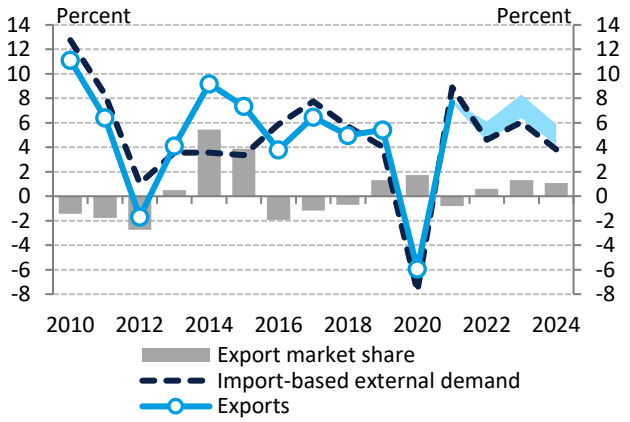
In view of the global semiconductor shortage and surging energy prices, Hungary's external demand may grow more slowly than previously expected (Chart 1-11). Growth prospects and sentiment have deteriorated considerably since the publication of the last Inflation Report. Together with global industrial production, global trade growth came

Chart 1-11: US corporate expectations of when supply chain disruptions will end



Source: Duke University, FRB Richmond and FRB Atlanta CFO Survey Q3 2021

Chart 1-12: Changes in export market share



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

to a halt as a result of the surge in transportation costs and energy prices, logistics difficulties caused by the pandemic and global shortages of certain base materials. Economic growth decelerated in China and the USA as well. European growth prospects typically improved to some extent, while they deteriorated for Hungary's export partners where the vehicle industry has a high weight. The economic outlook in Germany, which is a determinant in terms of the Hungarian vehicle industry, gradually deteriorated. Increasing uncertainty is perceived again in various parts of the world with the spread of the latest variant of the coronavirus.

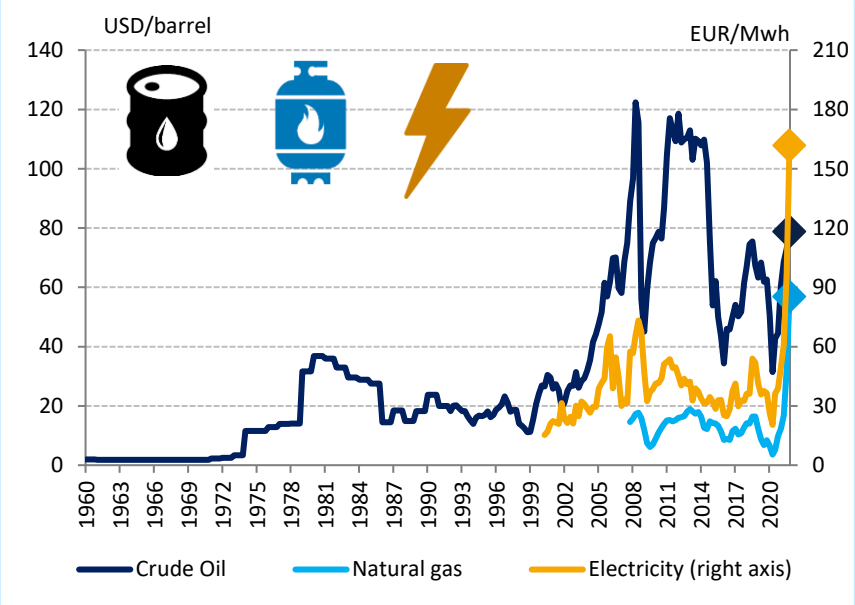
Hungarian exports may expand much more slowly than presumed before (Chart 1-12). The level of Hungary's exports declined again in 2021 Q2 and Q3 mainly due to the feed-through of unfavourable global developments. The previous rapid recovery was driven by the strong performance in goods exports, but these exports then fell in year-on-year terms in 2021 Q3 as a result of the global semiconductor shortage. According to market expectations, global supply disruptions may ease only in 2022 H2 (Chart 1-11), and thus, as opposed to previous assumptions, any major improvement in export performance is also expected only after that. Following the easing of supply problems, some of the unrealised exports are expected to be compensated. The persistent weakness of international tourism due to the appearance of new virus variants and the uncertain international environment hinder the recovery of Hungary's services exports as well. Recovery of the sector may continue at a slow pace in the coming period.

The growth contribution of Hungary's net exports is temporarily restrained. As a result of more subdued exports due to weak external demand and of increasing domestic demand, net exports only moderately support economic growth in 2021 and 2022. Disruptions in manufacturing production due to the shortage of chips, the deterioration in the terms of trade in view of historically high energy prices and the growing import demand stemming from buoyant domestic demand result in a decline in the goods balance, which is described in more detail in Box 3-1. Owing to lower exports and more buoyant domestic demand, net exports may contribute to growth only moderately in 2021 and 2022, before becoming a stronger contributor again. Hungary's export market share is expected to decline in 2021, but may then grow again from 2022 H2 in parallel with the easing of the shortage of chips and the normalisation of energy prices.

Box 1-2: Economic effects of rising energy prices

The largest energy price increase in recent decades is taking place in the world. In November, the price of crude oil exceeded the average of the 2017–2019 period by almost 30 percent, and the price of natural gas and electricity was more than 350 percent higher than the 2017-2019 average. The increase in energy prices is attributable to both economic and geopolitical reasons (Chart 1-13). Similar developments were unfolding in the global economy 50 years ago, when the oil crises entailed drastic energy price increases. Therefore, it is worth to take the course of events of the 1970s as a basis when examining the effects. At the same time, it also needs to be taken into account that the current economy is much different from the one 50 years ago.

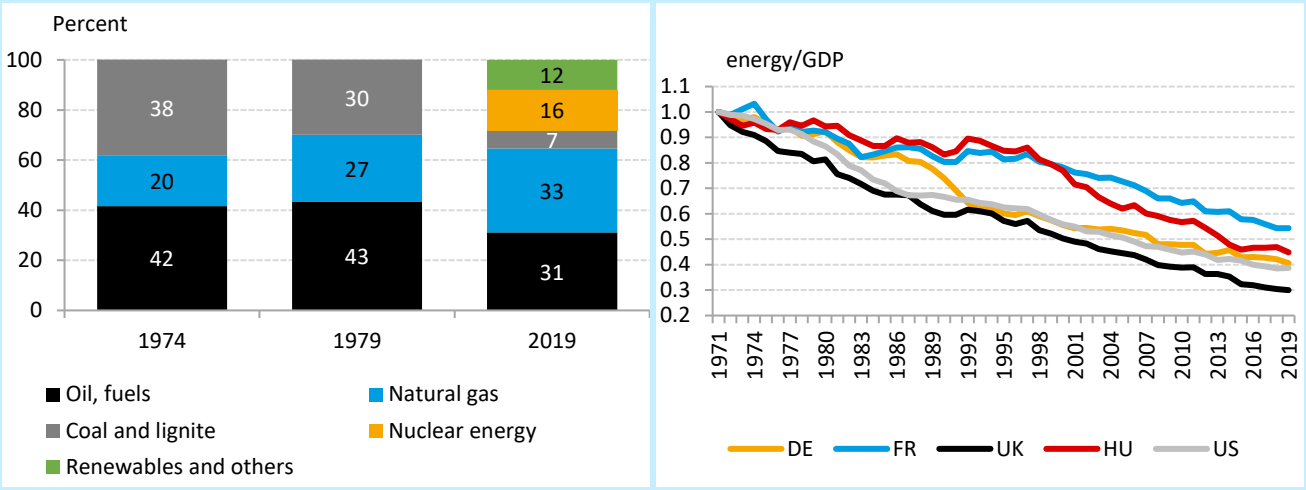
Chart 1-13: Changes in world market energy prices of the most important items



Source: Bloomberg, BP

The sudden rise in energy prices can be compared to the stagflation period of the 1970s. Nevertheless, in view of the different structure of the economy, the real economy is presumed to be less affected than in the 1970s. First, energy production is already much less dependent on fossil fuels than in the 1970s. The weights of oil and coal in production have declined mainly as a result of the roles of nuclear energy and renewables, while the importance of natural gas within the energy mix has increased (Chart 1-14, left panel). Secondly, the energy intensity of economies has also decreased. The amount of energy needed for the production of one unit of added value is about half of the figure typical of the 1970s (Chart 1-14, right panel). This is mainly the result of the structural transformation of production (higher weight of services) and the increase in general energy efficiency.

Chart 1-14: Changes in the structure of the economy: primary energy mix for Hungary (left panel) and the development of real energy intensity in Hungary and some developed industrial states (right panel)



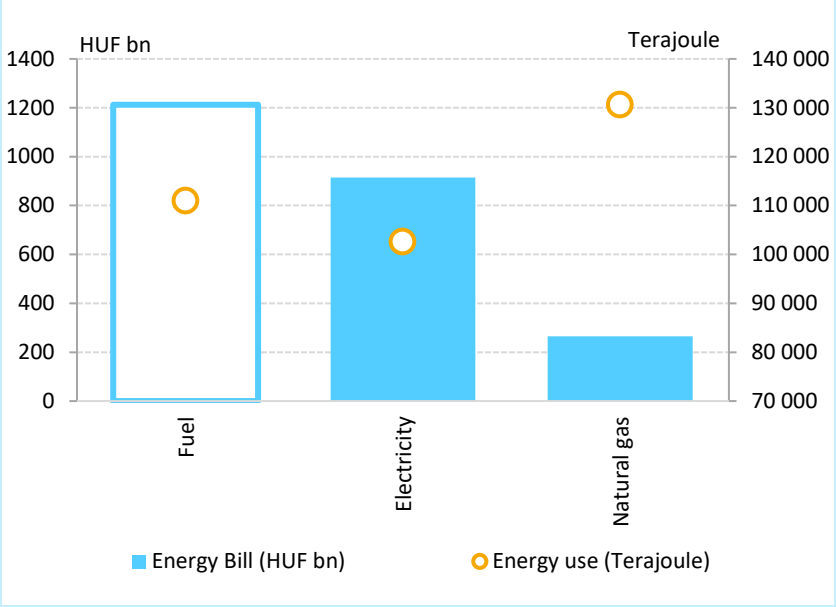
Source: BP, Eurostat and MNB calculations based on Penn World Table 10.0

Of the primary energy sources, the role of natural gas is particularly important, as it is considered an input for energy production and a product for end-use at the same time. Hungary's natural gas consumption in 2019 was 354,000 terajoules, 94,000 terajoules (27 percent) of which was used as other energy power emission, primarily for generating electricity. The remaining 73 percent of the natural gas is for end-use – following conversion loss – roughly half by industry and half by households. At the same time, the cost of natural gas is not the same in the balance sheets of companies purchasing on the open market or the companies and households that choose the universal service. In recent years, until 2021 H1, the companies that purchase on the open market paid less for the natural gas than the universal service price, as open market prices were below the universal service prices. Depending on the expiries of the 2021 contracts, the price rises seen in H2 imposed significant additional costs on companies purchasing on the open market, while the utility costs of the companies in the universal service and of households did not increase in view of the fixed administrative prices valid since 2013.

Compared to natural gas, electric energy is an item that is three times larger in companies' utility costs. In 2019, non-household electricity consumption for final-use amounted to 103,000 terajoules, corresponding to around 80 percent of the final-use of natural gas for production purposes. At the same time, as one (equivalent) unit of electric energy costs roughly 4–5 times more than one unit of energy of natural gas, the relationship reverses in the utility bill of companies, and electricity becomes a larger item. Companies are estimated to have spent roughly around HUF 264 billion on natural gas and HUF 915 billion on electricity in 2020 (Chart 1-15).

Fuel costs are also key determinants of corporate expenditures. Energy used for transport accounted for 23.4 percent of total energy consumption in 2019. According to our estimation, using the Balance of Intersectoral Relations, 57 percent of the fuel consumption is not related to households. Consequently, companies may have booked the forint equivalent of 111,000 terajoules of energy in 2019, which, converted to litres and calculating with average 2020 fuel costs, meant corporate expenditures amounting to some HUF 1,210 billion. This amount approximately corresponds to companies' combined gas and electricity consumption. In November, the government introduced a temporary price ceiling for fuel prices, and thus in terms of fuel costs, which account for half of the total energy cost of companies, every company is temporarily protected from the price increases in the world market.

Chart 1-15: Energy bill ofcompanies in 2020



Note: *Based on the Tax Authority's database the consumption was somewhat smaller, around HUF 1,140 bn.
Source: MNB calculations based on Eurostat's Energy balances, HCSO supply and use tables, tariff sheets of energy companies and NAV (National Tax Authority) data

Looking ahead, it is a question to what extent the utility bill of companies is affected by global market price increases. Although almost the entire industrial electricity consumption and 95 percent of the gas consumption adjusted to open market prices in 2020, pursuant to the government's announcement on 18 November 2021, fixed prices may also be chosen by SMEs if certain conditions are met. A further uncertainty is that it is not known what proportion of companies has valid energy contracts for the new year, and it is also unknown at what prices these contracts were concluded.

The increase in energy prices may affect the Hungarian economy through various channels (Chart 1-16).

• **In Hungary, the higher energy prices do not affect households directly as a result of the officially fixed utility costs.**

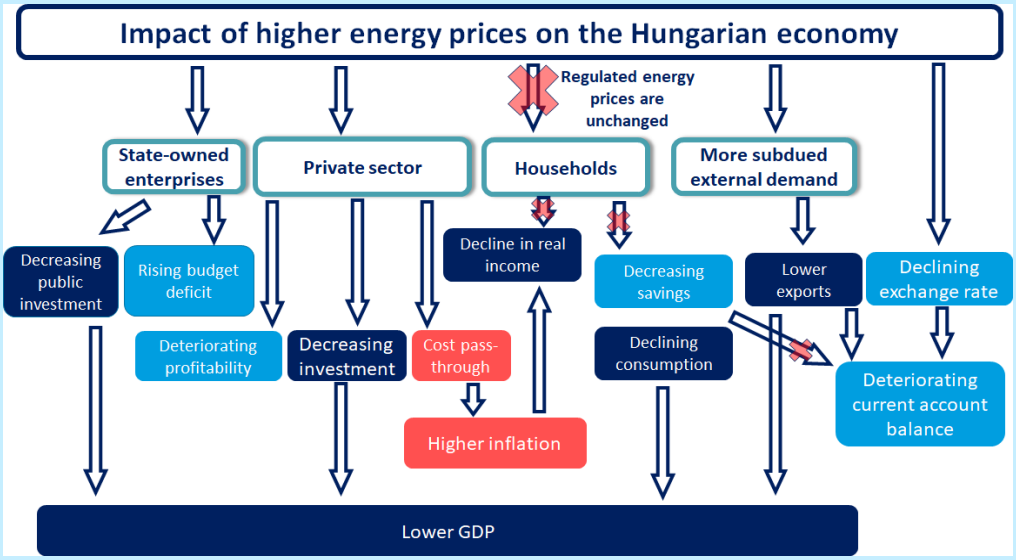
• **Higher energy prices add to inflation through corporate costs and reduce the purchasing power of households' incomes.** The increase in corporate costs is expected to be reflected in consumer prices, as companies may pass some of the higher costs on to consumers, entailing an increase in inflation. These developments reduce families' disposable real income and thus their consumption. At the same time, the decline in consumption may be moderated by the reducing of the forced savings accumulated by households during the waves of the pandemic.

• **If companies are unable to pass on the costs or can do so only partly, the higher costs result in a decline in investment and corporate incomes.** The real economy impact of these developments depends on the extent to which the companies offset the decline in profitability by restraining their investment.

• **Major energy price increases affect the general government as well.** The losses of households' universal service providers and local governments' additional energy costs all impose additional burden on the balance of the general government.

• **The increase in world market energy prices restrains growth in Hungary's export markets as well, and the terms of trade also cause a rise in the current account deficit.** As Hungary's foreign trade is essentially with energy-importing economies, exporting companies' chances to sell are declining as a result of the rise in energy prices.

Chart 1-16: Macroeconomic channels of effects

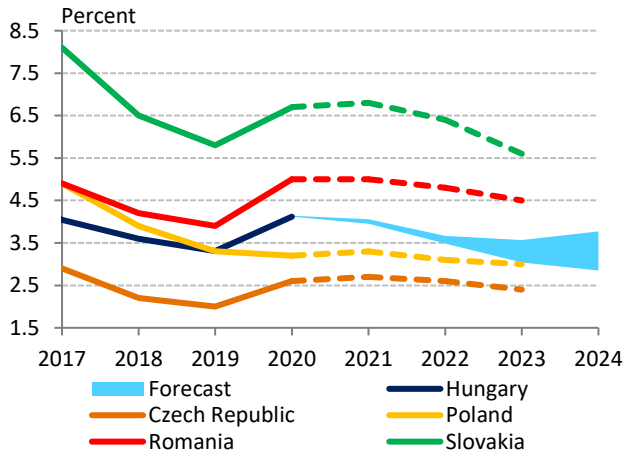


Note: The blue background colour indicates the real economy channel, while lighter blue and red represent the factors that directly affect financing and inflation, respectively.
Source: MNB

1.3 Labour market forecast

Recovery continues in the labour market, and as full employment is approached again, the unemployment rate will remain below 4 percent. The number of employed in the private sector is expected to increase by 0.6 percent in 2021, before increasing by another 0.8–1.2 percent in 2022. Developments in next year's wage dynamics are determined by the minimum wage increase at the beginning of the year, with strong wage dynamics also supported by the tight labour market. According to our forecast, private sector wage growth will amount to 7.4–7.6 percent in 2021 and rise to 9.7–10.7 percent in 2022.

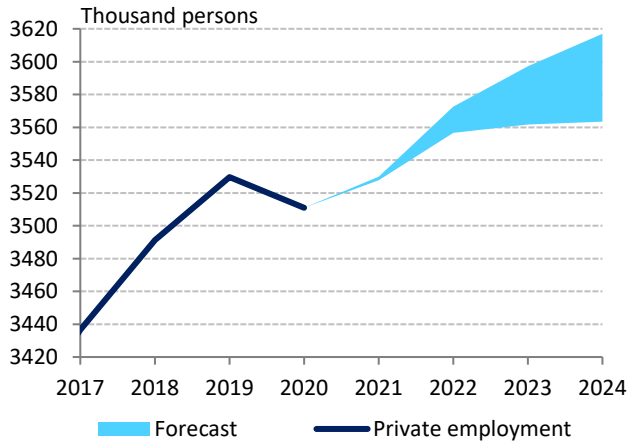
Chart 1-17: Change in the unemployment rate



Note: The dotted lines show the forecast of the European Commission.

Source: HCSO, MNB, European Commission

Chart 1-18: Change in employment in the private sector



Source: HCSO, MNB

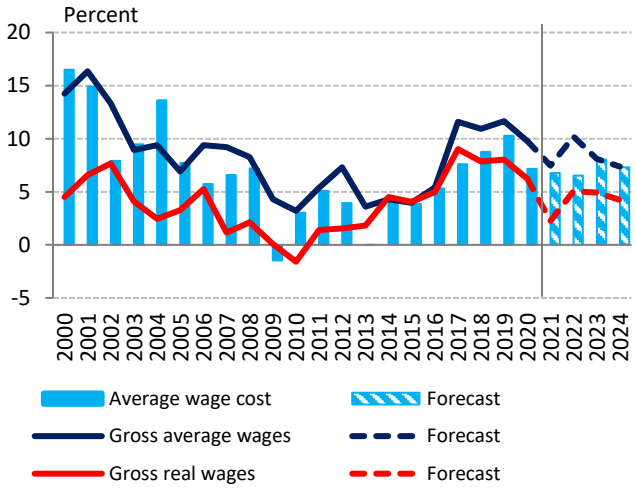
Corporate labour demand is expanding further, but downside risks strengthened. According to the ESI survey, which monitors employment prospects, companies are planning headcount increases in all major sectors in the coming months. At the same time, the inflationary effect of high energy prices on corporate costs and the more subdued external demand may entail a deceleration in corporate production, which may affect labour demand as well. Indicators of short-term developments in unemployment (fear of unemployment according to ESI survey, number of searches for unemployment benefits in Google trends) signalled a small risk in the past months (see Section 3.3).

According to our expectations, unemployment rate will remain below 4 percent (Chart 1-17). The number of active people is expected to rise moderately in view of employees returning from abroad due to the long-term recovery of international tourism and the PIT exemption entering into force in 2022.

Based on our forecast, private sector employment will increase by 0.6 percent in 2021, followed by a further expansion of 0.8–1.2 percent in 2022 (Chart 1-18). In addition to the growth in the rising demand for labour, we took into account that employees who return from abroad for good as a result of the pandemic may increase the number of those working in the private sector by 15,000–20,000 people. In addition to the expansion in headcount, the recovery of the labour market also entails the restoration of working hours; full-time equivalent (FTE) headcount may increase by 2.1–2.3 percent in 2021.

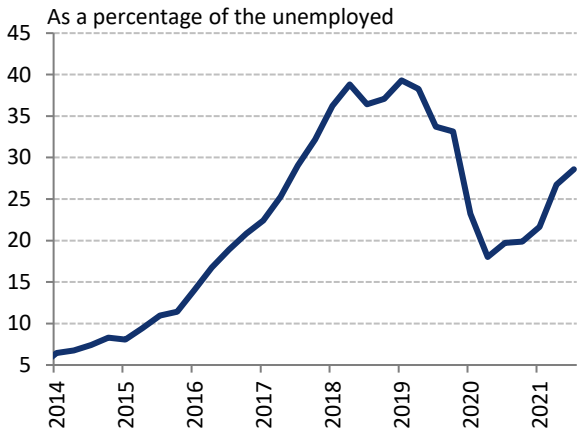
Developments in next year's wage dynamics are determined by the major minimum wage increase at the beginning of the year. In 2022, the minimum wage and the guaranteed wage minimum will rise by 19.5 percent and 18.7 percent, respectively. According to our estimate, as a result of wage compression, the administrative wage increases have an impact on developments in earnings up to the average wage, which is presented in more detail in Box 1-3. Our forecast suggests that annual wage growth may amount to 9.7–10.7 percent in the private sector in 2022. The high wage growth of 7–8 percent is expected to

Chart 1-19: Annual changes in gross average wages and average labour cost in the private sector



Source: HCSO, MNB

Chart 1-20: Evolution of labour market tightness



Note: Seasonally adjusted, quarterly data.
Source: HCSO, MNB

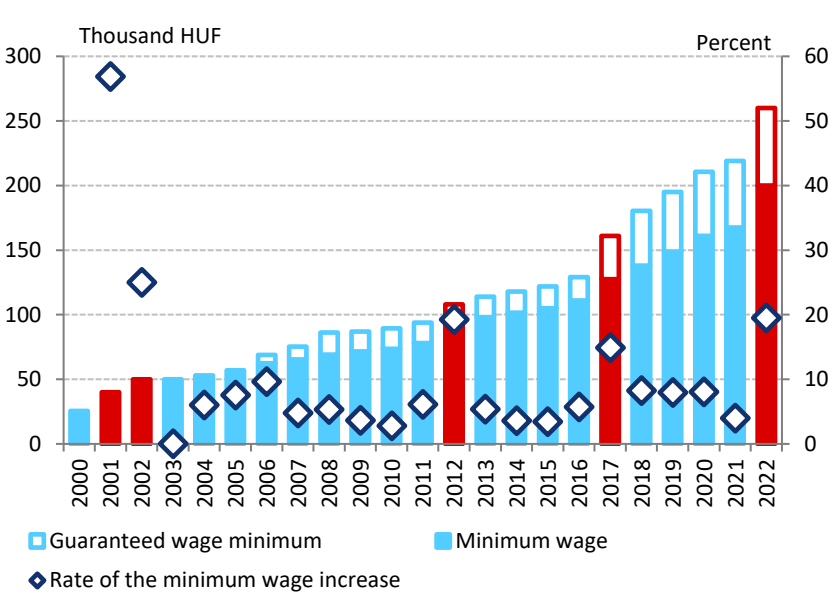
persist until the end of the forecast period. Labour market tightening will result in a sustained rise in real wages (Chart 1-19).

Wage dynamics may remain persistently strong in view of the tightening labour market and the labour shortage in some sectors. The labour market has become tighter in recent months, reaching the mid-2017 level at present (Chart 1-20). Statistical effects in gross average earnings stemming from changes in headcount and the restoration of part-time employment caused a temporary slowdown in the wage index this year, but these effects are expected to fade out by the end of the year. Annual wage growth in the private sector is forecast at 7.4–7.6 percent in 2021.

Box 1-3: Macroeconomic effects of the 2022 minimum wage increase

From January 2022, the minimum wage will rise by 19.5 percent to HUF 200,000, while the guaranteed wage minimum will increase by 18.7 percent to HUF 260,000 in Hungary. Major increases in administrative wages were previously seen in the 2001–2002 period as well as in 2012 and 2017 (Chart 1-21).

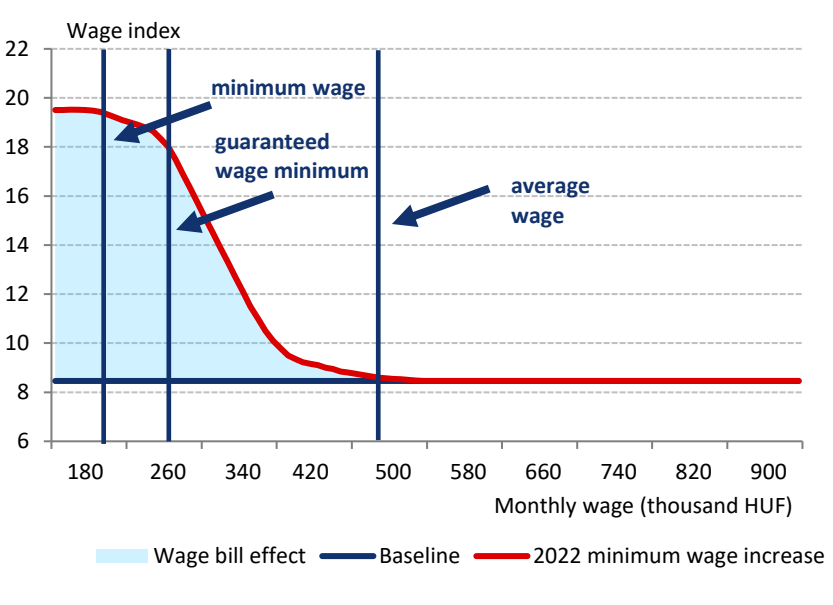
Chart 1-21: Changes in the minimum wage and the guaranteed wage minimum



Source: HCSO, MNB

The wage increase directly affects more than 1 million employees, while via wage compression it may exert an effect up to the level of gross average earnings, thus influencing the wages of 2.5 million employees in total. 8 percent of employees earn the minimum wage and a further 13 percent earn the guaranteed wage minimum in Hungary. The increase in the minimum wage and the wage minimum in 2022 significantly exceeds the 7–8 percent wage dynamics that constitute the underlying trends in the private sector. The major rise in administrative wages is perceived in the higher earnings categories as well, since this is the only way how employers can maintain the differences in wages between jobs that require various skills and experience. According to our calculations, through the effects of wage compression, this measure raises the wages of a further 1–1.5 million employees, resulting in 2022 in an increase of more than 2 percentage points in private sector wage dynamics compared to our baseline scenario (Chart 1-22).

Chart 1-22: Impact of the minimum wage increase on the rise in monthly earnings

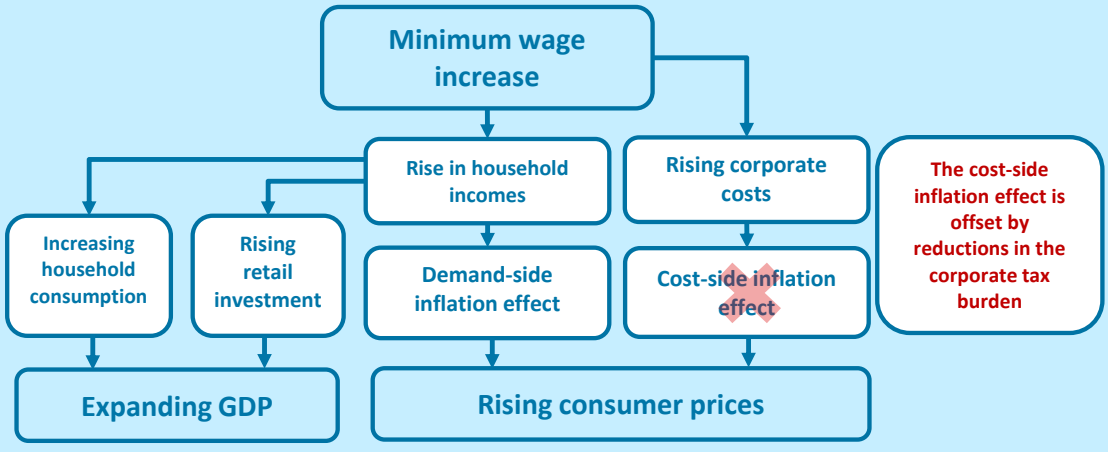


Source: HCSO, MNB

Households' disposable income will expand as a result of the significant wage increase (Chart 1-23). Our calculations suggest that the large increase in earnings corresponds to additional income of HUF 325 billion in net terms for households in 2022. As raising the minimum wage and the guaranteed wage minimum primarily affects employees with low earnings and higher marginal propensity to consume, it is expected that households will spend a significant part of the additional income on consumption. According to our calculations, household consumption will be 1.1 percentage points higher next year as a result of the measure. In view of the higher consumption and household investment, economic growth will be nearly 0.3 percentage point faster.

The cost-side inflationary effect of the administrative wage increases is offset by a reduction of corporate tax burdens. Raising the minimum wage and the guaranteed wage minimum adds to companies' wage cost, which may become included in the prices of products and services offered by them. At the same time, starting from next year, employers' contributions are reduced by 4 percentage points (social contribution tax by 2.5 percentage points and vocational training contribution by 1.5 percentage points), the small business tax is decreasing to 10 percent, and the local business tax allowance has been extended to 2022. These measures offset the HUF 540 billion increase in wage cost resulting from the higher minimum wage, and therefore no significant inflationary effect is expected through the cost-side channel next year.

Chart 1-23: Macroeconomic effects of the minimum wage increase



Source: MNB

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

	2020	2021		2022		2023		2024
	Actual	Projection						
		Previous	Current	Previous	Current	Previous	Current	Current
Inflation (annual average)[1]								
Core inflation	3.7	3.5 – 3.6	3.9	3.4 - 3.6	5.3 - 5.5	2.9 - 3.2	2.9 - 3.5	2.7 - 3.3
Core inflation excluding indirect tax effects	3.7	3.5 - 3.6	3.9	3.4 - 3.6	5.3 - 5.5	2.9 - 3.2	2.9 - 3.5	2.7 - 3.3
Inflation	3.3	4.6 - 4.7	5.1	3.4 - 3.8	4.7 - 5.1	2.8 - 3.2	2.5 - 3.5	2.5 - 3.5
Economic growth								
Household consumer expenditure	-1.6	4.6 - 5.2	3.0 - 3.1	5.0 - 6.3	5.5 - 6.1	2.4 - 3.6	3.0 - 3.9	2.4 - 3.5
Government final consumption expenditure[6]	0.6	3.5 - 4.1	4.1 - 4.3	0.9 - 2.1	0.9 - 2.0	0.3 - 1.5	0.2 - 1.4	0.3 - 1.4
Gross fixed capital formation	-6.9	4.3 - 5.3	6.9 - 7.1	6.2 - 8.2	2.5 - 4.7	2.2 - 4.2	1.7 - 4.6	1.6 - 4.5
Domestic absorption	-2.6	4.2 - 5.1	5.8 - 5.9	4.3 - 5.8	3.6 - 4.4	1.9 - 3.2	2.1 - 3.3	1.9 - 3.1
Exports	-5.9	11.0 - 12.0	7.6 - 7.8	6.6 - 8.7	4.5 - 6.1	3.7 - 5.8	6.4 - 8.3	4.2 - 5.9
Imports	-3.5	8.4 - 9.5	7.0 - 7.3	5.9 - 8.1	3.9 - 5.5	2.7 - 4.9	4.7 - 6.8	2.9 - 4.8
GDP	-4.7	6.5 - 7.0	6.3 - 6.5	5.0 - 6.0	4.0 - 5.0	3.0 - 4.0	3.5 - 4.5	3.0 - 4.0
Labour productivity[5]	-3.7	3.7 - 4.1	3.6 - 3.8	3.9 - 4.7	2.8 - 3.8	2.8 - 3.6	2.9 - 4.3	2.5 - 3.9
External balance[2]								
Current account balance	-1.6	(-0.9)-(-0.4)	(-3.0)-(-3.4)	(-0.1) - 0.8	(-2.5)-(-3.4)	0.0 - 0.9	(-1.5)-(-2.4)	(-0.6)-(-1.5)
Net lending	0.4	1.4 - 1.8	(-0.7)-(-1.1)	2.4 - 3.3	(-0.2)-(-1.1)	2.5 - 3.4	0.0-0.9	0.2-1.1
Government balance								
ESA balance	-8.0	(-7.3)-(-7.5)	-7.5	(-5.6)-(-5.9)	-5.9	(-3.6)-(-3.9)	-3.9	-3.0
Labour market								
Whole-economy gross average earnings[3]	9.7	7.7 - 8.4	8.1 - 8.3	7.7 - 9.2	10.2 - 11.2	6.0 - 7.5	5.6 - 6.8	5.3 - 6.5
Whole-economy employment	-0.9	0.6 - 0.7	0.8	0.8 - 1.0	0.6 - 1.0	0.2 - 0.4	0.0 - 0.8	(-0.1) - 0.7
Private sector gross average earnings[3]	9.8	7.2 - 8.0	7.4 - 7.6	7.1 - 8.7	9.7 - 10.7	7.1 - 8.6	7.5 - 8.7	6.8 - 8.0
Private sector employment	-0.5	0.6 - 0.7	0.6	1.0 - 1.2	0.8 - 1.2	0.2 - 0.4	0.1 - 0.6	(-0.1) - 0.5
Unemployment rate	4.1	3.9 - 4.0	4.0	3.4 - 3.7	3.5 - 3.7	3.2 - 3.6	3.1 - 3.7	2.8 - 3.8
Private sector nominal unit labour cost	12.5	3.2 - 3.5	2.3 - 2.5	2.8 - 3.4	2.6 - 4.0	1.7 - 2.4	2.8 - 4.6	0.8 - 2.6
Household real income[4]	0.7	4.1 - 4.8	3.0 - 3.2	4.4 - 5.8	5.0 - 6.0	2.2 - 3.6	2.8 - 4.0	2.2 - 3.4

[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

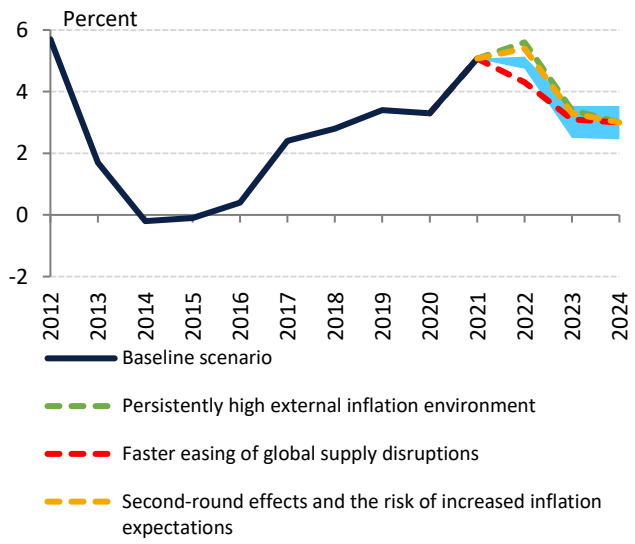
	2021	2022	2023	2024
Consumer Price Index (annual average growth rate, %)				
MNB (December 2021)	5.1	4.7 - 5.1	2.5 - 3.5	2.5 - 3.5
Consensus Economics (November 2021)[2]	4.5 - 4.9 - 5.2	3.4 - 4.6 - 5.9		
European Commission (November 2021)	5.1	4.8	3.4	
IMF (October 2021)	4.5	3.6	3.3	3.0
OECD (December 2021)	5.0	6.0	4.0	
Reuters survey (November 2021)[1]	4.9 - 5.0 - 5.1	4.0 - 4.8 - 5.4	2.6 - 3.4 - 4.0	2.9 - 3.2 - 3.5
GDP (annual growth rate, %)				
MNB (December 2021)	6.3 - 6.5	4.0 - 5.0	3.5 - 4.5	3.0 - 4.0
Consensus Economics (November 2021)[2]	6.2 - 7.1 - 8.0	3.8 - 5.1 - 7.0		
European Commission (November 2021)	7.4	5.4	3.2	
IMF (October 2021)	7.6	5.1	3.8	3.2
OECD (December 2021)	6.9	5.0	3.0	
Reuters survey (November 2021)[1]	6.1 - 6.8 - 7.3	4.4 - 5.1 - 6.3	2.9 - 3.9 - 4.7	2.8 - 3.5 - 4.0
Current account balance[3]				
MNB (December 2021)	(-3.0)-(-3.4)	(-2.5)-(-3.4)	(-1.5)-(-2.4)	(-0.6)-(-1.5)
European Commission (November 2021)	-1.1	-2.4	-1.9	
IMF (October 2021)	0.6	0.9	1.5	1.1
OECD (December 2021)	-0.5	-0.7	-1.5	
Budget balance (ESA 2010 method)[3]				
MNB (December 2021)	-7.5	-5.9	-3.9	-3.0
Consensus Economics (November 2021)[2]	(-8.5) - (-7.1) - (-5.3)	(-6.8) - (-5.6) - (-3.5)		
European Commission (November 2021)	-7.5	-5.7	-3.8	
IMF (October 2021)	-6.6	-5.9	-2.9	-2.2
OECD (December 2021)	-7.5	-5.8	-3.9	
Reuters survey (November 2021)[1]	(-7.5) - (-7.2) - (-6.0)	(-5.9) - (-5.5) - (-4.1)	(-4.5) - (-3.8) - (-3.4)	(-3.5) - (-3.2) - (-2.7)
Forecasts on the GDP growth rate of Hungary's trade partners (annual growth rate, %)				
MNB (December 2021)	4.6	3.5	3.3	2.4
ECB (September 2021)	4.1 - 5.0 - 5.8	2.2 - 4.6 - 5.7	1.9 - 2.1 - 2.3	
Consensus Economics (November 2021)[2]	4.3	4.1		
European Commission (November 2021)[2]	4.5	4.5	2.7	
IMF (October 2021)[2]	4.4	4.3	2.4	2.1
OECD (December 2021)[2]	4.2	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 December Inflation Report. The alternative scenario that presumes a persistently high external inflation environment entails higher domestic inflation and lower growth paths than the baseline forecast. In the scenario with a faster easing of global supply disruptions, lower inflation and higher growth paths will materialise compared to the baseline scenario. The scenario that presents the risks of second-round effects and a rise in inflation expectations is in line with higher inflation and higher growth paths compared to the baseline scenario. In addition to the scenarios highlighted above, as further alternatives, the Monetary Council discussed scenarios that assume more subdued external demand, stricter-than-expected external monetary policy conditions and mounting risk aversion as well as the implementation of competitiveness reforms.

Chart 2-1: Impact of alternative scenarios on the inflation forecast



Source: MNB

Persistently high external inflation environment

In the past months, inflation in many countries rose to highs unseen for a decade, which is exacerbated by a persistent increase in commodity and energy prices as well as the supply difficulties observed in more and more markets. In addition to the higher commodity prices and transportation costs, the increase in inflation is also explained by the fact that – due to the different nature of the crisis and the different crisis management –the recovery in global economic activity and the labour market is faster than in the case of the 2008/2009 crisis. The rapid economic recovery as well as the loose fiscal and monetary policy stance, the high government debt ratios and expanding lending, the deglobalisation and the shortening of value chains all point to rising inflation.

In parallel with the expected dynamic increase in consumption and investment activities by households and the corporate sector, several countries have maintained their respective economic stimulus programmes introduced during the pandemic. Fiscal policy may remain demand-stimulating in 2021 in the European Union, the United Kingdom and the United States as well. Nevertheless, current expectations suggest that budget deficits will decline considerably in the major economies in 2022.

Disruptions in global value chains and the shortage of semiconductors result in mounting cost pressure in shipping and industrial production. The cost of shipments from China to Europe rose by nearly seven fold in the span of one year. It is presumed that merchants will shift some of the ensuing additional costs to consumers, which may be reflected in domestic consumer prices as well.

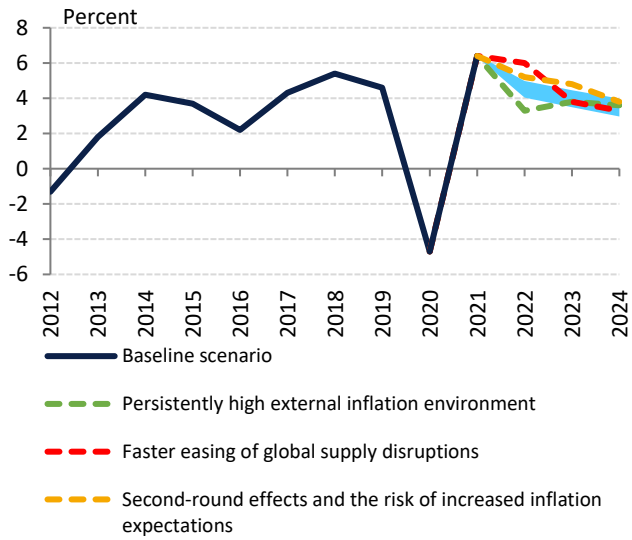
Prices of major commodities considerably exceed the levels observed prior to the pandemic. There was a sharp global increase in commodity prices in H1, which then rose

again following the adjustment observed in mid-summer. Prices of agricultural products may remain persistently high, partly as a result of disruptions in global value chains. **The rise in commodity prices is strongly attributable to market expectations, as well as the upswing in demand due to the recovery.** Expectations are reinforcing price rises caused by demand. In many commodity markets, economic reopening drove prices upwards thanks to burgeoning demand for certain products. Market speculation may contribute strongly to a further increase in commodity prices. If the global rise in inflation expectations is accompanied by further speculative commodity price increases, that will be an obstacle to global economic growth in the longer run.

In the **baseline scenario**, we expect that commodity prices will gradually decline from the currently high level.

In our alternative scenario, global commodity prices continue to increase, which is also attributable to market expectations, in addition to global supply problems. If this alternative path materialises, external inflation 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.

Chart 2-2: Impact of alternative scenarios on the GDP forecast



Source: MNB

Faster easing of global supply disruptions

A global shortage of semiconductors, which are indispensable parts of electronic devices, evolved as a result of the pandemic. Companies are unable to utilise their capacities due to the increased delivery time of chips, and thus they were forced to close factories or continue production in reduced shifts. The shortage of semiconductors directly and mainly hinders the manufacturing of vehicles and electronic products, which have a major weight in the exports of Hungary as well as of the Visegrád countries.

Disruptions in supply may end from 2022 H2. The global shortage of semiconductors will have an unfavourable impact on production in 2022 H1 as well. According to the expectations of actors in the sector, normalisation of the market may start from mid-2022, while complete restoration may take place only by 2023–2024. Nevertheless, there are also signs that supply disruptions are easing. Supply disruptions stopped deteriorating further in the past period, which may indicate that the shortage of semiconductors has reached its peak.

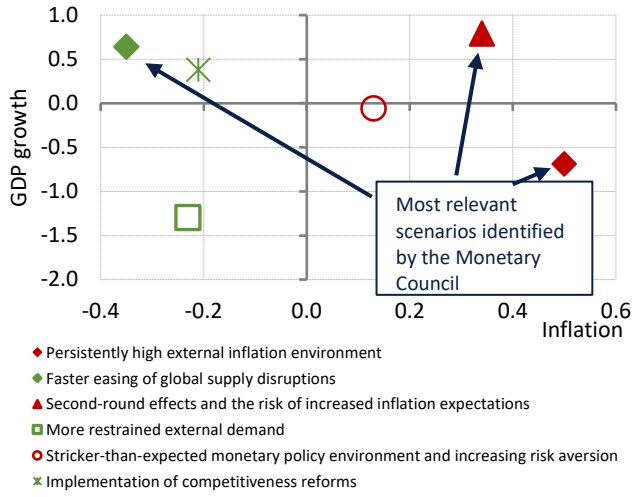
Faster easing of the global shortage of semiconductors and the disruptions in supply chains point to a decline in global inflation. If supply constraints weaken, and the high

transportation costs also decline, the rate of inflation will become more subdued throughout the world**.**

Global supply problems are expected to be solved only from mid-2022 in our **baseline scenario**. In parallel with that, Hungary's export performance will be restrained, while global inflation will remain high.

In our **alternative scenario**, the recovery of the supply side is faster than the assumption in the baseline scenario. 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.

Chart 2-3: 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

Second-round effects and the risk of increased inflation expectations

Inflation exited the tolerance band in Hungary in the autumn months. The high inflation was basically caused by external factors. Global commodity and energy prices are gradually appearing in the consumer prices of a widening range of products. The inclusion of high inflation in household expectations may result in higher price dynamics. Households' expectations concerning inflation in Hungary have increased in recent months.

Persistently higher domestic expectations may result in the evolution of second-round inflationary effects through wage developments and consumption-savings decisions. The tight labour market, the persistently high wage dynamics and the increase in wages as a result of government measures that boost household consumption pose the greatest risk in terms of the evolution of second-round inflationary effects. A faster decline in the forced savings accumulated during the crisis compared to our baseline assumption would represent a further inflationary effect. Domestic inflation risks are amplified by the external environment as well. As economies restarted and global supply problems evolved, both international commodity and food prices increased, and they feed through into domestic consumer prices as well.

Wage dynamics will remain strong as a result of the minimum wage increase and the tightening of the labour market. The minimum wage increase and other benefits provided by the government to households stimulate household consumption via the expansion in households' income, raising inflation from the demand side. At the same time, the increased wage costs of companies are offset by the reduction of various corporate taxes and contributions, and thus we do not expect any cost-side inflationary effect from the minimum wage increase. The labour market has become tighter in the last six months,

reaching the mid-2017 level. Labour became a bottleneck in more and more sectors, and mainly in market services.

Second-round inflationary effects remain moderate in our **baseline scenario**. High inflation will persist at the end of the year and in early 2022, before declining gradually and becoming lower following the fading of temporary effects**.**

According to the **alternative scenario**, the risk of second-round inflationary effects evolving increases: the current higher wage dynamics become included in economic agents' expectations, and high inflation remains for a longer time compared to the assumption in the baseline scenario. In addition, the high inflation expectations result in a major drop in the savings rate, which has a further inflationary effect.

Other risks

In addition to the scenarios highlighted above, the Monetary Council considered three other alternative scenarios. Compared to the baseline scenario, we assumed lower export dynamics and commodity prices in the alternative scenario that assumes more restrained external demand. The more subdued growth of Hungary's trading partners has a negative impact on the performance of the industry and the export sector. Accordingly, economic growth is lower compared to the baseline scenario, and represents a downside risk to inflation. If a stricter-than-expected monetary policy environment and increasing risk aversion materialise, the ECB and the Federal Reserve will tighten monetary conditions earlier than presently expected, the central banks in the region will raise their respective policy rates faster than the Hungarian central bank, and at the same time global investor sentiment deteriorates significantly in view of another wave of the pandemic. Domestic monetary conditions become relatively looser, which may result in a rise in domestic risk premiums and asset prices in view of the elevated global risk aversion by investors. In the scenario assuming the 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

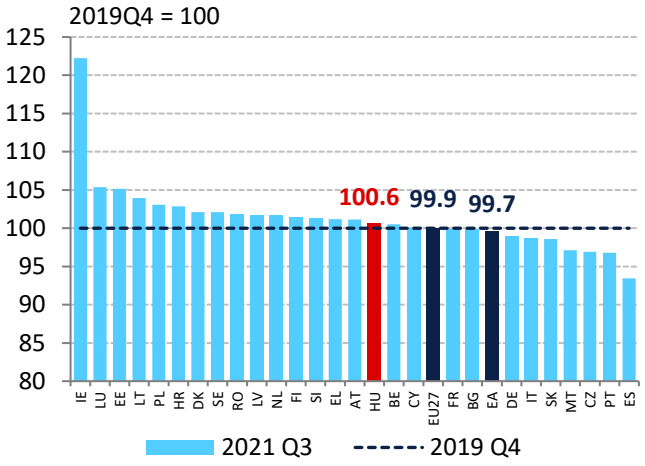
3.1. Evaluation of international macroeconomic developments

Economic recovery continued in 2021 Q3, and more than half of the countries of the European Union already exceeded their respective pre-crisis economic performances. At the same time, the outlook for GDP growth deteriorated as a result of the new wave of the pandemic, the sharp increase in energy prices and the problems still present in global supply chains. The global shortage of semiconductors mostly affects the manufacturing of vehicle industry and electronic products, which have a major weight in the exports of Hungary and the region. The uncertainty caused by the coronavirus is rising again; as the fourth wave strengthened, containment measures were introduced again in several countries, mainly for the unvaccinated. Growth prospects for energy-importing countries are also being impaired by the drastic price increases of raw materials and energy. In the past period, in reaction to the mounting inflation, the majority of the central banks under review started or continued to tighten monetary conditions. Of the world's leading central banks, the Fed left its policy rate unchanged around zero and started to reduce the pace of asset purchases. The European Central Bank also left its policy rates unchanged and confirmed the somewhat slower continuation of asset purchases under the PEPP programme. Monetary conditions became significantly tighter in the region in a narrower sense, as the Czech, Polish and Romanian central banks decided to raise their respective base rates.

3.1.1. International activity trends

With the fading of last year's extremely low base, economic growth decelerated in most countries in 2021 Q3. In Q3, both the United States and China expanded by 4.9 percent year on year. The EU and the euro area grew by 4.1 and 3.9 percent, respectively, in Q3 compared to the same period of 2020. This means that GDP in the European Union remains marginally below its pre-crisis level. The recovery of European countries continued at different paces, with Hungary ranking in mid-field in this respect (Chart 3-1).

Chart 3-1: Development of GDP level

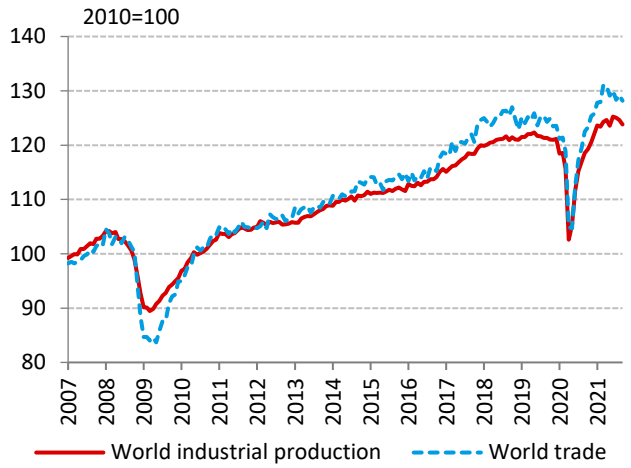


Note: Based on seasonally and working day adjusted data.
Source: Eurostat, Trading Economics

The rapid recovery of global trade came to a halt in the past months due to interruptions in production chains and transportation problems. Global industrial production has been above its pre-pandemic level since September 2020, but it stopped growing in the past months (Chart 3-2). A similar trend is observed in the case of global trade, the expansion of which may have stopped because of supply chain disruptions.

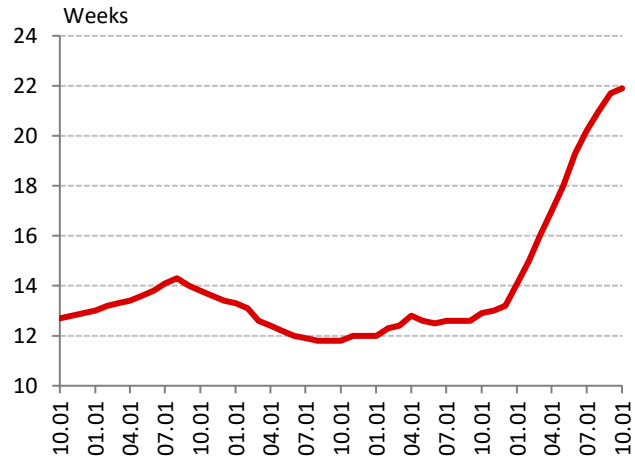
In addition to the coronavirus, international activity trends are mainly influenced by disruptions in supply chains and the surge in energy prices. The economic consequences of the global shortage of semiconductors are clearly indicated by the significant increase in the delivery time of microchips since the beginning of the year (Chart 3-3). The shortage of semiconductors and the disruptions of supply chains mainly affect the production units of developed economies. In Europe, companies are unable to utilise their capacities due to the increased delivery time of chips, and thus they were forced to close factories or continue production in reduced shifts. The

Chart 3-2: Development of world industrial production and world trade



Note: Based on seasonally adjusted data.
Source: CPB

Chart 3-3: Time between ordering a chip and delivery



Source: Bloomberg, Susquehanna Financial Group

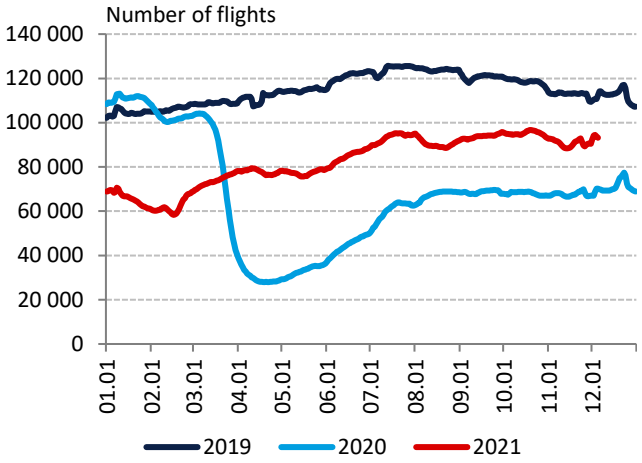
manufacturing of vehicles and electronic products are the sectors most hindered directly by the shortage of semiconductors, constituting a bottleneck for the German industry, which is a determinant of Hungary's export performance. In addition, disruptions in supply chains are hindering the availability of certain wood materials, copper, aluminium, plastics, cobalt, lithium, nickel and graphite.

The biggest energy price increase in recent decades is taking place in the world, which may reduce economic growth via the increase in corporate costs. In October, the price of crude oil, electricity and natural gas exceeded the average of the 2017–2019 period by more than 30 percent, 260 percent and nearly 400 percent, respectively. The higher energy prices significantly impair both the terms of trade and the current account balance in the case of net energy importer countries (such as Hungary and most of the countries in the region).

The recovery in services continued in Q3, but the strengthening of the fourth wave of the pandemic is a major risk for this trend. Tourism continues to be one of the most affected sectors, and the outlook for this sector is changing continuously in line with the waves of the pandemic. The rapid increase in vaccination coverage had given reason for hope, but the rise in the number of vaccinated people slowed down before herd immunity was reached, and uncertainty is growing again as a result of the fourth wave. Restrictions were reintroduced in a number of countries, mainly for the unvaccinated, and slow recovery continues to be expected in the sector. The daily number of commercial flights stabilised around 95,000, which is still well below the 2019 figure (Chart 3-4).

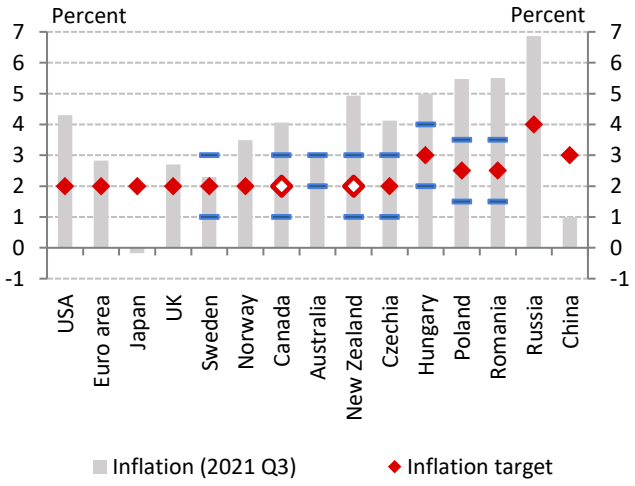
Growth prospects deteriorated in the case of the countries specialising in the manufacturing of automotive industry products, which are the most affected by the global shortage of semiconductors (Germany, Czech Republic, Slovakia). Of the countries of the region, just like in Hungary, economic performance in Romania and Poland has already exceeded its pre-crisis level, while the recovery is proceeding more slowly in Slovakia and the Czech Republic. Recovery in Germany, which is the main trading partner of Hungary, is also progressing slowly. The German economy is still in the lower third in the European recovery ranking, and its growth prospects for 2021 are the weakest in the EU as a whole.

Chart 3-4: Total number of global commercial flights



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

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

3.1.2. International monetary policy, inflation and financial market trends

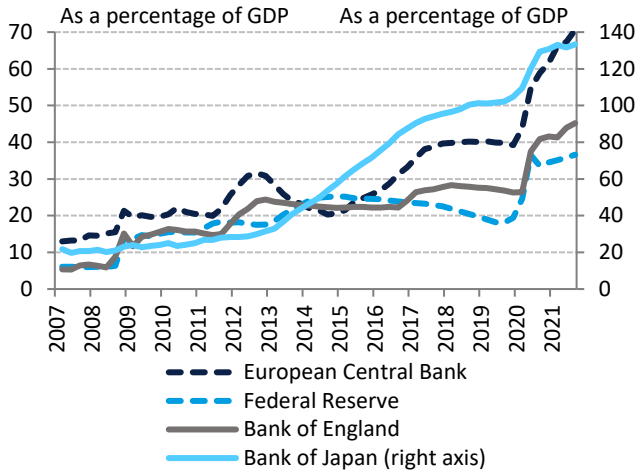
Global inflation continued to increase in recent months. In Q3, inflation rates in developed economies already exceeded central bank targets in several cases (Chart 3-5). Inflation was typically above the target in the countries of the region and in emerging countries as well. In addition to energy, price increases of industrial products also played a prominent role in this. Accordingly, more and more central banks started or continued to tighten monetary conditions.

Inflation advanced to 4.9 percent in the euro area in November according to preliminary data. Moving from negative territory at the end of last year, inflation gradually approached the 2- percent target starting from January. It then surpassed the target in July and continued to rise in the past months. Core inflation fell to 0.7 percent in July, before gradually increasing to 2.0 percent and then rising further in the past period.

In October, the Governing Council of the ECB left its policy rates unchanged and confirmed that it would continue purchases under the Pandemic Emergency Purchase Programme (PEPP) at a "moderately lower pace" than in Q2 and Q3 this year. According to the current guidance, the PEPP may end in March 2022. Purchases under the APP remain unchanged, and the ECB continues to provide the necessary liquidity through its TLTRO III programme. Higher-than-expected inflation in the euro area is typically still considered by ECB decision-makers to be temporary. The balance sheet total of the ECB rose to EUR 8,469 billion (72.0 percent of GDP) in December (Chart 3-6). The forward guidance of the central bank remained unchanged, and the ECB will keep the policy rates at the current or lower levels until inflation reaches the inflation target well before the end of the forecast horizon and remains permanently close to the target until the end of the forecast horizon, and until underlying inflation trends comply with the medium-term stabilisation of inflation at 2 percent. In the interests of achieving this, it is possible that inflation may temporarily and slightly exceed the inflation target.

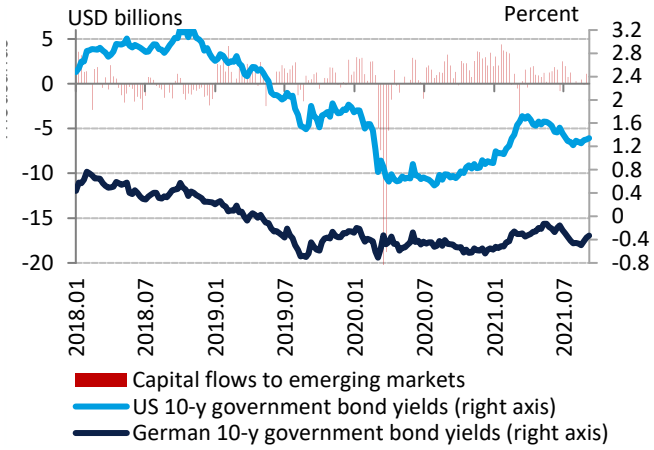
At their November rate-setting meeting, the decision-makers of the Federal Reserve left the target band of the policy rate unchanged at a level of 0–0.25 percent, at the same time reducing the monthly pace of asset purchases from the previous USD 120 billion to USD 105 billion in November and to USD 90 billion in December. Fed Chairman Jerome Powell said that the decision-makers decided to reduce the pace of asset purchases because of

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



Source: Databases of central banks, Eurostat, FRED

Chart 3-7: Capital flows to emerging markets (weekly) and US and German 10y-government bond yields



Source: EPFR, Bloomberg

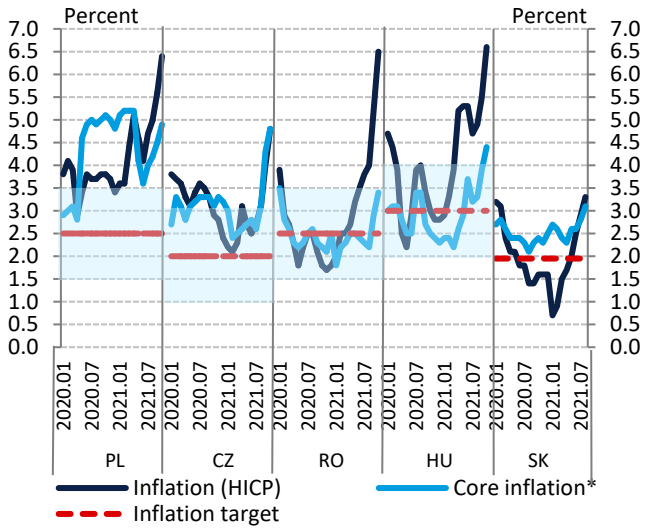
the substantial economic progress. He emphasised that the tapering of asset purchases did not provide information regarding the expected path of the interest rate target band, and the decision-makers would not discuss any interest rate hike until the labour market reaches maximum employment. According to Powell's statement at the end of November, looking ahead they may accelerate tapering as inflation was high more persistently than expected before. The balance sheet total of the central bank rose to USD 8,699 billion (37.5 percent of GDP) in December. In November, the consumer price index increased by 6.8 percent year on year, while the PCE inflation rate, which is closely monitored by the central bank, was 5.0 percent in October.

At the Bank of Japan's rate-setting meeting in October, the decision-makers did not change interest rate conditions. The lending stimulus programme, launched in April 2020, is expected to continue with unchanged parameters until March 2022. The balance sheet total of the central bank stood at 133.5 percent of GDP in November. The forward guidance has not changed; the Bank of Japan is closely monitoring the impact of the coronavirus pandemic, and, if necessary, is ready to take further easing steps in addition to the measures already implemented.

At the Bank of England's rate-setting meeting in November, the decision-makers left the Bank Rate unchanged and also did not modify the parameters of the government securities and corporate bond purchase programmes. Inflation declined from 3.2 percent in August to 3.1 percent in September, before rising to 4.2 percent in October. According to the central bank's forecast, inflation is expected to peak at 5 percent in April 2022, will start to decline in 2022 H2, and will reach the 2- percent target within two years. According to the central bank, a slight tightening of the monetary conditions may become necessary over the forecast horizon in order to reach the inflation target in the medium term.

The Chinese central bank did not change the level of the loan prime rate (LPR), which is the benchmark interest rate for the pricing of bank loans. Accordingly, the one-year LPR and the five-year LPR remained at 3.85 percent and 4.65 percent, respectively. For the time being, inflation is moderate in China, but producer prices increased further. The annual growth rate of the producer price index was up from 10.7 percent in September to 13.5 percent in October, while inflation increased from 0.7 percent to 1.5 percent.

Chart 3-8: Inflation and core inflation in the region



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

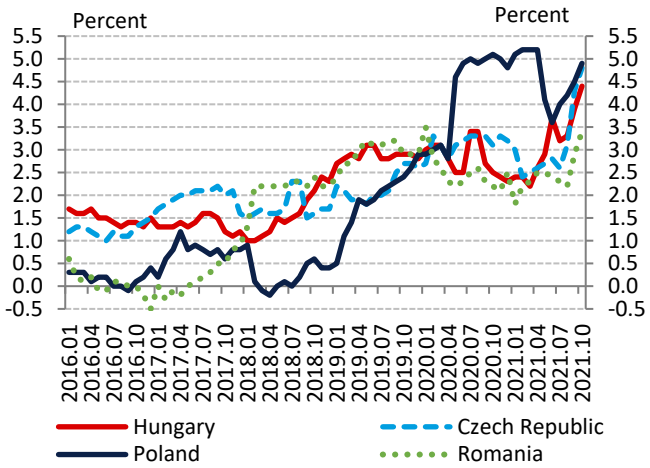
Source: Eurostat

Developed market investor sentiment practically did not deteriorate in the past quarter, but the volatility of emerging bond and FX markets increased in parallel with the tightening messages of developed central banks and the strengthening of inflation risks. Significant increases in the prices of raw materials and energy were more typical of the first half of the period, but at the same time the priced interest rate path became steeper, which was observed in developed and emerging markets as well. Recently published economic forecasts, incoming actual data and leading indicators continue to indicate a continued economic recovery, but downside risks around economic growth strengthened. At the same time, with the increase in inflation, expectations related to the phasing out of central bank stimulation programmes and to interest rate hikes also strengthened.

The majority of developed stock exchange price indices rose, with leading US and European stock exchange price indices increasing by some 3–5 percent, while the performance of stock exchanges of emerging countries varied. The US dollar mostly strengthened against both the developed and emerging currencies, including the currencies of the region in the narrow sense, thus appreciating by 4.1, 4.5 and 3 percent against the euro, the Japanese yen and the pound sterling, respectively. Developed market long-term bond yields typically increased, especially in the case of the 10-year US government security, which rose 30 basis points (Chart 3-7). 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.

Although various communications were published during the period about the deceleration and stopping of central bank programmes related to the coronavirus, market pricing forecasts only cautious interest rate hikes in the case of developed central banks. According to market pricing, the Fed may start to raise its interest rate level in mid-2022, which is an earlier date compared to the September expectations, and forward transactions with longer maturities also project a steeper interest rate path than before. Market pricing suggests that the ECB's current interest rate conditions may become tighter in February 2023, and thus market participants are pricing the possibility of an interest rate hike for an earlier date compared to the mid-September expectation, whereas monetary conditions may be tightened in 2022 with the changing of the asset purchase programme.

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



Source: Eurostat

Inflation increased further in all the countries of the region during the past quarter. In Poland, the HICP rose from 5.6 percent in September to 6.4 percent in October. In the Czech Republic, inflation calculated on the basis of the harmonised index of consumer prices increased from 4.0 percent in September to 4.8 percent in October, while the corresponding figures for Romania were 5.2 percent and 6.5 percent (Chart 3-8). In addition to the harmonised indices of consumer prices, inflation indicators monitored by individual central banks also rose considerably: in October, inflation increased to 7.9 percent in Romania, whereas in the Czech Republic and Poland it advanced to 6.0 percent and 7.7 percent in November, respectively. Over the past three months, core inflation has also typically increased in the countries of the region (Chart 3-9).

The Czech central bank raised the policy rate by 75 basis points in September and 125 basis points in November. In addition to that, the central bank confirmed its previous indication that the decision-makers are ready to raise the policy rate further, in line with the autumn forecast.

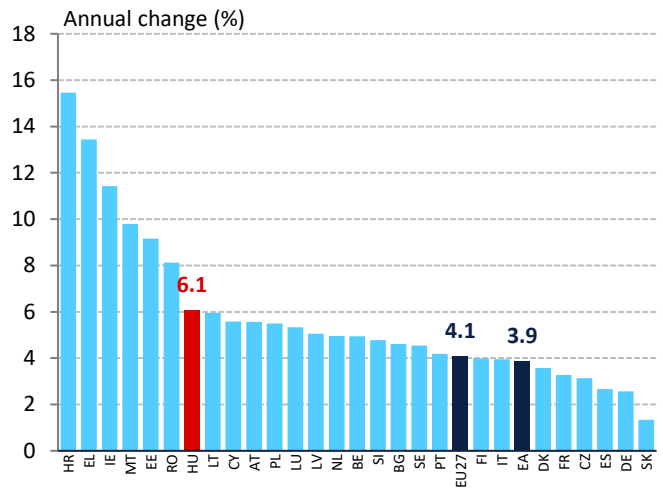
At its rate-setting meeting in October, the Polish central bank raised its policy rate by 40 basis points, followed by a 75-basis point hike at its November meeting and a 50-basis point hike in December. The required reserve ratio rose from 0.5 percent to 2 percent in October. The central bank indicated that if necessary, it may continue to intervene in the FX market and apply other tools as well, which are part of the monetary policy toolkit. Following the October meeting, the central bank closed the government securities purchases. At the same time, the Governor of the central bank indicated that the bank maintains the possibility of being active in the government bond market again if necessary.

The Romanian central bank raised the base rate in October and November by 25 basis points each, to 1.75 percent. In November, the central bank widened the symmetrical interest rate corridor from 50 basis points to 75 basis points, and thus the interest rate on the credit facility corresponding to the upper bound of the interest rate corridor increased from 2 percent to 2.5 percent, while the interest rate on the deposit facility, which is the lower bound of it, remained unchanged at 1 percent.

3.2. Analysis of the production and expenditure side of GDP

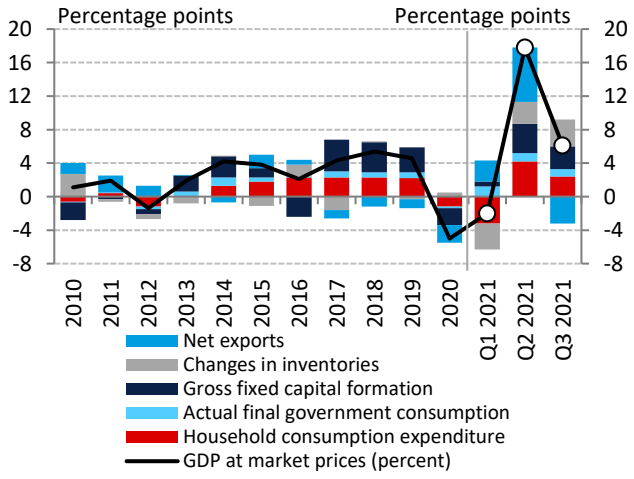
Following a successful restart, the Hungarian economy continued to grow at a decelerating rate, with gross domestic product expanding by 6.1 percent year on year in 2021 Q3. The performance of the Hungarian economy exceeded its pre-pandemic level by 0.6 percent. The recovery of domestic demand continued, with household consumption and investment also rising. The increase in investment in Q3 was primarily due to development projects in the corporate sector, while the volume of budgetary institutions' investment declined. As opposed to the upswing in domestic demand, Hungary's industrial exports gradually deteriorated as a result of the global semiconductor shortage and deceleration in export markets. The goods balance gradually deteriorated in the past months, which was attributable to a slowdown in exports, an increase in imports due to the dynamic domestic demand and to worsening terms of trade.

Chart 3-10: 2021 Q3 annual GDP change in EU countries



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

Chart 3-11: Contribution to annual GDP growth



Note: Actual final government consumption includes social transfers in kind from government and NPISHs.
Source: HCSO

Following a successful restart, the Hungarian economy continued to grow at a decelerating rate. In 2021 Q3, Hungary's gross domestic product expanded by 6.1 percent in year-on-year terms. The economies of the euro area and the EU-27 countries expanded by 3.9 percent and 4.1 percent, respectively, year on year (Chart 3-10). Hungary's growth surplus compared to the euro area was 2.2 percentage points in 2021 Q3.

From the expenditure side, the contribution of domestic absorption items to year-on-year growth was positive, while that of net exports was negative.

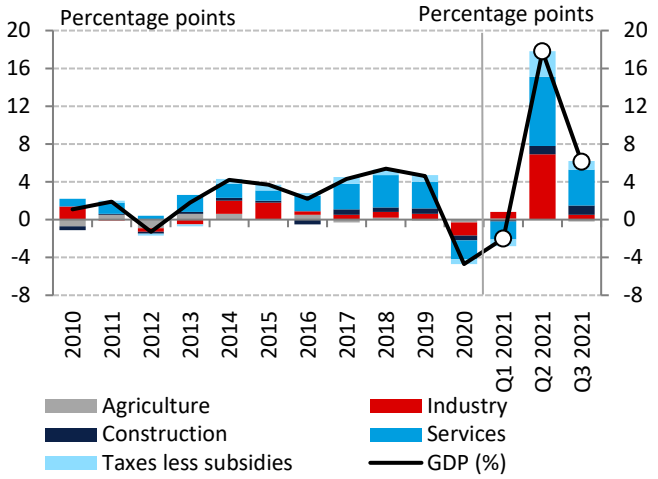
Households' consumption expenditures increased by 5.2 percent in year-on-year terms. The recovery in the consumption of services was the main contributor to the expansion in consumption.

Value added of gross fixed capital formation increased by 9.6 percent compared to the same period of the previous year. The volume of construction investment expanded to a greater degree than that of investment in machinery and equipment. The contribution of changes in inventories to growth was positive in Q3. Growth in the volume of exports (+1.4 percent) was lower than that in imports (+5.6 percent) (Chart 3-11).

On the production side, the performance of most sectors in the national economy expanded compared to both the same period of the previous year and to the previous quarter (Chart 3-12). The performance of industry rose 2.5 percent up compared to the same period of the previous year. Of the manufacturing sectors, the increase in the manufacturing of electrical equipment and products of metal processing was the strongest contributor to the expansion in industry. The value added of construction increased by 20.1 percent, while that of agriculture declined by 3.8 percent year on year. Services were up 6.8 percent, with accommodation services and catering as the main contributors.

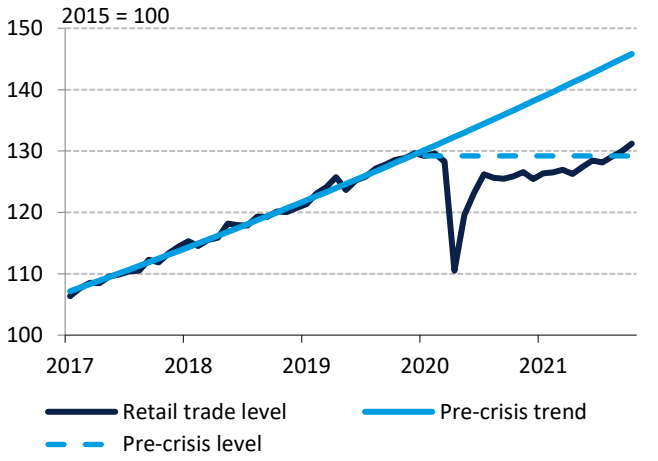
In 2021 Q3, retail sales were already close to the pre-crisis level, but still fell short of the growth trends from

Chart 3-12: Decomposition of change in production side GDP



Source: HCSO

Chart 3-13: Evolution of retail trade and pre-crisis trend



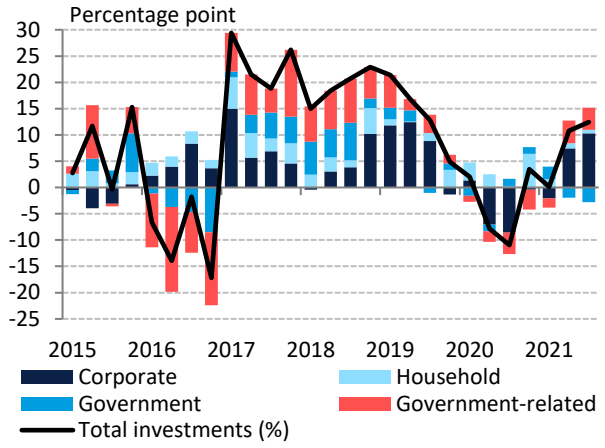
Note: Seasonally and calendar adjusted data. The pre-crisis trend is an extension of the trend from January 2017 to January 2020.
Source: HCSO, MNB

past years (Chart 3-13). In October 2021, the sales volume of retail shops increased by 5.7 percent year on year according to both raw and calendar adjusted data. Services are recovering gradually. One indication of this is that – according to online cash register data, which contain certain services as well – even the nominal turnover of catering already exceeded the pre-crisis level.

Household consumption and investment were strongly supported by the credit market as well. Disbursements of housing loans reached another historical high during the quarter (Chart 3-14). In 2021 Q3, household loans outstanding vis-a-vis the financial intermediary system as a whole expanded by HUF 395 billion as a result of transactions, and thus household loans outstanding increased by roughly 15.6 percent between October 2020 and September 2021. The expansion in loans outstanding was strongly supported by the decreased principal amortisation due to the payment moratorium, the record volume of housing loans disbursed and the still-high level of prenatal baby support loans granted. Since November 2021 the moratorium has no longer been a major contributor to the expansion in loans outstanding. According to preliminary data, as opposed to the previous 28 percent, 5 percent of household loans outstanding remained in the moratorium, which was extended in a narrower form. The volume of housing loan disbursements reached a historical high in Q3, exceeding the value for the same period of 2019 by 69 percent, while the disbursement of personal loans is slightly below the pre-pandemic figure (by 11 percent). The new home purchase subsidies available from 2021 contributed significantly to the outstanding lending for housing. In addition, the rise in housing prices as well as demand brought forward, which appeared in the credit market in relation to expectations of home price appreciation and interest rate hikes, may also have had an impact on the volume. During the quarter, young married couples concluded prenatal loan contracts amounting to HUF 139 billion.

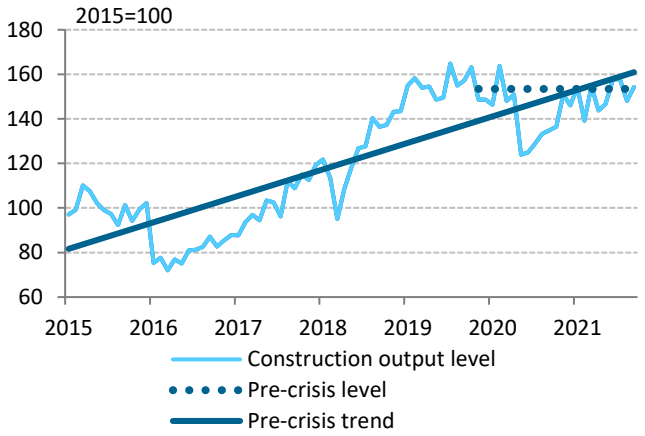
In 2021 Q3, the volume of whole-economy investment rose at a year-on-year rate of 12.4 percent based on investment statistics (Chart 3-14). Investment in machinery as well as building-type investment increased. Budgetary institutions' investment volume declined by 11.7 percent, with contributions from central institutions and local governments as well. The volume of investment by medium-sized and large enterprises employing at least 50 people grew by 21.8 percent, also supported by new corporate development projects launched after last year's

Chart 3-14: Decomposition of the annual change in investments



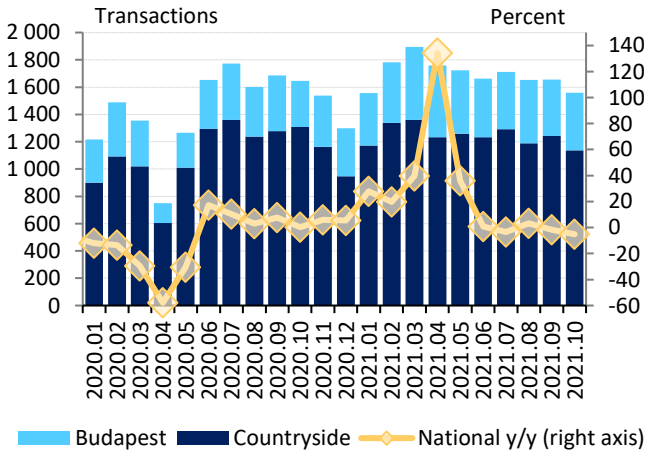
Source: HCSO

Chart 3-15: Evolution of construction output and pre-crisis trend



Source: HCSO, MNB

Chart 3-16: Monthly number of transactions completed by housing market intermediaries



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

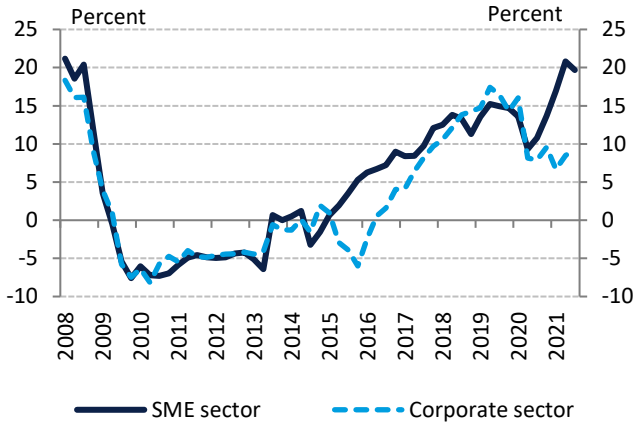
low during the pandemic. Investment in manufacturing, which represents the highest weight, increased by 24.9 percent. Home construction declined in Q3 in an annual comparison.

In 2021 Q3, construction output increased by 15.9 percent in year-on-year terms. The construction of buildings and other structures increased by 21.2 percent and 6.7 percent, respectively, year on year. Between July and September, the volume of construction output fluctuated close to the pre-crisis output level (Chart 3-15).

According to housing agents' data, the number of transactions declined slightly at the national level in 2021 Q3. On an annual basis, the number of transactions rose 9.5 percent in Budapest, while it fell by 3.9 percent in the countryside and by 0.8 percent at the national level (Chart 3-16). In October 2021, the number of sales and purchases increased further in the capital, exceeding last year's figure by 25.1 percent, while a decrease of 13.1 percent was seen in the countryside. According to the MNB house price index, in nominal terms the prices of homes in 2021 Q2 increased by 3.1 percent at the national level, by 3.2 percent in Budapest, by 3.5 percent in cities outside Budapest and by 2.2 percent in villages. Preliminary data suggest that house prices rose further in 2021 Q3 both on a national average and in the capital, appreciating by 4.7 percent on a national average and by 2.4 percent in Budapest.

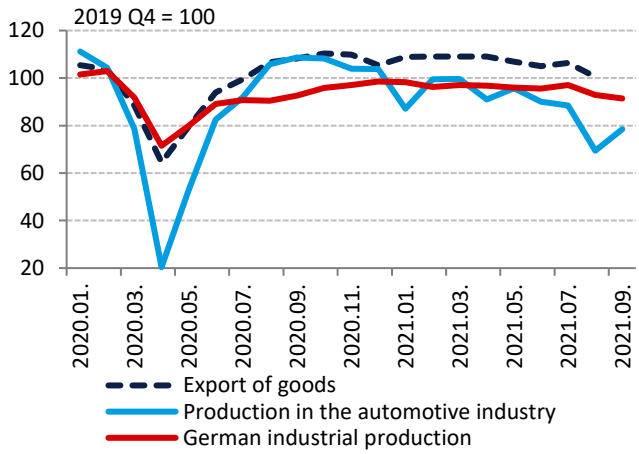
Corporate loans outstanding increased dynamically in Q3 (Chart 3-17). In the balance sheet of the entire financial intermediary system, corporate loans outstanding increased by HUF 475 billion in 2021 Q3, and thus the annual growth rate amounted to 9.4 percent. Also taking into account the corporate bonds subscribed by banks, credit institutions' loans and bonds outstanding vis-à-vis the non-financial corporate sector increased by 15 percent year on year at end-September, which shows the growing importance of the BGS in corporate borrowing. Within corporate lending, the annual growth rate of SME loans outstanding was around 20 percent in September, supported by contracts amounting to HUF 84 billion concluded during the quarter within the framework of FGS Go!. During the quarter, an increasing portion (nearly three quarters) of the newly disbursed corporate loans was extended on a market basis. According to preliminary data, 2 percent of corporate loans outstanding are participating in the payment moratorium, which, since November, has been available only for companies suffering from a steep drop in sales revenue; this participation rate is much lower than the

Chart 3-17: 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 3-18: Production in the automotive industry



Source: Destatis, HCSO

earlier 17 percent. In 2021 Q3, increases in loans outstanding were observed in the majority of sectors: the highest growth was seen in the financial and insurance activities sector, which primarily incorporates holding companies, as well as in the manufacturing sector. Loans outstanding were up by more than HUF 100 billion in these sectors. In net terms, 15 percent of the banks participating in the Lending Survey reported rising demand in the quarter and they also expect demand to expand looking ahead, following the depletion of the allocation for the FGS Go! programme.

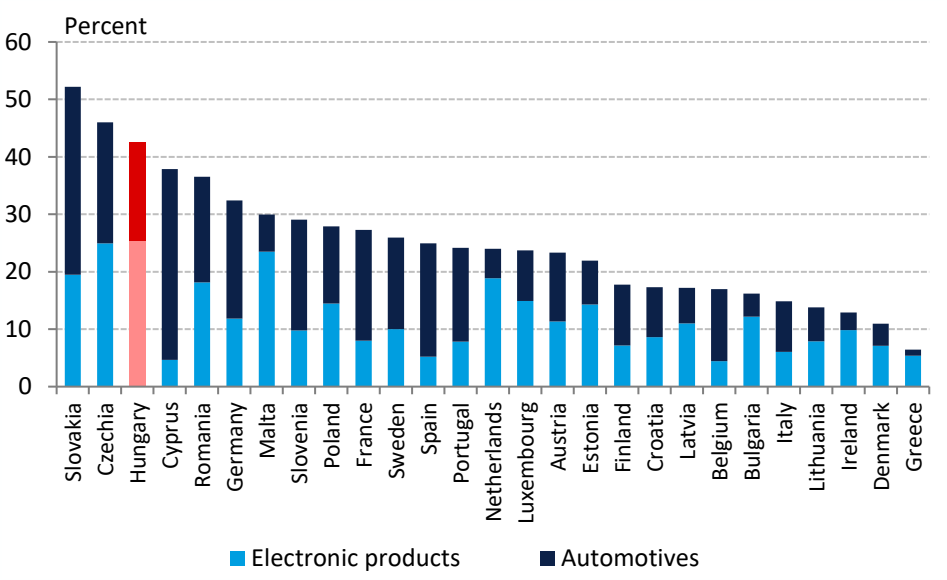
The global shortage of chips caused disruptions in vehicle manufacturing in Hungary as well. Compared to the previous quarter, Hungarian industrial production declined by 1.9 percent in Q3, which is attributable to the fact that in August and September car factories in Hungary were compelled to operate either in reduced shifts (Audi) or to stop for a couple of weeks (Mercedes, Suzuki), which had not been planned. In line with the ailing vehicle manufacturing, Hungary's goods trade balance also declined gradually (Chart 3-18), which is discussed in more detail in Box 3-1.

Box 3-1: External activity and determinants of the deterioration in the balance of external trade in goods

Hungary's balance of external trade in goods deteriorated in recent months. In view of the global shortage of chips, global industrial production growth stopped in the past months, which was also reflected in the gradually worsening of Hungarian industrial production data. At the same time, in parallel with the deteriorating export performance, Hungary's imports expanded, in line with the rapid increase in domestic demand items (household consumption and investment). The historically high energy prices exerted their effect through the terms of trade, and thus the above three factors jointly caused a sudden and considerable deterioration in Hungary's balance of external trade in goods.

Growth in Hungarian exports is being hindered by the fact that the recovery of Germany, Hungary's main trading partner, is also progressing slowly. The German economy remains in the lower third in the European recovery ranking, but downside risks to economic growth strengthened further in the past period. The output of German industry, which is strongly affected by the global semiconductor shortage, is still below its pre-crisis level, and business sentiment in Germany deteriorated further in November. Exports of the vehicle industry and electronic products, which are the most affected by the shortage of semiconductors, constitute the backbone of the German economy and one third of its total goods exports; the weight of these products is significant in Hungary and the Visegrád countries as well. The weak industrial performance restrains Germany's foreign trade as well as investment.

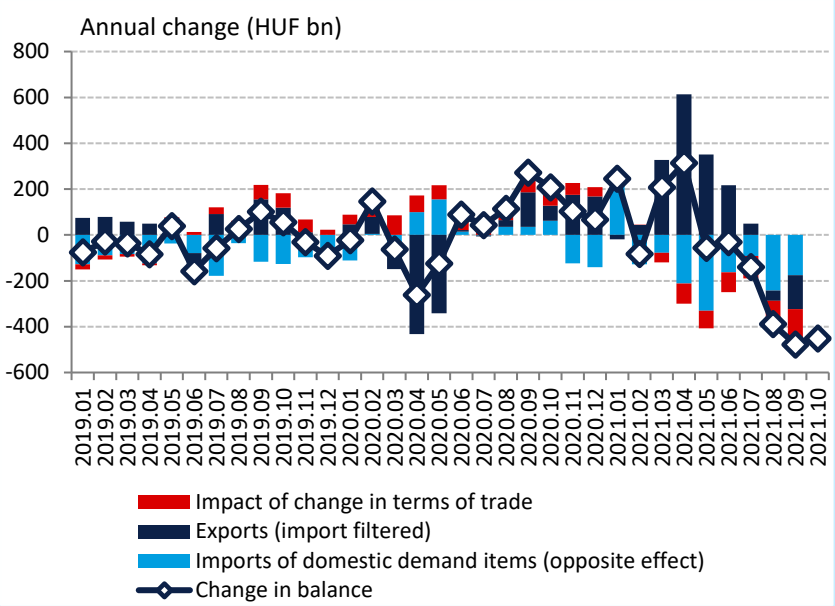
Chart 3-19: Share of vehicle industry and electronic products within goods exports (2019)



Note: Electronic products include product groups 75–77 according to the SITC categories.
Source: Eurostat

The underperformance of German industry impacts the economies of the region as well, since many of them are deeply embedded in the German supply chains. As in the case of Hungary's export partners, the performance of the domestic vehicle industry gradually weakened in the past months, and Hungary's export performance also deteriorated in line with that. The contribution of goods exports to the change in the goods balance in the same period of the previous year was still strongly positive in the spring, which was also attributable to last year's low bases. As a result of the deterioration in industrial activity, the contribution of goods exports already turned negative in September. Previously, the actors in the sector planned that during this year they would still be able to make up for the production loss suffered early in the year, but it seems unlikely on the basis of the current outlook. According to experts, the shortage of semiconductors may continue for most of 2022 as well; in a best-case scenario, the problem may be solved in H2 next year, or in a worse case only during 2023.

Chart 3-20: Changes in the balance of external trade in goods in 2021



Source: HCSO, MNB calculations

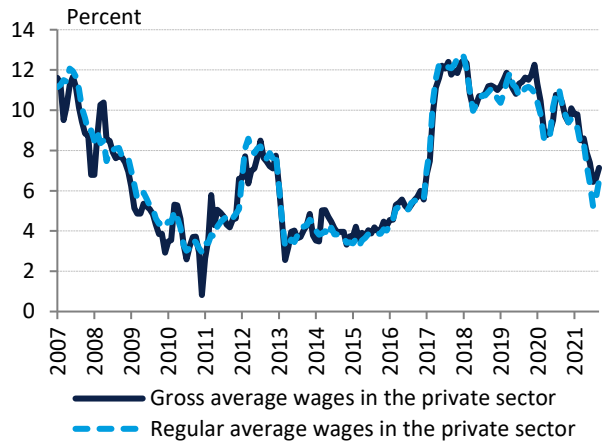
Domestic demand items, including household consumption, started to expand gradually with the restart of the economy. The import content of Hungarian households' consumption and of investment as well is high. Consequently, the additional consumption and additional investment also result in an increase in goods imports. Household consumption was just 0.5 percent below its pre-crisis level by 2021 Q3, while the volume of investment has been above the pre-crisis level since Q2. As a result of the gradually recovering domestic demand items, expanding goods imports have a negative effect on the balance during the whole year, which was still offset in the spring months by the extremely low base of exports, but with the drop-out of the base and in view of the factory stoppages related to the shortage of chips, the negative effect intensified.

In addition to real economy effects, historically high commodity prices impair the balance further through the terms of trade. The decline in the balance is influenced by the surge in commodity prices via two main channels. Firstly, elevated energy costs lead to an increase in corporate costs across Europe, which means more subdued external demand for Hungary, reducing domestic companies' exports. Secondly, rising import prices of commodities result in a deterioration in the terms of trade: The more expensive import of commodities adds to import prices directly as well, and in view of the weaker external demand due to foreign companies' rising costs, export prices cannot really adjust, and thus the terms of trade also deteriorate considerably as a result of the two price effects.

3.3. Labour market

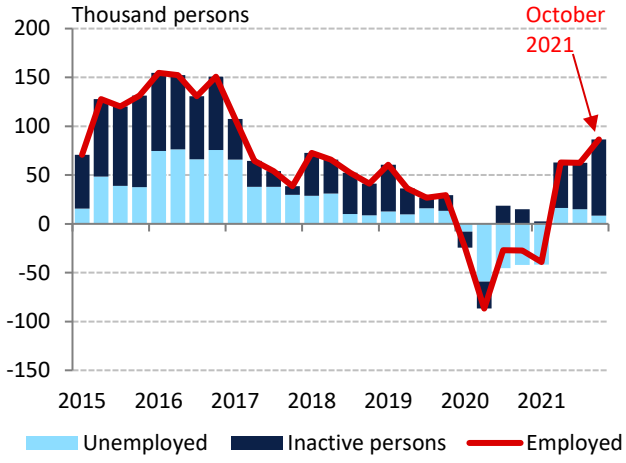
In 2021 Q3, gross average earnings in the private sector increased by 7.1 percent compared to the same prior-year period. The statistical distorting effects in the wage index declined considerably compared to the previous quarter and are expected to fade out by the end of the year. Labour market recovery continued in the past months, and whole-economy employment remains at a historical high. The unemployment rate also declined further in parallel with the increase in employment. Corporate labour demand is growing mainly in manufacturing and construction.

Chart 3-21: Annual change in gross average wages in the private sector



Note: Quarterly moving averages.
Source: HCSO

Chart 3-22: Decomposition of annual changes in whole-economy employment



Note: Instead of Q4 2021, monthly data for October is available. Changes in the number of unemployed and economically inactive have the opposite sign.
Source: HCSO

3.3.1. Wages

In 2021 Q3, gross average earnings in the private sector increased by 7.1 percent compared to the same prior-year period (Chart 3-21). Regular average earnings rose by 6.5 percent year on year, and bonus disbursements were not much different from the degree recorded in the previous year. Wages rose 5–10 percent year on year in most sectors; wage dynamics increased considerably compared to the previous quarter in the services subsectors most affected by the pandemic (accommodation and food service activities; other services).

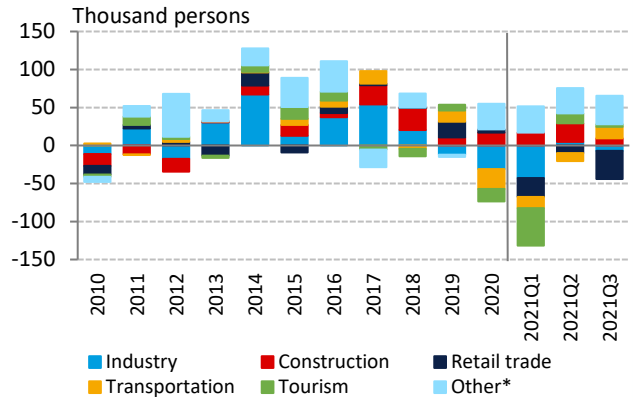
Downward distorting statistical effects continue to be observed in the developments in wages. During the first wave of the pandemic, part-time employment increased among those with low earnings. However, the HCSO's wage index only takes into account full-time employees, and this distorted the gross average earnings upwards last year. At end-2020, the ratio of part-time workers already fell to the pre-crisis level. Accordingly, due to last year's high base effect, the statistical effects result in an underestimation of the wage index for this year. These effects are expected to fade by the end of the year.

3.3.2. Employment and unemployment

Labour market recovery continued in recent months. Central bank and government measures (loan repayment moratorium, wage subsidies), which have already been partially completed, also contributed to this. Companies were able to preserve the jobs of 207,000 people with the job protection wage subsidy and of 181,000 people with the sectoral wage subsidy, while 49,000 new jobs were created using the job creation wage subsidy.

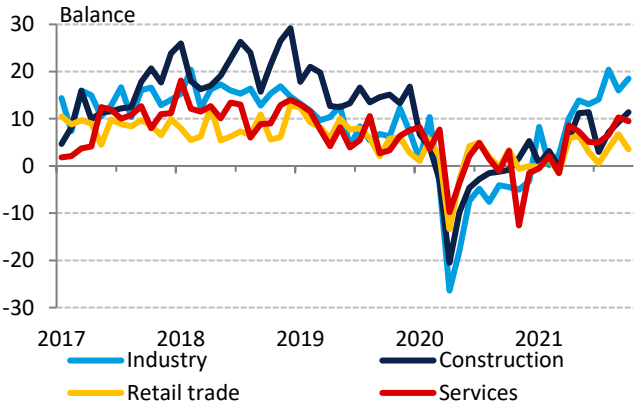
According to the Labour Force Survey, employment expanded by 63,000 in 2021 Q3 year on year (Chart 3-22). The number of fostered workers increased by 3,000, while those employed at places of business abroad declined by 19,000 versus one year ago. Private sector employment increased by 1.5 percent in year-on-year terms and by 0.7 percent compared to the previous quarter. Nevertheless, there was no further adjustment in the number of hours worked, and the full-time equivalent (FTE) headcount remained practically unchanged year on year. In

Chart 3-23: Decomposition of annual changes in private sector employment



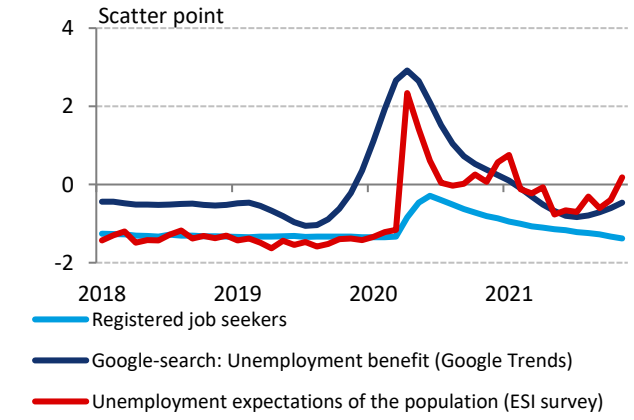
Note: *Agriculture, other industry and market services branches
Source: HCSO

Chart 3-24: 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

Chart 3-25: Indicators capturing the short-term evolution of unemployment



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

the private sector, the number of employees grew on an annual basis in construction, transportation and tourism and in certain market services subsectors (finance, information and communication), while it declined in manufacturing and trade (Chart 3-23). 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 2021 Q3.

In October 2021, whole-economy employment amounted to 4.688 million, exceeding the number recorded a year earlier by 86,000. According to seasonally adjusted data, the number of employed was 7,000 higher compared to the previous month. Seasonally adjusted data suggest that employment is at its peak in the market economy period. The seasonally adjusted unemployment rate declined to 3.9 percent in October. Unemployment in Hungary is still considered low in an international comparison.

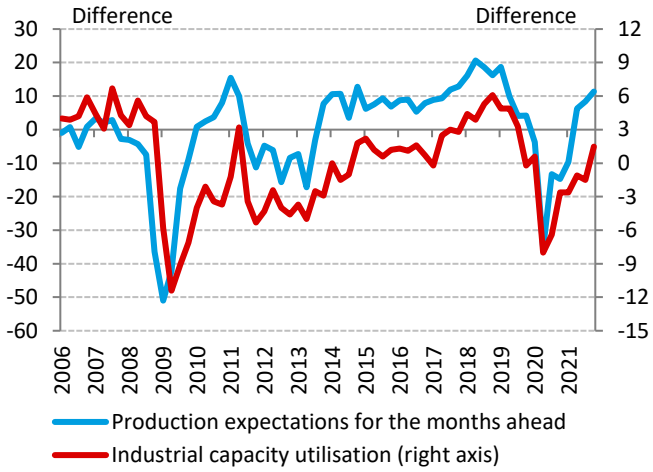
According to the ESI business survey, which monitors economic sentiment, companies' expectations regarding employment were positive in the autumn months, and headcount increases are planned in all major sectors. Demand for labour in manufacturing and the services sectors is higher than before the pandemic, while it came close to pre-pandemic levels in construction (Chart 3-24).

Indicators of short-term developments in unemployment show a low risk (Chart 3-25). Following its peak in June last year, the number of registered unemployed declined steadily. In November this year it amounted to 242,000, which is basically the same as the pre-pandemic, 2019 level. The Google Trends indicator concerning unemployment benefit is low in a historical comparison, but in November it rose slightly above the pre-crisis level. According to the ESI household survey, households' fear of unemployment increased in October and November compared to Q3.

3.4. The cyclical position of the economy

The recovery of the Hungarian economy continued at a decelerating rate in 2021 Q3. The cyclical position of the economy has improved in recent quarters, and thus output approximated its potential level again. 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. In the short run, the interruptions in global supply chains and difficulties in shipping point to an increase in inflation. According to questionnaire surveys, while manufacturing companies' capacity utilisation is improving, it remains at a low level.

Chart 3-26: Capacity utilisation and production expectations in manufacturing



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

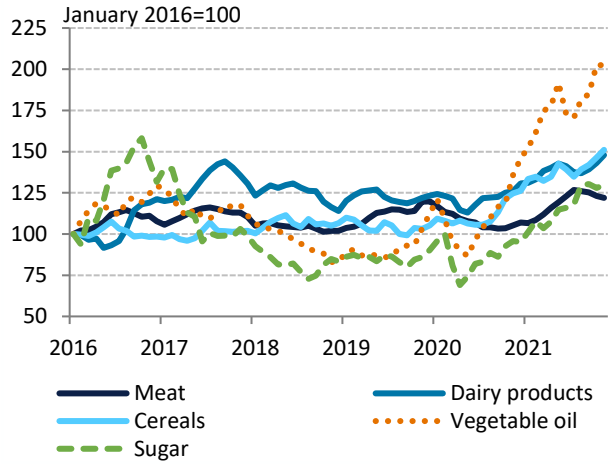
According to our estimation, the cyclical position of the economy has improved in recent quarters, and thus output approximated its potential level again. Changes in the cyclical position are surrounded by even greater uncertainty than usual, and the quantification and separation of demand and supply effects is difficult in the current situation. In the short run, the interruptions in global supply chains and difficulties in shipping point to an increase in inflation.

At the same time, questionnaire surveys suggest that while the capacity utilisation of manufacturing companies is improving, it remains at a low level (Chart 3-26). The prospects for global economic performance deteriorated as a result of the strengthening in the fourth wave of the pandemic, the surge in energy prices as well as the global shortage of semiconductors, and the related uncertainty remained significant. The recovery of the economy is expected to continue at a decelerating pace in 2021 Q4.

3.5. Costs and inflation

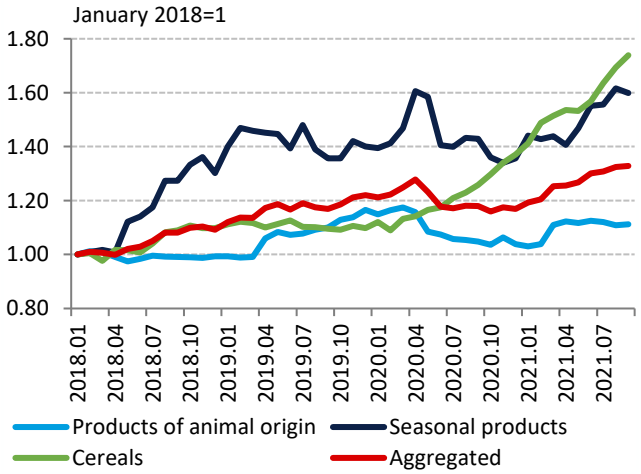
The growth rate of consumer prices was 7.4 percent in November. The major increase in inflation observed in the past months was primarily attributable to a wide range of goods and services. The increase in global commodity prices and transportation costs is gradually reflected in the consumer prices of a widening range of products, resulting in global inflation that is high compared to the past decade and also exceeds analysts' expectations. Core inflation excluding indirect taxes rose above 5.0 percent in Hungary in the past months. All core inflation items contributed to the increase in core inflation. The indicators capturing longer-term inflation trends – the inflation of demand-sensitive products as well as sticky-price products and services – have been increasing gradually since August. Households' inflation expectations rose in every country of the region in the past months.

Chart 3-27: Development of world market prices of food



Note: Real price indices.
Source: FAO

Chart 3-28: Development of agricultural producer prices



Note: Based on seasonally adjusted data.
Source: HCSO

3.5.1. Producer prices

Global food prices continued to rise in the past period. Prices of oil crops and cereals increased by the largest degree. Of the cereals, it was mainly the commodity exchange prices of wheat that increased considerably as a result of higher demand and weaker harvest results in the main wheat exporting countries. The price rise of oil crops was attributable to tight global supply and the increase in global crude oil prices (Chart 3-27).

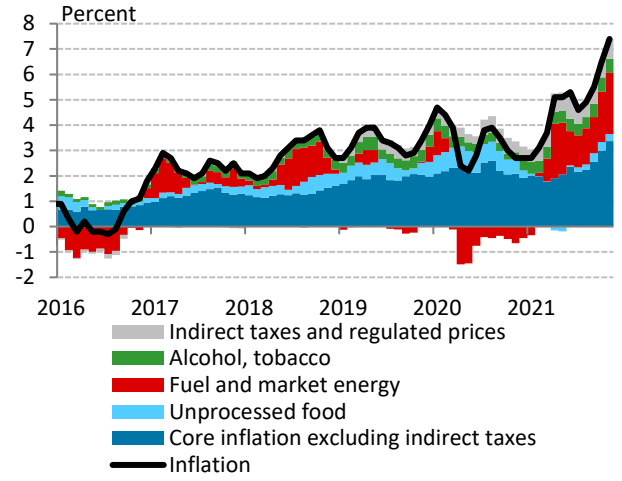
Domestic agricultural producer prices advanced considerably compared to the previous quarter, showing a more than 10-percent year-on-year increase in 2021 Q3. Following an average year-on-year increase of less than 1.5 percent typical of Q2, the producer prices of fruits already rose by more than 10 percent in Q3. In September, nearly 25-percent year-on-year growth was observed in the producer prices of potato. Of products of animal origin, the producer price of pork declined further in Q3 this year, while poultry meat producer prices rose 15 percent on average. In 2021 Q3, cereal prices increased by more than 30 percent year on year (Chart 3-28).

In the case of consumer goods, the rise in domestic industrial producer prices exceeded the historical average until October 2021. In the past months, the domestic sales prices of industry as a whole showed a year-on-year increase that was several times higher than the historical average and exceeded 20 percent on the whole, which was mainly attributable to the energy-producing sectors, in line with the rise in global energy prices.

3.5.2. Consumer prices

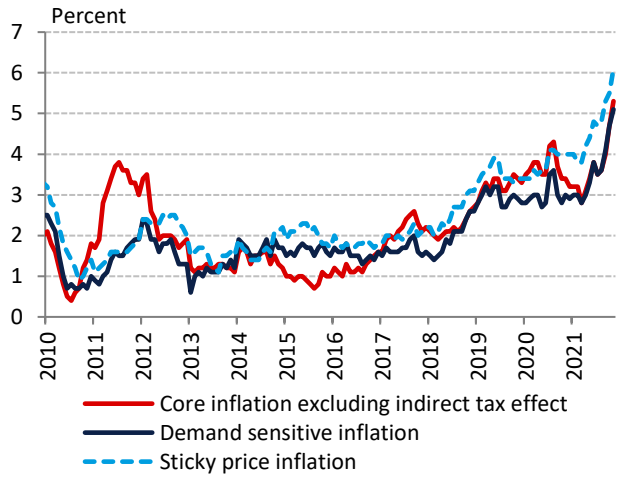
Consumer prices increased by 7.4 percent in November. The major increase in inflation observed in the past months was attributable to a wide range of goods and services (Chart 3-29). A large part of the price increase in Hungary is explained by external factors, which are discussed in detail in Box 3-5. The increase in global commodity prices and transportation costs is gradually reflected in the consumer prices of a widening range of products, resulting in global

Chart 3-29: Decomposition of inflation



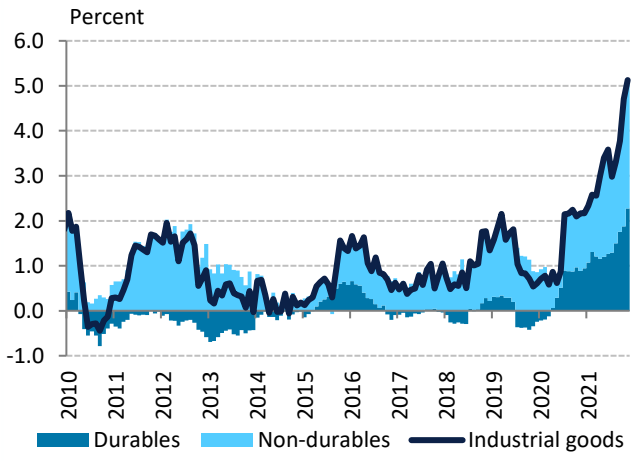
Source: MNB calculation

Chart 3-30: Underlying inflation indicators



Source: MNB calculation based on HCSO data

Chart 3-31: Inflation of industrial goods



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

inflation that is high compared to the past decade and also exceeds analysts' expectations.

Core inflation excluding indirect taxes rose above 5 percent in the past months. All core inflation items contributed to the increase in core inflation. The indicators capturing longer-term inflation trends – the inflation of demand-sensitive products as well as sticky-price products and services – have been increasing gradually since August (Chart 3-30).

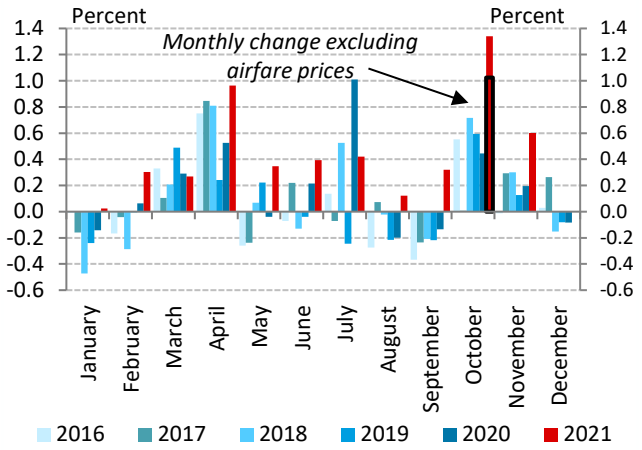
The inflation of industrial goods averaged 4.5 percent in recent months. The price rise of industrial goods is significantly higher than the average of previous years. In November, it exceeded 5 percent, which may have been due to the fact that the rise in global commodity prices is gradually appearing in the consumer prices of an increasingly wide range of products. In addition, the global shortage of semiconductors may have also played a role in the price rises for technical goods. Within this product group, the inflation of durables rose above 6 percent. The inflation of non-durables exceeds 4 percent, but a major contributor to the price rise in this product group was that airfares increased by more than 25 percent in October, as opposed to previous years' price declines (Chart 3-31 and Chart 3-32).

Market services inflation was around 4.5 percent from September and then rose to 5.0 percent in November. The negative monthly price dynamics in September were caused by decreases in the prices of mobile phone, Internet and domestic holiday services, whereas in November price dynamics exceeding the previous years' average was typical of a wide range of services (Chart 3-32).

Prices of alcohol and tobacco products continued to increase by more than 10 percent year on year in the past period as well. In addition to the carry-over effect of the market price increase in December 2020, which was larger than in the previous years, the excise tax hikes entering into force as of January and April this year play a role in the changes in the prices of this product group. Nevertheless, the price dynamics of these products will decline with the gradual fading of these effects.

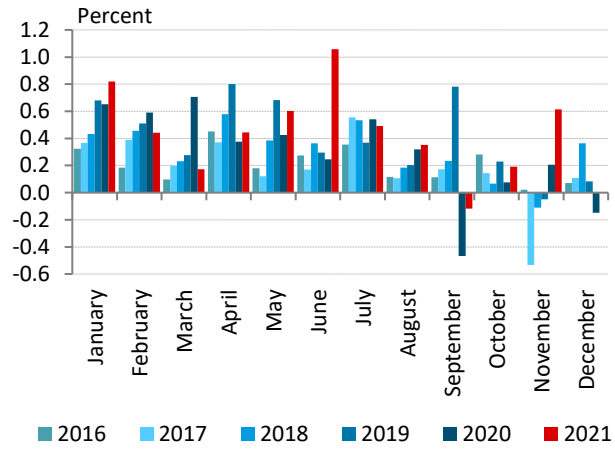
Food inflation rose to 5.9 percent by November, exceeding the historical average of this product group. The inflation of unprocessed food was around 5 percent, while the price index of processed food rose above 6 percent. In the case of the former, the changes in the prices of flour, pork and seasonal products (fresh fruit, potatoes) contributed mainly, and in the case of the latter mainly the price

Chart 3-32: Monthly price change of industrial goods



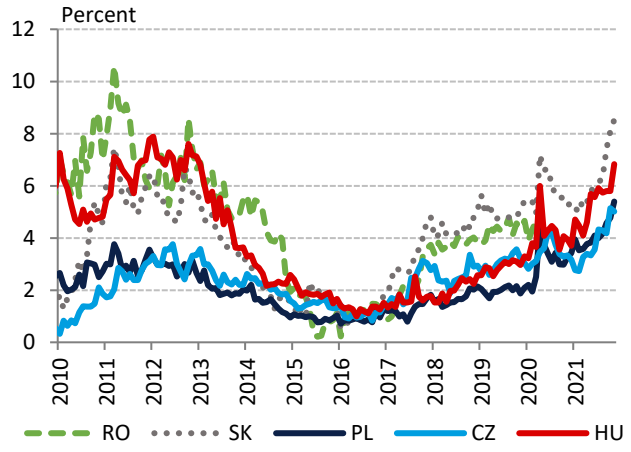
Note: Not seasonally adjusted monthly price changes excluding indirect tax effects. Source: HCSO, MNB

Chart 3-33: Monthly price change of market services



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

Chart 3-34: Inflation expectations in the region



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

changes of dairy products and cereal grain products (bread and bakery products).

In the past period, fuel prices were affected by world market prices of oil, base effects and government measures. In October, the world market price of Brent crude rose to a three-year high, i.e. to above USD 85 per barrel. In addition, the base effect of last year's price decline also contributed to the rise in fuel inflation to nearly 40 percent. At the same time, a price cap was introduced as of 15 November 2021. Accordingly, fuel prices may not exceed HUF 480 for 3 months. The price cap dampens the inflationary impact of the rise in world oil prices, which was already reflected to a lesser extent in the November data.

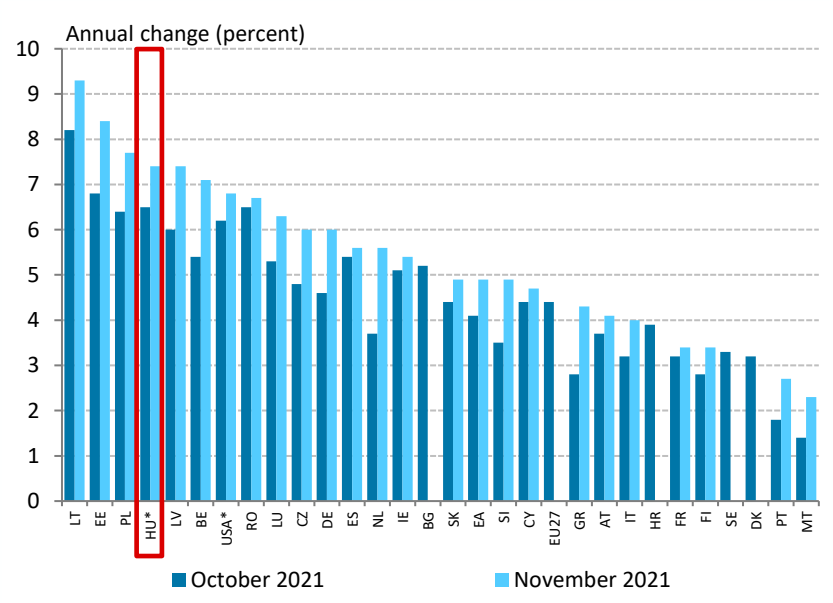
3.5.3. Inflation expectations

On the whole, households' inflation expectations rose in the past period. In the autumn months, the indicator rose in all of the countries in the region, reaching high levels unseen for decades in Poland, Slovakia and the Czech Republic (Chart 3-34). The indicator is close to its early 2013 level in Hungary, but at the same time the changes in households' inflation expectations are surrounded by uncertainty.

Box 3-2: External and domestic effects on inflation in Hungary

Rising prices above the central banks' inflation target in recent months is a global phenomenon. In the past period, higher price inflation compared to the previous decade was common in the major economies of the world and in the countries of the region as well (Chart 3-34). The economic recovery and the significant increase in commodity prices resulted in a rise in inflation. Global energy and commodity prices as well as the increase in transportation costs are gradually reflected in the consumer prices of a widening range of products, resulting in historically high inflation.

Chart 3-35: Inflation in October and preliminary inflation in November in the EU27 and the United States



Note: In the case of domestic and US inflation, the inflation data published by the HCSO and the BLS are presented, while in the case of the other countries, the harmonized index of consumer prices (HICP) data are shown in the figure for the sake of comparability. Preliminary data for November for Poland and data provided by national statistical institutes for the Czech Republic and Romania.
Source: BLS, CZSO, Eurostat, GUS, INSSE, HCSO

The role of external factors in the evolution of inflation strengthened (Table 3-1). In our estimation, we decomposed the Hungarian inflation rate into domestic and external factors. Upon identifying the external factors, the base of comparison was constituted by the countries of the region and Germany, as they are the most important trading partners of Hungary. In the past months, the contribution of external factors to inflation in Hungary increased mainly due to price rises of fuels and industrial goods. Higher prices of alcohol and tobacco products related to tax increases as well as the price rise of services caused by the economic opening following the lifting of the containment measures also played a role in amplifying external effects.

Compared to the period of price stability, i.e. the period between 2017 and 2019, 80 percent of the increase in inflation was caused by external factors (Table 3-1). HICP inflation in the 2017–2019 period was 2.9 percent on average, essentially corresponding to the central bank's 3-percent inflation target. Accordingly, price stability was achieved in Hungary in this period. HICP inflation amounted to 6.6 percent in October, exceeding the average of 2017–2019 by 3.7 percentage points. The contribution of domestic factors and external factors to the change in inflation amounted to 1.1 percentage points and 2.6 percentage points, respectively. The high ratio of external factors is attributable to the inflationary effects of the global energy and commodity price increases observed in the past period. At the same time, according to the current market forecasts for commodity prices, adjustment may take place in 2022, and thus the role of external factors is expected to lessen in the medium term.

Table 3-1: Role of external and internal effects on inflation

	External effects	Internal effects	Total inflation (HICP)
Average of 2017-2019	1.6	1.3	2.9
January-October 2021	2.8	2.0	4.8
October 2021	4.5	2.1	6.6
Acceleration of inflation (October 2021 vs. 2017-2019, pp.)	2.9	0.7	3.7
Acceleration of inflation (October 2021 vs. 2017-2019, percent)	79.8	20.2	100.0

Source: MNB calculation based on Eurostat data

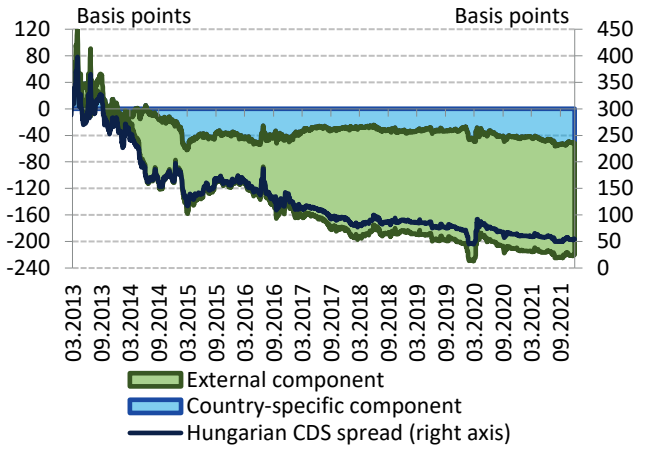
4. Financial markets and interest rates

4.1. Domestic financial market developments

Money and capital market sentiment did not deteriorate in the period as a whole, but at the end of the period the news related to the omicron variant of the coronavirus had a negative impact on market indicators. In the period since September, in addition to developments related to the coronavirus pandemic, it was mostly the strengthening inflation expectations as well as the monetary policy steps of the central banks in the region that determined financial market trends. In parallel with the tightening monetary conditions, a yield increase was observed in the region.

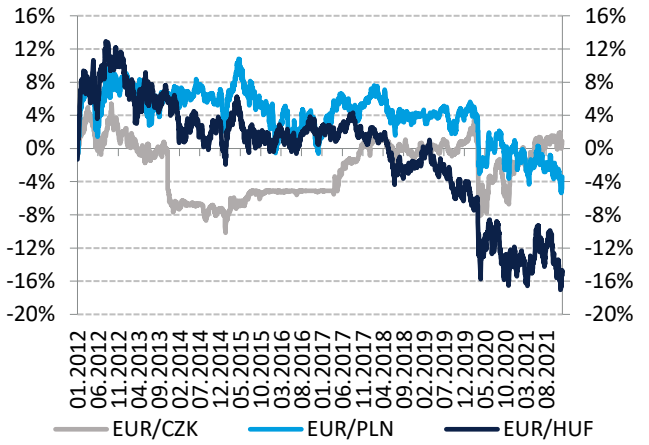
Hungary's credit risk spread rose slightly, but is still at a low level. As a result of increasing global yields, higher inflation and central bank interest rate hikes, government bond yields rose in the region and thus in Hungary as well. The interbank yield curve also shifted upwards. Compared to the currencies in the region, the forint depreciated to a greater extent against the euro, weakening by almost 3 percent. In the region, the Polish zloty and the Czech koruna tended to move together and weakened minimally during the period.

Chart 4-1: Components of the 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 an appreciation of the currency. Source: Bloomberg

4.1.1. Risk assessment of Hungary

Hungary's credit risk spread rose slightly at the beginning of the period and then adjusted. Consequently, it is at a relatively low level at present (Chart 4-1). During the period, the international factor and domestic factors increased the CDS spread to greater and lesser degrees, respectively, with the latter now standing at 54 basis points.

4.1.2. Developments in foreign exchange markets

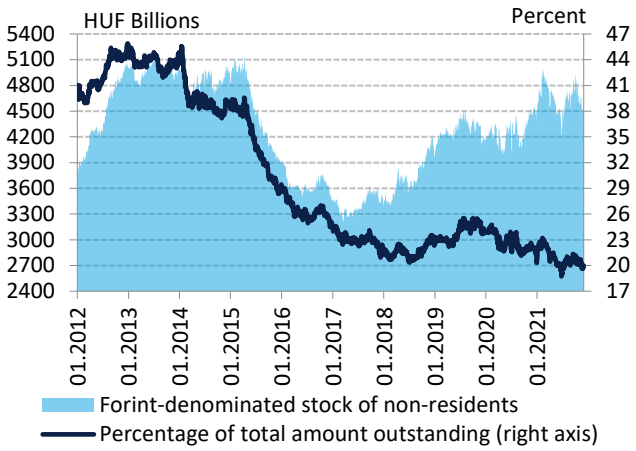
Compared to the currencies in the region, the forint depreciated to a greater degree, i.e. by almost 3 percent, against the euro. In the region, the exchange rates of the Polish zloty and the Czech koruna were practically unchanged at the end of the period (Chart 4-2). The currencies of the region typically strengthened in the environment of the interest rate decisions and inflation data, whereas the episodes of stronger risk aversion pointed to weakening. The forint depreciated by 7 percent against the US dollar, whereas of the currencies in the region, the zloty and the Czech koruna weakened by 4 percent against the US currency.

4.1.3. Government securities market and changes in yields

Non-residents' HUF-denominated government securities holdings dropped in the past quarter (Chart 4-3). Non-residents' HUF-denominated government securities holdings declined considerably in the first half of this year, before increasing in Q3. Over the past three months, however, the holdings decreased by nearly HUF 300 billion. The ownership share within HUF-denominated government securities also decreased, falling to 20 percent.

For most of the period, the Debt Management Agency accepted offers for higher amounts than announced at the government bond auctions, although in the case of securities with shorter maturities lower than announced

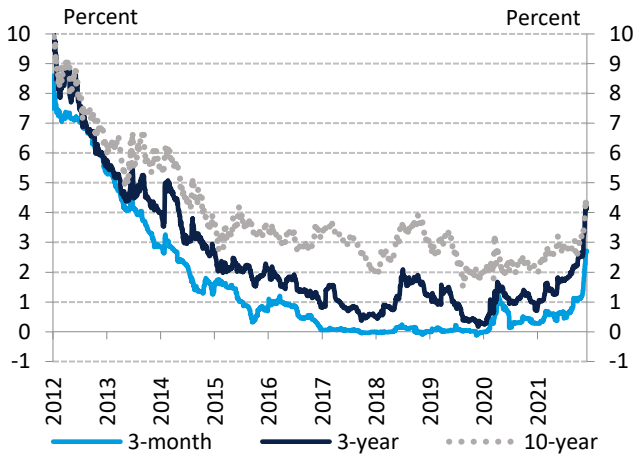
Chart 4-3: Stock of HUF-denominated government securities held by non-residents



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

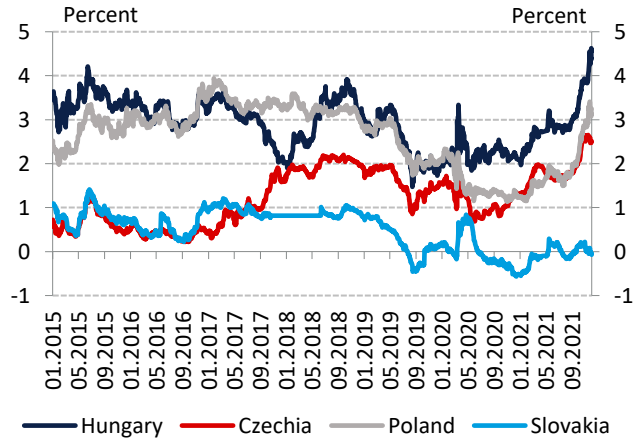
Source: MNB

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

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 auction yields increased by 170 basis points at the 3-month discount treasury bill auction and by 95 basis points at the 10-year auction. Accordingly, average auction yields were at 2.81 percent and 3.02 percent, respectively, at the end of the period.

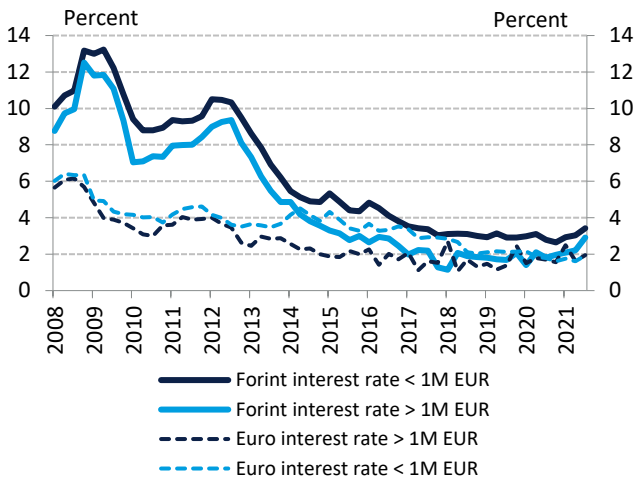
Yields increased over the entire government securities market yield curve. Yield increase was typical of the entire period, but the rise was stronger for longer maturities at the end of the period (Chart 4-4). On the whole, during the quarter, 3-year and 10-year yields rose by 192 and 162 basis points, respectively, with global factors and interest rate hikes in the region as contributors. Of the interbank yields, the 3-month BUBOR rose by 162 basis points to 3.19 percent.

Most of long-term reference yields in the region increased during the period (Chart 4-5). The 10-year Polish yield rose by 120 basis points, while the 10-year Czech yield is up 52 basis points versus the end of the previous quarter. Slovak (euro) yields fell by 10 basis points.

4.2. Credit conditions of the financial intermediary system

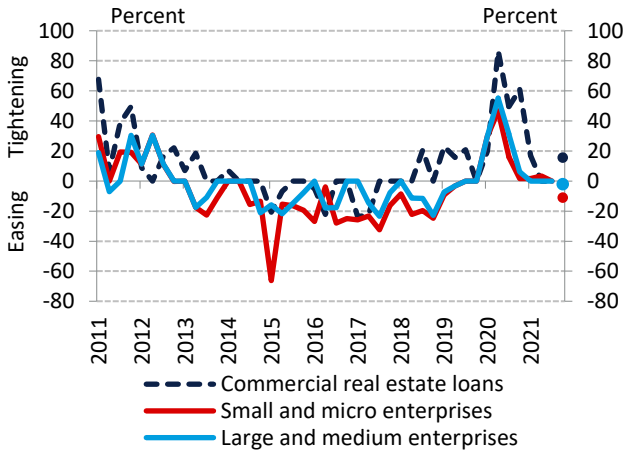
In 2021 Q3, corporate credit conditions remained unchanged in all company size categories as well as for commercial real estate loans, and the standards are also not expected to change significantly in the future. The standards of household loans also remained mostly unchanged in 2021 Q3, but, looking ahead, tightening is expected in the case of consumer loans. Both the average cost of funds of corporate HUF- and EUR-denominated loans as well as the APR on long-term fixed-rate housing loans increased in the period under review. Nearly 70 percent of the housing loan contracts concluded during the quarter were certified consumer-friendly housing loans (CCHL), ensuring long-term predictability of instalments. The real interest rate level rose during the quarter, which is fundamentally explained by the increase in benchmark yields.

Chart 4-6: 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 4-7: Changes in credit conditions in corporate sub-segments



Note: Net percentage balance of respondents tightening/easing credit conditions weighted by market share. Forecast for 2021 Q4 and 2022 Q1.
Source: MNB, based on banks' responses

4.2.1. Corporate credit conditions

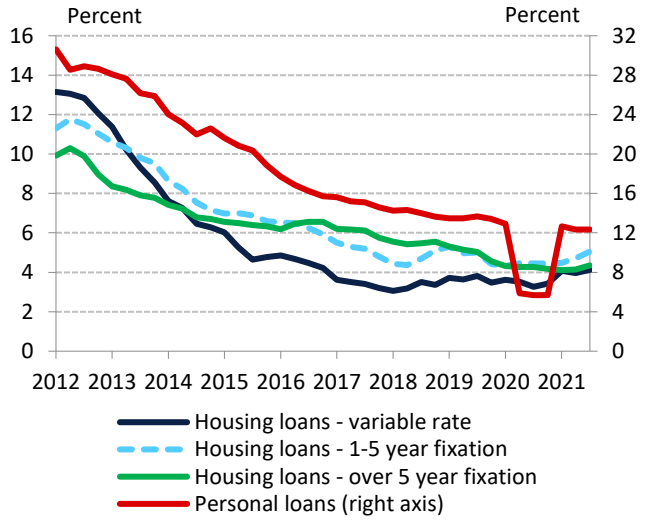
The average interest rate on HUF- and EUR-denominated loans also increased considerably in 2021 Q3. The smoothed average interest rate level on new corporate HUF loans with interest rates variable within one year (largely market based loans) – excluding money market transactions – rose by 38 basis points in the case of low-amount loans and 70 basis points in the case of high-amount loans compared to the previous quarter (Chart 4-6). Accordingly, within the loans the interest rate of which is variable within one year, the average interest rate on forint loans amounted to 3.1 percent in September. During the quarter, the interest rate level on low- and high-amount euro loans rose by 31 and 33 basis points, respectively, and thus the average cost of funds of euro loans stood at 2 percent at end-September. The rise in interest rates is mostly attributable to the increase in the cost of funds.

Corporate lending conditions did not change during the quarter, nor is any major shift expected in the standards in the future. The banks participating in the Lending Survey did not change the conditions of access to loans during Q3. Moreover, corporate credit conditions are also not expected to change significantly in 2021 Q4 and 2022 Q1: 15 percent of the responding credit institutions in net terms are planning tightening in relation to commercial real estate loans, while 11 percent and 2 percent of them are planning easing in the case of small and micro enterprises as well as large and medium-sized enterprises, respectively (Chart 4-7).

4.2.2. Household credit conditions

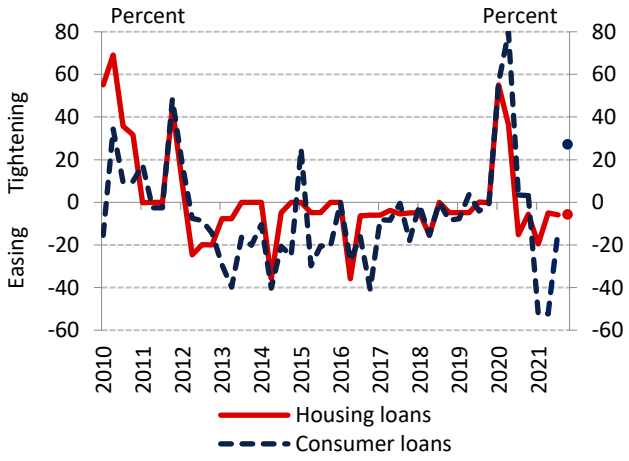
Banks only partly reflected the increase in the costs of funds in their pricing during the quarter. The average interest rate spread on housing loan contracts concluded in 2021 Q3 declined in all interest rate fixation categories. At the end of the quarter, following increases of 34 and 21 basis points, the average APR level on housing loan contracts concluded during the quarter stood at 5.1 and 4.3 percent in the case of loans with interest rate fixation for 1-5 years and for maturities exceeding 5 years, respectively (Chart 4-8). Rising slightly, the average APR on

Chart 4-8: Annual percentage rate of charge on new household loans



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

Chart 4-9: Changes in credit conditions in the household sector



Note: Net percentage balance of respondents tightening/easing credit conditions weighted by market share. Forecast for 2021 Q3 and 2021 Q4.
Source: MNB, based on banks' responses

personal loans reached 12.4 percent by the end of the period under review. The spread on certified consumer-friendly housing loans fell by 9 basis points to 1.2 percentage points at end-September 2021, and this product accounted for 69 percent of the quarterly housing loan issuance.

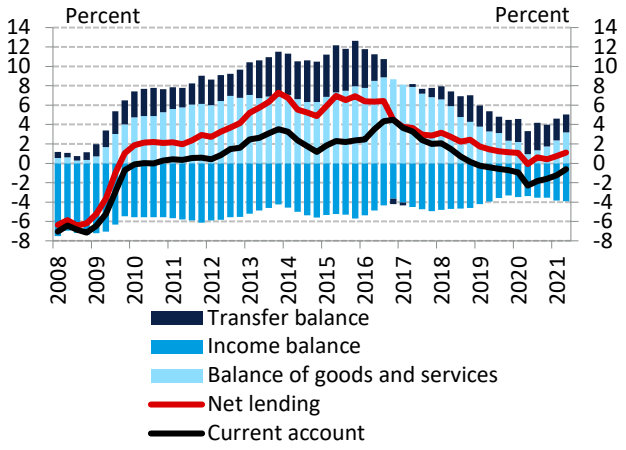
Banks did not significantly change standards on household loans, but looking ahead they are planning tightening in the case of consumer loans. According to responses to the Lending Survey, banks did not make any major changes to housing loan standards in 2021 Q3. In terms of partial conditions, however, half of the responding institutions indicated spread reductions, which was attributable to stronger competition among banks and to market share goals. They are not planning to change the conditions of housing loans in 2021 Q4 and 2022 Q1 either, but 22 percent of the banks in net terms held out the prospect of tightening the spread between the lending rate and the costs of funds (Chart 4-9). As far as consumer loans are concerned, in net terms 14 percent of credit institutions eased the conditions of access to loans in Q3. Nevertheless, looking ahead to the next half year, 27 percent of the banks are already planning to tighten standards in the market of consumer loans, primarily by raising the spreads.

5. Balance position of the economy

5.1. External balance and financing

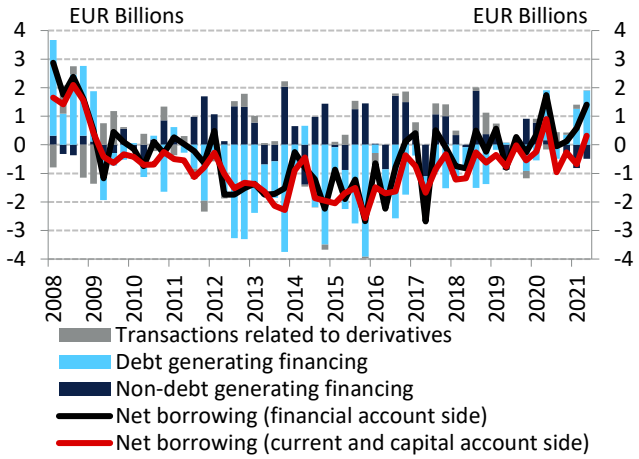
The external balance position of the Hungarian economy improved in 2021 Q2. The expansion in the current account balance and net lending was related to the increase in the trade surplus, with the upswing in exports and tourism playing a major role in this regard. Although to a declining degree, EU transfers continued to significantly improve the external balance position. According to preliminary monthly data, the trade balance and – in parallel with that – the current account balance also started to decrease in Q3, in relation to the more restrained export performance due to the shortage of chips and the deteriorating terms of trade. Financing data suggest that, as a result of Hungarian companies' investments abroad, the net FDI stock declined in H1, before increasing in Q3, while net external debt was growing.

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 current account, capital account and the BOP 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, so this technical effect is excluded from time series. Source: MNB

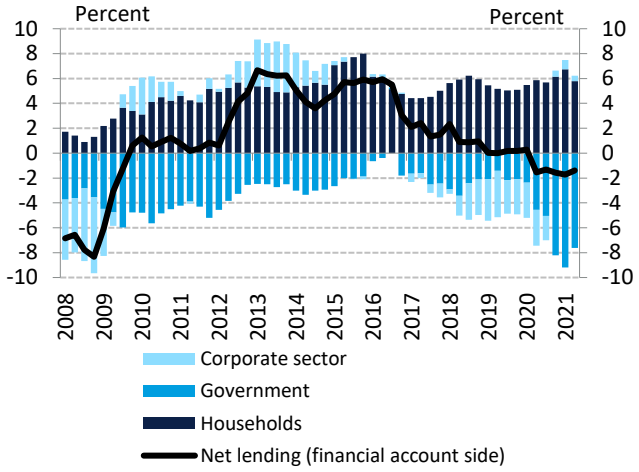
5.1.1. Developments in Hungary's external balance position

In mid-2021, the current account deficit declined to 0.6 percent of GDP, while net lending expanded to 1.1 percent of GDP (Chart 5-1). The improvement in external balance indicators in H1 was primarily attributable to the rapid expansion in net goods exports (in parallel with the pick-up in industrial production) as well as to the rise in the balance of services as the pandemic was receding. A contrasting impact was exerted by the decline – in relation to the effects of the pandemic – in incomes of people working abroad. According to preliminary monthly data, net exports declined considerably in Q3, which was partly attributable to the effects of the global shortage of base materials as well as to the deterioration in the terms of trade due to the surge in energy prices. Although to a declining degree, the transfer balance continued to improve the external balance position.

5.1.2. Developments in financing

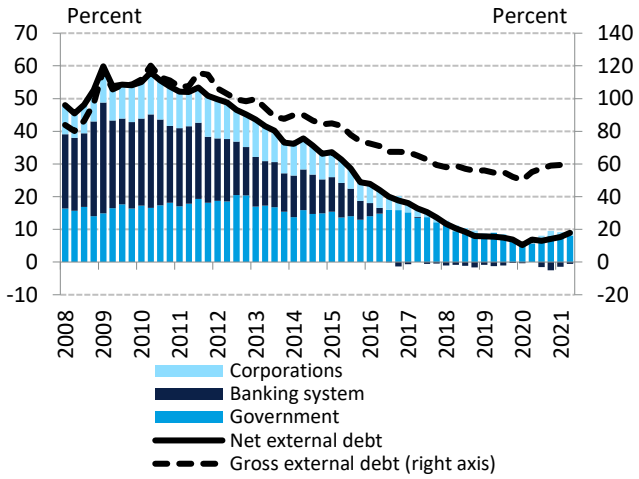
In relation to the expansion in investments abroad, net foreign direct investment declined slightly until end-June 2021, while the net external debt of the economy increased (Chart 5-2). Hungarian companies' investments abroad increased considerably, while foreign companies' investments in Hungary grew to a lesser degree compared to that as a result of lower reinvestment. Net portfolio equity investments declined further in view of households' foreign mutual fund share and equity purchases. Hungary's debt liabilities rose considerably in H1, which was mostly related to banks, and to a smaller degree to the consolidated general government. The rise in the net debt of the general government was attributable to procurement of equipment in connection with the pandemic as well as to the FX reserve-reducing effect of the euro liquidity providing swaps. According to preliminary data, a net FDI inflow evolved again in Q3, mainly as a result of an increase in reinvestment by foreign companies, while

Chart 5-3: Decomposition of net lending by sectors



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

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



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, so this technical effect, as well as intercompany loans are excluded from time series. As a percentage of GDP.
Source: MNB

net external debt continued to grow in relation to the consolidated general government.

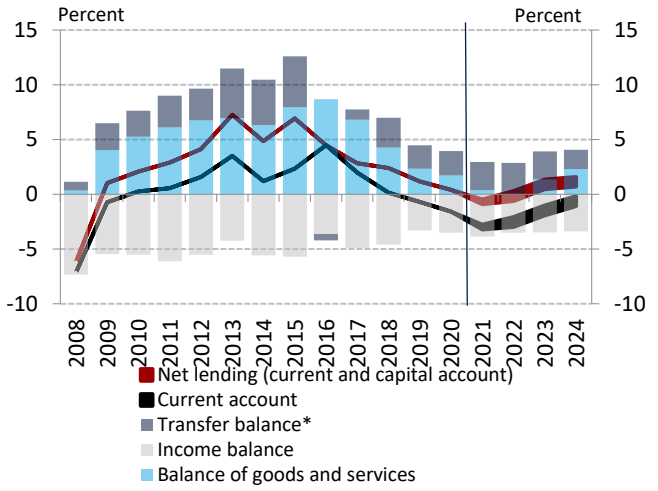
In the first two quarters of 2021, the high net borrowing of the state was mostly offset by the private sector's net financial savings (Chart 5-3). While Q1 was characterised by subdued consumption and investment in relation to the pandemic situation as well as by the high net savings of the private sector in parallel with that, households' net position declined in Q2. According to preliminary data, the upturn in domestic absorption further reduced the net position of households and corporations in Q3, resulting in a high deficit of the general government as well as an increase in the external net borrowing of the economy according to the savings of sectors.

The net external debt of the economy rose to 8.9 percent of GDP by end-June 2021 (Chart 5-4). Meanwhile, gross external debt decreased to close to 58 percent of GDP, which was related to a robust expansion in nominal GDP, offsetting the increase in liabilities as a result of transactions. External liabilities of the private sector increased considerably with the restart of the economy, which was offset to some extent by non-residents' declining HUF-denominated government securities holdings.

5.2. Forecast for Hungary's net lending position

Following a temporary decline, the current account balance gradually improves in the second half of the forecast period, with an increase in the net lending of the economy in parallel with that, after a temporary decrease. The decrease in the current account balance this year is attributable to restrained exports in view of the global semiconductor shortage, to imports driven by strong domestic demand as well as to deteriorating terms of trade due to rising energy prices. Factors with a negative impact on foreign trade may persist in 2022, which, however, may partly be offset by the recovery in tourism, whereas in the second half of the forecast period the completion of new export capacities and the pick-up in external demand may already be reflected in an increase in the trade balance. Approaching the end of the cycle, the absorption of EU transfers increases the net lending of the economy to a declining degree. According to the sectors' developments in savings, the general government deficit falls gradually as a result of rising tax and contribution revenues, which is significantly decelerated in 2022 by measures that entail an increase in household incomes. The upswing in households' consumption and investment activity is also reflected in the decline in net financial savings in 2021, before stabilising at a high level from 2022 with an expansion in incomes, which partly stems from the tax refund. Corporate net borrowing grows gradually, in parallel with an increase in investment activity.

Chart 5-5: Evolution of net lending

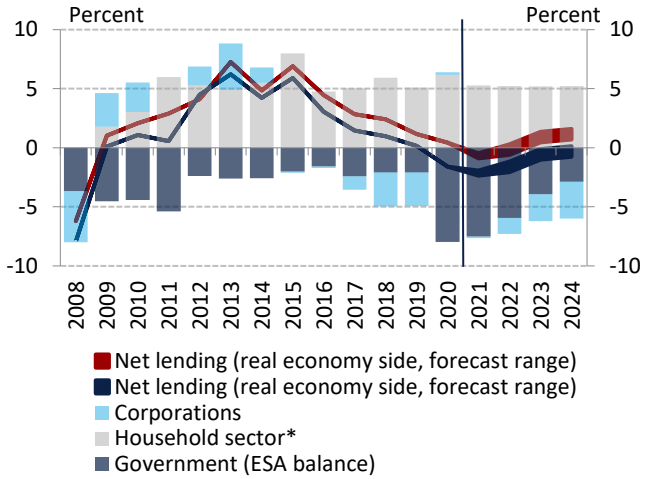


Note: As a percentage of GDP* The sum of the balance of the current transfers and the capital account balance.
Source: MNB

Looking ahead, following a temporary downturn, the current account balance improves gradually, in parallel with an expansion in the trade surplus (Chart 5-5). In 2021, there will be a significant drop in the trade balance due to subdued exports in view of the global semiconductor shortage, strong domestic demand and deteriorating terms of trade. Effects that impair the trade balance gradually weaken in 2022 H2, but declining net exports are still expected for the year as a whole. The upswing in external demand, the expansion in industrial production as a result of new capacities installed in view of the significant FDI inflows as well and the recovery in tourism result in a gradual improvement in the trade balance in the second half of the forecast period. Looking ahead, the transfer balance considerably improves the balance position of the economy, although its degree will temporarily decline in 2023 and 2024, at the end of the EU budget cycle. In 2021, the income balance deficit rises considerably as a result of a decline in earned incomes from abroad and the growing profits of foreign-owned companies. Later, however, it declines gradually, as a result of contrasting effects. This is because, with improvement in the pandemic situation, the rise in interest expenditure in view of the growing profits of foreign-owned companies and the rise in yields may be offset by the increasing earned income of those working abroad and a dynamic expansion of GDP. Overall, following a temporary decrease, the current account balance gradually improves from 2023, and the net lending of the economy also expands in parallel with that.

In terms of sectors' savings developments, the net lending of the economy, after temporary decrease, gradually increases in parallel with the declining general government deficit (Chart 5-6). Looking ahead, tax and contribution revenues increase significantly in view of the

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

improving economic situation, resulting in a gradually declining budget deficit. However, that is partly offset by the fiscal effect of the expenditures related to defence against the pandemic and to the restarting of the economy as well as of the measures entailing the raising of household incomes (tax refund, full 13th-month pension, reduction of employers' tax burdens). The tax refund planned for early 2022 may temporarily decelerate the decline in budget deficit. Households' recovering consumption and investment activity result in a decrease in the sector's net financial savings in 2021. In 2022, as a result of the tax refund and rising incomes, households' financial savings increase slightly, before stabilising in the second half of the forecast period. In 2021, companies' net position remains near the equilibrium level as a result of EU fund inflows and government expenditures related to the restarting of the economy, before declining gradually, in parallel with a gradual increase in investment.

5.3. Fiscal developments

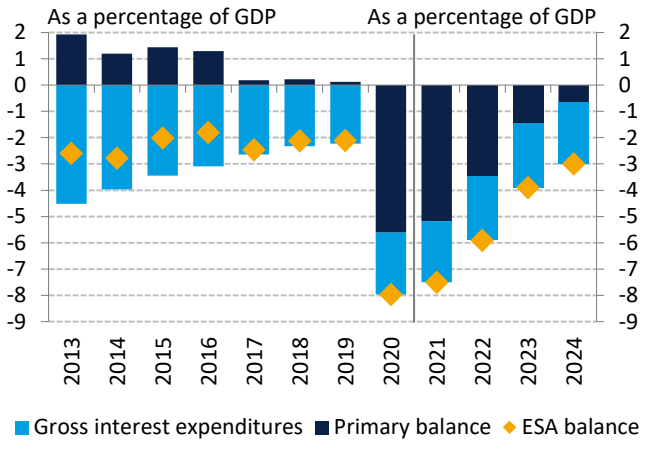
The Budget Acts for 2021 and 2022 envisage deficit-to-GDP ratios of 7.5 percent and 5.9 percent, respectively. According to our forecast, as a result of the rapid recovery of the Hungarian economy, tax and contribution revenues may significantly exceed budgetary expectations and appropriations. At the same time, the ensuing fiscal room for manoeuvre is completely used up by the budget, and thus overall, we expect a fiscal path that is in line with the government's deficit target. As a result of fiscal measures, households' income will increase considerably this year and in 2022: in addition to the uniformly raised pension premium, pensioners will receive a full 13th-month benefit at the beginning of next year, families raising children will have their personal income taxes paid in 2021 refunded (up to a limit), and several types of taxes will decline, offsetting the wage cost-increasing effect of the rise in the minimum wage to a gross HUF 200,000. For 2023 and 2024, we project a declining trend in the deficit-to-GDP ratio, which may reach the 3-percent threshold by the end of the forecast horizon. Following a temporary rise in 2020, the government debt ratio takes a declining path again in 2021 as a result of dynamic economic growth.

Table 5-1: General government balance indicators

	2020	2021	2022	2023	2024
ESA balance	-8.0	-7.5	-5.9	-3.9	-3.0
Primary ESA balance	-5.6	-5.2	-3.5	-1.5	-0.7
Fiscal impulse*	5.4	-0.6	0.2	-3.4	-0.9

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

Chart 5-7: Changes in the fiscal balance and government interest expenditures



Source: HCSO, MNB

5.3.1. Main balance indicators

According to our forecast, in line with the target, the government sector's deficit as a percentage of GDP may amount to 7.5 percent in 2021 and 5.9 percent in 2022 (Table 5-1). Compared to the 8 percent recorded in 2020, the deficit is expected to decline in 2021. However, the fiscal room for manoeuvre allowed by the dynamic rise in tax revenues due to the rapid macroeconomic recovery is completely used up by the budget.

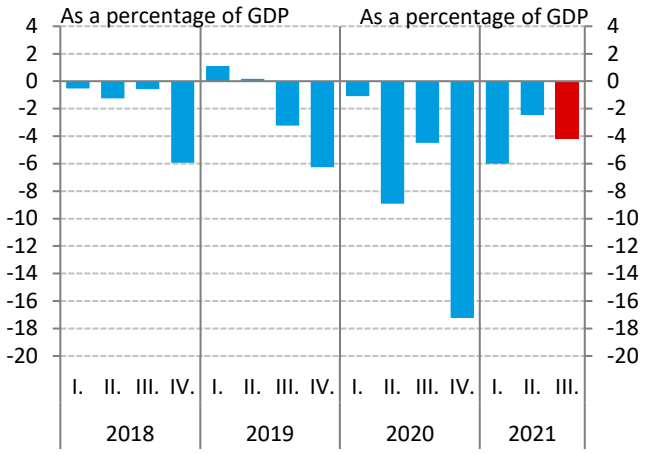
According to our expectation, the deficit in 2022 will be close to the 5.9-percent deficit target planned in the Budget Act (Chart 5-7)**.** Our forecast is based on higher tax base growth than the assumption in the Budget Act, and thus, tax and contribution revenues may exceed the appropriations, although they are completely offset by measures announced since the adoption of next year's budget. Developments in the 2022 deficit during the year are expected to be different than in recent years, and the deficit in Q1 will be more significant. The general government deficit will decline further over the forecast horizon, and may reach the 3-percent criterion again in 2024.

The general escape clause that has partially and temporarily suspended the EU fiscal rules starting from 2020 may continue to be applied until end-2022, and thus in all probability it will not be necessary to comply with the EU rules next year either. 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.

5.3.2. Budget balance in 2021

According to our forecast, the deficit target of 7.5-percent of GDP expected according to the amendment to the 2021 budget may be achieved. Fiscal developments were favourable in the first three quarters as a result of the rapid

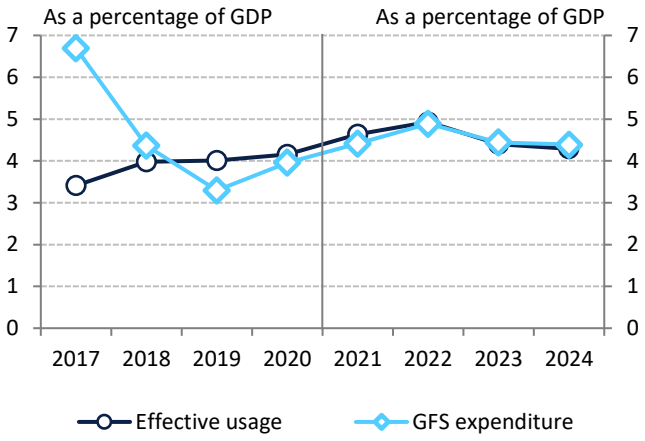
Chart 5-8: Accrual balance of the general government sector



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 5-9: Effective usage of EU grants and development of cash payments



Note: The forecast was made based on the midpoint of the band of the GDP forecast.

Source: MNB, Budget laws

restart of the economy. According to preliminary financial account data disclosed by the MNB, the Q3 accrual-based deficit corresponded to 4.2 percent of the quarterly GDP (Chart 5-8). The cumulative deficit of the first nine months was 4.6 percent, and thus – similarly to previous years – a major portion of the annual deficit may be concentrated in the last quarter.

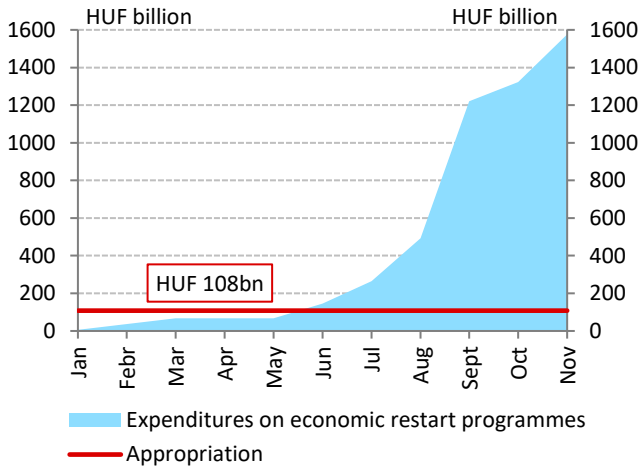
According to our expectations, the additional tax and contribution revenues will be spent completely, primarily through the central reserves for protection against the pandemic and the appropriations of the economic restart programmes. In view of the dynamic 2021 economic growth, a significant pension premium reaching 0.4 percent of GDP has been disbursed, and all of the beneficiaries were entitled to receive the maximum amount of HUF 80,000. As in the same period of 2020, a major deficit is expected to evolve in the last quarter

5.3.3. Budget balance in 2022 and 2024

The deficit in 2022 may reach the 5.9-percent deficit target planned in the Budget Act according to our expectations. Our projection suggests that the growth in tax bases, which is more favourable than the macroeconomic path of the budget, will generate significant additional revenues, which will be used to cover for fiscal measures to be implemented in H1. Families raising children may (up to a limit) be refunded their personal income tax paid in 2021, with the related fiscal effect projected to correspond to around 1 percent of GDP. In lieu of the previously announced gradual, weekly introduction, beneficiaries may receive a full 13th-month pension in 2022 already, which increases budgetary expenditures by 0.3 percent of GDP compared to the appropriation in the Budget Act. The six-month benefit ('arms money') of law enforcement and national defence employees will also be paid earlier than planned, in 2022 Q1 already, the fiscal effect of which corresponds to 0.4 percent of GDP. In 2022, the significant corporate wage cost increase caused by the rise in the minimum wage to a gross HUF 200,000 will be compensated for by the budget, and thus various types of tax rates (employers' SSC, small business tax, local business tax) will decline, which would reduce tax and contribution revenues by 1 percent of GDP, but it is partly offset by the additional revenues stemming from the higher gross wage bill.

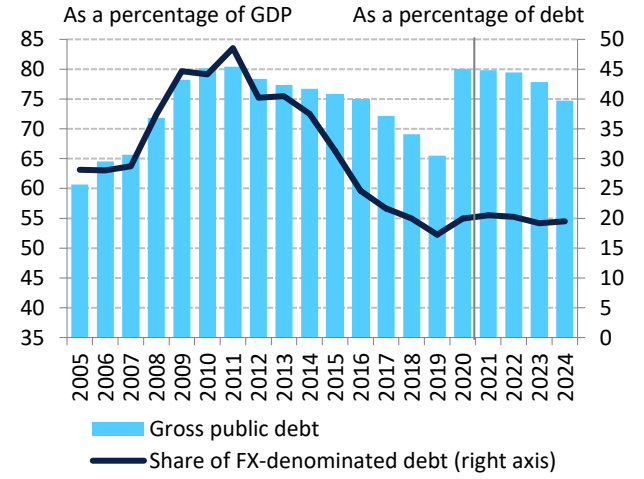
In the absence of an available Budget Act, for 2023 and 2024 we prepare technical forecasts, according to which the deficit will decline further compared to the previous years, and may reach the 3-percent Maastricht threshold by the end of the forecast horizon.

Chart 5-10: Expenditures on economic restart programmes



Source: Government decrees

Chart 5-11: Gross public debt forecast



Note: The forecast was made based on the midpoint of the band of the GDP forecast.

Source: MNB, GDMA

5.3.4. Risks surrounding the baseline scenario

Uncertain timing of the expenditures spent on pandemic protection and on the restarting of the economy poses a risk to our forecast (Chart 5-10). This year's HUF 108 billion appropriation of the economic restart programmes was exceeded by planned expenditures already in the middle of the year, in June, and by end-November they were close to HUF 1,600 billion. Both last year and in 2021 significant disbursements to organisations classified into the government sector took place. It adds to the accrual-based deficit upon use, although its timing is rather uncertain.

Complete implementation of the announced measures and investment projects is a risk that points to a higher general government deficit. In case of a complete realisation of the funds allocated for the government decisions, the budget deficit may exceed the budgetary expectation. On the other hand, the potential postponement of some government investment projects would point to a lower fiscal deficit in 2022.

5.3.5. Expected developments in public debt

According to preliminary data, at the end of 2021 Q3 the gross government debt-to-GDP ratio was 80.5 percent. Subsequently, the debt ratio rose by nearly 0.4 percentage points compared to end-2020. As a result of the expected lower Q4 debt issuance, government debt may slightly be lower by the end of this year than the end-2020 level.

According to our forecast, following a temporary rise last year, the gross government debt-to-GDP ratio will fall to 79.8 percent by end-2021 (Chart 5-11). The debt ratio is expected to steadily decline over the forecast horizon. According to our projection, in view of the decline accelerating in 2023 following last year's temporary increase, the government debt ratio may decrease annually by 1.3 percentage points on average, and thus it may fall below 75 percent by end-2024. The delay in revenues related to EU funds may affect the changes in the debt ratio over time, causing a slower-than- expected decline in the debt level this year, before reducing the debt upon actual receipt of the funds. Reacting to the expected delay in revenues from the EU, in September 2021 the Government Debt Management Agency raised its plan concerning HUF and FX issuances.

The changing EUR/HUF exchange rate affects the debt ratio even in the context of falling FX debt, and thus a 1-percent change in the EUR/HUF exchange rate modifies the debt-to-GDP ratio by 0.2 percentage point. The share of foreign currency within central government debt rose from 19.9 percent at the end of last year to 20.8 percent in 2021 Q3 as a result of the September FX issuance.

6. Special topics

6.1. What could be the cause of inflation?

Inflation, i.e. the rise in the price level of products and services, is one of the closely monitored macroeconomic indicators of market economies. Identifying the underlying reasons for a rise in the price level may provide important information on the persistence of inflation, and thus for the design of an adequate economic policy framework.

The acceleration of inflation has been a global phenomenon in recent quarters. The rate of inflation is at peaks unseen for decades in both the euro area (according to preliminary data, November 2021: 4.9 percent) and the United States (October 2021: 6.2 percent). Therefore, it is particularly timely to examine what reasons in general may lead to a rise in the price level. Global economic events of the past century provide examples for a review of the factors that cause inflation.

As inflation typically depends on the shifts in demand and supply compared to one another, these factors are examined first, before moving on to the role of economic policy in the developments in inflation. Finally, we deal with expectations, the economic psychology aspect of inflation developments.

Supply effects

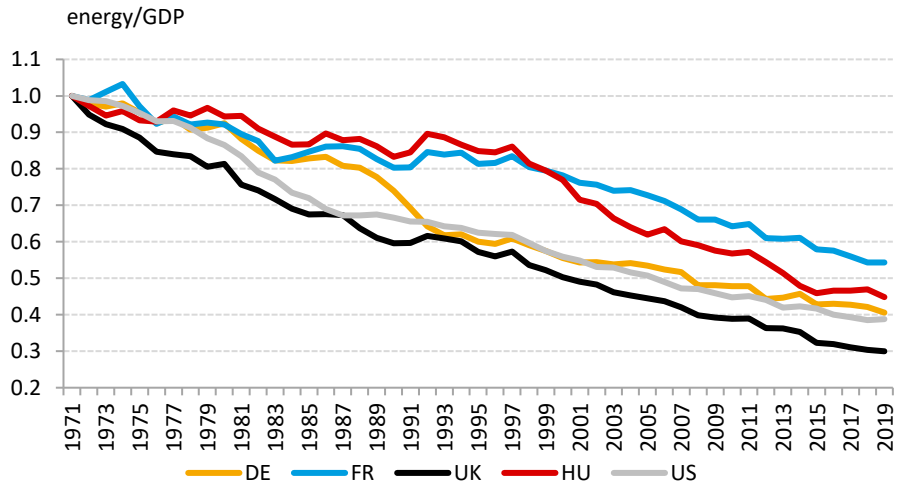
A tightening of supply or an increase in production costs cause an acceleration in consumer prices. A strong, shock-like fall in production possibilities may result in an increase in the price level, which is called supply-side inflation in the literature. A change like that may be caused by extreme drought, which may entail a drop in agricultural yields, reducing the supply of food. This is what happened in 2011–2012, when extreme weather conditions (drought in the USA) led to significant food price increases globally. The occurrence of natural disasters and extreme weather conditions may become increasingly frequent in view of the effects of climate change, contributing to the strengthening in the impacts on the supply side. Experience suggests that these supply effects are less persistent, and they typically weaken relatively quickly as a result of the flexible adjustment of market economy systems and the increase in trade. At the same time, they may cause significant volatility in the changes in consumer prices in the short run.

Disruptions in international supply chains may also cause price increases through falls in supply. The related effects are observed these days as well, following the appearance of the coronavirus pandemic in 2020. After the introduction of containment measures, major problems arose in international forwarding as well, and a so-called container crisis evolved all over the world. As a result of a sudden rise in demand, the costs of sea transport on the routes from China to Europe and America increased severalfold in a short time. Shipping costs become included in consumer prices, and thus more costly forwarding results in more expensive products, i.e. in inflation in the classical sense. However, this effect is not expected to be persistent: at present, market participants expect supply anomalies to end in the second half of next year and a decline in the price-increasing effect of the supply-side constraint.

The cost increase of production input factors (e.g. oil or gas price rises) are referred to as supply-side inflationary effects. The close relationship between the corporate supply curve and corporate marginal costs (i.e. the marginal cost of producing a product or providing a service) is well-known from microeconomics. In view of the increase in the prices of input factors, companies are able to produce their products and services only at a higher cost level. If they still offer their products at an unchanged price, their profits decline. If corporate profit is already low (the market is competitive), some of or the entire increase in costs needs to be shifted to consumers. The cycles evolving in commodity markets are typically more persistent (commodity market supercycles are known from economic literature), and thus changes may also often start in the structure and technology of production as a result of a persistent price rise.

The most famous supply-side commodity crisis is related to the oil price explosions in 1973 and 1979. As a result of the oil embargo introduced by OPEC against the United States, Western Europe and Japan, the per barrel price in 1974 jumped from 3 dollars to almost 12 dollars, whereas in 1979 it increased from 13 dollars to 31 dollars in view of the OPEC oil price rise due to the Iranian revolution. This resulted in a surge in inflation in those years in almost all of the countries in the world, including the United States. Global inflation calculated on the basis of OECD countries amounted to 8.9 percent in 1973 (Chart 6-2). As a consequence of the shock, market economy systems underwent a change of models, energy and cost saving technologies tended to spread, and thus the energy requirement of producing one unit of GDP has declined considerably in the past 50 years (Chart 6-1).

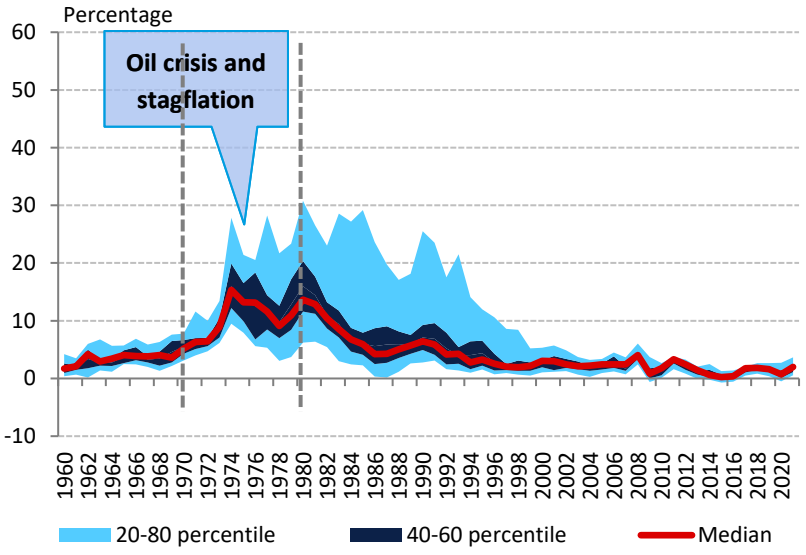
Chart 6-1: Changes in real energy intensity



Source: BP, Penn, MNB calculations based on Penn World Table 10.0

We have witnessed a sharp commodity price rise in recent months as well, although its persistence is surrounded by uncertainty. Of the prices of the main commodities, those of gas, coal and electricity reached historical highs in the past period. In addition, high oil prices also contribute to inflation, which has risen globally. At present, on the basis of market pricing, the interpretation where the commodity price rise is temporary and some consolidation is expected for next year can be considered the baseline scenario. By contrast, if we are at the beginning of a new commodity market supercycle, we need to prepare for a steady increase in prices. This latter interpretation is corroborated by the theory that changes in regulations, i.e. the introduction of stricter environmental rules, played a key role in the rise in prices. In a case like that, due to the stricter regulations, companies face persistently higher production costs, some of which they shift to consumers, and thus inflation increases. These inflationary effects may cease to exist only following an eco-friendly restructuring of production capacities, which is a much more time-consuming process compared to when only short-term supply anomalies cause price increases.

Chart 6-2: Oil price crises and global inflation



Source: FED, MNB

Demand effects

We speak about demand-side inflation when the rise in the price level is caused by elevated demand compared to relatively stable supply. An economy's supply capacities and the 'normal' capacity utilisation typical of an economy constitute the potential output, in which case macroeconomic developments are balanced in the given period. Prices do not increase excessively, and internal and external imbalances do not evolve. However, demand cycles may divert GDP from the equilibrium level. In cases like that, the current aggregate volume of demand exceeds the volume of supply capacities produced with normal capacity utilisation, i.e. potential GDP.

The difference between current output and the potential level is captured by the output gap and the cyclical position of the economy. This is the demand cycle that affects inflation developments basically over the horizon of monetary policy. If demand in an economy is greater than what the supply capacities are able to produce with normal capacity utilisation, corporate costs increase. Moreover, markups may also increase due to the higher pricing leeway. The correlation between cyclical position and inflation is represented by the so-called Phillips curve, whose history dates back to the late 1950s. According to the latest research, although the Phillips curve has lost much of its relevance, it is still an important determinant of inflation developments in the medium term. Change in the consumption component of demand may be caused by a sudden change in households' consumption decision. For example, following the lockdowns related to the pandemic situation, a postponed consumption motive was observed, which resulted in temporarily higher inflation. In addition, demand may grow persistently faster than the supply side (e.g. permanent expansion in income, continuously loose fiscal policy). Inflation may remain high for a longer time in this case.

Consumption demand is typically related to consumers' income and their opinion of the macroeconomic environment. Households may spend their disposable income on consumption, investment and savings. If they consume a higher portion of the disposable income (the consumption rate increases), additional demand-side inflation may be generated. An upswing in consumption is primarily reflected in the prices of market services. A fall in demand factors compared to supply has a contrasting effect, i.e. it may reduce inflation. The Great Depression of the 1930s is attributable to a downturn on the demand side.

The impact of economic policy on inflation

Fiscal policy is able to affect the changes in prices directly and indirectly as well. Besides households and families, the other main consumer is the government, which can increase consumer (or investment) demand directly by its own purchases, or indirectly, by giving transfers to other economic agents. The decrease in government purchases or higher taxes may have the opposite result, as it lowers aggregate demand. Raising transfers to households or reducing the level of taxes have an expansionary effect. These measures change disposable income and may result in demand-side inflation through the consumption expenditures described in the above paragraph. Economic policy may cause a one-off, more direct change in the price level by altering the levels of regulated prices and indirect taxes (e.g. VAT). Expansionary fiscal policy may result in consumers having higher inflation expectations as well, which may also contribute to a rise in the price level (the role of inflation expectations is explained in the last section).

The main task of monetary policy is to achieve and maintain a stable price level. For a long time, economists deduced the effect of monetary policy from the simple quantitative theory of money, according to which there is direct correlation between price level and money supply. Various versions of the theory date back to the 16th century, when it was observed that prices were increasing faster than before as a result of the inflow of precious metals from America to Europe. The modern version of this theory is monetarism, which prevailed in the 1960s. One of its central theses is that 'inflation is always and everywhere a monetary phenomenon'. An increase in the amount of money in circulation may lead to growing output in the short run, but in the longer run it is neutral to real output, and thus – assuming a constant velocity of circulation – it results in inflation, i.e. a rise in prices. One of the assumptions of the monetarist theory is that the velocity of money circulation is nearly constant, i.e. economic agents spend similar amounts of the money in the economy on goods and services in each period. In the 1960s, this standpoint was corroborated by various statistical analyses of longer time series, but later this relationship weakened.

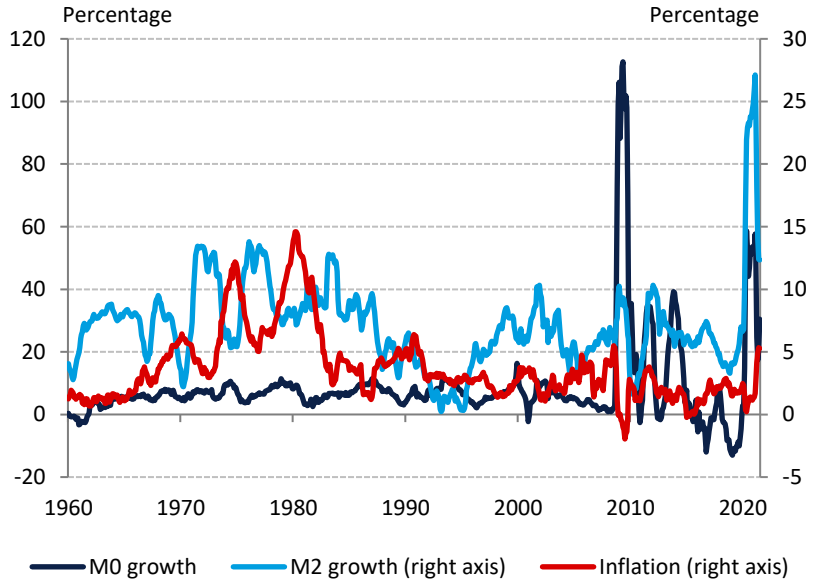
In the 1990s, central banks changed over to inflation targeting, where they attain their ultimate goal, i.e. the achievement and maintenance of price stability, using the base rate and by influencing inflation expectations. The central bank's steps exert their effect on the economy through the monetary transmission mechanism. The central bank's decisions concerning monetary policy tools first exert their effect on the financial markets: market interest rates, asset prices and the exchange rate react the fastest. Then the goods market adjusts: companies and consumers adjust to the financial market changes,

which changes their aggregate demand for products. Companies react to the changing demand through the quantity of the products they produce as well as by changing their prices, and thus monetary conditions ultimately have an effect on output and prices. Communication and short-term interest rates are of key importance in this system.

As central banks soon ran out of classical tools in the past two significant crisis periods (during the global financial crisis that broke out in 2008–2009 and then during the coronavirus pandemic in 2020), they attempted to support economic recovery by significantly increasing the amount of money they issued. After the 2008 crisis, in spite of a major growth in the M0 monetary base, the M2 monetary aggregate did not increase significantly, as it was prevented by commercial banks' difficulties in lending. Accordingly, central bank money creation does not always entail an expansion in M2, as the latter strongly depends on the autonomous money creation of the banking sector or the lack of thereof. The M2 expansion in the past decade, which is modest in historical comparison, was primarily reflected in asset prices (equities, real estate) in the 2010s. Compared to that, a remarkable change was brought by the coronavirus pandemic as well as by the lending and economic policy response to it.

In 2020, the increase in the monetary base also caused significant growth in the M2 monetary aggregate with the help of a sound banking sector and with the concurrent increase in government deficits (Chart 6-3). At present, it seems that the higher quantity of money issued by central banks and commercial banks has a stronger effect on consumer prices as well than in the previous decades. One underlying reason may be that a larger portion of additional liquidity reached consumers (instead of financial markets) through the rise in budget deficits.

Chart 6-3: Correlation between the growth rate of money supply and inflation (USA)



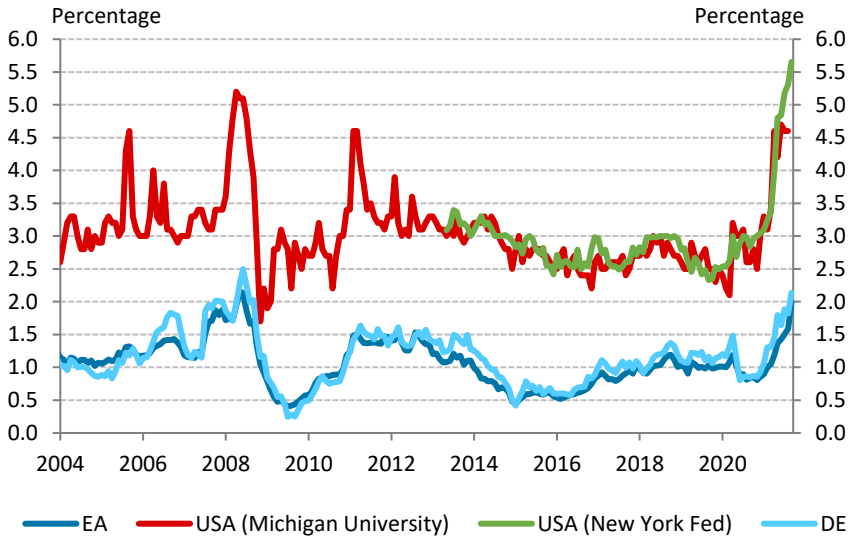
Source: FED

The role of inflation expectations

Inflation expectations constitute the centre of gravity of price increase trends. Inflation expectations have a significant effect on wage negotiations and the persistence of surges in inflation. In view of higher inflation expected in the future, economic agents try to reach higher nominal wages so that the real value of their income can remain unchanged. This higher wage adds to the costs of companies, which is ultimately reflected in price increases. Accordingly, this becomes a self-inducing process, and a so-called price–wage spiral evolves. In addition, when inflation expectations are high, certain actors' tolerance increases, and thus companies are able to attain higher price increases. Accordingly, the more this process is reflected in the expectations concerning the future, the more persistent inflation is. Therefore, the anchoring of inflation expectations is a key task of economic policy.

In the past period, surges in inflation tended to be increasingly reflected in expectations as well (Chart 6-4). Accordingly, the risk of the appearance of second-round effects and the persistence of the surge in inflation increased all over the world. This is also attributable to the fact that the prices of those products and services rose during the recovery following the coronavirus crisis that are usually overweighted by households when formulating their expectations (food, fuel).

Chart 6-4: Households' inflation expectations



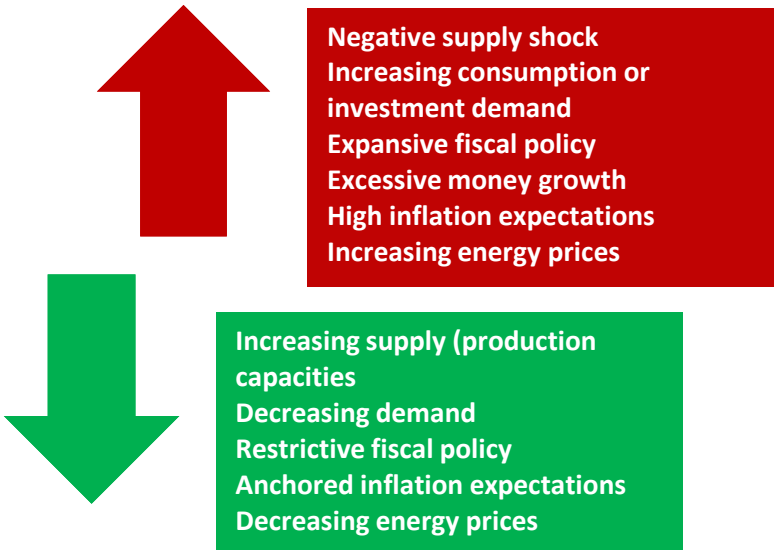
Source: European Commission, Michigan University, New York Fed

Summary

As presented through the above historical examples, inflation may be caused by various components, some of which may be considered exogenous changes, which are outside the economy (Chart 6-5). It is easiest to capture the various effects in economic models if we assume that all other factors remain unchanged. In practice, however, different factors often change simultaneously. A negative supply-side shock may be followed by a demand-side downturn as well. The real economy and inflationary effects caused by the coronavirus also took place as a combination of supply and demand effects.

The strength of the current global inflation cycle stems from the fact that almost all of the factors discussed above have played a role in it, and its persistence depends on the extent to which it is prevented from passing into expectations. From the supply side, the rise in oil and energy prices, as well as the disruption in supply chains all increase consumer prices. Additionally, demand factors contribute to inflation, such as a postponed consumption motive or the demand caused by the government purchases. Central banks reacted to the economic recession caused by the pandemic by increasing the money supply, which helped to prevent a financial crisis, but it has also led to rising prices along with the disrupted production.

Chart 6-5: Factors affecting changes in inflation



Source: MNB

6.2. The structure of achieving the inflation target

Following the restarting of the economy after the coronavirus pandemic, price increases that exceed central banks' inflation targets are a global phenomenon. Following the reopening of the economy, the increases in global energy and commodity prices as well as in transportation costs gradually appeared in the consumer prices of a widening range of products, resulting in historically high inflation and also exceeding analysts' expectations. In relation to that, a relevant question from the point of view of inflation-targeting central banks is what structure allows for the renewed achievement of the inflation target in the future. In our previous analyses, we found that in the case of a significant commodity price increase, inflation around the target is typically achieved with lower core inflation (see Box 1-3 of the September 2018 Inflation Report). This paper examines what core inflation structure allows for the sustainable achievement of the target in the current inflation environment.

For our analysis, we selected six episodes from the past two decades of European countries' economic history when inflation was close to the central bank target for a longer time (Table 6-1). Inflation in the selected periods was persistently close to the inflation target valid in the given country, and average inflation in the given periods was also close to the individual central bank targets.

Table 6-1: Price index periods persistently around the central bank inflation target

Country	Period
Netherlands	December 2003 – April 2009
Germany	December 2004 – October 2007
Slovenia	January 2009 – November 2013
Czech Republic	December 2016 – October 2019
Sweden	January 2017 – February 2020
Hungary	January 2017 – December 2020

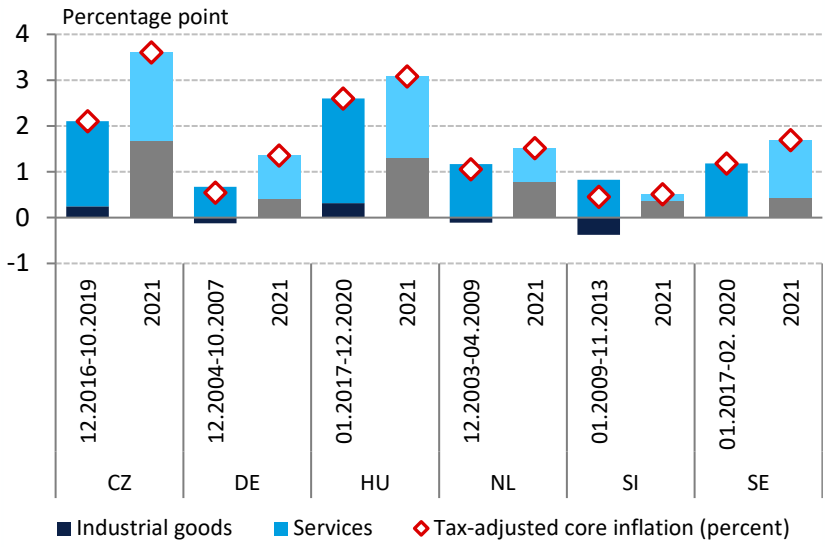
Note: HICP data calculated according to Eurostat's methodology.

Source: MNB calculation based on Eurostat data

In the past period, commodity prices rose to historically high levels, and their adjustment is expected only in the medium term. The world market price of crude oil increased to above USD 85 per barrel at end-October, for the first time since 2018. In November, the price of gas was nearly five times higher than the average level in 2019, while the price of electricity was three times higher. The degree of its price-increasing effect reflected in consumer prices may vary across economies. In some countries (including Hungary) energy prices are officially fixed for households, and thus the inflationary effect of the significant rise is not directly apparent beyond fuel prices. In this case, the higher energy prices contribute to the increase in inflation indirectly, through corporate costs. In other countries (e.g. in the Netherlands or Latvia), only the prices of certain items (such as electricity or gas) are fixed by the authorities, and thus the effect of the recently observed energy price rises is much more likely to be reflected in the consumer price index as well. According to current futures prices, energy and commodity prices are expected to adjust in the medium term, and thus only a gradually declining inflationary effect is expected.

The countries under review were characterised by lower core inflation excluding indirect taxes on average in the period of the lasting achievement of the inflation target than this year (Chart 6-6). In the period of achieving the inflation target not only the level of core inflation but also its structure was different from the pattern seen in the past months. While in the period of achieving the inflation target the contribution of services to core inflation exceeded 85 percent in all the countries under review, this year the share of the price index of industrial goods within core inflation increased considerably. In the period of successful target achievement the price index of industrial goods slightly reduced the increase in core inflation in Germany, the Netherlands and Slovenia, but this year it already contributed to the rise in core inflation in these countries as well. The share of the price index of industrial goods within core inflation increased this year in view of the pass-through of the effects of the growing global transportation costs as well as energy and commodity prices into consumer prices, and in particular into the prices of industrial goods. In Sweden, this year the price increase of industrial goods explained more than one quarter of the rise in core inflation, whereas it used to be nearly zero. In Hungary, the Czech Republic and the Netherlands, roughly half of the increase in core inflation was attributable to industrial goods and half of it to services. In Slovenia, nearly three quarters of the increase in core inflation has been related to the price index of industrial goods in the year to date.

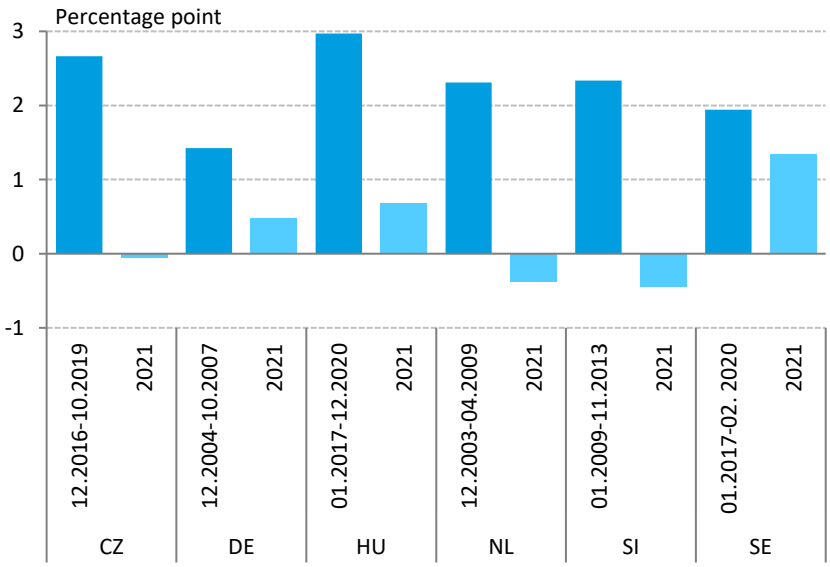
Chart 6-6: Developments in core inflation excluding indirect taxes in the period of the lasting achievement of the inflation target and this year



Note: Based on data excluding indirect taxes calculated using the methodology of Eurostat. 2021 data calculated from the average of January–October data.
Source: MNB calculation based on Eurostat data

The inflation gap between services and industrial goods declined significantly this year (Chart 6-7). In view of the economic reopening following the third wave of the coronavirus pandemic, repricing different from the seasonality was observed in the case of certain services during this year, while the prices of industrial goods rose to peaks unseen for years as a result of disruptions in supply chains, significant commodity price increases and energy market turbulence. In the periods of the lasting achievement of the inflation target in the countries under review, the inflation gap between services and industrial goods was typically around 2–3 percentage points. In the Czech Republic, the Netherlands and Slovenia it moved into negative territory this year, i.e. the price index of industrial goods was higher than that of services. In Hungary, Germany and Sweden the difference between the price indices of services and industrial goods has currently declined to 0.5–1.3 percentage points.

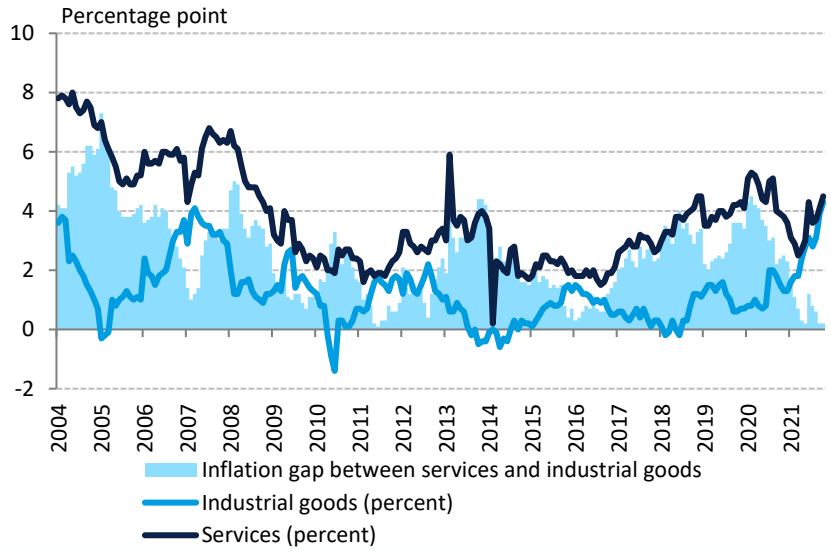
Chart 6-7: Changes in the inflation gap between services and industrial goods during the period of sustaining the inflation target and this year



Note: Based on data excluding indirect taxes calculated using the methodology of Eurostat. 2021 data calculated from the average of January–October data.
Source: MNB calculation based on Eurostat data

It is indispensable to reduce the inflation of industrial goods for the sustainable achievement of the inflation target (Chart 6-8). In the period when inflation was around the 3-percent central bank target, the price index of services was 3 percentage points higher on average than the prices of industrial goods, which is a natural phenomenon according to the Balassa–Samuelson effect for a small, open economy that is catching up. Wage dynamics are increasing in line with the improvement in productivity in the sectors that compete with the rest of the world (manufacturing), which determines the rise in wages in the labour market of the given country in the domestic services sector as well. In these sectors (tourism, personal services), however, productivity growth is typically lower, and thus higher inflation in services is a natural development in a catching-up, open economy. The global supply chain problems occurring in the period of the pandemic and the surge in energy and commodity prices raised the inflation of industrial goods to a historically high level, as a result of which the inflation gap between services and industrial goods practically disappeared. Although the inflation of services is close to a level corresponding to the historical average, as a result of the higher industrial goods price dynamics core inflation exceeds the level observed in the previous period of the lasting achievement of the target. Looking ahead, for the sustainable achievement of the inflation target it is necessary to reduce the inflation of industrial goods.

Chart 6-8: Historical changes in the inflation gap between services and industrial goods in Hungary



Note: Based on data excluding indirect taxes calculated using the methodology of Eurostat. 2021 data calculated from the average of January–October data.
Source: MNB calculation based on Eurostat data

7. Breakdown of the average consumer price index for 2021 and 2022

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

	Effect on CPI in 2021			Effect on CPI in 2022		
	Carry-over effect	Incoming effect	Yearly index	Carry-over effect	Incoming effect	Yearly index
Administered prices	-0.1	0.2	0.1	0.1	0.1	0.2
Market prices	0.7	3.7	4.4	2.5	2.0 - 2.4	4.5 - 4.9
Indirect taxes and government measures	0.2	0.4	0.6	0.0	0.0	0.0
CPI	**0.8**	**4.3**	**5.1**	**2.6**	**2.1 - 2.5**	**4.7 - 5.1**

Note: The tables show the decomposition of the yearly average change of the consumer price index. 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 the inflationary effects of changes in the indirect taxes, administered prices, and market prices (non-administered prices excluding indirect tax 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)

	2021					2022				
	Average carry-over effect	Carry-over indirect tax effect	Average incoming effect	Incoming indirect tax effect	Yearly index	Average carry-over effect	Carry-over indirect tax effect	Average incoming effect	Incoming indirect tax effect	Yearly index
Food	-0.9	0.0	4.4	0.0	3.5	2.5	0.0	4.4	0.0	6.9
non-processed	-3.5	0.0	6.1	0.0	2.6	0.5	0.0	6.0	0.0	6.5
processed	0.5	0.0	3.6	0.0	4.1	3.4	0.0	3.7	0.0	7.1
Tradable goods	1.0	0.0	2.6	0.0	3.6	2.8	0.0	1.8	0.0	4.6
durables	1.3	0.0	3.2	0.0	4.5	4.0	0.0	3.0	0.0	7.0
non-durables	0.8	0.0	2.3	0.0	3.1	2.1	0.0	1.2	0.0	3.3
Market services	0.8	0.0	3.2	0.0	4.0	2.0	0.0	3.4	0.0	5.4
Market energy	1.2	0.0	2.2	0.0	3.4	4.1	0.0	0.0	0.0	4.1
Alcohol and Tobacco	3.2	1.5	1.6	4.6	10.9	2.2	0.8	1.5	0.0	4.5
Fuel	2.5	1.2	20.7	-1.4	23.0	7.7	-0.5	-1.2	0.0	6.0
Administered prices	-1.1	0.0	1.7	0.0	0.6	1.0	0.0	0.5	0.0	1.5
Inflation	**0.6**	**0.2**	**3.9**	**0.4**	**5.1**	**2.6**	**0.0**	**2.1 - 2.5**	**0.0**	**4.7 - 5.1**
Core inflation	0.8	0.0	3.1	0.0	3.9	2.7	0.0	2.6 - 2.8	0.0	5.3 - 5.5

Note: The tables show the decomposition of the yearly average change of the consumer price index forecast range, for the sub-categories midpoint of the 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.

INFLATION REPORT

December 2021

Print: Prospektus Kft.

H-8200 Veszprém, Tartu u. 6.

mnb.hu

H-1013 BUDAPEST, KRISZTINA KÖRÚT 55.