INFLATION REPORT

2023
MARCH

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

Miklós Zrínyi: The Life of Matthias Corvinus

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

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

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

The analyses in this Report were prepared under the 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 financial stability.

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 23 March 2023.

Contents

List of boxes

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.

Global economic growth slowed in 2022 Q4, and GDP has already declined on a quarterly basis in several countries. Incoming data exceeded expectations, while the prolonged Russia-Ukraine war, the related sanctions, increased market uncertainties and the European energy crisis continue to pose a risk to growth prospects.

In 2022 Q4, economic growth slowed in the world’s major economies, but was mostly above expectations. The EU, the euro area and the US recorded year-on-year growth rates of 1.7 percent, 1.8 percent and 0.9 percent, respectively, exceeding analysts’ expectations. On the other hand, even the Chinese economy grew by merely 2.9 percent, falling short of expert projections. The performance of the German economy, Hungary’s most important export market, registered a quarter-on-quarter decline of 0.4 percent in the fourth quarter. Despite the further protraction of the Russia-Ukraine war, the related sanctions, increased market uncertainty and high inflation, consumer confidence and growth prospects slightly improved in recent months.

Inflation continues to be at historically high levels around the world; however, global developments point to a decline in price indices under increased uncertainty. Inflation has been moderating slowly but clearly in an increasing number of countries.

The slowdown in global economic activity, weakening demand, the correction in global energy and commodity prices and the fall in international freight costs point to a further decline in global inflation. Inflation in the US has been slowing on an annual basis since July. Inflation in the euro area amounted to 8.5 percent in February. In the CEE region, prices rose at double-digit rates: in Hungary by 25.4 percent, in Poland by 18.4 percent and in the Czech Republic by 16.7 percent in February, according to data supplied by national statistical offices.

In the past quarter, the world’s leading central banks continued to tighten monetary conditions. Among the central banks in the CEE region, the Czech and Polish central banks left the interest conditions unchanged, and the Romanian central bank did not raise the base rate further in February either.

At its February and March rate-setting meetings the Federal Reserve (Fed) raised the target band of its policy rate by 25-25 basis points to 4.75–5.00 percent on the whole, and looking ahead, it also anticipated some further tightening of interest rate conditions. In addition, reacting to financial market turbulences in the wake of bank failures, the Fed launched a new funding scheme and improved liquidity conditions by introducing dollar swap lines through a cooperation with several central banks. The European Central Bank (ECB) also continued its cycle of interest rate hikes, raising the key policy rates by 50–50 basis points at its February and March rate-setting meetings. The ECB stated in its press release that the euro area banking system was resilient, with strong capital and liquidity positions. The central bank decided last December on the reduction of its APP portfolio by an average of EUR 15 billion per month commencing in March, and on the further details of its balance sheet reduction this February.

The Polish central bank left its policy rate unchanged at 6.75 percent in the past quarter. The Czech central bank left the benchmark rate at 7 percent during the quarter. The central bank continues to stand ready to prevent excessive fluctuations of the exchange rate of the Czech koruna. At its January rate-setting meeting, the Romanian central bank raised the policy rate by 25 basis points to 7 percent, then left the base rate unchanged at its February rate-setting meeting. Based on its announcement, the Romanian central bank continues its wait-and-see approach until inflation falls below the base rate’s level of 7 percent. The Magyar Nemzeti Bank has maintained the interest rate on the key policy instrument at 13 percent since September, and the interest rate on the one-day deposit quick tender at 18 percent since mid-October. In addition, by raising the required reserve ratio further and introducing a tiered interest rate structure, the Monetary Council further tightens the impact of the minimum reserve instrument on liquidity.

Overall, investor sentiment deteriorated in the past quarter. Lessening fears of recession and declining commodity prices eased global financial market tensions at the beginning of the period; however, the escalation of concerns about the stability of certain banks significantly deteriorated sentiment from mid-March.

In the past quarter, asset price developments were essentially influenced by the news related to the war, expectations with regard to the path of interest rate increases by the world's leading central banks, the persistently high inflation environment, declining fears of recession and the expected impacts of the reopening of the Chinese economy. Of recent events, investor sentiment was strongly influenced by the risks surrounding the banking sectors of the United States and Switzerland, which also had an unfavourable impact on risk assessment of emerging market instruments. As a result of strict communication by the Fed and ECB, and in parallel with incoming inflation figures, expectations regarding developed market interest rate paths rose further in the first half of the period; however, risks surrounding US banks and March forecasts of the Fed's decision-makers materially shifted them downward.

Commodity and energy prices declined in the past quarter, overall. The easing of fears of recession and the economic reopening in China caused prices to rise; however, a milder winter and the high level of reserves in European gas storage facilities significantly reduced gas prices in Europe. The dollar depreciated against major developed market currencies and currencies of the narrow Central and Eastern European region. Both developed market long-term bond yields and international stock market indices rose overall throughout most of the period; however, in the period after the strengthening of fears concerning the stability of certain banks, risk perception deteriorated significantly, stock market indices fell, as yields and interest rate expectations declined. Developed market equity indices rose while long-term bond yields fell in the past quarter.

Hungarian interbank yields and government securities market yields remained broadly unchanged, while the forint strengthened against the euro overall.

In the past quarter, the short end of the government securities market yield curve shifted upwards, while its middle and long sections remained broadly unchanged. Interbank interest rates increased slightly, while foreign exchange swap yields rose. In the period under review, the forint gradually strengthened against the euro, while it was volatile in the first half of March. The domestic currency appreciated by 3.5 percent in the period as a whole.

The consumer price index in Hungary is expected to decline moderately in the coming months, followed by an acceleration in the disinflationary process in the second half of the year. In 2023, the price-suppressing effect of tight monetary policy, falling global commodity prices and declining domestic consumption will become increasingly more pronounced. Domestic inflation may fall to single-digits by the end of the year. The consumer price index is expected to return to the central bank tolerance band in 2024.

Based on available data, domestic inflation peaked in January. Looking ahead, the continued fall in annual price dynamics is supported by both external and internal factors. Global energy and commodity prices, as well as international freight costs moderated significantly, tensions in value chains eased, and the slowdown in global economic activity further curbs external inflation. Food inflation declined in both January and February. The continued decline in food price inflation is supported by the continuously decreasing global food base material prices.

Internal factors also significantly contribute to the deceleration in inflation. In 2023, tight monetary conditions exert their disinflationary impact in a widening range, causing a substantial slowdown in inflation. Companies' pricing practices also widely contributed to the rise in prices, which is also evidenced by a remarkable growth in corporate profits. This effect may be primarily mitigated by the strengthening of market competition. The decline in domestic demand narrows enterprises' room for manoeuvre in pricing, while interventions by the Hungarian Competition Authority also support an increasingly disciplined pricing behaviour. In the next months, the consumer price index is expected to decline slowly, while after the lapse of the base effect of household energy prices and certain tax measures, the process of disinflation will accelerate from the middle of the year. Domestic inflation will decrease slowly in the first half of 2023, and then more significantly from the middle of the year. The consumer price index will return to the central bank tolerance band in 2024. Inflation is expected to range between 15.0–19.5 percent in 2023, 3.0–5.0 percent in 2024 and 2.5–3.5 percent in 2025.

This year's growth is characterised by a duality in terms of structure and time. Looking ahead, economic growth is likely to slow this year, primarily as a result of the fall in domestic demand. Declining real wages and the rise in corporate costs also contribute to this, while the increasing external market share supports GDP growth through net exports.

The Hungarian economy grew by 4.6 percent in 2022. Growth dynamics slowed down in the last quarter of the year. Based on detailed data, GDP grew by 0.4 percent in the last three months of the previous year relative to a year earlier. Incoming data were in line with previous expectations, but high-frequency data point to a further slowdown in GDP growth at the beginning of this year. The time profile and structure of domestic GDP is characterised by a duality this year. Output growth will be weighed down mainly by domestic demand factors, as high inflation reduces household real income, which in turn leads to a further slowdown in consumption. A rise in corporate costs and the uncertain outlook for demand is expected to result in the postponement and rescheduling of investments. Economic growth is expected to pick up again from the second half of the year as inflation declines markedly and investment recovers.

Both internal and external factors may make a positive contribution to growth in 2024. The investment rate is expected to stabilise at around 28 percent over the forecast horizon due to high price dynamics. Hungary's GDP is expected to increase by 0.0–1.5 percent in 2023, by 3.5–4.5 percent in 2024 and by 3.0–4.0 percent in 2025.

The capital and liquidity positions of domestic banks are stable; banks continuously comply with regulatory requirements with robust buffers based on regularly performed stress tests and are able to meet the economy's financing needs. However, the private sector's credit expansion may continue to decelerate due to growing lending rates and the uncertain economic outlook.

The annual growth rate of the whole financial intermediary system's stock of outstanding corporate loans slowed by 1.6 percentage points compared to the previous quarter and reached 14.9 percent in December. Unique, large corporate credit transactions, partly related to the financing of Hungary's energy demand, also made a significant contribution to maintaining high growth. SME credit dynamics, better capturing the underlying trends, grew at a slower rate, by 12.6 percent, year-on-year. Seventy-three percent of corporate loans were realised on market terms and conditions. This ratio fell short of the 84 percent level seen in Q3, due to the increased use of the Széchenyi Card Programme. According to responses to the Lending Survey, banks tightened lending standards in the fourth quarter, and looking ahead, they expect a further tightening. Banks primarily justified the tightening with cyclical factors. Still only a narrow circle of banks cited liquidity and capital situation as tightening factors. This shows that banks' lending capacity is still at a high level. There was a rise in demand for short-term loans, but the vast majority of banks saw declines in demand for long-term (typically investment) loans in 2022 Q4, and looking ahead, they expect this diverging trend to strengthen. Due to rising lending rates and an uncertain real economic environment, the annual growth rate of outstanding corporate loans may slow to 8 percent by early 2024 overall, and may stabilise around this level until the end of the time horizon.

In 2022 Q4, slowing by 1.1 percentage points relative to the previous quarter, the annual growth rate of outstanding household loans was 5.3 percent. The volume of housing loans and personal loans disbursed fell short of the year-on-year figure by 54 percent and 18 percent, respectively, which – in the case of housing loans – was also attributable to the high base resulting from the launch of the Green Home Programme in 2021. In the responses to the Lending Survey, banks reported declining demand for consumer and housing loans, and looking ahead, the banks expect declines in the demand and a tightening of lending standards in both market segments. Annual growth of outstanding household loans may decelerate to 2 percent by mid-2023, but will return to around 10 percent by 2024 H2.

The current account deficit will be halved this year.

Due to a worsening energy balance resulting from soaring energy prices, the current account deficit temporarily rose in 2022, before steadily declining from 2023. In addition to the improving energy balance resulting from declining energy prices, the improvement is attributable to rising exports and the slowdown in import growth due to the deceleration of investment and consumption dynamics. In 2024, with the normalising global economic environment, as well as the utilisation of new export capacities built recently, the trade balance will continue to improve. As a result of the above, the current account deficit will be halved in 2023, while by the end of the forecast horizon, Hungary's net lending will become positive once again.

According to preliminary financial accounts statistics, the 2022 deficit target, which was raised to 6.1 percent, was met. Pursuant to the submitted amendment of the Budget Act, the 2023 deficit target rises from 3.5 percent to 3.9 percent, while the targets for 2024 and 2025 remain 2.5 percent and 1.5 percent, respectively. The decline in energy prices helps to contribute to meeting the deficit targets; however, tight budget management is necessary to achieve the targets. Based on preliminary data, the government debt ratio has decreased to 73.6 percent of GDP by the end of 2022, and it is expected to decline to 69 percent this year and close to 65 percent by the end of the forecast horizon.

Inflation risks and the outlook for growth are balanced.

The Monetary Council highlighted four alternative scenarios around the baseline projection in the March Inflation Report. The risk scenario featuring decelerating global economic activity presumes growth and inflation paths that are lower than the baseline scenario. The scenario presenting an increase in the risk of second-round inflationary effects presumes a higher inflation path and a somewhat higher growth path compared to the baseline scenario. In the alternative scenario presuming capital withdrawal from the emerging markets, higher inflation is accompanied by more moderate growth. As a result of the more cautious consumer behaviour, the risk scenario assuming lower consumption results in a lower inflation and growth path compared to the baseline scenario.

SUMMARY TABLE OF THE BASELINE SCENARIO

(Forecast based on endogenous monetary policy)

	2022	2023	2024	2025
	Actual		**Projection**	
Inflation (annual average)[1]				
Core inflation	15.7	16.9 -19.4	4.4 -6.4	3.0 -3.6
Core inflation excluding indirect tax effects	15.6	16.9 -19.4	4.4 -6.4	3.0 -3.6
Inflation	14.5	15.0 - 19.5	3.0 - 5.0	2.5 - 3.5
Economic growth				
Household consumption expenditure	6.6	(-2.0) - (-1.1)	2.1 - 3.1	2.3 - 3.3
Government final consumption expenditure[6]	1.7	(-0.3) - 1.5	0.3 - 1.6	0.9 - 2.0
Gross fixed capital formation	2.2	(-5.9) - (-3.0)	2.7 - 5.6	2.6 - 5.5
Domestic absorption	3.9	(-2.5) - (-1.2)	2.0 - 3.2	2.2 - 3.4
Exports	10.3	3.8 - 6.1	5.2 - 7.2	3.7 - 5.4
Imports	9.5	0.7 - 3.0	3.4 - 5.6	2.7 - 4.7
GDP	4.6	0.0 - 1.5	3.5 - 4.5	3.0 - 4.0
Labour productivity[5]	2.7	0.3 - 1.1	3.1 - 4.4	2.4 - 3.8
External balance[2]				
Current account balance	-8.1	(-4.4) - (-3.2)	(-2.3) - (-0.9)	(-1.3) - (0.1)
Net lending	-6.1	(-2.1) - (-0.9)	(-0.4) - (1.0)	(0.3) - (1.7)
Government balance				
ESA balance	-6.1	-3.9	-2.5	-1.5
Labour market				
Whole-economy gross average earnings[3]	17.6	11.3 - 12.2	8.4 - 9.6	6.6 - 7.9
Whole-economy employment	1.3	(-0.2) - 0.1	(-0.1) - 0.6	(-0.1) - 0.6
Private sector gross average earnings[3]	15.7	13.7 - 14.4	9.1 - 10.1	6.9 - 8.1
Private sector employment	2.1	(-0.1) - 0.2	0.2 - 0.7	0.0 - 0.6
Unemployment rate	3.6	3.6 - 3.7	3.1 - 3.6	2.9 - 3.7
Private sector nominal unit labour costs	9.9	13.0 - 14.3	4.5 - 6.2	3.7 - 5.4
Household real income[4]	6.0	(-1.4) - (-0.6)	2.1 - 3.3	2.2 - 3.4

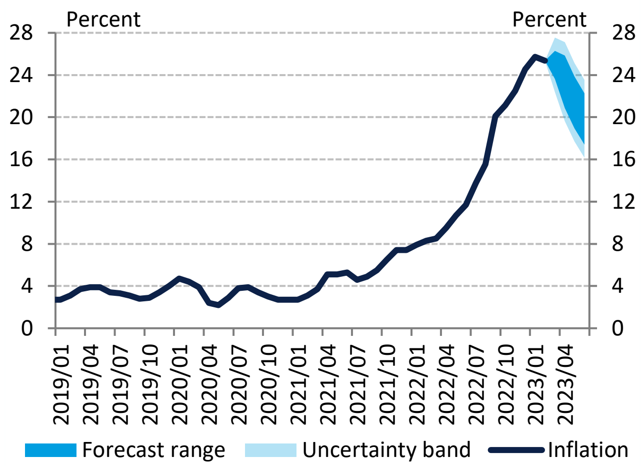
[1] Based on seasonally unadjusted data.
[2] GDP proportionate values, partly based on forecast.
[3] For full-time employees.
[4] MNB estimate.
[5] Whole economy, based on national accounts data.
[6] Includes government consumption and the transfers from government and non-profit institutions.

1 Inflation and real economy outlook

1.1 Inflation forecast

Inflation peaked at 25.7 percent in January, while consumer prices increased at a year-on-year rate of 25.4 percent in February. External factors point towards disinflation: Along with freight costs, energy and commodity prices have fallen significantly, and the slowdown in global economic activity is also alleviating external inflationary pressure. While food price inflation in Hungary is still considered high by both historical and international comparison, the rate of yearly price change already fell in February for the second consecutive month. However, repricing was higher than usual at the beginning of this year in the case of the core inflation basket, excluding food, and particularly in the case of market services. In the course of 2023, the disinflationary effect of tight monetary policy as well as lower global commodity prices and weaker domestic consumption will become increasingly pronounced. Tight monetary conditions help to mitigate second-round inflationary effects, and to moderate inflation expectations. The acceleration of disinflation will also be supported by last year's high bases. Domestic inflation is expected to decrease slowly in the first half of 2023 and then fall more quickly from the middle of the year. However, the uncertainty remains significant, and thus we maintain our prognosis for average inflation of 15.0–19.5 percent in 2023. Inflation is expected to return to the central bank tolerance band in 2024. According to our forecast, the consumer price index will be 3.0–5.0 percent in 2024 and 2.5–3.5 percent in 2025.

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



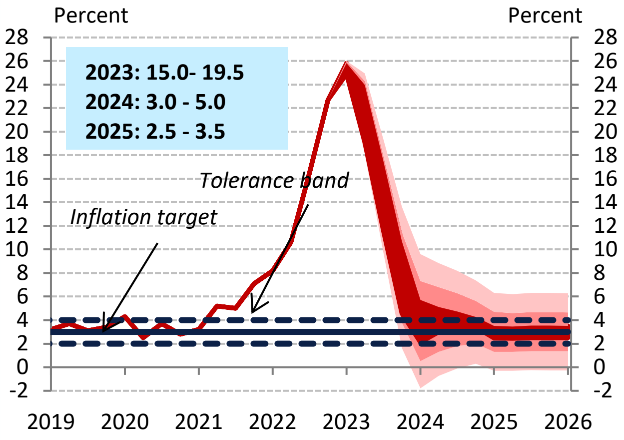
Note: Annual change. The uncertainty band shows the uncertainty around the forecast range with regards to the root mean squared error of previous years' near-term forecasts.
Source: HCSO, MNB

According to our projection, inflation will continue to slowly moderate in the coming months, and the decline will accelerate in 2023 H2. In the course of 2023, the disinflationary effect of tight monetary policy as well as lower global commodity prices and weaker domestic consumption will become increasingly pronounced. Tight monetary conditions help to mitigate second-round inflationary effects, and to moderate inflation expectations. Inflation is projected to drop slowly in 2023 H1 and then more quickly from mid-year. The increased profits also leave room for the moderation of inflation. The inflation outlook is still characterised by above-average uncertainty, partly due to external factors and partly due to internal adjustment.

Inflation is projected to return to the central bank's tolerance band in 2024. Compared to our previous expectations, lower food and energy prices offset the higher inflation of demand-sensitive items at the level of the consumer price index. Inflation may be 15.0-19.5 percent in 2023, 3.0–5.0 percent in 2024 and 2.5-3.5 percent in 2025 (Chart 1-2).

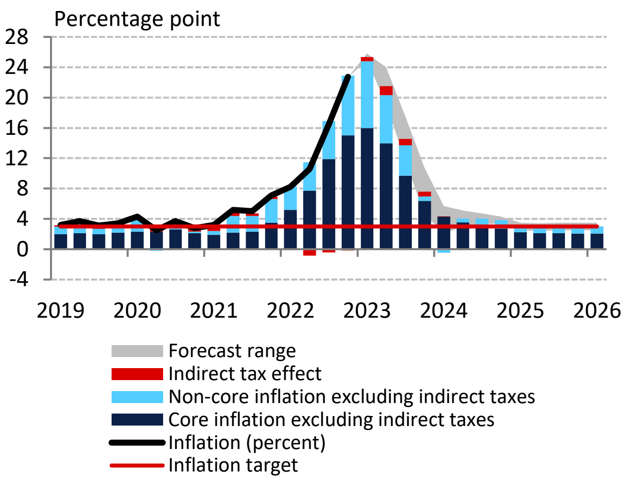
Our forecast estimates core inflation excluding indirect tax effects at 16.9–19.4 percent in 2023, 4.4–6.4 percent in 2024 and 3.0–3.6 percent in 2025. Despite the more favourable cost environment, higher underlying dynamics indicate a further rise in profits. Similar to external economic activity, economic growth is expected to decelerate in Hungary as well; in addition, the central bank measures implemented in the past quarters and the high bases also reduce the rise in prices.

Chart 1-2: Fan chart of the inflation forecast



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

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

		2023	2024	2025
Core inflation excluding indirect tax effects		16.9 -19.4	4.4 -6.4	3.0 -3.6
Core inflation		16.9 -19.4	4.4 -6.4	3.0 -3.6
Non-core inflation	Unprocessed food	17.0	2.2	4.5
	Fuel and market energy	28.5	-4.8	1.0
	Regulated prices	14.4	2.1	2.0
	Alcohol and tobacco	13.9	3.2	3.0
Inflation		**15.0 - 19.5**	**3.0 - 5.0**	**2.5 - 3.5**

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

Tax changes contribute to a temporary increase in inflation, before fading out completely from 2024 Q2 (Chart 1-3). The July 2022 increases in the excise tax on alcohol and tobacco products and the public health product tax have been incorporated into consumer prices. At the beginning of this year, some special taxes continued to rise, which may affect the development of the price index, but at the same time, the inflationary effect of this is less than the effect of last year's tax measures. Tax measures are expected to exert an effect until 2024 Q2.

In the case of items excluded from core inflation, the fall in global energy and crude oil prices as well as in food raw material prices points to a decline in the prices of fuels and unprocessed food. Global energy prices (gas and electricity) have dropped significantly in recent months and are thus currently below the levels prior to the Russia-Ukraine war. Brent crude oil price fell below $80/barrel in March. The fall in global food raw material prices supports a further decline in food price inflation. Unprocessed food inflation peaked in November, and the annual price increase in this product group may fall short of our previous expectations, remaining below 20 percent on average this year. Next year, the increase in unprocessed food prices may already be in the single-digit range. For alcohol and tobacco products, inflation may be around 14 percent this year (mainly due to excise tax hikes), before declining to the historically average level starting from 2024. According to our forecast, as result of amending the utility prices (gas and electricity prices), inflation of regulated energy prices will be around 40 percent on average in 2023. In our analysis, we applied the technical assumption that the measures impacting household energy and food prices will remain in force in unchanged form over the entire forecast horizon. On the whole, after the cost effects fade out, the price dynamics of non-core inflation items may be around 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	2023		2024		2025		Change		
	Previous	Current	Previous	Current	Previous	Current	2023	2024	2025
EUR/USD	1.04	1.07	1.04	1.07	1.04	1.07	2.4%	2.3%	2.3%
Oil (USD/barrel)	84.2	75.9	80.6	71.6	80.4	71.1	-9.9%	-11.3%	-11.5%
Oil (EUR/barrel)	80.8	71.1	77.3	67.1	77.1	66.7	-12.0%	-13.2%	-13.5%
Gas (EUR/MWh)	139.8	46.1	105.6	49.5	95.2	49.0	-67.0%	-53.2%	-48.6%
Euro area inflation (%)	6.3	5.3	3.4	2.9	2.3	2.1	-1.0 pp.	-0.5 pp.	-0.2 pp.
Euro area real GDP (%)	0.5	1.0	1.9	1.6	1.8	1.6	0.5 pp.	-0.3 pp.	-0.2 pp.
GDP growth of Hungary's main export partners (%)	0.0 - 0.8	(-0.2) - 1.0	2.4 - 3.3	2.4 - 3.3	1.9 - 2.7	1.9 - 2.7	(-0.2) - 0.2 pp.	0.0 pp.	0.0 pp.

Source: Bloomberg, Consensus Economics, MNB, ECB.

Economic growth was better than expected in most European countries in 2022 Q4. In this period, the economy of the European Union and of the euro area expanded by 1.7 percent and 1.8 percent, respectively, in seasonally adjusted, year-on-year terms. Economic output exceeded the pre-coronavirus crisis level in 25 of the EU-27 countries in the fourth quarter, while on a quarterly basis output fell in 10 countries. Germany, which is Hungary's most important trading partner, remains near the bottom of the European ranking in terms of recovery, which affects the other countries in the region as well due to their embeddedness in production chains. Despite the better-than-expected growth in 2022 Q4, compared to December the growth prospects for Hungary's export markets for 2023 have not changed materially, due to the uncertainties about international economic activity. In the other major economies, year-on-year GDP growth amounted to 0.9 percent in the USA and 2.9 percent in China in the fourth quarter. In addition to the protracted war and high inflation, energy prices, which are moving on a downward path, are a key factor in the development of the international growth outlook.

Compared to the December forecast, higher growth and more moderate inflation is expected in the euro area this year. While GDP growth in the euro area is expected to be slightly more favourable during the current year, going forward it may be weaker than previously expected, and is thus projected to amount to 1.0 percent in 2023, 1.6 percent in 2024 and 1.6 percent in 2025. According to the ECB's March forecast, euro area inflation may come in at 5.3 percent in 2023, 2.9 percent in 2024 and 2.1 percent in 2025. Falling energy prices contribute to both higher growth and lower inflation in the euro area this year.

The price of Brent crude oil fell below USD 80 in the second half of March, due to increased uncertainty. The decline in oil prices observed in March is primarily attributable to weakening international sentiment, owing to increased risks. Crude oil prices declined despite the fact that China's demand for oil is rising (according to the expectations of OPEC by 710,000 barrels per day in 2023) due to reopening of the country's economy. On the supply side, at the OPEC+ meeting in February, the production cut that was announced in October, amounting to 2 million barrels per day, was maintained for 2023. The volume of Russian crude oil received by Europe has fallen substantially in the past year.

The price of petrol and diesel both recently declined in Hungary. Hungary still receives Russian Ural crude by pipeline, but accounting in production takes place at the international Brent oil price; consequently, the Brent price quoted in USD and the USD/HUF exchange rate have a significant impact on fuel prices. The government cancelled the price cap on fuel in December 2022, meaning that the prices of petrol and diesel rose to market levels from the administrative price of HUF 480. In line with the international trends, in Hungary the market price of petrol and diesel fell to around HUF 600 by end-March.

The significant decline in TTF gas prices continued in recent months. Evolution of the domestic and European purchase price of natural gas follows the Dutch TTF gas price, which reached its historical high above EUR 300 in August 2022. From the second half of December, yet another significant fall was registered in the price of natural gas; at the end of March, the future price of TTF gas for next month was near levels of EUR 40–44. The milder-than-usual weather in winter, the high filling level of gas storage facilities and moderate demand also contributed to the lower gas prices. Changes in gas prices also affect the price of electricity via gas-fired power plants. In line with the drop in gas prices, the 7-day moving average of the electricity price for the German Phelix fell below EUR 100 by end-March from the levels close to EUR 400 seen in mid-December.

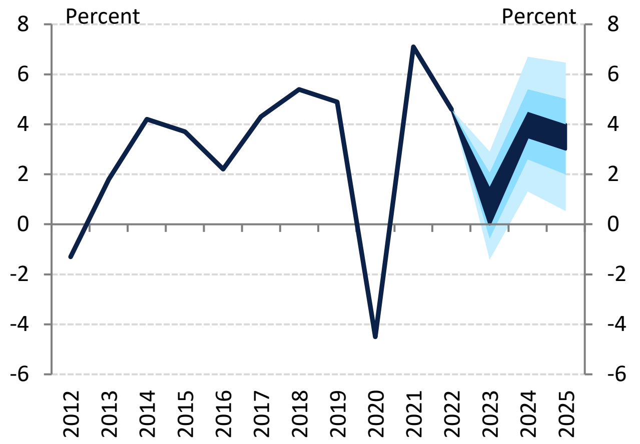
The deficit target in the 2023 budget is 3.9 percent, while for 2024 and 2025 it is 2.5 and 1.5 percent, respectively. According to the preliminary financial account statistics, the realisation of the budget deficit of 2022 at 6.1 percent was in line with the deficit target. As a result of the amendment of the 2023 budget, the deficit target rose from 3.5 percent to 3.9 percent, the achievement of which is supported by the fall in energy prices, in addition to which tight fiscal management is essential for the realisation of the target. Based on preliminary data, the government debt ratio fell to 73.6 percent of GDP by the end of 2022 from 76.8 percent at the end of 2021. It may decline to 69 percent this year and then reach nearly 65 percent by the end of the forecast horizon.

Following approval of the Hungarian Recovery and Resilience Plan and the signing of the Partnership Agreement, uncertainty about EU grants decreased, while absorption of the grants still has not started due to the ongoing disputes. Our baseline scenario assumes that there will be an agreement and the EU funds will be fully available.

1.2 Real economy forecast

Hungary's economic growth continued to decelerate in 2022 Q4 on an annual basis. While GDP expanded by 0.4 percent in year-on-year terms, economic activity declined over two consecutive quarters. Domestic output this year may be characterised by duality in terms of its time profile and structure. GDP may decline further in 2023 Q1 on a quarterly basis, due to the slowdown in domestic demand, and a material change is only expected from the second half of the year, which may be supported by a pick-up in investments. Structurally, net exports make a positive contribution to annual growth, while domestic demand components fall. While household consumption will decline this year due to the high inflation, starting from next year, lower consumer price dynamics will boost the purchasing power of wages, thereby setting consumption on a growth path again. The 2023 decline in investments may exceed our December expectations, but we anticipate expansion in 2024 and 2025. The nominal investment rate will stabilise at a high level of close to 28 percent over the forecast horizon, but the investment rate at constant prices will be significantly lower than that. Despite the favorable incoming data, our external demand assumption for 2023 remains unchanged due to the uncertainties. Import growth will decelerate sharply in 2023, primarily due to the slowdown in domestic demand, while Hungary's exports will be able to increase considerably this year as well, and thus net exports may make a positive contribution to growth. Economic growth is projected to be 0.0–1.5 percent in 2023 and 3.5–4.5 percent in 2024. In 2025, GDP may approach its long-term growth trend, thus increasing by 3.0–4.0 percent.

Chart 1-4: Fan chart of the GDP forecast

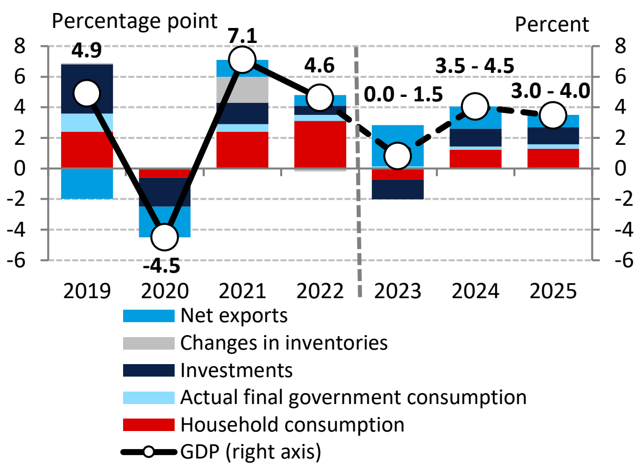


Note: Based on unadjusted data.
Source: HCSO, MNB

Hungary's economic growth continued to decelerate in 2022 Q4. While Hungary's GDP rose by 0.4 percent in year-on-year terms, economic output contracted over two consecutive quarters on a quarter-on-quarter basis, i.e. a technical recession was registered. Market services and industry were the main contributors to annual economic growth from the production side, while agriculture hampered GDP due to the extraordinary drought.

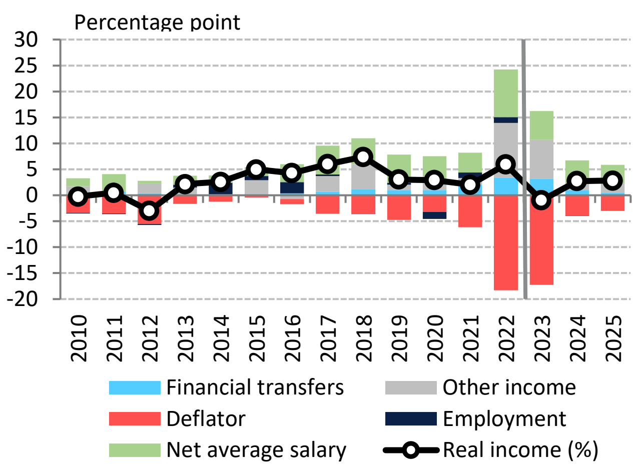
We project GDP growth of 0.0–1.5 percent for 2023 as a whole, looking ahead, Hungary's growth is characterised by duality in terms of its time profile and structure this year (Chart 1-4)**.** According to our expectations, in the short term, i.e. on a quarterly basis, GDP will contract further in the first three month of 2023. This is partly attributable to the fact that the high inflation environment may exert a negative impact on the real value of households' earned income, foreshadowing weaker consumption on an annual basis in the coming quarters. The increase in corporate costs and the slowdown in domestic demand may result in the postponement of investments in the first half of this year, and thus gross fixed capital formation is likely to decline in 2023. External demand continues to be influenced by the Russia-Ukraine war, sanction policies, increased market uncertainties and high inflation, which essentially pose downside risks. Exports may rise at a slower pace than in 2022, but due to weaker imports linked to domestic demand, net exports will make a positive growth contribution in 2023. From the third quarter of this year, in addition to net exports, recovering growth in investments may support the resumption of economic growth, while the slowdown in household consumption may last until the end of 2023 (Chart 1-5).

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



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

Chart 1-6: Decomposition of annual changes in household disposable income



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

Due to carry-over effects, economic acceleration from mid-year will stimulate GDP growth in 2024. The rebound in economic activity is fostered by the positive impact of inflows of foreign direct investment on exports and renewed growth in households' real earnings from the start of next year (Chart 1-6). Hungarian GDP may expand by 3.5-4.5 percent in 2024 and 3.0–4.0 percent in 2025.

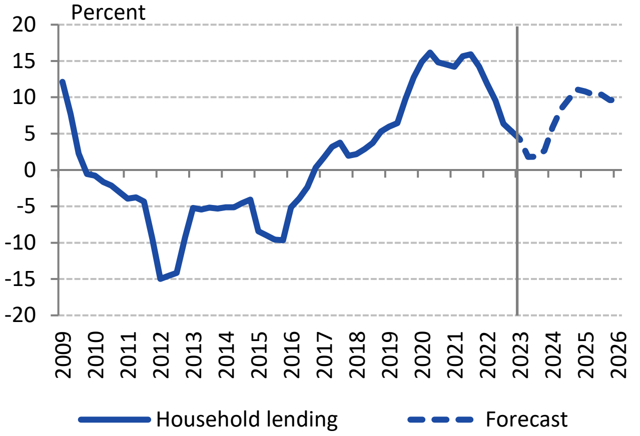
After the temporary slowdown, the growth surplus of the Hungarian economy compared to the euro area may be maintained. In our baseline scenario, assuming the successful absorption of EU funds, Hungary's growth surplus is projected to average 1.4 percentage points between 2023 and 2025, returning to around 2 percentage points by the end of the forecast horizon.

Year-on-year consumption growth is projected to decline this year. The deterioration in income conditions is primarily caused by the high inflation, resulting in a fall in the purchasing power of wages. This year, we expect a fall in households' real disposable income, and in parallel with that, the annual rate of consumption growth will decline. However, the fall in earnings will be offset somewhat by the rise in entrepreneurial incomes and households' interest income. From early 2024, households' real income will rise in parallel with the decline in inflation, and in line with that consumption will also return to a growth path (Chart 1-6).

The growth rate of households' outstanding borrowing may decline further, in conjunction with the slowdown in the real economy and the rising interest rate environment (Chart 1-7). In light of the actual quarterly figures for 2022 Q4, lending to households slightly exceeded our previous expectations, in part due to demand brought forward for prenatal baby support loans. On the other hand, the volume of new contracts concluded during the period fell short of the year-on-year figure by 34 percent. Looking ahead, the growth rate in the outstanding borrowing of households may fall short of our previous expectations: the uncertain real economic environment, the increasing interest rate environment and tighter credit conditions may all curtail households' propensity to borrow. Household loan dynamics may decelerate to 2 percent by mid-2023, but then return to around 10 percent from 2024 H2. In real terms, this means a decline in household loans outstanding looking one year ahead, and the real growth rate may become positive again from the beginning of 2024.

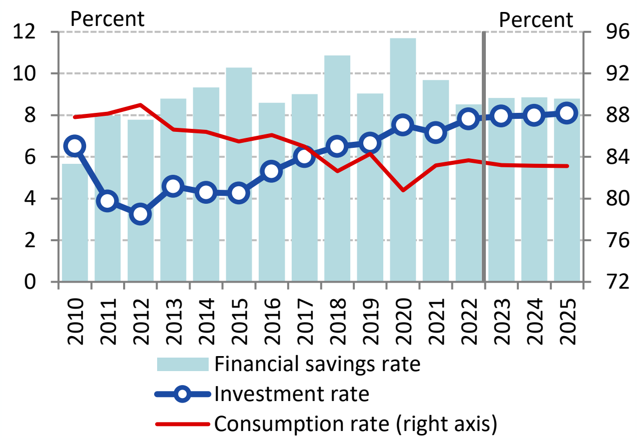
In 2022, due to rising inflation and higher utility costs, real earnings growth fell to nearly 3 percent by the end of the year, from roughly 10 percent at the start of the year. On the whole, the slowdown resulted in a lower saving rate, while the consumption rate increased. The rise in households' investment ratio was primarily caused by the

Chart 1-7: Annual change in lending to households



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

Chart 1-8: Evolution of households' consumption, investment and financial savings rates as a percentage of disposable income



Source: HCSO, MNB

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

	2023	2024	2025
Gross fixed capital formation	-4.4	4.2	4.0
Government investments	-3.0	-2.0	-1.1
Private investments	-4.7	5.7	5.1
Investment rate	27.5	27.6	28.0

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

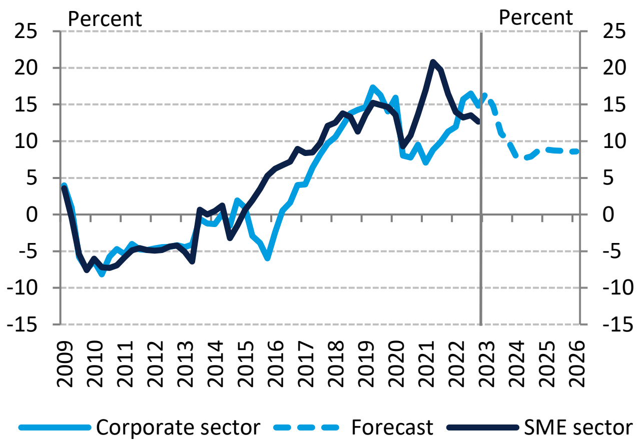
growth in home improvements and in the price index of investments. **Over the forecast horizon, however, we expect a moderate decline in the consumption rate and an increase in the savings rate** (Chart 1-8).

The contraction in investments in 2023 may exceed our December expectations, but we still expect growth in 2024 and 2025 (Table 1-3). This year, the decline is attributable not only to public investments, but also to corporate and household investments, whereas investments are likely to decrease only in the public sector in 2024 and 2025. The nominal investment rate will stabilise close to 28 percent over the forecast horizon; however, this is mostly the consequence of the rise in the price of investments. The investment rate calculated at constant (fixed 2015) prices has been steadily declining since 2019 and was below 25 percent in 2022. The gap between the rates may persist over the forecast horizon.

The growth rate of outstanding lending to corporations may decelerate tangibly in the second half of the year (Chart 1-9). In light of the figures for 2022 Q4, the annual growth rate of outstanding lending to non-financial corporations was moderately below our previous expectations. During the quarter, the relatively high nominal corporate credit dynamics were maintained by large transactions exceeding HUF 5 billion, banks' lending capacities and the working capital financing requirements generated by rising prices. The share of market-based loans within new corporate loan contracts decreased considerably in the fourth quarter, in parallel with the strong upswing in the Széchenyi Card Programme Max scheme. Due to individual large transactions, the credit institution sector registered sizable growth in transactions in January, in excess of HUF 400 billion. As a result of this, the growth rate of outstanding lending to non-financial corporations may still accelerate moderately in the first quarter. On the demand side, due to the rising energy and commodity prices, corporations' demand for working capital loans may still increase in the next period, while the supply side may be supported by expanded subsidised lending schemes. According to our estimates, however, corporate credit dynamics may decelerate in the uncertain environment to 8 percent by early 2024 and stabilise around this level until the end of the forecast horizon. In real terms, this means a decline in corporate loans outstanding looking one year ahead, and the real growth rate may become positive again from mid-2024.

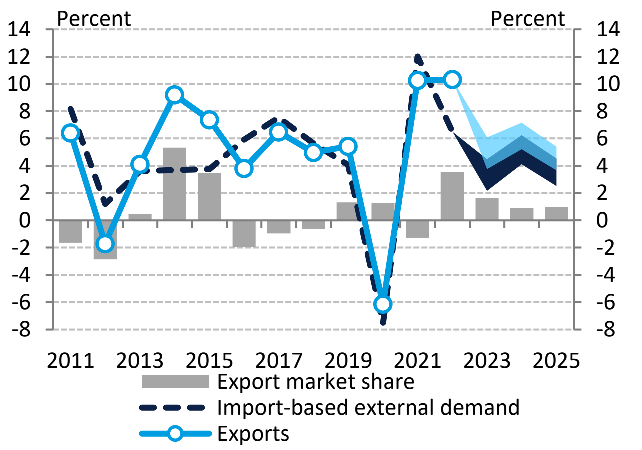
In 2023, corporate investment activity may decrease to a larger degree than previously expected. Corporate investment is expected to contract in 2023, primarily as a result of elevated financing and operating costs, but

Chart 1-9: Annual change 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: Changes in export market share



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

corporate investments are expected to expand in 2024 and 2025. Looking forward, the launch of the announced large-scale manufacturing investments (e.g. battery production) points to growth in corporate investments.

Household investments are expected to decline in 2023 and to grow in 2024–2025. The disbursement of housing loans in 2022 Q4 fell short of the same quarter of 2021 by 54 percent, suggesting a decline in household investments this year. However, the reduction of government investment may free up capacity in the construction industry, supporting the expansion of housing construction from the supply side. In addition, the subsidised housing schemes continue to contribute to households' investments.

The volume of public investments will decrease each year over the forecast horizon. In line with the available information, the volume of investment implemented by the state may fall by 3.0 percent in 2023, by 2.0 percent in 2024 and by 1.1 percent in 2025.

Short-term and medium-term developments in external demand continue to be primarily affected by the protracted Russia-Ukraine war, the economic sanctions imposed in response and persistently high inflation. Due to the higher interest rate paths, the recently emerging financial uncertainty and persistently high inflation, global and European growth prospects remained unchanged compared to December. Accordingly, our external demand assumption for 2023 remains constant. The decline in Hungarian and international business survey indices halted in recent months, but consumer confidence is still extremely low.

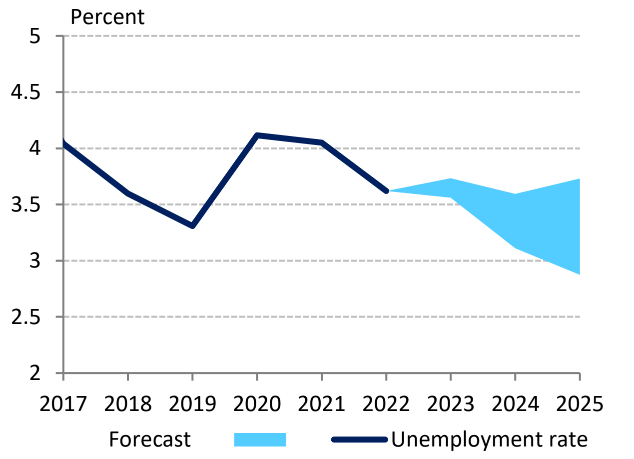
Net exports will make a significant growth contribution in 2023. In 2022 Q4, exports expanded in line with our preliminary expectations, but due to the uncertainties about external business activity, our forecast for this year has deteriorated slightly compared to December. The purchasing power of Hungary's trading partners is decreasing as a result of high inflation; nevertheless, Hungary's exports will be able to grow significantly this year as well, largely supported by the pick-up of production from earlier greenfield investments. Import growth dynamics will weaken significantly in 2023, mainly due to deceleration in domestic demand items, while exports will show growth. Accordingly, net exports may make a positive contribution to domestic growth in 2023. Hungary's export market share increased significantly in 2022, which may continue at a lower rate from 2023 (Chart 1-10). Our forecast is surrounded by high uncertainty due to the persistent geopolitical tensions and high inflation environment.

1.3 Labour market forecast

Labour demand has so far not reacted significantly to the economic slowdown and remains robust. Despite the high inflation, which is likely to persist during the first half of the year, and the slowdown in economic output, we expect no material change in the level of employment. The private sector headcount is expected to stagnate in 2023, followed by a moderate rise in 2024. The unemployment rate may be 3.6–3.7 percent this year. Wage dynamics in 2023 are driven by the significant increase in minimum wage at the beginning of the year and by the historically high labour market tightness, while the expected deceleration of economic performance in the first half of the year and the decline in inflation expectations may act as mitigating factors. This year, we project growth of 13.7–14.4 percent in private sector average earnings.

Labour demand has so far not reacted significantly to the economic slowdown and remains robust. Labour market tightness is historically high, at nearly the pre-pandemic level. Based on the figures from early this year, the number of new vacancies is rising again. On the other hand, the decline in economic output anticipated for the first half of the year could be an obstacle to employment growth in 2023. According to the February ESI survey of employment expectations, among the key sectors, the majority of companies in construction and in the trade sector are planning reductions, while the majority of firms plan to increase headcounts in other market services and manufacturing. The latest data reflect an upward trend in employment expectations in construction and a downward trend in manufacturing.

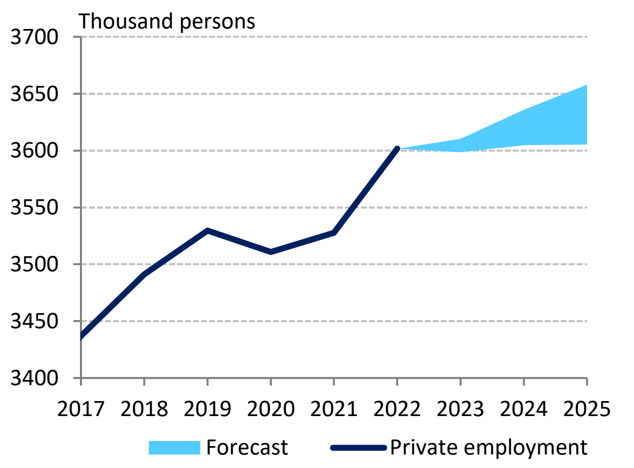
Chart 1-11: Change in the unemployment rate



Source: HCSO, MNB

Despite the economic slowdown, we do not expect to see substantial growth in the unemployment rate. Total employment remains at a historically high level. Labour market participation has been trending upwards in Hungary since mid-2020, but is expected to decline slightly in 2023 and stabilise at a higher level thereafter.The seasonally adjusted unemployment rate was at 3.7 percent in 2022 Q4, stagnating compared to the previous quarter and exceeding the level of the period prior to the coronavirus pandemic, but still low by international standards. According to our forecast, no material change is expected in the number of unemployed at the beginning of 2023, while their number will start to decline in the second half of the year. We expect the unemployment rate to reach its pre-pandemic level in the course of 2024. According to our forecast, the unemployment rate will be 3.6-3.7 percent this year, and 3.1–3.6 percent in 2024 (Chart 1-11).

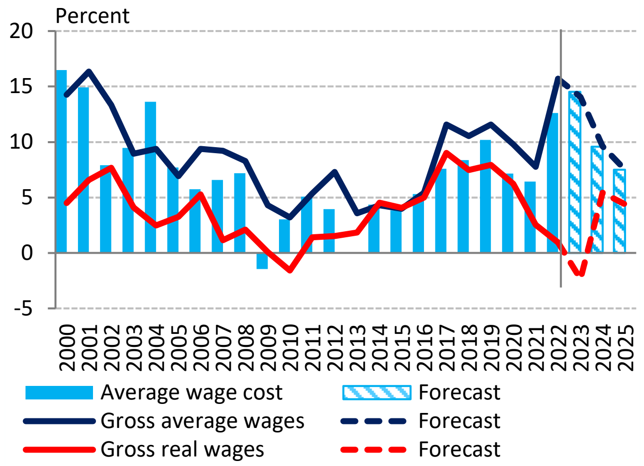
Chart 1-12: Change in employment in the private sector



Source: HCSO, MNB

Headcount in the private sector is expected to stagnate this year. As labour market tightness showed no significant response to the slowdown in economic performance, we anticipate no material change in the level of employment in 2023 Q1. This may be followed by a slow increase over the rest of the year. In the coming years, deteriorating demographic conditions could become an increasingly

Chart 1-13: Annual changes in gross average wages and average labour cost in the private sector



Source: HCSO, MNB

effective constraint on further significant growth in employment. According to our forecast, the number of people in employment in the private sector will stagnate in 2023, while it may increase by 0.2–0.7 percent in 2024 (Chart 1-12).

Nominal wage dynamics will be lower than last year, but remain high. This year's wage dynamics are determined on the one hand by the significant minimum wage increase at the beginning of the year and the historically high tightness of the labour market, and on the other hand by the declining inflation expectations. The minimum wage increase at the start of 2023 will impact the earnings index as early as the first quarter via the wage adjustments implemented earlier this year. Wage increases announced early this year by large companies also point to high underlying trends. On the other hand, the already discernible decline in inflation expectations in certain sectors and the slowdown in economic performance in the first half of the year may reduce wage dynamics. According to our forecast, wages in the private sector will increase by 13.7–14.4 percent in annual terms in 2023, while we anticipate growth of 9.1–10.1 percent in 2024 (Chart 1-13).

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

	2022	2023		2024		2025	
	Actual	Forecast					
		Previous	Current	Previous	Current	Previous	Current
Inflation (annual average)[1]							
Core inflation	15.7	14.9 -17.4	16.9 -19.4	3.2 -5.5	4.4 -6.4	3.0 -3.6	3.0 -3.6
Core inflation excluding indirect tax effects	15.6	14.9 -17.4	16.9 -19.4	3.2 -5.5	4.4 -6.4	3.0 -3.6	3.0 -3.6
Inflation	14.5	15.0 - 19.5	15.0 - 19.5	2.3 - 4.5	3.0 - 5.0	2.5 - 3.5	2.5 - 3.5
Economic growth							
Household consumer expenditure	6.6	(-2.1) - (-1.4)	(-2.0) - (-1.1)	2.1 - 3.0	2.1 - 3.1	2.3 - 3.4	2.3 - 3.3
Government final consumption expenditure[6]	1.7	0.1 - 1.2	(-0.3) - 1.5	0.4 - 1.5	0.3 - 1.6	0.6 - 1.7	0.9 - 2.0
Gross fixed capital formation	2.2	(-4.1) - (-1.9)	(-5.9) - (-3.0)	2.8 - 5.6	2.7 - 5.6	2.5 - 5.5	2.6 - 5.5
Domestic absorption	3.9	(-2.0) - (-1.2)	(-2.5) - (-1.2)	2.0 - 3.2	2.0 - 3.2	2.1 - 3.3	2.2 - 3.4
Exports	10.3	4.4 - 5.9	3.8 - 6.1	5.2 - 7.1	5.2 - 7.2	3.6 - 5.4	3.7 - 5.4
Imports	9.5	1.3 - 2.9	0.7 - 3.0	3.6 - 5.6	3.4 - 5.6	2.7 - 4.7	2.7 - 4.7
GDP	4.6	0.5 - 1.5	0.0 - 1.5	3.5 - 4.5	3.5 - 4.5	3.0 - 4.0	3.0 - 4.0
Labour productivity[5]	2.7	0.7 - 1.6	0.3 - 1.1	2.8 - 4.1	3.1 - 4.4	2.2 - 3.7	2.4 - 3.8
External balance[2]							
Current account balance	-8.1	(-5.4) - (-4.2)	(-4.4) - (-3.2)	(-2.8) - (-1.4)	(-2.3) - (-0.9)	(-2.1) - (-0.7)	(-1.3) - (0.1)
Net lending	-6.1	(-3.4) - (-2.2)	(-2.1) - (-0.9)	(-1.2) - (0.2)	(-0.4) - (1.0)	(-1.0) - (0.4)	(0.3) - (1.7)
Government balance							
ESA balance	-6.1	-3.5	-3.9	-2.5	-2.5	-1.5	-1.5
Labour market							
Whole-economy gross average earnings[3]	17.6	9.8 - 10.8	11.3 - 12.2	7.3 - 8.6	8.4 - 9.6	6.3 - 7.6	6.6 - 7.9
Whole-economy employment	1.3	(-0.4) - 0.0	(-0.2) - 0.1	0.1 - 0.7	(-0.1) - 0.6	0.0 - 0.7	(-0.1) - 0.6
Private sector gross average earnings[3]	15.7	11.8 - 12.7	13.7 - 14.4	7.6 - 8.7	9.1 - 10.1	6.5 - 7.7	6.9 - 8.1
Private sector employment	2.1	(-0.2) - 0.1	(-0.1) - 0.2	0.3 - 0.8	0.2 - 0.7	0.1 - 0.6	0.0 - 0.6
Unemployment rate	3.6	3.6 - 3.8	3.6 - 3.7	3.1 - 3.6	3.1 - 3.6	2.9 - 3.7	2.9 - 3.7
Private sector nominal unit labour cost	9.9	5,9 - 7,3	13,0 - 14,3	4,4 - 6,1	4,5 - 6,2	2,1 - 3,9	3,7 - 5,4
Household real income[4]	6.0	(-1.6) - (-0.6)	(-1.4) - (-0.6)	2.3 - 3.5	2.1 - 3.3	2.2 - 3.4	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

	2023	2024	2025
Consumer price index (annual average growth rate, %)			
MNB (March 2023)	15.0 - 19.5	3.0 - 5.0	2.5 - 3.5
Consensus Economics (March 2023)[1]	16.9 - 18.4 - 19.4	3.6 - 5.2 - 8.0	
European Commission (February 2023)[2]	16.4	4.0	
IMF (October 2022)	13.3	5.6	4.0
OECD (November 2022)	12.7	5.2	
Reuters survey (March 2023)[1]	17.6 - 18.6 - 19.9	3.6 - 5.2 - 7.0	3.0 - 3.9 - 6.0
GDP (annual growth rate, %)			
MNB (March 2023)	0.0 - 1.5	3.5 - 4.5	3.0 - 4.0
Consensus Economics (March 2023)[1]	(-0.8) - 0.1 - 1.1	0.8 - 2.9 - 4.3	
European Commission (February 2023)[2]	0.6	2.6	
IMF (October 2022)	1.8	2.8	3.0
OECD (November 2022)	1.5	2.1	
Reuters survey (March 2023)[1]	(-0.7) - 0.3 - 1.0	1.7 - 3.0 - 4.3	3.0 - 3.6 - 4.5
Current account balance[3]			
MNB (March 2023)	(-4.4) - (-3.2)	(-2.3) - (-0.9)	(-1.3) - (0.1)
European Commission (November 2022)[2]	-6.3		
IMF (October 2022)	-3.0	-2.1	-0.9
OECD (November 2022)	-4.6	-4.6	
Budget balance (ESA 2010 method)[3]			
MNB (March 2023)	-3.9	-2.5	-1.5
Consensus Economics (March 2023)[1]	(-4.8) - (-4.2) - (-3.3)	(-5.2) - (-3.5) - (-2.8)	
European Commission (November 2022)[2]	-4.4	-5.2	
IMF (October 2022)	-3.1	-2.6	-1.6
OECD (November 2022)	-5.6	-5.3	
Reuters survey (March 2023)[1]	(-6.1) - (-4.2) - (-3.3)	(-4.1) - (-3.3) - (-2.7)	(-3.1) - (-2.9) - (-2.5)
Forecasts on the GDP growth rate of Hungary's trade partners (annual growth rate, %)			
MNB (March 2023)	-0.2 - 1.0	2.4 - 3.3	1.9 - 2.7
ECB (March 2022)	1.0	1.6	1.6
Consensus Economics (March 2023)[1]	0.6	1.8	
European Commission (February 2023)[2]	0.6	1.2	
IMF (January 2023)[2]	0.9	2.0	2.2
OECD (March 2023)[2]	0.5	1.6	

[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.

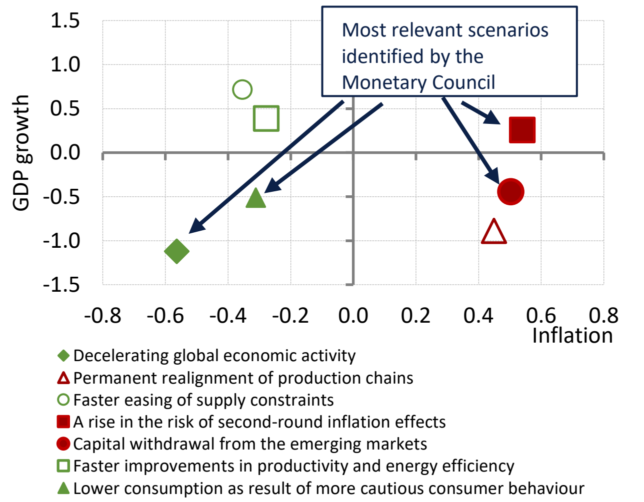
[3] As a percentage of GDP.

Source: Consensus Economics, ECB, European Commission, IMF, OECD, Reuters poll, MNB

2 Effects of alternative scenarios on our forecast

The Monetary Council highlighted four alternative scenarios around the baseline projection in the March Inflation Report. The risk scenario featuring decelerating global economic activity presumes growth and inflation paths that are lower than the baseline scenario. The scenario presenting an increase in the risk of second-round inflationary effects presumes a higher inflation path and a somewhat higher growth path compared to the baseline scenario. In the alternative scenario presuming capital withdrawal from the emerging markets, higher inflation is accompanied by more moderate growth. As a result of the more cautious consumer behaviour, the risk scenario assuming lower consumption results in a lower inflation and growth path compared to the baseline scenario. In addition to the highlighted scenarios, the Monetary Council discussed paths that presume a permanent realignment of production chains, faster easing of supply constraints, as well as faster improvement in productivity and energy efficiency as alternative scenarios.

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



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

Decelerating global economic activity

Global GDP growth generally slowed in 2022 Q4. However, economic growth in most countries of the European Union was better than expected. The economy of the United States, the European Union, the euro area and China grew at a year-on-year rate of 0.9 percent, 1.7 percent, 1.8 percent and 2.9 percent, respectively. **Economic growth in the aforementioned regions was lower compared to the previous quarter.** The economy of Germany, Hungary's main trading partner, also decelerated and registered growth of 0.9 percent.

The deterioration in global and regional growth expectations for 2023 halted in the past quarter. According to Bloomberg analyst expectations, the global economy may grow by 2.4 percent in 2023, as opposed to the rate of 2.1 percent expected in December. The growth rate of the European Union may be around 0.4 percent, but this exceeds previous expectations by just 0.2 percentage point. Instead of a GDP expansion of 0.4 percent, the US economy may grow by 0.7 percent, while growth of 5.3 percent is expected in China, compared to the previously forecast 4.8 percent in December.

However, the outlook for global growth is characterised by duality. Looking ahead, the protracted Russia-Ukraine war, the spillover of fears related to the failure of US banks and, in the case of the world's leading central banks, the rising interest rate environment, continue to pose material downside risks. Forward-looking confidence indicators showed a mixed picture in the euro area early this year, but remain at low levels. The US Purchasing Managers' Index continues to hover around the threshold (50 points).

In the risk scenario that features decelerating global economic activity, the slowdown in global growth exceeds

the assumption in the baseline scenario. The deceleration in the performance of developed economies, including Germany, which is Hungary's main trading partner, points to deterioration in export performance and a decline in Hungary's GDP growth rate. In addition, a lower inflation path materialises compared to the baseline scenario, warranting looser monetary conditions.

Rise in the risk of second-round inflation effects

In recent months, domestic inflation was around 25 percent, while inflation expectations remain at high levels. However, in February the ratio of respondents who expect that looking ahead inflation will rise faster than at present decreased compared to previous month. In addition, price expectations of corporations with regard to retail and services have been steadily below their highs observed in the summer of 2022 for months.

To a large extent, the high inflation seen in the past period was explained by the significant increases in food prices. In addition to this, due to higher energy and commodity prices, companies repriced their products and services to a much larger degree compared to the average of previous years. Price rises also contributed to a major increase in corporate profits, i.e. the pick-up in inflation does not only reflect an increase in costs. The increase in corporate profits can be observed in a wide range of sectors, and thus the high repricing is supported not only by the cost side pressures but also by rising profit rates. The most striking difference between the effective price increase and the increase in costs can be observed for processed food.

Based on the analysis of international examples, inflation exceeding 20 percent fell to a single-digit figure in about 25 percent of the cases in one year; accordingly, a high inflationary environment and profit-driven price increases may result in lasting inflation. In Hungary, the price increase of the product groups causing more persistent inflation is mixed. The repricing of processed food slowed significantly, but that of market services rose.

In this alternative scenario, the risk of second-round inflationary effects materialises: the effects of profit-driven inflation couse inflation persistence to rise, thereby implying higher inflation and calling for tighter monetary conditions.

Capital withdrawal from the emerging markets

In recent months, global investor sentiment has been primarily driven by expectations related to interest rate hikes by the world’s leading central banks, the incoming macroeconomic data, the European energy crisis and

concerns connected to the Russia-Ukraine war. Long-term yields typically rose, while stock price indices declined and the US dollar appreciated against the major currencies. In the second half of the period, liquidity problems in the US banking sector also arose as a potential risk. **In the first half of March, the sudden deterioration in investor sentiment was triggered by bank failures in the United States**, as investors fear that the problems arising from the high interest environment, which potentially may be structural, will occur at other banks as well.

Tightening by the world's leading central banks has continued. As a result of the better-than-expected macroeconomic data, the peak of the expected interest rate path first shifted upwards both at the Fed and ECB, but after the strengthening of fears of bank failures interest rate expectations declined. Central banks in the CEE region already ended their tightening cycle in 2022. At their February and March rate-setting meetings, the Fed's decision makers raised the target band of the key policy rate by 25 basis points. The ECB raised the key policy rates by 50 basis points both in February and March. The reduction of the securities portfolio purchased under the APP started in March 2023.

Overall, financial market sentiment deteriorated in the past period. In the first half of the period, international confidence indices typically rose, but in the period following the strengthening of fears related to bank failures, perceptions of risk deteriorated significantly, stock market indices fell, accompanied by declining yields and interest rate expectations.

In the alternative scenario, we assume that risk aversion vis-à-vis emerging markets, including Hungary rises more persistently and sharply compared to the baseline scenario. As a result of this, major capital outflows and a further rise in inflation may occur, which is consistent with tighter monetary conditions.

Lower consumption as result of more cautious consumer behaviour

In 2022 Q4, Hungary's GDP and domestic demand items continued to decelerate. The growth rate of the volume of retail sales has been steadily slowing since the beginning of 2022, in December 2022 and January 2023, it already decreased in year-on-year terms. Of the main factors determining household consumption, real net earnings also dropped in December, while household confidence indices remain at a low level.

High frequency data indicate a further deceleration in GDP growth for the beginning of the year, which – in parallel

with the fall in real wages – curbs consumption expenditures. The deterioration in income conditions is primarily caused by the high inflation, which results in a fall in the purchasing power of wages. Developments in employment remained favourable, but due to the uncertain economic outlook, consumers' cautiousness may strengthen. With a view to increasing their financial reserves, households may save a larger part of their income, thereby reducing their consumption to a greater degree.

In the risk scenario assuming lower consumption as result of the more cautious consumer behaviour, uncertain economic developments are accompanied by persistently low consumer confidence, and thus domestic consumption declines at a faster pace compared to the baseline scenario. As a result of this, a lower inflation and growth path materialises compared to the baseline scenario, which is in line with looser monetary conditions.

Other risks

In addition to the scenarios highlighted above, the Monetary Council considered three other alternative scenarios. In the alternative scenario assuming **a permanent realignment of production chains due to mounting deglobalisation**, recurring trade tensions and potential protective tariffs result in global demand problems and an increasing cost environment. Accordingly, in this alternative scenario external demand falls, while external inflation exceeds expectations, which reduces domestic output and raises inflation, which may justify tighter monetary conditions.

In the alternative scenario presenting a **faster easing of supply constraints**, due to the resolution of global supply chain problems and lower energy prices, we assume higher productivity and a faster fall in corporate costs than in the baseline scenario. In parallel with the normalisation of the global economic environment and the terms of trade as well as the utilisation of new, recently built domestic export capacities, declining corporate costs reduce inflationary pressure as well. In this alternative scenario, domestic growth exceeds expectations, while inflation falls short of them, which is in line with looser monetary conditions.

In the alternative scenario assuming **a faster improvement in productivity and energy efficiency**, as a result of the changeover to the intensive growth model, improved competitiveness stimulates the domestic economy primarily from the supply side. Productivity may improve to a greater degree compared to the assumption in the baseline scenario if further recommendations are implemented out of the 330 steps for improving competitiveness, and by the implementation of the 144 points of the essay entitled “Sustainable Balance and Convergence”, and thus improvement in energy efficiency increases by accelerating the green transition. 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, as well as looser monetary conditions.

3 Macroeconomic overview

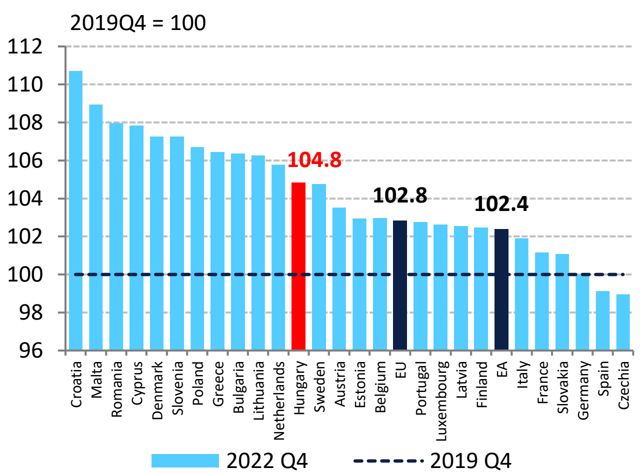
3.1 Assessment of macroeconomic trends

During the fourth quarter, economic growth in most major economies exceeded analysts' expectations. Owing to energy prices falling to pre-war levels and manufacturing output proving to be crisis resistant, and despite the permanently tense geopolitical atmosphere, the slowdown in the economies in the European Union in the fourth quarter was smaller than expected. Developments in international economic activity – and especially in the European economic outlook – continue to be primarily affected by the Russia-Ukraine war and high inflation. In 25 of the countries of the European Union, output already exceeded the level seen prior to the COVID crisis, but the economy of Germany, which is Hungary's most important trading partner, only reached the GDP level recorded in the final quarter of 2019 during the third quarter of last year. In the past quarter, the world's major central banks continued to tighten monetary conditions. In the United States, the Federal Reserve continued its interest rate hike cycle and balance sheet tightening that began in June 2022. However, the Fed's balance sheet total rose substantially in March, as a result of the liquidity-providing measures introduced in response to the financial turmoil. The ECB continued its cycle of interest rate increases and decided on the details of the balance sheet reduction commencing in March 2023. In the CEE region, the Romanian central bank raised interest rates in January, while it left the base rate unchanged in February, similar to the Czech and Polish central banks.

3.1.1. International economic trends

Growth figures typically exceeded analysts' preliminary expectations in 2022 Q4. During the quarter, the economy of the United States grew by 0.9 percent year-on-year and 0.7 percent quarter-on-quarter. China registered economic growth of 2.9 percent versus 2021 Q4, while it stagnated quarter-on-quarter. In 2022 Q4, the economy of the EU and of the euro area grew by 1.7 percent and 1.8 percent, respectively, in year-on-year terms. Economic activity exceeds the pre-COVID level in 25 of the European Union countries, but GDP fell in 10 of the EU-27 countries on a quarterly basis. In 2022 Q4, the economy of Germany, Hungary's most important trading partner, grew by 0.9 percent in year-on-year terms.

Chart 3-1: Development of GDP level



Note: Based on seasonally and working day adjusted data. In Ireland, the GDP level was 134.3 percent in 2022 Q4.
Source: Eurostat

Developments in international economic activity – and especially in the European economic outlook – continue to be affected primarily by the Russia-Ukraine war and the high inflation. Global industrial production and global trade showed strong dynamics before the war. From the second quarter, global industrial production and trade, which had dropped as a result of the Russia-Ukraine war, started to grow again, but this came to an end in the fourth quarter, causing growth in industrial production to slow down and trade to decline significantly (Chart 3-2). Owing to the mild winter, the high filling level of gas storage facilities, the return of the major commodity prices to the pre-war level and the declining output of energy-intensive manufacturing subsectors, short-term energy supply risks have eased in Europe. Nevertheless, due to the higher interest rate paths than seen before and prolonged inflation, global and European growth prospects have not changed materially compared to the December forecast. The fall in domestic and international business survey indicators has stopped in recent months, but consumer confidence is still at an extremely low level.

3.1.2. International monetary policy, inflation and financial market trends

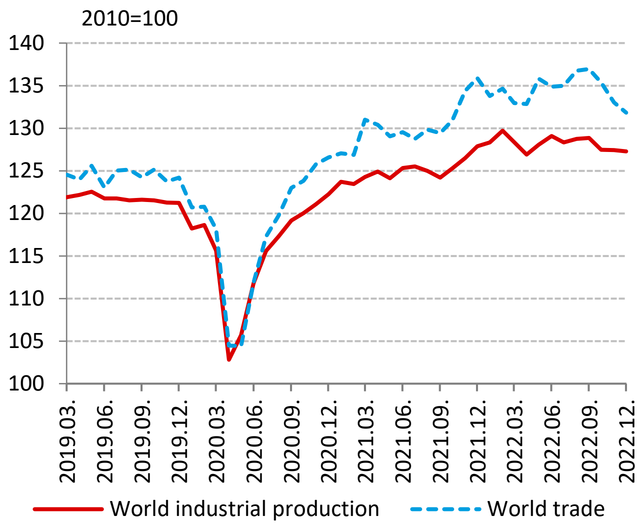
In recent months, global inflation has declined, while core inflation has persisted and kept rising in some countries. Inflation rates continued to exceed the central bank targets by a substantial margin in most advanced economies (Chart 3-3). Reacting to that, the world's leading central banks kept tightening monetary conditions, while in the region the Czech, Polish and Romanian central banks left their respective base rates unchanged at their latest rate-setting meetings.

In the USA, CPI inflation dropped from 6.5 percent in December 2022 to 6.4 percent in January 2023 and 6.0 percent in February 2023. In parallel, core inflation fell from 5.7 percent in December 2022 to 5.6 percent in January 2023 and 5.5 percent in February 2023. PCE inflation rose from 5.3 percent in December 2022 to 5.4 percent in January 2023, coming in above analyst expectations. The liquidity-providing measures introduced in March in response to the financial turmoil had increased the Fed's balance sheet by USD 300 billion to USD 8,689 billion, or 33.3 percent of GDP by mid-March 2023 (Chart 3-4).

In the United States, the Federal Reserve continued its interest rate hike cycle. At its most recent rate-setting meeting in March 2023, the central bank lifted the target range for the policy rate by 25 basis points to 4.75-5.00 percent. According to Fed Chairman Jerome Powell, although the process of disinflation has commenced, it was still at a very early stage and the central bank had a long way to go before it reached the 2-percent inflation target. Looking ahead, Powell foresaw "some additional policy firming". In response to the financial turmoil in March, the Federal Reserve and five other major global central banks announced on 19 March that they would coordinate to increase liquidity through US dollar swap agreements. The Fed also launched a new funding programme, the Bank Term Funding Program (BTFP).

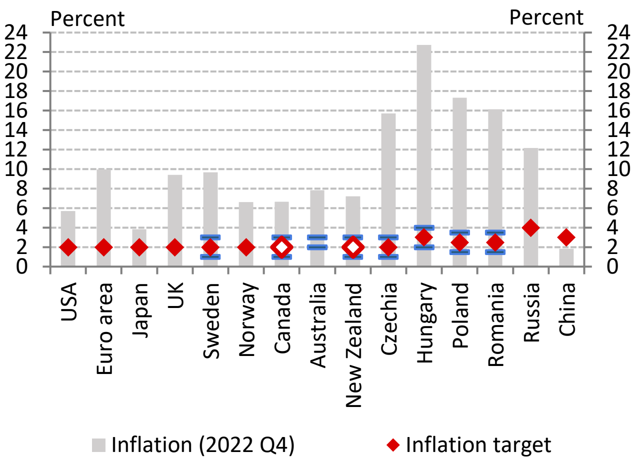
In January 2023, inflation in the euro area fell from 9.2 percent, registered in December 2022, to 8.6 percent, and to 8.5 percent in February. On the other hand, core inflation rose from 5.2 percent, registered in December 2022, to 5.3 percent in January 2023 and to 5.6 percent in February. In its December forecast, the central bank revised

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



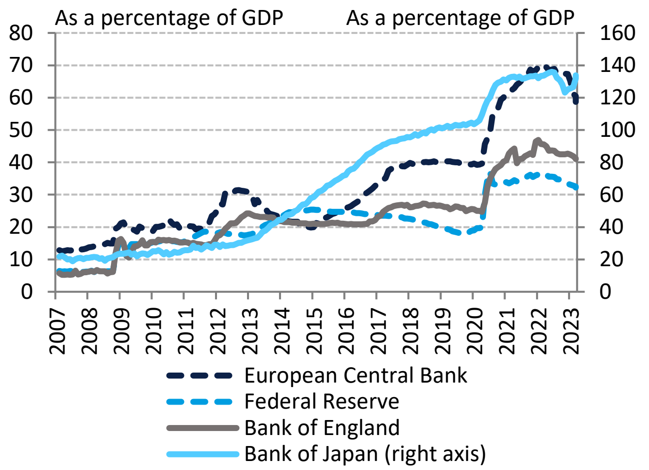
Note: Based on seasonally adjusted data.
Source: CPB

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



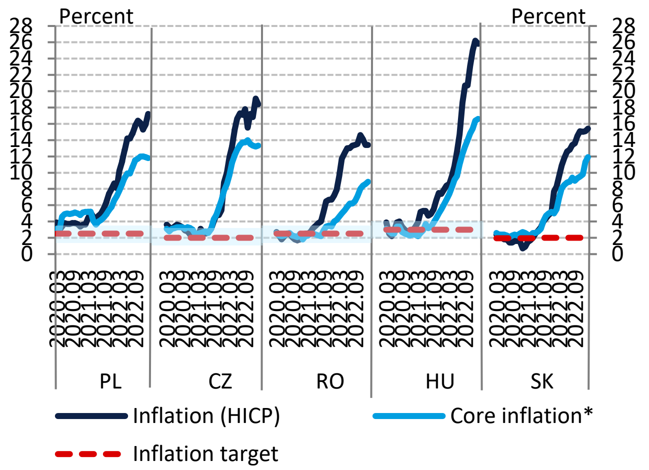
Note: The blue lines represent the inflation control range in Australia, Canada and New Zealand, while in other countries they mark a permissible fluctuation band. In Canada and New Zealand, the mid-point of the target band is accentual, which is marked by an empty diamond.
Source: OECD, FRED, National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

Chart 3-4: Central bank balance sheet totals in developed countries



Source: Databases of central banks, Eurostat, FRED

Chart 3-5: Inflation and core inflation in the region



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

its inflation forecast downwards, according to which inflation in 2023, 2024 and 2025 may be 5.3 percent, 2.9 percent and 2.1 percent, respectively. The ECB's balance sheet total amounted to EUR 7,829 billion (58.7 percent of GDP) at the middle of March 2023 (Chart 3-4).

The ECB continued its interest rate hike cycle and decided on the details of the balance sheet reduction commencing in March 2023. The central bank raised policy rates by 50 basis points at its March rate-setting meeting. The ECB justified the decision by arguing that inflation would remain elevated for too long looking ahead. ECB President Christine Lagarde said in a speech after the meeting that the ECB would make data-dependent decisions in the coming months. In the course of balance sheet reduction, outstanding assets in the APP portfolio will decline by EUR 15 billion per month on average from early March until the end of June. The central bank will decide on the pace of reduction thereafter later on. The ECB will reinvest maturing securities purchased under the PEPP until at least the end of 2024.

The Bank of Japan left the -0.1 percent interest rate charged on excess reserves unchanged. At its December rate-setting meeting, however, the central bank increased the tolerance band of the 0-percent target applicable to the 10-year government securities market yield from 25 to 50 basis point in both directions. With a view to maintaining the yield target, the central bank offers to purchase government bonds in an unlimited volume at a fixed rate of 0.5 percent on working days, which is also the upper bound of the central bank's yield target. The central bank will continue its qualitative and quantitative easing (QQE) programme until such time as inflation steadily reaches the 2-percent price stability objective. Inflation rose from 3.8 percent in November 2022 to 4.0 percent in December and 4.3 percent in January 2023. The central bank's balance sheet total-to-GDP ratio amounted to 133.9 percent at the beginning of March 2023. The balance sheet total once again started to increase from October 2022 following an earlier decrease (Chart 3-4).

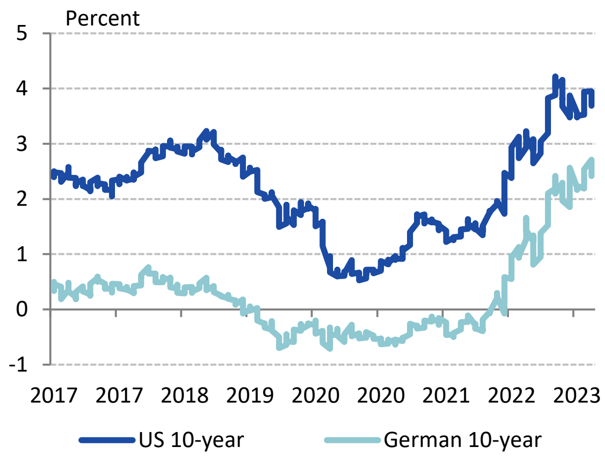
The Chinese central bank did not change the medium-term lending instrument level of 2.75 percent, and the 1-year and 5-year benchmark lending rates at 3.65 percent and 4.3 percent respectively. Since last December, the central bank has significantly increased the liquidity of the banking sector and prolonged its set of structured monetary policy instruments. At its March rate-setting meeting, the central bank decided to cut the required reserve ratio by 0.25 percentage point with effect from 27 March. Inflation rose from 1.8 percent in December 2022 to 2.1 percent in January 2023 and then fell to 1 percent in February 2023. The annual and monthly change in the producer price index has been in the negative range since October 2022 and December, respectively. The balance sheet total of the Chinese central bank started to increase again from September 2022. The balance sheet of the central bank stood at 34.9 percent of GDP at the beginning of January.

The Polish central bank has left its policy rate at an unchanged level of 6.75 percent since September 2022. Looking ahead, the central bank will decide on further measures depending on incoming inflation, growth and labour market data. In addition, it will take into account the impact of the Russia–Ukraine war on the Polish economy. Inflation increased from 16.6 percent in December 2022 to 17.2 percent in January 2023 and 18.4 percent in February 2023. The Harmonised Index of Consumer Prices was 17.2 percent in February (Chart 3-5). Polish central bank governor Adam Glapinski said that the interest rate hike cycle was still not officially closed and that it was not yet clear whether the rate cuts would start this year or next.

The Czech central bank has left its policy rate at an unchanged level of 7.0 percent since June 2022. According to the statement following the last rate-setting meeting in February, the central bank will continue to prevent excessive fluctuations of the exchange rate of the Czech koruna. Aleš Michl, governor of the Czech central bank, believes that for some time interest rates will remain higher than seen in the past ten years. Inflation rose from 15.8 percent in December 2022 to 17.5 percent in January 2023, before declining to 16.7 percent in Febuary 2023. The Harmonised Index of Consumer Prices was 18.4 percent in February (Chart 3-5). According to the central bank, the sharp increase in inflation in January reflects the termination of the energy price subsidy and the repricing in January, as a result of which consumer prices rose by 6 percent compared to the previous month. According to the central bank's forecast, from spring inflation will decline relatively rapidly and fall below 10 percent in the second half of the year.

At its January rate-setting meeting, the Romanian central bank raised the key policy rate by 25 basis points to 7.0 percent, while it left the base rate unchanged at its February rate-setting meeting. Mugur Isarescu, governor of the Romanian central bank, believes that the central bank is likely to follow a wait-and-see policy until such time as inflation falls below the base rate of 7 percent. Inflation declined from 16.4 percent in December 2022 to 15.1 percent in January 2023 before rising to 15.5 percent in February 2023. The Harmonised Index of Consumer Prices was at 13.4 percent in February (Chart 3-5). According to the central bank's forecast, inflation will decline faster than expected previously and may move into the single-digit range as early as 2023 Q3.

Chart 3-6: US and German 10-year government bond yields



Source: Bloomberg

Global financial market sentiment improved moderately in the past quarter, although long-term government securities yields in the developed markets decreased, in parallel with weakening interest rate expectations. Prices on developed and emerging stock exchanges rose during the period under review. At the beginning of the period, the smaller-than-expected decline in US inflation and the disclosure of more favourable-than-expected growth data led to a rise in developed market interest rate hike expectations, further strengthened by the communication of central bank officials. However, the default of the Silicon Valley Bank (SVB) increased risk avoidance, and market sentiment worsened significantly at the end of the period. In line with this, developed market government securities yields rose in the first part of the period under review, but then decreased later. International stock exchange indices typically increased during the period as a whole.

European and US stock exchange price indices rose considerably, advancing by 3–8 percent, while stock exchanges in the emerging countries fell by 0.8 percent on average. The US dollar weakened against the euro and emerging currencies, including the currencies of the region in the narrow sense, while it strengthened against the British pound and the Japanese yen. Developed market long-term bond yields decreased, with the 10-year US government securities yield rising by 20 basis points to 3.4 percent and the German government securities yield increasing by 6 percent to 2.27 percent (Chart 3-6).

Both the Fed and the ECB continued their interest rate hikes, while market expectations for increases in developed market interest rates weakened as a result of risk avoidance. Based on the market pricing, the interest rate hike cycle is likely to peak in the upcoming month both at Fed and ECB. In the case of Fed, the interest rate level priced in for the end of this year dropped from 4.41 percent to 4.12 percent, while in the case of ECB the interest rate level expected for the year-end decreased from 3.39 percent to 3.28 percent.

3.2 Analysis of the production and expenditure side of GDP

Growth in the Hungarian economy continued to decelerate in 2022 Q4, as gross domestic product expanded by 0.4 percent in year-on-year terms, but declined by 0.4 percent versus the previous quarter. As regards production-side trends, the value added of industry (+2.7 percent), construction (+0.9 percent) and services (+2.8 percent) rose, while the performance of agriculture fell by 32.3 percent in year-on-year terms in 2022 Q4. On the expenditure side, consumption (+2.1 percent) and net exports (+0.5 percent) both rose, while gross fixed capital formation (-8.6 percent) and government final consumption expenditure (-2.4 percent) declined. Overall, Hungarian GDP grew by 4.6 percent in 2022.

Economic growth in Hungary continued to slow in 2022 Q4 as gross domestic product rose 0.4 percent in year-on-year terms, according to the raw data. On a seasonally and calendar-adjusted basis for international comparison, GDP expanded by 0.8 percent year on year, but declined on a quarter-on-quarter basis. The economies of the euro area and the EU-27 countries expanded at year-on-year rates of 1.8 percent and 1.7 percent, respectively (Chart 3-7). Hungary's growth surplus compared to the European Union has disappeared as the domestic growth rate fell short of the EU average by 0.9 percentage point.

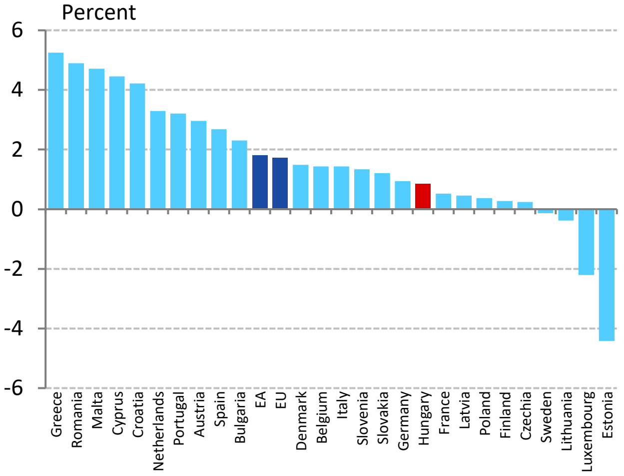
Households' consumption expenditures rose by 2.1 percent in year-on-year terms (Chart 3-8). The strongest growth was registered in services consumption (+5.0 percent). Actual final government consumption dropped by 2.4 percent on an annual basis. In-kind social transfers received from the government increased by 0.2 percent, while in-kind benefits from the non-profit sector decreased by 0.6 percent and government consumption fell by 4.5 percent versus the same period of the previous year.

The value added of gross fixed capital formation declined by 8.6 percent on an annual basis, while the contribution of the changes in inventories to growth developed positively. The volume of construction investment fell to a larger degree than that of investment in machinery and equipment. The investment rate was 28.5 percent.

Growth in the volume of exports (+9.8 percent) was higher than that in imports (+9.2 percent). Goods exports grew by 8.5 percent, while services exports rose by 15.6 percent in year-on-year terms. Net exports contributed 0.5 percentage points to Q4 GDP growth.

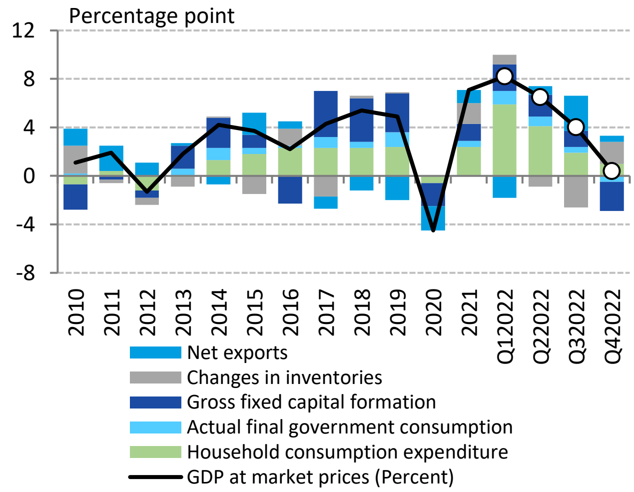
Most of the main sectors of the national economy expanded in 2022 Q4 (Chart 3-9). **Industrial output rose by 2.7 percent year on year in the final quarter.** Of the manufacturing sectors, the strongest contributors to annual industrial growth were the manufacture of vehicle and electrical equipment, while chemicals and chemical products were the main restraint. **The construction industry's value-added increased by 0.9 percent.**

Chart 3-7: Annual GDP change in EU countries in 2022 Q4



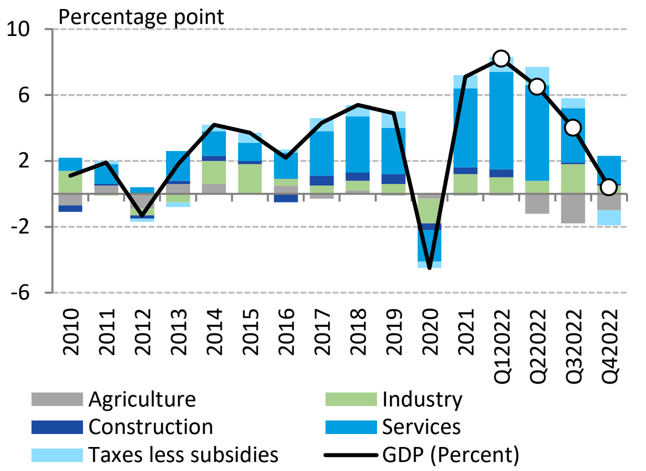
Note: Seasonally and calendar adjusted data. Ireland's annual growth rate was 13.1 percent.
Source: Eurostat

Chart 3-8: Annual change in decomposition of expenditure-side GDP



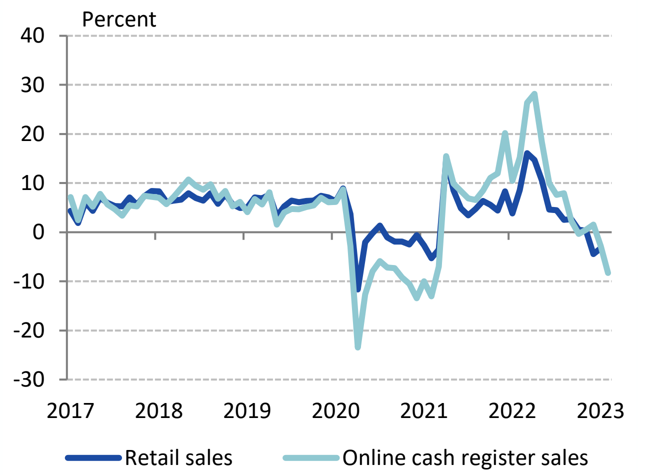
Note: Actual final government consumption includes social transfers in kind from the government and NPISHs. Changes in inventories includes acquisitions less disposals of valuables.
Source: HCSO

Chart 3-9: Annual change in decomposition of production-side GDP



Source: HCSO

Chart 3-10: Annual change in retail sales and online cash register sales



Note: Seasonally and calendar adjusted data. Online cash register sales' real values deflated by the consumer price index.
Source: HCSO, NTCA

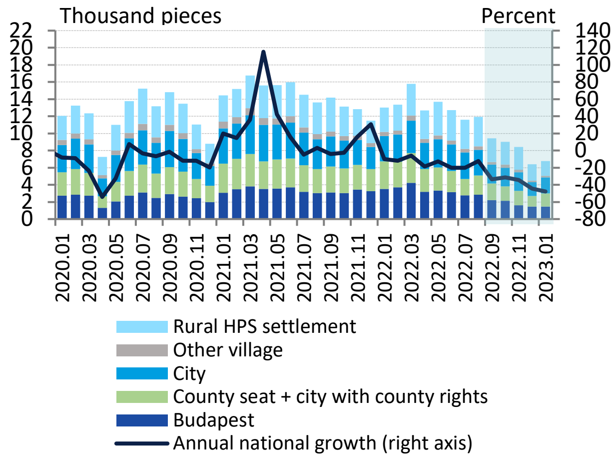
In view of the serious loss caused by the drought, agricultural output fell 32.3 percent in year-on-year terms at the end of the year.

Services' value added, taken together, rose by 2.8 percent. The strongest growth was seen in the transportation and storage (+8.0 percent) as well as the real estate (+5.9 percent) sectors of the national economy. The performance of government-related services (public administration, defence, mandatory social insurance; education; human health, social care) increased by a total of 2.6 percent year on year. Healthcare output expanded at an annual rate of 8.0 percent. The volume of public administration, defence and social insurance shrank by 1.7 percent, while that of education increased by 3.5 percent.

The annual growth rate in the volume of retail sales started to decline in 2022 Q4 (Chart 3-10). In January 2023, the volume of retail sales fell by 3.3 percent year-on-year based on seasonally and calendar adjusted data. Excluding the turnover of petrol stations, retail sales have been declining steadily since last July on an annual basis. Turnover of the NTCA's online cash registers rose by 17.1 percent in nominal terms, while turnover adjusted for inflation fell by 8.3 percent in February, in year-on-year terms. This figure differs from the volume of retail sales as it also includes part of the catering, taxi services and accommodation services turnover.

In the household loan market, the number of new contracts declined, and the expansion in loans outstanding decelerated in the fourth quarter compared to previous periods. After deceleration of 1.1 percentage points compared to the previous quarter, the annual growth rate of the whole financial intermediary system's household loans outstanding stood at 5.3 percent at end-December. The volume of housing loans granted by credit institutions in 2022 Q4 was 54 percent smaller than in the same period of the previous year, while the disbursement of personal loans was 18 percent lower. In the fourth quarter, married couples concluded prenatal baby support loan contracts amounting to HUF 132 billion, up 7 percent in year-on-year terms. However, this was partly attributable to demand brought forward due to uncertainties surrounding a prolongation of the scheme. According to the responses to the Lending Survey, in net terms 80 percent and 92 percent of banks reported falling demand for consumer and housing loans, respectively, in the fourth quarter. Looking ahead to 2023 H1, banks anticipate further weakening in demand and tightening of credit standards, albeit at a lower rate in both submarkets.

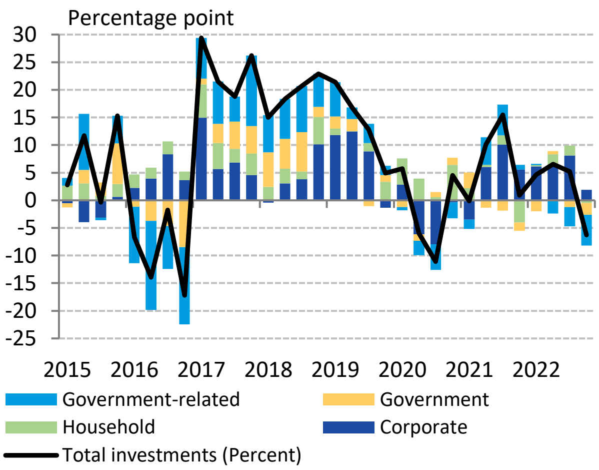
Chart 3-11: Number of housing market transactions by settlement type



Note: Only taking into account 50-percent and 100-percent private acquisitions. From April 2021 to June 2022, the data of the NAV fee database are adjusted based on the estimation of the level of processing by type of settlement. Based on transactions and estimated market share of real estate agents in the highlighted months.

Source: NTCA, MNB, Housing market intermediary database

Chart 3-12: Decomposition of the annual change in investments



Source: HCSO

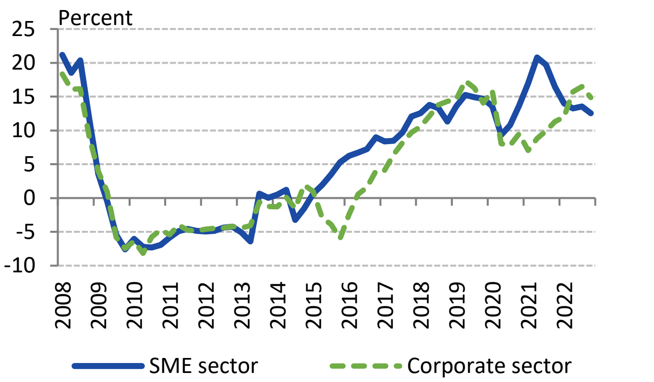
The transaction volume in the housing market fell significantly in 2022 Q4 (Chart 3-11). During the quarter, the number of transactions declined by 21 percent in settlements eligible for rural HPS, by 47 percent in Budapest, by 45 percent in towns of county rank, by 32 percent in other towns and by 41 percent in other villages, in year-on-year terms. At the national level, the Q4 number of housing market sales and purchases may have amounted to 23,800 in total, which is 36 percent lower than the transaction figure of 37,400 in the same period of the previous year. Accordingly, the number of sales in 2022 Q4 fell to a record low. The decline continued in January 2023, with the number of sales practically halved compared to last January. According to the MNB house price index, nominal house prices increased by 3.3 percent at the national level in 2022 Q3, rising by 1.0 percent in Budapest, by 3.7 percent in cities outside Budapest and by 4.4 percent in villages on a quarterly basis. Based on preliminary data, in 2022 Q4, in line with the significant fall in housing market activity, house prices also started to decline, registering a quarter-on-quarter decrease of 0.3 percent countrywide.

In 2022 Q4, the volume of whole-economy investment declined at a year-on-year rate of 6.3 percent (Chart 3-12). This deceleration is significant compared to the growth of 5.2 percent registered in the previous quarter. It was a wide-scale decline, but it was mostly attributable to the slowdown in public construction investments, partly financed by the EU. The volume of investments after seasonal adjustment fell by 5.5 percent compared to 2022 Q3. **Machinery and construction investments** both declined in the fourth quarter. In year-on-year terms, investments fell by 5.5 percent in machinery and equipment and by 6.6 percent in construction. Within machinery investment, both the volume of imported and domestically produced machinery declined.

Export-oriented manufacturing investments rose by 10.7 percent, while investment by sectors producing for the domestic market fell by 12.1 percent. In 2022 Q4, budgetary organisations' investment volume shrank by 28.4 percent. Among other things, this decline was attributable to the the smaller volume of projects financed from EU funds. Investments by the narrow public sector (public administration, education and healthcare) fell by 24.7 percent. Investments by sectors indirectly linked to the public sector (government-related) dropped by 18.5 percent. Household investments fell moderately in 2022 Q4.

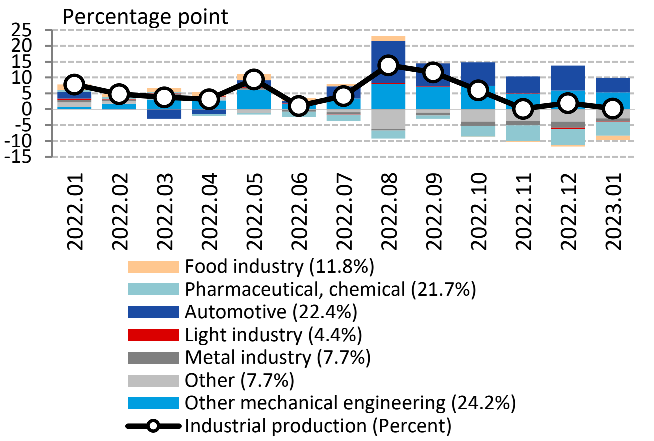
The outstanding borrowing of non-financial corporations from the financial intermediary sector as a whole grew by

Chart 3-13: 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 3-14: Sectoral breakdown of annual change in domestic industrial production



Note: The 2022 weight of the sectors in industrial production is given in brackets. Without water and waste management industry. Total industrial production does not include the performance of enterprises with less than five employees.
Source: HCSO

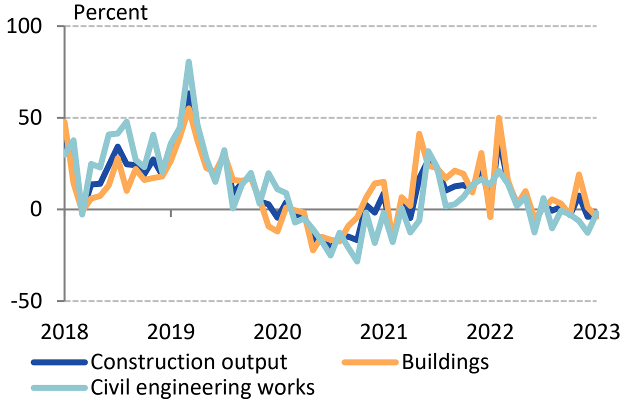
14.9 percent in 2022 Q4 (Chart 3-13), representing a quarter-on-quarter slowdown of 1.6 percentage points. Within corporate lending, the outstanding borrowing of SMEs rose by 12.6 percent in annual terms at the end of 2022 Q4. In the fourth quarter, 73 percent of new corporate loans were[1] market-based contracts. Due to the pick-up in the Széchenyi Card programme, this ratio was lower than the previous quarter's 84 percent. According to responses to the Lending Survey, in net terms 23 percent of banks tightened credit standards in the fourth quarter and looking ahead a net 29 percent expect further tightening. Banks primarily cited cyclical factors, as factors pointing to tightening. As regards the liquidity and capital position, only a smaller part of banks plan any tightening, and thus banks' lending capacity remains high. As regards credit demand, a net 31 and 70 percent of banks perceived a pick-up in demand for foreign currency and short-term loans, respectively, in 2022 Q4, while 35 and 64 percent of banks registered declining demand for forint and long-term loans, respectively. Looking ahead, this diverging trend is likely to persist. **The outstanding borrowing of non-financial corporations rose by roughly 15 percent in 2022; however, in real terms this already represents a moderate decline.**

In the fourth quarter, Hungary's industrial production rose by 2.7 percent year on year (Chart 3-14). Within the industrial sub-sectors, battery manufacturing continued its dynamic expansion. As a result of the low base, vehicle manufacturing expanded significantly, in parallel with weaker performance in pharmaceuticals, chemicals, food and metals. In 2022 Q4, the goods trade balance remained in deficit. In December, the terms of trade worsened by 2.4 percent year on year, with the main contributor still the price rise of mineral fuels, the effect of which resulted in a 4.5-percentage point deterioration in the terms of trade.

In 2022 Q4, construction output increased by 0.1 percent in year-on-year terms. Construction of buildings was up by 5.3 percent, while other construction decreased by 7.5 percent in year-on-year terms. In January 2023, the volume of construction output decreased by 3.6 percent on an annual basis (Chart 3-15).

[1] When calculating the ratio of market-based loans, we examined the ratio of non-overdraft type loans, not classified as "Normal market", within the new contracts of credit institutions excluding the Hungarian Development Bank and Eximbank.

Chart 3-15: Evolution of construction output



Source: HCSO

3.3 Labour market

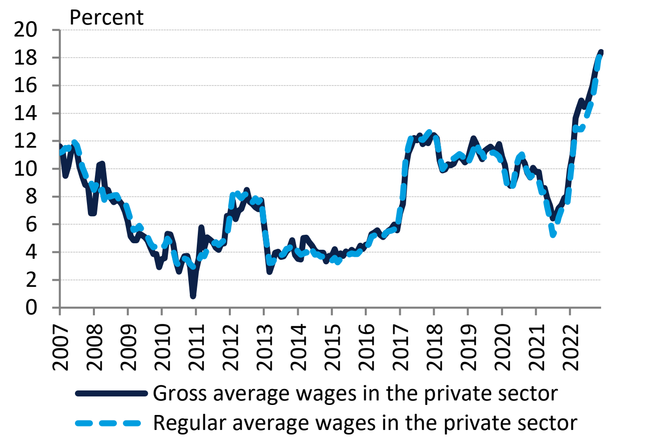
Total employment remains at a historically high level. Employment continued to expand in year-on-year terms due to the headcount increase in the private sector also in the fourth quarter. The unemployment rate is still low in an international comparison, and the number of job vacancies matches the pre-crisis figures. Thus, the labour market is stable, and for the time being it is not responding to the slowdown in economic activity (for more details, see Box 3-1). In 2022 Q4, gross average earnings in the private sector rose 18.4 percent year on year.

3.3.1. Wages

Wage developments continue to be strong. In 2022 Q4, gross average earnings in the private sector rose 18.4 percent in year-on-year terms (Chart 3-16). Average gross regular earnings also rose by 18.4 percent compared to the same period last year, while bonus disbursements were higher than previous years' average. The growth dynamics of average wages was over 15 percent in most branches of the private sector in 2022 Q4.

Of the countries in the region, nominal wage dynamics were highest in Hungary in 2022 Q4. In Hungary, wage growth in the whole economy amounted to 17.7 percent in the last three months of the year. By contrast, in annual terms wages rose by 12.3 percent in Poland, by 12.2 percent in Romania, and 7.9 percent and 6.5 percent in the Czech Republic and Slovakia, respectively. Real wages fell in all of the countries in the region.

Chart 3-16: Annual change in gross average wages in the private sector

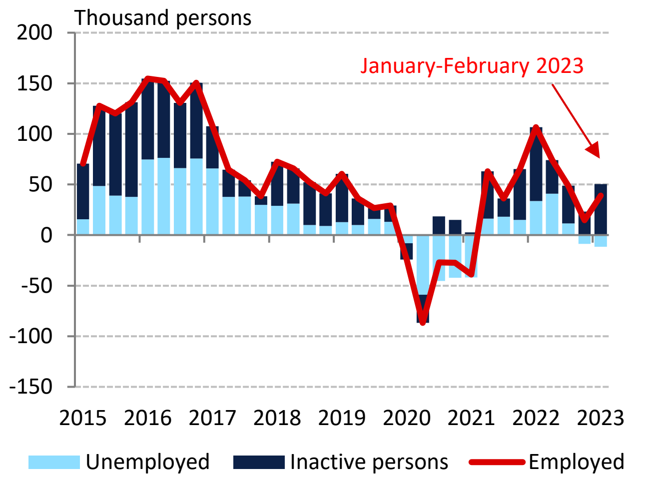


Note: Quarterly moving averages.
Source: HCSO

3.3.2. Employment and unemployment

The number of employees in the overall economy remained at a high level. In 2022 Q4, the average number of employees aged 15–74 years was 4,702,000, an increase of 15,000 versus the same prior-year period (Chart 3-17). According to seasonally adjusted data, in February 2023 there was a slight decrease in the level of employment compared to January. The unemployment rate, calculated with the HCSO's methodology based on a three-month moving average, was 4.1 percent between December 2022 and February 2023. The unemployment rate in Hungary can still be considered low in an international comparison.

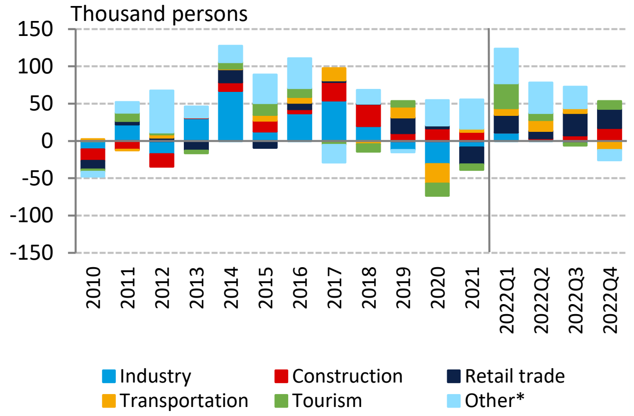
Chart 3-17: Decomposition of annual changes in whole-economy employment



Note: Instead of Q1 2023, monthly data for January and February is available. Changes in the number of unemployed and economically inactive have the opposite sign.
Source: HCSO

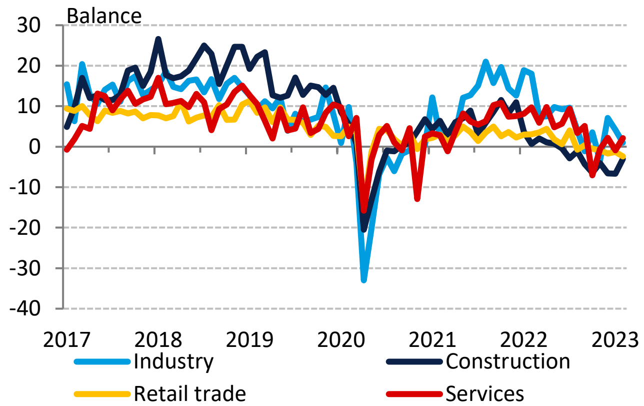
The expansion in employment was driven by the private sector. In 2022 Q4, the number of people employed at local units abroad rose by 13,000, while the number of fostered workers declined by 14,000 in annual terms. Private sector employment expanded by 28,000 in year-on-year terms. In 2022 Q4, the full-time equivalent (FTE) headcount rose by 2.6 percent year on year. According to detailed quarterly sectoral data, increases in headcount took place primarily in market services sectors (particularly in trade, accommodation services and catering, real estate activities, professional, scientific and technical activities), while the number of employees declined in public administration and

Chart 3-18: Decomposition of annual changes in private sector employment



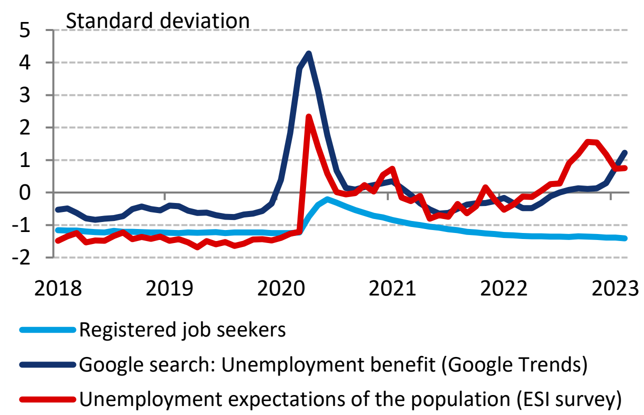
Note: *Agriculture, other industry and service sector branches.
Source: HCSO

Chart 3-19: 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 3-20: Indicators capturing the short-term evolution of unemployment



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

education on an annual basis. Employment in construction rose, while it did not change significantly in manufacturing (Chart 3-18).

According to the ESI business survey, which monitors economic sentiment, companies' expectations regarding employment followed varying sectoral patterns in February 2023. Most companies in the construction and trade sectors plan to reduce the headcount in the next three months. Despite the negative balance, construction shows improving sentiment based on the February data. In services and in manufacturing most firms anticipate growth in headcount for the time being; however, compared to the previous two months, sentiment in manufacturing is less optimistic and expectations have deteriorated (Chart 3-19).

Indicators capturing the short-term evolution of unemployment show a mixed picture (Chart 3-20). In February, the number of registered unemployed was 245,000. The seasonally adjusted data show no significant change compared to the figures seen in spring 2022, with the figures remaining low in a European comparison. The Google Trends indicator for unemployment benefits has been on a deteriorating trend since spring 2022 and is higher than the figures observed prior to the COVID crisis. According to the ESI consumer survey, households' fear of unemployment increased significantly starting from early 2022, coming close to the highest value measured during the pandemic, while the year-end and start-of-year data reflect a decline in concerns.

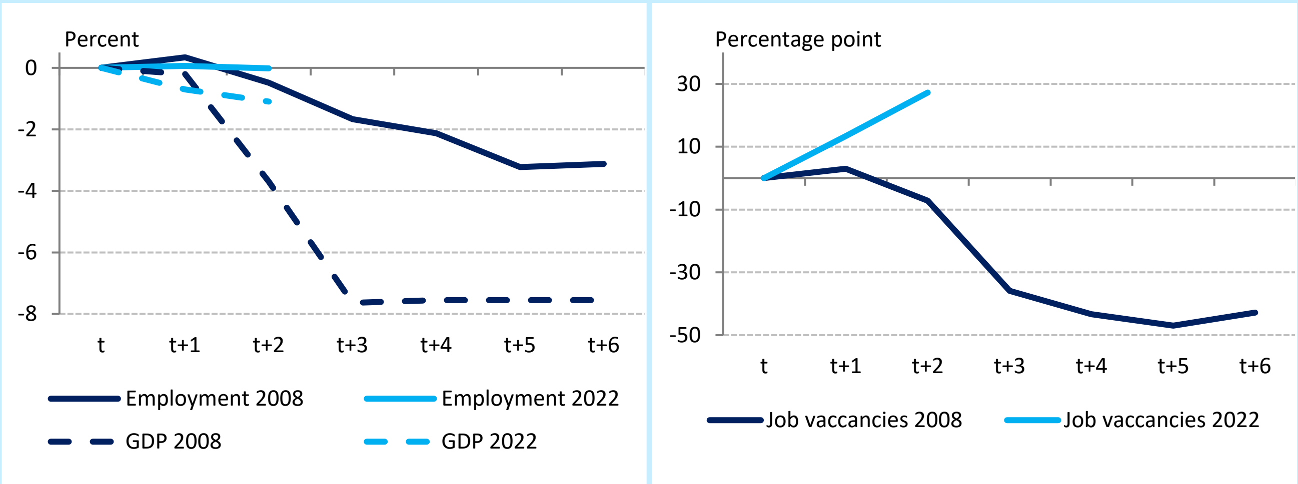
Box 3-1: What is the reason for the stability of the labour market?

The labour market has so far proven to be resilient to the growth deceleration in economic performance. The analysis of this trend is of the utmost importance for the purposes of forecasting future labour market developments. In order to analyse the persistence of the decoupling of the real economy and the labour market cycle, we first review the speed and the time needed for labour market adjustment in the 2008–2009 crisis and then assess the impact of sectoral investments on labour demand in the past period. Third, we show the increasing effectiveness of demographic constraints.

During the 2008 crisis, the fall in the level of GDP was followed by the labour market with a delay of one quarter. The level of employment declined over four quarters (by 3.6 percentage points in total). For the time being, the downturn in economic activity which commenced in 2022 Q3 shows a different pattern, as no adjustment can be observed in employment even after two quarters. Accordingly, the lagging nature of the labour market does not in itself explain the positive employment figures, but there are other factors that contribute to it.

The number of non-subsidised job vacancies announced continues to increase, which again differs completely from what was seen during the financial crisis. In 2008, the number of job vacancies also started to fall in the second quarter after the onset of the crisis, dropping to almost half of its pre-crisis level. By contrast, the economic downturn in 2022 was not followed by a decline in new vacancies announced, as this figure rose by 27.2 percent compared to the quarter preceding the energy crisis (Chart 3-21).

Chart 3-21: Changes in GDP and the number of employees (left panel) and the evolution of the number of newly advertised vacancies (right panel) during the 2008 and 2022 recessions



Note: Seasonally adjusted data, t denotes the last quarter before the crisis, which is 2008 Q2 and 2022 Q2.
Source: HCSO, NES, MNB

Contributing to the high level of employment, most of the domestic industrial subsectors have experienced extensive growth, while a smaller share has been capital-labour substitution, and only the manufacture of vehicle has shown intensive growth since 2019. Output has risen in a large number of sub-sectors, as well as in construction, while employment and investment have both increased since 2019. Manufacturing is still characterised by strong labour demand, which is well-illustrated by the fact that in 2022 Q4 the number of job vacancies exceeded the 2019 Q4 figure by 12.5 percent. Partly due to the labour shortage, in part of the subsectors the number of employees decreased compared to the period before the COVID crisis, but they tried to offset the lost labour force by boosting investments, i.e. by capital-labour substitution. In Hungary, the automotive industry is of key importance and represents a separate category, where output was able to grow intensively, in conjunction with a decreasing level of employment and investments (Table 3.1).

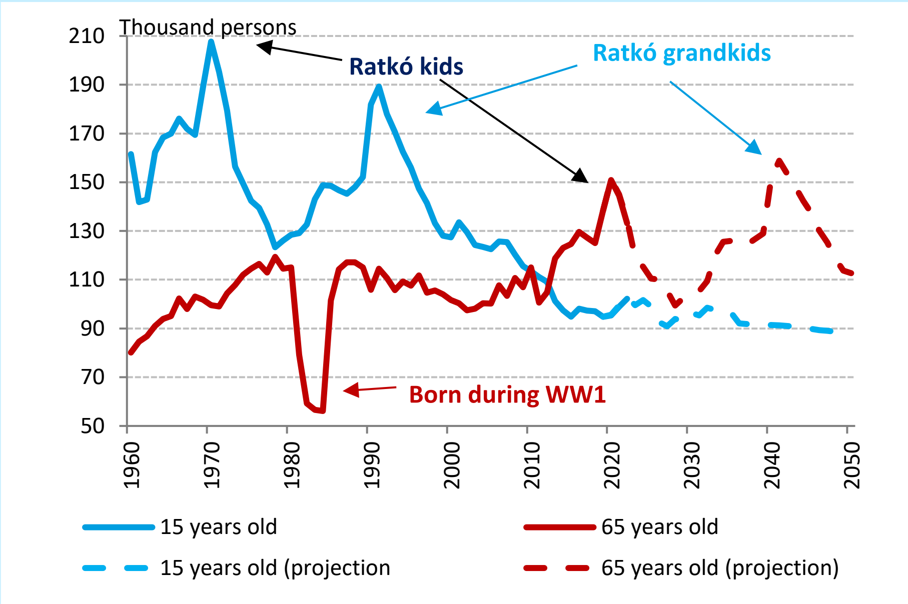
Table 3-1: Change in production, employment and investment in the construction industry and in some sub-sectors of the manufacturing industry

		Output 2022Q4/2019Q4 (%)	Employment 2022Q4/2019Q4 (%)	Investments Average change of 2019Q4-2022Q4 (%)
Extensive growth	Electrical equipment	134.4	8.1	67.0
	Construction	7.5	8.7	13.5
	Machinery	36.9	5.2	6.8
	Other manufacturing	0.7	6.4	6.1
	Pharmaceuticals	3.6	8.7	4.3
Capital-labour substitution	Food production	10.0	-0.2	10.0
	Basic and fabricated metals	-9.6	-0.4	11.7
	Textiles, leather production	-9.2	-16.6	20.2
Intensive growth	Transport equipment	10.3	-2.5	-9.2

Note: Seasonally adjusted data, institutional statisistics of labour in the case of employment
Source: HCSO, MNB calculations

Companies' demand for labour has been kept high by the expectation that demographic constraints will become more effective. Employment in the age group of 15–74 years started to rise significantly after 2010, with more than 850.000 persons by 2022. As a result of this, the labour force participation rate rose by 9.8 percentage points, reaching 66.5 percentage points in 2022. Population aged 15-64 will decline significantly in the early 2020s due to the retirement of Ratkó kids (Chart 3-22). Accordingly, the decline in the active population increasingly hinders activity growth and foreshadows a further rise in labour market tightness.

Chart 3-22: Number of people aged 15 and 65 years



Source: HCSO, Eurostat, MNB

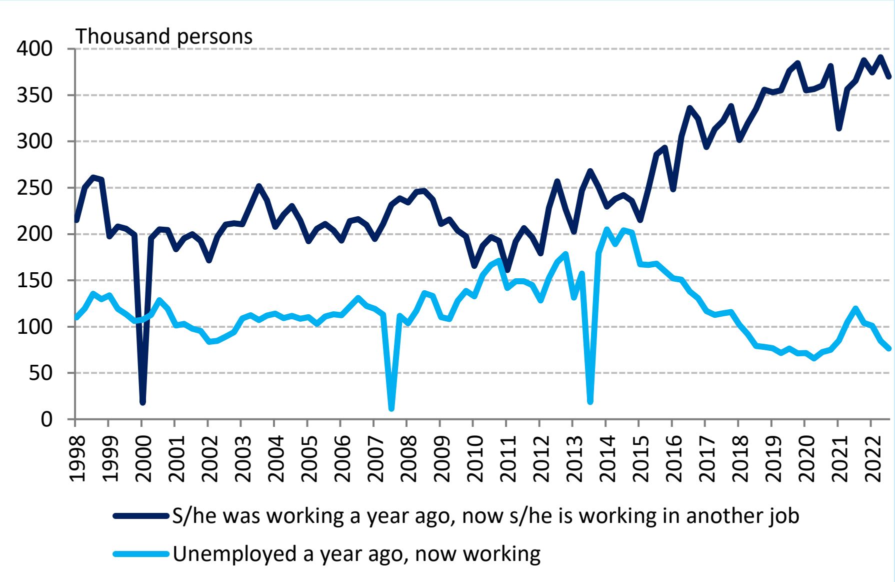
Box 3-2: Risk of the development of a wage-price spiral in Hungary

High wage and price dynamics are both present in Hungary, but for the time being a wage-price spiral has not developed. In February, consumer prices rose by 25.4 percent, while in December gross wages in the private sector increased by 18.3 percent in year-on-year terms. The definition of the wage-price spiral assumes that when it develops wage and price dynamics accelerate in a mutually reinforcing manner, i.e. the rise in wage increases enterprises' costs and/or domestic demand to such an extent that it generates additional inflation. As a result of the rising inflation, wage demand increases again as employees wish to maintain or increase the level of real wages. This forces enterprises to increase prices further to offset their rising expenses, thereby triggering the spiral. However, this trend cannot be observed in Hungary, as there are several other underlying factors that contribute to high wage and price dynamics.

The rise in Hungarian nominal wages is primarily attributable to the tightness of the labour market and to the minimum wage increase. Labour market demand remains strong in the Hungarian labour market. Labour market tightness is historically high, coming close to the pre-pandemic level. In the tight labour market, employees have stronger bargaining power, and enterprises are willing to satisfy wage demands to retain their employees.

Job changes to more productive positions also contribute to the higher wage statistics. In recent years, the number of people changing jobs increased (Chart 3-23). Employment at more productive enterprises improves allocative efficiency and may increase wage statistics.

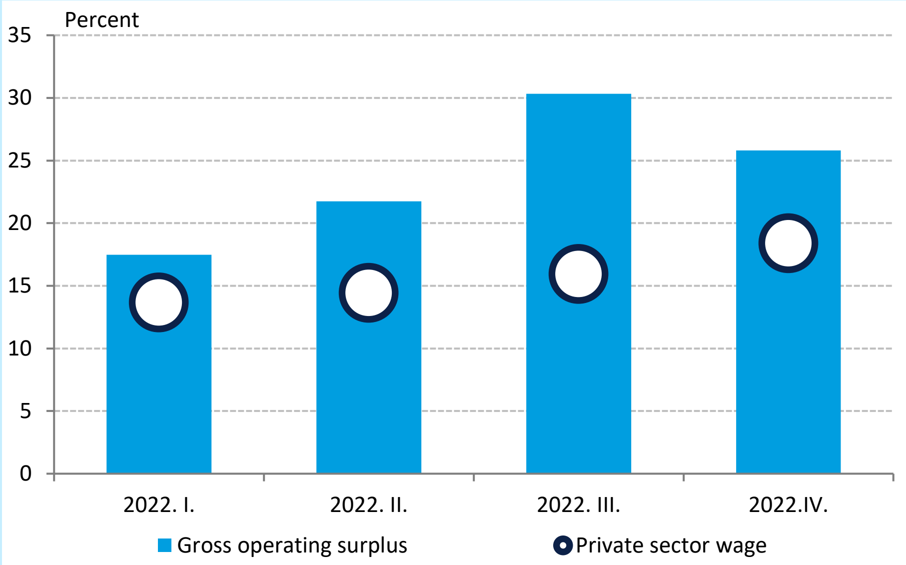
Chart 3-23: Number of people changing jobs



Source: HCSO, MNB calculation

It works against the wage-price spiral that – despite the high wage dynamics – corporate profits rose even more (Chart 3-24). In 2022 Q4, profits in Hungary rose to the third largest degree within the EU. The rise in profits suggests that the increase in expenses is not the sole reason for the accelerating price dynamics. Strong growth in profits was observed in a wide range of sectors. Accordingly, the rise in wages did not undermine corporate profitability, and there is no pressure on enterprises to raise prices because of higher wages. This was also confirmed by the corporate interviews we conducted.

Chart 3-24: Annual increase in gross operating surplus and private sector wage

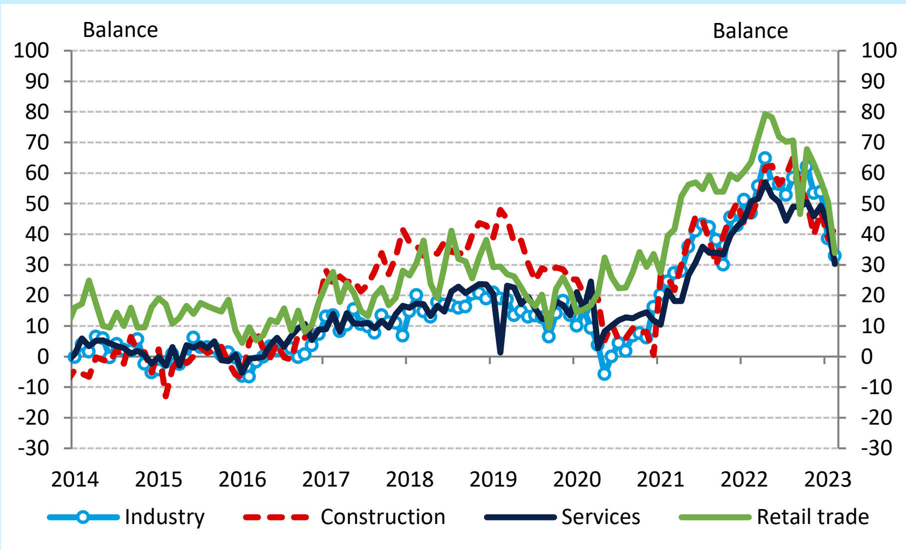


Note: Annual change, based on raw nominal data.
Source: HCSO

The fall in real wages and slowdown in retail trade and consumption ease inflationary pressure from the demand side. Inflation has exceeded nominal annual wage growth since September 2022, i.e. real wages are also declining in Hungary on an annual basis. This reduces purchasing power, and thus household consumption is expected to decline. The annual change in household consumption decelerated in 2022, and the volume may decline on average in 2023. In December 2022, excluding fuel sales, the volume of retail sales contracted by 3.4 percent in year-on-year terms. The volume of retail sales in food stores and groceries fell by 4.8 percent.

Forward-looking inflation expectations imply weaker price increases (Chart 3-25). Changes in corporate inflation expectations (retail trade, services) are of special importance for the expectations channel due to their forward-looking nature. Recently, the price increase perceived by enterprises has already slowed down, which suggests that the inflation tipping point has been passed. Household expectations are typically retrospective, i.e. after the reversal of inflation household expectations are also likely to decline. Inflation currently perceived by the population is higher than the expected future inflation. Accordingly, the correlation between wage indices and households' inflation expectations has become negative, i.e. the wage index accelerated at the end of the year, while expected inflation has already declined. This also reduces the probability of a wage-price spiral.

Chart 3-25: Expected change in sales prices in the next 3 months

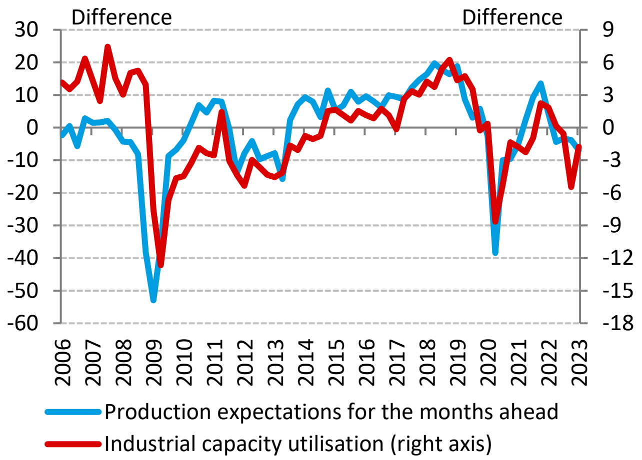


Source: European Commission

3.4 Cyclical position of the economy

Hungarian economic output expanded slightly in year-on-year terms in 2022 Q4, but declined compared to the previous quarter. The cyclical position of the economy in 2022 was characterised by two trends. The cyclical position of the economy was positive in the first half of the year, due to buoyant demand and the easing of supply chain frictions. These effects resulted in a cyclical position of inflationary effect. In the second half of the year, in parallel with the decelerating economic performance and due to supply-side constraints, the cyclical position of the economy resulted in disinflationary effect.

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



Note: Deviation from historical average.

Source: MNB based on ESI

According to our estimate, the cyclical position of the economy was positive in 2022 H1, but in the second half of the year, in parallel with the decelerating economic performance, the cyclical position of the economy deteriorated and became negative by the end of the year. Consumption was the main contributor to economic growth in 2022 H1, supported by significant government transfers at the beginning of the year as well. The cyclical position of the economy was positive in the first half of the year, due to buoyant demand and easing supply chain frictions, resulting in a cyclical position of inflationary effect. In parallel with the decelerating economic growth in 2022 Q3 and Q4, the cyclical position of the economy started to close. Looking ahead, the slowdown in demand and the expected unwinding of supply-side constraints will have disinflationary effects.

According to the questionnaire-based surveys, the capacity utilisation of manufacturing companies has improved in recent months, but is still below the historical average (Chart 3-26). Production expectations for the coming months continued to deteriorate and remained below the historical average level.

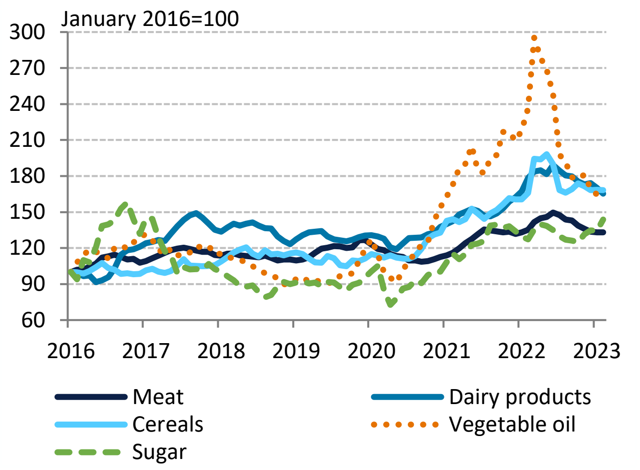
3.5 Costs and inflation

The annual growth rate of consumer prices amounted to 25.4 percent in February. The underlying reasons for the significant increase in inflation observed in recent months include the rise in the price index of core inflation items, such as fuels and regulated-price products and services. As an external effect, the spill-over of high energy prices via several channels and geopolitical tensions continue to exert pressure on consumer prices. In addition, persistently strong corporate repricing dynamics and profit increases act as internal factors for the development of the price index, i.e. the high inflation reflects more than just rising expenses. Core inflation excluding indirect taxes eased to 25.1 percent in February. Inflation of processed food remains above 50 percent, while inflation of market services rose to over 16 percent. The indicators capturing longer-term inflationary trends have increased in recent months.

3.5.1. Producer prices

In terms of the changes in global food prices, the previously seen significant increase stopped, and declines in the prices of food commodities were observed in recent months. In the winter months, the price level of meat, dairy products and oil crops gradually decreased, and in February the price level of cereals also declined. The fall in dairy product prices was attributable to moderate international demand, while deteriorating export prospects and strong international demand caused sugar prices to increase (Chart 3-27).

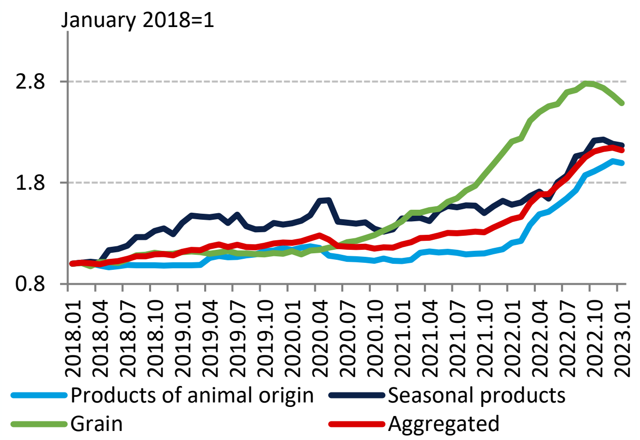
Chart 3-27: Development of world market prices of food



Source: FAO

Compared to the previous quarter, domestic agricultural producer prices rose further, showing a year-on-year increase of 57 percent in 2022 Q4. The largest increase can be observed in the prices of products of animal origin, which rose by 75 percent year on year in 2022 Q4. Prices of seasonal products and cereals also rose significantly compared to 2022 Q3, with the largest increase registered in potato prices. In January, agricultural producer prices slightly decreased compared to December, but rose by 47 percent overall compared to the same month of the previous year, with products of animal origin registering the largest price increase at 66 percent (Chart 3-28).

Chart 3-28: Development of agricultural prices



Note: Based on seasonally adjusted data.

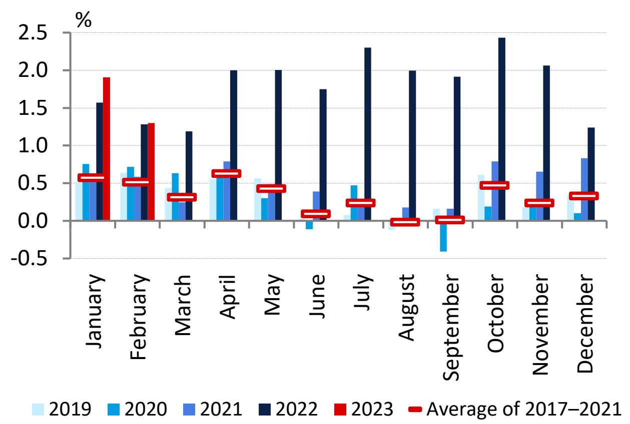
Source: HCSO

In the case of consumer goods, the rise in domestic industrial producer prices exceeded the historically observed extent by several times. By January 2023, price dynamics increased by more than 30 percent year on year. In the winter months, domestic sales prices in industry as a whole remained over 60 percent, albeit they somewhat fall short of the October high, which was mostly attributable to the price increase in the energy producing sectors. January's 152-percent annual price increase in the energy producing sectors reflects the rise in European energy prices.

3.5.2. Consumer prices

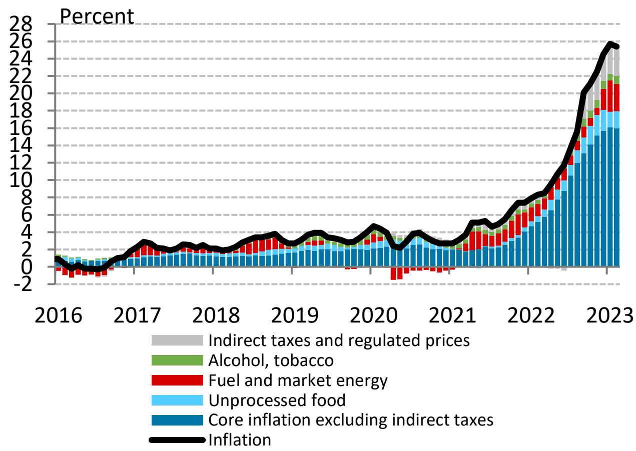
In February 2023, inflation started to fall in Hungary. The annual growth rate of consumer prices was 25.4 percent in February. As an external effect, the spill-over of high

Chart 3-29: Monthly price changes of consumer prices excluding fuel and regulated prices



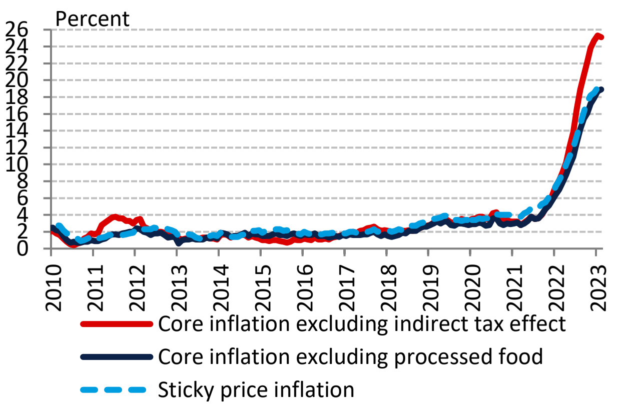
Note: Tax-adjusted, seasonally unadjusted monthly change.
Source: MNB calculation based on HCSO data

Chart 3-30: Decomposition of inflation



Source: MNB calculation

Chart 3-31: Underlying inflation indicators



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

energy prices via several channels and geopolitical tensions continue to exert pressure on consumer prices. In addition, an internal factor affecting the evolution of the price index is that due to companies repriced their products and services significantly more than the increase in energy and commodity prices, contributing to higher inflation this year. Thus the price increase was also caused by a significant rise in corporate profits. The monthly price change of the basket excluding fuels and administered prices was 1.3 percent (Chart 3-29.). The monthly value of core inflation, which better reflects market developments and excludes processed food, was 1.2 percent. The largest contributors to the deceleration of the price index compared to January included fuels (-0.5 percentage point) and processed food (-0.2 percentage point).

Core inflation excluding indirect taxes fell to 25.1 percent in February. The rise in core inflation in January was attributable to price developments in market services, while the decline in February was supported by processed food. The indicators capturing longer-term inflationary trends overally have risen slightly over the past period (Chart 3-31).

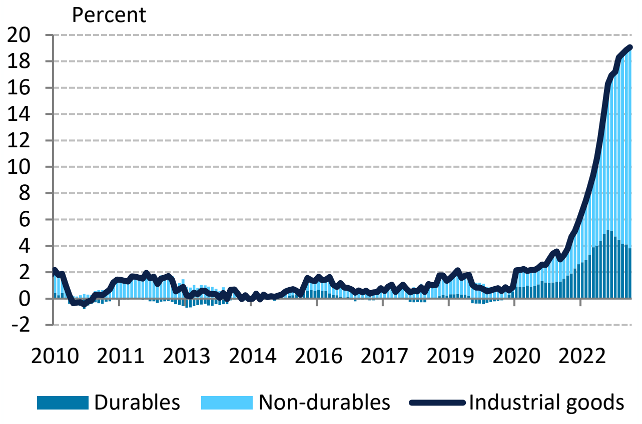
Industrial goods inflation has ranged around 19 percent in recent months. The rise in the price of industrial goods is substantially larger than the average recorded for previous years. Within this product group, inflation of durable goods stood at 12.6 percent, and inflation of non-durables at 22.7 percent in February (Chart 3-32 and Chart 3-33.).

The inflation of market services accelerated further, rising to 16.8 percent in February. In January, services registered outstanding monthly repricing at 2.2. The monthly repricing observed in February stood at 1.1 percent. Health and telecommunication services were the largest contributors to the monthly repricing, and – similar to previous periods – prices of food-related services (restaurant and catering services) also accelerated further (Chart 3-34).

Prices of alcohol and tobacco products showed double-digit increases in the past months, with inflation in this product group at 18.8 percent in February. The excise tax hike on tobacco products in January had passed through to consumer prices almost in full by February.

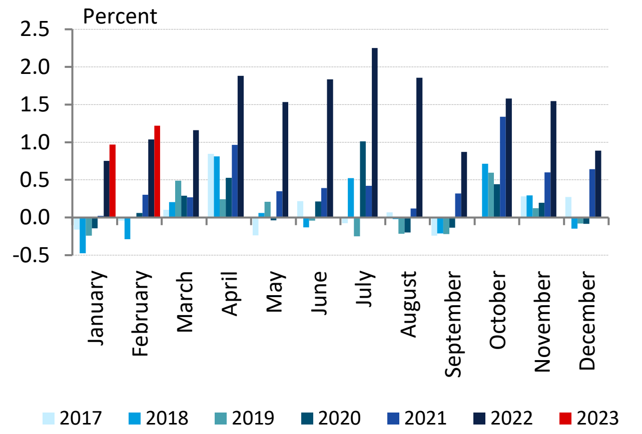
Based on the February data, inflation of food has been declining for two months. According to the data disclosed by HCSO, inflation of food was 43.3 percent this February. Inflation of unprocessed and processed food stood at 38 percent and 50.9 percent, respectively, and thus the price index of both these product groups declined moderately in February. In recent months, the deceleration

Chart 3-32: Inflation of industrial goods



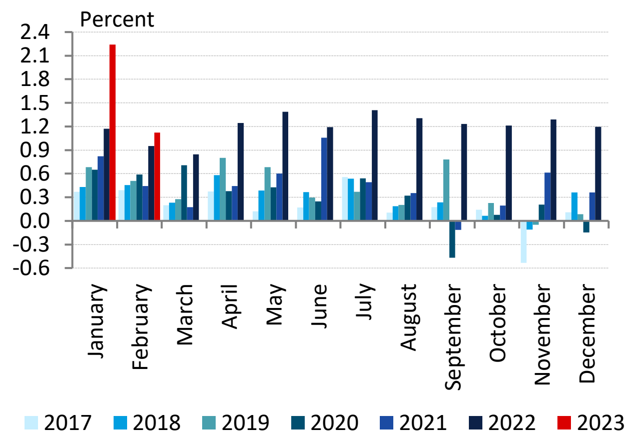
Note: Annual change, excluding the effect of indirect taxes.
Source: MNB calculation based on HCSO data

Chart 3-33: Monthly price changes of traded goods



Note: Seasonally non-adjusted, tax adjusted monthly change.
Source: MNB calculation based on HCSO data

Chart 3-34: Monthly price change of market services



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

of food price inflation was primarily attributable to bread and bakery products, cold cuts, cheese and margarine. The food price increase in Hungary is high by international comparison, despite the fact that government measures fixed the prices of certain basic food products (granulated sugar, wheat flour, sunflower oil, pork leg, 2.8% UHT milk, chicken breast and chicken backs, fresh eggs and table potatoes).

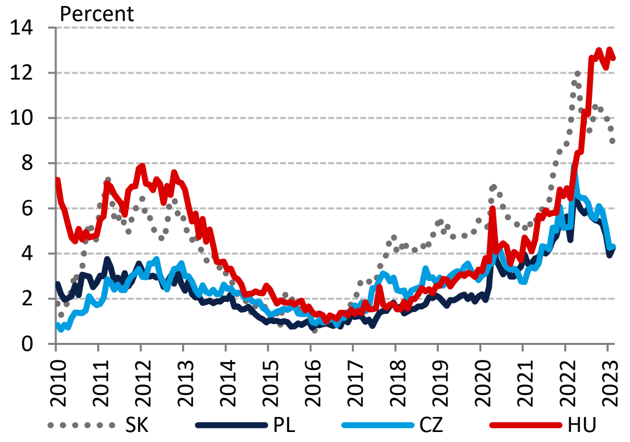
Consumer prices of motor fuels were recently shaped by government measures. Due to the phase-out of the cap on fuel prices on 7 December 2022, inflation of this product group in January and February stood at 35.9 and 30.3 percent, respectively.

Looking at recent months' data, inflation was in line with the forecast range in the December Inflation Report.

3.5.3. Inflation expectations

In Hungary, households' inflation expectations are broadly unchanged. In the countries of the region, inflation expectations declined moderately on the whole compared to the end of the year. In February, in the CEE region, households' inflation expectations moderately rose in Hungary, while they declined in Slovakia, in the Czech Republic and Poland compared to December (Chart 3-35).

Chart 3-35: Inflation expectations in the region



Source: MNB calculations based on European Commission data

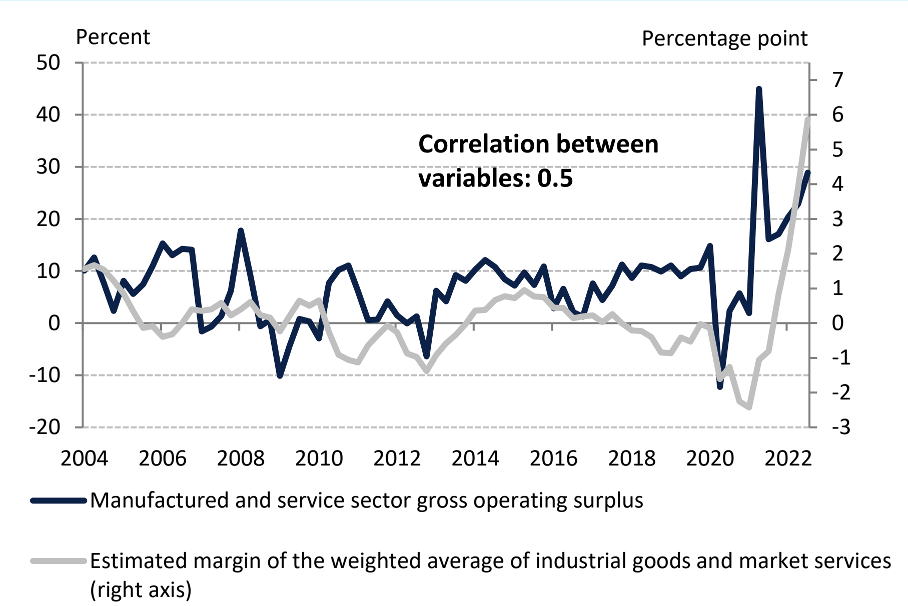
Box 3-3: Rising inflation accompanied by rising profits

In our analysis, we examined the factors contributing to the domestic inflation trends and the extent to which the phenomenon of profit-driven inflation can be proven. We performed these calculations relying on Polaris, the MNB's econometric macroeconomic model.[2]

We broke down the effects influencing inflation into internal and external factors: internal factors include effects that essentially come from domestic macroeconomic developments, while external factors include factors affecting the Hungarian economy influenced by international trends. The part of inflation not influenced by cost items (external and internal) in our model is largely the corporate margin linked to the products, which partly also shows the increase in profits. This is also implied by the fact that the value of these other factors moves closely together – in the case of core inflation excluding food prices – with the gross operating surplus related to these sectors (manufacturing and service sector) (Chart 3-36).

[2] Soós – Kelemen – Horváth (2020): Polaris, új eszköz a jegybanki előrejelzésekhez (Polaris, a new tool for central bank forward forecasts). MNB Working Papers 2020/1, https://www.mnb.hu/kiadvanyok/elemzesek-tanulmanyok-statisztikak/mnb-fuzetek/wp-2020-1-soos-gabor-daniel-kelemen-jozsef-horvath-milan-polaris-uj-eszkoz-a-jegybanki-elorejelzesekhez

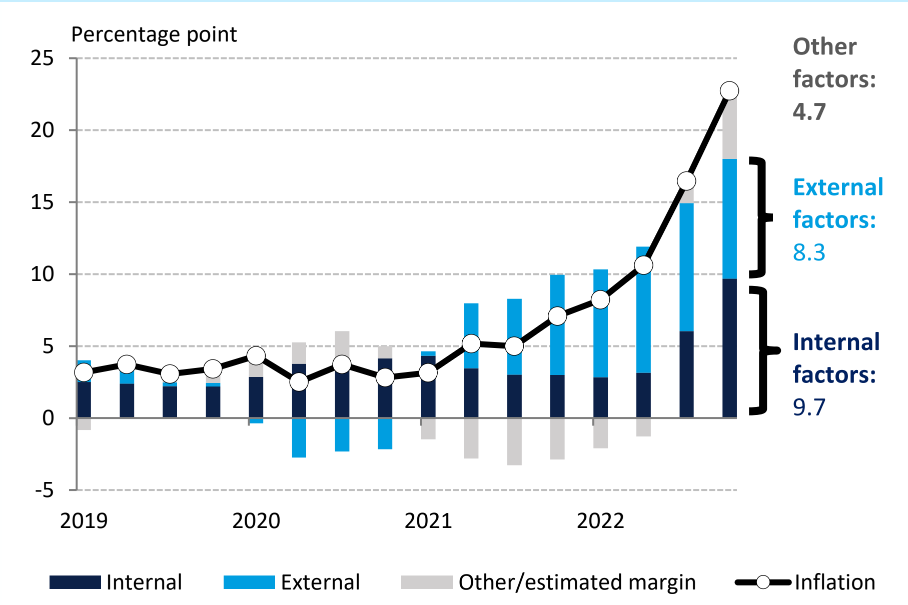
Chart 3-36: Gross operating surplus of the manufacturing industry and the service sector and the estimated margin of the weighted average of industrial goods and market services



Note: The correlation was calculated for the period 2011-2022.
Source: HCSO, MNB calculations

In 2022 H2, the part of inflation that cannot be attributed to cost factors increased, which implies higher profits. In the past, external and internal cost factors provided a good explanation for inflation developments; however, in 2022 Q3 and Q4 the part of inflation not explained by costs increased. This unexplained part may derive from several factors, such as nonlinearities arising in an extraordinary environment, but also suggests that the rise in inflation was accompanied by rising profits.

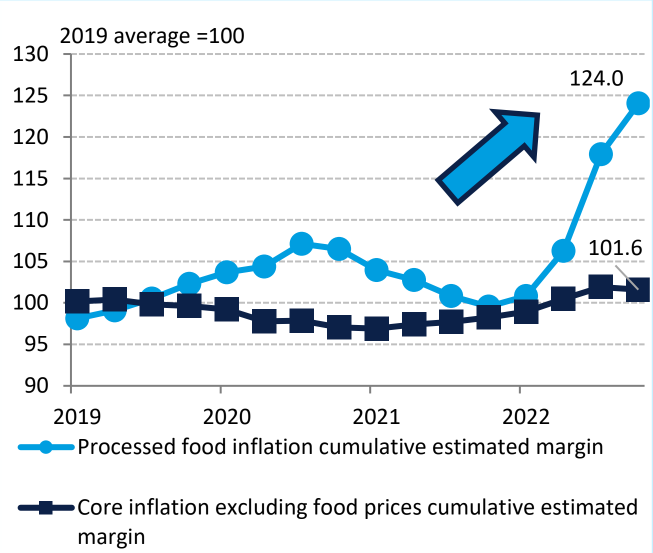
Chart 3-37: Decomposition of inflation

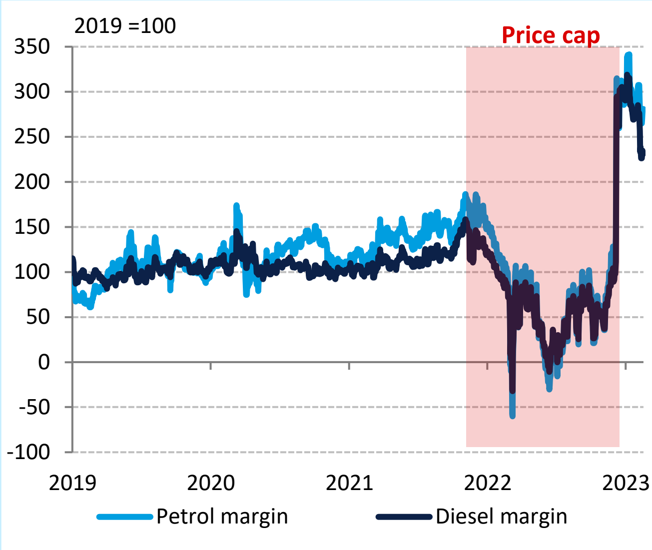


Note: Internal factors: productivity, wage cost, inflation expectation, exchange rate, regulated prices, indirect tax effect, External factors: Imported inflation, oil price, TTF gas price, agricultural prices.
Source: HCSO, MNB calculations

While in the case of processed food and fuel we can identify a strong profit impact, in the case of core inflation excluding food prices, companies made up for the profit lost during the COVID pandemic. In the case of processed food prices the currently estimated profit impact is well above the pre-COVID level (Chart 3-38, left panel). Accordingly, in this case we cannot talk about making up for lost profits, but rather a higher margin than before. Margins on fuel prices also rose significantly after lifting the fuel price cap (Chart 3-38, right panel). The latter likely relates to making up for profits lost during the period of administered fuel prices.

Chart 3-38: The cumulative change in the estimated margins of the individual inflation sub-items compared to the 2019 average (left panel), the evolution of the margin observed in the price of petrol and diesel (right panel)





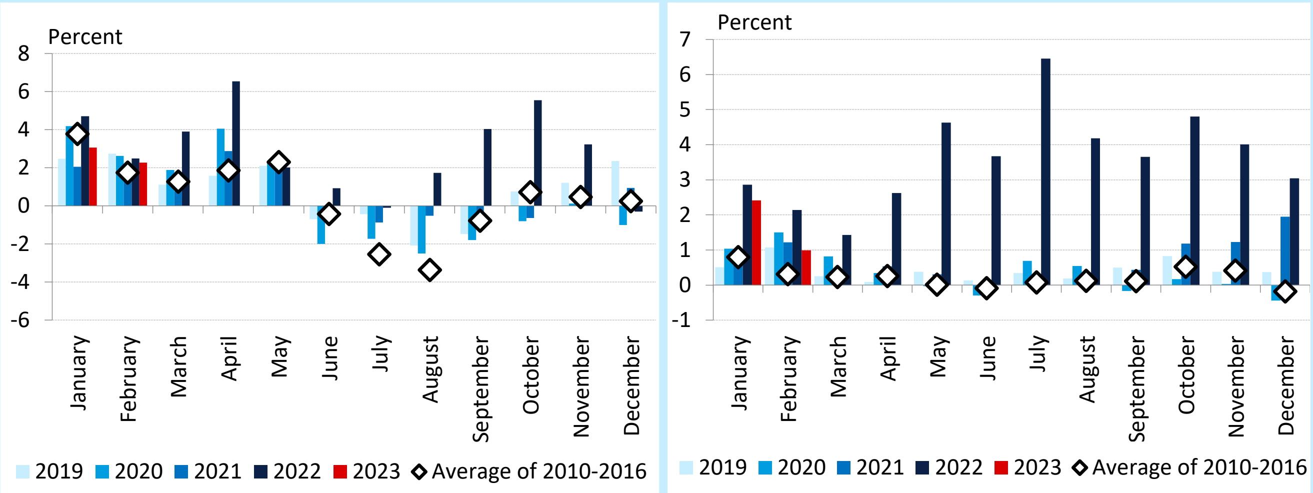
Note: In the case of fuels, the margin includes all costs incurred in refining crude oil, transporting refined products, wholesaling and retailing.

Source: MNB calculation

Box 3-4: Decelerating price dynamics observed among food items

Price dynamics of food have been decelerated for the second month as food price inflation may have reached its high. According to the HCSO's data, food price inflation fell to 44.0 percent in January and to 43.3 percent in February from 44.8 percent registered in December. Processed and unprocessed food both registered a slowdown in annual price dynamics. The annual price index of unprocessed food has been decelerating for three months, and processed food price inflation also declined in January and February. The monthly price increase of unprocessed and processed food slowed down in February; the repricing of processed food in February (1 percent) falls short of the average of the same month of the previous three years (Chart 3-39).

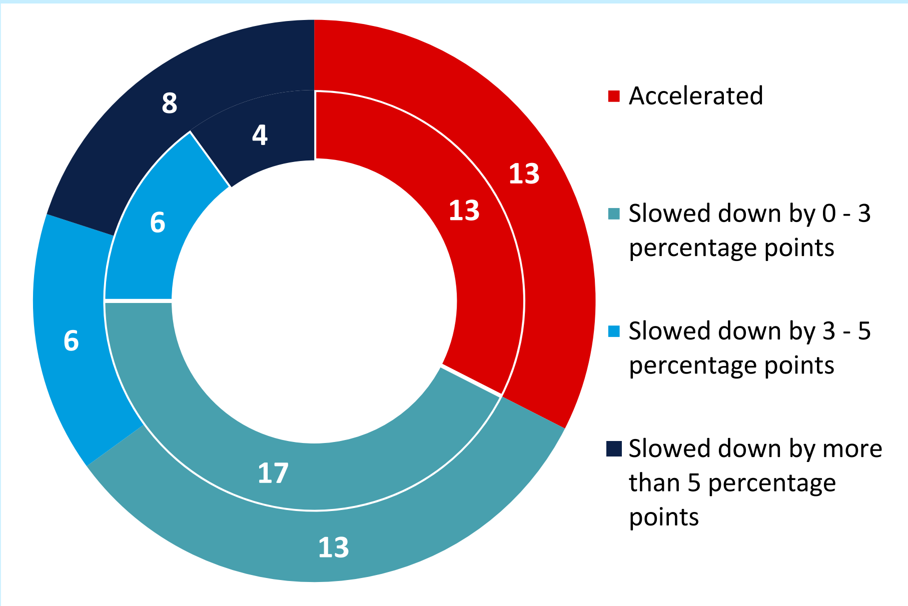
Chart 3-39: Monthly repricing of unprocessed food (left panel) and processed food (right panel)



Note: Seasonally unadjusted monthly changes excluding indirect tax effects (percent).
Source: HCSO, MNB

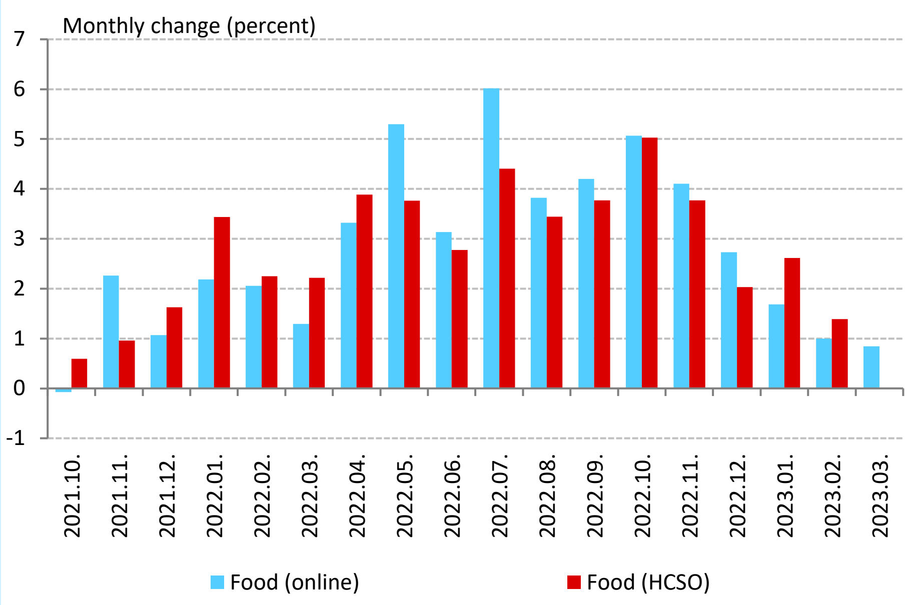
In February, the increase in the price of 27 of 40 food items decelerated, of which the inflation of 14 items declined by more than 3 percentage points compared to January (Chart 3-40). Relying on online data, we regularly monitor developments in consumer prices of food. Based on our collection of high frequency data, the slowdown in price increases continued in March (Chart 3-41).

Chart 3-40: Change in annual inflation for food items January (inside) and February 2023 (outside)



Source: HCSO, MNB

Chart 3-41: Changes in food price index surveyed online



Note: The purpose of the survey is exclusively to monitor the development of food prices at a high frequency. Collection data is available until March 17.

Source: MNB collection

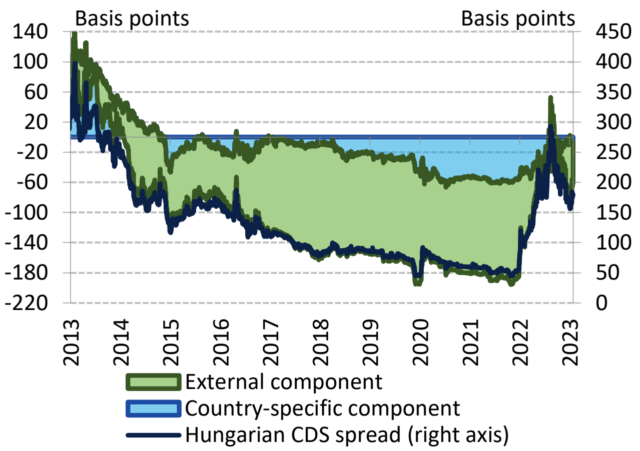
The deceleration of food price inflation supports the decline in Hungary's excess inflation compared to the region. In the countries of the region, the dynamics of food prices were significantly lower than the figures registered in Hungary, i.e. 23-28 percent in an annual comparison in February. **The rise in food prices alone causes two-thirds of Hungary's excess inflation compared to the Czech Republic and Poland, and around 50 percent compared to the regional average.** Of the inflation differential of 7.4 percentage points compared to the Czech Republic, 4.7 percentage point is attributable to food, while of the excess of 8.6 percentage point compared to Polish inflation this figure is 5 percentage point. In both cases the largest part of the differential comes from processed food rather than from unprocessed food.

4 Financial markets and interest rates

4.1 Domestic financial market developments

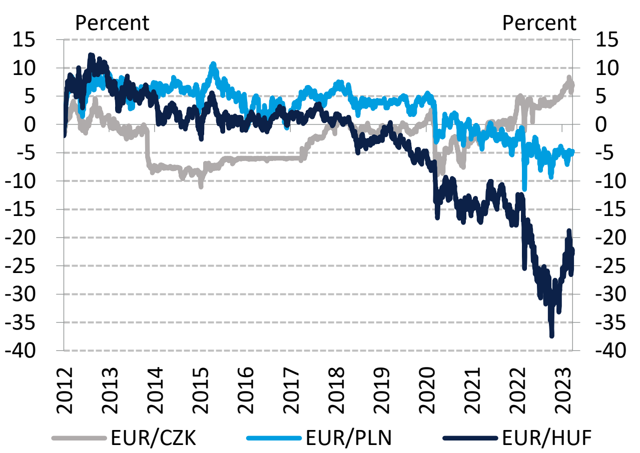
Sentiment on the developed and emerging financial and capital markets improved for most of the past quarter, but at the end of the period under review risk aversion strengthened due to the collapse of SVB, and thus sentiment only changed to a small degree overall. In parallel with lower energy prices, from mid-January the decelerating US consumer price index and better-than-expected growth data had a favourable impact on financial and capital market sentiment and developments. The weakening of the US dollar, the rise in international stock indices and the decline in developed market yields slightly lowered Hungarian long-term government securities yields as well, but on the whole domestic interbank yields increased at the same time. For most of the period, the forint strengthened against the euro, while it was volatile and weakened significantly at the end of the period. Overall, the forint strengthened by 3.8 percent against the euro, while the Czech koruna appreciated less, gaining 2.3 percent, while the Polish zloty and the Romanian leu depreciated slightly over the past three months.

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



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

Chart 4-2: Exchange rates in the region



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

4.1.1. Risk assessment of Hungary

Hungary's credit risk spread increased slightly in the first half of the period, before declining from the beginning of January. Overall, the credit risk spread decreased during the period (Chart 4-1). In the early part of the period, both country-specific and international factors raised the CDS spread, while in the second half of the period international factors reduced the CDS spread, which currently stands at 175 basis points.

4.1.2. Developments in foreign exchange markets

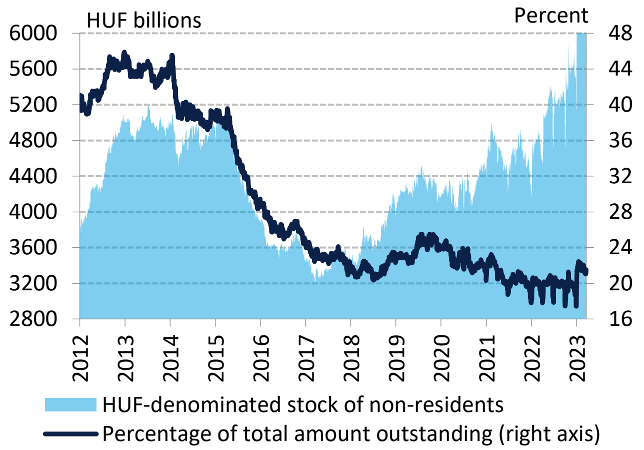
For most of the period, the forint strengthened against the euro, but then became volatile in the second half of the period, and thus overall it appreciated by 3.8 percent. Within the CEE region, the Polish zloty and the Romanian leu deppreciated by 0.3 percent, while the Czech koruna appreciated by 2.3 percent during the period (Chart 4-2). The exchange rate trends of the currencies from the region were mainly affected by commodity market developments as well as monetary policy steps by the region's central banks. As the US dollar weakened against the euro in the period as a whole, the currencies of the region appreciated against the dollar as well.

4.1.3. Government securities market and changes in yields

Non-residents' HUF-denominated government securities holdings rose substantially in the past quarter (Chart 4-3). Non-residents' forint government securities holdings expanded significantly, growing by nearly HUF 1,200 billion to HUF 6,631 billion in the past three months. The ownership share within HUF-denominated government securities also increased to around 21.2 percent.

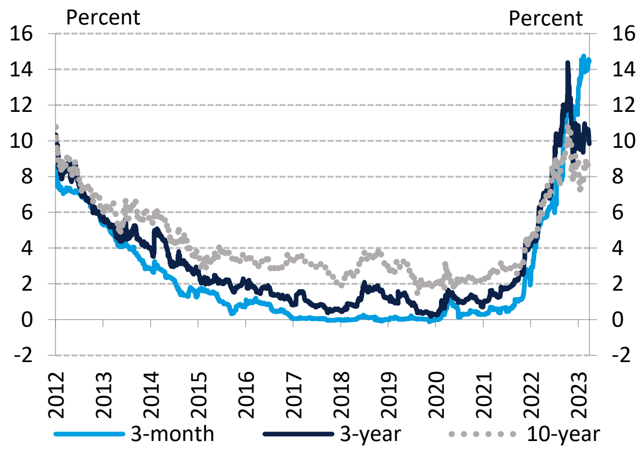
For most of the period, the Debt Management Agency accepted offers for higher amounts than announced at the government bond auctions, although in some cases lower-

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



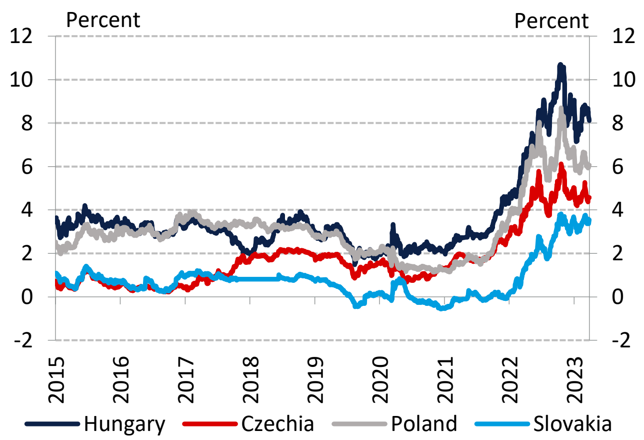
Note: The chart shows the stock of T-bills and T-bonds.
Source: MNB

Chart 4-4: Yields of benchmark government securities



Source: Government Debt Management Agency (ÁKK)

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



Source: Bloomberg

than-announced issuances also took place. In line with the secondary market yield level, average auction yields typically increased. Average auction yields increased by 116 basis points at the 3-month discount treasury bill auction and by 42 basis points at the 10-year auction. Accordingly, average auction yields were at 14.89 percent and 8.69 percent, respectively, at the end of the period.

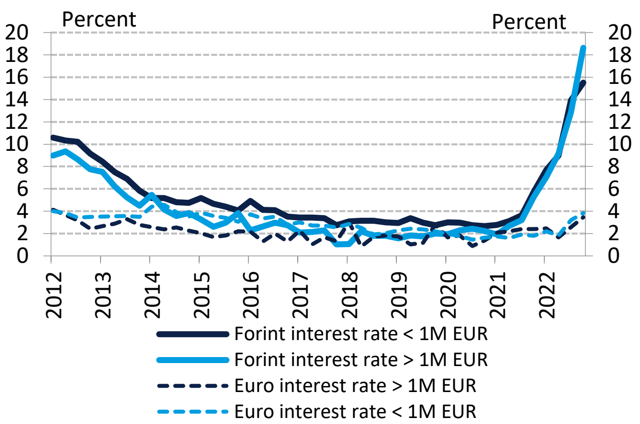
Yields rose typically in the short and middle section of the government securities market yield curve, while long-term yields decreased. (Chart 4-4). On the whole, during the quarter, 5-year and 10-year yields decreased by 7 and 17.5 basis points, respectively, while government securities market yields were volatile during the period under review. Of the interbank yields, the 3-month BUBOR rose by 9 basis points to 16.3 percent.

Most long-term reference yields in the region declined during the period (Chart 4-5). The 10-year Polish yield fell 69 basis points, while the 10-year Czech yield dropped 39 basis points versus the end of the previous quarter. Slovak (EUR) yields fell by 14 basis points.

4.2 Credit conditions of the financial intermediary system

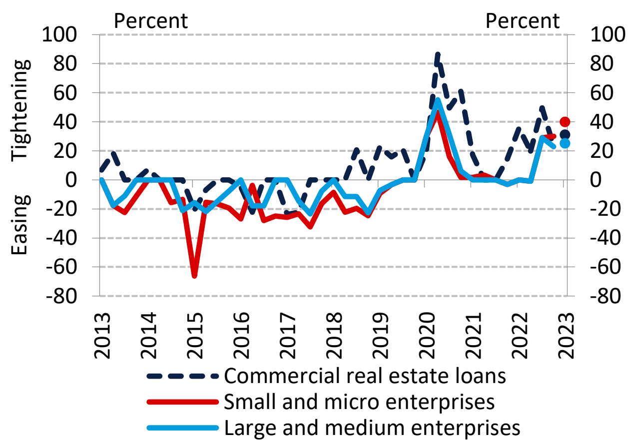
Corporate credit conditions tightened in 2022 Q4 in the case of small and large companies as well as in commercial real estate lending. Banks indicated further tightening of credit standards looking ahead to 2023 H1. Banks primarily cited cyclical factors as a reason for the tightening, while the liquidity and capital position was still mentioned only by a small part of banks among the factors pointing to tightening. This indicates that banks' lending capacity remains high. In the case of housing loans and consumer loans, 17 percent and 27 percent of banks in net terms tightened standards, and further tightening is expected in both segments in the next six months as well. The average cost of funds of newly contracted corporate HUF-denominated loans and the average APR on newly contracted long-term fixed-rate housing loans increased during the period under review.

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 2023 Q1 and 2023 Q2.
Source: MNB, based on banks' responses

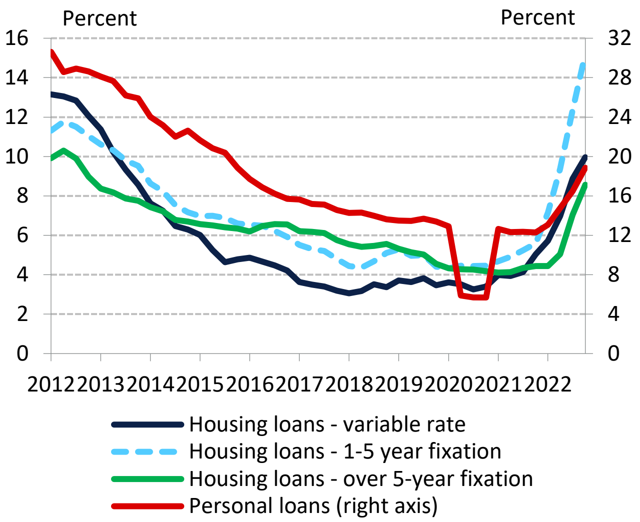
4.2.1. Corporate credit conditions

In 2022 Q4, the average interest rate on corporate forint loans continued to increase, in parallel with a rise in the interest rate environment. The 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 159 basis points in the case of low-amount loans and 576 basis points in the case of high-amount loans compared to the previous quarter (Chart 4-6).[3] During the quarter, the interest rate level on low-amount euro loans increased by 62 basis points, while for high-amount euro loans it rose by 89 basis points, and thus the average cost of funds of euro loans stood at 3.5 percent at end-December. The significant rise in corporate forint interest rates is attributable to the rise in interbank rates.

Credit standards for SMEs and large corporates tightened during the quarter, and further tightening is expected going forward. In 2022 Q4, the banks participating in the Lending Survey tightened conditions of access to loans in both company size categories as well as in the segment of commercial real estate lending. Banks primarily cited cyclical factors as the reason for tightening, while the liquidity and capital position, as factors pointing to tightening, was still mentioned only by a small part of banks. This shows that banks' lending capacity is still at a high level. Looking ahead to the next six months, corporate credit conditions are likely to be tightened further: a net 31 percent, 25 percent and 40 percent of banks anticipate tightening in commercial property financing, for large and medium-sized enterprises and for small and micro enterprises, respectively (Chart 4-7). Looking ahead, in both company size categories banks intend to tighten the data provision requirements vis-á-vis customers, as well as monitoring activities.

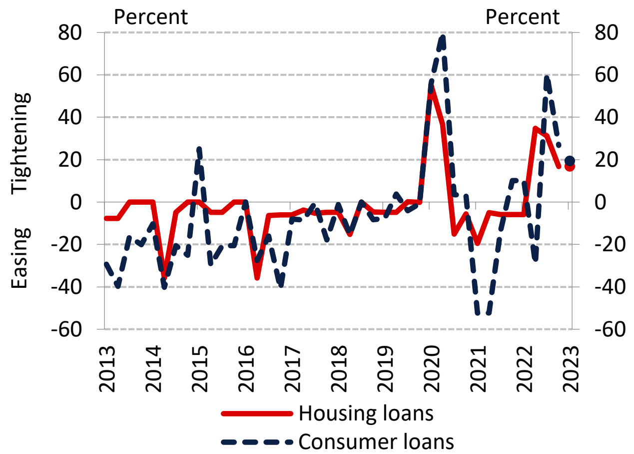
[3] When comparing the average change in the interest rate level on low- and high-amount loans to the January 2023 figure, a shift of similar magnitude can be observed: between September 2022 and January 2023 a rise of 200 basis points and 366 points was observed at low-amount and high-amount loans, respectively.

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



Note: Quarterly average of lending rates on newly disbursed loans. 1-5 year fixation loans currently mostly cover loans subsidised by the state, in which case the interest rate shown in the figure also includes the subsidy paid by the state.
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 2023 Q1 and 2023 Q2.
Source: MNB, based on banks' responses

4.2.2. Household credit conditions

The average interest rates on housing loans increased significantly during the quarter. The average APR level of housing loan contracts concluded in 2022 Q4 stood at 15.2 percent, after a rise of 286 basis points in the case of loans with interest rate fixation for 1-5 years (many of which are subsidised-rate loans related to the Home Purchase Subsidy Scheme for Families), while in the case of loans with interest rate fixation for more than 5 years the increase was 153 basis points, and thus the average APR reached 8.6 percent during the quarter (Chart 4-8). In 2022 Q4, the volume of certified consumer-friendly housing loans available with an at least 5-year interest rate period accounted for 63 percent of the quarterly new housing loan issuance. Increasing by 236 basis points, the average smoothed APR on personal loans reached 18.9 percent by the end of the period under review.

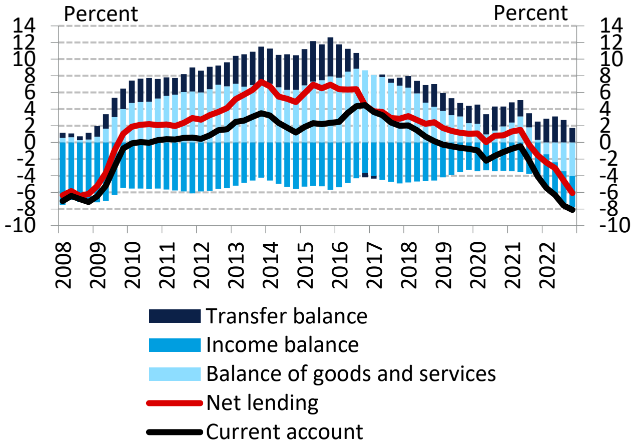
Housing loan standards tightened in the quarter, and further tightening is expected in the future. According to the responses to the Lending Survey, in 2022 Q4, a net 17 percent of banks tightened the standards of housing loans and looking ahead to 2023 H1, an additional 17 percent of banks, in net terms, plan to implement tightening (Chart 4-9). The tightening primarily involved the stricter application of internal debt cap rules. As far as consumer loans are concerned, a net 27 percent of credit institutions tightened conditions of access to loans in the fourth quarter. Looking ahead to the next half year, a net 19 percent of the banks plan further tightening of standards in the market of consumer loans.

5 Balance position of the economy

5.1 External balance and financing

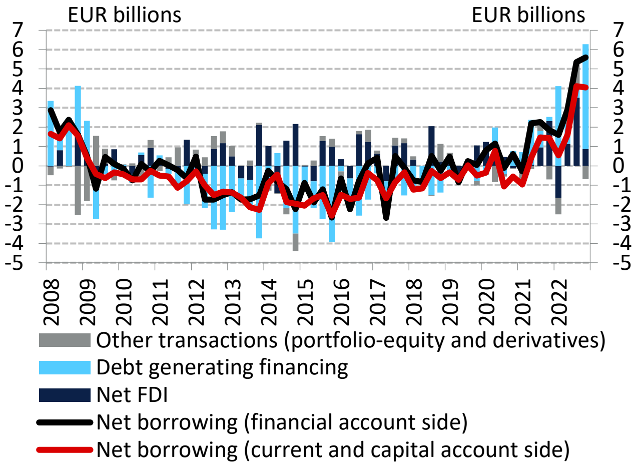
In 2022 Q4, the current account deficit increased to 8,1 percent of GDP, while the net borrowing of the economy also rose. The continued decline in the trade balance is related to the surge in energy prices. In 2022 Q4, net foreign direct investments showed an inflow on the financing side, with increasing debt inflow. Hungary's net external debt-to-GDP ratio slightly increased , while gross debt rose as well: the effect of borrowing could only be curbed by the increase in GDP.

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

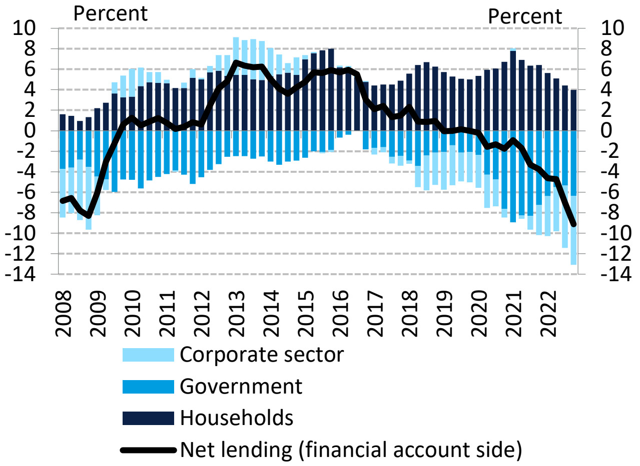
In 2022 Q4, the net borrowing of the economy and the current account deficit rose to 6,1 percent and 8,1 percent of GDP, respectively (Chart 5-1). The decline in external balance indicators was mostly attributable to the fall in the trade balance, and particularly to the energy balance due to the deteriorating terms of trade. In 2022 Q4, the service balance surplus, which plays a key role in the development of the trade balance, reached 4.8 percent of GDP, an unprecedentedly high level since the outbreak of the pandemic. In addition, the goods surplus excluding energy also increased in 2022 Q4. The moderate decline in the corporate income-to-GDP ratio improved the income balance, while the transfer balance surplus remained significant, thereby mitigating the impact of the deteriorating trade balance.

5.1.2. Developments in financing

In 2022 Q4, net FDI inflow continued, accompanied by a significant rise in debt liabilities (Chart 5-2). Following the growth registered in 2022 Q2, net FDI inflow rose to exceed EUR 3 billion in 2022 Q3. At a lower level, the net direct capital inflow continued in the fourth quarter as well. Due to the transactions, the stock of debt resources increased slightly in the third quarter, while in the fourth quarter it increased significantly: in parallel with borrowing by the general government and the banking sector, companies reduced their foreign debt.

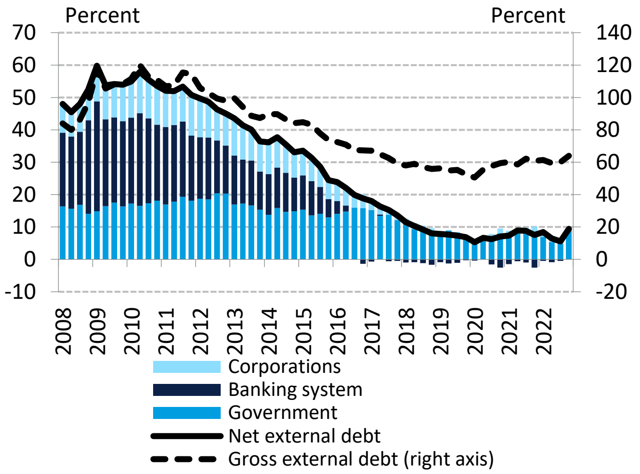
In 2022 Q4, the earlier decline in general government net borrowing turned into growth, while the net savings of the private sector fell from the previously high level to the pre-COVID level (Chart 5-3). Increasing inflation contributed to a decline in the private sector's net financial position. The net position of the general government deteriorated, due to the rise in public energy and consumption expenditures and the public procurement of a large volume of gas. Companies' increasing net borrowing was attributable to the continued buoyant investment activity, inventory accumulation as well as to the corporate income-reducing

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

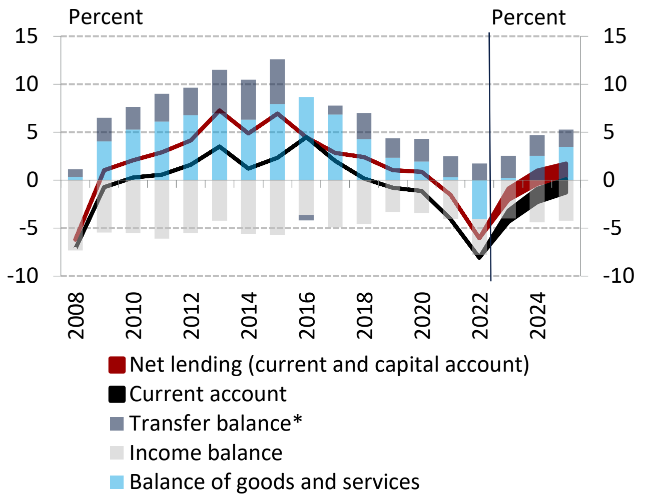
effect of higher energy and commodity prices. The impact of price increases, perceived in the entire economy, accompanied by consumption still growing in annual terms, materially reduced households' net financial savings.

At the end of December 2022, the net external debt of the economy rose above 9 percent of GDP (Chart 5-4). The slight increase in the indicator was a result of contrasting effects. The stock-increasing effect of the transactions was only partially offset by the expansion of nominal GDP. The gross external debt rose to nearly 64 percent of GDP, which was also attributable to the inflow of debt.

5.2 Forecast for Hungary's net lending position

The current account balance reached its low point in 2022 and will decline substantially in 2023–2024, due to the improving trade balance. By the end of the horizon, the deficit will be around 0–1 percent of GDP. This year, the impact of falling energy prices is reflected in declining imports, while decelerating domestic demand curbs import dynamics. In parallel with the continued improvement in export market share, all of this will result in a smaller trade deficit overall. In conjunction with investment projects that start production in the second half of the forecast horizon, the normalisation of the global economic environment will result in a further improvement in Hungary's external balance position. According to the sectors' savings approach, the private sector net position will turn into net lending from 2023, while the general government deficit – mostly due to the high revenues and the budget measures – will fall significantly and later consolidate at a low level.

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

The current account balance reached its low in 2022 and will rise substantially from 2023, in parallel with the improving trade balance (Chart 5-5). In early 2023, improving terms of trade resulting from the shrinking energy prices reduce imports, while from the second half of 2022 recovering exports support an improvement in the goods balance. On the whole, the trade deficit will decline substantially, which is partially offset by the increasing profit of non-resident companies (which will be moderate due to the windfall tax) and the deteriorating income balance resulting from interest expenditures. As a result of the foregoing, the current account deficit may be halved in 2023. In 2024, recovering domestic demand will boost import growth, reflected by a slowdown in the improvement of the trade balance. In 2024, we anticipate the phase-out of the windfall tax, which will increase the income balance deficit. In 2025, due to the normalisation of the global economic environment and the launch of the production of major new export capacities under development, the external balance position may improve significantly, and thus by the end of the horizon the current account deficit may fall to around 0-1 percent of GDP.

Table 5-1: Development of the trade balance as a percentage of GDP

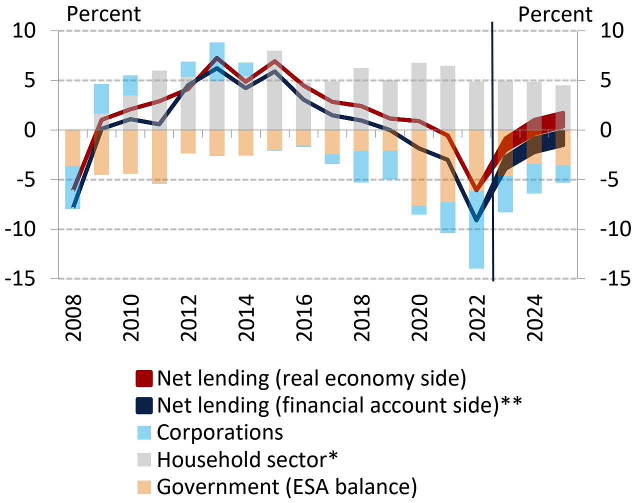
	2021	2022	2023	2024	2025
Balance of goods	-3.0	-8.5	-4.5	-2.4	-1.5
Balance of energy	-4.4	-9.7	-5.2	-4.3	-3.8
Balance of other goods	1.4	1.1	0.8	1.9	2.2
Balance of services	3.3	4.5	4.7	4.9	5.0
Trade balance	**0.3**	**-4.0**	**0.2**	**2.5**	**3.5**

Source: HCSO, MNB

The major improvement in the energy balance expected for 2023 is reflected in the declining current account deficit. Due to soaring energy prices in 2022, energy imports as a percentage of GDP increased more than two-fold. As a result of declining energy prices and the gradual adjustment of resident economic agents, the energy balance deficit will fall sharply in 2023, followed by a more moderate decline from 2024 (Table 5-1).

According to the sectors' savings trends, after peaking in 2022, the general government deficit will fall in 2023, while the position of the private sector will exceed the equilibrium level (Chart 5-6). General government net borrowing will gradually decline over the forecast horizon, which is mostly attributable to the growth in tax revenues. In addition, declining energy prices – supplemented by the amended utilities rules – as well as the expenditure-cutting fiscal measures also contribute to the consolidation 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 net savings in the financial accounts differ from the data in the chart. ** We expect that 'Net errors and omissions' (NEO) will return to the historical average.
Source: MNB

budget deficit. Following the decline as a result of high inflation and falling real income in 2022, households' savings trend will remain broadly unchanged until the end of the forecast horizon. In 2023, as a result of the more moderate corporate investments, the net borrowing of corporations will decline, also supported by lower energy prices. Recovering external demand and the inflow of EU funds from 2024 will be reflected in a further improvement in corporations' financing position.

5.3 Fiscal developments

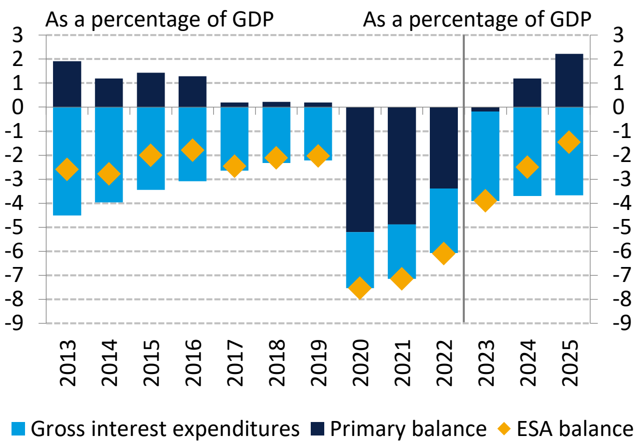
According to the preliminary financial accounts statistics, the 2022 budget deficit came in at 6.1 percent, in line with the deficit target amended in autumn. As a result of the amendment of the 2023 budget, the deficit target for 2023 rose from 3.5 percent to 3.9 percent. The budget continues to project a deficit of 2.5 percent and 1.5 percent in 2024 and 2025, respectively. Achievement of the deficit targets is supported by the fall in energy prices, which should be accompanied by tight fiscal management in order to realise the target of 3.9 percent. In view of the fact that the appropriation includes EU fund revenues from the 2021–2027 period, the realisation of the cash deficit is conditional on an agreement with the Commission as soon as possible. According to preliminary data, at end-2022 the gross government debt-to-GDP ratio fell to 73.6 percent, while according to our forecast, the debt ratio may drop to 69 percent this year and to nearly 65 percent by the end of the forecast horizon.

Table 5-2: General government balance indicators

	2022	2023	2024	2025
ESA balance	-6.1	-3.9	-2.5	-1.5
Primary ESA balance	-3.4	-0.2	1.2	2.2
Gross interest expenditures	-2.7	-3.7	-3.7	-3.7

Note: As a percentage of GDP.
Source: HCSO, MNB

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



Source: HCSO, MNB

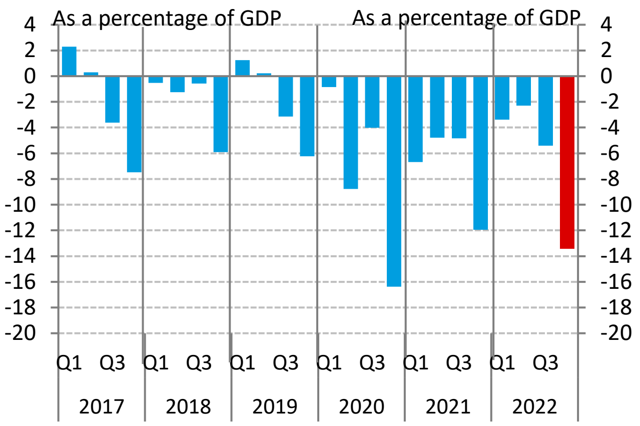
According to the preliminary data of the financial accounts, the net borrowing of the general government amounted to 6.1 percent in 2022, while based on the amendment of the 2023 Budget Act, the budget deficit target for 2023 rose to 3.9 percent of GDP (Table 5-2). In addition to higher revenues resulting from economic growth, the reduction of the deficit compared to 2022 may be facilitated by the measures announced in parallel with the 2023 budget bill and the significant fall in energy prices observed in recent months. In 2024, the deficit may decline further compared to previous years and, based on budgetary expectations, will reach a more favourable level of 2.5 percent of GDP compared to the Maastricht criterion (Chart 5-7). The fiscal forecast contains a budget deficit of 1.5 percent for 2025.

From 2024, the conditions of the Stability and Growth Pact's corrective arm applicable to debt and deficit are likely to be reinstated. In parallel with this, building on the Member States' agreement in principle and in accordance with the new proposals of the European Commission, new EU rules for budget management will be implemented, with the introduction of new, country-specific, medium-term public debt paths and a new expenditure rule consistent with such.

5.3.1. Budget balance in 2022

According to the preliminary financial account data, the 2022 budget deficit amounted to 6.1 percent of GDP. The 2022 Budget Act contained a deficit target of 5.9 percent of GDP, which was first reduced to 4.9 percent by the government's projection, and then raised to 6.1 percent, based on the special natural gas reserve accumulation. According to the preliminary financial account data published by the MNB, general government net borrowing in the last quarter amounted to 13.4 percent of quarterly GDP (Chart 5-8). Including the Eximbank surplus of 0.2 percent as well, the 6.1-percent deficit target was achieved. As a result of the significant nominal GDP growth, the realisation of tax revenues exceeded the plan, while a

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



Note: 2022 Q4 data shows the net lending capacity of general government as reported in the preliminary financial accounts published by the MNB.
Source: HCSO, MNB

large part of this was offset by higher energy-related expenditures: public energy expenditures, partial maintenance of the subsidy for household utility costs and the purchase of gas by the Hungarian Hydrocarbon Stockpiling Association (HUSA).

The 2022 accrual-based general government deficit was significantly lower than the cash deficit of the central subsector. The difference of more than HUF 650 billion between the cash-based and accrual-based balance is primarily attributable to the fact that in the accrual accounting the family tax refund paid in 2022 related to 2021. The advancing of EU grants also resulted in the ESA deficit being lower than the cash-based deficit, while the procurement of gas by HUSA increased the accrual-based deficit.

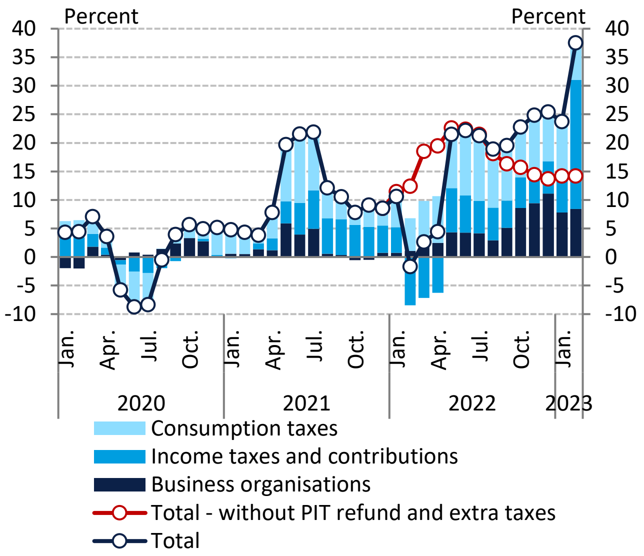
5.3.2. Budget balance in 2023

If the 2023 deficit target of 3.9 percent is achieved, the deficit may decline by more than 2 percentage points compared to 2022. The balance improvement from one year to the other may be fostered primarily by the announced income and expenditure measures, higher tax revenues and the fall in energy prices observed in the first months of 2023. The fiscal impact of inflation and high energy prices may already turn negative in 2023, since the growth in tax revenues may be offset by the rise in budgetary expenditures, which, however, is mitigated by the fall in energy prices.

The amendment of the Budget Act also includes several new tax measures. Payments by pharmaceutical companies involve a new, temporary, tiered surtax, payable by drug producers in 2023 in respect of their 2022 and 2023 sales revenue. The tax rate is 1 percent for sales revenue below HUF 50 billion, 3 percent for sales revenue of HUF 50-150 billion and 8 percent over that. The payments will increase the revenues of the Utilities Protection Fund. The insurance tax rate rose from 7 percent to 12 percent on non-life insurance premium income and from 3 percent to 5 percent on life insurance premium income for the part exceeding HUF 36 billion. The partial personal income tax exemption for workers below the age of 25 is extended to 30 years for women giving birth to a child below the age of 30.

The evolution of government expenditures related to energy prices will remain an important factor in 2023. The achievement of the deficit targets for 2023–2025 may be supported by declining energy prices, while the much higher interest expenditure resulting from the yield increase and the rising pension payments to compensate

Chart 5-9: Evolution of tax and contribution revenues in 2020–2023, year-on-year, 3-month moving average



Source: HST, MNB

for inflation will raise expenditures. Achievement of the deficit targets requires tight fiscal management.

5.3.3. Budget balances for 2024–2025

As there is no Budget Act available, we prepare a technical forecast for 2024 and 2025, which suggests that according to the expected macroeconomic path and estimated expenditures, the deficit path will decline further, following a decrease in risks.

5.3.4. Risks surrounding the baseline scenario

Developments in energy prices still pose a risk to the budget balance, but at present declining prices carry positive risks. High energy prices entail major additional fiscal expenditures even in conjunction with a continuous decline in world market prices and application of the new rules. On the other hand, compared to the expectation included in the amendment of the Budget Act, the persistence of the March gas prices represent upside risks. However, it is a downside risk that a smaller increase in consumption and slower wage growth compared to that planned in the Budget Act would result in lower tax revenues compared to the budget.

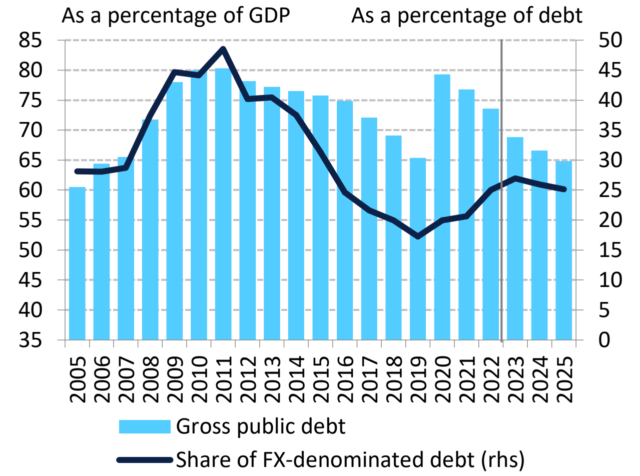
Although at present Hungary may draw down large amounts of cohesion funds from the 2014–2020 financial framework as well, an agreement with the Commission as soon as possible is essential. Following approval of the Hungarian Recovery and Resilience Plan and the signing of the Partnership Agreement, uncertainty about disbursements of EU funds decreased, but drawdown of the 2021–2027 cohesion and recovery funds is not yet permitted. The pre-financing and absorption of funds affect the evolution of the current account deficit and government debt, while the scheduling of implementation has an impact on the accrual-based balance and real economy trends. Until the absorption of the funds, the budget provides pre-financing for the beneficiaries for the expenditures connected to the new programming period.

5.3.5. Expected developments in public debt

According to preliminary data, at the end of 2022 the gross government debt-to-GDP ratio decreased to 73.6 percent. Accordingly, the debt ratio declined by more than 3 percentage points compared to the end-2021 level, mainly owing to strong nominal GDP growth. The share of foreign currency within the central government debt rose to 25 percent by the end of 2022 as a result of last year's foreign currency bond issuance.

According to our forecast, if the budget deficit target is met, the gross government debt-to-GDP ratio will

Chart 5-10: Gross public debt forecast



Source: MNB, ÁKK

decrease to around 69 percent by end-2023. Over the forecast horizon, the debt ratio is expected to steadily decline at unchanged end-2022 exchange rates. According to our projection, the government debt may decline on average by 2.9 percentage points annually and thus by the end of 2025 it may decline to about 65 percent (Chart 5-10).

The change in the EUR/HUF exchange rate affects the debt ratio through the revaluation of FX debt, and thus a 10-forint change in the EUR/HUF exchange rate modifies the government debt-to-GDP ratio by around 0.45 percentage point. According to our projection, the foreign currency ratio of the central government debt may be 27 percent by the end of 2023.

6 Special topics

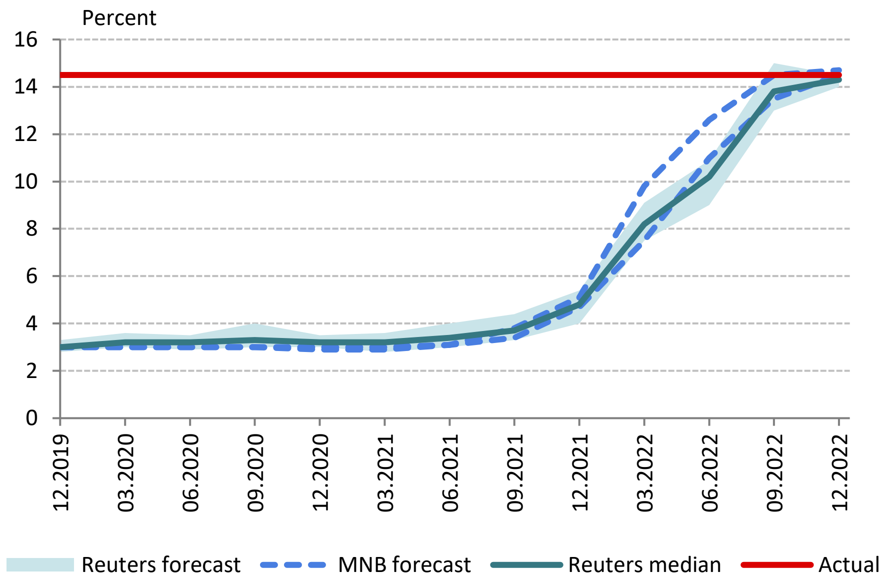
6.1 Assessment of central bank projections for 2022

The purpose of this chapter is to present the accuracy of the realisation of our forecasts for the key macroeconomic indicators in 2022. In addition, we look at how the central bank's forecasting performance compares with market analysts. The first forecast for the previous year for the variables under review was made in December 2019. Overall, actual inflation, economic growth and the number of employees in the private sector in 2022 were in line with our forecasts for last year, while private sector wage growth exceeded our forecasts.

6.1.1. Inflation

Inflation was 14.5 percent in 2022. Inflation developments were significantly impacted by the individual phases of the fight against the global coronavirus pandemic. Sharp rises in commodity, energy and food prices then triggered higher volatility in consumer price changes compared to previous years. Accordingly, our forecast was primarily influenced by these factors. Although the coronavirus pandemic significantly altered supply and demand conditions in certain markets, based on the lessons learnt from previous crises we expected that the disinflationary impacts of slack demand would gradually appear in underlying inflation developments as well. Accordingly, our inflation forecast was initially determined by the joint result of supply and demand frictions, as well as the disinflationary effect of weak demand. Later, the onset of the increasingly severe waves of the coronavirus was accompanied by rising inflation, which prompted us to revise our inflation forecast upward gradually. On the other hand, as a result of the rising commodity, food and energy prices, we increased our inflation forecast further starting from 2022. However, the uncertainty of forecasts increased, as also evidenced by the fact that the expectations of market analysts participating in the Reuters survey varied widely from the first quarter of 2022. **Our forecasts for 2022 - ahead of market expectations - gradually approached the actual figure** (Chart 6-1).

Chart 6-1: MNB and market forecasts for 2022 inflation

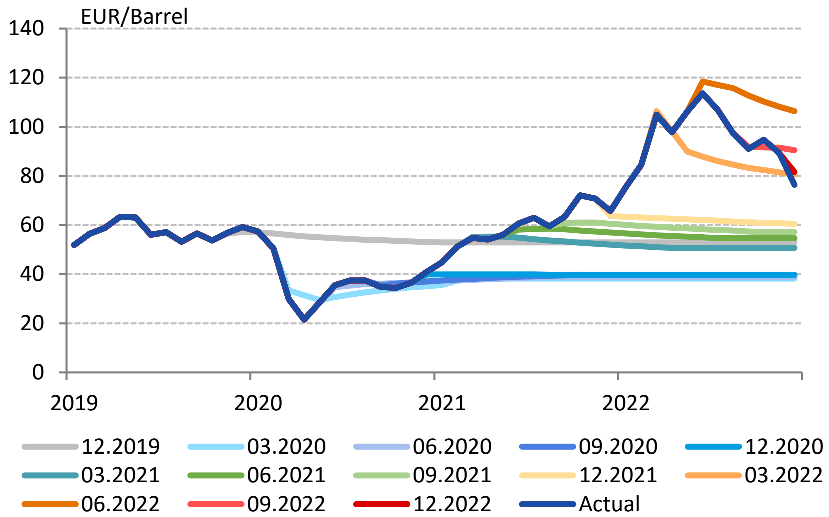


Note: Due to the uncertain situation in the world economy, from December 2020, a forecast range was published by the MNB for 2022 inflation, excluding the June 2021 Inflation Report, which was a point estimate.

Source: HCSO, MNB, Reuters

The revision of our forecasts for 2022 was primarily caused by rising commodity and energy prices (Chart 6-2). After a sharp fall in early 2020, the EUR-denominated world market price of Brent crude oil, which determines fuel prices in Hungary, increased significantly in 2021. This was due to the fact that, in parallel with the reopening of the economies, global markets were characterised by significant excess demand. While the world market oil price per barrel was EUR 22 in April 2020, during the first wave of the coronavirus pandemic, two years later it rose more than fourfold, reaching EUR 98 per barrel. Last year's record was registered in June at EUR 114 per barrel. We revised our mid-year inflation forecast for 2022 considering these factors.

Chart 6-2: Change in oil price assumptions

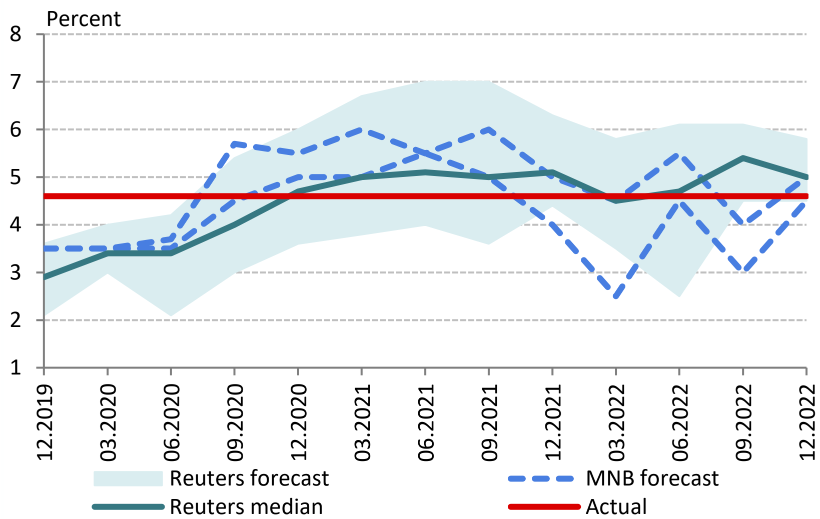


Source: Bloomberg

6.1.2. Economic growth

Hungary's GDP grew at a year-on-year rate of 4.6 percent in 2022. From early 2020, first the coronavirus pandemic and then the onset of the Russia-Ukraine conflict generated significant uncertainties in the global economy. Due to this, from June 2020 we published a range forecast for GDP of 2022. Anticipating rapid economic adjustment, we raised our forecast until mid-2021, and then – due to the sharp rises in commodity, food and energy prices resulting from international supply chain frictions and the war – we gradually reduced it. In 2022, our forecasts made during the Russia-Ukraine conflict were surrounded by large uncertainty; however, the economy reacted more flexibly than first estimated. **Our projections for 2022 essentially approached to the actual level for most of the year.** The average error of the forecast over the past three-year horizon was somewhat smaller than the median of market analysts (Chart 6-3).

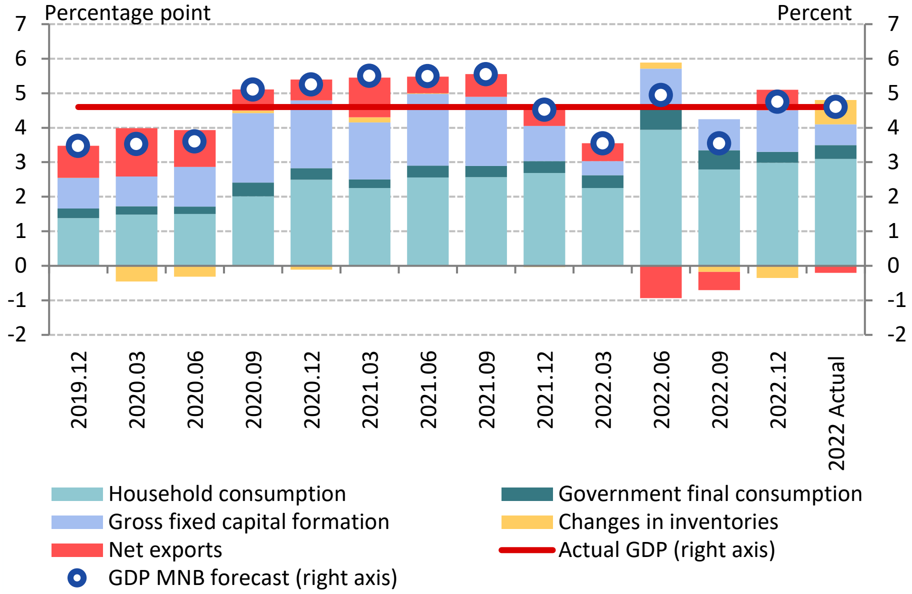
Chart 6-3: MNB and market forecasts for 2022 GDP growth



Note: Due to the uncertain situation in the world economy, from June 2020, a forecast range was published by the MNB for 2022 GDP, excluding the June 2021 Inflation Report, which was a point estimate.
Source: HCSO, MNB, Reuters

In 2022, growth was registered in consumption (+6.6 percent), gross fixed capital formation (+2.2 percent) and government final consumption expenditure (+1.6 percent), and the contribution of net exports was also positive (+0.7 percent). In our projection, we estimated the contribution of net exports considering the performance of domestic industry, which was in line with the expectations overall. Due to reopening of the economy, we assumed faster recovery and expansion of consumption, also supported by government measures, in addition to the favourable income trends and a major rise in net financial wealth. Until 2021 Q3, we raised our expectations related to gross fixed capital formation, while due to rising funding and other costs we gradually reduced them until 2022 Q1. In the remaining part of last year, in line with the favourable economic environment, we repeatedly raised our projection. Overall, our forecasts were below the actual level (Chart 6-4).

Chart 6-4: MNB forecasts for 2022 GDP expenditure-side decomposition

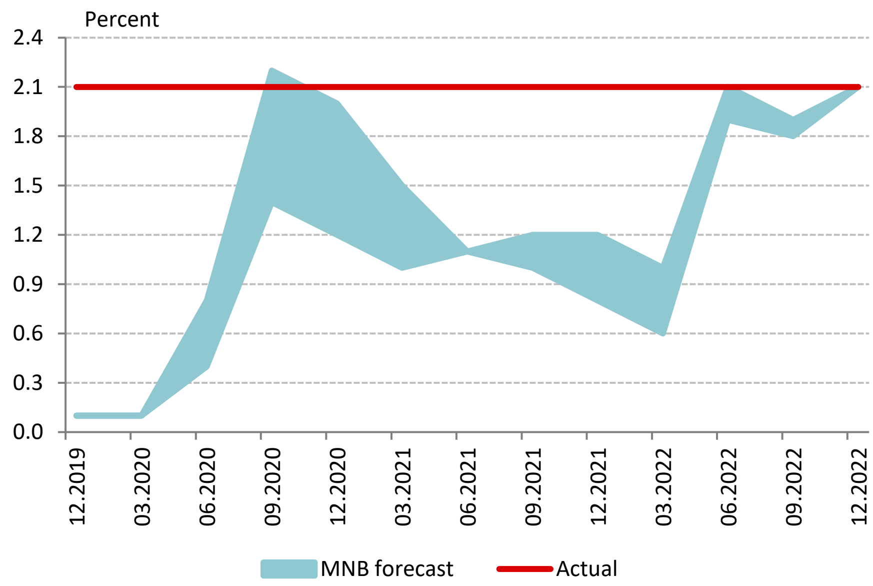


Note: Due to the uncertain situation in the world economy, from June 2020, a forecast range was published by the MNB for 2022 GDP, excluding the June 2021 Inflation Report, which was a point estimate. The values represent the middle of the forecast range. Actual final public consumption includes government consumption expenditures and social transfers in kind from government and NPISHs.
Source: HCSO, MNB

6.1.3. Labour market

Private sector headcount rose by 2.1 percent in 2022. We anticipated an increase in our previous projections as well, due to economic growth and recovery after the pandemic. The war had smaller effect on the labour market than expected. Accordingly, from 2022 Q2 we once again anticipated dynamic growth in employment. Our estimates provided during the Russia-Ukraine conflict involved great uncertainty, but **our projections for last year were close to the actual level from June onwards** (Chart 6-5).

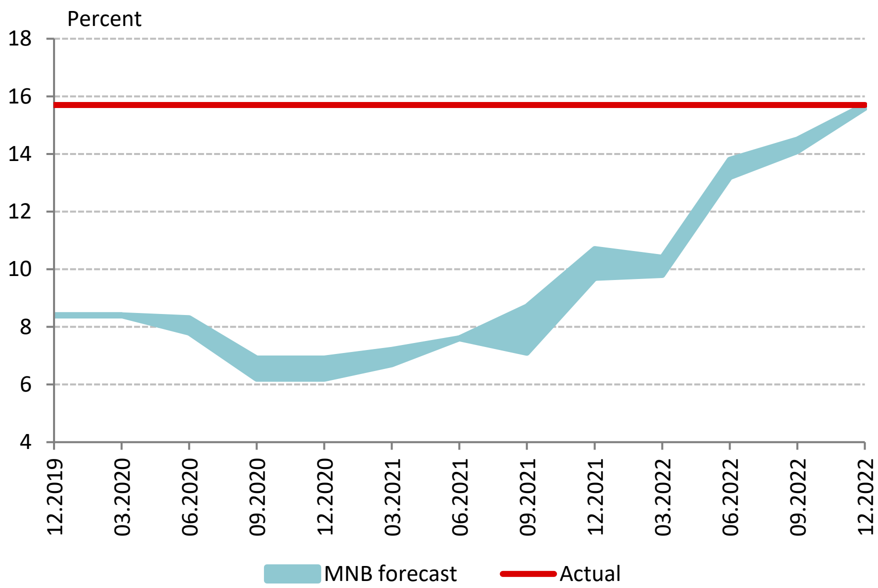
Chart 6-5: MNB forecasts for 2022 private employment growth



Note: Due to the uncertain situation in the world economy, from June 2020, a forecast range was published by the MNB for 2022 private employment growth, excluding the June 2021 Inflation Report, which was a point estimate.
Source: HCSO, MNB

Private sector wages rose by 15.7 percent in 2022. Last year's wage dynamics were largely influenced by the significant increases of 20 percent and 19 percent in the minimum wage and guaranteed wage minimum, respectively. Accordingly, we anticipated a double-digit increase in wages for the entire year. The Russia-Ukraine conflict had much smaller effect on labour market tightness than expected, while inflation forecasts rose, and thus we gradually revised our projection for wage growth upwards throughout 2022, implementing the largest increase in the second quarter. **Overall, last year's projections for private sector wage growth in 2022 were below the actual wage increase** (Chart 6-6).

Chart 6-6: MNB forecasts for 2022 private wage growth



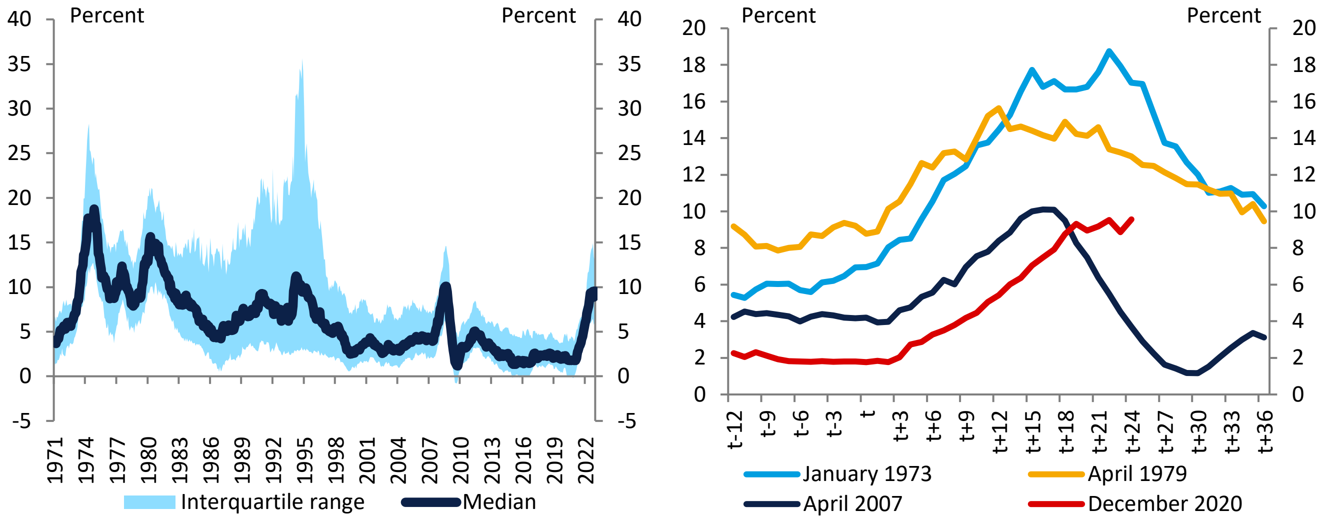
Note: Due to the uncertain situation in the world economy, from June 2020, a forecast range was published by the MNB for 2022 private wage growth, excluding the June 2021 Inflation Report, which was a point estimate.
Source: HCSO, MNB

6.2 Is there a valley beyond the mountain? – Disinflation following high-inflation episodes in the past 50 years

In recent years, as a result of several successive inflation shocks, by the end of 2022 global inflation rose to levels last seen before the 2008–2009 crisis. At the end of 2022, the annual inflation rate exceeded 10 percent in almost half of the countries in the world, while in more than three-quarters of the countries in the world it exceeded 5 percent (Chart 6-7, left panel). Following the 2020 coronavirus crisis, global inflation developments were determined by commodity market demand-supply imbalances, the adjustment of commodity prices after the pandemic and international transportation bottlenecks. In 2021, frictions after the restart of the economy, the realignment of consumer habits/basket, significant exchange rate depreciations in the developing and middle-income countries resulting from financial market turbulences also fostered an increase in price levels. The chances of sustained inflationary pressure are high, due to the renewed rise in energy prices and the persistent supply chain problems resulting from the war in Ukraine launched by Russia in 2022, and in Europe particularly due to the food market and supply problems.

The persistent increases in price levels in excess of the inflation targets pose a major monetary policy challenge for central banks around the world. The primary goal of monetary policy and the precondition of its credibility is to achieve price stability. Credible monetary policy contributes to sustainable growth in economic output and to the maintenance of high level of employment, while excessively high inflation may hinder the achievement of these goals.

Chart 6-7: Evolution of global inflation between 1971–2022: median inflation over the entire time period (left panel) and median inflation 1 year before and 3 years after major global inflationary periods (right panel)



Source: World Bank

In our analysis, based on persistently high-inflation episodes in past decades, we examine the macroeconomic circumstances of inflation rising to high levels as well as the cases when fast disinflation was achieved. The lessons learnt from structural changes observed using an economic history approach may help understand current inflation patterns and respond to challenges.

Several high inflationary periods can be identified globally in the past 50 years (Chart 6-7, right panel). In the 1970s inflation came in several waves. As result of the two oil price shocks during the decade, in most economies inflation rose to the double-digit range in 1973–1975 and 1979–1982. Following the end of the Cold War and the structural change from the centrally planned economy to the market economy, significant inflation occurred in several countries in the world in the first half of the 1990s; however, it remained regionally limited. Even before the global crisis of 2008–2009, global economic growth was accompanied by a significant rise in inflation and by double-digit price index in several countries.

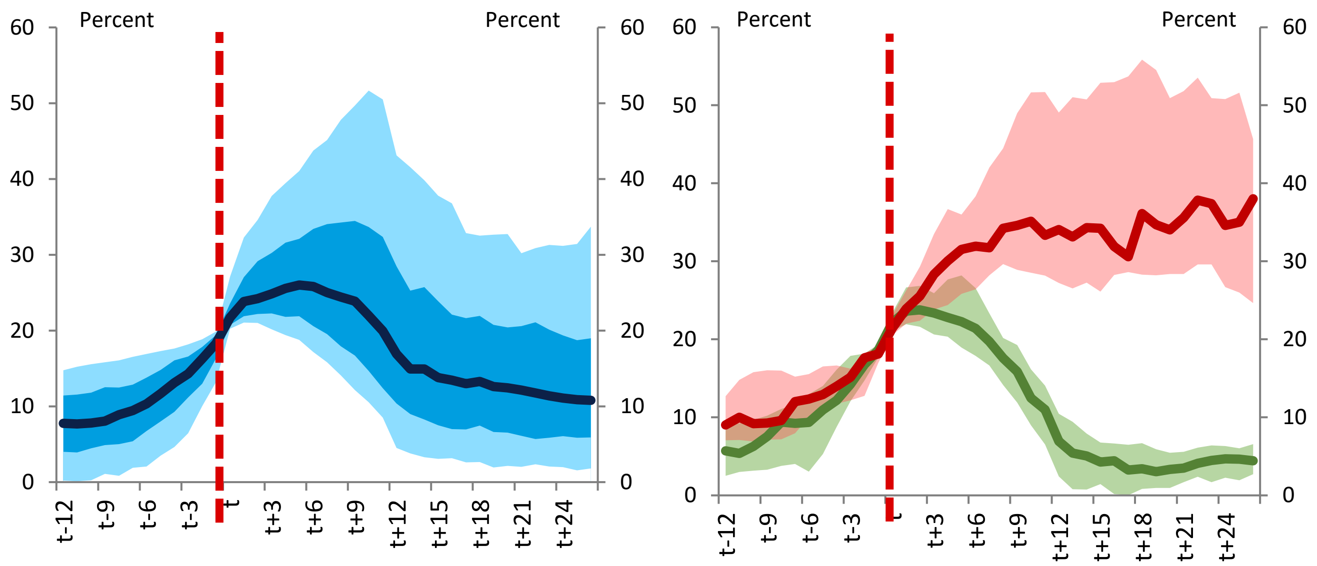
Using data from the past 50 years, our analysis focuses on those countries and periods, where and when inflation rose relatively quickly from a low level to a high level of over 20 percent. In some cases, this was followed by a fast correction, and inflation returned to the single-digit range. However, in several cases inflation remained persistently high. We refer to the former as successful and to the latter as unsuccessful disinflation episodes.

6.2.1. Features of high inflation spikes

First, we examine the realisation of short-term, fast moderation of high-inflation episodes using monthly data. An episode of high inflation is defined as a period when, after inflation on an annual basis has been below 20 percent for at least 12 months, it rose from this lower level to above 20 percent for at least three months. Economies successfully achieving disinflation are identified as those where inflation was persistently reduced to below 10 percent after 12 months, while in the case of the unsuccessful disinflation group, inflation remained persistently above 20 percent for the second year after the surge in inflation. The intermediate cases are not analysed in detail. The starting date is the month in which annual inflation exceeds 20 percent (indicated by "t" in the charts).

Of the 204 cases identified as high-inflation episodes, inflation fell below 10 percent within one year in roughly 25 percent of them and in less than half them within 2 years (Chart 6-8, left panel). In the vast majority of all cases, inflation was still in the single-digit range a year before rising above 20 percent, and typically remained high for a year afterwards. In the following year, a sharp decrease in the inflation rate is already typical, but in many cases, this may also be explained by base effects.

Chart 6-8: Distribution of monthly inflation episodes above 20 percent: all episodes (left panel), successful and unsuccessful disinflations (right panel)



Note: The 10th, 25th, 50th, 75th and 90th percentiles are shown in the figure on the left. The 25th, 50th, and 75th percentiles are in the figure on the right. The solid line is the 50th percentile (median). Green: successful, red: unsuccessful cases.

In the countries that successfully achieved disinflation after periods of high inflation, the inflation rate fell not only to the single-digit range, but even dropped below 5 percent in most cases (Chart 6-8, right panel). However, it should be noted that one quarter of the successful cases were in the period of the global financial crisis, i.e. the global inflation caused by the commodity price increase in 2008 was terminated by the global crisis in most economies.

In the majority of unsuccesful disinflation episodes, inflation exceeded the 20-percent threshold, without a halt in its upward trend, rising above 30 percent in the same year. Moreover, in almost 75 percent of the cases, inflation remained over 30 percent the next year as well, and even by the end of the second year in more than two-thirds of the cases it was over 30 percent. However, understanding unsuccesful disinflation and periods of persistently high inflation calls for long-term analysis.

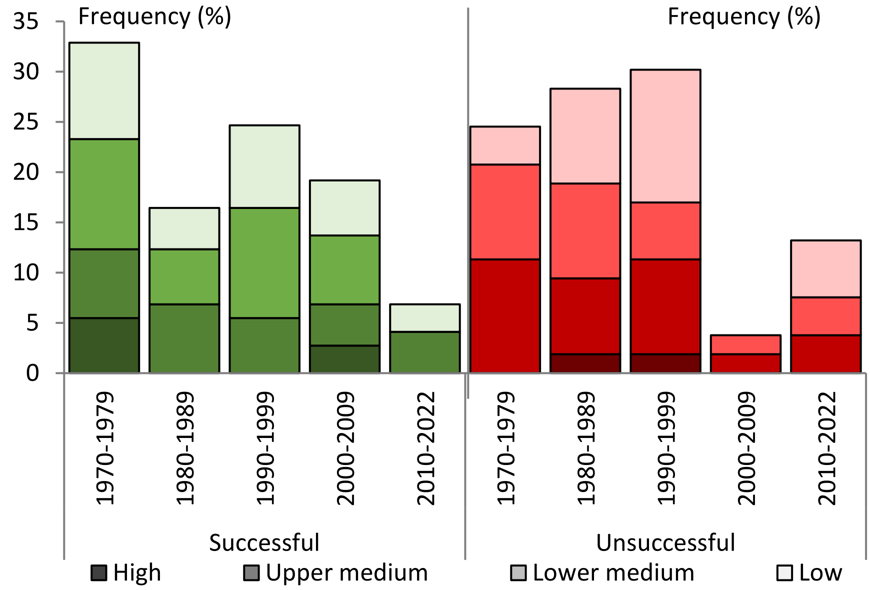
6.2.2. Macroeconomic features of high-inflation episodes

Relying on annual data, it is also possible to monitor the longer-term development of other macroeconomic variables during periods of high inflation. In the following, we present the evolution of economic growth, the interest rate environment controlled by the monetary authority, changes in fiscal policy and exchange rates in successful and unsuccessful disinflation episodes.

According to our definition of high-inflation episodes, we examine cases when annual average inflation rose above 20 percent in a way that in the previous year inflation was below 20 percent and two years previously it was below 10 percent. Half of the cases analysed are from the period before 1990; however, despite the changes in monetary policy framework, the expansion of the central bank's role and the spread of the inflation targeting system, several episodes can be identified even after 1990.

The groups of countries that successfully fight against inflation are defined based on annual data in such a way that in the index falls below 10 percent in the second year after the inflation spike, while in case of unsuccessful episodes it remains over 20 percent in the second year after the inflation spike. In the period of 1971–2022 we identified 73 successful and 53 unsuccessful episodes. 40 cases cannot be classified in either group (in these cases inflation was between 10 and 20 percent), and thus we ignore these in the rest of the analysis. 40 percent of the successful episodes took place in the early 1970s or in 2008, i.e. they coincided with global inflationary peaks that were followed by a global disinflationary phase (Chart 6-9). 28 percent of the unsuccessful cases are concentrated in the early 1990s, with even distribution between 1970 and 1990.

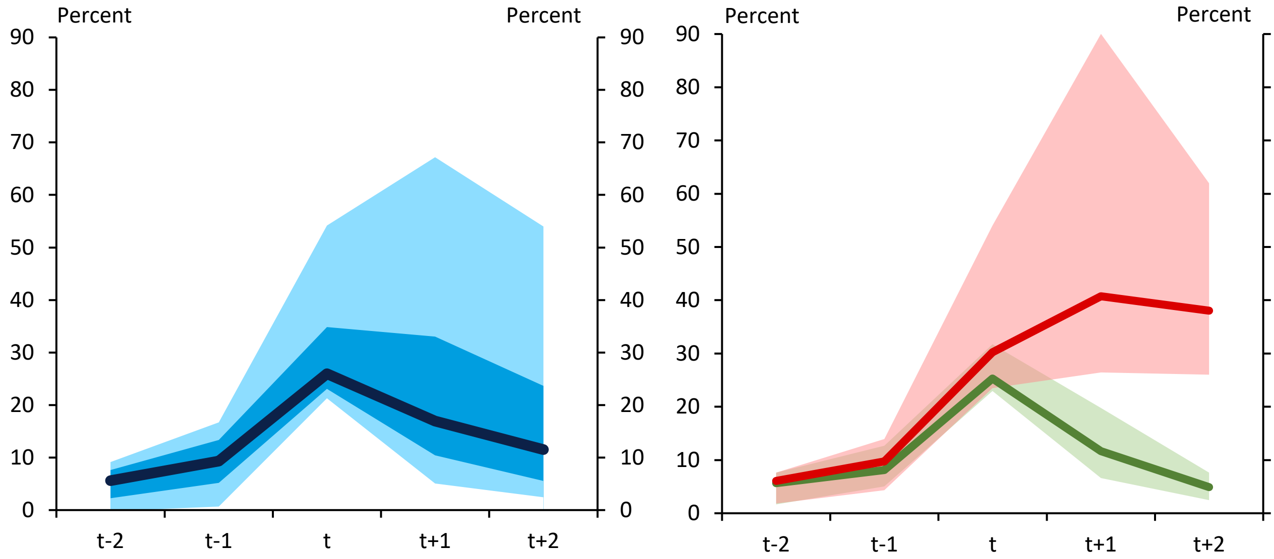
Chart 6-9: Distribution of episodes with annual average inflation over 20 percent over the horizon under review countries are categorised by their 2021 income level classified by the World Bank



Source: World Bank, own calculation

When examining the annual average inflation, of the cases identified as high-inflation episodes, in one quarter of the cases, inflation fell below 10 percent in the first year after the surge, while over a two-year horizon inflation was in the single-digit range in 44 percent of the cases (Chart 6-10, left panel). Similarly to the data analysed with monthly frequency, the cases where inflation is over 10 percent, the dispersion of inflation is significant. In the unsuccessful cases, the surge in inflation was followed by an additional rise a year later, and in half of the cases the rate stabilised over 40 percent (Chart 6-10, right panel).

Chart 6-10: Episodes when inflation exceeded 20 percent, identified based on annual inflation data: all episodes (left panel), successful and unsuccessful disinflation (right panel)

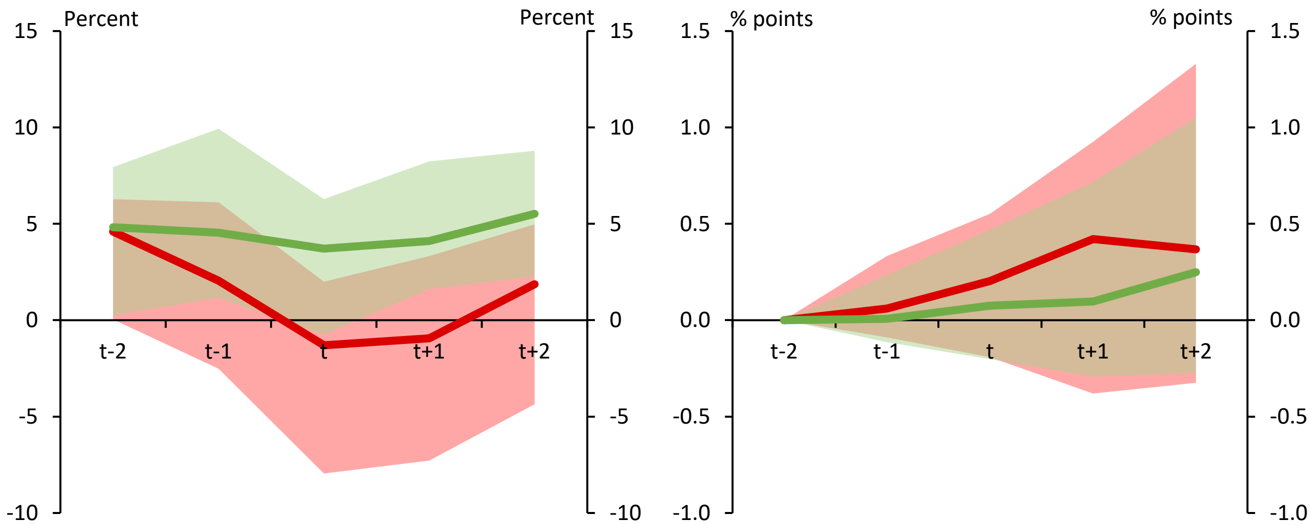


Note: The range of bands in the left-hand chart are 10, 25, 75 and 90 percentiles. The range of bands in the right-hand chart are 25 and 75 percentiles. The continuous line is the 50th percentile (median). Green: successful, red: unsuccessful cases.

Source: World Bank, own calculation

There is a sharp difference in successful and unsuccessful episodes when examining real economic performance. In the successful cases, there is no significant change in the real GDP growth rate either before or after the spike in inflation. By contrast, in cases of high inflation, economies were characterised by a slowdown already before the spike in inflation, and in the year of spike in inflation as well as in the year after in most of the episodes, GDP shrank (Chart 6-11, left panel). The dynamics of the economic contraction appear both in the consumption and industrial production trends. On the other hand, no significant difference can be ascertained between the two groups in terms of employment (Chart 6-11, right panel).

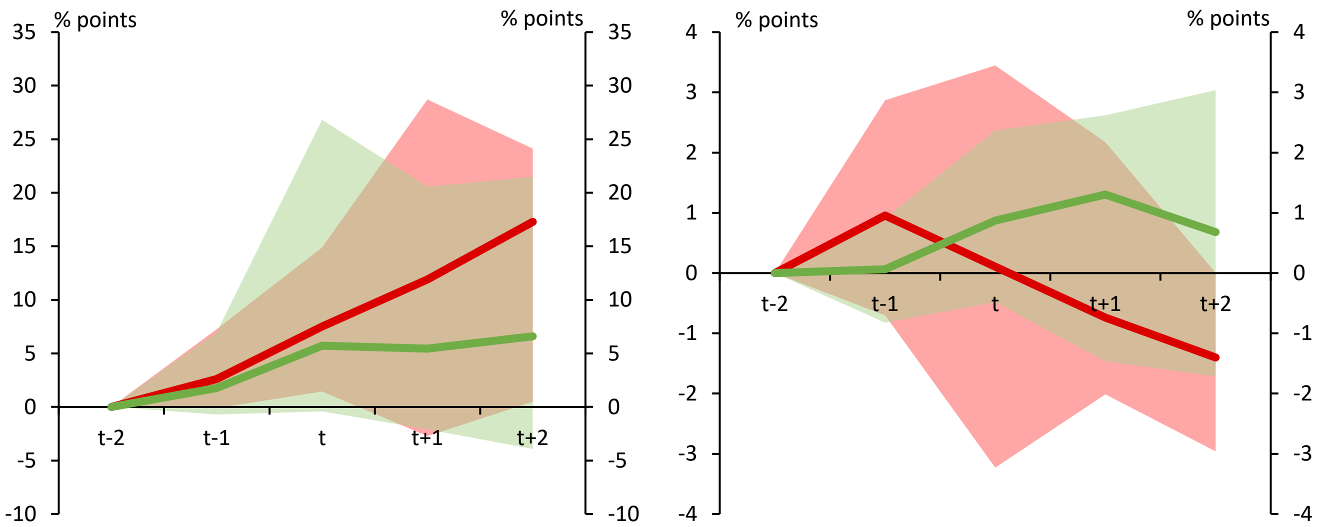
Chart 6-11: Annual growth of real GDP (left panel) and employment trends (right panel) compared to the second year before the surge in inflation in successful and unsuccessful disinflation episodes



Note: The range of bands are the 25 and 75 percentiles. The continuous line is the 50th percentile (median).
Green: successful, red: unsuccessful cases.
Source: World Bank, own calculations

Fiscal balance and government debt trends may be important preconditions for curbing inflation, as evidenced by the difference between the cases of successful and unsuccessful disinflation. In the period preceding the surge in inflation, the government debt-to-GDP ratio rises similarly in both groups, typically by about 5–7 percentage points (Chart 6-12, left panel). In the years after the high inflation, the rise stops in the successful cases, while it continues in the unsuccessful cases, and two years later the median rise exceeds 17 percentage points. In the successful group, the budget balance typically already improves in the year when inflation surged and remains at elevated levels (Chart 6-12, right panel). By contrast, in cases of unsuccessful disinflation, the budget balance deteriorates distinctly from the time when inflation surged and all of this leads to a significant increase in the government debt ratio compared to the group of countries with successful disinflation.

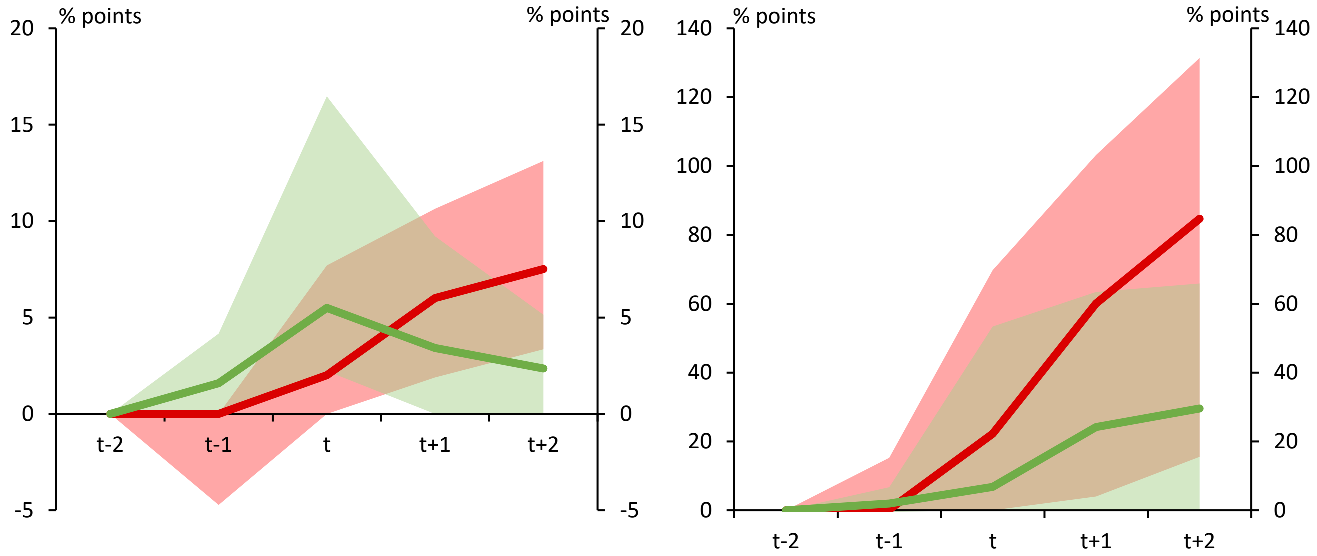
Chart 6-12: Change in percentage points in the government debt-to-GDP (left panel) and budget balance (right panel) compared to the second year preceding the surge in inflation in successful and unsuccessful episodes



Note: The range of bands are the 25 and 75 percentiles. The continuous line is the 50th percentile (median).
Green: successful, red: unsuccessful cases.
Source: World Bank, IMF

Short-term interest rates, which basically reflect monetary policy response, rose in both groups (Chart 6-13). In successful disinflation cases, interest rates increased to a greater extent in the year before reaching a high level of inflation, in parallel with the rise in inflation, and declined somewhat in the disinflationary phase. In the case of countries with unsuccessful disinflation, short-term interest rates continued to rise during the two years after the surge in inflation. However, it should be noted that proper interest rate data are available only for a narrow range of the examined countries, and thus this result is surrounded by significant uncertainty.

Chart 6-13: Change in percentage point in short-term interest rates (left panel) and the exchange rate versus USD (right panel) compared to the second year preceeding the surge in inflation in successful and unsuccessful disinflation episodes



Note: The range of bands are the 25 and 75 percentiles. The continuous line is the 50th percentile (median).
Green: successful, red: unsuccessful cases.
Source: World Bank, IMF, BIS

The exchange rate depreciated practically in all of the countries examined. The depreciation was much greater in the unsuccessful cases than in the successful ones, with the median value of the currency in USD depreciating by almost 90 percent in the former and 30 percent in the latter by the end of the period.

6.2.3. Summary

Overall, we found that countries with successful disinflation raised interest rates faster and more intensively, and were able to start interest rate cuts earlier. In the unsuccessful cases, persistently high inflation resulted in interest rates that rose more slowly and later, but remained higher in the longer term. In the successful cases, there was hardly any change in GDP growth, while in the unsuccessful cases the real economy slowed down significantly. Fiscal policy is also key to combating inflation, due to shaping aggregate demand. In addition, on the fiscal side, the government debt-to-GDP ratio stabilised after the increase before the high inflation in the successful cases and did not rise further. In the unsuccessful cases, government debt continued to rise despite the inflation shock, accompanied by steadily deteriorating budget balance. Although the analysis did not aim to explore cause and effect relations, the inflation and disinflation experiences of the past 50 years suggest that a disciplined monetary and fiscal response contributes to the mitigation of spikes in inflation.

6.3 As a result of the measures taken by the MNB, Hungary's financial market indicators improved significantly since 14 October and stability has been preserved

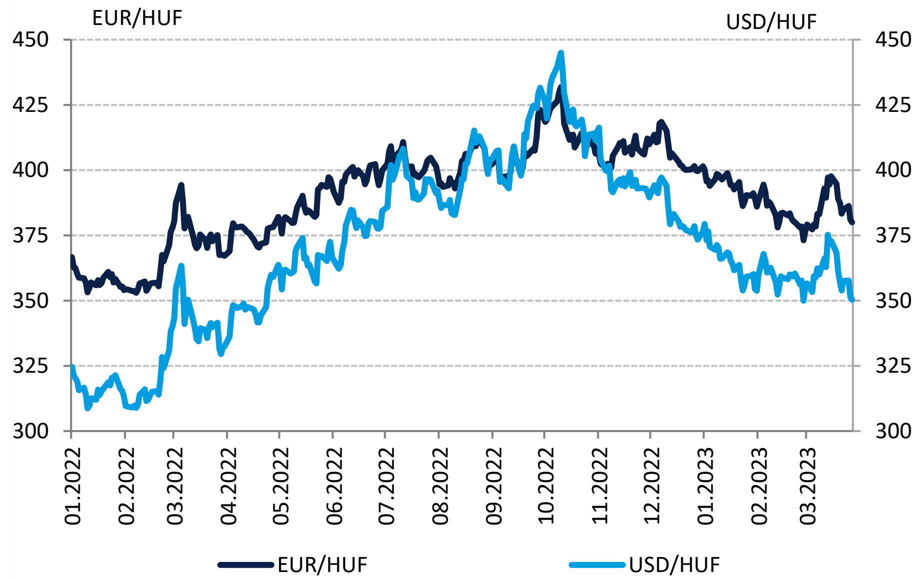
Last year, Hungary's financial market indicators deteriorated significantly, in response to which the MNB took firm measures. It is mostly the result of this that since mid-October the forint has become the best-performing currency globally. In parallel with this, a wide range of the financial market indicators sharply improved.

By mid-October 2022, the unfavourable external environment and some country-specific vulnerabilities had created a critical situation in domestic markets that **posed a threat of a more severe speculative attack on financial markets and destabilisation** of markets. In this critical situation, the central bank took firm measures to ensure the recovery of market stability, which is essential for price stability.

In the form of an extraordinary measure, the MNB decided to introduce overnight instruments with significantly higher interest rate than before. Since the new interest rate conditions were enforced with varying efficiency in the individual sub-markets, the strengthening of the monetary policy transmission became key to fighting inflation. The measures of the central bank which had already been introduced before the extraordinary measures, at the end of September, **such as the revised minimum reserve system, the one-week discount bond and the long-term deposit also served this purpose**, the application of which became even more important in the turbulent market environment seen in October. The purpose of these measures was to ensure that tighter monetary conditions are enforced more efficiently for all important actors in the financial market, and that market stability, which is essential for fighting inflation, was maintained.

The turnaround in the forint exchange rate and other risk indicators in mid-October is undoubtedly the result of the MNB's extraordinary measures. The central bank's measures and communication were key to the recent improvement in risk perception. Naturally, a number of other external and internal factors also influenced market trends in recent months: e.g. the agreement with the EU was a positive development in early December. With a view to further strengthening the efficiency of monetary policy transmission and restoring the balance on the critical FX swap market, in January the MNB decided **on the regular use of the one-week discount bonds**, which had been introduced earlier. The experiences with the measure are positive. The measures taken in recent months **have materially improved the balance of the swap market and monetary policy transmission**.

Chart 6-14: Changes in the forint exchange rate



Source: Bloomberg

There are several tangible signs of the improvement in financial market trends. As a result of the central bank's measures, **the forint became the best-performing currency of recent period** – strengthening against the US dollar by almost 25 percent since 13 October (Table 6-1). Accordingly, the EUR/HUF and USD/HUF exchange rate at present stands close to levels unseen since last May (EUR/HUF 380 and USD/HUF 350).

Table 6-1: Best performing currencies versus USD since 13 October 2022

Country	Currency	Performance (%)
Hungary	**HUF**	**25.2**
Chile	CLP	18.4
Czech Republic	CZK	15.4
Costa Rica	CRC	14.7
Albania	ALL	13.9
Poland	PLN	13.8
Sri Lanka	LKR	12.2
Thailand	THB	11.6
French Polynesia	XPF	11.5
Iraq	IQD	11.5

Source: Bloomberg

Since mid-October, speculative positions against the forint have decreased significantly, by almost HUF 450 billion. This is attributable to the prevention and reversal of the speculative trends observed in October, and the mitigation of the forint surplus on the FX swap market. Relying on the measures introduced since mid-October, the MNB was able to raise further the cost of taking positions against forint and make HUF-denominated instruments more attractive, without the need to tighten the interest rate conditions of central bank instruments.

As a result of the measures, **Hungary's CDS spread also adjusted significantly** (falling by more than 100 basis points compared to its high in mid-October). **Non-residents' forint government securities holdings started to grow again, rising by more than HUF 1,200 billion** (Table 6-2)**.** Finally, it is also a positive development that the yield on the **5-year government securities** fell by 320 basis points **in 1 month after the measures**.

Table 6-2: Changes in Hungary's key financial market indices since 13 October 2022

	CDS (bp)	Exchange rate (HUF, %)	Volatility (%)	Spread to 5 year Bund (bp)	Spread to 5 yr polish government bond (bp)	Speculative positions against HUF (billion HUF)	Non-residents share of government bond (billion HUF)
13 October	293	429	16	957	370	662	5414
29 March	177	380	14	682	315	211	6646
Improvement since 13th October	**-116**	**11**	**-2**	**-275**	**-55**	**-451**	**1232**

Note: In the case of speculative positions, only changes carry meaningful information and not the stock data. ÁP: Government securities.
Source: Bloomberg

Overall, the significant turnaround in the domestic markets in mid-October and the improvement seen since then is clearly the result of the central bank's measures taken in mid-October, reinforced by several other central bank measures since then. However, it should be noted that the external and internal factors underlying the deterioration in the risk environment have not disappeared in recent months, although they have changed positively in several cases.

7 Breakdown of the average consumer price index for 2023

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

	Effect on CPI in 2023		
	Carry-over effect	Incoming effect	Yearly index
Administered prices	1.8	0.1	1.9
Market prices	10.5	4.0	14.5
Indirect taxes and government measures	0.4	0.4	0.8
CPI	**12.7**	**4.5**	**17.2**

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)

	2023				
	Average carry-over effect	Carry-over indirect tax effect	Average incoming effect	Incoming indirect tax effect	Yearly index
Food	21.9	0.0	4.1	0.0	26.0
non-processed	14.9	0.0	2.1	0.0	17.0
processed	25.1	0.0	5.1	0.0	30.2
Tradable goods	8.5	0.1	5.1	0.0	13.7
durables	5.5	0.0	2.4	0.0	7.9
non-durables	10.1	0.1	5.4	0.0	15.6
Market services	7.1	0.0	8.3	0.0	15.4
Market energy	37.6	0.0	2.1	0.0	39.7
Alcohol and tobacco	3.5	2.5	5.4	2.5	13.9
Fuel	19.7	2.6	-3.6	2.3	21.0
Administered prices	13.5	0.0	0.9	0.0	14.4
Inflation	**12.3**	**0.4**	**4.1**	**0.4**	**17.2**
Core inflation	11.7	0.0	6.4	0.0	18.1

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

List of charts and tables

List of charts

List of tables

Mátyás Hunyadi

(23 February 1443 – 6 April 1490)

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

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

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

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

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

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