INFLATION REPORT

2022

SEPTEMBER

'... 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 22 September 2022.

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

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

In 2022 Q2, economic growth varied in the international scene, while downside risks strengthened significantly. The protracted war between Russia and Ukraine and the European energy crisis fundamentally determine the evolution of risks, further worsening growth prospects.

The rate of economic growth decelerated in the major economies of the world in 2022 Q2. The EU, the euro area and the USA recorded year-on-year growth rates of 4.2 percent, 4.1 percent and 1.7 percent, respectively, while that of China was a mere 0.4 percent. GDP in the majority of the countries of the European Union has already exceeded the levels seen prior to the coronavirus crisis, but recovery in Germany, which is Hungary's most important trading partner, continues to be protracted. Global and European growth prospects deteriorated considerably as a result of the Russia–Ukraine war and due to increasing energy supply risks. In addition, the most severe drought of the past decades struck Europe and many other areas in the world during the summer.

Inflation reached highs unseen for several decades in most countries. Price indices may temporarily increase further, but global developments project a decline in price pressure.

In the first half of this year, world market prices of various commodities rose to their historical highs, before starting to decline in the past period. Nevertheless, they still stay at high levels. In the past months, inflation in most countries rose to highs unseen for decades. At the same time, the inflation rate in the United States already decelerated in July and August year on year. Inflation in the euro area amounted to 9.1 percent in August. Countries in the CEE region registered double-digit price increases. In August, prices in the Czech Republic, Poland and Hungary rose by 17.2 percent, 16.1 percent and 15.6 percent, respectively.

The decline in freight costs may reduce the price pressure in general, as it also restrains the rise in the price indices of products that are traded internationally. In addition, the easing of difficulties affecting international production chains and the decline in commodity prices due to the strengthening in the risks of a recession attenuate the cost-side pressure on companies. Together with the above factors, the slowdown in the global economy and the weakening of demand point to a decline in global inflation as of next year.

In the past quarter, the world's leading central banks continued to tighten monetary conditions, while central banks in the region already started to decelerate or stop their respective interest rate hike cycles that had been launched much earlier.

At their September rate-setting meeting, the decision-makers of the Federal Reserve (Fed) raised the target band of the policy rate by a further 75 basis points to 3.00–3.25 percent. In addition, the Fed continued to tighten its balance sheet. According to its forward guidance, the Fed anticipates that the policy rate will have to be raised further to achieve the central bank's goals. The European Central Bank raised the policy rates by 50 basis points in July, followed by a 75 basis point hike at its September rate-setting meeting. In July 2022, the Central Bank closed the net purchases under the APP, and created a new 'anti-fragmentation' tool (Transmission Protection Instrument, TPI) in order to protect the efficiency of monetary transmission. In addition, the Central Bank also decided to apply a flexible approach upon the reinvestments of the Pandemic Emergency Purchase Programme (PEPP).

At a slowing pace since June 2022, the Polish central bank raised the base rate by a total 75 basis points to 6.75 percent. The Polish decision-makers indicated that any further steps to be taken would depend on incoming data. Following a 125 basis point interest rate hike in June, the Czech central bank stopped tightening the interest rate conditions in August, keeping the interest rate on the policy instrument at 7.00 percent. Nevertheless, the decision-makers indicated that they were still ready to intervene in the FX market. The Romanian central bank raised the base rate by 100 basis points in July, followed by a lesser than expected, i.e. 75 basis point, hike to 5.50 percent in August. Since end-June 2022, the Magyar Nemzeti Bank has raised the base rate by a total 400 basis points to 11.75 percent.

Developed market investor sentiment improved to some extent in the past quarter. Strengthening fears of a recession may result in a decline in energy prices and an increase in the prices of safe-haven assets.

In the past quarter, asset prices were basically driven by the news related to the war, expectations regarding the interest rate hike paths of the world's leading central banks, the concerns caused by persistently high inflation, strengthening fears of a recession and the developments in the coronavirus pandemic. Market expectations related to developed market interest rate paths increased further in parallel with the interest rate hikes of the Fed and the ECB.

Commodity and energy prices remain high, but strengthening fears of a recession may result in a decline in energy prices and an increase in the prices of safe-haven assets. As of mid-September, adjustment was observed in gas market prices. The dollar continued to strengthen against emerging market currencies, including the currencies of the CEE region in a narrow sense, while it appreciated by around 4–5 percent against the major developed market currencies as well. Developed market long-term bond yields increased, thus the 10-year US government security yield also rose.

Domestic interbank and government securities market yields rose, while the exchange rate of the forint was volatile against the euro.

Overall, the government securities yield curve shifted upwards in the past quarter, with the largest rise observed in the long and middle sections of the curve. Interbank rates and foreign exchange swap yields grew in parallel with the increase in the base rate. During the period, the exchange rate of the forint showed high volatility mainly as a result of international factors.

Inflation is expected to rise further this year. In the first half of the next year, the price-suppressing effect of the decrease in global commodity prices and the decline in domestic consumption will become more and more pronounced. The decline in domestic inflation will accelerate in the second half of 2023 and the consumer price index is expected to return to the central bank's tolerance band in the first half of 2024.

In the first half of this year, high energy, commodity and food prices increased domestic inflation, but at the same time, the rise in producer prices has almost completely passed through to retail prices. The impact of external factors was attenuated by the fuel price stop and the regulated energy prices for households. The rise in residential energy prices will increase inflation by 2.5–3.0 percentage points for one year from September 2022. Short-term inflation is also elevated by a drought of considerable extent – even on a historical scale –, the estimated inflationary effect of which can be close to 1 percentage point depending on the degree of drought damage. The cost-based price pressure remains high. However, the extension of the price caps until December 31 – affecting certain staple food products and fuels –, the high bases from the end of last year, and the falling consumption demand point towards lower inflation. Domestic inflation continues to rise in the autumn months, so this year it may average between 13.5–14.5 percent overall.

In the first half of the next year, the price-suppressing effect of the decrease in global commodity prices and the decline in domestic consumption will become more and more pronounced. Tight monetary conditions help to avoid second-round inflationary effects and anchor inflation expectations. 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 the first half of 2024. The consumer price index may be in the range of 11.5–14.0 percent in 2023 and between 2.5–4.0 percent as of 2024.

Downside risks to growth were up in the short run, and may persist next year as well. Looking ahead, the economy will slow down as a result of a fall in domestic demand, to which a decline in external demand and a rise in corporate costs also contribute.

The Hungarian economy expanded at a robust rate in 2022 Q2; the gross domestic product grew by 6.5 percent year on year. At the same time, high-frequency data project a slowdown in GDP in H2. Next year's growth will be decelerated by external and domestic factors as well. The war between Russia and Ukraine continues to result in uncertainty, and the rise in energy prices have added to corporate operating costs, which may lead to a decline in production. The difficulties that affect international production chains moderated in the past months. Nevertheless, high energy prices and geopolitical tensions may create new frictions. Due to the deteriorating global economic activity, external demand may be lower than expected before, which has a negative impact on Hungary's exports as well. In addition to external market trends, domestic factors are also expected to restrain economic growth in 2023. The decline in real incomes, the restraining of public investment and rising corporate costs have a negative effect on economic activity.

In 2022, the time profile and structure of Hungary's GDP have strongly shown a dual nature. Components of domestic demand, particularly household consumption, are expected to contribute to growth this year. By contrast, net exports are likely to hold down the expansion. In 2023, household consumption may decline, and investment may also be down. At the same time, the contribution of net exports to GDP growth may be positive again as of the end of next year, in parallel with the slow recovery of external markets and supply chains. Looking ahead, rising costs also reduce the corporate sector's investment activity, and the rescheduling of public development also has a negative effect on investment activity. However, the investment rate will stabilise at around 28 percent over the forecast horizon due to high price dynamics. Hungarian GDP may expand by 3.0–4,0 percent in 2022, 0.5–1.5 percent in 2023 and 3.5-4.5 percent in 2024.

Looking ahead, as a result of a major increase in nominal interest rates, loan dynamics is expected to decelerate in both the corporate and household segments.

The financial intermediary sector's outstanding lending to the corporate sector rose by HUF 524 billion in the second quarter of 2022, and consequently the annual growth rate of the stock of loans reached 15.9 percent in June. Outstanding lending to the SME sector increased by 13.5 percent year-on-year in the same period. During the quarter, the share of new corporate loans disbursed on a market basis was down to 60 percent, before rebounding to 80 percent in July, in parallel with the closing of the Széchenyi Card Programme (SCP) Go! The annual growth rate of corporate loans outstanding may decelerate to 6 percent by mid-2023, and may return to above 8 percent only as of 2024 H2.

The stock of household lending by the financial intermediary system rose by HUF 299 billion in the second quarter of 2022, reaching an annual growth rate of 9.9 percent at the end of June. The volume of housing loan contracts signed in 2022 Q2 expanded by 17 percent year on year. The FGS Green Home Programme and demand brought forward also greatly contributed to the high volume of disbursements. The role of subsidised loan products may become even more important in the rising interest rate environment. In July 2022, the volume of housing loan contracts was 31 percent below the figure for the same period of the previous year. The value of prenatal baby support loan contracts concluded in Q2 was HUF 120 billion, corresponding to a decline of 21 percent. Household loan dynamics may decelerate to 5 percent by mid-2023, but may return to around 10 percent as of 2024 H2.

Decline in the current account deficit is to take place later.

The deterioration in the current account in 2022 is attributable to the increasing trade deficit, which is due to the worsening energy balance as a result of surging energy prices. Looking ahead, the deceleration in investment and consumption dynamics restrains the expansion in imports, which still will mostly be offset next year by the import increasing effect of energy prices. By 2024, with the normalisation of the global economic environment, and as the new export capacities installed in recent years become productive, the external balance position may improve considerably.

The measures announced by the Government and their implementation are expected to ensure the achievement of this year's budget deficit target indicated by the Ministry of Finance. The government raised the 2022 budget deficit target from the previous 4.9 percent to 6.1 percent, whereas the budget assumes deficit targets of 3.5 percent and 2.5 percent for 2023 and 2024, respectively. The raising of the 2022 deficit target is warranted by the accumulation of special natural gas inventories, which adds to the accrual-based deficit, but does not result in government securities market borrowing requirement. The achievement of a balance that is in line with the budgetary objectives is supported by the high tax revenues collected to date, the expenditure reducing and revenue increasing measures announced in parallel with the preparation of the 2023 Budget Act and also by the amendments related to regulated energy prices. The high energy prices entail major additional fiscal expenditures even with the application of the new rules, which poses a risk to the achievement of the deficit targets, in the coming years too. As a result of the growth in nominal GDP, the government debt ratio will decline from 76.8 percent at the end of the previous year to nearly 76 percent of GDP by end-2022, before sinking to nearly 72 percent by the end of the forecast period.

Growth prospects are surrounded by downside risks, while inflation risks have become more balanced.

The Monetary Council highlighted four alternative scenarios around the baseline projection in the September Inflation Report. The risk scenario based on decelerating global economic activity presumes growth and inflation paths that are lower than the baseline scenario. In the scenario of persistently higher energy and commodity prices, a higher inflation and lower growth path will be realised than in the baseline scenario. The alternative scenario that presumes lower energy and commodity prices is in line with a lower inflation path and a higher growth path. The scenario that presents the strengthening of second-round inflationary effects presumes a higher inflation path compared to the baseline scenario. In addition to the highlighted scenarios, the Monetary Council discussed paths involving capital outflows from emerging markets and faster implementation of competitiveness reforms as alternative scenarios.

SUMMARY TABLE OF THE BASELINE SCENARIO

(Forecast based on endogenous monetary policy)

	2021	2022	2023	2024
	Actual		Projection	
Inflation (annual average)[1]				
Core inflation	3.9	15.0 -15.5	10.6 -12.9	2.6 -3.5
Core inflation excluding indirect tax effects	3.9	15.0 -15.5	10.6 -12.9	2.6 -3.5
Inflation	5.1	13.5 - 14.5	11.5 - 14.0	2.5 - 4.0
Economic growth				
Household consumption expenditure	4.6	6.0 - 6.1	(-1.3) – (-0.5)	2.2 - 3.2
Government final consumption expenditure[6]	3.6	2.3 - 2.7	0.2 - 1.3	0.5 - 1.6
Gross fixed capital formation	5.9	3.0 - 3.6	(-2.8) – (-0.2)	2.6 - 5.6
Domestic absorption	5.5	4.0 - 4.2	(-1.1)– (-0.2)	2.0 - 3.2
Exports	10.3	4.7 - 5.3	2.7 - 4.5	5.6 - 7.4
Imports	9.2	5.4 - 6.0	0.7 - 2.5	3.8 - 5.8
GDP	7.1	3.0 - 4.0	0.5 - 1.5	3.5 - 4.5
Labour productivity[5]	5.0	1.7 - 1.9	0.5 - 1.5	2.5 - 3.9
External balance[2]				
Current account balance	-4.2	(-8.7) - (-7.7)	(-7.0) - (-5.8)	(-3.7) - (-2.3)
Net lending	-1.7	(-7.0) - (-6.0)	(-4.7) - (-3.5)	(-2.0) - (-0.6)
Government balance				
ESA balance	-6.8	-6.1	-3.5	-2.5
Labour market				
Whole-economy gross average earnings[3]	8.7	16.6 - 16.9	7.5 - 8.6	7.1 - 8.3
Whole-economy employment	0.7	1.2 - 1.3	-0.3 - 0.3	0.5 - 1.2
Private sector gross average earnings[3]	7.8	14.1 - 14.5	9.3 - 10.3	7.4 - 8.5
Private sector employment	0.5	1.8 - 1.9	-0.3 - 0.1	0.7 - 1.3
Unemployment rate	4.1	3.5	3.5 - 3.7	3.0 - 3.6
Private sector nominal unit labour costs	1.2	8.7 - 9.3	1.1 - 2.6	4.8 - 6.5
Household real income[4]	3.6	3.6 - 3.8	(-3.7) – (-2.7)	2.5 - 3.7

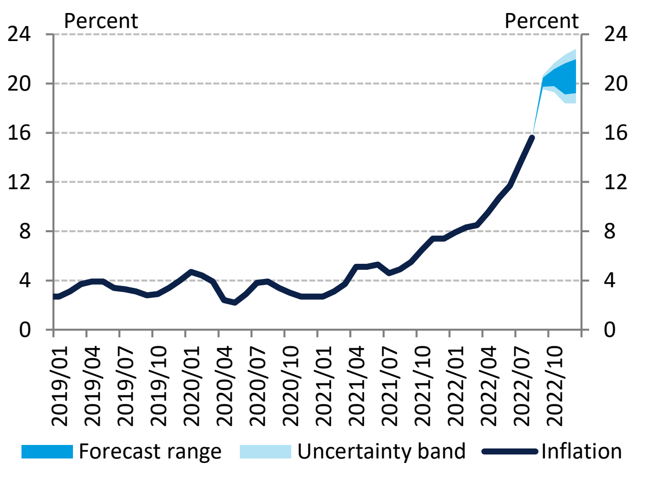
[1] Based on seasonally unadjusted data.
[2] GDP-proportionate values, partly based on forecast.
[3] For full-time employees.
[4] MNB estimate.
[5] Whole economy, based on national accounts data.
[6] Includes government consumption and the transfers from government and non-profit institutions.

1. Inflation and real economy outlook

1.1 Inflation forecast

Consumer prices increased at a year-on-year rate of 15.6 percent in August. The high price increase was mainly attributable to the significant rise in prices of food products, but as a general phenomenon companies repriced their products and services this year to a much stronger degree than the average for previous years. Rising energy, commodity and food prices also fuelled domestic inflation from the expenditure side, while the pass-through of producer price increases into consumer prices has been almost complete. Starting from September 2022, the increase in household energy prices will add 2.5-3.0 percentage points to inflation over the course of one year. Over the short run, our inflation forecast is also lifted by the historically significant drought: depending on the extent of the damages, its estimated inflationary impact may be almost 1.0 percentage point. On the other hand, extension of the price cap on certain basic foodstuffs and fuel until 31 December 2022, the high base effect of the previous year and declining consumer demand point to lower inflation. Inflation is expected to increase during 2022, over the short run, the upward trend in inflation is expected to continue at a slower pace compared to previous observations, after which the disinflationary effect of the turnaround in global commodity prices and declining domestic consumer demand intensifies in 2023 H1. The consumer price index may be between 13.5–14.5 percent in 2022. Similar to the path of global economic activity, economic growth in Hungary is also expected gradually decelerate. The central bank's steps in past quarters and the high base effects mitigate the price increases. The decrease in the Hungarian consumer price index is forecast to accelerate starting from 2023 H2 and will return to the central bank tolerance band in 2024 H1. According to our forecast, the consumer price index will be 11.5-14.0 percent in 2023 and 2.5–4.0 percent in 2024.

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

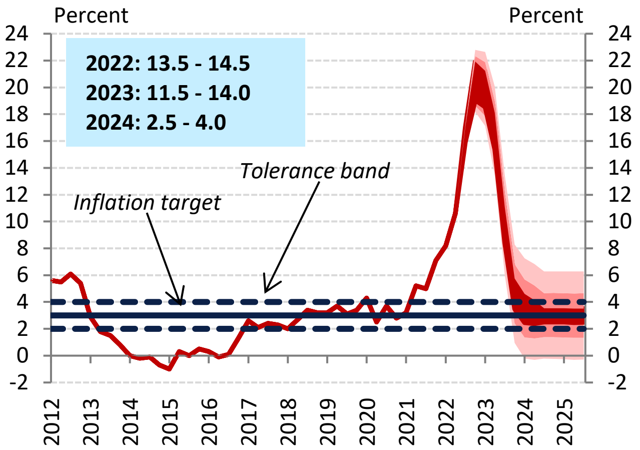


Note: Annual change. The uncertainty band shows the uncertainty around the forecast range with regards to the root mean squared error of previous years' near-term forecasts.
Source: HCSO, MNB

The year-on-year rate of increase in consumer prices advanced to 15.6 percent in August. The high inflation seen in the past period was explained to a large degree by the significant increases in food prices. In the first half of the year, companies repriced their products and services to a much stronger degree than the average of previous years due to rising energy and commodity prices, which raised inflation in Hungary.

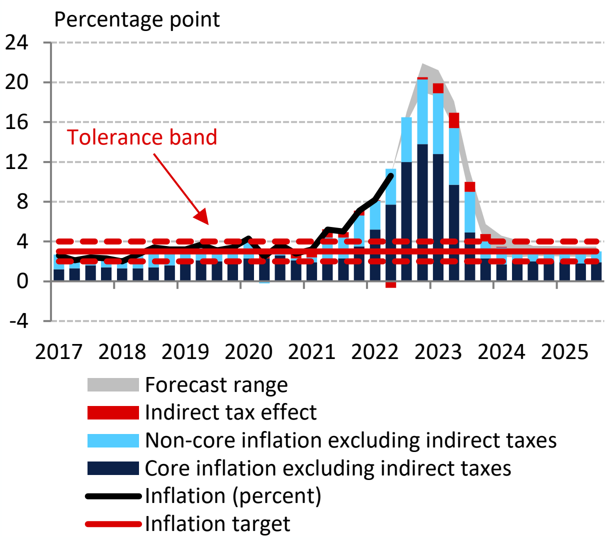
Over the short run, high energy, commodity and crop prices will continue to raise domestic inflation on the cost side, which will be exacerbated by the impact of the extraordinary drought as well. Over the medium term, however, a turnaround in global commodity prices will have a disinflationary effect (for details, see Box 3-4). The rise in energy prices (gas and electricity) and global oil prices primarily appears in the consumer prices of food and industrial goods, via the increasing costs of enterprises. At the global level, however, more and more countries are reporting declining rates of inflation (see Box 3-4). The pass-through of higher producer prices into consumer prices is almost complete. The overall impact of these factors suggests that, inflation is expected to increase during 2022 and over the short term, the upward trend in inflation will continue at a slower pace compared to previous observations, after which the disinflationary effect of the turnaround in global commodity prices and

Chart 1-2: Fan chart of the inflation forecast



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

Chart 1-3: Decomposition of the inflation forecast



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

declining domestic consumer demand intensifies in 2023 H1.

Disinflation will be delayed by the extreme drought affecting all of Europe, which may result in another wave of food price increases starting from the autumn. According to our estimates, the inflationary effect of the drought may amount to almost 1.0 percentage point, depending on the extent of drought damages.

The inflation path is fundamentally influenced by the extension of the price-cap measures and the amendment of regulated utility prices. On 17 September, the government announced that the price caps for basic food products and the price cap for motor fuel would be extended until the end of December. We have no further information on the evolution of these measures after 1 January; we thus apply a technical assumption that these price caps will be gradually phased out by the end of June 2023. Following phase-out of the price cap, motor fuel prices are expected to return to levels justified by futures prices. The government announcement on 14 July terminated the administrative price of gas and energy for households for the quantity above the average consumption. According to our estimate, starting from September 2022 the increase in household energy prices will add 2.5–3.0 percentage points to monthly inflation over the course of one year. However, this effect will materialise quickly, in September 2022.

According to our projection, disinflation accelerates from 2023 H2. Similar to the path of external economic activity, economic growth in Hungary is expected to decelerate. From 2023, disinflation should gain momentum thanks to more subdued domestic economic activity, the short-term decline in labour market tightness, the central bank measures taken in past quarters and the strong base effects.

Inflation is expected to return to the central bank tolerance band in 2024 H1. According to our forecast, inflation may amount to 13.5–14.5 percent in 2022, 11.5-14.0 percent in 2023 and 2.5–4.0 percent in 2024 (Chart 1-2). As the effects of central bank measures take hold, core inflation excluding indirect taxes will embark on a downward path starting from the beginning of next year. Our forecast has core inflation excluding indirect tax effects at 15.0–15.5 percent in 2022, 10.6–12.9 percent in 2023 and 2.6–3.5 percent in 2024.

Tax changes temporarily contribute to the increase in inflation, before fading out completely from 2024 Q2 (Chart 1-3). The inflationary impact of the increase in the public health product tax in July was incorporated by August, in the case of processed food and non-alcoholic soft drinks. The effect of the excise tax hike on alcohol and tobacco products will continue to feed through in the coming months. Based on the available information, the inflationary effect of tax measures will continue to appear next year (further increase in excise tax on tobacco products and in other surtaxes starting from January 2023), which will then fade out completely from 2024 Q2.

In the case of non-core inflation items, substantial increases are expected in the prices of fuel, unprocessed food and regulated-price products and services. The price trend on global commodity markets fundamentally determines the evolution of fuel prices. With the gradual phase-out of price-limiting measures, fuel prices are expected to gradually rise in 2023 H1. Unprocessed food inflation may be in the double digits this year and next year, coming in at around 20 percent, which is higher than our previous expectation. Global food prices increased further in the past period. There were considerable rises in wheat and corn prices due to the Russia–Ukraine conflict, while looking ahead, inflation in this product group may be shaped by indirect effects stemming from higher energy and commodity prices as well as the drought affecting Europe. The inflation of alcohol and tobacco products may be around 11 percent this year and next year, mainly due to the excise tax increases, before declining to the historically observed level from 2024. According to our forecast, as a result of the amendment of regulated utility prices, the inflation of regulated energy prices will be close to 20 percent in 2022 and may be in the double-digit range in 2023 as well due to carry-over effects, while we expect price dynamics for non-energy regulated prices to be similar to our June assumption this year and next year. On the whole, after the cost effects have faded out, the price dynamics of non-core inflation items will moderate to around 3 percent at the end of the forecast horizon (Table 1-1).

Table 1-1: Details of the inflation forecast

		2022	2023	2024
Core inflation excluding indirect tax effects		15.2	11.7	3.0
Core inflation		15.2	11.7	3.0
Non-core inflation	Unprocessed food	23.6	18.2	6.1
	Fuel and market energy	10.3	23.9	4.1
	Regulated prices	8.8	13.1	2.0
	Alcohol and tobacco	10.5	11.5	3.1
	Total	11.7	15.1	3.4
Inflation		**13.9**	**12.9**	**3.2**

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

Box 1-1: Assumptions applied in the forecast

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

Table 1-2: Main external assumptions of our forecast

Technical assumptions	2022		2023		2024		Change		
	Previous	Current	Previous	Current	Previous	Current	2022	2023	2024
EUR/USD	1.08	1.05	1.07	1.00	1.07	1.00	-3,2%	-6,5%	-6,5%
Oil (USD/barrel)	101.5 - 122.2	96.2 - 105.3	88.4 - 119.6	72.4 - 97.9	86.6 - 117.1	68.1 - 92.1	(-5.2) - (-13.8)%	(-18.1)%	(21.4)%
Oil (EUR/barrel)	94.9 - 114.7	91.4 - 100.6	84.3 - 114.0	72.2 - 97.6	82.5 - 111.7	67.9 - 91.9	(-3.7) - (-12.3)%	(-14.4)%	(-17.7)%
Gas (EUR/MWh)	83.2 - 98.3	142.9 - 164.0	69.4 - 93.8	162.8 - 220.2	54.0 - 73.1	135.4 - 183.2	66.8 - 71.8%	134.6 - 134.8%	150.7%
Euro area inflation (%)	6.8	8.1	3.5	5.5	2.1	2.3	1.3 pp.	2.0 pp.	0.2 pp.
Euro area real GDP (%)	2.8	3.1	2.1	0.9	2.1	1.9	0.3 pp.	-1.2 pp.	-0.2 pp.
GDP growth of Hungary's main export partners* (%)	2.5 -3.3	2.3 - 2.8	3.0 - 3.5	2.4 - 3.3	2.6 - 3.2	2.4 - 3.3	(-0.5) - (-0.2) pp.	(-0.6) - (-0.2) pp.	(-0.2) - 0.1 pp.

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

Source: Bloomberg, Consensus Economics, MNB, ECB

In 2022 Q2, economic growth varied at the international level, but downside risks intensified. Of the major economies, in year-on-year terms GDP grew by 1.7 percent in the United States and by just 0.4 percent in China. The economy of the EU and of the euro area grew at year-on-year rates of 4.2 and 4.1 percent, respectively. Economic activity exceeded the pre-coronavirus crisis level in 24 of the EU-27 countries. Nevertheless, Germany, which is the most important trading partner of Hungary, remains close to the bottom of the European ranking, which affects the countries of the region as well, due to the fact that they are embedded in production chains. Growth prospects in Hungary's external markets deteriorated compared to June. Short- and medium-term developments in international economic activity are determined by the protracted war, the high and extremely volatile commodity and energy prices as well as energy supply risks.

Growth is more subdued and inflation is higher in the euro area compared to the June forecast. According to the ECB's new forecast, euro area inflation may be 8.1 percent in 2022, 5.5 percent in 2023 and 2.3 percent in 2024. In 2022, the higher inflation is driven by the sharp increase in energy prices, the Russia-Ukraine conflict, rising food prices and the persistence of supply disruptions. As a result of strong H1 data, euro area GDP growth may be slightly more favourable this year, but looking ahead it may be much more restrained than previously expected, reaching 3.1 percent in 2022, 0.9 percent in 2023 and 1.9 percent in 2024.

The average world market price of Brent crude oil was USD 108.9 per barrel in July, before gradually declining to average USD 98.6 per barrel level in August. In June, the price of oil reached a peak unseen for a decade, after which quotations fell by more than 20 percent. The adjustment observed in the price of oil is typically the consequence of the deteriorating international economic activity. At its meeting on 5 September, the member countries decided to reduce their production for the first time in a year. Compared to September, OPEC+ will reduce output by 100,000 barrels per day from October. The decision is based on the recent drop in oil prices related to the recession, indicating that the organisation's decision-makers share concerns about waning global market demand. In addition to weakening growth prospects, the decline in US and European crude benchmarks is attributable to the latest lockdowns in China due to the pandemic, obscuring the upcoming OPEC production cut. In addition, the United States has been selling its strategic crude oil reserves for months in order to increase supply and reduce prices, which may also have contributed to the drop in the world market prices of oil.

EUR-denominated oil prices, which determine changes in fuel prices in Hungary, decreased significantly compared to our June assumption over the forecast horizon, in line with the decline in the world market prices of oil and the further weakening of the euro against the US dollar. The government extended the price cap on motor fuels introduced on 15 November 2021 until 31 December 2022, further moderating the appearance of the effects of high oil prices in domestic inflation. The difference between the quoted prices of Russian Ural crude oil, which is important for the domestic energy sector, and Western Brent narrowed from the levels of USD 30-40 per barrel to nearly USD 15 per barrel in the past period.

In the summer months, gas prices rose to levels never seen before. The changes in domestic and European gas prices follow the Dutch TTF price, which – amid high volatility – rose to several times of its previous level starting from mid-2021, further strengthened by the development of the Russia-Ukraine conflict from February 2022. The average price of the Dutch TTF was EUR 234 per MWh, which is more than 120 percent increase compared to June. The quantity of gas imports from Russia has been steadily declining since March, raising the price of TTF by 178 percent between January and August. Via gas-fired power plants, the rise in gas prices resulted in a similarly unprecedented increase in the price of electricity. Major adjustment took place following the end-August historical highs seen in the prices of natural gas and electricity. According to the available September data, the prices of gas and electricity adjusted by nearly 20 percent and 30 percent, respectively, compared to the average August levels. Based on the current futures prices of the Dutch TTF gas, prices may decline significantly in the second half of next year. However, the development of prices is surrounded by uncertainty.

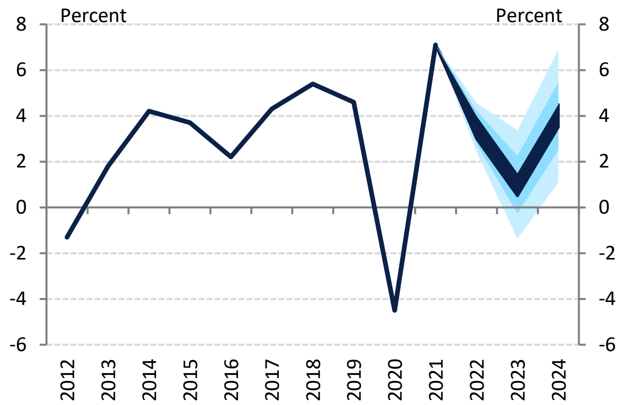
The government raised the budget deficit target from the previous 4.9 percent to 6.1 percent in 2022, while the budget deficit may be 3.5 percent in 2023 and 2.5 percent in 2024. The increase in the deficit target for 2022 is justified by the accumulation of special natural gas reserves, which increases the accrual-based deficit, but does not create a need for financing from the government securities market. In 2022, the achievement of a balance that is in line with the budgetary objectives is supported by the high tax revenues as well as the expenditure-reducing and revenue-increasing measures announced in parallel with the preparation of the 2023 Budget Act and also by the amendments related to regulated energy prices. Nevertheless, the high energy prices entail major additional fiscal expenditures even with the application of the new rules, which poses a risk to the achievement of the deficit targets especially in the forthcoming years. If the budget deficit target is achieved, the government debt-to-GDP ratio may fall from 76.8 percent at end-2021 to 76 percent in 2022 as a result of a dynamic nominal GDP growth, which may be followed by further decline in the coming years.

According to our expectations, following the adoption of the Recovery and Resilience Plan as well as the Partnership Agreement and the operational programmes, drawdown of the funds for the 2021–2027 cycle may start. Nevertheless, utilisation of the recovery and cohesion funds is still surrounded by high uncertainty.

1.2 Real economy forecast

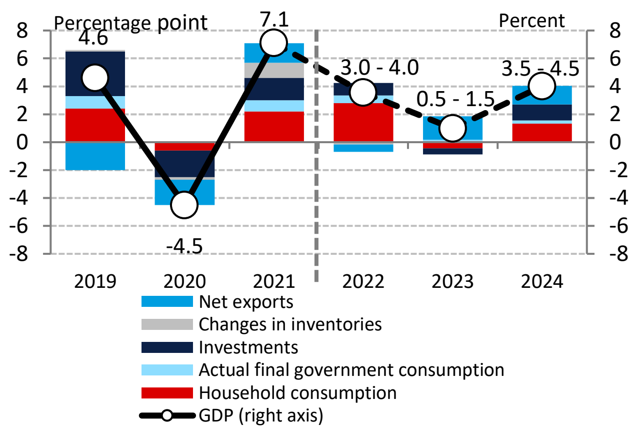
In line with our expectations, Hungarian GDP grew at a year-on-year rate of 6.5 percent in 2022 Q2. There is a strong duality in the time profile of GDP in 2022, and we expect economic growth to decelerate significantly in the second half of the year. Households' consumption expanded dynamically in the first half, with major wage increases and one-off income-expanding government measures as contributors. From the last quarter of this year, real disposable income may decline, resulting in lower consumption. Added value in agriculture also restrains this year's growth, as the extraordinary drought damage has led to a substantial loss of output in the sector. Significantly higher energy prices, mounting uncertainty and slower lending are reducing private sector investments looking ahead, and the rescheduling of state developments this year and next year also has a negative effect on investment activity. Overall, the expansion in the volume of investments may continue this year at a lower rate than projected in June, while gross fixed capital formation may decrease in 2023. The investment rate will stabilise at around 28 percent over the forecast horizon. In line with the increasing worries about global recession, prospects for external economic activity have deteriorated. Accordingly, we project that Hungarian exports will grow more slowly in both 2022 and 2023. As a result of the dynamic expansion of domestic demand in the first half of the year, import growth is higher than export growth, and consequently net exports are restraining GDP growth. However, they are expected to have a positive effect from 2023. In 2022, Hungary's GDP may grow to a lower degree than expected in June, expanding by 3.0–4.0 percent. Economic growth is projected to be 0.5–1.5 percent in 2023 and 3.5–4.5 percent in 2024.

Chart 1-4: Fan chart of the GDP forecast



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

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

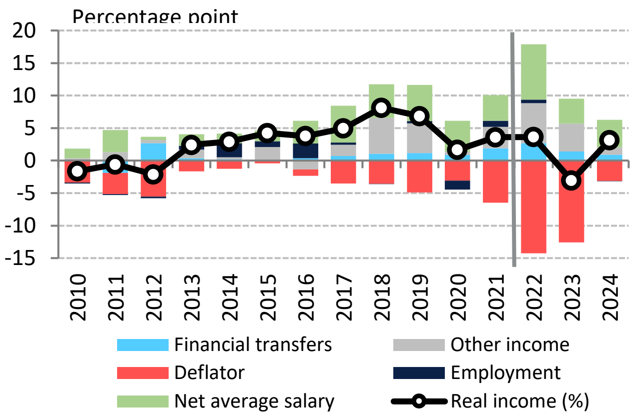


Note: The values represent the middle of the forecast range. Actual final government consumption includes government consumption and the transfers from government and non-profit institutions. Source: HCSO, MNB

In 2022 Q2, Hungarian GDP growth corresponded to our expectations, with a year-on-year increase of 6.5 percent. Market services and industry were the main contributors to annual economic growth from the production side, while agriculture hampered GDP growth due to the extraordinary drought. Following the favourable economic performance in the first half of the year, GDP growth is expected to decelerate significantly in the latter half (Chart 1-4).

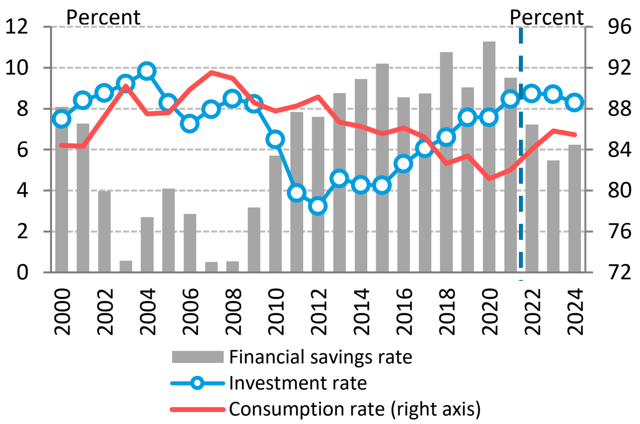
Looking ahead, the growth rate of the economy is expected to slow down in 2022 H2 and 2023, in line with falling domestic demand, deteriorating external demand and rising corporate costs. Economic growth is surrounded by downside risks. The war between Russia and Ukraine continues to result in uncertainty, and rising energy prices have added to corporate operating costs, which may lead to a decline in production. Difficulties in international production chains have eased in recent months, but frictions may arise again in view of the high energy prices, geopolitical tensions and the related energy supply risks. Due to the deteriorating global economic activity, external demand may be weaker than previously expected, which may have a negative impact on Hungary's exports. In addition to external market trends, domestic factors may also curb economic growth in 2023. The decline in household consumption and rising corporate costs may have a negative effect on economic activity. Economic performance may become more dynamic from the middle of next year. **Hungarian GDP may expand by 3.0–4.0 percent in 2022, 0.5–1.5 percent in 2023 and 3.5-4.5 percent in 2024** (Chart 1-5).

Chart 1-6: Evolution of household disposable income



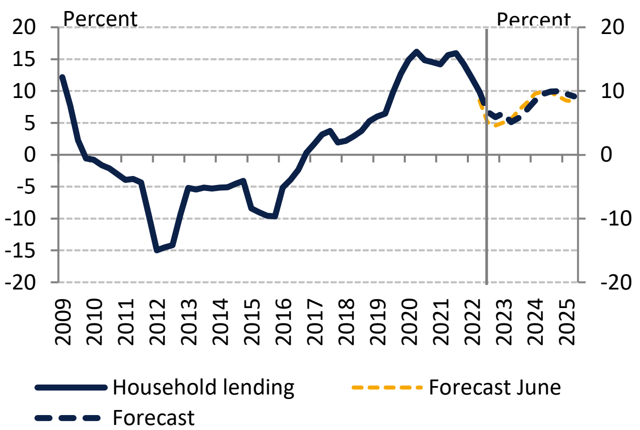
Note: Based on the mean of the forecast band. Government measures concentrating in 2022 H1, statistically are accounted in the net average salary.
Source: HCSO, MNB

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



Source: HCSO, MNB

Chart 1-8: Annual changes in lending to households



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

Despite the temporary slowdown, the growth surplus of the Hungarian economy compared to the euro area may be maintained. Hungary's growth surplus is expected to average 0.9 percentage points between 2022 and 2024, returning to above 2 percentage points by the end of the forecast horizon. **Household consumption will continue to increase overall this year, but may decline in 2023 as a result of falling real disposable incomes.** While household consumption expanded dynamically in 2022 H1, households' real disposable income started to decrease from the final quarter of this year, due to the expiration of one-off government benefits and inflation that is higher than our previous expectations (Chart 1-6).

Next year, we expect a temporary decline in savings. With the exception of the lowest income decile, thanks to the increase in real wages in recent years, households in the lower income deciles have also become net savers, which can facilitate adaptation to higher prices. At the end of the forecast horizon, in line with the increase in real disposable income, the savings rate of households increases again, while the investment rate remains relatively stable in the following years (Chart 1-7).

The growth rate of household loans outstanding may decelerate significantly due to the higher interest rate environment. According to actual data for Q2, lending to households exceeded our earlier expectations, partly due to demand brought forward in relation to the Green Home Programme as well as interest rate and inflation expectations. Looking ahead, the growth rate of household loans outstanding may roughly correspond to our previous expectations; the inflationary and real economy effect of the Russia–Ukraine conflict and the sanctions introduced to contain it as well as the increasing interest rate environment and tightening credit conditions may reduce households' propensity to borrow (Chart 1-8). Household loan dynamics may decelerate to 5 percent by mid-2023, but then return to around 10 percent from 2024 H2.

Growth in investments may continue at a slower pace this year than expected in June, while we expect a reduction in investment activity in 2023. The lower growth rate in 2022 is primarily explained by the decline in state investments; in 2023, we expect a decrease in both corporate and state investments. The investment rate will stabilise at around 28 percent over the forecast horizon, due to the high deflator of investments (Table 1-3).

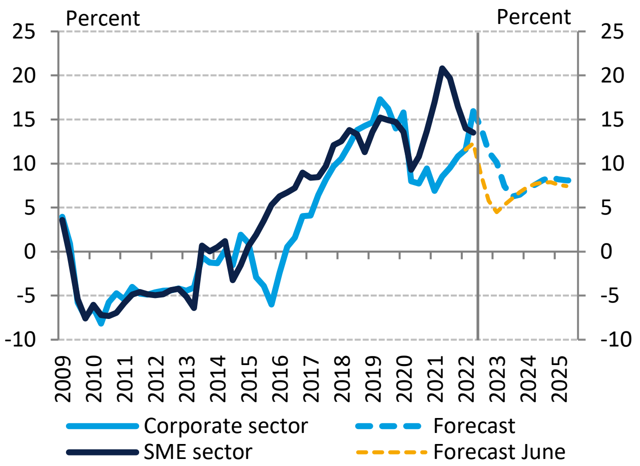
The growth rate of outstanding lending to corporations may decelerate significantly in the second half of the year. According to actual data for Q2, the annual

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

	2022	2023	2024
Gross fixed capital formation	3.3	-1.5	4.1
Government investments	-8.5	-4.3	0.0
Private investments	6.6	-0.9	5.0
Investment rate	28.7	27.8	27.5

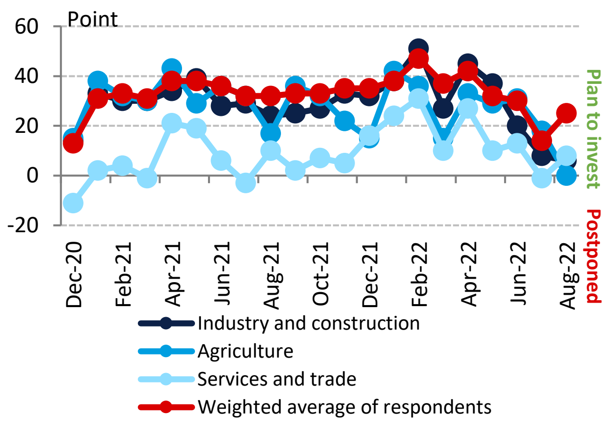
Note: The values represent the middle of the forecast range. Year-on-year growth for gross fixed capital formation and investment rate as proportion of GDP.
Source: MNB

Chart 1-9: Annual changes in lending to non-financial corporations and SMEs



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

Chart 1-10: Difference between the proportions of those planning investments and those postponing planned investments in the next three months



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

growth rate of corporate loans outstanding was above our previous expectation: the subsidised credit schemes, banks' ample lending capacities and the demand for working capital loans arising due to the increasing prices contributed to the maintenance of the high nominal corporate loan dynamics (Chart 1-9). The share of market-based loans within new corporate loan contracts declined considerably in Q2, in parallel with the upturn in the loan disbursements of the Széchenyi Card Programme Go! prior to its closure. Corporate demand for working capital loans may increase in the coming period due to the rising energy and commodity prices, but according to our estimate, overall corporate loan dynamics may decelerate to 6 per cent in the uncertain environment by mid-2023, and the growth rate may only return to a level above 8 percent from 2024 H2.

Corporate investments may temporarily decrease in 2023. According to 2022 H1 investment statistics, corporate investment trends were favourable. Nevertheless, we expect lower activity in H2. In August, the domestic purchasing manager index in manufacturing was still in the range that indicates growth, but investment expectations have deteriorated in the past months according to the MNB's survey of corporate economic activity (Chart 1-10). Agricultural, industrial and construction companies are also planning fewer developments. Rising company operating costs as a result of high energy prices may lead to the postponement of projects or to fewer new investments and, in the case of some companies, to bankruptcy.

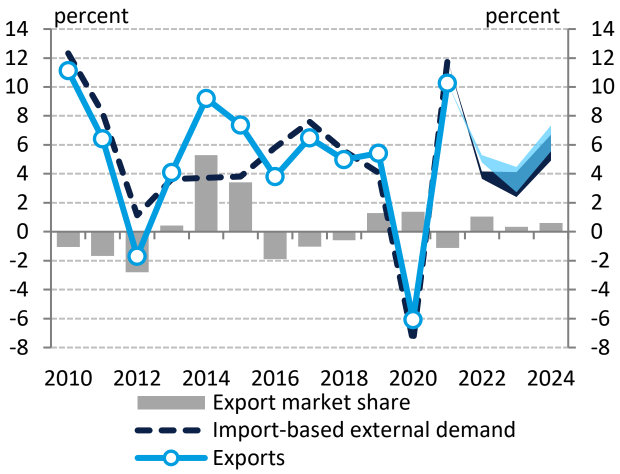
Household investment is expected to grow over the forecast horizon. Home-creation measures continue to support growth in households' investments. A record volume of housing loans was disbursed in the housing loan market in Q2: housing loans rose 17 percent year-on-year. The Green Home Programme also contributed to the increase in housing loans. Energy efficiency renovations can also contribute to the expansion of residential investments. Households' real disposable income may decline to start from the end of the year. With income trends becoming unfavourable, household investment in 2023 may expand at a slower pace than our previous expectations.

In annual terms, the volume of public investments will decrease both in 2022 and 2023, according to our expectations. In line with the available information, the volume of investment implemented by the state may fall by 8.5 percent in 2022 and 4.3 percent in 2023, with the announced rescheduling of government capital expenditures playing a role in the lower volumes.

Short- and medium-term developments in Hungary's foreign trade continue to be primarily affected by the Russia–Ukraine war and the historically high energy prices. In line with the worsening external economic outlook and mounting fears of global recession, expectations concerning the growth prospects of Hungary's trading partners in 2023 were also revised significantly lower. The more subdued growth in Hungary's external market partners and the decline in their purchasing power due to higher inflation also undercuts their import demand considerably. The uncertainty and the decreasing purchasing power may restrain international tourism as well.

Export growth will slow considerably in 2022 and 2023. In the first half of this year, growth in investments and buoyant consumption resulting from the surplus funds received by households triggered a significant temporary rise in import growth. As a result of the major upswing observed in the first half, the growth dynamics of imports will exceed that of exports this year, and net exports will thus restrain GDP growth in 2022. Export growth has already decelerated significantly this year compared to last year, and the expansion may be even more subdued in 2023 in view of subdued external demand. Import growth will decline next year, primarily due to a slowdown in domestic demand items, and thus the overall contribution of net exports to growth will be positive starting from 2023. The upswing in exports from 2024 will also be fostered by the construction of new production capacities and improvement in external demand conditions. Hungary's export market share will expand to a small degree over the forecast horizon amidst major turbulence in global economic activity (Chart 1-11).

Chart 1-11: Changes in export market share

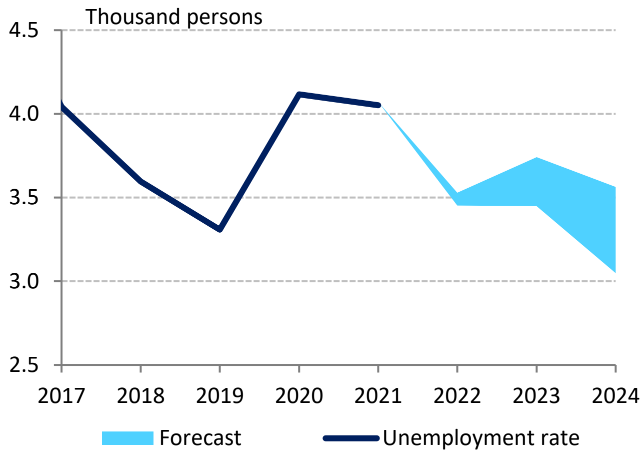


Note: Export market share based on the average of the forecast range.
Source: HCSO, MNB

1.3 Labour market forecast

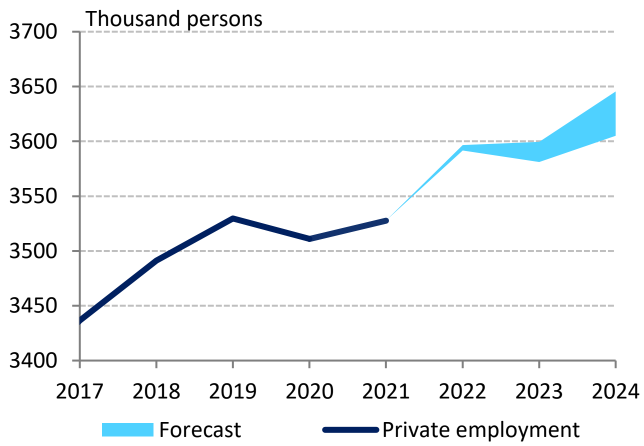
Labour demand remains strong for the time being, but signs of economic deceleration are already reflected in employment expectations. Rising energy prices and the downturn in external and domestic economic activity may result in a modest increase in the rate of unemployment by the end of the year. The number of employed in the private sector is expected to increase by 1.8–2.0 percent in 2022 and then stagnate in 2023. Employment is expected to bounce back quickly in 2024 in parallel with the recovery in economic activity. Wage dynamics in 2022 are determined by the minimum wage increase early in the year and the historically tight labour market. In line with the deceleration in economic activity, we project slower wage growth next year.

Chart 1-12: Change in the unemployment rate



Source: HCSO, MNB

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



Source: HCSO, MNB

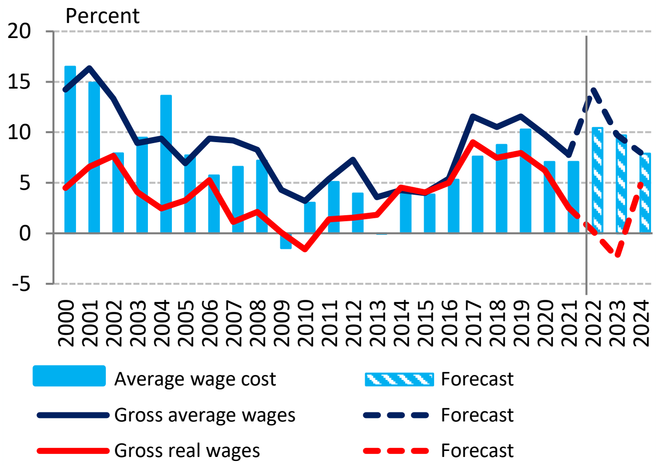
Labour demand remains strong for the time being, but signs of economic deceleration are already reflected in employment expectations. According to the ESI survey, which monitors employment prospects, in August, construction and trading companies already planned reductions in headcount for the following months.

The unemployment rate will rise modestly due to the economic slowdown and then decline again from 2024. Whole-economy employment remains at a historically high level, and labour market tightness is above the pre-pandemic level. In 2022 Q2, the seasonally adjusted unemployment rate was at the historical low level of 3.3 percent, corresponding to the rate observed prior to the pandemic. At the same time, as a result of the economic slowdown, a temporary rise in the unemployment rate is expected at the end of this year and in early 2023 in parallel with a decline in employment. According to our forecast, the unemployment rate may be 3.5 percent in 2022, followed by a rate of 3.5–3.7 percent in 2023 (Chart 1-12).

Headcount in the private sector is expected to temporarily stop increasing next year. The labour market typically reacts to a deceleration in economic performance with a delay of half a year, and thus the number of lay-offs may rise by year-end. The number of employed is expected to decrease in 2022 H2, but the headcount will expand for 2022 on the whole. Following that, stagnation or a slight drop is expected on average in 2023 (Chart 1-13). The effect of the rapid real economy adjustment evolving in the second half of next year will be perceived in the labour market primarily in 2024, entailing a renewed increase in employment and a decline in the unemployment rate.

The strong private sector wage growth will decelerate next year. Wage increases at the start of the year were driven by the significant minimum wage hike, while wage dynamics may accelerate to around 15 percent in the third and fourth quarters as a result of the tight labour market. Our forecast suggests that annual wage growth may amount to 14.1–14.5 percent in the private sector in 2022.

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



Source: HCSO, MNB

Looking ahead, we expect slower wage dynamics, in line with the deceleration in GDP growth: in 2023, wage growth is projected to be 9.3–10.3 percent (Chart 1-14).

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

	2021	2022		2023		2024	
	Actual	Previous	Current	Previous	Current	Previous	Current
Inflation (annual average)[1]							
Core inflation	3.9	13.0 -14.0	15.0 -15.5	6.6 -8.2	10.6 -12.9	2.7 -3.3	2.6 -3.5
Core inflation excluding indirect tax effects	3.9	13.0 -14.0	15.0 -15.5	6.6 -8.2	10.6 -12.9	2.7 -3.3	2.6 -3.5
Inflation	5.1	11.0 -12.6	13.5 - 14.5	6.8 -9.2	11.5 - 14.0	2.5 -3.5	2.5 - 4.0
Economic growth							
Household consumer expenditure	4.6	8.4 - 8.7	6.0 - 6.1	0.6 - 1.4	(-1.3) – (-0.5)	2.4 - 3.4	2.2 - 3.2
Government final consumption expenditure[6]	3.6	2.4 - 3.1	2.3 - 2.7	0.4 - 1.6	0.2 - 1.3	0.4 - 1.6	0.5 - 1.6
Gross fixed capital formation	5.9	3.7 - 4.8	3.0 - 3.6	(-0.9) - 1.8	(-2.8) – (-0.2)	2.0 - 5.0	2.6 - 5.6
Domestic absorption	5.5	5.7 - 6.2	4.0 - 4.2	0.2 - 1.2	(-1.1) – (-0.2)	1.9 - 3.2	2.0 - 3.2
Exports	10.3	4.8 - 5.7	4.7 - 5.3	5.0 - 6.9	2.7 - 4.5	4.4 - 6.2	5.6 - 7.4
Imports	9.2	6.0 - 6.9	5.4 - 6.0	2.7 - 4.6	0.7 - 2.5	3.1 - 5.2	3.8 - 5.8
GDP	7.1	4.5 - 5.5	3.0 - 4.0	2.0 - 3.0	0.5 - 1.5	3.0 - 4.0	3.5 - 4.5
Labour productivity[5]	5.0	3.2 - 3.6	1.7 - 1.9	1.7 - 2.9	0.5 - 1.5	2.6 - 4.0	2.5 - 3.9
External balance[2]							
Current account balance	-4.2	(-6.6) - (-5.6)	(-8.7) - (-7.7)	(-3.3) - (-2.1)	(-7.0) - (-5.8)	(-2.7) - (-1.3)	(-3.7) - (-2.3)
Net lending	-1.7	(-4.6) - (-3.6)	(-7.0) - (-6.0)	(-1.3) - (-0.1)	(-4.7) - (-3.5)	(-0.9) - 0.5	(-2.0) - (-0.6)
Government balance[2]							
ESA balance	-6.8	-4.9	-6.1	-3.5	-3.5	-2.5	-2.5
Labour market							
Whole-economy gross average earnings[3]	8.7	15.8 - 16.4	16.6 - 16.9	7.1 - 8.3	7.5 - 8.6	7.0 - 8.2	7.1 - 8.3
Whole-economy employment	0.7	1.0 - 1.2	1.2 - 1.3	(-0.2) - 0.5	(-0.3) - 0.3	(-0.2) - 0.6	0.5 - 1.2
Private sector gross average earnings[3]	7.8	13.2 - 13.8	14.1 - 14.5	8.8 - 9.9	9.3 - 10.3	7.3 - 8.4	7.4 - 8.5
Private sector employment	0.5	1.9 - 2.1	1.8 - 1.9	0.2 - 0.7	(-0.3) - 0.1	0.1 - 0.6	0.7 - 1.3
Unemployment rate	4.1	3.5 - 3.6	3.5	3.2 - 3.6	3.5 - 3.7	2.9 - 3.7	3.0 - 3.6
Private sector nominal unit labour cost	1.2	5.7 - 6.7	8.7 - 9.3	4.2 - 5.8	1.1 - 2.6	3.8 - 5.6	4.8 - 6.5
Household real income[4]	3.6	5.1 - 5.7	3.6 - 3.8	0.8 - 2.0	(-3.7) – (-2.7)	2.7 - 3.9	2.5 - 3.7

[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 transfers from government and non-profit institutions.

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

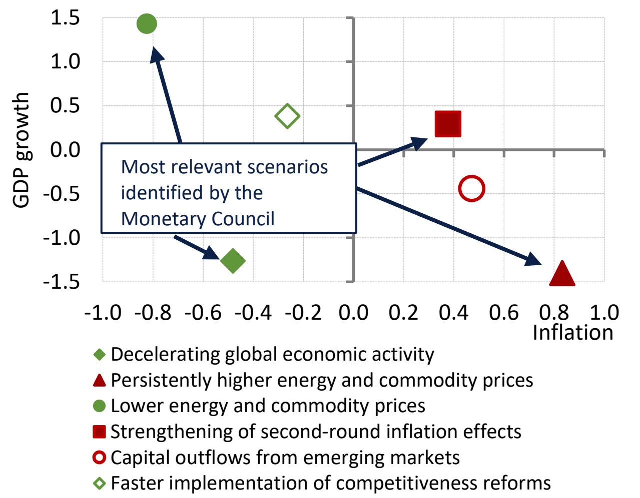
	2022	2023	2024
Consumer Price Index (annual average growth rate, %)			
MNB (September 2022)	13.5 - 14.5	11.5 - 14.0	2.5 - 4.0
Consensus Economics (September 2022)[1]	10.9 - 13.2 - 16.0	5.5 - 12.4 - 17.0	
European Commission (July 2022)[2]	11.8	7.6	
IMF (April 2022)	10.3	6.4	4.0
OECD (June 2022)	10.3	7.0	
Reuters survey (August 2022)[1]	13.0 - 13.8 - 15.0	9.0 - 12.6 - 16.0	3.3 - 4.3 - 6.0
GDP (annual growth rate, %)			
MNB (September 2022)	3.0 - 4.0	0.5 - 1.5	3.5 - 4.5
Consensus Economics (September 2022)[1]	2.5 - 5.0 - 6.0	(-3.5) - 0.9 - 3.2	
European Commission (July 2022)[2]	5.2	2.1	
IMF (April 2022)	3.7	3.6	2.7
OECD (June 2022)	4.0	2.5	
Reuters survey (August 2022)[1]	4.5 - 5.4 - 6.1	1.5 - 1.7 - 2.5	2.8 - 3.8 - 4.6
Current account balance[3]			
MNB (September 2022)	(-8.7) - (-7.7)	(-7.0) - (-5.8)	(-3.7) - (-2.3)
European Commission (May 2022)	-5.5	-3.5	
IMF (April 2022)	-1.3	0.1	0.5
OECD (June 2022)	-5.0	-3.8	
Budget balance (ESA 2010 method)[3]			
MNB (September 2022)	-6.1	-3.5	-2.5
Consensus Economics (September 2022)[1]	(-6.0) - (-5.2) - (-4.4)	(-4.5) - (-3.8) - (-3.0)	
European Commission (May 2022)	-6.0	-4.9	
IMF (April 2022)	-6.8	-5.4	-3.9
OECD (June 2022)	-5.5	-5.4	
Reuters survey (August 2022)[1]	(-5.9) - (-4.8) - (-4.2)	(-4.4) - (-3.7) - (-3.5)	(-3.3) - (-3.0) - (-2.8)
Forecasts on the GDP growth rate of Hungary's trade partners (annual growth rate, %)			
MNB (September 2022)	2 - 2.3	1.1 - 1.9	2 - 2.9
ECB (September 2022)	3.1	0.9	2.3
Consensus Economics (September 2022)[2]	1.2	0.8	
European Commission (July 2022)[2]	2.1	1.4	
IMF (June 2022)[2]	1.3	1.8	2.1
OECD (June 2022)[2]	2.6	1.7	

[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 September Inflation Report. The risk scenario with decelerating global economic activity presumes growth and inflation paths that are lower than in the baseline scenario. In the scenario with persistently higher energy and commodity prices, a higher inflation and lower growth path will be realised than in the baseline scenario. The alternative scenario that presumes lower energy and commodity prices is in line with a lower inflation path and a higher growth path. The scenario that presents the strengthening of second-round inflationary effects presumes a higher inflation path compared to the baseline scenario. In addition to the highlighted scenarios, the Monetary Council discussed paths involving capital outflows from emerging markets and faster implementation of competitiveness reforms as alternative scenarios.

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



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

Decelerating global economic activity

Economic growth rates typically decelerated in 2022 Q2. The US economy grew by 1.7 percent in year-on-year terms, but there were quarter-on-quarter **declines in the first two quarters of 2022, which corresponds to a technical recession.**

Chinese economic output expanded by 0.4 percent year-on-year, but declined on a quarterly basis. China's economic growth is resource- and commodity-intensive, and thus the slowdown in growth there has a negative impact on exporter countries that supply it with energy and other raw materials. In addition, the declining growth has a negative impact on those producer countries for which China represents the market of semiconductors and motor vehicles. Germany, which is Hungary's largest trading partner, also belongs to the latter category. **On a year-on-year basis, the German economy expanded by 1.7 percent in Q2, but on a quarterly basis it slowed to near stagnation.**

The Russia–Ukraine war, the energy crisis and persistent disruptions in supply chains boost the risk of recession in the global economy. While the monthly production indicators still tend to show a positive picture, forward-looking confidence indicators have declined further. The US purchasing managers' index (PMI) weakened considerably, falling to below the threshold (50 points) for the first time since June 2020. Economic sentiment declined further in the euro area according to both the ESI (Economic Sentiment Indicator) and the PMI, while the consumer confidence index also dropped to a historical low. The Chinese PMI already signals contraction in manufacturing.

In Hungary's main trading partner, Germany, the manufacturing PMI declined further, while business expectations fell to lows unseen for two years. In parallel with that, trade turnover in Germany also dropped to a historical low in June.

If the risk scenario that features decelerating global economic activity materialises, the slowdown in global growth will exceed the assumption from the baseline scenario. The stronger-than-expected deceleration in developed economies, including Germany, as Hungary's main trading partner, points to deterioration in export performance and a decline in the GDP growth rate of Hungary. In addition, a lower inflation path materialises compared to the baseline scenario, warranting looser monetary conditions.

Persistently higher energy and commodity prices

The global increase in inflation has continued, amounting to 18.0 percent on average in August 2022. According data for 112 countries, the inflation rate in 53 of these was in double-digit territory; 20 of these countries are located in Europe. Based on European data it can be established that the rate of price increases is higher in the economies that are geographically closer to the Russia–Ukraine war than in western countries.

In the first half of this year, world market prices of various commodities rose to their historical highs, before starting to decline in the past period. Nevertheless, they remain at high levels. As a result of the energy crisis in European markets, gas and electricity prices continued to rise significantly. At end-August, the prices of gas and electricity exceeded the peaks from 2022 H1.

Global value chains are recovering more slowly than demand, leading to continued cost pressures in global transportation and industrial production. In addition to the rapid recovery in demand, the global chip shortage is causing disruptions in industrial production, particularly in the automotive sector, which may have a knock-on effect on prices. It is presumed that merchants will shift some of the additional expenses stemming from the rise in transportation costs compared to previous years to consumers.

The effects of the persistently high energy and commodity prices, disruptions in supply chains and the drought in Europe will further exacerbate external inflationary effects in the coming months.

In our alternative scenario that presumes persistently higher energy and commodity prices, global supply problems and the protracted war result in major disruptions in supply chains. Commodity market disturbances and the realisation of risks involving persistently higher prices put upward pressure on global inflation. If this alternative path materialises, the external inflation environment will be higher than expected, which will feed through into domestic prices. Should this scenario materialise, tighter monetary conditions may be justified compared to the baseline scenario.

Lower energy and commodity prices

The strengthening fears of global recession increase the uncertainty related to the future changes in energy and commodity prices. The downturn in economic activity may trigger a general decrease in the rate of price increases in the world starting from 2023. Looking at the August inflation data for 112 countries, price dynamics already declined or stagnated in 25 of these compared to July.

In addition to the rising risks of recession, there are also various signs that global supply disruptions have started to ease recently. The GSCPI index, which measures friction in global supply chains, has been falling sharply since April. Global costs of goods transport from China have decreased considerably in recent months.

From the supply side, China plays a key role in changes in energy and commodity prices. Therefore, a deceleration in the Chinese economy may significantly reduce world market prices for commodities. Except for the world market prices of gas and electricity, prices of the main industrial raw materials are currently below their H1 highs, while the prices of several commodities, including oil, declined during the past month. It is a good indication of the two-way risks around commodity prices that the forecasts concerning the price of Brent crude are distributed in a wide range.

From the supply side, a de-escalation of the conflict between Russia and Ukraine would suggest an easing in the energy crisis and thus in inflation developments, while from the demand side – in addition to the recession risks – it also has a similar effect if the major economies reduce their gas industry dependence in their respective energy strategies. According to recent news, Germany is considering a longer-term use of nuclear energy.

In our alternative scenario, globally strengthening fears of recession, the easing of supply disruptions, de-escalation of the conflict and the relative decrease in demand compared to supply in view of certain structural measures contribute to a fall in energy and commodity prices. If this alternative path materialises, the external inflation environment will be lower than expected, which is in line with looser monetary conditions.

Rise in the risk of second-round inflation effects

Double-digit wage dynamics continued in Hungary in June. The increase in the minimum wage and the guaranteed wage minimum also contributed to the high wage growth. In the region, the growth rate of wages was still the highest in Hungary.

In addition to the minimum wage increase in Hungary, which is remarkable in international comparison as well, the tightening of the labour market also contributes to the strengthening of wage dynamics. There is fierce competition for trained labour in all sectors, which may result in persistently high wage growth. Sectoral rearrangements in employment as a result of the coronavirus crisis may increase the shortage of labour in certain sectors, and may lead to tensions in wage developments if the shortage of labour becomes permanent. In addition, in the tight labour market environment, against the background of high inflation, the corporate sector may carry out further dynamic wage increases as a result of rising domestic inflation expectations and employees' strengthening bargaining positions. The persistently high wage dynamics add to the risk of a rise in underlying inflation trends.

In the **alternative scenario**, the risk of second-round inflationary effects evolving materialises: the result of high inflation expectations in the tight labour market environment is that wage dynamics rise faster than the baseline assumption, and the savings rate declines with the expansion in consumption, pointing to a further rise in inflation and warranting tighter monetary conditions.

Other risks

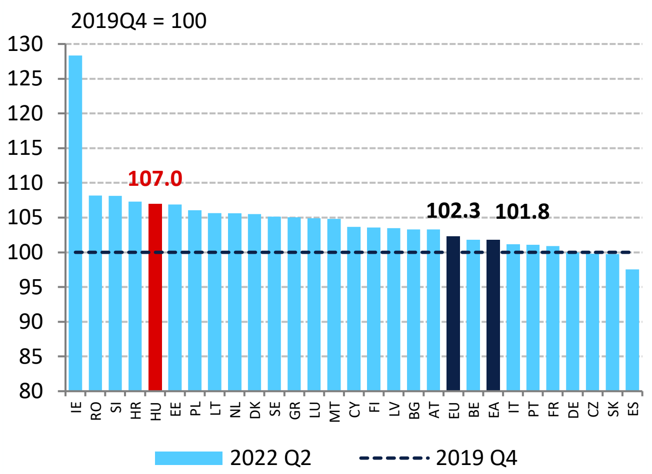
In addition to the scenarios highlighted above, the Monetary Council considered two other alternative scenarios. In the alternative path presuming capital withdrawal from emerging markets, we expect that risk aversion vis-à-vis emerging markets, including Hungary, increases more persistently and strongly compared to the baseline scenario. As a result of this, major capital outflows and a further rise in inflation may occur. In the scenario assuming the faster implementation of competitiveness reforms, the improvement in competitiveness provides further stimulation to the domestic economy primarily from the supply side. Competitiveness may improve to a greater degree compared to the assumption in the baseline scenario if further recommendations are implemented out of the 330 steps presented by the Magyar Nemzeti Bank for improving competitiveness, and the implementation of the 144 points of the essay entitled *Sustainable balance and convergence* commences. Implementation of the targeted measures leads to a significant increase in productivity, resulting in a lower cyclical position in the domestic economy. This is consistent with a lower inflation path and higher economic output.

3. Macroeconomic overview

3.1. International macroeconomic trends

Recovery following the COVID crisis continued in the second quarter, but at the same time economic growth decelerated in most of the major economies. Looking at the EU Member States, GDP exceeded the pre-COVID level in 23 countries, but in Germany – which is Hungary's largest trading partner – it is still minimally below. Historically high energy prices and the continuously tense geopolitical atmosphere further impaired short-term growth prospects. Rising costs feed through into both producer and consumer prices relatively quickly, further raising European inflation. In the past quarter, the world's major central banks kept tightening monetary conditions in response to the strong inflationary pressure, while the central banks in the region slowed down the pace of their tightening cycle. The Federal Reserve increased the target band of the policy rate in several steps and started to shrink its balance sheet. In early July 2022, the European Central Bank closed its net asset purchases under the APP and started a cycle of interest rate hikes. In addition, it introduced a new 'anti-fragmentation' tool, in order to ensure the efficiency of monetary transmission. Of the countries in the region, in response to the growing inflation, interest rate levels increased further at a slower pace in Poland and Romania, while the Czech central bank left the policy rate unchanged in August. Compared to the June figure, the inflation rate in the United States already decelerated in July and in August.

Chart 3-1: Development of GDP levels



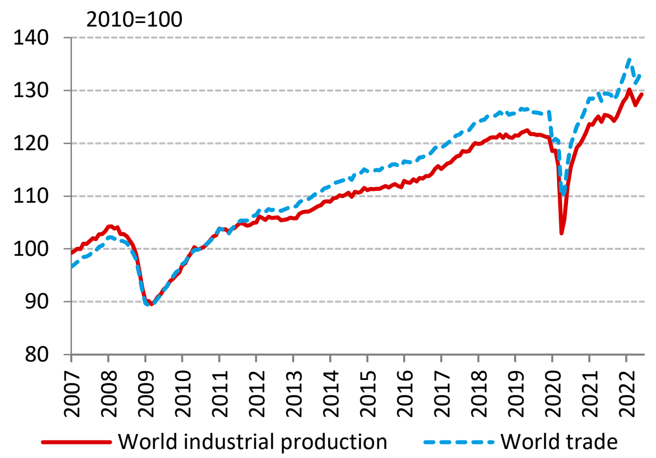
Note: Based on seasonally and working day adjusted data.
Source: Eurostat, Trading Economics

3.1.1. International activity trends

The rate of economic growth typically weakened in the major economies in 2022 Q2. The US economy grew slower than in the first quarter, expanding at a rate of 1.7 percent but registering a decline on a quarterly basis. Compared to the previous quarter, GDP contracted in China as well, and thus the economy expanded to a lesser degree than analysts' expectations, growing at a rate of 0.4 percent year-on-year. In 2022 Q2, the economy of the EU and of the euro area grew by 4.2 percent and 4.1 percent, respectively, in year-on-year terms. Economic activity exceeded the pre-COVID level in 23 of the EU-27 countries. The economy of Germany, which is Hungary's most important trading partner, came close to the GDP level observed in the last quarter of 2019, but was still slightly below that (Chart 3-1).

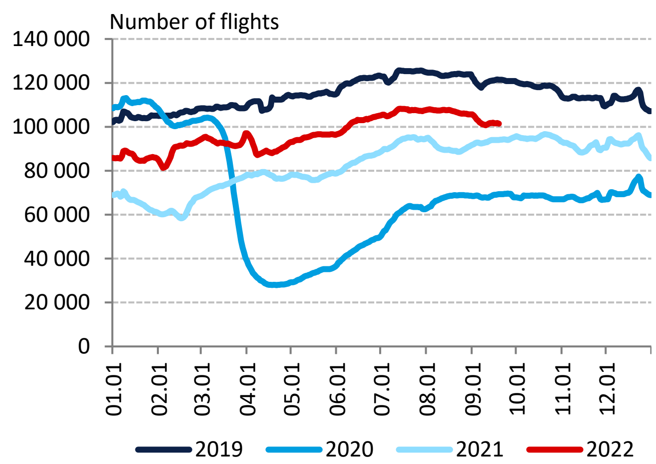
Developments in international economic activity (and especially in the European economic outlook) continue to be primarily affected by the Russia–Ukraine war and the historically high energy prices. Global industrial production and global trade once again started to grow at the end of 2021, showing strong dynamics before the war. The Russia–Ukraine war and the ensuing sanction policies temporarily reduced industrial production and foreign trade, although growth was observed in Q2 again (Chart 3-2). Global and European growth prospects have deteriorated significantly since the June Inflation Report due to risks to the security of energy supply as well as due to the related rise in energy prices and worsening economic sentiment.

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



Note: Based on seasonally adjusted data.
Source: CPB

Chart 3-3: Total number of global commercial flights



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

In the area of services, tourism is still the most affected by the global turbulence. In conjunction with the prevailing restrictions in some regions, international tourism has only strengthened gradually, but the prospects – particularly in the CEE region – are now overshadowed again by the war. The number of daily commercial flights rose slowly to over 100,000 by early June globally, which still remains below the 2019 figure (Chart 3-3).

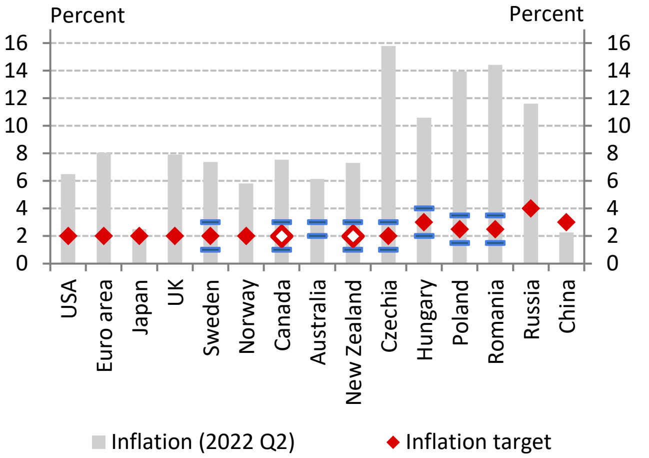
3.1.2. International monetary policy, inflation and financial market trends

Global inflation continued to rise in recent months. In the past period, the rate of inflation was well above central bank target values in most advanced economies (Chart 3-4). In response, most central banks continued to tighten monetary conditions by raising key interest rates; in addition, certain central banks gave priority to ending net asset purchases as well as to shrinking their balance sheets.

In the United States, due to the mounting inflation risks, the Fed launched a tightening cycle in March 2022 and began shrinking its balance sheet from June 2022. At its most recent September rate-setting meeting, the central bank raised the target band of the key policy rate by 75 basis points to 3.00–3.25 percent. The Federal Open Market Committee expects that the ongoing increases in the target band for the key policy rate will be instrumental in achieving the central bank's objectives related to price stability and maximum employment. As of 1 September, the central bank doubled the monthly pace of its balance sheet reduction to USD 60 billion per month for treasury securities and USD 35 billion per month for mortgage-backed securities, in line with the schedule set in May. The FOMC revised its forecast significantly, with the key rate likely to be 1.0 percentage point higher by the end of the year than in the June forecast. According to the new forecast, economic growth may be significantly lower this year and also in 2023 and 2024 than expected in June. The unemployment rate, as well as the PCE inflation and core inflation rates, may be higher than previously forecasted. After 9.1 percent, registered in June, inflation declined to 8.5 percent in July and to 8.3 percent in August, while the PCE inflation rate, one of the central bank's main focal points, dropped from 6.8 percent in June to 6.3 percent in July. The Fed's balance sheet total amounted to USD 8,822 billion (35.5 percent of GDP) at the beginning of September 2022 (Chart 3-5).

Inflation in the euro area climbed to 9.1 percent in August 2022, mostly due to rising food and energy prices.

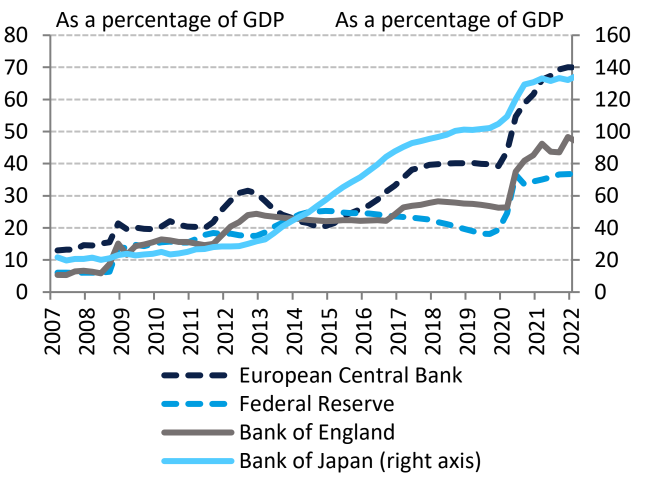
Chart 3-4: Inflation targets of central banks and actual inflation



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 the empty diamond.

Source: OECD, FRED, National Institute of Statistics Romania

Chart 3-5: Central bank balance sheet totals in developed countries



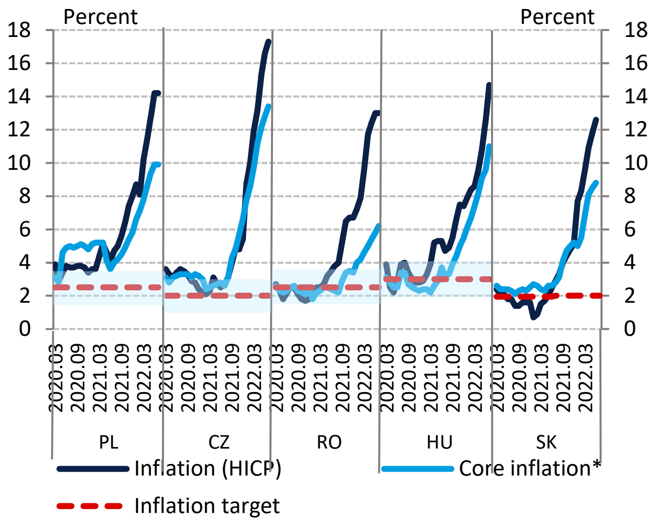
Source: Databases of central banks, Eurostat, FRED

Meanwhile, economic activity is slowing down, mainly as a result of the Russia–Ukraine war.

The ECB raised the policy rates by 50 basis points in July, followed by a 75-basis point hike at its September rate-setting meeting. The ECB was of the opinion that the latest interest rate hike would bring forward the transition from highly loose monetary conditions towards an interest rate level that ensures a timely return of inflation to the 2-percent inflation target. In July, the central bank adopted its new 'anti-fragmentation' tool, known as the Transmission Protection Instrument (TPI). The objective of the new tool is to ensure the efficiency of monetary transmission. The degree of government bond purchases under the TPI will depend on the size of the risks around transmission; their volume will not be predetermined. At the end of March 2022, the ECB closed it asset purchase programme under PEPP and it will reinvest the maturing securities purchased under the programme until the end of 2024. The asset purchases under the APP were closed on 1 July 2022. The central bank will reinvest the maturing securities even after the date of the first interest rate increase, until such time as necessary to maintain ample liquidity. According to the September announcement of the central bank, further interest rate hikes are to come at the next meetings. The ECB will decide on the course of further tightening looking ahead, from meeting to meeting, depending on the relevant data. In August, the harmonised consumer price index and core inflation increased to 9.1 percent and 4.3 percent, respectively, significantly exceeding the ECB's 2-percent target. In addition, inflationary pressure is increasingly present in the economy, due to which the central bank revised up its inflation forecast to a significant degree. According to the new forecast, inflation may be 8.1 percent this year and 5.5 percent next year. Growth may decelerate sharply, and the economy may stagnate at the end of the year and in 2023 Q1. The ECB's balance sheet total amounted to EUR 8,756 billion (69.9 percent of GDP) at the end of August 2022 (Chart 3-5).

At its September 2022 rate-setting meeting, the Bank of Japan left unchanged its 0-percent target applicable to the 10-year government securities market yield and the -0.1 percent interest rate charged on excess reserves. In addition, the central bank decided to phase out its special COVID-related SME financing measures. The Bank of Japan is continuing its asset purchase programme and noted that, with a view to maintaining the yield target, it offers to purchase government bonds in unlimited volume at a fixed rate of 0.25 percent, which is also the upper

Chart 3-6: Inflation and core inflation in the region



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

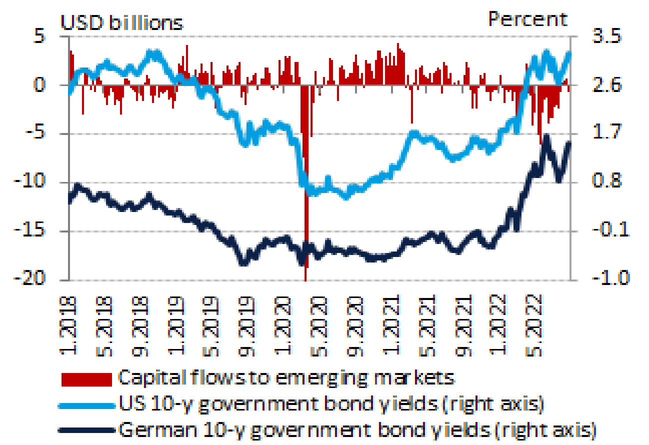
bound of the central bank's yield target. The Japanese government intervened in the foreign exchange market in order to stabilise the exchange rate of the yen. The central bank forecasts higher inflation and lower growth in 2022. Instead of the previously expected 1.9 percent, inflation may be 2.3 percent in 2022, whereas consumer prices may increase by 1.4 percent next year, instead of 1.1 percent. This year, growth may be 2.4 percent instead of the previously projected 2.9 percent, whereas the economy may grow by 2.0 percent and not by 1.9 percent next year. The central bank's balance sheet total-to-GDP ratio was 130.5 percent at the beginning of September 2022 (Chart 3-5).

At its September rate-setting meeting, the Chinese central bank did not change the level of the loan prime rate (LPR), which is the benchmark interest rate for the pricing of bank loans. Accordingly, the one-year LPR and the five-year LPR remained at 3.65 percent and 4.3 percent, respectively. The central bank reduced the reserve ratio for foreign currency deposits of commercial banks from 8 percent to 6 percent with effect from September 15. In August, the Chinese central bank decided to reduce the levels of the 1-year and 5-year reference lending rates from 3.7 percent to 3.65 percent and from 4.45 percent to 4.3 percent, respectively. Prior to that, the central bank cut the interest rate on its medium-term lending facility (MLF) by 10 basis points to 2.75 percent. The central bank also cut the interest rate on its liquidity-providing, 1-week reverse repo facility by 10 basis points, from 2.10 percent to 2.00 percent.

The interest rate cut in August was the central bank's reaction to the deceleration in economic growth. The Chinese economy contracted by 2.6 percent in the second quarter of this year, and most economic indicators fell short of expectations in July as well. According to the forecast of the Chinese central bank, inflation may rise to above 3 percent in the second half of the year.

In September, the Polish central bank raised its key policy rate by 25 basis points to 6.75 percent. In Poland, inflation rose to 16.1 percent in August and the harmonised consumer price index edged up to 14.2 percent in July (Chart 3-6), mainly due to the sharp rise in food and energy prices. The central bank believes that there is still a risk that inflation will exceed the central bank target over the horizon of monetary policy transmission, and thus it was necessary to raise the key policy rate further. Looking ahead, the central bank will decide on the necessity of further tightening depending on incoming inflation, growth and labour market data. In

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



Source: EPFR, Bloomberg

addition, it will take into account the impact of the Russia–Ukraine war on the Polish economy.

At its August rate-setting meeting, the Czech central bank kept its policy rate at 7.0 percent. According to the central bank's announcement, this decision is corroborated by the latest macroeconomic forecast as well. In addition, the central bank indicated that it will apply FX market interventions to prevent the depreciation and excessive volatility of the koruna. Inflation was 17.2 percent in August, which significantly exceeds the upper bound of the tolerance band around the inflation target. The harmonised consumer price index increased to 17.3 percent in July (Chart 3-6). The central bank forecast suggests that inflation will reach 20 percent in the autumn and average around 16.5 percent this year, later declining to about 2 percent within a year and a half.

In August, the Romanian central bank raised the base rate by 75 basis points from 4.75 percent to 5.5 percent. In addition, using its other tools, the Romanian central bank exercises tight liquidity control over the interbank market, as a result of which at end-August the 3-month interbank rate was at 7.8 percent, i.e. well above the base rate. Inflation in Romania rose to 15.3 percent in August, with the harmonised consumer price index advancing to 13.0 percent in July (Chart 3-6). The central bank expects inflation to peak in 2022 Q3, before embarking on a gradually declining path, which is somewhat higher than previously expected. Inflation is expected to fall below 10 percent in the latter half of 2023 and will remain above the tolerance band until the first quarter of 2024.

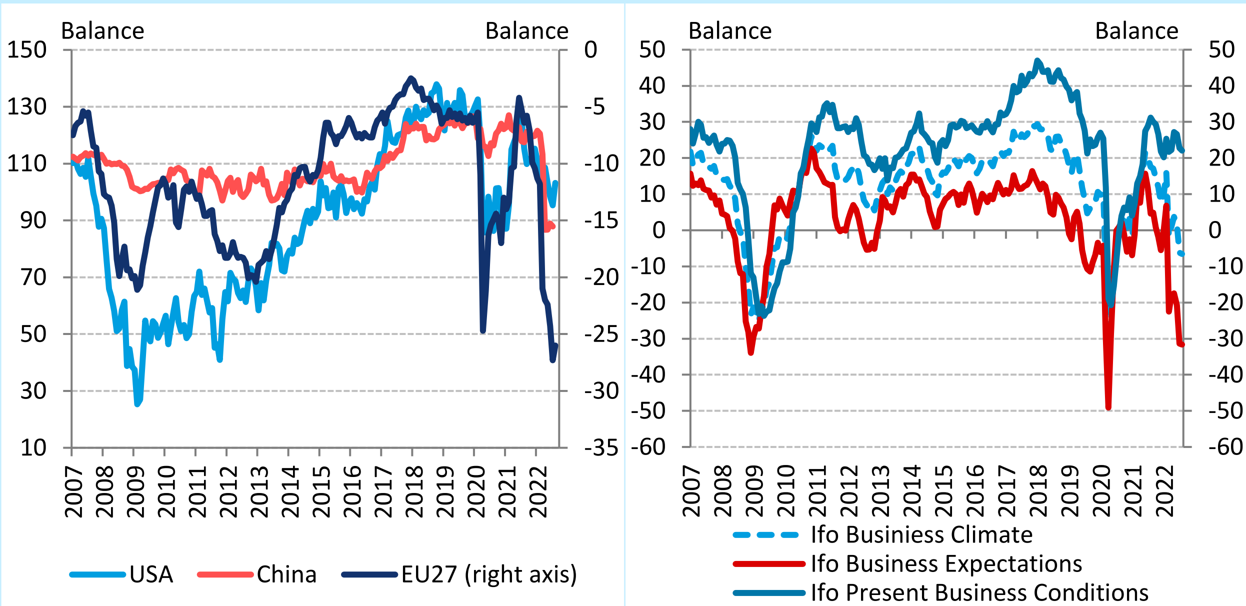
Global financial market sentiment improved slightly in the past quarter, although tension was still observed in commodity markets. Prices on the developed stock exchanges also rose as a result of the improving sentiment. At the beginning of the period, investors' initial fears in relation to the Russia–Ukraine war diminished, but investor sentiment became more negative again in the second half of the period, in view of mounting commodity market tensions. Developed stock exchange price indices rose in most of the period, while declines took place in emerging markets. The increase in developed stock exchange price indices amounted to 3–5 percent in the case of US and Japanese ones, while the rise in European indices was more moderate. Stock exchanges in emerging countries fell by 3 percent on average. The US dollar strengthened further versus developed and emerging currencies, including the currencies of the narrower region, appreciating by 4 percent against the Japanese yen and 5 percent versus the euro, while also gaining 5 percent against the British pound. Developed market long-term bond yields increased, with the 10-year US government security yield rising to 3.25 percent (Chart 3-7).

After the ECB also started with its interest rate increases, market expectations related to developed market interest rate paths rose further as well. Based on market pricing, expectations with regard to interest rate hikes by the Fed and the ECB rose further. In the case of the Fed, the interest rate level priced in for the end of the year rose by 35 basis points to 3.7 percent during the period under review, while in the case of the ECB it rose by 85 basis points to 1.65 percent.

Box 3-1: Changes in the outlook for external economic activity

With the surge in energy prices, global growth prospects for 2022 H2 have grown increasingly gloomy, and in addition to the economic slowdown, this is expected to have a disinflationary effect. This phenomenon is not exclusively typical of European economies, which is corroborated by the fact that on a quarterly basis US economic performance already declined in the first two quarters of the year and consumer prices rose at a slower rate in both July and August. Compared to the previous quarter, the Chinese economy contracted by 2.6 percent in Q2, while the prospects are impaired by the government's zero-COVID policy as well as by deteriorating lending dynamics and real estate market turbulences. The deceleration in global growth also affects the Central and East European region via the euro area (mainly Germany), through the real economy channel. As a small, open economy, Hungary is highly exposed to changes in external economic activity, which may restrain the growth rates of domestic industrial production and exports through both direct and indirect channels.

Chart 3-8: Changes in consumer confidence in major global economies (left panel) and the Ifo indices in Germany (right panel)



Source: European Commission, Ifo Institute, Macrobond

Consumer confidence weakened considerably in all major global economies in recent months (Chart 3-8). Compared to the levels seen during the 2008–2009 crisis and the 2020 crisis caused by the coronavirus, confidence dropped to an even lower level in the EU and China in a few months. The sentiment of US consumers also declined gradually, although for the time being the level of the indicator did not sink to the lows observed during the pandemic or in 2008–2009. The significant loss of confidence took place everywhere due to the major, rapid deterioration in economic prospects, primarily on the consumer side. Among EU respondents, fears of recession superseded the difficulties caused by the increase in inflation and the costs of living. The gloomy economic outlook may have resulted in their price expectations falling to the lowest levels since the beginning of the war in Ukraine.

Germany, the largest economy in the European Union, is edging closer and closer to a recession at the end of the year. The prospects, which were already subdued due to the high energy and commodity prices, the still existing frictions in supply chains and the war in Ukraine, were further impaired by transportation difficulties stemming from the low water level in the Rhine, new and continuous geopolitical uncertainties as well as the risk of a gas shortage. Demand for the products of the German economy decreased, and thus both industrial production and export performance may be lower in the period to come. Inflation – which is expected to accelerate to double digits by the end of the year in view of the surging energy costs – also further erodes domestic households' income intended for consumption. According to the Ifo Institute survey, firms expect a major downturn in business activity in the coming months, which is corroborated by the decrease in German vehicle industry output in recent months, which continued to be at a quite low level (Chart 3-9).

Chart 3-9: Changes in main indicators of German industrial production

Note: Seasonally adjusted data.
Source: Destatis

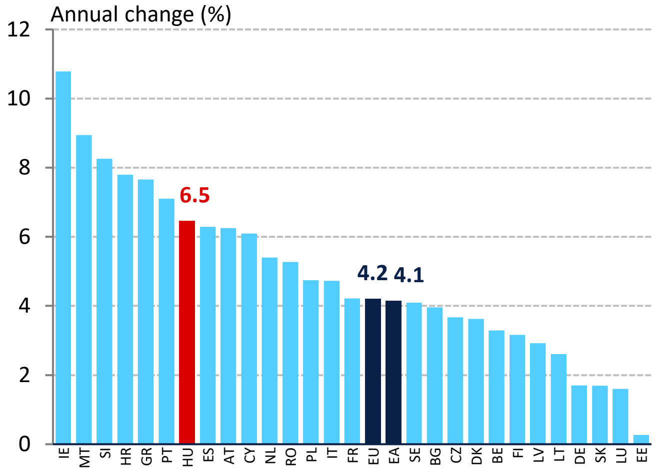
Prospects for economic growth will be affected in the coming years as well by the fact that the whole business model of the German economy needs renewal. Transformation of the global economy entails a significant risk for the German economic model. It will be more and more difficult to maintain an economy that relies on exports of high-quality products made using imports of cheap (Russian) energy and input goods and that successfully exploited the advantages of the fact that global trade had become increasingly free. By contrast, now the country now faces the green transition, persistent frictions in supply chains and reversal of the process of globalisation. In addition, it must also manage long-standing problems, such as the lack of digitalisation, ageing infrastructure and an ageing society. As a result of the existing problems, the performance of German industrial production is still below the level seen prior to the crisis caused by the coronavirus. The aforementioned problems are especially true for vehicle manufacturing, which is the driver of the German economy, and which is a sector that has been negatively affected by almost all the new challenges appearing since 2020.

Deceleration in the German economy will affect the rest of the euro area as well. The feed-through effects will mainly be perceived in the chemical and automotive industries, and weakening external demand may lower growth in the CEE region as a whole this year and next year as well.

3.2. Analysis of the production and expenditure side of GDP

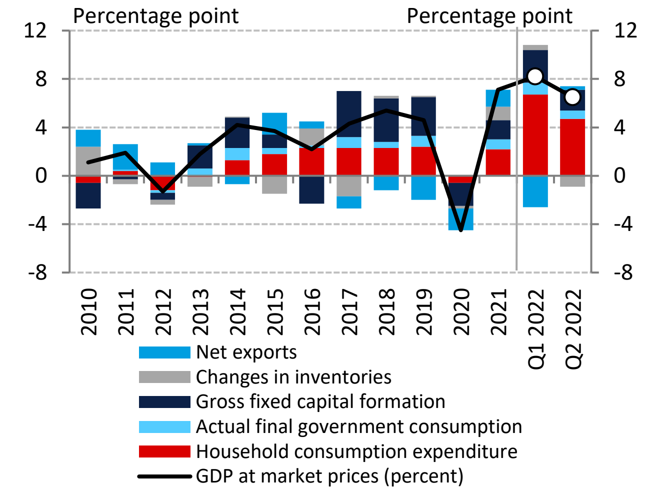
Economic growth in Hungary continued in 2022 Q2: the country's gross domestic product expanded by 6.5 percent in year-on-year terms, and thus Hungarian economic output exceeded its pre-pandemic level by 7.0 percent. Household consumption was the main contributor to growth. Investment by the corporate sector and budgetary institutions also increased in Q2. In the second quarter, the goods trade balance remained in deficit. The terms of trade deteriorated significantly on an annual basis, due to the rising price of mineral fuels.

Chart 3-10: 2022 Q2 annual GDP change in EU countries



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

Chart 3-11: Contribution to annual GDP growth



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

Following a successful restart, the Hungarian economy continued to grow. In 2022 Q2, gross domestic product expanded by 6.5 percent in year-on-year terms. The economies of the euro area and the EU-27 countries expanded at year-on-year rates of 4.1 percent and 4.2 percent, respectively (Chart 3-10). Hungary's growth surplus compared to the European Union was 2.3 percentage points in 2022 Q2.

On the expenditure side, the contributions of most items to annual GDP growth were positive. As in Q1, household consumption was the main driving force behind growth.

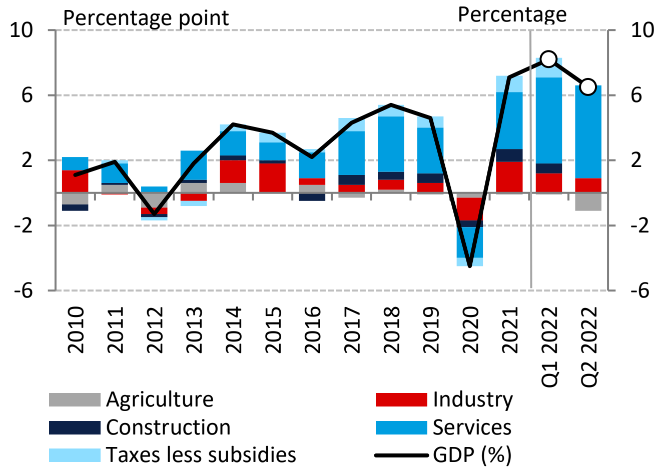
Households' consumption expenditures climbed significantly, rising by 10.1 percent in year-on-year terms. The largest growth was registered in the consumption of services (+15.6 percent) and semi-durable goods (+13.7 percent). Actual final government consumption rose by 3.2 percent on an annual basis.

The value added of gross fixed capital formation increased by 6.1 percent compared to the same prior-year period. The volume of investment in machinery and equipment expanded to a greater degree than that of construction investment. The investment rate was 28.3 percent. Following a positive contribution to growth in Q1, changes in inventories were negative (Chart 3-11).

In the second quarter, net exports made a positive contribution to economic growth. Growth in the volume of exports (+7.6 percent) was higher than that in imports (+7.3 percent), with net exports thus contributing 0.3 percentage point to Q2 growth. Goods exports grew by 4.4 percent, while services exports by 23.4 percent in year-on-year terms. Goods and services imports increased by 4.4 percent and 26.9 percent, respectively, on a year-on-year basis.

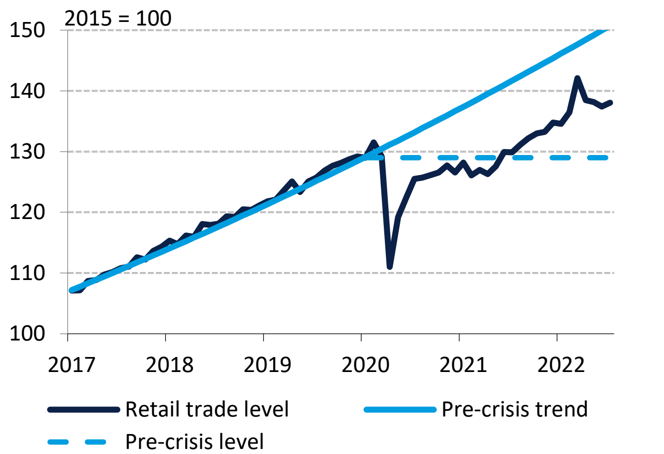
The performance of all sectors of the economy, excluding agriculture, improved in year-on-year terms (Chart 3-12)**.** Industrial output rose 3.9 percent compared to the same period of the previous year. Of the manufacturing sectors, the biggest contributors to the annual industrial growth were the manufacture of electrical equipment and the food industry. Value added in construction increased by 0.4 percent, in line with monthly production indicators. In

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



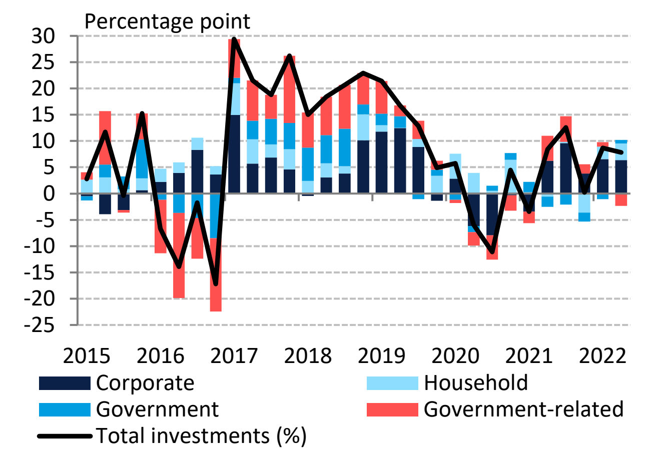
Source: HCSO

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



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

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



Source: HCSO

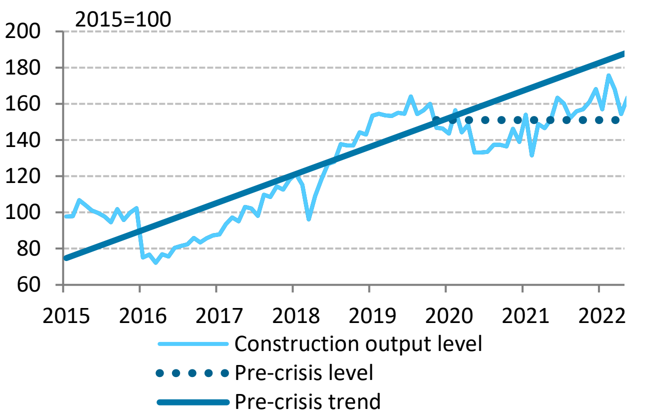
view of the serious loss caused by the drought, agricultural output fell 35.5 percent in year-on-year terms. The value added of services rose by a total 10.5 percent. The strongest growth took place in those areas of the economy where the base was low due to last year's containment measures. Nevertheless, considerable expansion was observed even in some services sectors, the performance of which was not significantly affected by the lockdowns one year earlier (+13.4 percent in information and communication, +6.4 percent in financial and insurance activities).

In 2022 Q2, the growth rate of retail sales decelerated compared to the first quarter (Chart 3-13). In July 2022, the sales volume of retail shops rose 4.3 percent year-on-year, based on calendar adjusted data. The recovery of services continued. The online cash register data of NTCA for June – which also contain the turnover of catering, accommodation services and taxi services – showed substantial growth in the volume of retail sales. The significant growth also reflected the sharp rise in fuel retail sales and the impact of last year's low base. Based on the NTCA's online cash register data, strong growth in retail sales persisted in July, but moderated in August.

In 2022 Q2, the volume of whole-economy investment rose at a year-on-year rate of 7.8 percent based on investment statistics (Chart 3-14), while the seasonally adjusted increase was 2.5 percent compared to the previous quarter. In terms of the material-technical composition, investments in machinery increased by 13.1 percent, while building-type investments expanded by 4.8 percent in year-on-year terms. Budgetary organisations' investment volume was up by 3.0 percent. According to HCSO information, both central institutions and local governments increased their tangible asset purchases compared to the base period. The volume of investment by medium-sized and large enterprises employing at least 50 people grew by 3.0 percent, in which the developments of foreign-owned enterprises played a significant role. Investment in manufacturing, which represents the highest weight, increased by 24.9 percent. In 2022 Q2, 4,605 new homes were completed, representing a decline of 26.4 percent in an annual comparison.

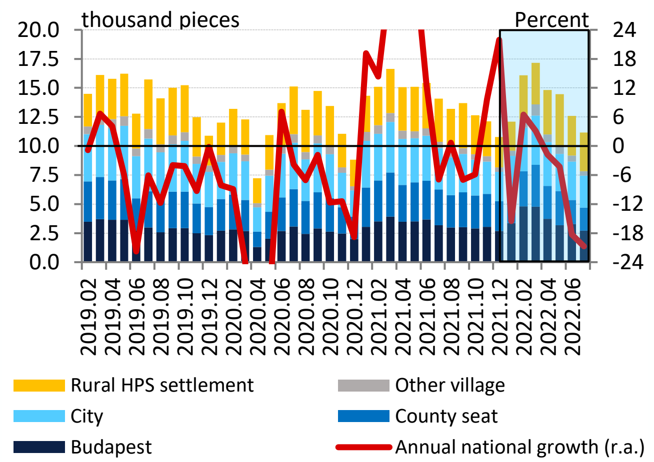
The volume of new household loan contracts was high in Q2 as well, but loans outstanding increased more slowly than in the previous periods. In 2022 Q2, household loans outstanding vis-a-vis the entire financial intermediary system expanded by HUF 299 billion as a result of transactions, and thus at the end of June, the annual

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



Source: HCSO, MNB

Chart 3-16: Number of residential transactions carried out by real estate agents by month



Note: Only taking into account 50 and 100 percent private acquisitions. From July 2020 to September 2021, 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.

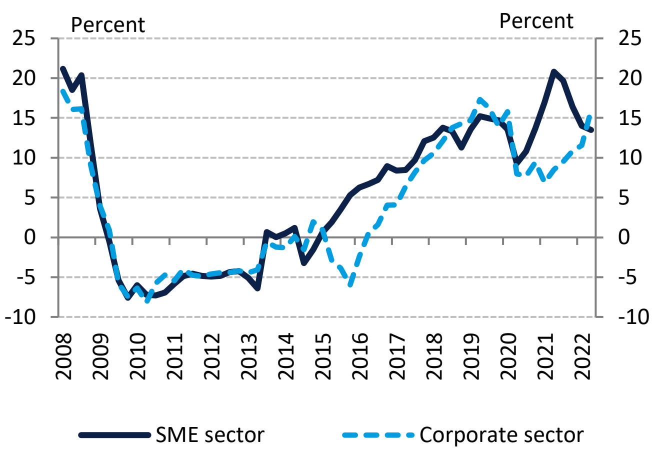
Source: NAV, MNB, housing market intermediary database.

growth rate of household loans outstanding was 9.9 percent, representing a slowdown of 2.1 percentage points versus the preceding quarter. From November 2021, the repayment restraining effect of the payment moratorium declined considerably. Around 5 percent of household loans outstanding were in moratorium at end-June, and according to interviews with banks their share may decline even further with the beginning of the fourth phase of the moratorium in August. The volume of housing loans concluded by credit institutions in 2022 Q2 exceeded the year-on-year figure by 17 percent. In addition to home purchase subsidies and demand brought forward, the FGS Green Home Programme was also a major contributor to the robust issuance: in the quarter under review, this product accounted for more than 80 percent of the loans extended for the purchase and construction of new homes. Disbursement of personal loans exceeded the volume registered in 2021 Q2 by 18 percent. In the second quarter, young married couples concluded prenatal baby support loan contracts amounting to HUF 120 billion, down by 21 percent in year-on-year terms.

In 2022 Q2, construction output increased by 0.1 percent in year-on-year terms. The construction of buildings and other structures also increased by 2.4 percent, year on year. Based on data adjusted for seasonal and calendar effects, the volume of construction output was still above the pre-crisis production level between April and June (Chart 3-15), but construction output nonetheless remained below the level of the pre-crisis trend in 2022 Q2.

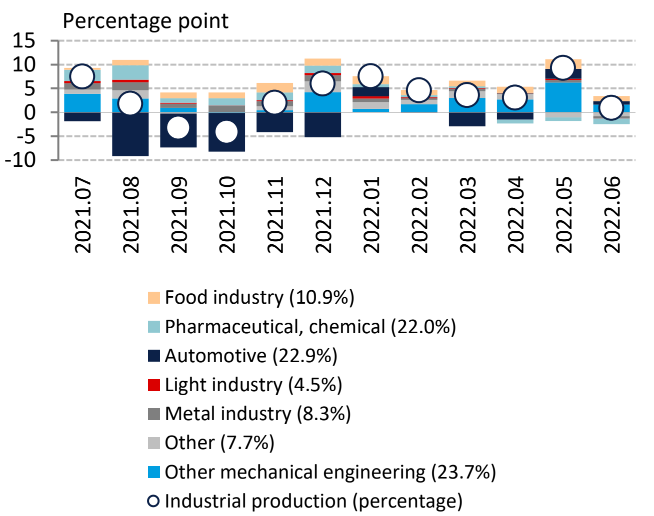
The number of housing market transactions declined in 2022 Q2 in year-on-year terms (Chart 3-16). According to our estimate, the number of transactions rose slightly in 2022 Q2, by an annual 2.3 percent, only in the settlements eligible for rural HPS, while the year-on-year decline in the number of transactions was 4.5 percent in Budapest, 20.3 percent in county seats, 11.8 percent in other towns and 6.4 percent in other villages. At the national level, in the second quarter the number of housing market sales and purchases may have amounted to 41,900 in total, which is 8.2 percent less than the transaction number of 45,600 in the same period of the previous year. In July 2022, the number of transactions already declined in all types of settlements; there were 21 percent fewer sales and purchases in Hungary than in July 2021. According to the MNB house price index, in 2022 Q1 house prices in nominal terms increased by 4.4 percent nationwide, 7.0 percent in the capital and 8.4 percent in country

Chart 3-17: Annual changes in lending to non-financial corporates and SMEs



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

Chart 3-18: Sectoral breakdown of annual change in domestic industrial production



Note: The weight of the sectors in industrial production is given in brackets. Without water and waste management industry.
Source: HCSO.

towns, while they were down by 5.4 percent in villages. Preliminary data suggest that housing prices continued to rise at a high pace in 2022 Q2, appreciating by 6.5 percent on a national average and by 7.3 percent in Budapest.

Corporate loans outstanding increased dynamically in the second quarter. In the balance sheet of the entire financial intermediary system, corporate loans outstanding expanded by HUF 524 billion in 2022 Q2, and thus the annual growth rate amounted to 15.9 percent (Chart 3-17). Also taking into account the corporate bonds subscribed by banks, credit institutions' loans and bonds outstanding vis-à-vis the non-financial corporate sector increased by 22.1 percent at end-June. Within corporate lending, the annual growth rate of SME loans outstanding was 13.5 percent at the end of the second quarter. In view of the strong demand for the Széchenyi Card Programme Go!, which ended during the quarter, some 40 percent of the new corporate loans were subsidised; this ratio is much higher than the 10–15 percent observed in the period prior to the coronavirus. At the end of June, 2 percent of outstanding corporate loans were participating in the narrower moratorium on payments available to corporations that suffered a significant loss of revenues. Interviews with banks suggest that this share may decline further with the beginning of the fourth phase of the moratorium in August. According to Lending Survey, during the second quarter banks did not change standards significantly in any of the enterprise size categories. However, in the commercial real estate lending segment, a net 20 percent of respondent credit institutions tightened the conditions of loans, and looking ahead credit standards are likely to be tightened in all segments. Banks did not perceive any major changes in demand in 2022 Q2, whereas looking ahead the increasing operating costs point to an upswing in the demand for short-term loans, while a decline in the demand for long-term loans is forecast due to postponed investment projects.

In the second quarter, Hungary's industrial production rose by 4.6 percent in quarter-on-quarter terms (Chart 3-18). Dynamic growth in battery manufacturing continued. As a result of the low base, vehicle manufacturing expanded slightly, in parallel with a fall in the performance of the pharmaceutical and chemical industries. In the second quarter of the year, the goods trade balance remained in deficit. The terms of trade deteriorated significantly in June, by 5.6 percent on an annual basis due to the rising price of mineral fuels.

Box 3-2: Use of households' income-increasing subsidies concentrated in 2022 H1

Government measures increased households' disposable income by nearly HUF 1,600 billion in 2022 H1 (Table 3-1). From a real economy and equilibrium point of view, it is highly relevant to examine how households used this additional income of HUF 1,600 billion. The calculations considered the online cash register data supplied by the NTCA as well as the MNB's July 2022 survey regarding the spending of the PIT refund, which was extended to the entire disbursed volume of transfers for H1. The robustness of our findings is corroborated by the fact that the survey as well as other control and special statistics show similar pictures.

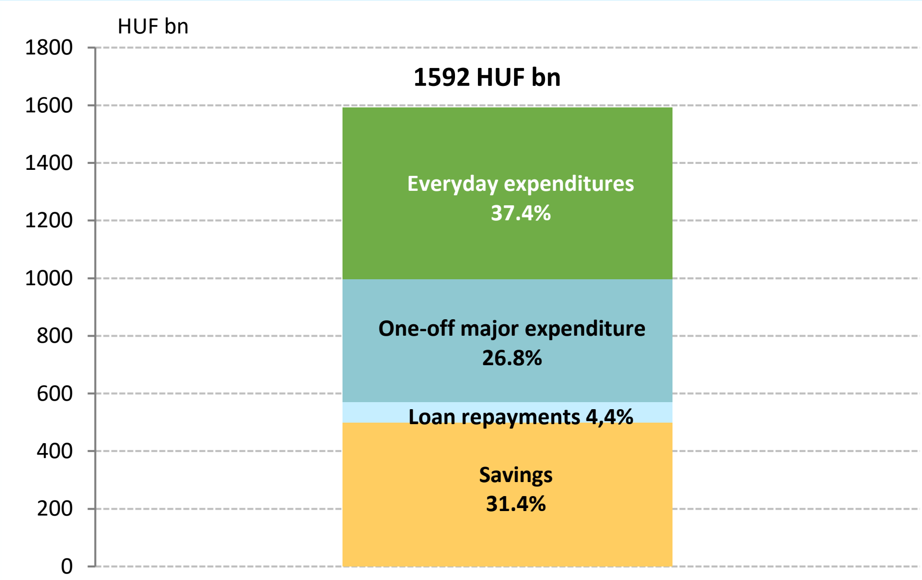
Table 3-1: Measures to increase households' income in 2022 H1 (HUF billion)

Income-increasing measures	Amount (HUF bn)
Reintroduction of the 13th-month pension	360
PIT reimbursement	664
Under 25s PIT exemption	67
Sectoral wage increases	230
Arms money	271
Overall	**1592**

Source: MNB, Ministry of Finance

According to the available data, households have already used HUF 1,100 billion of the HUF 1,600 billion that was disbursed. Only 30 percent, i.e. HUF 500 billion of the total amount, increased their savings, while the lowest ratio, approximately 5 percent, was spent on loan repayment (which adds to net savings) (Chart 3-19).

Chart 3-19: Distribution of the use of disbursals between January and June 2022



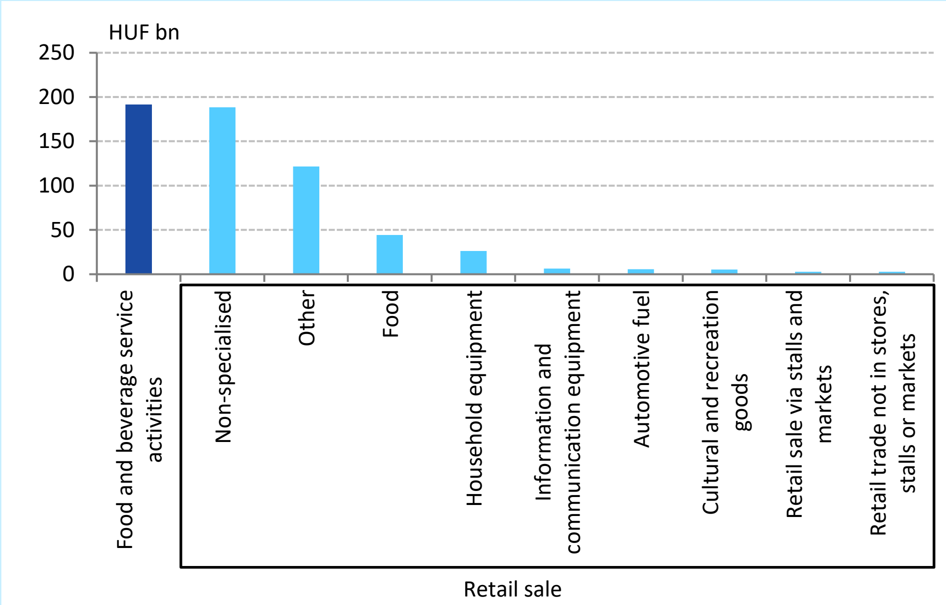
Source: MNB

In 2022 H1, everyday expenditures of households exceeded the growth trend of previous years by nearly HUF 600 billion according to online cash register data disclosed by the NTCA. Most of the additional income was spent on catering services and in retail sale in non-specialised stores,[1] representing two thirds (around HUF 400 billion) of the total additional consumption in everyday expenses (Chart 3-20).

[1] Retail sale in non-specialised stores: this group includes the retail sale of a variety of product lines in the same unit (non-specialised stores), such as supermarkets or department stores.

One-off, higher-amount expenditures amounted to more than HUF 400 billion in total in H1. However, based on the available data, it cannot be known how much was spent on investment (purchases of new homes) or high-amount consumption (car, holidays).

Chart 3-20: Distribution of the potentially spent additional income by product group (January to July 2022)



Source: Online cash register data of NTCA

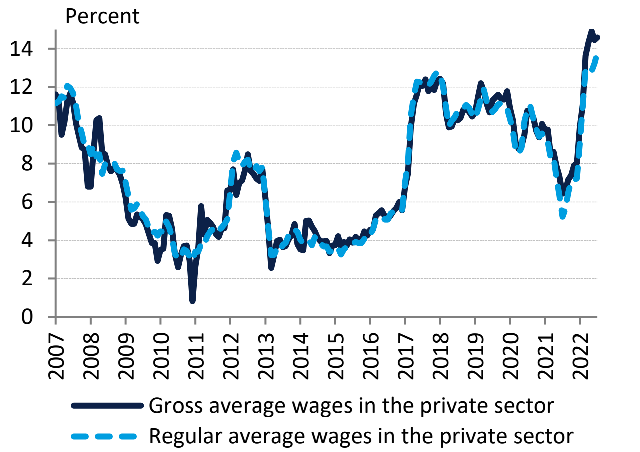
Of the additional incomes, prepayment of household loans amounted to around HUF 100 billion until June 2022.

Households saved nearly HUF 500 billion of the transfers disbursed before the end of H1, which is below previous expectations. In addition to cash holdings, holdings of equity investments (e.g. listed shares, domestic investment funds) increased considerably.

3.3. Labour market

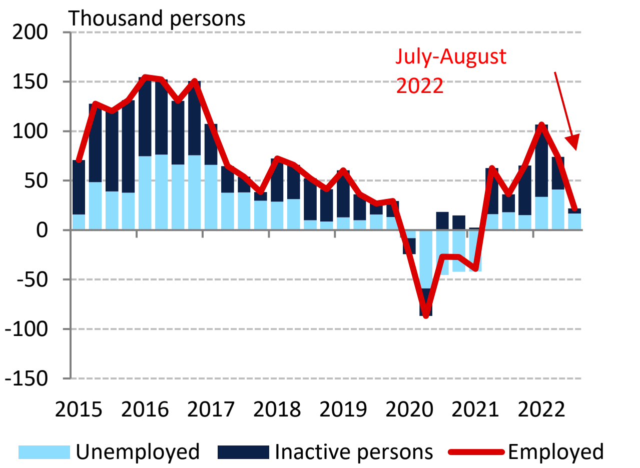
The number of employees in the overall economy remains near the highest figures measured in the market economy era. Employment continued to expand in year-on-year terms in the second quarter, due to the headcount increase in the private sector. The unemployment rate is still low in an international comparison. Moreover, the number of vacancies exceeds the pre-crisis figures, and thus the tightness of the labour market increased further. Partly as a result of this tightness and partly in view of the minimum wage increase and one-off benefits, gross average earnings in the private sector in July 2022 rose 14.9 percent year-on-year.

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



Note: Quarterly moving averages.
Source: HCSO

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



Note: Instead of 2022 Q3, monthly data for July is available. Changes in the number of unemployed and economically inactive have the opposite sign.
Source: HCSO

3.3.1. Wages

Wage developments continue to be strong. In July 2022, gross average earnings in the private sector rose 14.9 percent in year-on-year terms (Chart 3-21)**.** Average gross regular earnings rose by 13.6 percent year-on-year, while bonus disbursements were significantly higher than previous years' average.

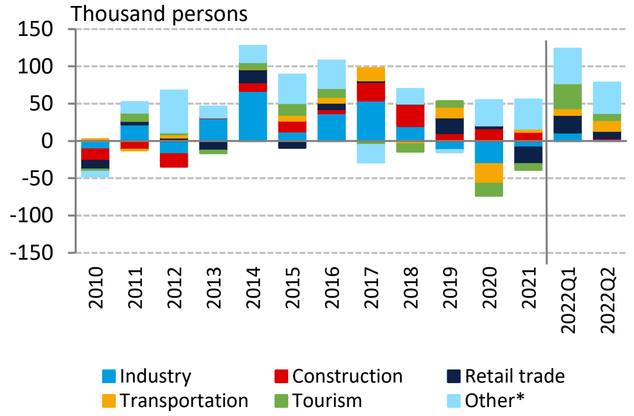
Of the countries of the region, wage dynamics were highest in Hungary and Poland in July. Taking into account part-time employees as well, wage growth amounted to 15.7 percent in July in Hungary. By contrast, in annual terms wages rose by 15.8 percent in Poland, and by 10.8 percent and 6.9 percent in Romania and Slovakia, respectively.

3.3.2. Employment and unemployment

The number of employees in the overall economy remains high. In August 2022, the average number of employees aged 15–74 years was 4 million 713 thousand. Compared to the same prior-year period, employment expanded by 52,000 people in the period between June and August 2022 (Chart 3-22). According to seasonally adjusted data, employment levels were similar to the previous month. In parallel, the seasonally adjusted unemployment rate was 3.3 percent in the second quarter and 3.6 percent in August. The unemployment rate in Hungary can still be considered low in an international comparison.

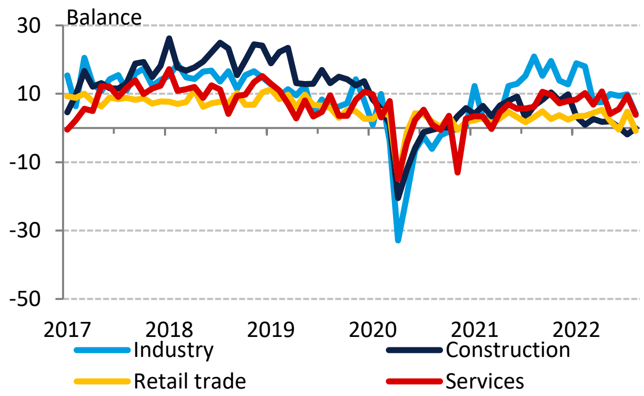
The private sector was the biggest contributor to the expansion in employment. In the second quarter, the rise in headcount was mostly attributable to the primary labour market. The number of fostered workers declined by 6,000, while those employed at local units abroad increased by 13,000 year-on-year. Private sector employment expanded by 78,000 people in year-on-year terms. The number of hours worked increased slightly, and thus the full-time equivalent (FTE) headcount rose by 2.9 percent year-on-year. According to the available quarterly, detailed sectoral data, major increases in headcount primarily took place in market services sectors (such as real estate transactions, professional, scientific and technical activities, financial services, tourism, transportation), while the number of employees fell versus the prior year in education, retail

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



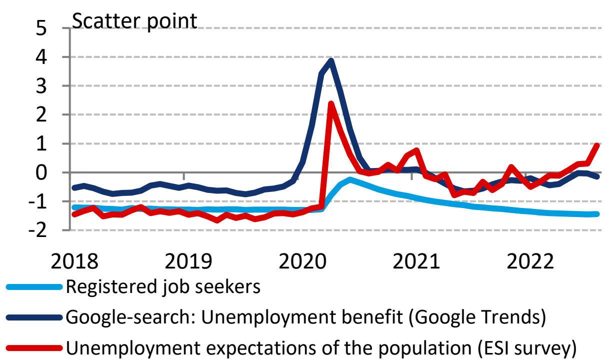
Note: *Agriculture, other industry and market sector branches.
Source: HCSO

Chart 3-24: Employment expectations in the ESI business survey



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

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



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

trade and the health system. Employment remained practically unchanged in construction and manufacturing (Chart 3-23).

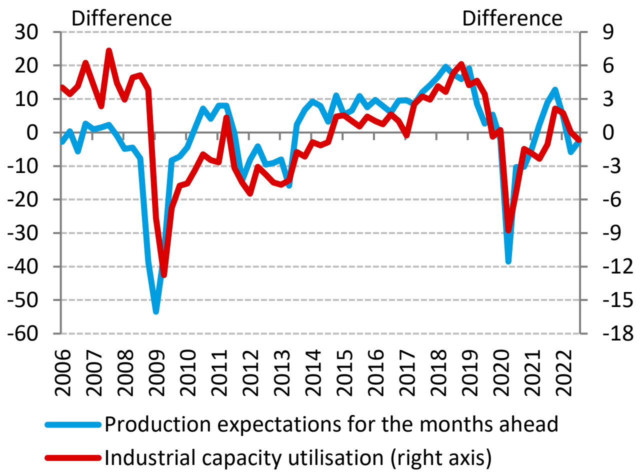
According to the ESI business survey, which monitors economic sentiment, companies' expectations regarding employment differed across sectors in August. In manufacturing and other services sectors, the majority of companies are planning increases in headcount, while in trade and construction most companies foresee reductions in headcount for the next three months (Chart 3-24).

Indicators capturing the short-term evolution of unemployment show a mixed picture (Chart 3-25). The number of registered unemployed was 231,000 in August, showing no change compared to June and July, and still low in European comparison. The Google Trends indicator concerning unemployment benefit improved slightly compared to the first two months of the summer, but is higher than the figures observed prior to the COVID crisis. According to the ESI consumer survey, households' fear of unemployment increased in recent months, showing the highest value since May 2020.

3.4. Cyclical position of the economy

The Hungarian economy continued to recover in 2022 Q2. The cyclical position of the economy improved in recent quarters, and thus output may already be slightly above its potential level. The buoyant demand observed in the first half and the easing of frictions in supply chains resulted in an inflationary cyclical position. Looking ahead, the slowdown in demand and the expected unwinding of supply-side constraints will have disinflationary effects. The capacity utilisation of manufacturing companies declined in recent months, and production expectations remained persistently negative.

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



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

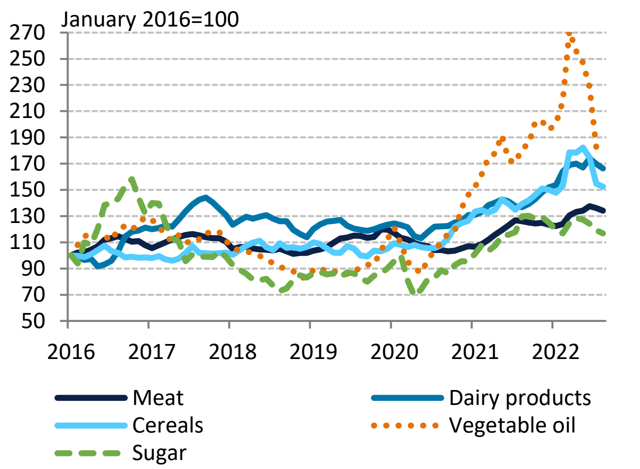
According to our estimations, the cyclical position of the economy improved in recent quarters, with output now slightly above its potential level. Consumption was the main contributor to economic growth in 2022 Q2, which was also supported by the significant government transfers at the beginning of the year. The buoyant demand observed in 2022 H1 and the easing of frictions in supply chains resulted in an inflationary cyclical position. Looking ahead, the slowdown in demand and the anticipated unwinding of supply-side constraints will have disinflationary effects.

According to the questionnaire-based surveys, the capacity utilisation of manufacturing companies declined in recent months and thus dropped below the historical average (Chart 3-26). Production expectations for the coming months were already consistently below the historical average level.

3.5. Costs and inflation

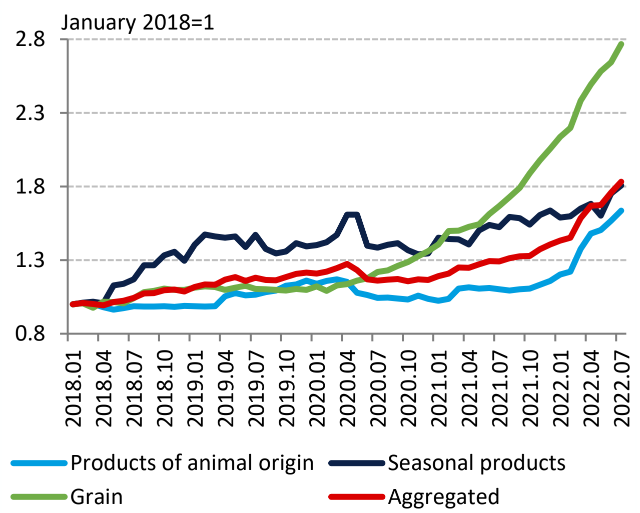
The annual growth rate of consumer prices was 15.6 percent in August. The underlying reasons for the significant increase in inflation observed in recent months primarily include the rise in food, industrial goods, alcohol and tobacco price indices. The rise in global commodity prices and transportation costs affects a large part of the consumer basket, resulting in historically high global inflation, in excess of analysts' expectations. At the same time, the evolution of inflation was affected by tax effects as well (excise tax increase, surtaxes) starting from July. Core inflation excluding indirect taxes advanced to 18.9 percent in August. Of the sub-components of core inflation, changes in processed food prices contributed the most to the rise in core inflation in the past period. Inflation of processed food has accelerated to close to 40 percent since May, while inflation of industrial goods has risen to over 16 percent. The indicators capturing longer-term inflationary trends have increased in recent months.

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



Note: Real price indices.
Source: FAO

Chart 3-28: Development of agricultural prices



Note: Based on seasonally adjusted data.
Source: HCSO

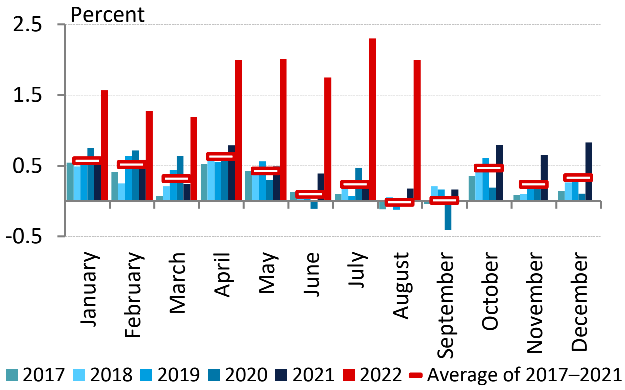
3.5.1. Producer prices

In terms of the changes in global food prices, the previously seen significant increase stopped, and a decline in prices has been observed since May. The largest decrease was seen in the prices of cereals and oil crops. Of cereals, the commodity exchange prices of wheat have fallen significantly in the past months. This is attributable to the increase in supply due to the start of the harvest, the agreement between Russia and Ukraine on the latter's grain exports and the improvement in the global outlook for expected crop yields. Prices of oil crops also adjusted considerably, which is explained by the combined effect of the fall in demand due to high world market prices and the expanding global market supply (Chart 3-27).

Domestic agricultural producer prices continued to rise compared to the previous quarter, showing a more than 33-percent year-on-year increase in 2022 Q2. The largest increase can still be observed in grain prices, which rose by 62 percent year-on-year in 2022 Q2. This rise was attributable to wheat and oil crops. Prices of products of animal origin rose further compared to 2022 Q1, mainly due to higher prices for pork, poultry and milk. The fall in producer prices of fruits only partially offset the further rise in vegetable prices (Chart 3-28).

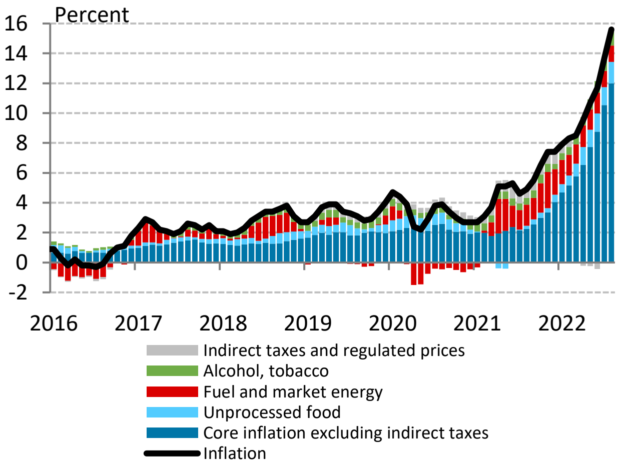
In the case of consumer goods, versus the same prior-year period, the rise in domestic industrial producer prices exceeded the historical average by several times until July 2022. In the past months, the domestic sales prices of industry as a whole rose by more than 52 percent year-on-year, with the energy producing sectors and the increase in base material prices as the main contributors; this rise is significantly higher than the historical average. The annual price increase of more than 90 percent in the energy producing sectors reflects the rise in European energy prices, with the surge in gas prices as a result of the decline in gas supply from Russia playing a major role in this regard.

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



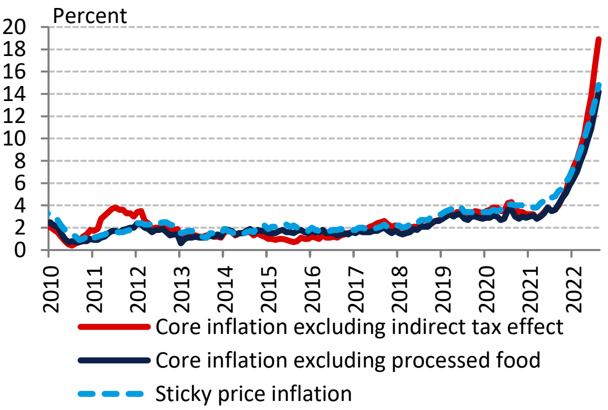
Note: Tax-adjusted, seasonally unadjusted monthly change.
Source: MNB calculation based on HCSO data

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

3.5.2. Consumer prices

The annual growth rate of consumer prices was 15.6 perent in August (Chart 3-29)**. In August, the monthly price change of the basket excluding fuels and administered prices was 2.0 percent, which was in line with the repricing pattern observed in the past months, but at the same time significantly exceeded the figures typical of the previous years.** The underlying reasons for the significant increase in inflation observed in recent months primarily include the rise in food, industrial goods, alcohol and tobacco price indices (Chart 3-30). A large part of the inflation in Hungary is explained by external factors. The rise in global commodity prices and transportation costs affects a large part of the consumer basket, resulting in historically high inflation around the world. At the same time, the development of inflation was also affected by tax effects (excise tax increase, surtaxes) from July.

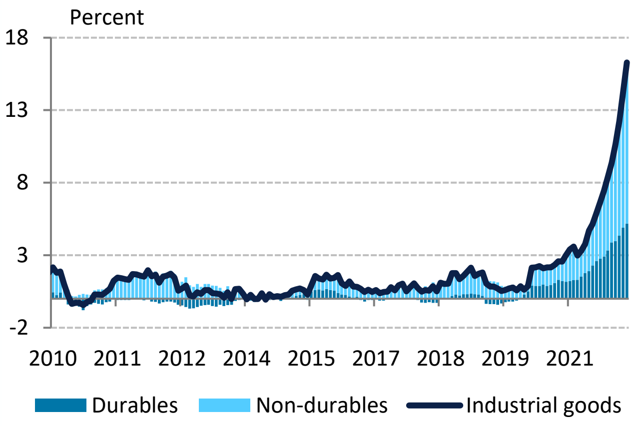
Core inflation excluding indirect taxes advanced to 18.9 percent in August. Of the sub-components of core inflation, the changes in processed food prices contributed the most to the rise in core inflation in the past period. The indicators capturing longer-term inflationary trends have been rising over the past period (Chart 3-31).

The inflation of industrial goods was close to 16 percent in August. The increase in the price of industrial goods is substantially larger than the average recorded for previous years. The global semiconductor shortage and the high level of commodity prices also supported a rise in the consumer prices of the product group. Within this product group, inflation of durable goods rose to 14.8 percent, while inflation of non-durables stood at 17.3 percent (Chart 3-32 and Chart 3-33). The price rise of durables was mainly related to the increase in the prices of new and second-hand passenger cars. The increase in the price index of non-alcoholic drinks also reflected the effect of raising the public health product tax.

Inflation of market services has continued to accelerate since May, rising to above 11.0 percent. In recent months, the monthly price increase was two to three times higher than in previous years and characterised a wide range of services. Similarly to previous periods, prices of food-related services (restaurant and catering services) accelerated further (Chart 3-34).

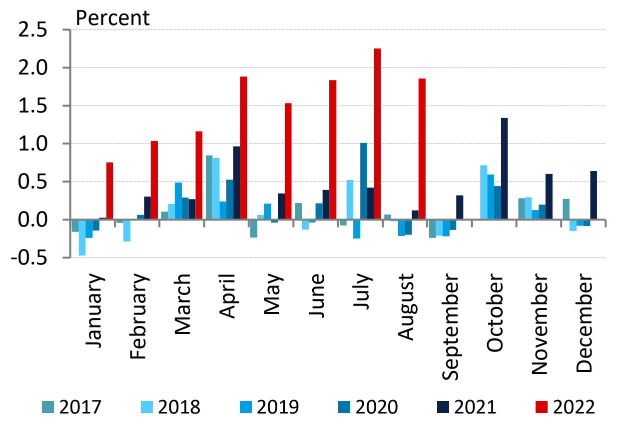
Prices of alcohol and tobacco products showed double-digit year-on-year increases from July, with inflation in this product group advancing to 13.1 percent in August. The surge in the annual price index of this product group is explained by the excise tax hike in July. In the case of

Chart 3-32: Inflation of industrial goods



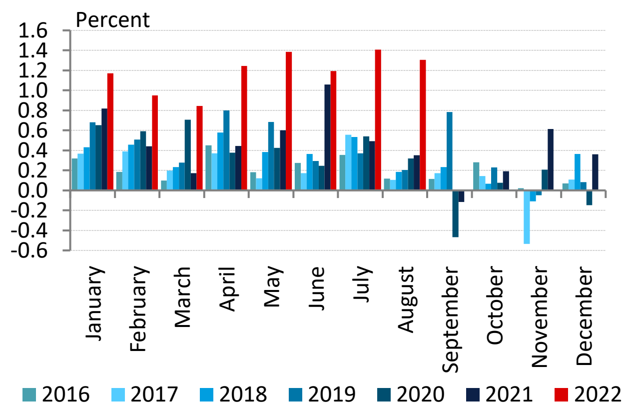
Note: Annual change, excluding the effect of indirect taxes.
Source: MNB calculation based on HCSO data

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: Non-seasonally adjusted monthly price changes excluding indirect tax effects.
Source: HCSO, MNB

alcoholic drinks, the excise tax hike offset the effect of excluding the product group from the range of products subject to public health product tax. Looking at the effect of the excise tax hike on tobacco products, we observed lower pass-through than before; nevertheless, pass-through may continue in the coming months.

Food inflation rose to 33.6 percent in August, well above the historical average for this product group. Inflation rates for unprocessed food and processed food accelerated to 24.4 percent and nearly 40 percent, respectively. One factor behind this was that from July the data already partly reflected the price-increasing effect of the public health product tax, which affected the development of processed food prices. Price increases were wide-ranging for both processed and unprocessed food. 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) at last October's level.

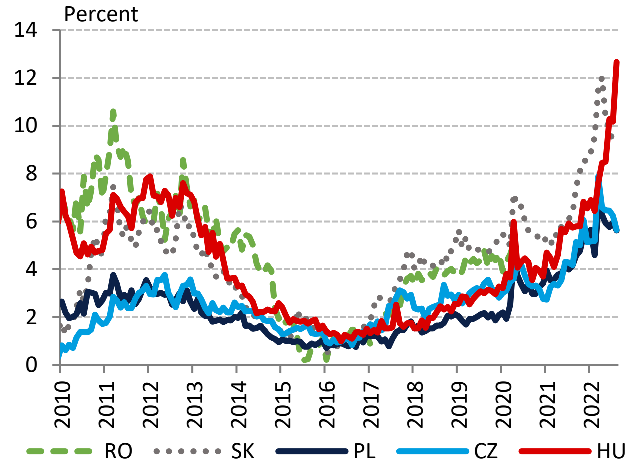
The consumer prices of motor fuels were recently shaped by government measures, which curbed the spillover effect of elevated world market oil prices. Fuel inflation eased from 10.8 percent in May to 6.2 percent in August. The price cap in force since 15 November 2021 substantially mitigates the inflationary effect of the world market oil price increase on fuel prices, maximising the price at HUF 480 for domestic consumers.

Based on data from recent months, inflation was in line with the forecast in the June Inflation Report.

3.5.3. Inflation expectations

Households' inflation expectations rose, and the indicator remains more volatile than usual. In the countries of the CEE region, inflation expectations increased on the whole compared to the beginning of the year, in line with the recent rise in inflation. On the other hand, in the countries of the region a moderation of expectations was observed in August compared to May (Chart 3-35).

Chart 3-35: Inflation expectations in the region



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

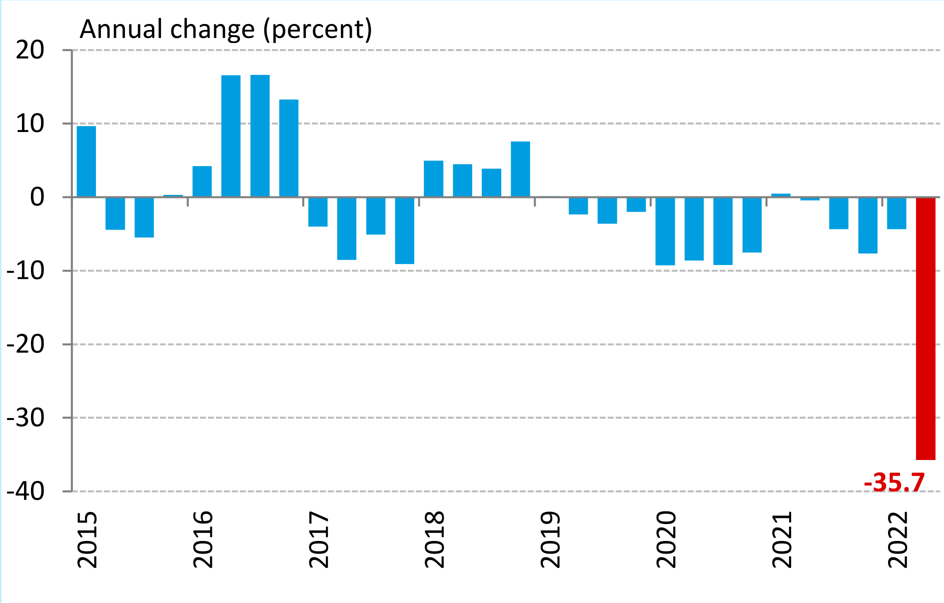
Box 3-3: Inflationary and real economy effects of the extraordinary drought

Monthly mean temperatures were above the historical average this summer, while the amount of precipitation fell far below the historical average. In July 2022, an extraordinary drought hit Hungary. The monthly mean temperature exceeded the average by 3.5 degrees centigrade, while the amount of precipitation was only one third of the average. The worst years for Hungarian agriculture were typically related to drought periods. These occurred in 2000, 2002, 2007 and 2012, when the ratio of areas affected by drought was significant (in 2010, one and a half times more rain fell than the average, which is also not good for crops).

According to our estimates, the historically severe drought may reduce 2022 GDP growth by 0.6–0.8 percentage point. The structure of Hungarian agriculture exposes the sector to the weather conditions due to the high share of cultivation (nearly 70 percent). As a result of the record-setting drought, losses are expected to be reported for 1.3 million hectares, i.e. nearly one third of all cultivated arable land. The drought is mainly a problem for the Great Plain region, in certain parts of which there was no rainfall at all in July. The average yields of wheat and rape may have declined by 30–50 percent, whereas value added in agriculture fell by more than 35 percent in the second quarter (Chart 3-36).

One element in defending against drought may be the wider use of irrigation, as only slightly more than half of the already equipped areas are watered. In addition, the renewal and development of the whole water management also plays a major role. Nevertheless, even with irrigation it would not be possible to avoid all of the damage caused by drought: according to experts, the size of irrigated areas could be increased to half a million hectares, i.e. nearly 12 percent of all arable land.

Chart 3-36: Annual changes in the value added of the Hungarian agriculture

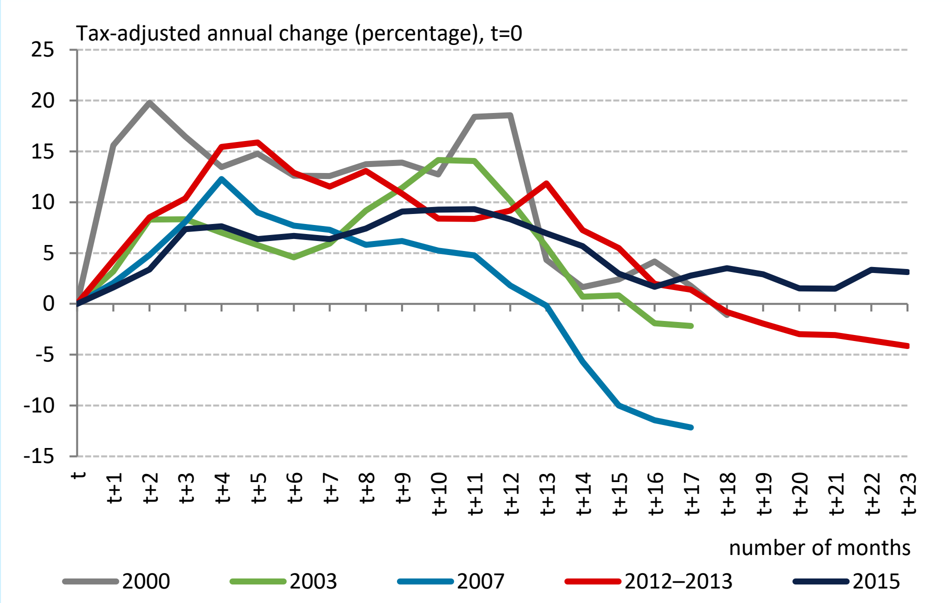


Note: Based on seasonally and calendar adjusted balanced data.
Source: HCSO

The inflationary effect of the extraordinary drought may be at least as significant as the real economy effect. As a result of the drought, which hit all of Europe, the world market prices of food may be higher compared to our previous expectations. So far, food prices have explained a major part of this year's inflation in the EU (nearly 20 percent on average from January to August), and this may increase further as a result of the drought. In year-on-year terms, the rise in food prices in Hungary amounted to 33.6 percent in August. Within this, the price indices of unprocessed food and processed food were 24.4 percent and 40 percent, respectively. Based on past experiences, this magnitude of food price inflation was last observed at the time of the 2012 grain crisis. In dry years, the additional inflationary effect fed through into domestic unprocessed food prices almost immediately, and the period of increase typically lasted three to five months (Chart 3-37).

Taking these experiences into account, as a result of the drought, starting from the autumn, sharply rising food prices may boost the price index by 1.0 percentage point more than previously expected. In view of the carry-over effect, the inflationary effect of the drought may mostly affect inflation in the coming year, and after next year, it will not raise domestic consumer prices any further. Moreover, the return of production to the historical average may contribute to disinflation. At the same time, depending on the degree of the drought loss, the estimated inflationary effect may change, and it remains to be seen to what degree the consequences have already been reflected in the prices so far.

Chart 3-37: Additional changes in unprocessed food prices in drought periods in Hungary



Note: 't' means the beginning of the drought, while the individual periods mean the months passed.
Source: HCSO, MNB

Box 3-4: Turnaround starting in the commodity markets

As a combined effect of various factors, worries about global recession strengthened in the past period. The Russia–Ukraine war, a possible new wave of the coronavirus pandemic, the high commodity prices in the past period, persistent disruptions in supply chains and the tightening of global monetary conditions all increase the risk of a recession in the global economy. These worries are exacerbated by the technical recession in the US economy, while Chinese growth prospects are also impaired by the zero-Covid policy, weak lending and the worsening sentiment.

In addition to the macroeconomic variables, the slowdown in the global economy can be perceived in the commodity markets as well, and the declining commodity prices can accelerate the disinflation from 2023. One historically observed phenomenon is that deceleration or contraction in global GDP is reflected in weaker demand for key commodities (crude oil, industrial metals) and through that in a decrease in prices. During the 2008–2009 crisis, all commodity prices showed double-digit declines for the year as a whole; only the changes in precious metal prices were positive. In 2009, the price of oil dropped by 26 percent on average, while coal and gas prices fell by 43 percent and 52 percent, respectively, in year-on-year terms. Following the onset of the coronavirus pandemic, with the closing of economies and the downturn in demand, declines in the main commodity prices were observed again: in 2020, prices of oil and gas fell by 33 percent and 20 percent, respectively (Table 3-2).

The recovery following the coronavirus pandemic resulted in burgeoning global demand and thus higher commodity prices. After mid-2021, the price of gas reached a historical high, while the price of oil rose to above USD 100 per barrel again. The outbreak of the war between Russia and Ukraine at end-February 2022 contributed to further increases in prices. According to data for the first eight months of this year, the prices of the majority of commodities show double-digit increases, with an average year-on-year price rise of 103 percent observed in the case of gas.

Table 3-2: Annual average changes in commodity prices

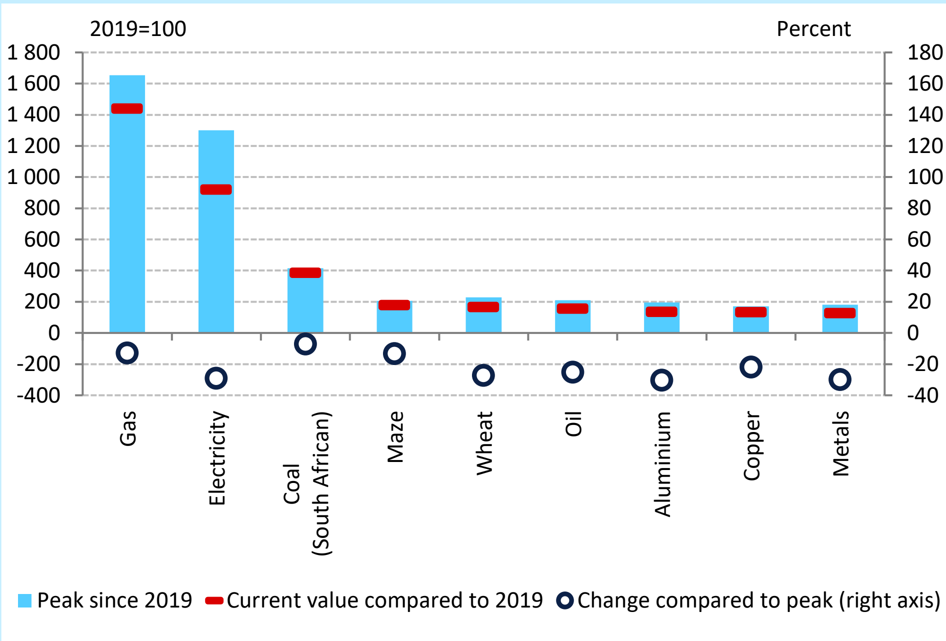
	Oil	Coal	Gas	Wheat	Aluminium	Copper	Lead	Nickel	Zinc	Gold	Platina	Silver	Palladium
2006	21%	10%	-17%	17%	36%	83%	32%	70%	137%	36%	27%	58%	61%
2007	12%	24%	5%	48%	3%	7%	103%	79%	6%	16%	15%	17%	11%
2008	41%	104%	27%	30%	-3%	-1%	-8%	-44%	-43%	26%	23%	13%	-1%
2009	-26%	-43%	-52%	-26%	-30%	-11%	0%	-14%	2%	13%	-11%	6%	-7%
2010	34%	42%	13%	25%	33%	54%	34%	57%	38%	26%	35%	37%	101%
2011	40%	28%	-8%	31%	11%	19%	14%	7%	3%	28%	7%	81%	45%
2012	1%	-20%	-29%	6%	-15%	-9%	-12%	-22%	-10%	7%	-9%	-10%	-11%
2013	-2%	-13%	40%	-4%	-9%	-8%	4%	-14%	-2%	-15%	-4%	-23%	13%
2014	-9%	-10%	18%	-11%	2%	-6%	-2%	14%	13%	-10%	-7%	-19%	11%
2015	-47%	-22%	-40%	-15%	-10%	-20%	-15%	-29%	-10%	-8%	-24%	-17%	-13%
2016	-13%	15%	-1%	-15%	-3%	-11%	5%	-15%	12%	8%	-5%	10%	-8%
2017	26%	37%	25%	2%	23%	27%	25%	9%	41%	1%	-3%	1%	42%
2018	32%	15%	7%	15%	8%	7%	-3%	28%	3%	1%	-7%	-8%	18%
2019	-9%	-26%	-17%	4%	-15%	-8%	-10%	8%	-12%	10%	-1%	4%	49%
2020	-33%	-9%	-20%	8%	-5%	3%	-8%	0%	-10%	27%	2%	26%	45%
2021	78%	88%	92%	25%	46%	53%	21%	35%	34%	2%	25%	29%	12%
2022	59%	72%	103%	23%	27%	2%	4%	49%	29%	2%	-15%	-14%	-17%

Note: 2022 data are available until August.

Source: World Bank, Macrotrends

If the fears of global recession materialise in the coming period, main commodity prices may decline as experienced in the past. At the same time, as it feeds through into the development of consumer prices, the decrease in commodity and energy prices may result in disinflationary effects. In terms of the price changes of the main commodity and energy market products, declines were already recorded in the case of certain commodities compared to the peaks observed since 2019 (Chart 3-38). Looking at the futures prices of crude oil and gas, markets are pricing in lower prices for the coming period.

Chart 3-38: Price change of main commodity and energy market products



Note: Daily frequency data were examined in the case of gas, electricity and oil, while monthly data are available for other commodities.

Source: MNB calculation based on Bloomberg and World Bank data

Box 3-5: Global inflation developments

The increase in consumer prices is a global phenomenon, and thus, according to the data available for 112 countries, average inflation at the global level amounted to 18.0 percent in August 2022. Looking at continents, average inflation was highest in Africa (26.8 percent), while Australia and Oceania showed the lowest price increase (6.0 percent). The average rate of price increase was 26.0 percent in South America, 19.8 percent Asia, 12.8 percent in Europe and 8.7 percent in North America. Within Europe, inflation in the 27 Member States of the European Union amounted to 10.1 percent in August, while prices in the euro area rose 9.1 percent in year-on-year terms.

Out of 112 countries, 53 recorded double-digit inflation in August. At the same time, in parallel with the turnaround starting in the commodity markets, signs of a trend reversal also appeared in the development of inflation, as the rate of price increase compared to July already decelerated or stagnated in 52 countries. More than one third of the countries with double-digit inflation in August are in Europe, where inflation above 10 percent was observed in 20 countries (Table 3-3).

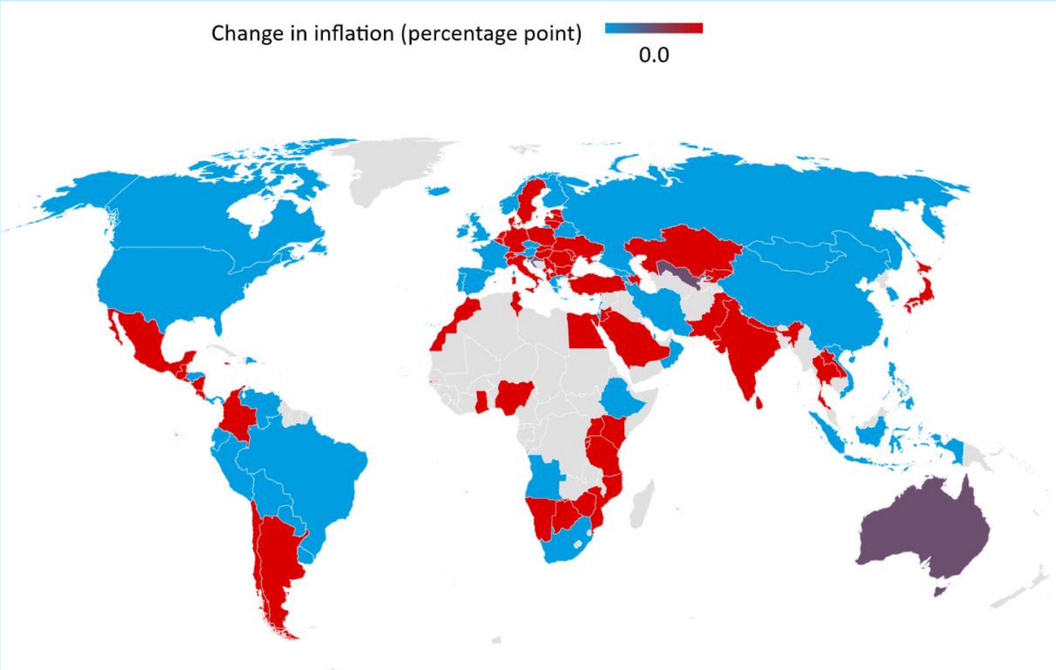
Table 3-3: Inflation rates in the world by continent

	Number of countries	Double-digit inflation rate (August 2022)	Decrease compared to July	Stagnation compared to July	Increase compared to July
Europe	38	20	14	3	21
Africa	21	12	5	0	16
Asia	30	12	16	1	13
South America	10	5	7	0	3
North America	11	4	5	0	6
Australia and Oceania	2	0	0	1	1
World	**112**	**53**	**47**	**5**	**60**

Source: Macrobond, MNB

Compared to July, inflation rates declined mainly in Asian countries and Europe in August. In Europe, compared to the previous month, decline or stagnation in the annual price dynamics was observed in nearly one half of the countries (17 out of 38) in August (Chart 3-39).

Chart 3-39: Changes in August inflation rates in the world compared to July



Note: Based on data available for 112 countries. 2022 Q2 data for Australia due to quarterly data release.
Source: Macrobond, MNB

Box 3-6: Changes in the base effect of extraordinary inflation factors appearing in 2022

Developments in inflation this year are affected by various extraordinary factors, the inflationary effect of which will have impact on the first half of next year as well, but base effects also contribute significantly to the acceleration of disinflation from 2023 Q3. The entry into effect of indirect taxes and surtaxes in July, the drought in Europe and the amendment of utility cost regulations are all one-off, extraordinary items appearing in 2022, which increase the price index in 2022. However, the base effects related to these items will reduce inflation in 2023. Starting from the second half of next year, these factors will contribute to a sudden drop in inflation as a result of their gradual exclusion from the base.

The July and August inflation data reflected the effect of tax increases, as some of these increases involved indirect taxes, the effect of which appears in consumer prices almost immediately (public health product tax, excise tax on alcohol and tobacco products). The base effect of indirect taxes will be positive in 2023 H1, as the reduction of the excise duty and crude oil stockpiling fee ("KKSZ” fee) on fuel that occurred this spring will drop out of the base then. In the second half of next year, however, the indirect tax hikes that came into force from July will result in a significant negative base effect. The negative base effect of extra profit taxes will be also perceived in 2023 H2.

Similar to the situation in the rest of Europe, large cultivated areas are impacted by drought in Hungary as well. The surge in food prices as a result of the drought adds to the price index starting from this autumn, and thus the inflationary effect of these price increases will fade in 2023 H2.

The amendment of utility cost regulations increases the price index by 2.5-3.0 percentage points for one year starting from September 2022, but will contribute to a turnaround in inflation from the autumn of 2023. The government terminated the administrative price of gas and energy for households for the quantity above the average consumption, and introduced a household price that is more favourable than the actual market price. The inflationary effect of the change may be first reflected in the September data, when consumers receive the utility bills for August.

On the whole, the base effect may reduce inflation by nearly 5 percentage points on average during 2023. The total negative base effect is mostly attributable to the underlying trends; one-off items explain roughly one fifth of the total effect in 2023. Stronger disinflationary impacts stemming from base effects may prevail in 2023 H2, supporting the return of inflation to the tolerance band in 2024 Q1.

Table 3-4: Changes in the base effect from one-off items in 2023

	Indirect tax effect	Surtaxes	Drought	Amendment to utility price reduction	Other	Total base effect
2023 Q1	0.1	0.0	0.0	0.0	-3.0	**-2.9**
2023 Q2	0.5	0.0	0.0	0.0	-4.8	**-4.3**
2023 Q3	-0.5	-0.1	-0.3	-0.8	-4.8	**-6.6**
2023 Q4	-0.2	-0.4	-0.6	-1.7	-2.5	**-5.4**
2023 average	**-0.1**	**-0.1**	**-0.2**	**-0.6**	**-3.8**	**-4.8**

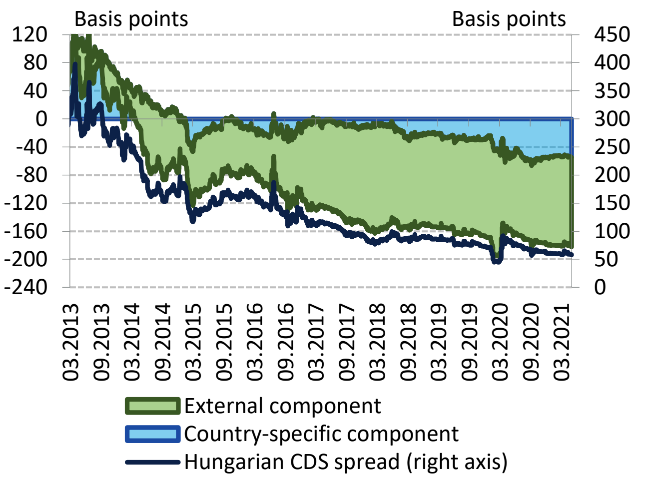
Note: In the case of the amendment of utility cost regulations we used 2.5 percentage points for the calculation.
Source: MNB

4. Financial markets and interest rates

4.1. Domestic financial market developments

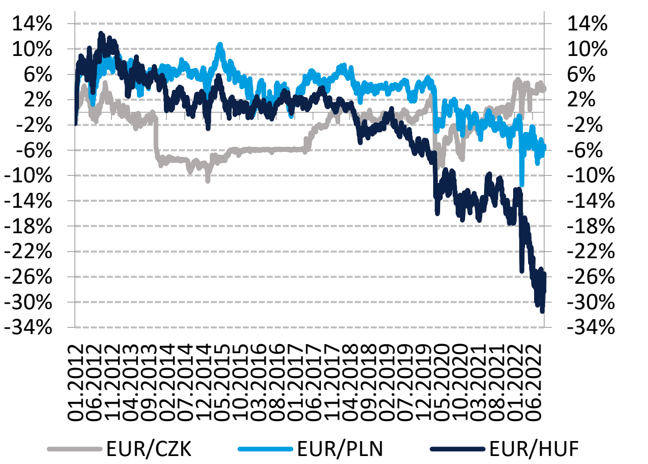
Financial and capital market sentiment improved slightly during the period, but tension was still observed in commodity markets. In the period since June, in addition to the developments in the Russia–Ukraine war and in commodity markets, it was primarily the mounting fears of inflation and recession as well as the monetary policy steps of developed and regional central banks that shaped financial market trends. Hungary's credit risk premium continued to increase in the past quarter. Government bond yields also rose in Hungary, as a result of increasing global yields, higher inflation and central bank interest rate hikes. The interbank yield curve also shifted upwards. The forint appreciated more than the other currencies in the region, strengthening by over 1 percent against the euro. In the region, the Polish zloty weakened by 1 percent, while the Czech koruna appreciated by 0.8 percent against the euro during 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 premium increased considerably in the first half of the period and then rose again following a slight correction in the middle of the period (Chart 4-1). During the period, the international factor and domestic factors increased the CDS spread to greater and lesser degrees, respectively, with the latter now standing at 228 basis points.

4.1.2. Developments in foreign exchange markets

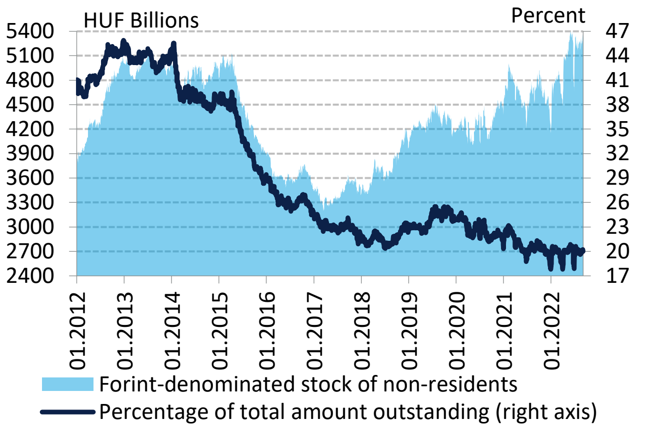
Amid high volatility, the forint strengthened by 1.2 percent against the euro, while the Czech koruna appreciated to a lower degree and the Polish zloty weakened. Within the CEE region, the Polish zloty depreciated by 1 percent, while the Czech koruna appreciated by 0.8 percent by the end of the period (Chart 4-2). Exchange rate trends of the currencies of the region were affected by commodity market developments as well as the monetary policy steps of the central banks in the region. The forint depreciated by 2.7 percent against the US dollar, while of the currencies in the region the zloty and the Czech koruna weakened against the US currency by 5.5 percent and 3.3 percent, respectively.

4.1.3. Government securities market and changes in yields

Non-residents' HUF-denominated government securities holdings dropped in the past quarter (Chart 4-3). Non-residents' forint government securities holdings rose considerably in the first half of this year, before declining by about HUF 120 billion to HUF 5,293 billion during the past three months. The ownership share within HUF-denominated government securities also decreased, falling to about 20 percent.

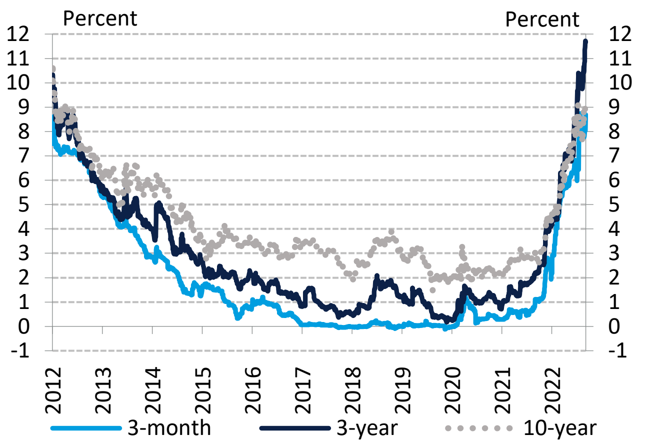
For most of the period, the Debt Management Agency accepted offers for higher amounts than announced at the government bond auctions, although in some cases lower-than-announced issuances also took place. Average auction yields rose at all maturities in the past quarter, in line with

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



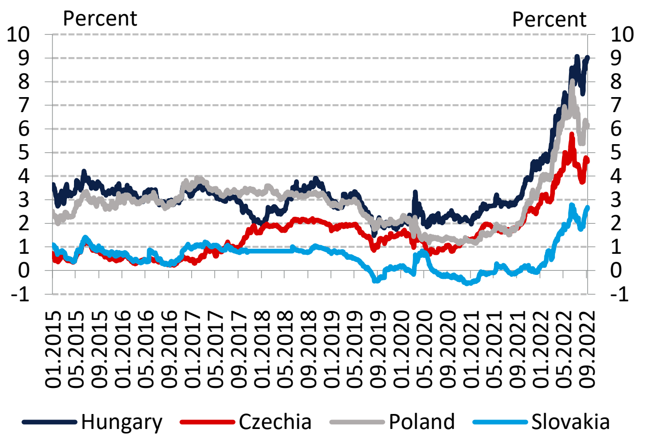
Note: The chart shows the stock of T-bills and T-bonds.
Source: MNB

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

the increase in the secondary market yields. Average auction yields increased by 312 basis points at the 3-month discount treasury bill auction and by 54 basis points at the 10-year auction. Accordingly, average auction yields were at 9.73 percent and 8.94 percent, respectively, at the end of the period.

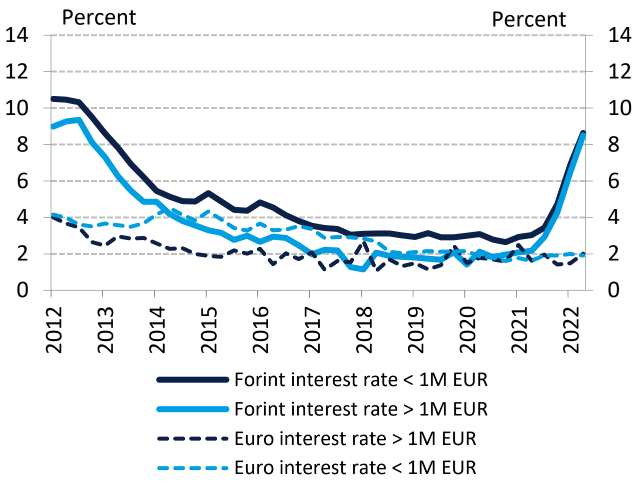
Yields increased along the entire government securities market yield curve. Short-term yields typically rose throughout the period, although the 10-year yield declined temporarily in the middle of the period (Chart 4-4). On the whole, during the quarter, 3-year and 10-year yields rose by 341 and 51 basis points, respectively, with global factors and interest rate hikes in the region as contributing factors. Regarding interbank yields, the 3-month BUBOR rose by 567 basis points to 12.84 percent.

Most of the long-term reference yields in the region moderated during the period (Chart 4-5). The 10-year Polish yield fell 164 basis points, while the 10-year Czech yield dropped 94 basis points versus the end of the previous quarter. The Slovak (euro) yield fell by 2 basis points.

4.2. Credit conditions of the financial intermediary system

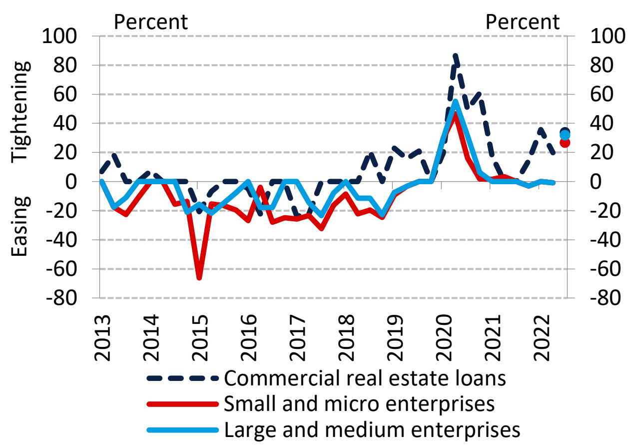
In 2022 Q2, corporate lending conditions did not change significantly in any enterprise size category, but respondent credit institutions tightened conditions further in the commercial property financing segment. Credit standards are expected to be tightened in all segments during the second half of the year. In 2022 Q2, housing loan standards were tightened, while those of consumer loans were eased. Looking ahead to 2022 H2, tightening is expected in both segments. The average cost of funds of corporate HUF-denominated loans and the APR on long-term fixed-rate housing loans increased in the period under review. Of the housing loan contracts concluded during the quarter, 86 percent had rate fixation for at least 10 years, ensuring the long-term predictability of instalments.

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 2022 Q3 and 2022 Q4.
Source: MNB, based on banks' responses

4.2.1. Corporate credit conditions

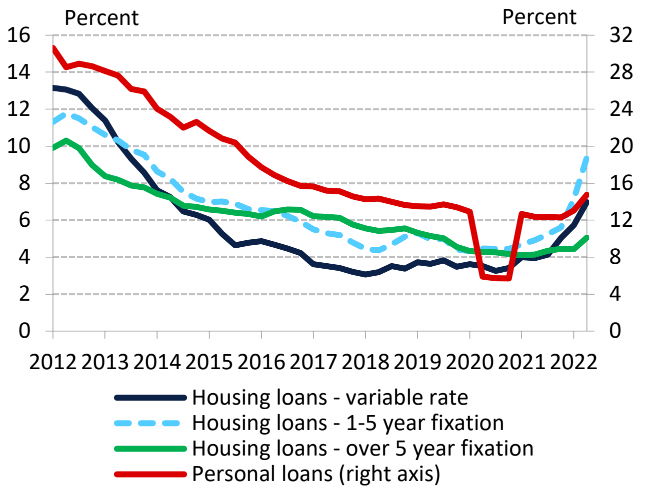
In 2022 Q2, the average interest rate on corporate forint loans increased considerably, in parallel with a rise in the costs of funds. Excluding money market transactions, the smoothed average interest rate level on new corporate HUF loans with interest rates variable within one year (largely market-based loans) rose by 173 basis points in the case of low-amount loans and 204 basis points in the case of high-amount loans compared to the previous quarter (Chart 4-6). Accordingly, within the loans the interest rate of which is variable within one year, the average interest rate on forint loans amounted to 8.5 percent in June. During the quarter, the interest rate level on low-amount euro loans decreased by 9 basis points, while for high-amount euro loans it rose by 54 basis points, and thus the average cost of funds of euro loans stood at 2 percent at end-June. The significant rise in corporate forint interest rates is attributable to the rapid pass-through of the rise in funding costs into bank lending rates.

Standards did not change significantly during the quarter in any enterprise size category, but looking ahead, tightening can be expected. Banks participating in the Lending Survey did not significantly change the conditions of access to credit in any of the enterprise size categories in the second quarter, although a net 20 percent of the respondent credit institutions continued to tighten in the sector of commercial real estate financing. Looking ahead to 2022 H2, corporate credit conditions are likely to be tightened: a net 34 percent, 32 percent and 27 percent of banks anticipate tightening for 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 primarily intend to tighten the premium on riskier loans and the data reporting requirements vis-à-vis clients.

4.2.2. Household credit conditions

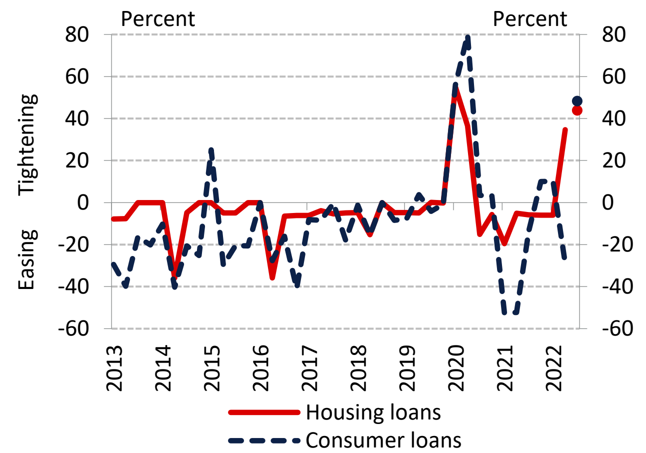
Banks only partly included the rise in the yield environment in the pricing of housing loans during the quarter. Following an increase of 223 basis points, the

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



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

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



Note: Net percentage balance of respondents tightening/easing credit conditions weighted by market share. Forecast for 2022 Q3 and 2022 Q4.
Source: MNB, based on banks' responses

average APR level on housing loan contracts concluded in 2022 Q2 stood at 9.4 percent in the case of loans with 1-5 years of interest rate fixation, while in the case of loans with interest rate fixation for more than 5 years a mere 61-basis point rise took place as a result of the reducing effect of the Green Home Programme (GHP) on the average interest rate. Accordingly, the average APR reached 5 percent during the quarter (Chart 4-8). As a result of the significant GHP disbursement, the share of loans fixed for at least 10 years increased and reached an unprecedented 86 percent within new loans. Increasing by 169 basis points, the average smoothed APR on personal loans reached 14.7 percent by the end of the period under review.

Housing loan standards tightened in Q2, and further tightening is expected in the future. According to responses to the Lending Survey, in net terms 35 percent of banks tightened the standards of housing loans in 2022 Q2, but concerning partial conditions, more than half of the responding institutions indicated reductions of spreads. Looking ahead to 2022 H2, a net 44 percent of the banks plan to further tighten housing loan conditions, and as regards partial conditions, a net 59 percent of the banks already anticipated raising the spread between the loan interest rate and cost of funds (Chart 4-9). As far as consumer loans are concerned, in net terms 29 percent of the credit institutions eased the conditions of access to loans in the second quarter. Looking ahead to the next six months, in net terms 48 percent of the banks plan to tighten standards in the market of consumer loans.

Box 4-1: Changes in subsidised and market loans in the domestic credit market since the outbreak of the coronavirus pandemic

High-volume loan and guarantee programmes were announced in both Hungary and the Member States of the European Union in the uncertain economic situation following the appearance of the coronavirus pandemic. As a result of the subsidised programmes, a shift was observed in the composition of new loan contracts according to scheme. Between April 2019 and March 2020, the share of market-based loans[2] within the total corporate loan volume in Hungary was 88 percent. This share then declined to 52 percent between May 2020 and September 2021, i.e. in the period affected by the FGS Go! and the Széchenyi Card Programme. Following closure of the FGS Go!, the SCP Go! programme gained ground, and its share gradually increased within the new SME loan volume. While a reversal was observed in the final quarter of 2021 (in the course of which the share of market loans rose to 71 percent), the share of market-based loans within SME loan contracts declined to 64 percent and 51 percent by 2022 Q1 and Q2, respectively.

In addition to the composition of new loans, the structure of loans outstanding has also changed considerably since the outbreak of the coronavirus. While at end-2019 only 13 percent of the loans outstanding were related to subsidised loans, in 2022 Q2 this already applied to around one third of them. In parallel with that, guaranteed loans outstanding also increased considerably, from HUF 1,000 billion prior to the coronavirus to some HUF 3,000 billion.

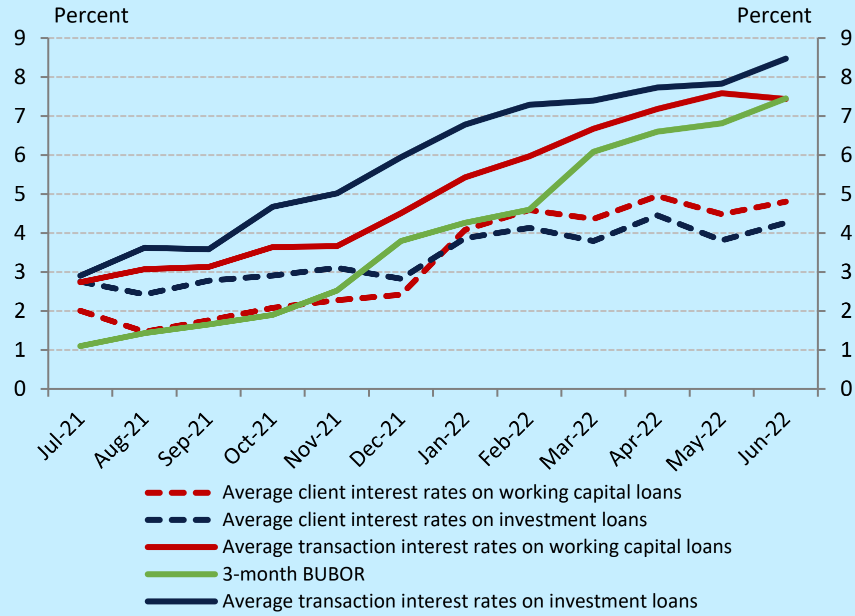
The interest advantage of the subsidised credit schemes contributed significantly to their upswing, especially in view of the central bank interest rate hikes. In 2022 Q2, the contract amount weighted average transaction interest rate on forint working capital loans to SMEs[3] (which also contains the subsidy paid by the state in the case of subsidised loans) rose by 77 basis points compared to the previous quarter, and amounted to 7.4 percent at end-June, while the interest rate on investment loans[4] – following an increase of 108 basis points – reached 8.5 percent at the end of the period under review (Chart 4-10). However, taking into account the client interest rates to be actually paid, the average interest rate on loans granted during the quarter was much lower: following increases of 44 basis points and 46 basis points, average interest rates on working capital loans and investment loans at end-June reached 4.8 percent and 4.3 percent, respectively. The reason for the difference between transaction and client interest rates is that companies eligible for subsidised credit schemes could have access to funds at client interest rates of 1–2.5 percent as well during the second quarter.

[2] When calculating the ratio of market-based loans we examined the ratio of non-overdraft type loans, classified as "Normal market" in the bank data reporting, within the new contracts of credit institutions excluding the Hungarian Development Bank and Eximbank.

[3] Loans materialising with a loan purpose of factoring transaction, factoring transaction credit line, working capital loan and working capital credit line belong to working capital loans.

[4]Project loans included investment loans, credit lines with investment purpose, project loans and loans materialising with a project-purpose credit line loan purpose.

Chart 4-10: 3-month BUBOR and average transaction and client interest rates on investment and working capital loans to SMEs

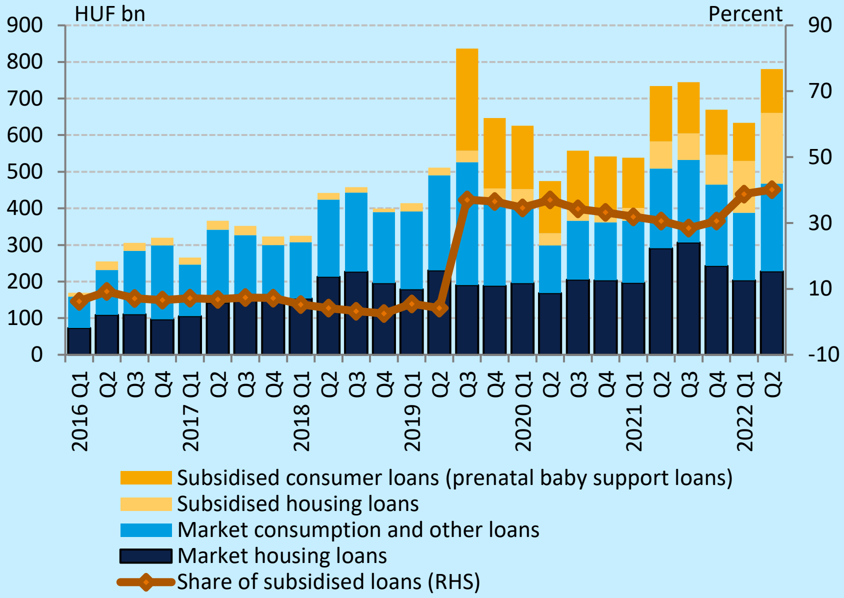


Source: MNB

In the past years, the share of subsidised loans expanded within household loans as well. An upturn in subsidised loans can be observed from 2019, in parallel with the launch of prenatal baby support loans and the rural HPS as well as the expansion of the previous HPS programme, whereas the new home purchase subsidies introduced in 2021 (VAT exemption of new properties purchased using the HPS, exemption from duty for homes purchased using the HPS, multigenerational HPS, subsidised housing loan for home improvement) gave new momentum to the spread of subsidised loans. Subsidised-rate housing loans disbursed with HPS subsidies amounted to HUF 180 billion in 2022 H1, accounting for 24 percent of the housing loan disbursements in the same period. Within the framework of the FGS Green Home Programme (GHP) launched in October 2021 as part of the Funding for Growth Scheme, in 2022 H1 banks concluded loan contracts amounting to HUF 277 billion, accounting for 36 percent of housing loan disbursements, and contributing significantly to the record volume of housing loan disbursements that materialised in 2022 Q2. Through June, the total amount of contracts concluded for subsidised home improvement loans was HUF 64 billion. There is also stable, although gradually declining demand for general-purpose prenatal baby support loans on which the interest rate is 0 percent after the birth of one child; during the past three years this product rose to 18 percent of household loans outstanding. In 2022 Q2, four out of ten household loans were linked to state interest rate subsidy or preferential central bank refinancing, and thus it can be concluded that subsidised loans play a major role in lending to households.

The impact of subsidised household loans is reflected in client interest rates as well. In view of the high share of subsidised loans, the increase in the central bank base rate was reflected in client interest rates only in a subdued manner: while in June 2022 the average interest rate on market-based new housing loans amounted to 7 percent, taking all housing loans into account the level of the average interest rate to be paid by clients was 5.8 percent.

Chart 4-11: Disbursement of market-based and subsidised loans in the household segment



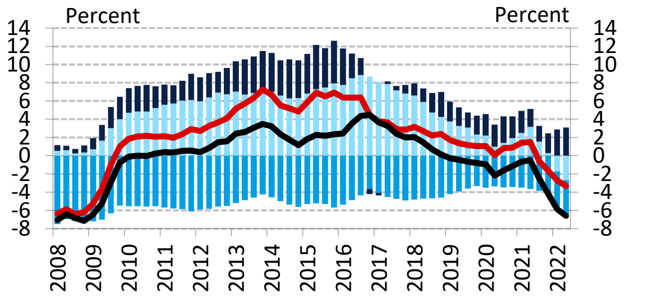
Source: MNB

5. Balance position of the economy

5.1. External balance and financing

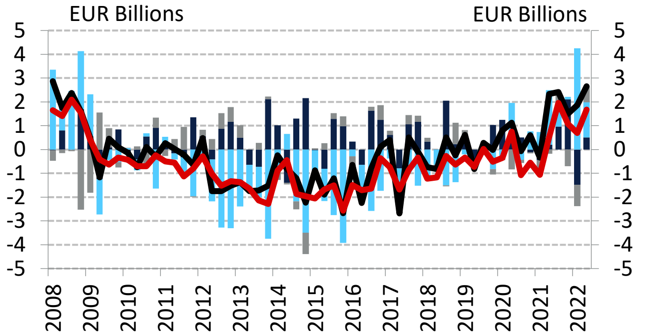
In 2022 H1, the current account deficit increased to 6.6 percent of GDP. In parallel with that, the net borrowing of the economy also rose. The drop in the external balance position was attributable to the continued decline in the balance of goods and services, as net energy imports rising in parallel with surging energy prices turned the trade balance into an increasing deficit. According to financing data, net borrowing in 2022 H1 was primarily financed by debt liabilities, while net FDI and portfolio investments showed outflows. The country's external debt-to-GDP ratios decreased slightly: net debt-type borrowing was more than offset by the revaluation of outstanding debt and the expansion of 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: 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 the time series.
Source: MNB

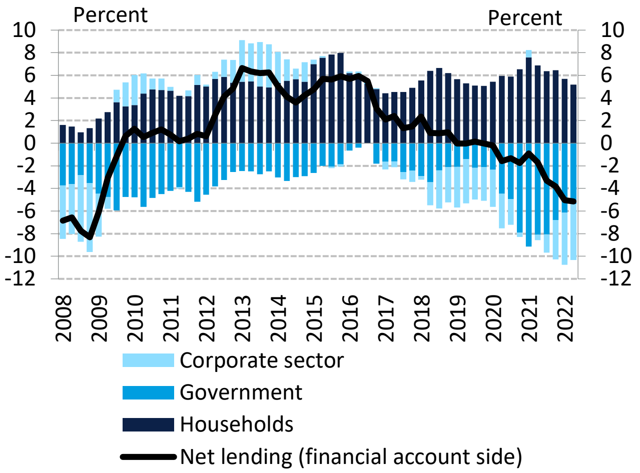
5.1.1. Developments in Hungary's external balance position

In 2022 Q2, the four-quarter current account deficit and net borrowing of the country rose to 6.6 percent and 3.3 percent of GDP, respectively (Chart 5-1). The continued decline in the external balance position was driven by the further deterioration in the trade balance due to the increase in net energy imports, which reflected the effect of deterioration in the terms of trade due to the surge in energy prices, while the trade balance excluding the energy balance was relatively stable. The import-increasing effect of strong internal demand in 2022 H1 was offset by the improving balance of services, in parallel with the recovery of tourism. The income balance improved slightly as a result of a decline in foreign-owned companies' incomes. The transfer balance started to increase in early 2022, and thus it significantly improved the external balance position in 2022 H1 as well.

5.1.2. Developments in financing

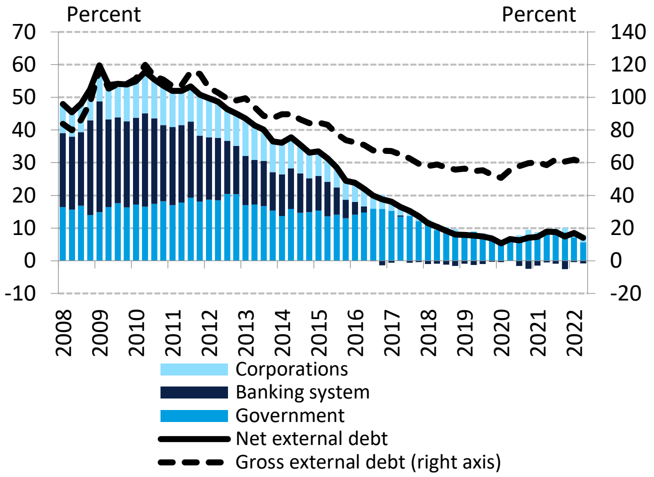
Debt liabilities increased considerably in 2022 H1, in parallel with outflows of portfolio investments and FDI funds (Chart 5-2). The outflow of net foreign direct investment in 2022 Q1 was a result of the fact that the FDI-increasing effect of the rise in reinvested earnings was offset by the acquisition of a foreign-owned company in Hungary, while Hungarian investments abroad also rose as a result of a Hungarian company's expansion abroad. Net portfolio equity investments also continued to decline in 2022 H1, with contributions from both domestic actors' foreign mutual fund share and equity purchases and the decrease in non-residents' equity investments in Hungary. Net inflows of debt liabilities in 2022 H1 were primarily related to the banking sector, but the debt liabilities of the state and of companies (in connection with skyrocketing energy prices as well, in relation to the increase in commercial loans) also rose.

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 the time series. As a percentage of GDP.
Source: MNB

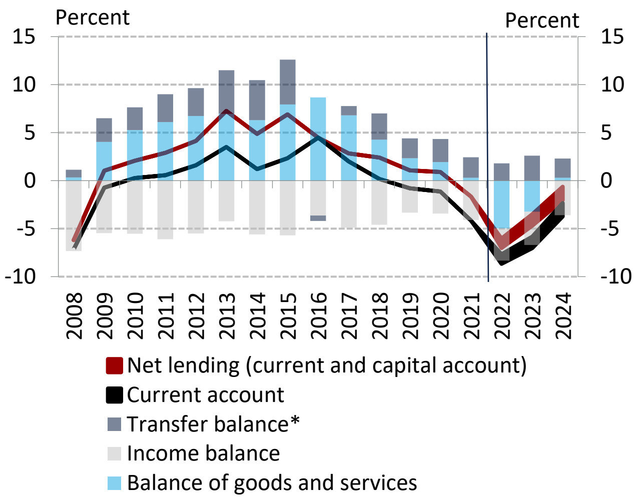
In 2022 H1, the net borrowing of the state continued to decline from a high level, while the net financial savings of the private sector decreased further (Chart 5-3). In relation to the rise in tax revenues, the strong domestic demand improved the net position of the general government, while it contributed to the decline in the net financial position of the private sector. Companies' net borrowing rose in relation to the strong investment activity and stockpiling as well as to the corporate income-reducing effect of higher energy and commodity prices. In line with the pick-up in consumption, households' net financial savings declined in 2022 H1 compared to the high level observed in 2021, which contained receivables related to the recognition of tax refunds.

At the end of 2022 H1, the net external debt of the economy was at 7 percent of GDP (Chart 5-4). The decrease in the indicator to near its historical low was a result of opposite effects. The effect of the debt inflow was offset by the impact of the revaluation of the outstanding debt (mainly due to yield increases) and the expansion in nominal GDP, turning the indicator as a percentage of GDP into a decline. Gross external debt fell to 60 percent of GDP, which is also the result of revaluation exceeding debt inflow.

5.2. Forecast for Hungary's net lending position

The current account deficit is expected to temporarily rise further in 2022, but the external balance position will improve significantly in the coming years. The trade deficit will grow further in 2022, primarily in view of the deterioration in the terms of trade due to high energy prices. Weaker external demand in line with the deteriorating global economic outlook and frictions in supply chains hampers the expansion of exports. The deceleration of investment and consumption growth restrains imports, which is partly offset in 2023 by the import-increasing effect of energy prices. With the normalisation of the global economic environment and energy prices, and as new export capacities begin producing, the current account will improve considerably from 2024. The balance position of the private sector will turn into net borrowing from 2022, in view of the decline in real income and the increase in corporate costs, due to high inflation and rising utility costs. The general government deficit declines as a result of a rise in revenues stemming from economic growth, the consolidation of utility costs as well as fiscal measures that reduce expenditures and boost tax revenues, which partly offset the expenditure-increasing effects of the Russia–Ukraine war and the high energy prices.

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

In view of the high energy prices, the current account deficit temporarily continues to increase in 2022, before starting to improve considerably in the coming years (Chart 5-5). Deterioration in the terms of trade due to high energy prices results in a major increase in nominal imports, while the weakening of external demand in line with the deteriorating external economic outlook and supply chain tensions hamper exports. As a result of these factors, the trade deficit increases further, which is only partly offset by the improvement in the income balance in view of the extra profit tax. Overall, the current account deficit may peak at around 8 percent of GDP in 2022. Looking ahead, the deceleration in investment and consumption growth restrains the expansion in imports, which will still be partly offset in 2023 by the import-increasing effect of energy prices. By 2024, with the normalisation of the global economic environment and the terms of trade, and as the export capacities installed in recent years become productive, the external balance position will improve considerably. Accordingly, the current account deficit will decline to around 2–4 percent of GDP by the end of the forecast horizon.

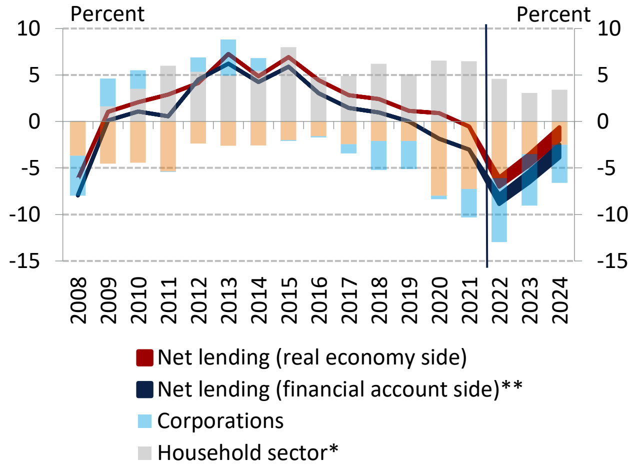
The path of the current account balance is significantly affected by the changes in the energy balance. Net energy imports in 2021 still corresponded to 4.4 percent of GDP, but are expected to more than double this year as a result of surging energy prices, contributing to the deterioration of the trade balance, which will almost triple in proportion to GDP. The annual energy balance deficit will be around 9-10 percent of GDP in 2022 and 2023. The adjustment of domestic economic agents may restrain the expansion in imports, and thus, starting from 2024, with the normalisation of energy prices, net energy imports may decrease considerably, to around 7 percent of GDP, while the deficit in the balance of foreign trade may fall below 5 percent of GDP (Table 5-1).

Table 5-1: General government balance indicators

	2021	2022	2023	2024
Balance of goods	-3.0	-8.8	-7.7	-4.7
Balance of energy	-4.4	-9.2	-10.3	-7.0
Balance of other goods	1.5	0.4	2.6	2.3
Balance of services	3.3	3.8	4.5	5.0
Trade balance	**0.3**	**-5.0**	**-3.2**	**0.3**

Source: HCSO, MNB

Chart 5-6: Changes in the savings of sectors



Note: As a percentage of GDP. * Net financial saving of households does not contain the pension savings of those who return to the public pension system. The 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

In terms of developments in sectors' savings, the private sector's net position turns into net borrowing from 2022, while the deficit of the government is declining (Chart 5-6). The budget deficit continues to fall over the forecast horizon as a result of a rise in revenues stemming from economic growth, the consolidation of utility costs as well as fiscal measures that reduce expenditures and boost tax revenues, which partly offset the expenditure-increasing effects of the high energy prices and the Russia–Ukraine war. Consumption expenditures increase in view of the rising utility costs and high inflation, resulting in declines in real income and savings. With the easing of inflationary pressure and improvement in households' income conditions, savings will start to increase again from 2024. In 2022, the declining but still high investment rate, the rise in corporate operating costs due to higher commodity and energy prices as well as the extra profit tax result in an overall increase in corporate net borrowing. Looking ahead, the normalisation of the global economic environment and energy prices as well as the fading of the factors that cause cost increases, together with the adjusting external demand and EU fund inflows contribute to an improvement in the financing position of companies.

5.3. Fiscal developments

The government raised the budget deficit target for 2022 from the previous 4.9 percent to 6.1 percent of GDP, while the expected deficit target is 3.5 percent for 2023 and 2.5 percent for 2024. The increase in the deficit target for 2022 is justified by the accumulation of special natural gas reserves, which increases the accrual-based deficit, but does not generate additional financing need on the government securities market. The favorable dynamics of tax revenues, as well as the extra profit taxes and expenditure-reduction measures introduced in parallel with the preparation of the 2023 budget law, help to meet the deficit targets. However, the higher energy prices may pose a risk to meeting the deficit targets, especially in the coming years. If the deficit target is met, the government debt-to-GDP ratio will decline to nearly 76 percent by end-2022 and to around 72 percent by the end of the forecast period.

5.3.1. Main balance indicators

The government raised the accrual-based deficit target from 4.9 percent to 6.1 percent of GDP in 2022, with a target of 3.5 percent for 2023 (Table 5-1). The increase in the deficit target for 2022 is justified by the accumulation of special natural gas reserves, which – according to Eurostat's accounting – increases the ESA deficit. In 2021, the budget deficit amounted to 6.8 percent, compared to which the deficit could narrow this year. In addition to the increase in revenues stemming from economic growth, the decrease in the budget deficit in both 2022 and in 2023 results from the measures announced in parallel with the 2023 budget bill, while the ongoing war in the neighbouring country and rising energy prices have unfavourable impacts on the budget, in response to which continuous budgetary measures are being taken. In 2024, the deficit may decline further compared to previous years and, based on budgetary expectations, it will reach the level of 2.5 percent to GDP, complying with the Maastricht deficit criteria (Chart 5-10).

Exemption from compliance with the EU fiscal rules is also provided in 2023, as in the Spring Package of the European Semester, the Commission emphasised that it is necessary to maintain the general escape clause that partially suspends the EU fiscal rules in 2023 as well. Accordingly, the 3-percent deficit criterion and the rule regarding the medium-term budgetary objective set forth in the Stability Pact were also suspended until end-2023, while the continuance of the state of emergency allows the deviation from the debt rule of the Fundamental Law.

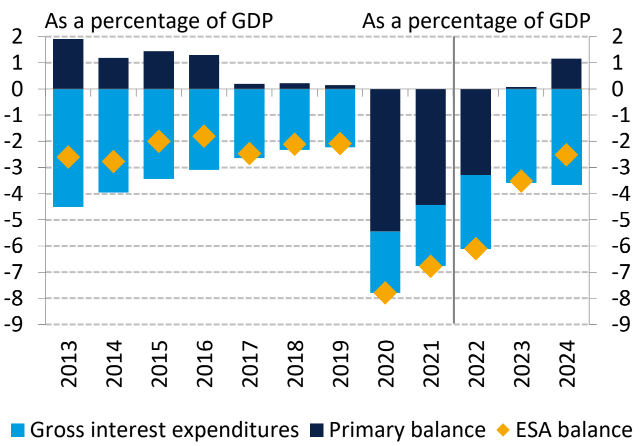
Table 5-2: General government balance indicators

	2021	2022	2023	2024
ESA balance	-6.8	-6.1	-3.5	-2.5
Primary ESA balance	-4.4	-3.3	0.1	1.2

Note: As a percentage of GDP.

Source: HCSO, MNB

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

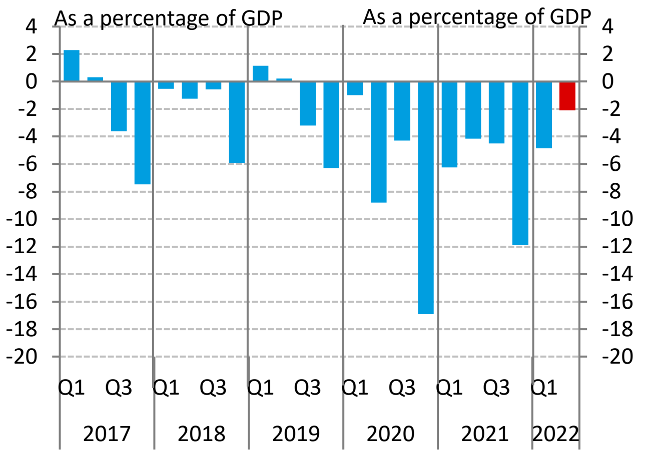


Source: HCSO, MNB

5.3.2. Budget balance in 2022

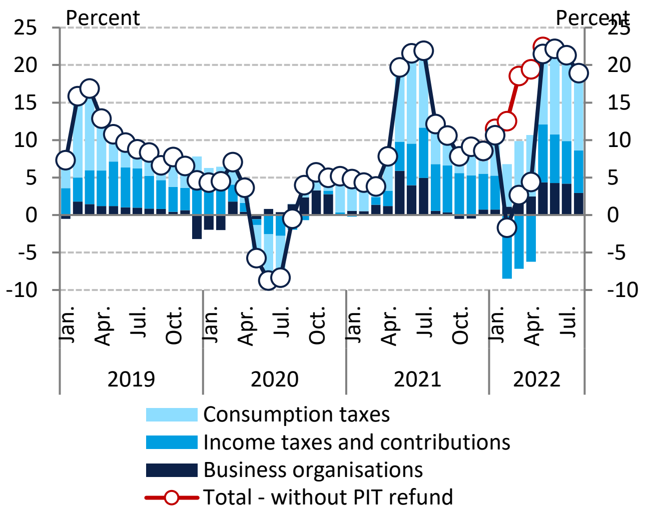
The budget deficit may be 6.1 percent of GDP in 2022, based on the government's target which was raised from 4.9 percent. The 2022 Budget Act contained a budget deficit target of 5.9 percent of GDP, which was reduced to 4.9 percent according to the December 2021 projection and then raised to 6.1 percent due to the special gas reserve accumulation by the government announcement in September 2022. The first-quarter accrual-based deficit amounted to 4.8 percent of GDP for the quarter, while measures resulting in one-off expenditures of higher

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



Note: The 2022 Q2 data show the net lending capacity of the general government as reported in the preliminary financial accounts published by the MNB.
Source: HCSO, MNB

Chart 5-9: Evolution of tax and contribution revenues in 2019–2022, year-on-year, 3-month moving average



Source: Hungarian State Treasury, MNB

amounts (13th month pension, armed forces service benefit) were implemented. According to the preliminary financial accounts data published by the MNB, the deficit was even more favourable in Q2, amounting to a mere 2.1 percent (Chart 5-11), and thus, on the whole, the H1 accrual-based deficit corresponded to 3.4 percent of H1 GDP. Following the favourable H1 data, budgetary expenditures are expected to increase in H2: expenditures related to energy prices, pensions and interest expenditures are foreseen to be much higher than planned before.

On 23 September, the government raised the 2022 accrual deficit target from 4.9 percent to 6.1 percent of GDP. The 1.2-percentage point increase in the deficit target is caused by the accumulation of special natural gas reserves by the Hungarian Hydrocarbon Stockpiling Association (HUSA) (based on July 2022 legislation). Gas purchases worth about HUF 740 billion increase the deficit as Eurostat has classified HUSA in the government sector since 2019, so its gas purchases increase the accrual deficit, while its borrowings are accounted for in government debt. The additional expenditure does not increase the financing need on the government securities market, as the funds necessary for the transaction were provided by a syndicated loan from domestic banks with a state guarantee.

The deficit in the first two quarters was mitigated by favourable developments in tax revenues. Due to the rapid nominal growth in wages and consumption, until August tax revenues exceeded the amount registered a year ago by almost 20 percent (adjusted for the effect of the personal income tax refund). Revenues are expected to exceed the appropriation considerably throughout the year (Chart 5-12).

Due to the additional expenditures, a package of measures amounting to about 3 percent of GDP was announced together with the 2023 budget bill in order to meet the target deficit. Most of the measures affect the expenditure side: according to government expectations, the savings of budgetary institutions and organisations may reach 1 percent of GDP, the restraint or rescheduling of investments represents an expenditure cut of 0.5 percent of GDP, while the additional expenditure measures will result in a savings of 0.2 percent as percentage of GDP. As regards the measures on the revenue side, revenues of more than 1.1 percent of GDP may come from the special taxes imposed on extra profits in 2022. Payments by the bank and insurance sector, taxes imposed on energy companies, the retail sector, telecommunication companies and pharmaceutical actors will rise, and a contribution by airlines will also appear as a new element. Advertising tax will be reintroduced again.

Amendments to household energy prices were also announced in July. Accordingly, the previous administrative prices remained available for everybody up to the energy quantity corresponding to the average consumption, whereas for the energy consumption above the average a household market price was introduced, which is still more favourable than the current market price. As a result of the measure, the budget may save some HUF 200 billion in 2022 and more than HUF 400 billion in 2023, which partly offsets the fiscal effect of the major energy price increases observed in the summer months.

The amendment to the lump sum tax of small enterprises (KATA) limited the scope of those entitled to choose this simplified type of tax, resulting in estimated additional revenue of some HUF 150–200 billion for the budget. 100,000–150,000 of the approximately 450,000 small taxpayers may continue their activities in the new KATA system, which in itself may correspond to lost revenues of roughly HUF 150 billion. By contrast, revenues from other types of taxes (primarily from personal income tax and contributions) may amount to more than HUF 300 billion, which may be offset by the quitting of the typically second job type entrepreneurial activity.

5.3.3. Balances in 2023 and 2024

According to the deficit target set forth in the Budget Act adopted in July, the budget deficit in 2023 may amount to 3.5 percent of GDP. The deficit may primarily be reduced by the revenue and expenditure measures announced in line with the budget bill as well as by tax revenues stemming from the growth of the Hungarian economy.

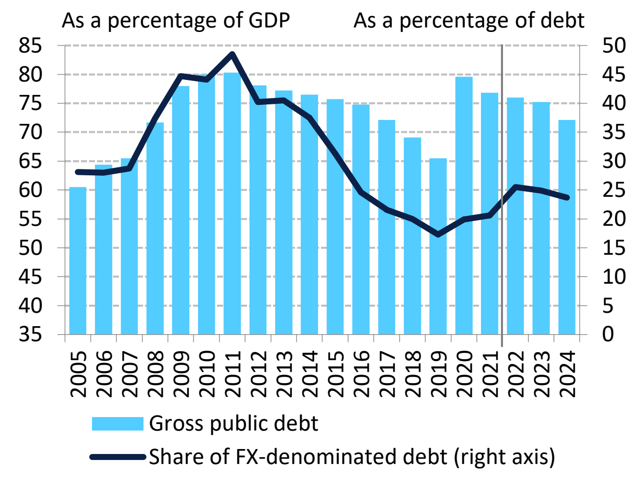
Government expenditures related to energy prices may also increase in 2023. This is to be covered by the Utilities Protection Fund, which amounts to 1 percent of GDP, while the Defence Fund is for financing the increase in defence expenditures due to the war in the neighbouring country from the surtaxes imposed on extra profits and made available for these funds. The achievement of the 2023 and 2024 deficit targets is made difficult by the energy prices as well as the surge in interest expenditures due to a rise in yields and by higher pension disbursements in view of inflation.

As there is no Budget Act available, we prepare a technical forecast for 2024, 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

The most important risk to the evolution of the budget balance is the level of energy prices. Taking into account a

Chart 5-10: Gross public debt forecast



Source: MNB, GDMA

higher gas price than our basic assumption, the adverse fiscal effect of energy prices would increase significantly. The degree of risks is estimated to be 1 percent of GDP if the even higher world market prices persist. The amendment to regulated utility prices announced in July, the reduction of the heating cost of public institutions and further energy saving measures partly offset the additional expenditures caused by the high gas price.

At present, there is still uncertainty surrounding the development of EU funds. The approval of Hungary's Recovery and Resilience Plan and the Partnership Agreement, expected to take place in the second half of this year, together with the pre-financing and receipt of subsidies affect the development of the government debt, while the scheduling of its implementation has an impact on the accrual-based balance and real economy trends. Until the approval of the submitted plans, 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 the preliminary data, the gross government debt-to-GDP ratio stood at 77.5 percent at the end of 2022 Q2. The debt-to-GDP ratio rose by around 1.2 percentage points year-on-year and by 0.7 percentage points compared to the end-2021 level. The rise in government debt was caused by the high net issuance, which was close to HUF 2,700 billion in the first half of the year, while the dynamic GDP growth partly offset the increase in the ratio.

According to our forecast, if the budget deficit target is met, the gross government debt-to-GDP ratio will fall to 76.0 percent by end-2022, and we expect a steady decline in the debt ratio over our forecast horizon. If the financing plan of the Debt Management Agency is achieved, the government debt ratio will decline as a result of a dynamic expansion in nominal GDP, more subdued debt issuance in the second half of the year and a decrease in government deposit holdings. The government debt ratio may decrease annually by almost 1.5 percentage points on average over the forecast horizon and may thus fall to around 72 percent by the end of 2024 (Chart 5-13).

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 0.4 percentage point. The share of foreign currency within the central government debt rose from 20.6 percent at the end of last year to 23.1 percent in 2022 Q2 as a result of FX bond issuances.

6. Special topics

6.1. Changing relations in a changing world: the past and present of the Phillips curve

In Hungary, the primary objective of monetary policy is to achieve and maintain price stability. Accordingly, it is crucial to examine the changes in inflation and its determinants. Inflation is affected by various factors directly and indirectly. **One of the most important factors is the correlation between the cyclical position of the economy (cyclical unemployment, output or consumption gap) and underlying inflation trends.** The cyclical position of the economy is able to influence the increase in consumer prices over the medium term, i.e. after the fade-out of one-off shocks. This is the horizon where monetary policy has the greatest impact on inflation, and accordingly it is one of the determinants of inflation dynamics over the monetary policy horizon.

After the first decade of the 2000s characterised by the 'Great Moderation' and following the low inflation typical in the period between 2010 and 2020, the COVID crisis and subsequent rapid recovery resulted in a turning point in commodity cycles and a global rise in inflation rates. As such a structural change significantly affects the relationship between macroeconomic variables, it is worth updating previous estimates and analyses with new data.

6.1.1. Brief theoretical background

Starting in the 1950s already, economic research focused on the correlation between economic cycles and price/wage dynamics, and the findings are still at the centre of the economic policy debate today. The first important finding is that of A.W. Phillips, who found a non-linear, negative correlation between the unemployment rate and the rise in wages.[5] Following that, research tended to focus on the relationship between unemployment and inflation. Samuelson and Solow found a similar, negative correlation between unemployment and price increases.[6] Keynesian economists of that time welcomed these findings enthusiastically, as they provided an explanation for an important missing link in Keynesian theory, i.e. inflation prior to achieving full employment. This correlation seemed to be useful for economic policy as well, since it offered a menu for decision-makers: based on normative preference, some may have considered the fight against unemployment a key factor, and others may have opted for the reduction of inflation and strived to position the economy accordingly on the relevant section of the Phillips curve.

However, the Phillips curve is not a stable phenomenon; its position is affected by changes in inflation expectations. The stable, original Phillips curve concept was rejected by the monetarist school from the very beginning, as according to their basic assumption, inflation is a monetary phenomenon in the long run, and thus, according to their expectation, the long-term Phillips curve is vertical. It is not possible to reduce unemployment below the non-accelerating rate, because that results in an increase in inflation expectations.[7] **Accordingly, in the 1970s many economists already pointed out that the Phillips curve is unstable, and expectations may significantly modify its position. These axioms were confirmed by the stagflation period of the 1970s as well.** Starting from this period, changes in inflation expectations became a determinant component of the Phillips curve. The so-called New Keynesian Phillips curves, which can be considered the most up-to-date ones, defined inflation by inflation expectations and a variable measuring the cyclical position of the real economy (which can be captured for example by the level of cyclical unemployment or the output gap). And these cyclical variables are basically for indicating the marginal cost of production.

Not only the position, but also the steepness of the Phillips curve changes over time. While in the mid-1970s a 1-percentage point change in the unemployment rate (presuming an 'equilibrium' rate of unemployment) amended

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[5]A.W. Phillips (1958): The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957. Economica, Vol. 25. No 100.

[6] P.A. Samuelson and R.M. Solow (1960): "Analytical Aspects of Anti-Inflation Policy" American Economic Review Papers and Proceedings 50(2), pp. 177-94.

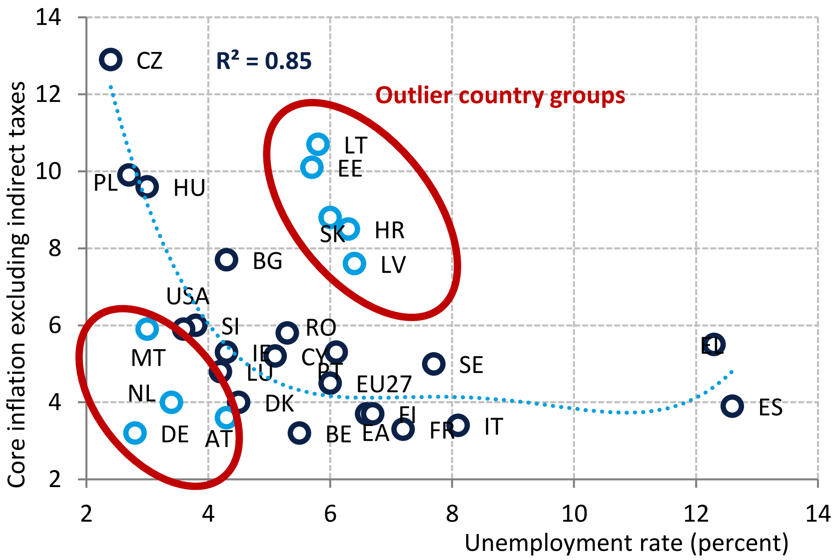
[7] According to recent research, however, the non-accelerating inflation rate of unemployment (NAIRU) and the equilibrium or potential output of the economy are not independent of the cycle either, as presented in the 2016 Growth Report.

inflation to the same degree, this effect declined to 0.1 percentage point by the 2010s. Similar patterns are observed in other developed countries as well, which is called the 'flattening of the Phillips curve' in the literature.[8] **We have now arrived at a new turning point in the relationship between prices and the economic cycle, and thus it is worth examining certain features of the Phillips curve, such as non-linearity[9] and state-dependence.**

6.1.2. Global acceleration of inflation in the 2020s and the revival of the Phillips curve

If cross sectional data are analysed, the underlying inflation trends of the EU and the USA correspond well to a non-linear Phillips curve (Chart 6-1). If the unemployment rate is above 5 percent, underlying inflation trends do not indicate any major change. The Phillips curve is still flat on this section. By contrast, unemployment rates below 5 percent, and especially below 4 percent, already result in a remarkable acceleration in inflation. There are countries and regions that can be considered exceptions: inflation is higher in the Baltic countries, Croatia and Slovakia than what their respective unemployment rates would justify, whereas in Denmark, Germany and the Netherlands even the low unemployment rate does not result in an acceleration in underlying inflation trends. Of course, there are many constraints to a cross-sectional analysis: it presumes that similar Phillips curves characterise the various countries, so it is worth examining the change in the relationship over time in a selected economy (Hungary).

Chart 6-1: Relationship between unemployment and core inflation excluding indirect taxes in the European Union and the United States



Note: June 2022 data. Outlier countries: Baltic states, Croatia, Slovakia, Malta, Netherlands, Germany, Austria. In the case of the United States, core inflation is shown in the chart.
Source: Eurostat, European Commission

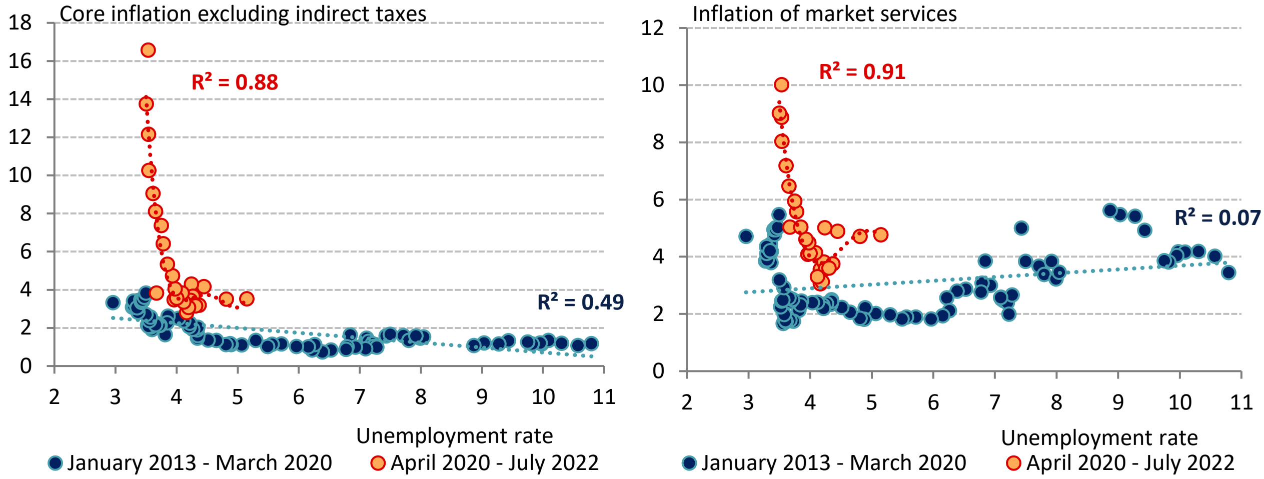
The Phillips curve in Hungary shifted upwards and became steeper, indicating a non-linear, state-dependent relationship between the variables. Shifts in the domestic Phillips curve are shown in Chart 6-2. In order to exclude external effects from the data as best as possible, the analysis focused on core inflation excluding indirect taxes and on the price index of market services. These are the inflation items that move together with the domestic economic (and labour market) cycle the most. The charts show that the relationship is practically horizontal in the period between 2013 and March 2020, but

[8] Sz. Szentmihályi – B. Világi (2015): A Phillips-görbe – elmélettörténet és empirikus összefüggések (The Phillips curve – history of thought and empirical evidence). Hitelintézeti Szemle (Financial and Economic Review), Vol. 14., Issue 4.

[9] Recent research also confirms the non-linearity of the Phillips curve. These include: M. Harding – J. Lindé – M. Trabandt (2021): Resolving the Missing Deflation Puzzle. Journal of Monetary Economics, doi: https://doi.org/10.1016/j.jmoneco.2021.09.003; B. Albuquerque – U. Baumann (2017): Will US inflation awake from the dead? The role of slack and non-linearities in the Phillips curve. ECB Working Paper Series. No 2001

following that, even a basically minor change in the unemployment rate took place in parallel with a major acceleration in inflation.

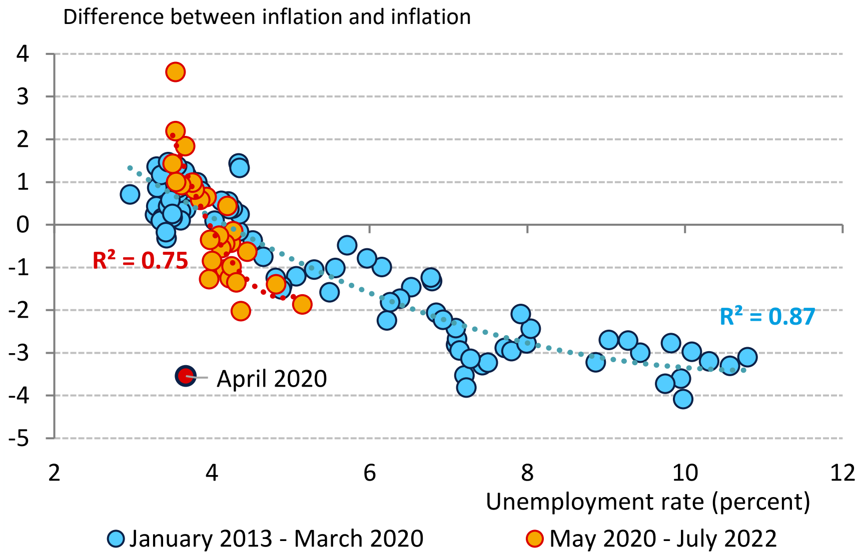
Chart 6-2: Relationship between core inflation and unemployment rate in Hungary between 2013 and 2022



Source: HCSO, MNB calculation

The shift in the Phillips curve was caused by an increase in expectations. If the theory of Phelps and Friedman is taken as a basis, the primary reason for the shift in the curve is the rise in inflation expectations. This can be tested by deducting the expectations from inflation. The relationship between the resulting 'inflation surprise' and unemployment seems to be stable (Chart 6-3), i.e. no major shift is seen in this. **At the same time, a rise in the steepness of the curve can still be detected.** But what can be the factor that generates a greater inflationary effect than before, while the unemployment rate is similar? These factors can be international, such as the changes in production chains, where the security of supply more and more replaces the cost factor. The developments in price and wage rigidities may also have an impact: if these nominal rigidities and frictions decline, companies are able to reprice their products to a greater degree in the various phases of the economic cycle. Here the primary focus is on the most important internal factors, the labour market ones: the shape and position of the wage Phillips curve and the wage–inflation relationship.

Chart 6-3: Relationship between inflation adjusted for expectations and unemployment rate between 2013 and 2022



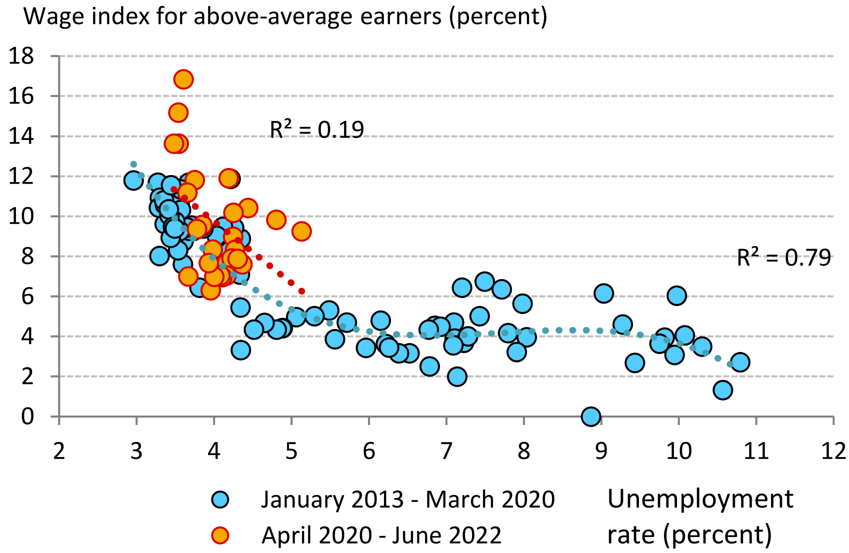
Source: European Commission, HCSO, MNB calculation

6.1.3. Internal reason why the domestic Phillips curve became steeper: wage–inflation nexus becoming stronger again

Basically, the labour market may have contributed to the price-determining Phillips curve's becoming steeper through two channels: via a change in the relationship between unemployment and wage increases (in the change in the wage Phillips curve) or via a strengthening of the relations between wages and inflation. We have not found convincing evidence for the former, whereas the latter assumption plays an important role in the Phillips curve's becoming steeper.

The wage Phillips curve seems to be a more stable relationship than the price Phillips curve. Low unemployment (and labour market tightness through that) improves employees' bargaining position in wage negotiations. Administrative measures affect wage dynamics considerably; therefore, in order to receive a clearer picture of the underlying wage-setting trends, our calculation is based on the wage index of those who earn above the average (Chart 6-4). At the same time, we cannot find any new, strong relationship between the two variables. Incoming data are not much different from the regression line typical of the past decade. **This is also especially important because we can speak about a price–wage spiral in the case of positive feedback between the two Phillips curves, which cannot be detected in Hungary at present. This seems to be corroborated by the finding of the questionnaire survey conducted by the MNB that only one quarter of the companies are planning to implement additional wage increases due to the rising inflation, i.e. no positive feedback evolved between wages and inflation.**[10]

Chart 6-4: Relationship between inflation adjusted for expectations and unemployment rate between 2013 and 2022



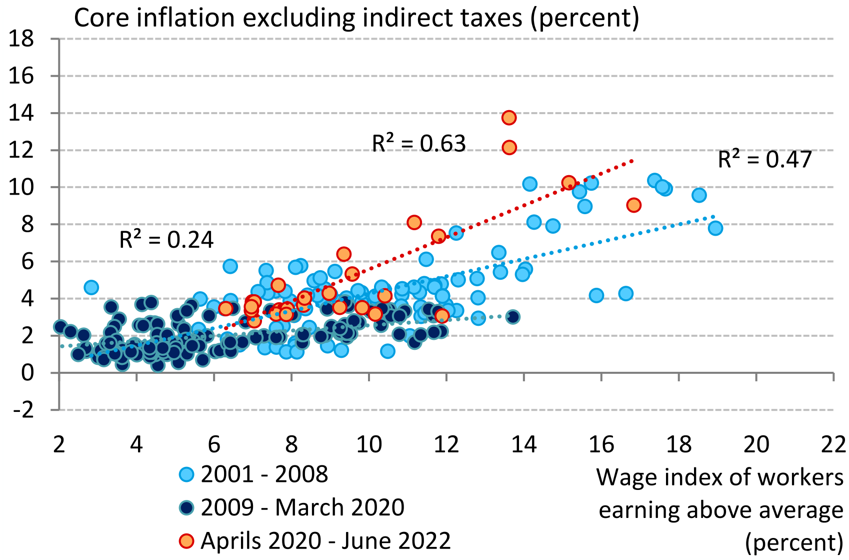
Source: HCSO, MNB calculation

The relationship between wage growth and inflation, which had become flat in the past decade, became steeper again (Chart 6-5). Prior to the 2008 crisis there had been a strong correlation between the two variables, whereas the general experience following the crisis was that this relationship weakened. However, the fact that the relationship between wage dynamics and inflation has become steeper again in recent years suggests that higher wage increases entail higher inflation. One of the underlying reasons may be that according to our calculations the wage share rose to a high level due to the strong wage growth,[11] and this reduces the profitability of companies, which they are forced to offset through price increases.

[10] The results of the MNB's corporate business cycle survey of August 2022

[11] The wage share estimated by us is different from the indicator quantified by the HCSO in the national accounts (NA), as it takes into account the institutional labour statistics as well in addition to the NA wage statistics.

Chart 6-5: Relationship between core inflation and wage dynamics between 2000 and 2022



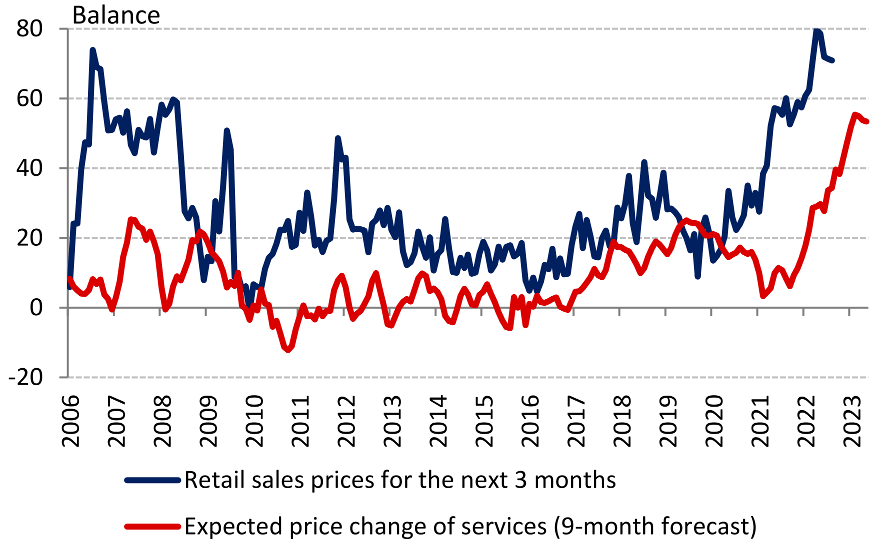
Source: HCSO, MNB calculation

6.1.4. Economic policy conclusion: inflation may decline considerably with a deterioration in economic activity; the management of expectations and wage-setting in line with productivity are particularly important

The result of the increase in the steepness of the Phillips curve is that underlying inflation trends may react to a deterioration in economic activity more strongly than before. A rise in cyclical unemployment entails a stronger disinflationary effect than in the past decades; therefore, more pronounced disinflation is expected in the descending branch of the economic cycle.

Return to the inflation target range may be achieved in two ways: 'hard landing' or 'soft landing'. It depends on the inflation expectations which path we take. If the surge in inflation expectations is temporary, the Phillips curve does not shift further upwards and disinflation can be achieved at a relatively low real-economy cost. By contrast, inflation expectations remaining at a persistently high level results in a further upward shift in the Phillips curve, leading to stagflation in the beginning, and according to historical experience it is possible to break this state only with major real-economy costs. In Hungary, households' inflation expectations tend to be rather backward-looking. Therefore, they do not map the medium-term inflationary effects, but the pricing trends of past quarters. Compared to that, corporate price expectations are much more forward-looking. Price rise expectations for market services and retail trade did not increase any further in the past months (Chart 6-6), which is favourable news, but it is important that the trend reversal should become lasting. **The inflation expectation of professional forecasters asked by Reuters is about 4 percent for 2024,** i.e. analysts expect the acceleration in consumer prices to be temporary.

Chart 6-6: Changes in expectations regarding retail sales prices and services prices



Note: Three-month moving averages.
Source: MNB calculations based on European Commission data.

The third important conclusion is that looking ahead wage growth that exceeds productivity cannot be sustained; therefore, further wage convergence requires the development of the supply side of the economy as well as the increasing of competitiveness and productivity.

7. Breakdown of the average consumer price index for 2022 and 2023

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

	Effect on CPI in 2022			Effect on CPI in 2023		
	Carry-over effect	Incoming effect	Yearly index	Carry-over effect	Incoming effect	Yearly index
Administered prices	0.1	1.0	1.1	1.8	-0.1	1.7
Market prices	2.8	10.1	12.9	7.1	3.0	10.1
Indirect taxes and government measures	0.1	-0.2	-0.1	0.4	0.7	1.1
CPI	**3.0**	**10.9**	**13.9**	**9.3**	**3.6**	**12.9**

Note: The tables show the decomposition of the yearly average change in 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 indirect taxes, administered prices and market prices (non-administered prices excluding indirect tax effects). The sub-groups may not sum to the aggregate figure due to rounding.
Source: MNB

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

	2022					2023				
	Average carry-over effect	Carry-over indirect tax effect	Average incoming effect	Incoming indirect tax effect	Yearly index	Average carry-over effect	Carry-over indirect tax effect	Average incoming effect	Incoming indirect tax effect	Yearly index
Food	3.6	0.0	23.4	0.0	27.0	16.3	0.0	5.3	0.0	22.6
non-processed	0.9	0.0	22.7	0.0	23.6	15.8	0.0	2.4	0.0	18.2
processed	4.9	0.0	23.8	0.0	28.7	16.7	0.0	8.0	0.0	24.7
Tradable goods	3.2	0.0	9.8	0.1	13.1	7.5	0.1	0.6	0.0	8.2
durables	4.2	0.0	9.5	0.0	13.7	8.4	0.0	-0.8	0.0	7.6
non-durables	2.7	0.0	9.9	0.1	12.7	6.8	0.1	1.6	0.0	8.5
Market services	2.2	0.0	8.0	0.0	10.2	5.7	0.0	4.1	0.0	9.8
Market energy	6.0	0.0	4.2	0.0	10.2	2.1	0.0	0.0	0.0	2.1
Alcohol and Tobacco	1.9	0.8	4.8	3.0	10.5	3.1	4.2	1.5	2.7	11.5
Fuel	7.3	-0.5	8.8	-7.0	8.6	2.1	-1.7	19.1	7.1	26.6
Administered prices	1.0	0.0	7.8	0.0	8.8	14.7	0.0	-1.6	0.0	13.1
Inflation	**2.9**	**0.1**	**11.0**	**-0.1**	**13.9**	**8.9**	**0.4**	**2.9**	**0.7**	**12.9**
Core inflation	3.2	0.0	12.0	0.0	15.2	8.8	0.0	2.9	0.0	11.7

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 sub-groups may not sum to the aggregate figure due to rounding.
Source: MNB

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Mátyás Hunyadi

(23 February 1443 – 6 April 1490)

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

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

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

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

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

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