MAGYAR NEMZETI BANK

INFLATION REPORT

2018
JUNE

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

Miklós Zrínyi: The Life of Matthias Corvinus

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

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

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

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

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

The projections are based on information available for the period ending 14 June 2018.

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

In the Council's assessment, in parallel with the pick-up in domestic demand Hungarian economic output is close to its potential level. Growth of the Hungarian economy will pick up further in 2018, then, if the assumptions of the current projection hold, it will slow down gradually from 2019. The inflation target is still expected to be achieved in a sustainable manner from mid-2019, as the temporary, inflation boosting effects of oil price changes fade.

The fundamentals of the Hungarian economy continue to be stable. Accompanied by dynamic growth, the country's external debt has declined significantly, and its net lending continues to be persistently strong. Its fiscal position is sustainable, the budget deficit is low and the public debt-to-GDP ratio has been contracting. The foreign currency debt ratio has fallen sharply.

The output of the global economy has continued to grow in recent months; however, risks surrounding the growth outlook have strengthened. The Central and Eastern European region proved to be the economic growth centre of the European Union once again. Although the significant rise in global oil prices pointed towards an increase in global inflation, core inflation indicators capturing longer-term inflation trends remained moderate.

Global economic growth, and particularly in the euro area, continued in the first quarter of 2018. The upturn in GDP growth in the United States is expected to continue in 2018, while the Chinese economy is still growing dynamically. Euro-area real economy figures exceeded expectations in the first quarter; however, the values of forward-looking indicators have decreased in recent months. Uncertainties surrounding the United Kingdom's exit from the EU, intensifying geopolitical tensions and the potential prolongation of money market turmoil may restrain the GDP growth rate of the euro area. Supported by stable fundamentals, the buoyant growth in the Central and Eastern European region continued despite the capital outflows characterising the emerging markets.

Global inflation remained moderate. Global oil prices increased significantly overall, the direct effects of which have been reflected in rising inflation rates in recent months. As a result, euro-area inflation rose close to the target in May, while core inflation remained subdued. The inflation rate has increased across the region in recent months.

According to market expectations, the loose monetary policy environment will remain across the euro area despite the phasing out of the quantitative easing programme at the end of the year.

The Fed is continuing with its gradual interest rate increases. Parallel with the FOMC's summary of economic projections, market expectations regarding a total of four increases in 2018 have increased. The European Central Bank discontinues its asset purchase programme, however interest rates may remain unchanged at least through the summer of 2019, thus the monetary policy environment may remain loose in the euro area. Decision-makers at the Czech and Polish central banks left their monetary conditions unchanged in the past quarter. By contrast, the National Bank of Romania raised its key policy rate in May parallel to rising inflation.

Risk appetite declined in the past quarter, leading to turbulence primarily in the emerging markets and in some more vulnerable developed economies. Supported by stable fundamentals, the markets of the Central and Eastern European region showed minor volatility.

Global risk appetite has declined since the publication of the March Inflation Report. In the first half of the quarter, the intensification of geopolitical risks weighed on the developed markets as well; however, in the second half of the period risk appetite typically decreased only in relation to emerging markets and the peripheral countries of the euro area. In the foreign exchange market, the dollar appreciated significantly while US ten-year Treasury yields rose above 3 percent, which prompted capital outflows and a surge in yields on the emerging markets. In the second half of May, parallel to the decline in US and other developed market long-term yields, a minor adjustment was also observed in emerging market bond yields. Developments in European domestic politics had a negative impact on the asset prices of peripheral countries as well. In

the broader emerging region, yields increased significantly in a number of countries, particularly in those more vulnerable in terms of external and fiscal balance. By contrast, yields rose only moderately in the Central and Eastern European region, where fundamentals are more stable and growth prospects are favourable.

In line with the surge in yields driven by the volatile international money market environment, the Hungarian interbank and government securities market yield curve shifted upwards.

On the Hungarian interbank market BUBOR quotes have increased by around 10-20 basis points since mid-March. In line with the international yield increase, the entire length of the interbank forward yield curve shifted upwards by 20–90 basis points. A similar increase was observed in the Hungarian government securities market during the quarter, while the yield curve became steeper. For the most part there was strong demand at the government securities auctions during the period. Non-residents' HUF-denominated government securities holdings rose in the past quarter. Along with most regional currencies, the forint depreciated against the euro during the quarter. Euro-area monetary conditions – as the key determinants of Hungarian monetary policy – are expected to remain accommodative according to market forecasts.

Domestic inflation may temporarily rise slightly above 3 percent in the coming months driven by the sharp increase in global oil prices. As inflation expectations are anchored at low levels, we do not anticipate any second-round effects from the higher oil prices; accordingly, underlying inflation trends may continue to exhibit a moderate increase. The inflation target is expected to be achieved in a sustainable manner by mid-2019 as the direct effect of the oil price change tapers off.

In the past period, inflation changed in line with our expectations. Since the March forecast, core inflation has stabilised at around 2.5 percent. According to our current projection, inflation may temporarily rise above the inflation target as a result of the sharp increase observed in global oil prices since April. Inflation expectations are well-anchored; thus the increase in oil prices is not expected to induce second-round spillover effects. The inflationary effect stemming from the labour market will remain moderate. The further cut in the social contribution tax imposed on corporations moderates the increase in labour costs, while the relation between domestic labour costs and consumer prices has weakened in recent years, in line with international experience. According to the ECB's June forecast, the inflation outlook may remain persistently moderate in the euro area, which also slows the increase in Hungarian prices. After the temporary, inflation-boosting effect of the oil price change has faded, from mid-2019 the rise in underlying inflation trends will ensure the sustainable achievement of the 3 percent inflation target.

The Magyar Nemzeti Bank has revised its growth forecast upwards across the entire forecast horizon. The structure of growth will remain balanced. From the perspective of a sustainable convergence path, the improvement in productivity and competitiveness will gain increasing significance in addition to maintaining financial stability.

According to our forecast, economic output will increase by 4.4 percent this year and – if the assumptions of the current projection hold – by 3.5 percent in 2019 and 2.8 percent in 2020. Growth will still be supported by the expansion in domestic demand. The strong consumption is based on the perseverance of favourable labour market trends. Amidst a significant increase in real wages, employment will continue to rise somewhat, prompting another boost in household incomes. The dynamic increase in investment activity is expected to continue until 2019. On the corporate side, we expect strong underlying investment trends in the context of favourable demand, low interest rate environment, expanding lending and the acceleration of the absorption of EU funds. Tight labour market conditions and rapid wage outflows accelerate the substitution between capital and labour, and hence, the increase in the investment ratio. Besides the underlying trends, large one-off projects will also contribute to increasing corporate investment. In line with the surge in the housing market cycle, the investment activity of households is also intensifying. The development of new export capacities and the acceleration of services exports are contributing to the expansion in exports and to the improvement in Hungary's export market share.

Parallel to the upturn in domestic demand, output is close to its potential level over the forecast horizon. As the output gap closes, expansion in the supply side of the economy is determining the sustainability of growth. Besides maintaining stability, economic policy can increase the rate of potential growth with measures aimed at improving competitiveness and productivity.

Both corporate and household lending rise dynamically over the forecast horizon.

The Hungarian economy is still in the early, ascending phase of the new lending cycle; thus, looking ahead the increase in lending is expected to continue. With the acceleration of lending to the SME sector, the entire corporate lending segment is growing dynamically. The rise in the outstanding loans of SMEs is also supported by banks' commitments to the Market-based Lending Scheme. The healthy structure of the upturn in household loans is ensured by the debt cap regulation. Within new housing loans, there was an increase in the ratio of loans with interest fixed for longer than one year, which contributes to the improvement in financial stability. The cyclical impact of bank lending on economic growth is neutral.

The current account surplus is expected to be stable across the forecast horizon. As a result of the surge in the absorption of EU transfers, net lending is expected to stabilise at high levels, bringing down the net external debt of the economy to a level close to zero by 2020.

Until 2019, the oil price increase and the upturn in domestic demand will reduce the current account balance through the decline in the trade surplus; this will be partly offset by the surge in the absorption of EU transfers. Accordingly, net lending will only decline moderately. Amid the decelerating rise in domestic absorption, the fast growth in exports linked to major FDI inflows entails a further expansion in the current account surplus at the end of the forecast horizon. With remarkably high net lending across the entire forecast horizon, net external debt is expected to decline to a level close to zero by 2020. According to our forecast, the 2018 budget deficit figure may be somewhat more favourable than the 2.4 percent target included in this year's appropriation, while in line with the deficit target, it will drop to 1.8 percent in 2019. By way of the declining deficit, fiscal policy will build up a countercyclical capital buffer in the second half of the forecast horizon. The debt ratio is expected to decrease significantly over the entire forecast horizon.

The macroeconomic outlook is surrounded by both upside and downside risks

In addition to the baseline projection in the June Inflation Report, the Monetary Council highlighted three alternative scenarios. If the scenario presenting the capital outflow from the emerging markets materialises, the increase in the risk premium will cause slower growth and a higher inflation path compared to the baseline scenario. In the case of the alternative scenario assuming faster wage growth and higher consumption, domestic economic growth is more robust, while inflation is higher than the forecast in the baseline scenario. The risk scenario assuming weaker growth and more moderate underlying inflation developments in the euro area means lower domestic inflation and growth than in the baseline scenario. In the first two cases, achieving the inflation target in a sustainable manner can be attained with tighter, and in the latter case with looser, monetary conditions compared to the baseline scenario. Along with the highlighted scenarios, the Monetary Council discussed other risks, including scenarios featuring a permanent rise in global oil prices and the strengthening of global protectionism.

The inflation target is still expected to be achieved in a sustainable manner from mid-2019, as the temporary, inflation boosting effects of oil price changes fade. In the Council's assessment, maintaining the base rate and the loose monetary conditions is still necessary to achieve the inflation target in a sustainable manner. The current volatile international environment suggests a more cautious approach. The Council will ensure the maintenance of loose monetary conditions, necessary to achieve the inflation target in a sustainable manner, by using the current set of monetary policy instruments.

SUMMARY TABLE OF THE BASELINE SCENARIO

(Forecast based on endogenous monetary policy)

	2017	2018	2019	2020
	Actual		Projection	
Inflation (annual average)				
Core inflation	2.3	2.4	3.1	3.0
Core inflation excluding indirect tax effects	2.2	2.4	3.1	3.0
Inflation	2.4	2.8	3.1	3.0
Economic growth				
Household consumption expenditure	4.7	4.8	3.2	3.1
Government final consumption expenditure	0.8	1.2	0.5	0.7
Gross fixed capital formation	16.8	14.9	8.8	-0.7
Domestic absorption	5.9	6.1	3.9	1.6
Exports	7.1	7.5	7.5	6.7
Imports	9.7	9.7	8.2	5.7
GDP	4.0	4.4	3.5	2.8
Labour productivity[5]	2.0	2.6	3.1	2.6
External balance[1]				
Current account balance	2.9	1.1	0.8	1.3
External financing capacity	4.1	3.2	3.3	3.6
Government balance[1,4]				
ESA balance	-2.0	(-2.2) – (-2.3)	(-1.7) – (-1.8)	(-1.4) – (-1.8)
Labour market				
Whole-economy gross average earnings[2]	12.9	10.3	7.1	6.9
Whole-economy employment	1.6	1.4	0.4	0.2
Private sector gross average earnings[2]	11.6	10.0	7.2	7.3
Private sector employment	2.2	1.9	0.7	0.3
Unemployment rate	4.2	3.6	3.5	3.4
Private sector nominal unit labour costs	5.5	5.0	2.6	3.3
Household real income[3]	5.6	5.5	2.8	2.5

[1] As a percentage of GDP.

[2] According to the original HCSO data for full-time employees.

[3] MNB estimate.

[4] The lower value of the forecast band shows the ESA balance if the Country Protection Fund is used, while the higher value shows the ESA balance if the Country Protection Fund is not used.

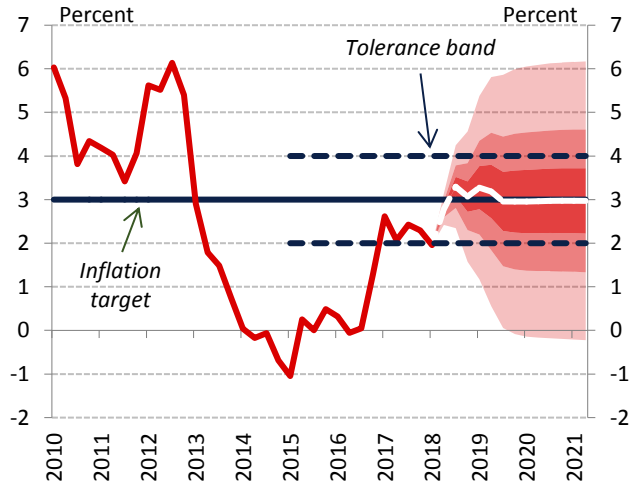
[5] Whole economy, based on national accounts data.

1. Inflation and real economy outlook

1.1. Inflation forecast

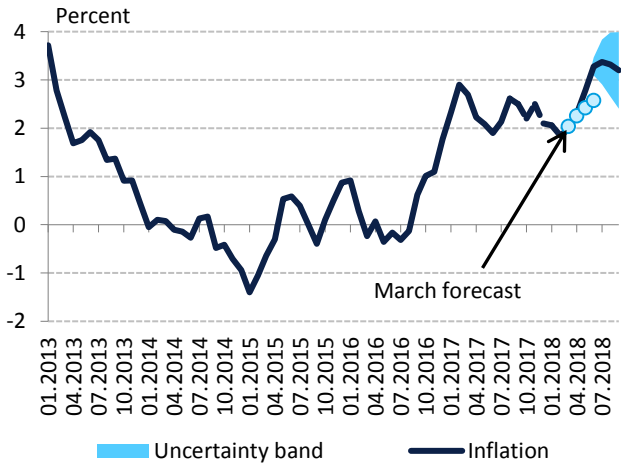
According to our current forecast, domestic inflation may temporarily rise slightly above 3 percent in the coming months driven by the sharp increase in global oil prices observed since April. At the same time, core inflation may remain stable in the next few months. As inflation expectations are anchored at low levels, we do not anticipate any second-round effects from the higher oil prices. Over the medium term, with the continued expansion in consumption, core inflation excluding indirect taxes is expected to edge up gradually. At the same time, the rate of price increases is restrained not only by moderate external underlying inflation trends and the stabilisation of inflation expectations at historically low levels, but also by continuous employer contribution cuts and this year's VAT reductions. Taken together, after the direct effects of the oil price increase wear off, rising core inflation from mid-2019 will ensure the achievement of the inflation target in a sustainable structure.

Chart 1-1: Fan chart of the inflation forecast



Source: HCSO, MNB

Chart 1-2: Monthly evolution of the near-term inflation forecast



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

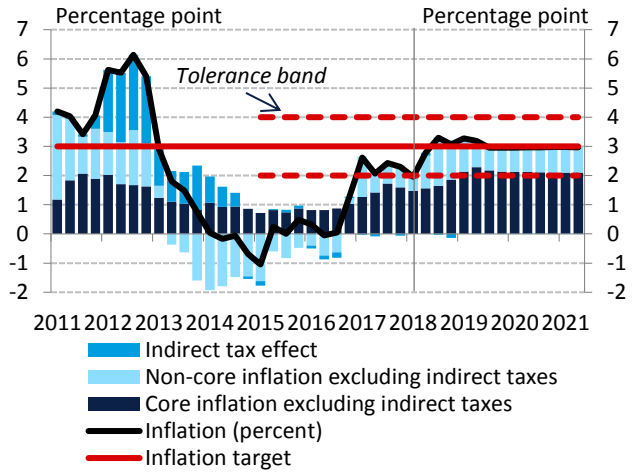
For this and the following year, we anticipate a slightly higher inflation path than expected in our previous projection, although for 2020 our forecast remains unchanged. According to our current forecast, rising oil prices may temporarily push inflation above its target level in the coming quarters (Chart 1-2).

In the last few years, inflation expectations were at moderate levels. Thus, **we do not anticipate any second-round effects through expectations from oil price increases**. The effects of higher oil prices on production costs of companies are reflected in prices with a lag of several quarters. The resulting indirect inflationary effect, however, may remain subdued as the oil price increase will peter out gradually in the coming years according to the price expectations by the market. Based on our current forecast, and parallel to the temporary oil price effect fading out, **in mid-2019** rising core inflation will ensure that **the 3 percent central bank inflation target is achieved in a sustainable structure** (Chart 1-1).

Inflation in the euro area will continue to fall short of the ECB's inflation target in the coming years. According to the latest ECB forecast, expectations for inflation in 2018 and 2019 have increased with the appearance of the rising oil prices in inflation. The forecast for core inflation by ECB, however, did not change significantly. Looking ahead, underlying inflation will rise continuously as a result of the tightening labour market.

According to our current forecast, core inflation excluding indirect taxes will edge up gradually (Chart 1-3). The expansion in household consumption boosts the pricing power of firms, but its inflationary effect is more moderate compared to pre-crisis experiences. According to our expectations, the increase in consumption is primarily linked to durable consumer goods with high recovery potential. In view of the high import content of durable

Chart 1-3: Decomposition of the inflation forecast



Source: HCSO, MNB

Table 1-1: Details of the inflation forecast

		2018	2019	2020
Core inflation		2.4	3.1	3.0
Non-core inflation	Unprocessed food	5.1	5.4	5.6
	Fuel and market energy	9.0	5.1	2.4
	Regulated prices	0.3	1.1	1.9
	Total	3.5	3.0	2.8
Inflation		2.8	3.1	3.0

Source: MNB

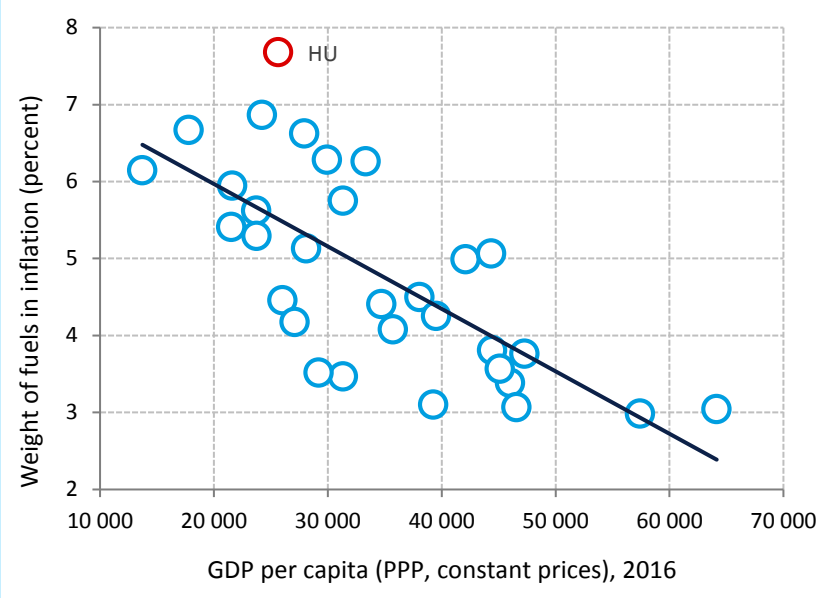
consumer goods and the still subdued underlying inflation trends, the impact on price developments may be moderate. Wage dynamics in the private sector will remain robust in the coming years. **Nevertheless, the inflationary impact from the labour market may remain moderate owing to the further reduction of the social contribution tax paid by companies** and the weakened relationship between labour costs and prices (more details in Box 1-3).

Looking ahead, the price dynamics of non-core inflation items will be more robust than anticipated in our March forecast. The accelerated price dynamics of this product group can be attributed to the higher inflation of fuel prices (Table 1-1). As a result of rising Brent crude oil prices and the weakening of the euro against the dollar, our assumption regarding euro-denominated oil prices increased considerably. We expect the dynamics of unprocessed food prices to remain near the historical average seen in the last six months. Based on our assumptions, regulated energy prices will not change until the end of the forecast horizon, and only minor price changes are expected in the case of non-energy regulated prices.

Box 1-1: Impact of higher global oil price on inflation forecast

Global oil prices increased considerably in the past period; **with higher volatility, the price per barrel of Brent crude oil was in the USD 65–80 range between end-March and mid-June**. It is a general phenomenon that inflation in relatively more developed countries is less exposed to fluctuations in global oil prices (Chart 1-4). By international comparison, the weight of fuels is above the average compared to Hungary's level of development as well. Accordingly, the increase in fuel prices resulting from the volatile crude oil prices in recent months significantly influences short-term developments in domestic inflation. The box below examines the underlying reasons for oil price rises and their impact on inflation trends in Hungary.

Chart 1-4: Correlation between weight of fuels in inflation and level of economic development

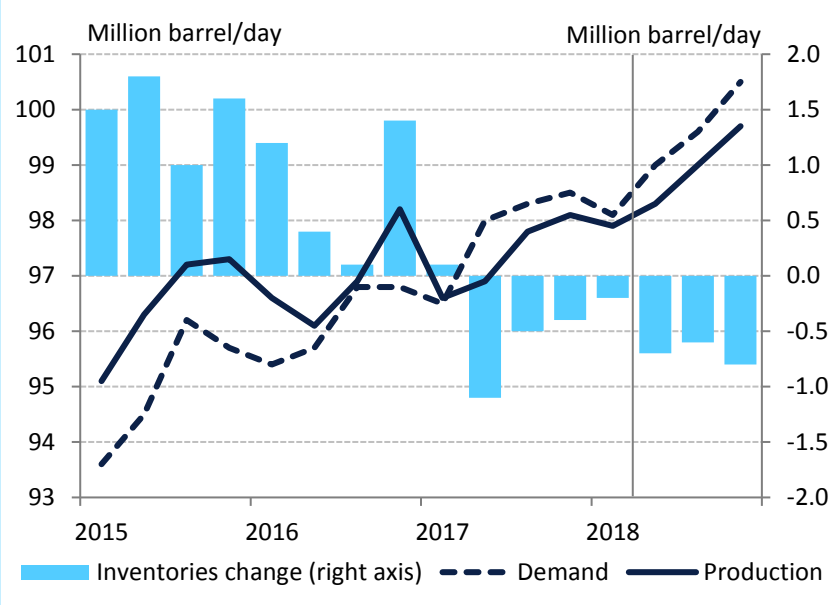


Sources: Eurostat, WDI

Developments in supply and demand compared to one another are crucially important in terms of the changes in global oil prices. In the past period, price rises were mainly **explained by the fact that production was lower than demand**. The OPEC countries restrained production by more than stated in the quotas of their production limitation agreement. Moreover, the Middle East conflict and the crisis in Venezuela also decreased production, which was only partly offset by the dynamically expanding shale oil production in the USA. As a result, crude oil stocks fell considerably from their record high level a year earlier (Chart 1-5).

According to the April forecast of the International Energy Agency (IEA) for supply and demand, **the dynamic increase in US shale oil production** may continue because the profitability of shale oil production is also increasing as a result of the rising oil prices. However, with the significant over-fulfilment of the quotas in the OPEC production limitation agreement, **this is not enough to satisfy the expanding demand**. Future price developments are surrounded by high uncertainty. The possible restoration of the embargo on Iran as well as the shortage of capacity and specialists that limits the expansion of production in the USA are identified as upside risks. At the same time, a possible easing of the exceeded OPEC production limits at the end of June would facilitate the adjustment of oil prices.

Chart 1-5: Global oil demand, production and changes in inventories

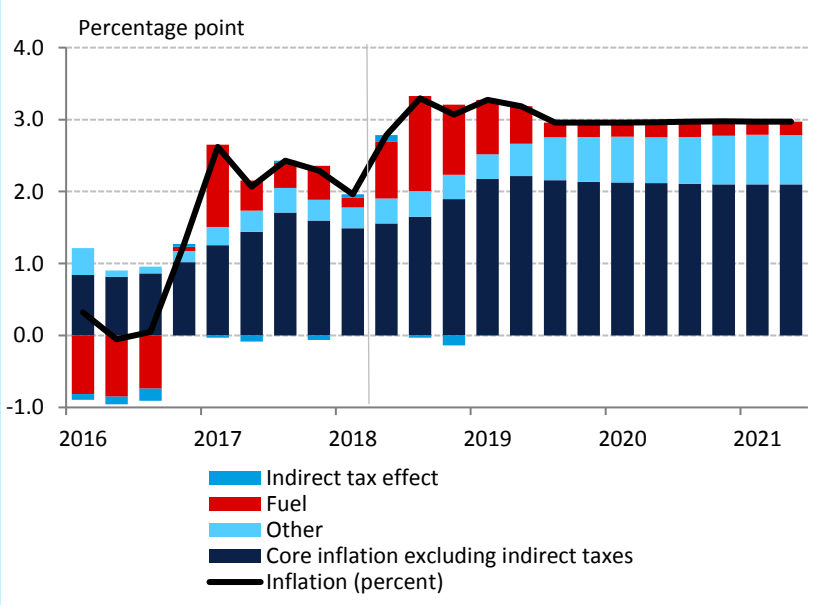


Source: International Energy Agency

The depreciation of the euro against the dollar also raised the oil prices denominated in euros. **Our current oil price assumption for this year and 2019 is significantly higher compared to our March assumption**.

The rise in oil prices already feeds through into domestic consumer prices via fuel prices in the short run (Chart 1-6). As a result, the rise in fuel prices has increased inflation by 1 percentage point from the beginning of the year. The inflation path, which is higher than our earlier projection, will be linked to the elevated oil prices in the coming quarters, but **the effects of this year's fuel price increases will fade out as of mid-2019**. **Due to the anchoring of inflation expectations at low levels, no second-round effects from expectations are anticipated in our forecast.** Besides, the effects of higher oil prices on production costs of companies are reflected in prices with a lag of several quarters. The resulting indirect inflationary effect, however, may remain subdued as the oil price increase will peter out gradually in the coming years according to the price expectations by the market. Accordingly, in parallel with the fading out of the temporary inflation-raising effect of the oil price, the gradual rise in core inflation will ensure the 3 percent inflation target is reached in a sustainable structure as of mid-2019 (Chart 1-6).

Chart 1-6: Decomposition of the inflation forecast

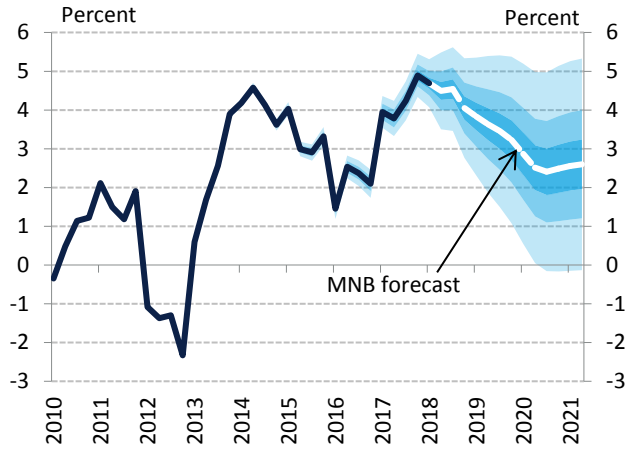


Sources: HCSO and MNB

1.2. Real economy forecast

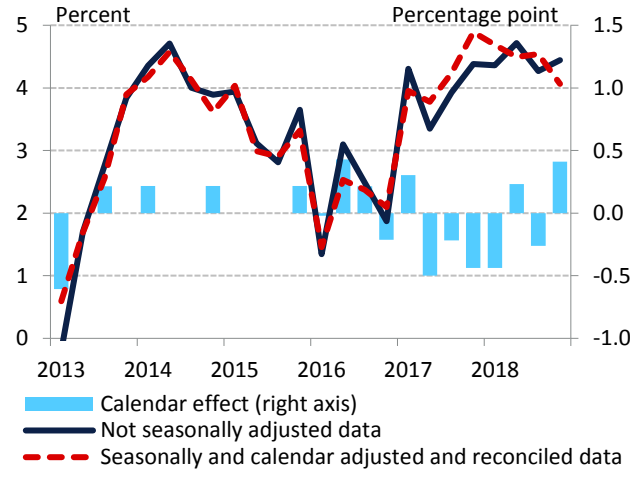
Our growth forecast has been revised upwards over the entire forecast horizon. We expect economic growth to be faster this year than in 2017, which – provided that our current assumptions hold true – will be followed by a gradual deceleration from 2019. Domestic demand continues to play an important role in the growth of the Hungarian economy. The expansion in disposable income drives consumption growth which is also supported by a historically high level of consumer confidence. In addition, the net financial wealth of the household sector and the second-round effects of the upswing in the housing market cycle (e.g. furniture purchase) may also contribute to consumption growth. There is expected to be a dynamic and general expansion of investment until 2019. In 2020, investment activity will decline as EU transfers taper off, large-scale projects become incorporated into the base, and VAT is presumed to be reset for new housing transactions. This year, fiscal policy effects will boost demand owing to the tax cuts (reduction of social contribution, targeted VAT reduction, extension of the family tax allowance). In line with the development of new export capacities and the dynamic expansion in the exports of services, the growth of exports will exceed the rate of increase in Hungary's external demand, and thus Hungary's export market share will improve. Parallel with the upturn in domestic demand, output is close to its potential. As the output gap closes, the expansion in the supply side of the economy determines the sustainability of growth. Besides maintaining stability, economic policy can increase the rate of potential growth through measures aimed at improving competitiveness and productivity.

Chart 1-7: Fan chart of the GDP forecast, based on seasonally and calendar adjusted and reconciled data



Source: HCSO, MNB

Chart 1-8: Short-term GDP forecast, unadjusted, and seasonally and calendar adjusted

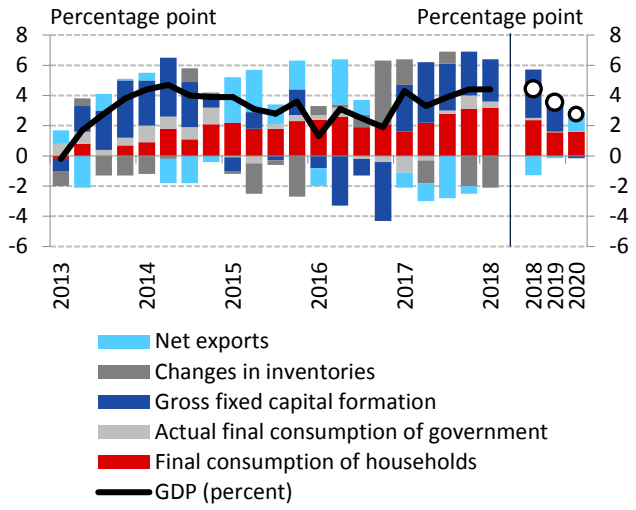


Source: HCSO, MNB

Provided that the assumptions in our current forecast hold true, we expect **economic growth to be even faster this year, followed by a gradual deceleration.** GDP is projected to expand at a rate of 4.4 percent in 2018, and at 3.5 percent and 2.8 percent in 2019 and 2020, respectively (Chart 1-7). During this year we expect a noticeably calendar effect (Chart 1-8). Over the short run, **rising domestic demand will continue to play a significant role** in Hungarian growth with household consumption and investment expansion as the key factors (Chart 1-9).

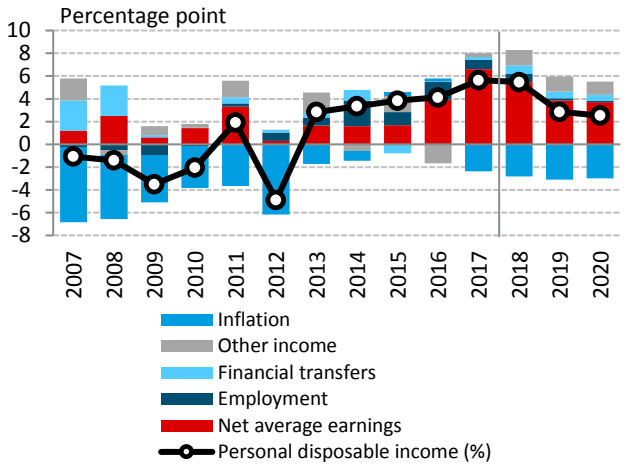
We expect household consumption will continue expanding over the forecast horizon at a faster rate than anticipated in our previous projection, and consequently, consumption will remain a key driver of economic growth. The growth in household consumption expenditures is materially supported by the favourable underlying income trends linked to persistent strong wage outflows and rising employment rates. Substantial net financial assets previously accumulated also contribute to the upswing in consumption. The process is supported by the historically high level of **consumer confidence** and the **second-round effects of the housing market boom** as well. Moreover, the fact that household consumption spending continues to fall short of the levels warranted by the underlying income trends also points to an expansion in consumption. Accordingly, owing to deferred consumption there is substantial **recovery potential** especially in the consumption of import-intensive durable goods. As a result of favourable income trends (Chart 1-10) and the gradual increase in households' propensity to consume, household consumption exhibits stable growth over the entire forecast horizon (Chart 1-11).

Chart 1-9: Contributions to annual changes in GDP



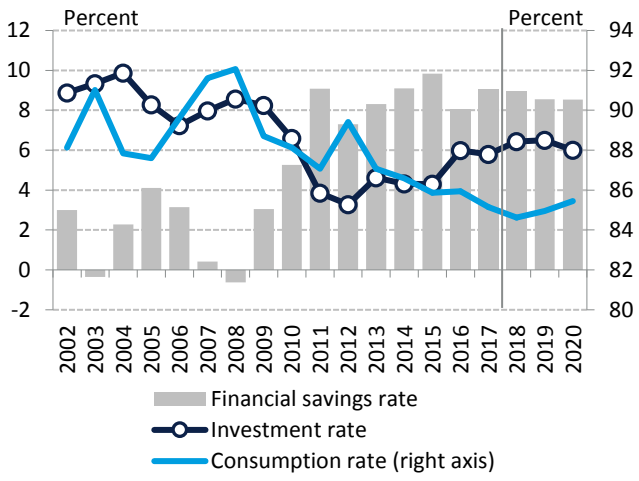
Source: HCSO, MNB

Chart 1-10: Decomposition of personal disposable income



Note: Annual changes. Source: MNB

Chart 1-11: Evolution of household consumption, investment and financial savings rates as a percentage of disposable income



Source: HCSO, MNB

We expect **dynamic growth in whole-economy investment in 2018 and 2019,** driven by an increase in the investment activity of all three sectors (corporate, household and government).

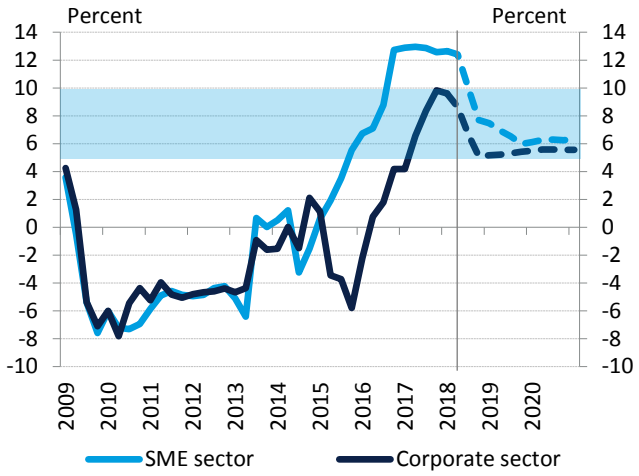
If the assumptions in our current forecast hold true, business investment will continue to rise. **Underlying investment trends in the corporate sector are strengthening considerably** in line with the favourable developments in demand, the low interest rate environment and an increase in loans to SMEs. If our current assumptions hold true, we can expect a 6 percent annual increase in total corporate lending on average, and a 6–8 percent expansion in loans to SMEs over the forecast horizon (Chart 1-12). Looking ahead, EU funds – the majority of which focus on economic development – will also support business investment. Large-scale investment projects announced earlier and capacity expansions may also boost investment in the corporate sector. There are large-scale investment projects worth close to HUF 1900 billion currently in progress, mostly affecting the manufacturing industry. **As large-scale investment projects are incorporated into the base, an adjustment in business investment is expected in 2020.**

In our forecast we anticipate an increase in public-sector projects implemented from EU transfers and own funds. We do not anticipate that advance payments and their subsequent absorption will have a substantial impact on the total fiscal and real economy effect of the funds available in the EU's programming period between 2014 and 2020. They only influence their distribution over the years. On the whole, a downturn is expected in the effective absorption of EU funds from 2020 onwards.

Also supported by government programmes, **household investment is expected to increase** both in 2018 and 2019. The high number of home building permits and the gradual increase in the construction of new homes indicates an acceleration in household investment activity too. Based on our assumption derived from the prevailing tax laws, the VAT on house purchases will revert to its original level after 2019. Consequently, the upturn in the housing market is expected to come to a halt. **At the end of the forecast horizon, household investment will decline with the slowdown in the housing market cycle in 2020.**

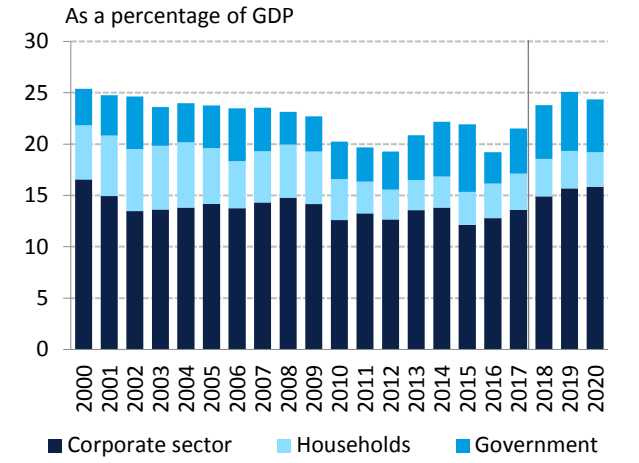
Looking ahead, the whole-economy investment rate will approach 25 percent. In 2020, investment activity will decline as large-scale projects become incorporated into the base, EU transfers taper off, and the housing market cycle decelerates (Chart 1-13).

Chart 1-12: Annual changes in lending to non-financial corporations and SMEs



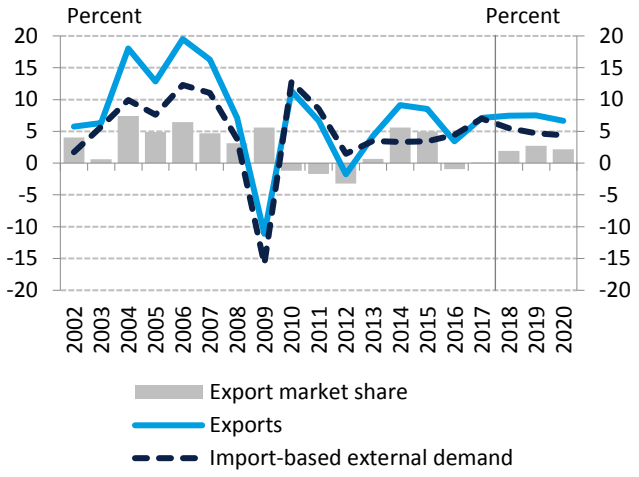
Note: Transaction-based, year-on-year data. Source: MNB

Chart 1-13: Evolution of investment rate by sectors



Source: HCSO, MNB

Chart 1-14: Changes in export market share



Note: Annual change.
Source: HCSO, MNB

In the first quarter, the economic growth in the countries of Hungary's main trading partners was somewhat favourable, and international institutions revised their expectations about external demand upwards slightly. Compared to our March assumptions, we expect moderately higher external demand. **Looking ahead, however, European economic activity is beset with risks:** restrained industrial production, adjusting business climate indicators in Europe, the United Kingdom's exit from the EU and trade restriction measures may impair the growth prospects of our export markets. In line with the development of new export capacities and the dynamic expansion in the exports of services, the growth rate of exports will persistently exceed the rate of increase in Hungary's external demand, and thus **Hungary's export market share will improve further** (Chart 1-14). In Hungary, strengthening domestic demand factors (consumption, investment) significantly boost import dynamics; consequently, we expect **net exports to make a significantly negative contribution to economic growth in 2018 and to restrain economic growth moderately in 2019.** Parallel to the continued growth in external demand, exports are expected to increase in 2020 as well, which – in conjunction with decelerating imports – will ensure a **positive contribution from net exports to economic growth at the end of the forecast horizon.**

Based on our technical assumptions, agriculture is making a slightly positive contribution to growth during 2018.

We estimate that **output was close to its potential level in the first quarter of 2018.** Having been in negative territory for a long time, we reckon the output gap closed at the end of last year. Demographic developments as well as the tight labour market increasingly act as an effective constraint on economic expansion; improving productivity, therefore, is becoming a key factor. **Our forecast points to an improvement in labour productivity** (Chart 1-14). It is a general phenomenon that labour productivity increases in the rising phase of the business cycle (Kaldor-Verdoorn Law) and accordingly, productivity is expected to improve further looking ahead. In the longer term, economic policy may support productivity growth to a considerable extent by improving competitiveness (Box 3-2).

Box 1-2: Assumptions applied in our forecast

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

Table 1-2: Main external assumptions of our forecast

Technical assumptions	2018		2019		2020		Change		
	Previous	Actual	Previous	Actual	Previous	Actual	2018	2019	2020
EUR/USD	1.23	1.19	1.23	1.17	1.23	1.17	-3.3%	-4.9%	-4.9%
Oil (USD/barrel)	65.1	73.2	61.4	72.8	58.6	69.0	12.4%	18.6%	17.7%
Oil (EUR/barrel)	52.9	61.7	49.9	62.3	47.7	59.1	16.6%	24.8%	23.9%
Food prices									
Wheat (USD/bushel)	4.80	5.07	5.40	5.81	5.61	6.04	5.6%	7.6%	7.7%
Maize (USD/bushel)	3.79	3.96	4.07	4.34	4.20	4.53	4.5%	6.6%	7.9%
Euro area inflation (%)	1.4	1.7	1.4	1.7	1.7	1.7	0.3 pp.	0.3 pp.	0.0 pp.
GDP growth of Hungary's main trading partners*(%)	2.6	2.7	2.5	2.6	2.4	2.5	0.1 pp.	0.1 pp.	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.
Sources: CBT, Bloomberg, OECD, Consensus Economics, MNB, ECB

Amidst higher volatility, global oil prices floated in a range of USD 65–80. The price per barrel of Brent crude oil started to rise gradually in April, which was also attributable to the fact that demand was higher than production. Following that, it fluctuated around USD 77 in May, with significant volatility. In addition to the over-fulfilment of the OPEC countries' commitments to cut production, as laid down in an agreement, the Middle East conflict and the crisis in Venezuela also restrained production, which was only partly offset by the dynamically expanding shale oil production in the USA. (For more details on the changes in oil prices see Box 1-1.) **As a result of the rise in global oil prices, futures prices expressed in euros were revised significantly upwards compared to our March assumption, but they project a declining path.** With respect to the EUR/USD cross rate, a weaker euro is expected over the forecast horizon than in our March assumption on a technical basis.

In its latest forecast, the European Central Bank continues to project that price dynamics will fall short of its inflation target over the entire forecast horizon. The ECB has revised its inflation forecast for this year and next year upwards due to the inflationary impact of rising oil prices. Eurozone inflation is projected at 1.7 percent in all three years. The ECB's forecast inflation, however, did not change significantly. Over the forecast horizon, core inflation will gradually increase, which is attributable to the cost-side effects from the tightening labour market (strengthening nominal wage dynamics) as well as the labour shortages in some parts of the euro area.

Growth forecasts concerning the performance of the global economy were revised upwards to some extent; so we expect a slightly greater expansion in external demand compared to our March assumptions. **At the same time, European growth is surrounded by downside risks as well** (subdued industrial production of the past period, adjustment of European economic activity indicators, risks related to Brexit and possible effects of the recently introduced import duties).

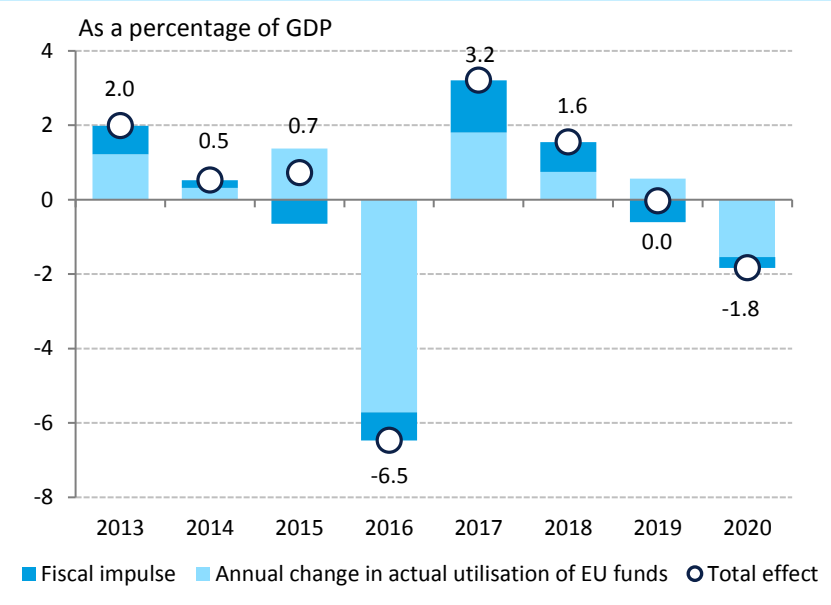
Based on futures prices, slightly greater price increases are expected in the case of wheat and corn compared to the assumptions in the March Inflation Report.

The 2019 budget bill did not contain any significant new measures, but the more favourable macroeconomic developments resulted in a lower deficit path compared to our March forecast. According to the 2019 budget bill submitted to the National Assembly on 13 June, the 2 percentage point social contribution tax reduction pursuant to the wage agreement would enter into effect as of 1 July 2019, so this is included in our baseline forecast. Over the forecast

[1] For the methodology of our external assumptions see (only available in Hungarian): Krusper Balázs– Bauer Péter: „Mit jelent a feltételes előrejelzés?" Downloadable at: https://www.mnb.hu/letoltes/krusper-balazs-bauer-peter-mit-jelent-a-felteteles-elorejelzes-20140425.pdf

horizon, our projection for the budget deficit is reduced by 0.1–0.2 percentage points, which is primarily justified by the more favourable macroeconomic developments compared to the March Inflation Report.

Chart 1-15: Fiscal demand effect and the actual absorption of EU funds

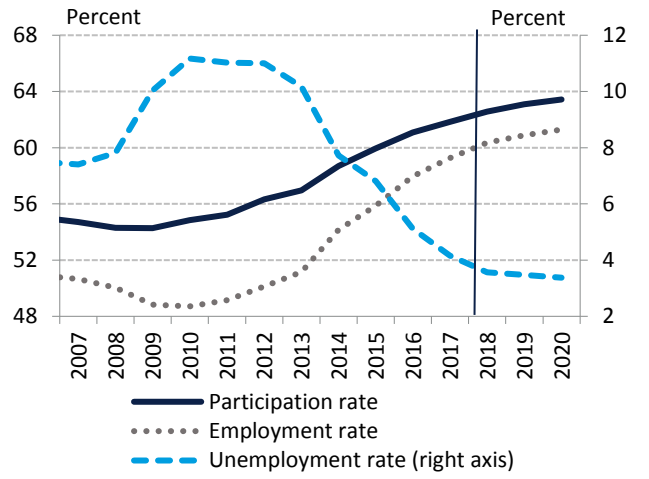


Source: MNB

1.3. Labour market forecast

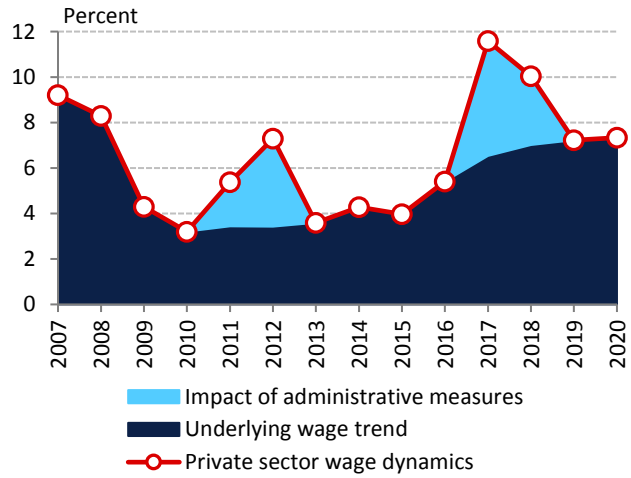
Over the forecast horizon, the growth rate of employment exceeds the increase in activity; thus the historically low unemployment rate declines further. Parallel to economic growth, the steadily high labour demand of the private sector will contribute to the expansion in employment. The heightened demand for labour means that persistently strong underlying wage trends will emerge in the tight labour market. The increase of real wages will continue in the coming years. The inflationary effect of wages from the cost side will remain moderate.

Chart 1-16: Employment, participation and unemployment rate in the whole economy



Source: HCSO, MNB

Chart 1-17: Impact of substantial increases in minimum wage and guaranteed wage minimum on private sector wage growth



Note: Rises in minimum wages in the following years are not known at present. We assume their extent will be equal to the underlying wage trend.

Source: HCSO, MNB estimation

Due to increasingly effective demographic constraints (change in the size of the working-age population and in its composition by age and gender) we expect labour market participation will rise at a decelerating pace in the coming years, and in 2020 the growth in labour supply will falter under the current assumptions. **Demographic developments will mean an ever more effective constraint on the expansion in employment** (Chart 1-16).

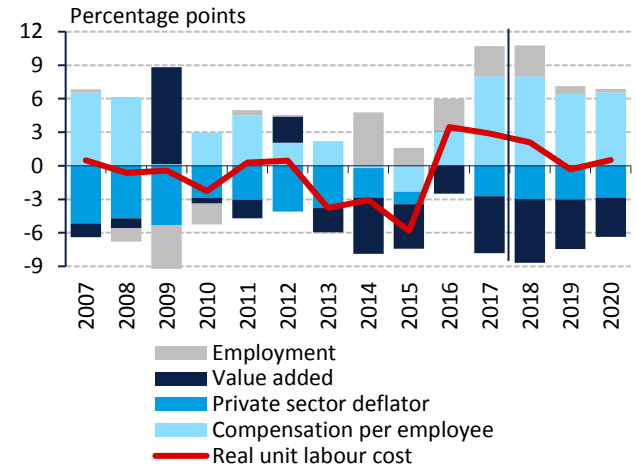
In line with the budgetary measures, the number of workers in the public works schemes will drop below 150,000 during the forecast period, thus the number of participants decreases by nearly 80 thousand compared to the historical high of 2016. At the same time, an increasing portion of those dropping out of such schemes may return to the primary labour market under the tight labour market environment. Employment in the public sector excluding public works will remain practically unchanged in the coming years.

Parallel with economic growth, the steadily high labour demand of the private sector will contribute to the expansion in employment. Meanwhile, owing to bottlenecks, the number of people in private sector employment will continue to rise at a slower rate compared to the robust increase observed in recent years. **Already at a historical low, the unemployment rate will decline further** in the context of the continued increase in employment.

In the current historically tight labour market, companies compete to retain workers and fill vacancies, which steadily strengthens workers' wage bargaining position. **Underlying wage trends will remain strong**. Wage dynamics are expected to be slightly restrained in 2018 in light of the fact that the increase in the minimum wage and in the guaranteed wage minimum fell short of the levels seen in 2017 (Chart 1-17). Over the rest of the forecast horizon, the expansion in real labour costs will gradually adjust to the rise in productivity (Chart 1-18).

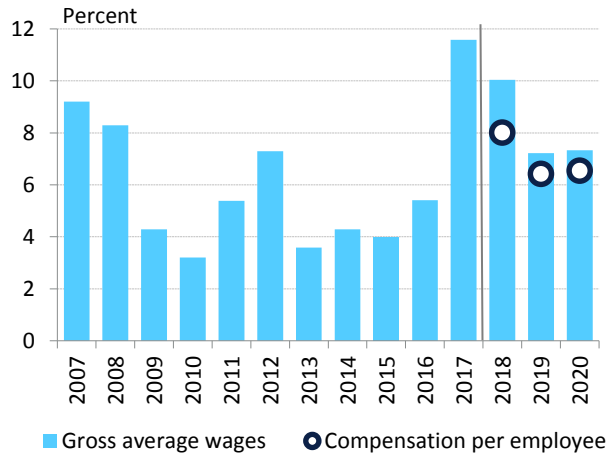
The effect of wage dynamics on labour costs is attenuated by the fact that the social contribution tax rate on firms was cut by a further 2.5 percentage points in early 2018, and therefore the **inflationary effect from the cost side may**

Chart 1-18: Decomposition of real unit labour cost growth in the private sector



Source: HCSO, MNB

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



Source: HCSO, MNB

remain moderate. Based on the budget bill for 2019, we expect another 2-percentage-point decline from 1 July 2019 (Chart 1-19). In line with the wage agreement, after next year the social contribution tax will decline in three additional steps by 2 percentage points each time, depending on the rise in real wages.

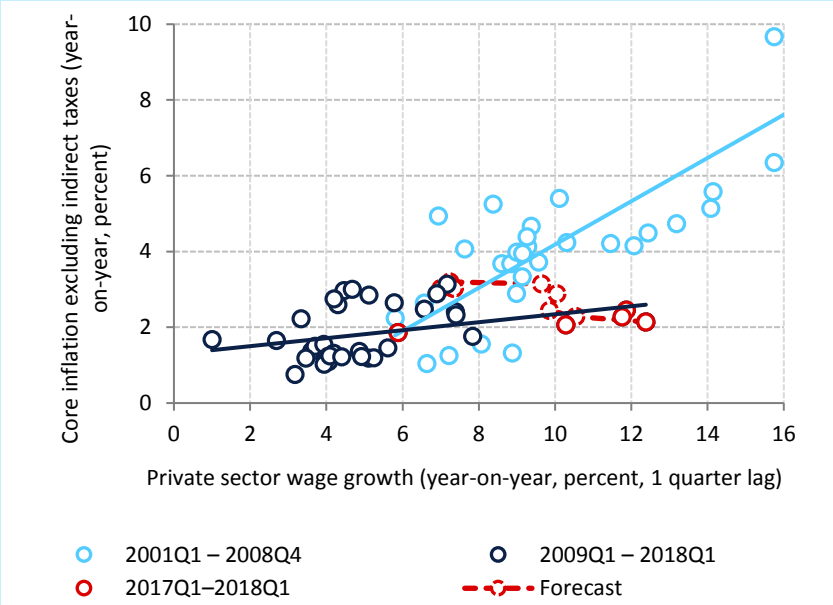
Box 1-3: Inflationary effect from labour market remains moderate

In the past period the unemployment rate fell to a historical low in Hungary, and further declines are expected over our forecast horizon. Free labour market capacities for corporations diminished considerably, and firms are engaged in increasingly fierce competition for skilled workers. This process is generally referred to as labour market tightening, and corporate adjustment channels are analysed in detail in Special Topic 6.2. Wage increases are among the most important adjustment channels, and we expect **underlying wage trends to strengthen even further in the coming quarters.**

From the central bank's perspective, however, one of the main questions is **how this will be reflected in prices, i.e. the degree to which the rising underlying wage trend will impact inflation.** In numerous previous analyses we have drawn

attention to the fact that the inflationary effect of labour market cycles and wages is more subdued than before the crisis.[2] **Data from the previous quarter confirms the weakened relationship between prices and wages** (Chart 1-20).

Chart 1-20: Relationship between core inflation excluding indirect tax effects and gross private sector wages

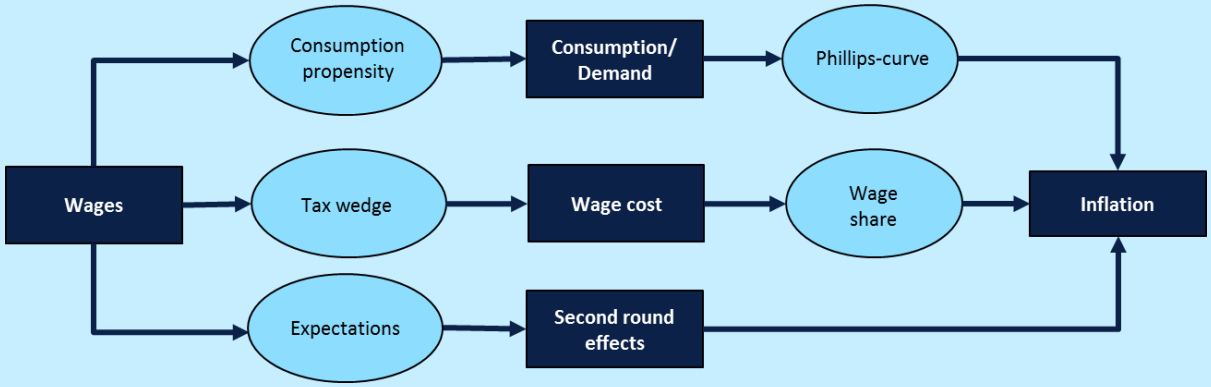


Source: HCSO, MNB

Wages can exert their impact on consumer prices via several channels (Chart 1-21). **Wage increases may influence inflation through household demand, corporate costs and inflation expectations.**

Rising wages increase the real disposable income of households, and the ensuing surge in household demand boosts the pricing power of firms. **The link between demand and prices is captured by the so-called Phillips curve. Based on Hungarian and international experience, the curve has flattened since the crisis; in other words, the same increase in demand entails a smaller inflationary effect.** This process is reinforced by the fact that, according to our expectations, the increasing household demand is primarily directed at more import-intensive durable goods; thus the expansion in consumption may exert a smaller impact on Hungarian price dynamics.

Chart 1-21: Relationship channels between wages and prices



Source: MNB

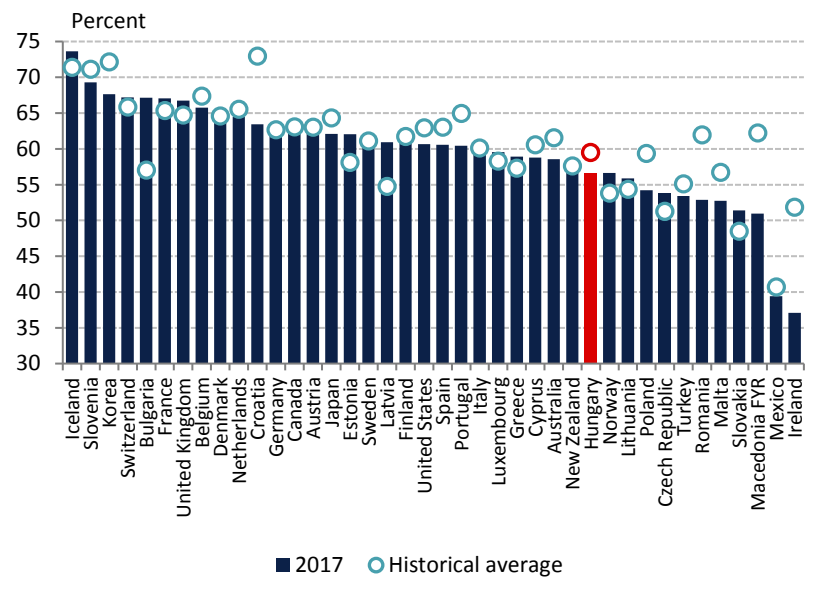
Changes in corporate costs represent another channel of the relationship between prices and wages. The significance of this channel is determined by two factors. The first is the extent to which firms' wage costs rise overall in response to the

[2] See for example (only available in Hungarian): Soós Gábor Dániel – Várhegyi Judit (2015): Árak és bérek – okok egy megváltozott gazdasági kapcsolat hátterében, MNB szakmai cikkek, 2015.

increase in wages, which includes – besides gross wages – all labour-related taxes and contributions imposed on employers. **The inflationary effect of wages** through this channel **is dampened by the multi-step reduction in the social contribution tax of corporations** (with the next cut scheduled in mid-2019), as a result of which corporate expenses are growing at a slower rate than wages. In addition, the rise in corporate expenses may have been attenuated by the whitening of wages as well.

The inflationary effect from wage costs, however, is not only influenced by the growth rate of wage costs but also by the level thereof. Not only is the wage share – i.e. the ratio of total wage costs to nominal GDP – considered low in Hungary by international standards, but its lag behind the historical average is also one of the highest in Europe (Chart 1-22). Despite the continued increase in the wage share prompted by the dynamic wage increases in 2018 – which is also reflected in the dynamics of real unit labour costs (Chart 1-18) –, **the wage share is expected to continue falling short of the historical average.** Subsequently, however, from 2019 the increase in wages will be roughly in line with the rise in productivity; in other words, the upward drift in the wage share will come to a halt. The decline in the social contribution tax plays an important role in this process, as it curbs the rise in corporate costs despite the high earnings indices.

Chart 1-22: International comparison of changes in wage share



Source: Ameco

The third possible channel of the inflationary effect of wage increases is expectations. In Hungary, however, despite the accelerated wage dynamics and rising inflation driven by the surge in fuel prices in the past few months, **the inflation expectations of households remain at historically low levels,** which is indicative of households' anchored expectations (Chart 3-36). Subdued utility costs in the recent period – an important determinant of expectations – may also have contributed to this process. Consequently, we do not expect any inflationary effect through the expectations channel in response to the wage increase.

Overall, according to our forecast **the dynamic rise in wages may primarily affect inflation from the demand side through the expansion in consumption.** In the case of the other two channels, considerable inflationary effects are not expected in view of the decline in the social contribution tax, anchored inflation expectations, and the fact that the wage share is below the historical average. As a result, **the effect of the wage increase on inflation remains moderate, and core inflation excluding indirect taxes is expected to rise only gradually in the coming years.**

Table 1-3: Changes in projections compared to previous Inflation Report

	2017	2018		2019		2020	
	Actual	Projection					
		March	Current	March	Current	March	Current
Inflation (annual average)							
Core inflation	2.3	2.4	2.4	2.9	3.1	2.9	3.0
Core inflation excluding indirect tax effects	2.2	2.4	2.4	2.9	3.1	2.9	3.0
Inflation	2.4	2.5	2.8	2.9	3.1	3.0	3.0
Economic growth							
Household consumer expenditure	4.7	4.4	4.8	3.0	3.2	3.0	3.1
Government final consumption expenditure	0.8	0.6	1.2	0.6	0.5	0.7	0.7
Gross fixed capital formation	16.8	14.9	14.9	6.4	8.8	-2.0	-0.7
Domestic absorption	5.9	5.9	6.1	3.3	3.9	1.2	1.6
Exports	7.1	7.9	7.5	7.4	7.5	6.6	6.7
Imports	9.7	10.0	9.7	7.7	8.2	5.4	5.7
GDP	4.0	4.2	4.4	3.3	3.5	2.7	2.8
Labour productivity[5]	2.0	3.0	2.6	2.9	3.1	2.5	2.6
External balance[1]							
Current account balance	2.9	1.5	1.1	1.6	0.8	2.7	1.3
External financing capacity	4.1	4.2	3.2	4.3	3.3	4.8	3.6
Government balance[1,4]							
ESA balance	-2.0	(-2.2) – (-2.4)	(-2.2) – (-2.3)	(-1.8) – (-2.0)	(-1.7) – (-1.8)	(-1.6) – (-2.0)	(-1.4) – (-1.8)
Labour market							
Whole-economy gross average earnings[2]	12.9	10.2	10.3	6.5	7.1	6.4	6.9
Whole-economy employment	1.6	0.9	1.4	0.3	0.4	0.2	0.2
Private sector gross average earnings[2]	11.6	10.3	10.0	6.9	7.2	7.1	7.3
Private sector employment	2.2	1.6	1.9	0.6	0.7	0.3	0.3
Unemployment rate	4.2	3.7	3.6	3.6	3.5	3.5	3.4
Private sector nominal unit labour cost	5.5	5.0	5.0	3.4	2.6	3.0	3.3
Household real income[3]	5.6	5.0	5.5	2.5	2.8	2.3	2.5

[1] As a percentage of GDP.

[2] According to the HCSO data for full-time employees.

[3] MNB estimate.

[4] The lower value of the forecast band shows the ESA balance if the Country Protection Fund is used, while the higher value shows the ESA balance if the Country Protection Fund is not used.

[5] Whole economy, based on national accounts data, nominal index.

Table 1-4: MNB baseline forecast compared to other forecasts

	2018	2019	2020
Consumer Price Index (annual average growth rate, %)			
MNB (June 2018)	2.8	3.1	3.0
Consensus Economics (May 2018)[1]	2.0 – 2.5 – 3.3	2.4 – 3.0 – 3.8	
European Commission (May 2018)	2.3	3.0	
IMF (April 2018)	2.7	3.3	3.1
OECD (May 2018)	2.6	3.4	
Reuters survey (May 2018)[1]	2.1 – 2.4 – 2.7	2.6 – 3.0 – 3.5	2.8 – 3.1 – 3.5
GDP (annual growth rate, %)			
MNB (June 2018)[5]	4.4	3.5	2.8
Consensus Economics (May 2018)[1]	3.3 – 3.9 – 4.6	2.0 – 3.0 – 3.8	
European Commission (May 2018)	4.0	3.2	
IMF (April 2018)	3.8	3.0	2.6
OECD (May 2018)	4.4	3.6	
Reuters survey (May 2018)[1]	3.5 – 4.0 – 4.6	2.8 – 3.3 – 3.8	
Current account balance[3]			
MNB (June 2018)	1.1	0.8	1.3
European Commission (May 2018)	1.2	0.9	
IMF (April 2018)	2.5	2.4	2.3
OECD (May 2018)	2.5	0.8	
Reuters survey (May 2018)	2.9 – 3.6 – 4.4	2.7 – 3.2 – 3.8	
Budget balance (ESA 2010 method)[3,4]			
MNB (June 2018)	(-2.2) – (-2.3)	(-1.7) – (-1.8)	(-1.4) – (-1.8)
Consensus Economics (May 2018)[1]	(-1.8) – (-2.4) – (-3.0)	(-1.7) – (-2.3) – (-3.0)	
European Commission (May 2018)	-2.4	-2.1	
IMF (April 2018)	-2.1	-1.9	-1.9
OECD (May 2018)	-2.6	-2.1	
Reuters survey (May 2018)[1]	(-2.0) – (-2.4) – (-2.8)	(-1.8) – (-2.2) – (-2.8)	
Forecasts on size of Hungary's export markets (annual growth rate, %)			
MNB (June 2018)	5.5	4.7	4.4
European Commission (May 2018)[2]	5.9	5.0	
IMF (April 2018)[2]	5.7	4.9	4.5
OECD (May 2018)[2]	5.0	5.1	
Forecasts on GDP growth rate of Hungary's trade partners (annual growth rate, %)			
MNB (June 2018)	2.7	2.6	2.5
Consensus Economics (May 2018)[2]	2.6	2.3	
European Commission (May 2018)[2]	2.8	2.6	
IMF (April 2018)[2]	2.8	2.4	2.0
OECD (May 2018)[2]	2.7	2.5	

[1] For the 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 forecasts for all partner countries.

[3] As a percentage of GDP.

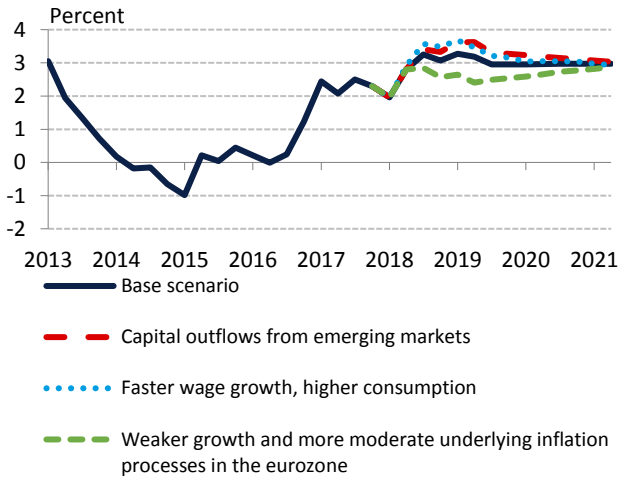
[4] The lower value of the forecast band shows the ESA balance if the Country Protection Fund is used, while the higher value shows the ESA balance if the Country Protection Fund is not used.

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

2. Effects of alternative scenarios on our forecast

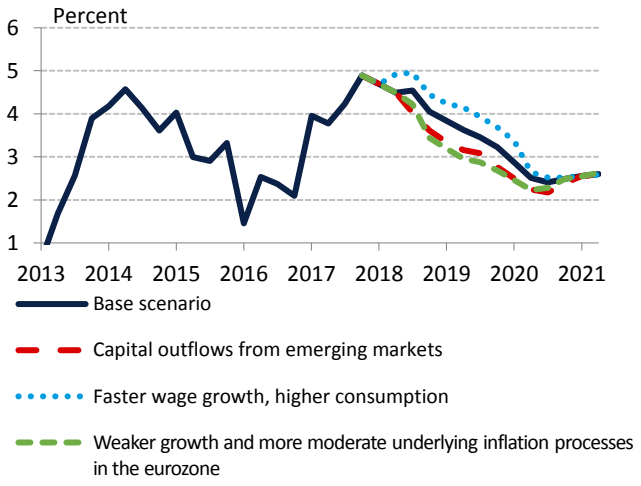
In addition to the baseline projection in the June Inflation Report, the Monetary Council highlighted three alternative scenarios. If the scenario presenting the capital outflow from the emerging markets materialises, the increase in the risk premium causes slower growth and a higher inflation path compared to the baseline scenario. In the case of the scenario assuming faster wage growth and higher consumption, domestic economic growth is more robust, while inflation is higher than the forecast of the baseline scenario. The risk scenario assuming weaker growth and more moderate underlying inflation developments in the euro area means lower domestic inflation and growth path than in the baseline scenario. In the first two cases achieving the inflation target in a sustainable manner can be attained with tighter, and in the latter case with looser, monetary conditions compared to the baseline scenario. Along with the highlighted scenarios, the Monetary Council discussed other risks, including scenarios featuring a permanent rise in global oil prices and the strengthening of global protectionism.

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



Source: MNB

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



Source: MNB

Capital outflows from emerging markets

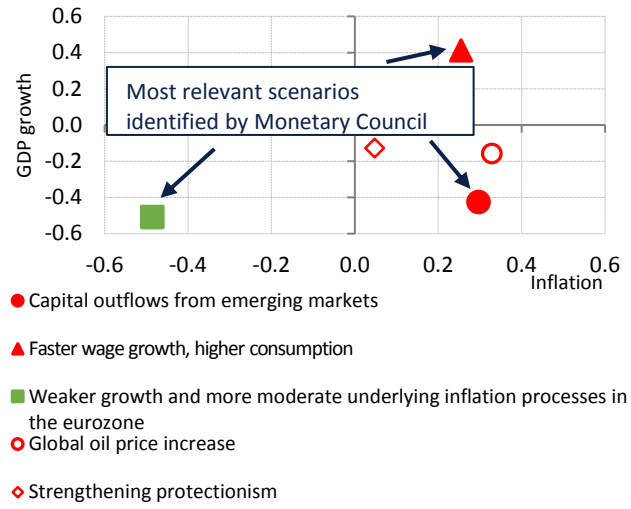
In the past period, the increasing **expectations with regard to the US interest rate hike** led to a rise in developed market yields and to the appreciation of the dollar exchange rate. The yield increase **strengthened aversion to risk in the financial markets, which resulted in disinvestments in the emerging markets and the depreciation of emerging market currencies.** In recent months, **uncertainties related to the forming of the new government in Italy after the elections, those surrounding Brexit,** the dismissal of the nuclear deal with Iran as well as news and statements regarding protectionist commercial measures all pointed towards higher risk aversion. **The disinvestment primarily impacted the currency and bond market of the more vulnerable and riskier developing countries.** At the same time, the financial market turbulence also had a tangible impact on the CEE region's market processes.

In the **risk scenario** we assume that the increase of the **risk premium** may **result in a further** major rise in **emerging market yields and in the depreciation of emerging market currencies**. On the whole, the upside inflation risk means that the achievement of the inflation target is ensured by a tighter monetary policy than in the baseline scenario.

Faster wage growth, higher consumption

In March, whole-economy and private-sector gross average wages were up by 11.1 percent and by 8.4 percent year on year, respectively. According to our expectations, the **underlying wage trend**, in parallel with the decreasing free labour force capacity, will **remain strong this year as well.** In 2017, and in 2018 to date, **the inflation impact of the vigorous wage growth predominantly appeared in**

Chart 2-3: Risk map: effect of alternative scenarios on the baseline forecast



Note: The risk map presents the average difference between the inflation and growth path of the alternative scenarios and the baseline forecast on the monetary policy horizon. The red marker means tighter and the green markers mean looser monetary policy than the baseline forecast.

Source: MNB

labour-intensive sectors. The pass-through of unit wage costs to prices remained moderate compared to the pre-crisis years; **the relation between prices and wages may have weakened** in recent years (also see Box 1-3). However, looking ahead, just how long this weaker relationship will last represents a risk. In the **baseline scenario**, the **dynamic growth in wages has only a moderate effect on inflation** owing to the favourable income position of enterprises and the cut in the social contribution tax rate at the beginning of the year**.**

In the alternative scenario, both the whole-economy wage dynamics and the increase in employment may be higher compared to the baseline scenario in the coming years. The higher disposable income **boosts households' consumption and investments,** exerting a positive impact on economic growth. Corporate costs rise to a higher degree than in the baseline scenario, which in parallel with the increasing domestic demand **may result in an increase in prices**, and thus the achievement of the inflation target is ensured by a monetary policy that is tighter than in the baseline scenario.

Weaker growth and more moderate underlying inflation processes in the euro area

Price growth in the euro area in the first quarter of 2018 decelerated slightly, and then in April the consumer price index and core inflation dropped to 1.2 percent and 0.7 percent, respectively. After this, **inflation in the euro area** substantially **increased** in **May** – mostly due to the increase in oil prices observed in the past period**; however, underlying inflation developments continue to be at moderate levels.** Looking ahead, euro area inflation is expected to fall short of the ECB's target of below, but close to, 2 percent, for years. In addition to this, based on the decrease in international economic sentiment indicators observed recently, **there may be a risk of economic growth decelerating in the euro area** – similarly to 2011-12 –**, and as a result the low inflation environment may persist for longer than expected.**

According to the assumption in the alternative scenario, **the weaker than expected growth and inflation processes** mean the ECB may reach its inflation target in a sustainable manner more slowly, **which may result in a looser euro area monetary policy than assumed in the baseline scenario.** The lower euro area inflation **may curb the rise in domestic inflation more strongly,** and the deteriorating cyclical developments in our external markets **might restrain growth in Hungary** (Charts 2-1, 2-2 and 2-3). In such a situation, the achievement of the inflation target is

ensured by maintaining loose monetary conditions for a longer period.

Other risks

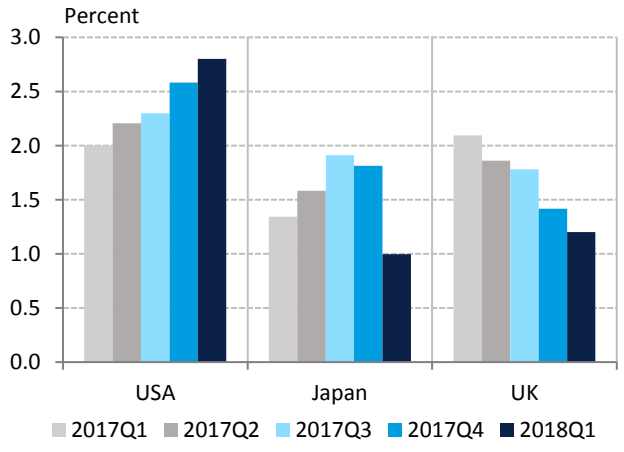
Along with the scenarios highlighted above, the Monetary Council also considered two additional alternative scenarios. The risk scenario assuming **a permanent rise in global oil prices** points towards higher inflation. If commercial tensions escalate and **global protectionism strengthens**, somewhat more subdued growth may be expected than in the baseline scenario, without any major impact on inflation.

3. Macroeconomic overview

3.1. Evaluation of international macroeconomic developments

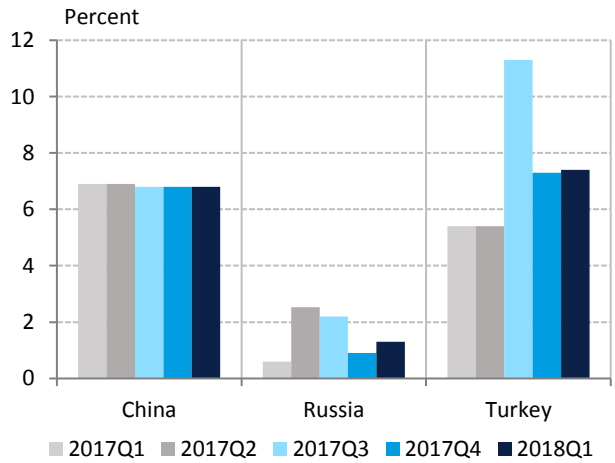
The global economy and in particular the euro area continued to grow in 2018 Q1, with the Central and Eastern European region remaining the European Union's growth centre. Global oil prices grew significantly, and the direct effects of this also materialised in the increase in inflation rates in recent months. As a result, inflation in the euro area increased close to the target in May, while core inflation remained subdued. In the FX market the US dollar appreciated significantly, and the US 10-year yield rose above 3 percent, which led to a swift increase in emerging yields through the capital outflow. The ECB announced that subject to incoming data it would end its net asset purchases in December 2018. According to the statement of the June meeting, the key interest rates might be kept at their current levels at least through the summer of 2019. The Fed's decision-makers increased the key interest rate by 25 basis points in line with expectations. Based on market pricing the probability of the Fed's fourth interest rate hike of this year increased, in line with the decision-makers' forecast. The monetary policy stances of central banks continued to differ in the CEE region. The Romanian central bank raised its policy rate, while the decision-makers in the Polish and Czech central banks left monetary conditions unchanged in the past quarter. Inflation rates increased in the countries of the region.

Chart 3-1: Annual changes in GDP in certain key global economies



Note: Seasonally adjusted series. Source: OECD

Chart 3-2: Annual changes in GDP in some emerging economies



Source: Trading Economics

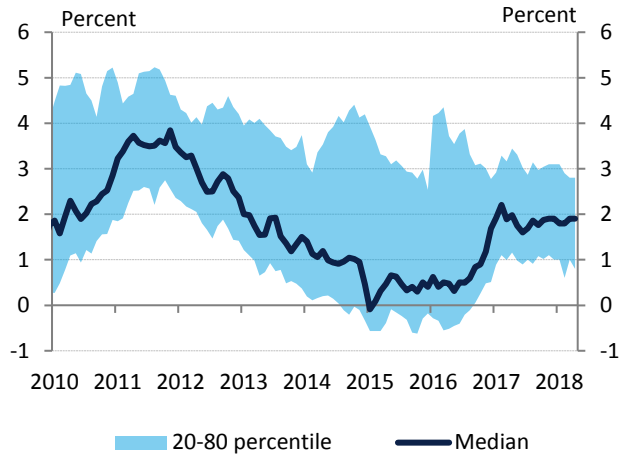
3.1.1. Developments in globally important economies

In 2018 Q1, expansion in the US economy exceeded expectations (Chart 3-1). In addition to investment, it was mainly household consumption and government expenditures that contributed to the economic expansion. Parallel to an expansion in domestic absorption items, export growth exceeded import growth, and thus net exports also had a positive impact on economic growth on the whole. As a result of the infrastructure investment programme and the tax cuts announced by the US administration, economic growth prospects continue to be favourable. Nevertheless, the announced trade restriction measures may have a significant impact on the global economy due to the dominance of the US within global imports. Looking ahead, the uncertainties surrounding import tariffs pose a considerable risk to global economic activity.

Growth in the United Kingdom fell short of expectations in Q1. Economic expansion was supported by gross fixed capital formation and household consumption, while net exports made a negative contribution to growth. Brexit and the unclear circumstances of the whole process exert an unfavourable impact on medium-term growth prospects and on the developments in corporate investment. **In Japan, the economy expanded at an annualised rate of 1 percent, while compared to the previous quarter, growth was 0.2 percent slower in Q1** (Chart 3-1). The decline was mainly the result of a fall in household consumption and investment, while the weaker export performance also restrained growth.

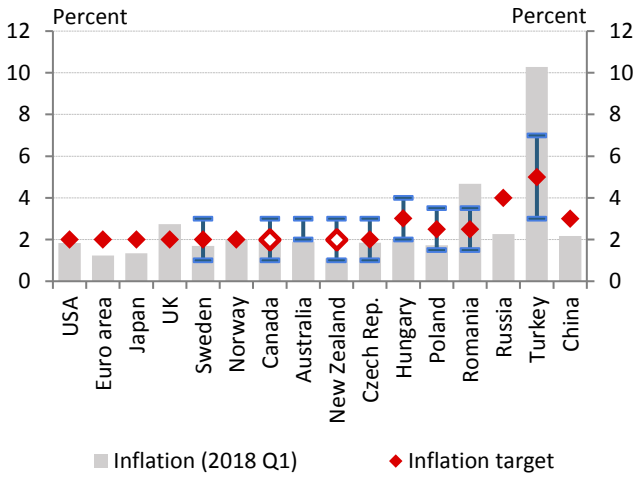
Looking at the major emerging countries, the Chinese economy expanded by 6.8 percent in 2018 Q1 (Chart 3-2).

Chart 3-3: Global inflation developments



Note: Percentage change on the same period of the previous year, based on data from 43 developed and emerging countries.
Source: OECD

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 an empty diamond.
Source: OECD, FRED, National Institute of Statistics Romania

The data received exceeded expectations to some extent. Household consumption as well as investment related to the real estate market contributed to the expansion at the beginning of the year. In parallel with a rise in exports, the expansion in imports was also significant, exceeding expectations. The growth prospects of the Chinese economy improved to some extent in the past months. In Russia, economic growth accelerated in Q1, mainly supported by domestic demand items.

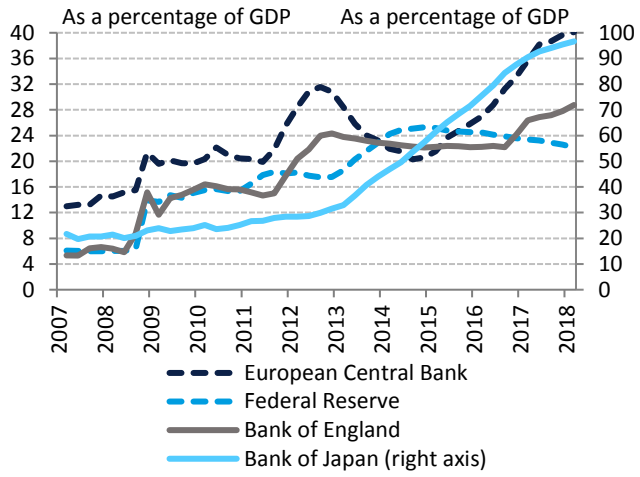
Global inflation was stable in the last year, remaining at a moderate level (Chart 3-3). In line with this, inflation was below central-bank targets in the majority of developed countries (Chart 3-4). On the whole, global oil prices increased markedly in the past period.

At their June meeting, the Fed's decision-makers increased the policy rate by 25 basis points to the 1.75–2.00 percent band in line with expectations. Based on the meeting's statement, further gradual increases in interest rates would be consistent with sustained expansion of economic activity, strong labour market conditions, and the fact that inflation will be near the 2 percent, symmetric inflation target over the medium term. Besides the interest rate hikes, the limitation on reinvesting maturing assets on the central bank balance sheet will continue. Market expectations are pricing in the next two interest rate hikes for September and December after the decision-makers in their June forecast held out the prospect of one more hike than in the previous forecast, so four interest rate hikes in total for this year.

The Bank of Japan did not change its monetary conditions in the past quarter and is still adjusting its Quantitative and Qualitative Monetary Easing Programme to the 0 percent long-term yields. Since the announcement of the yield curve targeting, the Bank of Japan has reduced the level of monthly purchases (Chart 3-5). The commitment to overshoot the inflation target has remained part of the central bank communication. Based on the March forecast of the Bank of Japan, decision-makers expect more robust growth and slightly lower inflation for 2018 compared to the previous assessment. However, they did not change their outlook concerning the end of the forecast period. In line with the previous forecast and the commitment to overshoot the inflation target, decision-makers expect inflation to exceed the target in 2019 and 2020.

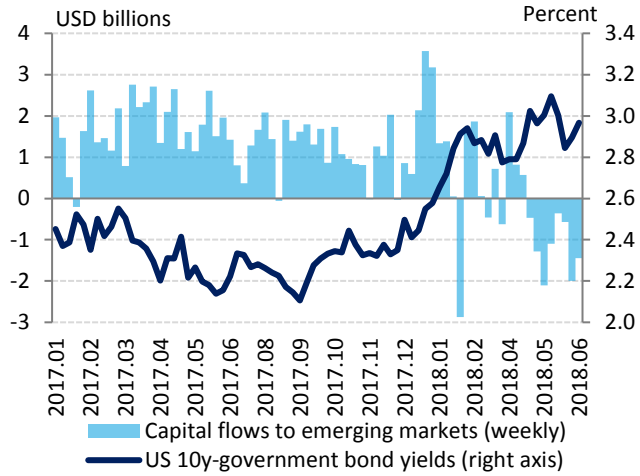
The decision-makers of the Bank of England left their monetary conditions unchanged in the past quarter. Macroeconomic prospects in the May Inflation Report are mostly in line with the projection of the previous report. Wage growth and cost pressure are strengthening in the

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



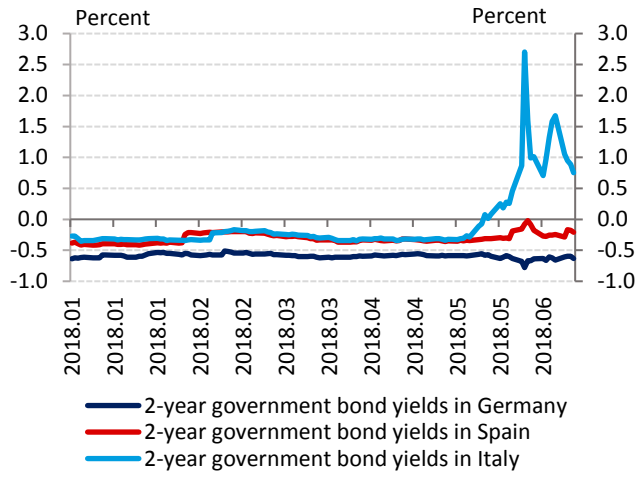
Source: Databases of central banks, Eurostat, FRED

Chart 3-6: Capital flows to emerging markets (weekly) and US 10y-government bond yields



Source: EPFR, Bloomberg

Chart 3-7: 2-year government bond yields in Germany, Italy and Spain



Source: Bloomberg

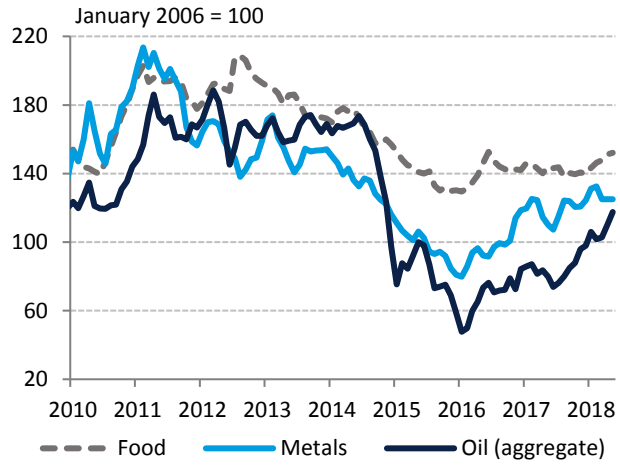
economy as expected. The size of unutilised capacities may be limited now. The inflationary impact of the depreciating exchange rate may decline faster than expected, and inflation may reach the target within two years. The forecast foresees a slightly rising interest rate path in the next three years. To achieve the inflation target in a sustainable manner, further monetary tightening is expected in the forecast period. Future interest rate hikes will be gradual and limited.

In the past quarter, risk appetite declined mainly in the emerging markets and in countries on the euro area periphery. In the first half of the period, rising trade tensions between China and the USA as well as the strengthening of geopolitical risks had a negative impact on developed markets as well. In the FX market the US dollar appreciated significantly, and the US 10-year yield rose above 3 percent, which through the capital outflow led to a swift increase in emerging yields (Chart 3-6). In the second half of May along with the decrease of US and other developed market yields, a slight downwards correction was observed in EM yields as well, but the signs of bond market tension were still visible at the end of the period. From the side of the euro, weaker euro area macroeconomic data as well as the uncertainty concerning the forming of the government in Italy may also have contributed to the strengthening of the dollar against the euro. The domestic political crisis in Italy had an unfavourable effect on asset prices of periphery countries. In the broader emerging market region several countries that are vulnerable from an external and fiscal balance perspective saw their yields to rise significantly.

Looking at the central banks of emerging countries, **during the past quarter the Turkish central bank raised the Late Liquidity Window interest rate, which can be considered the policy rate, first by 75 basis points from 12.75 percent to 13.5 percent,** then at an extraordinary meeting in May the decision-makers **decided on a further 300 basis-point hike as well as on unconventional measures** to mitigate market turbulence**.** As of June 2018, the central bank again considers the 1-Week Repo to be its policy rate, putting it at 16.5 percent. The decision-makers set a +/-150 basis-point interest rate corridor around the rate. **At their June meeting decision-makers increased the policy rate by another 125 basis points to 17.75 percent, and said they would continue the monetary policy restriction if it was needed.**

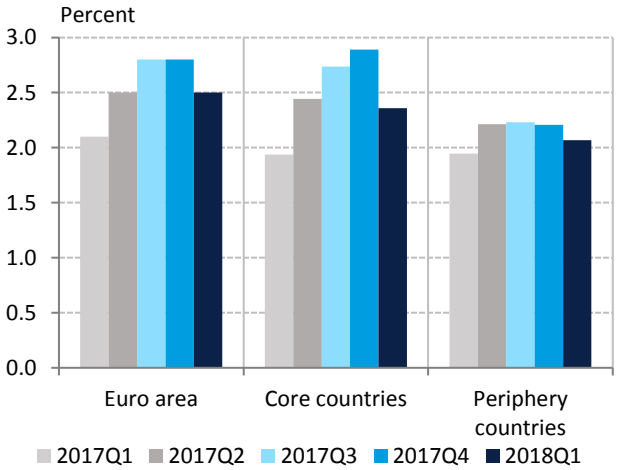
At the beginning of May Argentina's central bank increased **its policy rate three times** during a little more than one week **to stop the significant depreciation of the peso**

Chart 3-8: Major commodity price indices



Note: Calculated from prices in USD.
Source: World Bank

Chart 3-9: Annual changes in euro-area GDP



Note: Seasonally and calendar adjusted series. Periphery countries (Portugal, Italy, Greece, Spain), Core countries (Belgium, Germany, France, Netherlands, Austria).
Source: Eurostat

against the dollar. Following the two 300-basis-point interest rate hike the central bank increased the policy rate by 675 basis points at the beginning of May, thus raising it to 40 percent. As a result of the remarkable depreciation of the Argentine peso, Argentina turned to the IMF for financial support. According to the deal, Argentina will receive a 3-year, USD 50 billion standby loan from the IMF, but in turn it will execute a severe fiscal adjustment in the coming years.

In the period under review as a whole, **the US long-term yield rose by some 15 basis points, while the corresponding yield of the euro area changed direction** and sank 6 basis points **following an increase in the middle of the period**. Due to the domestic political crisis in Italy **the stock exchange price indices of periphery countries declined, their government security yields surged, and their credit risk premiums were up by 60–200 basis points** in May (Chart 3-7).

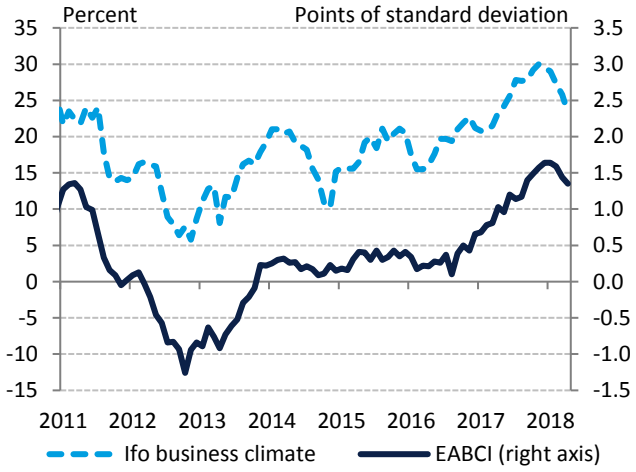
Oil prices increased in the past period overall, which may have been attributable to the ceasing of the oversupply in the oil market and the uncertainty surrounding the nuclear agreement with Iran. At the same time, the information leaking from OPEC about the intention to lift the production limit and the dynamic rise in US production may also have contributed to the trend reversal at the end of the period (Chart 3-8).

3.1.2. Developments in the euro area

Economic growth in the euro area continued in 2018 Q1 (Chart 3-9). The economy of Germany, Hungary's most important trading partner, expanded by 2.3 percent year on year. Expanding corporate investment and stable household consumption were the main contributors to growth. The growth of euro-area **core countries** exceeded that of the periphery, which was primarily attributable to the continued buoyant expansion in the German as well as the Austrian and Dutch economies. The Austrian economy expanded at a rate of 3.4 percent, while the Dutch economy posted growth of 3.0 percent in year-on-year terms. Economic growth rates varied across the **periphery countries** in Q1. The Greek economy grew by 2.3 percent year on year, which is the highest rate since the crisis. In parallel with the economic growth in Portugal, continued dynamic growth was observed in Spain. At the same time, the increase in the performance of the Italian economy was below expectations.

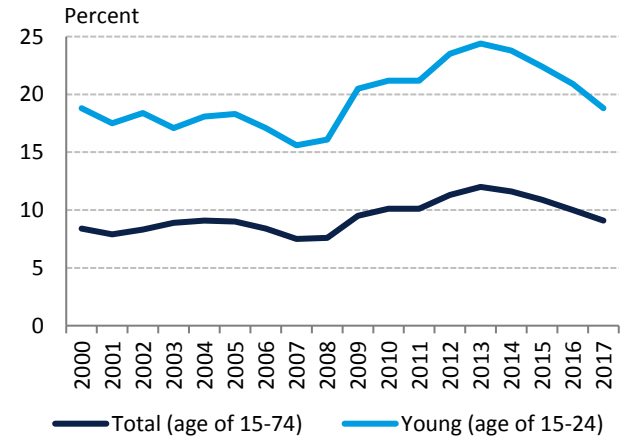
Forward-looking indicators of economic activity decreased in the past period (Chart 3-10). The business confidence index capturing the euro-area outlook (EABCI)

Chart 3-10: Business climate indices for Germany and the euro area



Source: European Commission, Ifo

Chart 3-11: Unemployment rate of the eurozone



Source: Eurostat

continued to decline slightly, and expectations concerning the German economy (Ifo) were also down compared to the first quarter. The companies surveyed are less optimistic about the business outlook. By historical standards, however, both indicators are at high levels. **Cyclical factors also contributed to the improvement in the economic activity of the euro area.** Nevertheless, the longer-term growth prospects involve high uncertainty due to slow expansion in productivity and the still high unemployment rates (Chart 3-11).

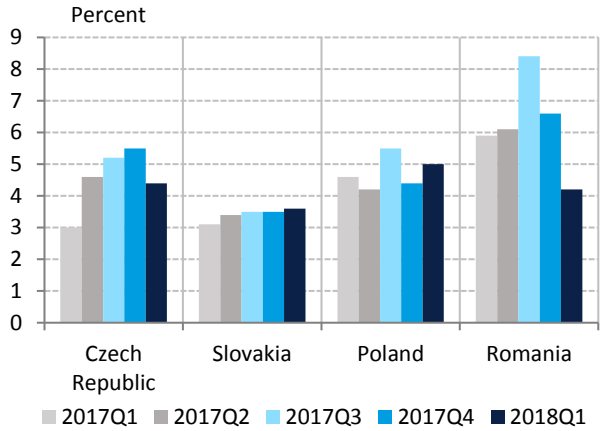
Average inflation in the euro area was 1.2 percent in 2018 Q1, followed by an inflation rate of 1.2 percent in April as well. Based on the preliminary data, the inflation rate rose to 1.9 percent in May, while core inflation remained subdued. Inflation is still below the central bank target in most of the Member States. Core inflation developments indicate restrained inflation dynamics. 5-year inflation expectations 5 years ahead increased slightly in the euro area, but they still fall short of the ECB's inflation target.

At its June meeting, the European Central Bank left its key interest rates unchanged. Regarding non-standard monetary policy measures, the Governing Council stressed that it will continue the asset purchase programme at the current monthly pace of €30 billion until the end of September 2018. After that, and subject to incoming data, the decision-makers anticipate the monthly pace of net asset purchases will be reduced to €15 billion, then in December 2018 net purchases will end. The principal payments from maturing securities purchased under the asset purchase program will be reinvested for an extended period of time after the end of the net asset purchases, and in any case for as long as the Governing Council considers it necessary. The Governing Council expects the key ECB interest rates to remain at their present levels at least through the summer of 2019 and in any case for as long as necessary to ensure that the evolution of inflation remains aligned with the current expectations of a sustained adjustment path. After the meeting, and in accordance with the decision statement, the market priced in the first interest rate hike for Q3 2019.

3.1.3. Developments in the CEE region

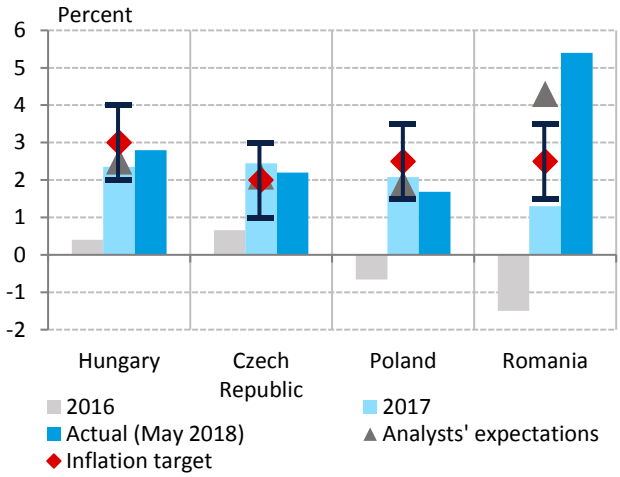
As in the previous quarters, the CEE region proved to be the engine of the European Union's growth in early 2018 as well (Chart 3-12). In Poland, economic expansion amounted to 5.0 percent, exceeding that of the previous quarter. Year-on-year GDP growth amounted to 3.6 percent in Slovakia and 4.4 percent in the Czech Republic in Q1. Looking at the region as a whole, growth was mainly supported by domestic demand. In Romania, following

Chart 3-12: Annual changes in GDP in CEE countries



Note: Seasonally and calendar adjusted series. In the case of Slovakia, only seasonal adjustment.
Source: Eurostat

Chart 3-13: Inflation targets of central banks, inflation, and economic agents' expectations



Note: Analyst's expectations relate to annual average in 2018.
Source: OECD, Trading Economics, National Institute of Statistics Romania, Consensus Economics

outstanding GDP growth in 2017, the economy expanded by 4.2 percent in the first three months of the year, thus returning to a more sustainable path.

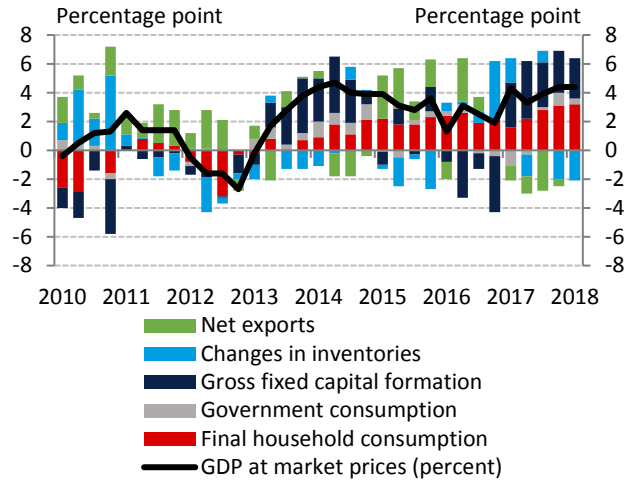
Inflation in the countries of the region increased in the past months (Chart 3-13). For most of the last quarter, inflation in the Czech Republic was somewhat below the central bank target, before increasing to 2.2 percent in May. In Poland, the pace of inflation rose, amounting to 1.7 percent in May. Rising to 5.4 percent in May, inflation in Romania exceeded the upper limit of the tolerance band around the inflation target. In parallel with the increase in inflation, core inflation rose in the Czech Republic, remained unchanged in Romania, and was at a moderate level in Poland during the period under review.

Looking at the central banks of the Central and Eastern European countries, the decision-makers of the Czech central bank kept their policy rate unchanged in the past period. Based on the central bank's forecast, raising the base rate is expected for end-2018 or the beginning of next year, but according to statements from some decision-makers the current conditions are also appropriate for an earlier interest rate hike. Inflation is expected to be below 2 percent before rising close to the target over the monetary policy horizon. **During the past quarter the Polish central bank's decision-makers did not change their monetary conditions.** The central bank's communication suggests that the base rate may remain unchanged until 2020. According to the decision-makers, inflation may be consistent with the target over the monetary policy horizon, as projected. As a result, the current level of the base rate is contributing to sustainable growth and the macroeconomic balance. Decision-makers highlighted at their April meeting that there was an increased probability of the interest rates remaining at their current level for longer than previously expected. **At its May rate-setting meeting, the Romanian central bank raised its policy rate by 25 basis points to 2.5 percent, and also shifted the ±1 percentage point interest rate corridor around the base rate upwards by 25 basis points.** According to the May Inflation Report, inflation is expected to increase further in the short run, before returning to the upper range of the tolerance band by end-2018.

3.2. Analysis of the production and expenditure side of GDP

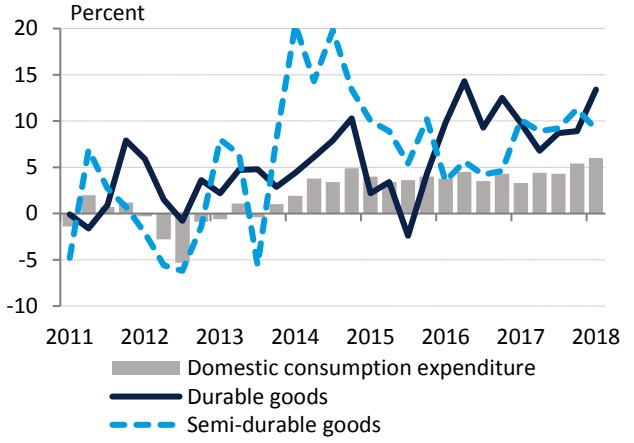
Economic growth accelerated further in the first quarter of the year. The 4.4 percent year on year of the gross domestic product was supported by wide range of sectors, therefore economic growth continued in balanced structure on a solid basis. Economic growth was still supported by growing domestic demand, in parallel with major contributions from market-based services. On the production side industry and construction increased further, however, due to first quarter one-off effects, they raised the GDP to a lesser extent only.

Chart 3-14: Contribution to annual changes in GDP



Source: HCSO

Chart 3-15: Development of consumption components, annual changes



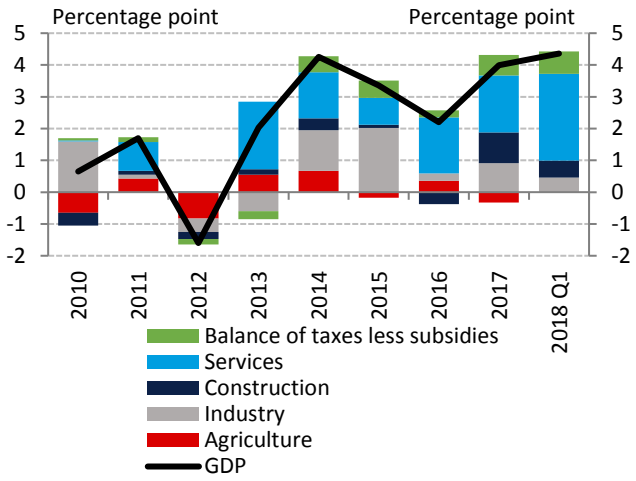
Source: HCSO

According to the HCSO, **gross domestic product increased by 4.4 percent year on year in 2018 Q1,** while expanded by 1.2 percent compared to the previous quarter. Economic growth was further supported by domestic demand through the continuing expansion in consumption and investment. The contribution of net exports to growth was neutral in the first quarter (Chart 3-14).

In 2018 Q1, expansion in household consumption continued. In parallel with an upswing in the housing market cycle, **the rise in spending on durable and semi-durable goods**, which have a high recovery potential, **continued to exceed the aggregate expansion in consumption**. The consumption of durable goods was up 13.4 percent, while purchasing of semi-durable goods expanded by 9.1 percent in Q1 (Chart 3-15). Growth was supported by historically high consumer confidence and net financial wealth as well as by a dynamic increase in wages and further expansion in employment (Chart 3-17). The increasingly dynamic consumption growth is underpinned by April's preliminary retail trade turnover as well, which shows a rise of 6,0 percent (Chart 3-19).

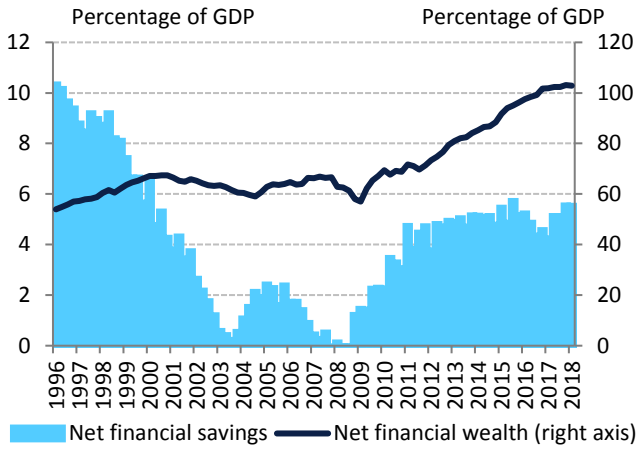
In 2018 Q1, **household loans outstanding vis-à-vis the financial intermediary system as a whole** increased by HUF 22 billion as a result of loan transactions. **Accordingly, a 2.3 percent growth was observed in annual terms.** The annual average increase in the volume of new loans from credit institutions was 37 percent. Within that, new housing loans and personal loans grew by 36 percent and 50 percent, respectively, during the quarter. In parallel with the cyclical upswing on the housing market, buoyant demand continues to be supported by the Home Purchase Subsidy Scheme for Families (HPS), linked to 14 percent of new housing loans. By the end of the quarter, 76 percent of the housing loans granted were with interest rate fixation of over one year, and half of the fixed-rate loans were certified as consumer-friendly housing loans. According to banks' responses to the Lending Survey, the conditions of housing and consumer loans may ease further in 2018, and banks expect continuing buoyant demand for housing loans. Demand in the housing market and the major increase in real income point to expansion in household consumption and investment.

Chart 3-16: Contribution to annual changes in the production of GDP



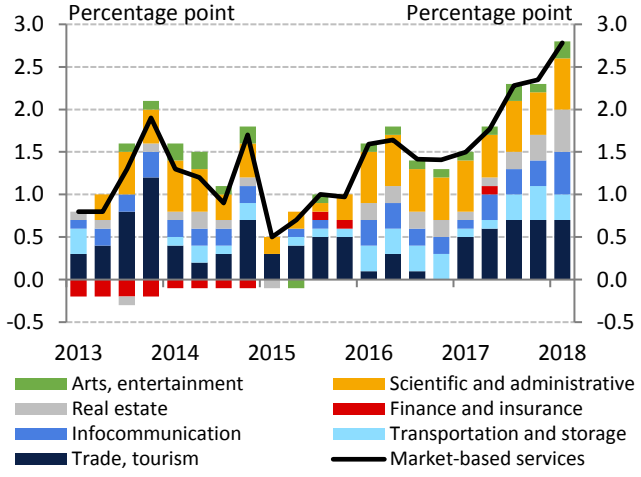
Source: HCSO

Chart 3-17: Net financial savings of households



Note: Seasonally adjusted series Source: HCSO

Chart 3-18: Growth decomposition of the subsectors of market-based services



Source: HCSO

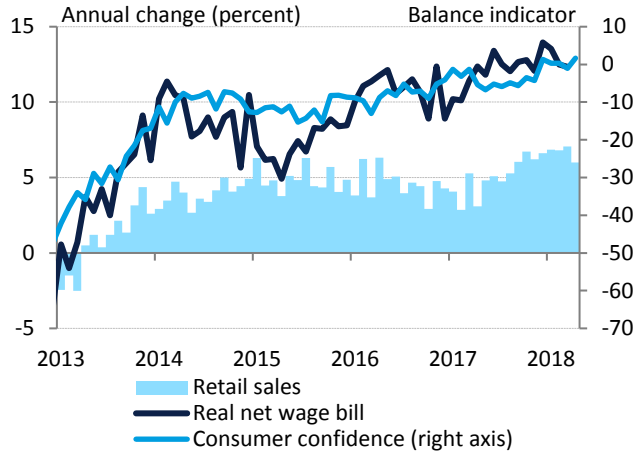
In line with a rise in domestic demand, market-based services contributed significantly to economic growth in Q1 (Chart 3-16)**. Value added increased in each of the market-based services**, while government-related services made a neutral contribution. ICT provided the strongest growth contribution, along with trade, accommodation services and hospitality, while the contributions from administrative services as well as the real estate transactions sectors were also significant (Chart 3-18).

Similarly to last year, in 2018 Q1 a further increase was observed in both public consumption and in-kind social benefits received from the Government.

In 2018 Q1, whole-economy investment rose by 17.3 percent year-on-year (Chart 3-20). Investment by companies producing goods and providing services for the domestic market accelerated considerably compared to the previous quarter, but the decline in the investment of the finance and insurance sector restrained the dynamics. Investment in the sectors producing mainly for external markets declined, while investment in the case of manufacturing, which has a high weight, was stagnant. This is attributable to the high base and the completion of some high-value projects (e.g. electronics). Nevertheless, in contrary to the stagnation, investment in various subsectors within manufacturing expanded significantly (vehicle manufacturing, production of chemical substances). Buoyant expansion in investment was also observed in public sectors (health, administration, education) and in sectors closely related to the public sector (energy, transport) – primarily as a result of developments implemented from EU and own funds. **In line with the buoyant investment activity, the dynamic increase in construction output continued in Q1.**

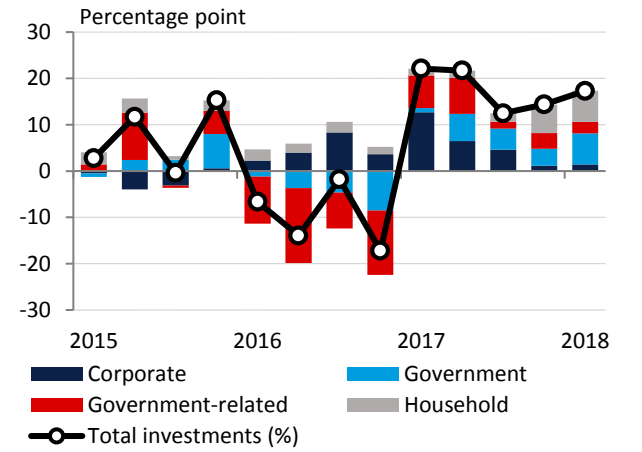
The upswing in investment is well reflected in corporate lending as well. Total corporate lending dynamics reached nearly 10 percent in 2018 Q1. During the quarter, non-financial corporations' loans outstanding vis-à-vis the financial intermediary system expanded by HUF 85 billion as a result of disbursements and repayments, representing a lower increase in loans outstanding compared to what is seasonally typical at the beginning of the year. As a result, **in annual terms, corporate loans outstanding and the SME sector's loans outstanding increased by nearly 10 percent and 13 percent, respectively** (Chart 3-21)**.** The annual volume of contracts concluded by credit institutions was 26 percent higher than a year before, which contributes to the further expansion in loans outstanding. Based on their responses to the Lending Survey, banks eased the credit conditions of the small and micro enterprises segment in

Chart 3-19: Developments in retail sales, income and the consumer confidence index



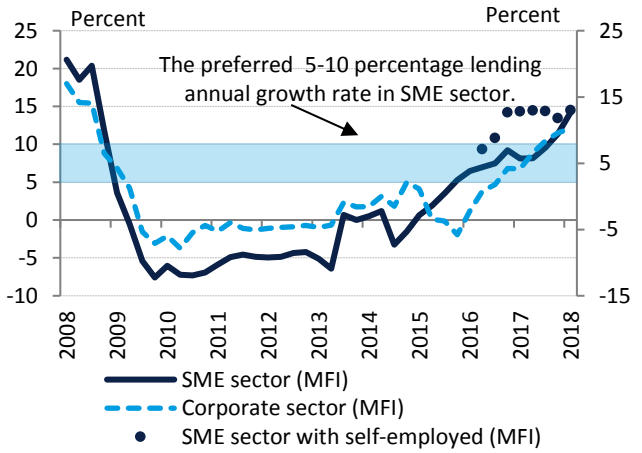
Source: Eurostat, CSO

Chart 3-20: Decomposition of the annual change of investments



Source: HCSO

Chart 3-21: Annual changes in lending to non-financial corporates and SMEs



Note: Data for corporate loans total are based on transactions. For SME loans, estimated transactions are applied from Q4 2013.
Source: MNB

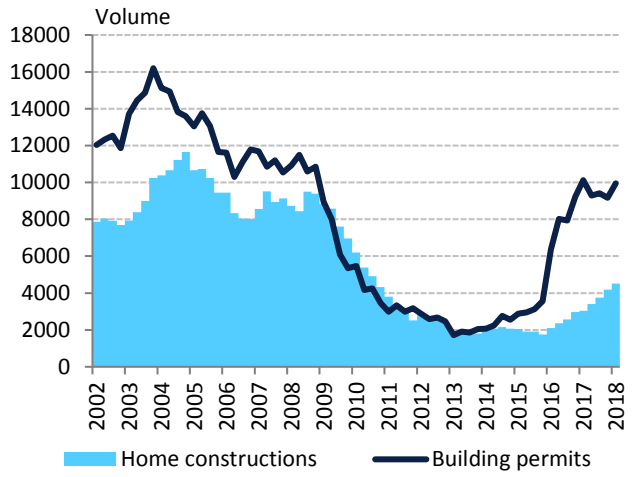
2018 Q1, which, according to their perception, was mostly reflected in the decline in the interest rate spread on loans. They justified the easing primarily with the increase in price competition among banks. The institutions participating in the survey reported that **credit demand was strengthening again both in the large companies and SME segments.** Looking ahead, they basically expect the present developments to remain, i.e. growing credit demand and a decline in spreads against the background of increasing competition among banks. In the case of commercial real estate loans, the responding institutions considered the conditions generally unchanged in Q1, but for the next half year already a net one fifth of banks plan some form of tightening.

Households' investment activity increased further in Q1, and the dynamic expansion in home-building continued in parallel with the favourable demand conditions (Chart 3-22). In line with the previously issued building permits, the number of newly-built homes that were handed over surged upwards, corresponding to a year-on-year increase of 64.7 percent. **As a result of the buoyant demand, house prices continued to rise** in 2018 Q1, driven by price changes for both pre-owned and new homes. Nevertheless, taking the composition effect into account as well, a slowdown could already be observed in price increases in the case of pre-owned homes in recent quarters. This is due to the fact that the share of homes outside the capital, which are typically sold at a lower price, rose in the number of transactions.

On the whole, the contribution of net exports to the growth of the Hungarian economy was neutral at the beginning of the year. In line with the developments in industrial production, the increase in goods exports decelerated in Q1 In spite of an increase in domestic demand items (household consumption, investment), the growth dynamics of goods imports also decelerated early in the year. The expansion in services exports continued in the first three months of the year. The increase domestic services exports seen in the past quarters was related to the exports of financial and other business services in addition to tourism and transportation services. Services imports were down at the beginning of the year, thus **the balance of services increased considerably** (Chart 3-23). The **annual dynamics of total exports was** slightly **exceeded by import growth; therefore on the whole the effect of net exports on economic growth was neutral in Q1.**

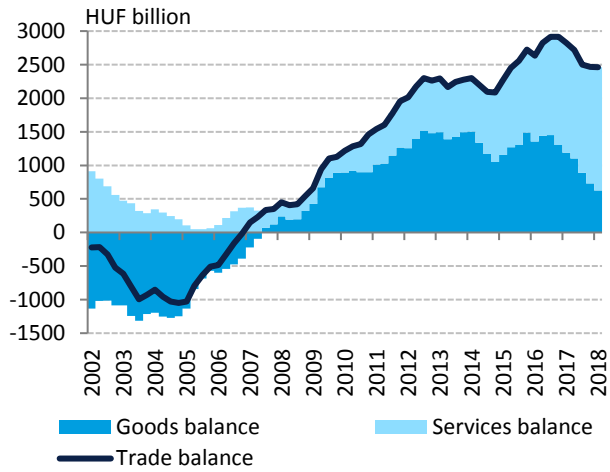
Agricultural performance have not changed considerably compared to same period of the previous year. This year's crop yield will only be available in the second half of the

Chart 3-22: Evolution of home constructions and building permits



Note: Seasonally adjusted data.
Source: HCSO

Chart 3-23: Evolution of the trade balance



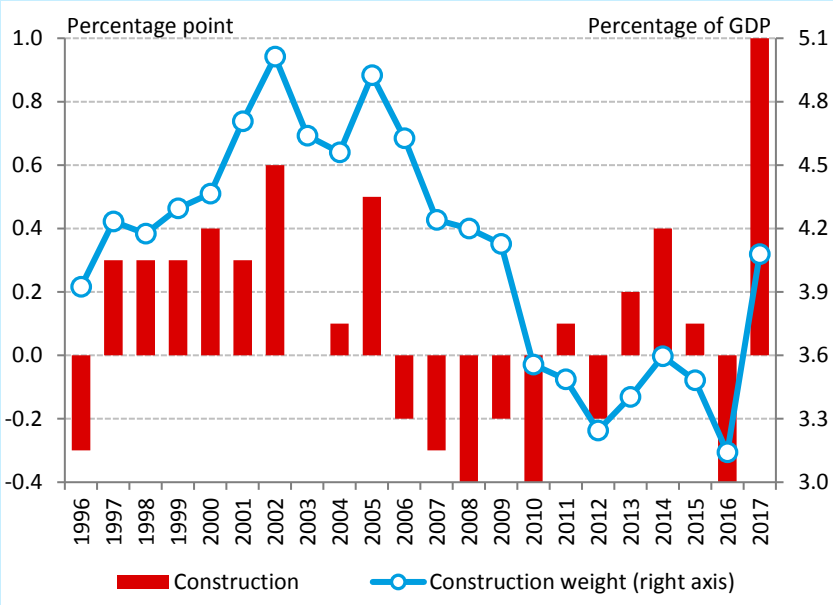
Note: Seasonally adjusted, 4-quarter cumulated values, in 2005 prices.
Source: HCSO

year, when the HCSO could revise the growth contribution of the first quarter. However, following the unfavourable performance of agriculture last year, we expect a positive correction this year. As a result of the high base from the previous year, change in inventories slowed economic growth down significantly in the first quarter.

Box 3-1: Challenges to construction output

The weight of construction within Hungarian GDP has never exceeded 5 percent in more than 20 years. At the same time, the value added of the sector is highly volatile, and in many cases works as litmus paper for the whole macroeconomic activity. The performance of the sector reflects the current state of the economic cycle and the expected developments in growth as well. Therefore, we devote special attention to following the developments taking place in the sector. **Despite its low weight, construction caused volatility in domestic GDP growth** (Chart 3-24). Last year, the sector's contribution to growth was a historically high 1.0 percentage point.

Chart 3-24: The growth contribution and weight of construction in GDP growth

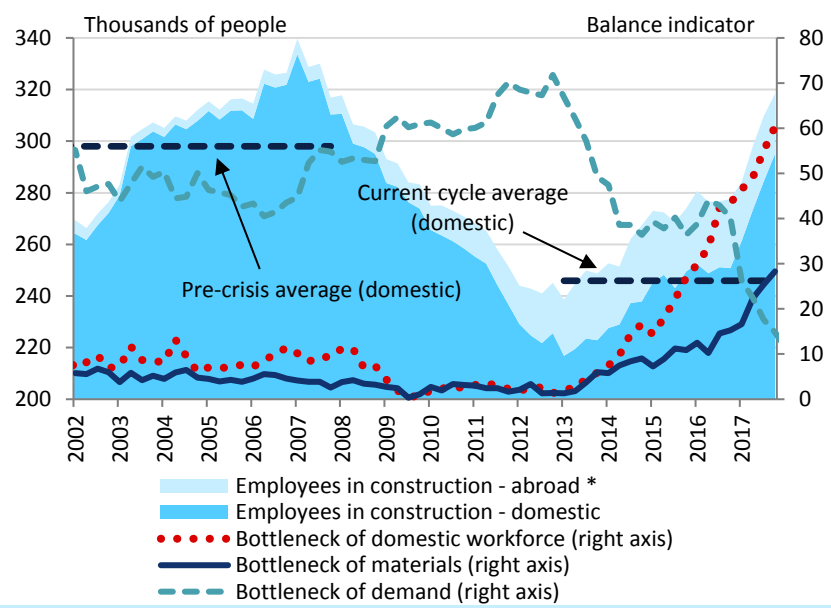


Source: HCSO

We expect continued construction investment both in the public and private sectors in the period ahead. Accordingly, demand for the sector's products and services will continue to increase dynamically. However, in line with our macroeconomic analysis there are constraints in construction as well, meaning supply will also likely be able to adjust to the increase in demand more slowly and probably not completely (Chart 3-25). In the past period, the unemployment rate declined to 3.8 percent as a result of the dynamically expanding employment. The number of those employed in construction in Hungary was higher prior to the crisis, since a significant portion of Hungarian construction workers work abroad, thus **at present some 40 thousand skilled workers are missing from the construction sector[3]. The tight labour supply is a significant challenge for the sector, although more and more technological developments (e.g. 3D printing) offer solutions for capital–labour substitution.**

[3] See for details: Housing Report, May 2018., MNB.

Chart 3-25: Number of employees in construction



Note: *With household in Hungary.

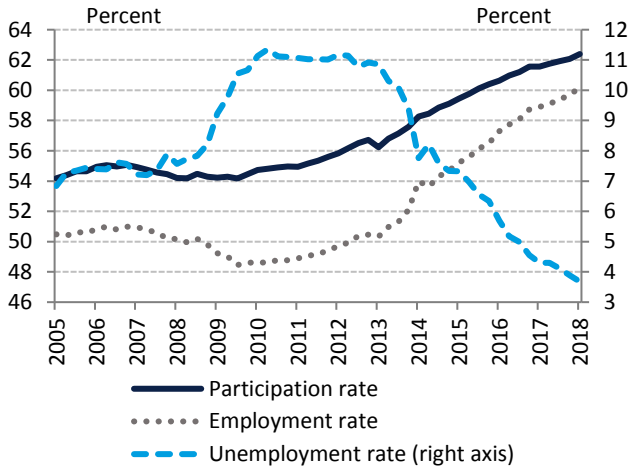
Sources: HCSO, Eurostat

In the recent period, in line with the simultaneous upswing of expansion in corporate production facilities, public investment projects and the housing market cycle, and in addition to the demand for domestic labour, **the demand for construction materials has also increased considerably.** Due to the capacity constraints of the domestic supply chain, construction companies' demand for products manufactured abroad may increase, and thus the domestic **construction industry's import requirement might have increased in the past period** (import demand for construction materials may have risen from 40 percent at the turn of the millennium to above 50 percent recently). **Accordingly, the increased import ratio may represent lower value added in spite of the high output of the sector.**

3.3. Labour market

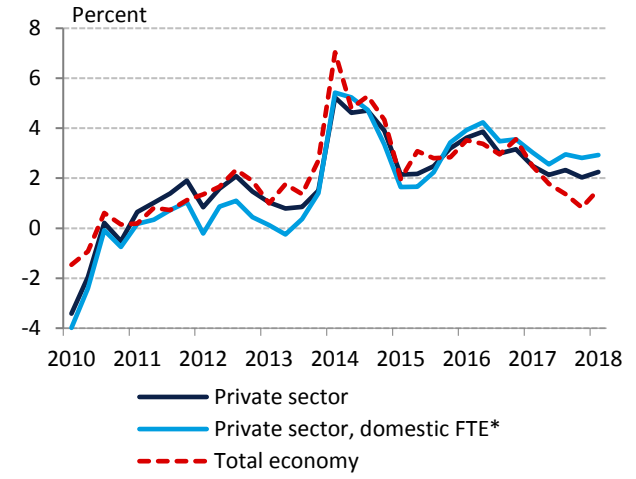
Headcount in the private sector increased further in 2018 Q1, with continued contributions from the employment expansion in manufacturing and construction. In line with the growth in whole-economy employment, the seasonally adjusted unemployment rate declined to 3.7 percent.

Chart 3-26: Participation, employment and unemployment rate in the total economy



Note: Seasonally adjusted data.
Source: HCSO

Chart 3-27: Annual change of main employment indicators



Note: *Full-time equivalent employment, excluding cross-border workers.
Source: MNB calculation based on HCSO data

In 2018 Q1, the activity rate of the 15–64 age group was 71.4 percent. The decline in the population aged 15–74 was lower than last year. Within that, based on seasonally adjusted data **the ratio of those active rose to 62.4 percent, while the employment rate increased to 60.2 percent** (Chart 3-26).

Whole-economy employment expanded by 1.5 percent in annual terms, with contributions from increases in employment in both the public and private sectors. Within the public sector, a further decline was observed in the number of participants in public work programmes, but employment excluding public work increased at a higher rate.

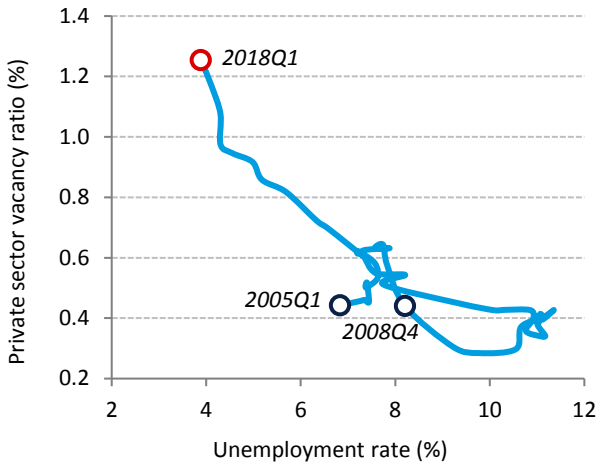
Expansion in employment in manufacturing and construction continued to contribute to the increase in the private sector headcount, while employment in the market services sector declined slightly. Companies adjusted themselves on the intensive side as well; with the decline in the number of those underemployed, the ratio of part-time employees could decrease. The number of those working at sites abroad declined to 96.5 thousand in Q1. As a result of these factors, **the domestic full-time equivalent headcount increased faster than the number of employees** (Chart 3-27).

The increase in employment still exceeds the expansion in activity, thus **the seasonally adjusted unemployment rate declined to 3.7 percent**.

3.4. Cyclical position of the economy

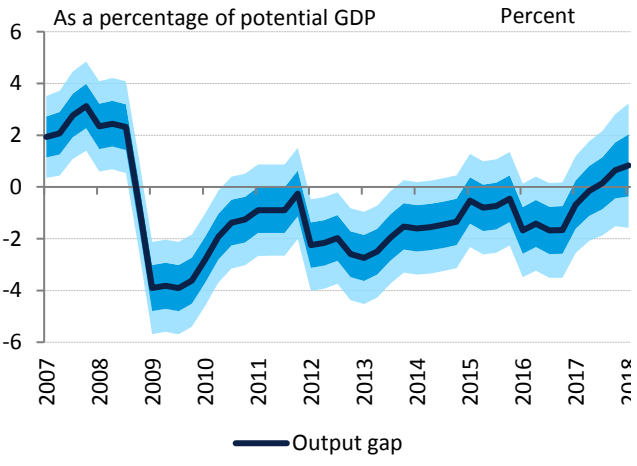
According to our estimate, Hungarian output was around its potential level in 2018 Q1. The closing of the Hungarian output gap is suggested by the buoyant domestic demand, the rising capacity utilisation of domestic production units, and the increasing labour market tightness. In parallel with the closing output gap, expanding the supply side of the economy becomes decisive for the sustainability of growth. Fiscal policy can raise potential growth through specific measures aimed at improving competitiveness and increasing productivity while maintaining macroeconomic stability.

Chart 3-28: Development of the Beveridge-curve



Note: The private sector vacancy ratio indicates the ratio of private sector vacancies to active workers. Seasonally adjusted data.
Source: MNB calculation based on HCSO data

Chart 3-29: Uncertainty band of the output gap



Note: The blue area shows the estimation uncertainty band.
Source: MNB

Based on the number of vacancies, corporate labour demand continued to increase both in manufacturing and the market-based services sector. The Beveridge curve still shows tightening labour market environment (Chart 3-28). The **majority of the surveys capturing corporate business sentiment** and capacity utilisation **increased further.** Similarly, as in the previous quarters, **companies' responses revealed that labour was a bottleneck** for production. In case of the industrial sector, the ratio of companies indicating workforce as a primary factor limiting production was near historically high levels in 2018 Q1. However, the employment rates increased further in the previous period.

The historically low unemployment rate also corroborates that **utilisation of the labour factor increased considerably in the past period and it is also high by historical comparison**. The significant expansion in employment and accordingly to this, the decline in the unemployment rate have contributed to better capacity utilisation in the previous years.

According to our estimate, the Hungarian output was around its potential level in 2018 Q1 (Chart 3-29)**.** The gradual closure of the output gap observed last year was strongly influenced by the buoyant domestic demand. Estimates show that **at the end of last year the euro area output gap was still slightly open, and it is expected to close during 2018**.

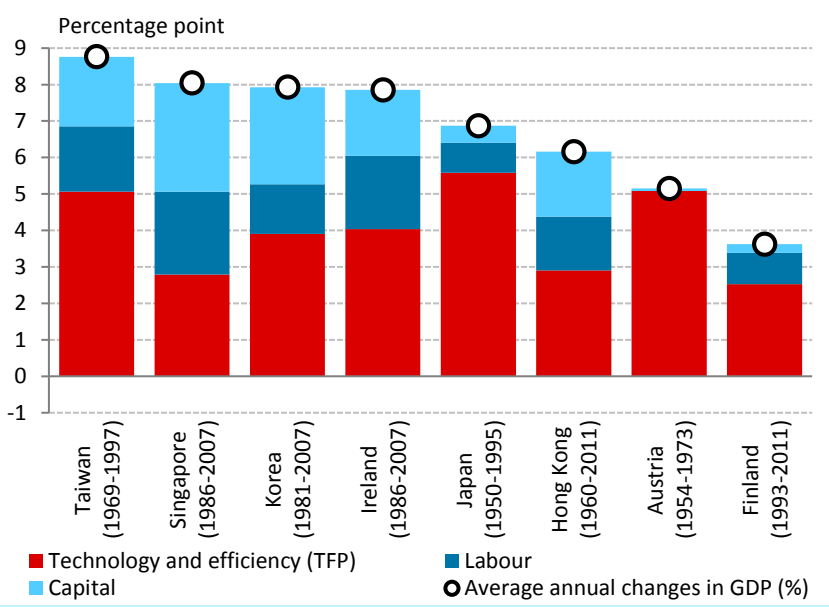
Box 3-2: Improving competitiveness to sustain economic convergence

In parallel with the closing output gap, expanding the supply side of the economy becomes decisive for the sustainability of growth. We presume that GDP growth will decline to below 3 percent by 2020, so it may be possible to ensure sustainable convergence through improving competitiveness and increasing productivity, while preserving stability. After stabilising the external and domestic financing situation of the Hungarian economy following the crisis, **real economic convergence compared to the euro area restarted in 2013**. In the past period, average annual GDP expansion exceeded 3 percent, while the gross government debt ratio declined and the debt situation of the private sector also improved. The unemployment rate fell to its historical low as a result of the measures facilitating the supply adjustment of the labour market and the increase in labour demand of the private sector.

Demographic developments (expected decline in working-age population and the ageing of society) **will increasingly limit** the expansion in employment in the coming decades; therefore, in addition to quantitative factors it is essential **to take qualitative characteristics into account and improve competitiveness** as well. The box below describes the correlation between competitiveness and the level of economic development, devoting special attention to exploiting productivity potential.

In the past nearly seven decades, **persistently strong real economic convergence was identified only in relatively few countries** (Chart 3-30). The economies of the **East Asian 'tigers'** (South Korea, Hong Kong, Singapore, Taiwan) expanded dynamically for decades, thus they rose into the group of the most developed countries on the basis of GDP per capita. The **Japanese** GDP increased by an annual average of nearly 7 percent between 1950 and 1995. By historical comparison, the growth of **Ireland** (1986–2007), **Austria** (1954–1973) and **Finland** (1993–2011) deserve a mention among European countries as their economic performance expanded strongly over nearly twenty years. Although the countries successfully converging are not uniform in terms of geography, culture, society or economic structure, what is common in all of them is that the **buoyant economic growth of several decades was stimulated by the application of developed technology and by greater efficiency**.

Chart 3-30: Growth characteristics of successful international convergence periods

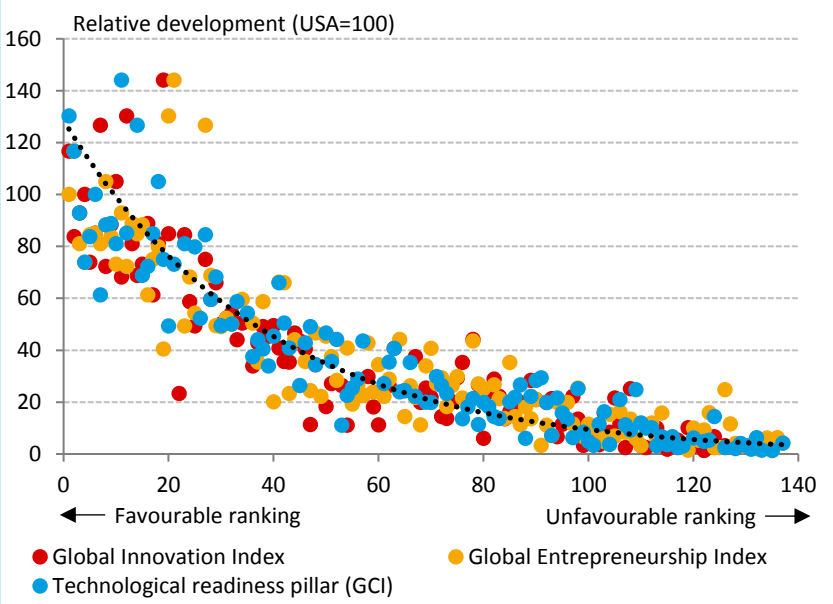


Sources: Penn World Table, MNB estimation

Sustainable long-term economic growth is based on increasing productivity, which can be implemented through improving competitiveness. In addition to the quantity of labour and capital involved in production, their efficiency and the level of applied technology also significantly influence the growth performance of economies. Accordingly, an **adequate quality of human capital**, **fostering domestic innovation**, **high entrepreneurial willingness and abilities**, **efficiently functioning institutions** as well as **developed physical and digital infrastructures** are essential for increasing competitiveness. Based on international comparisons it is eye-catching that the **level of economic development** (measured

by GDP per capita) **of more competitive and more innovative countries is higher** (Chart 3-31). Infrastructure, education system, entrepreneurship and research are advanced in Switzerland, the USA, Sweden, Finland, the Netherlands, Singapore, Hong Kong, Germany or the United Kingdom, which belong to the group of the most developed countries; furthermore, these are also leading countries in the development and application of modern technologies.

Chart 3-31: Relationship between competitiveness and economic development

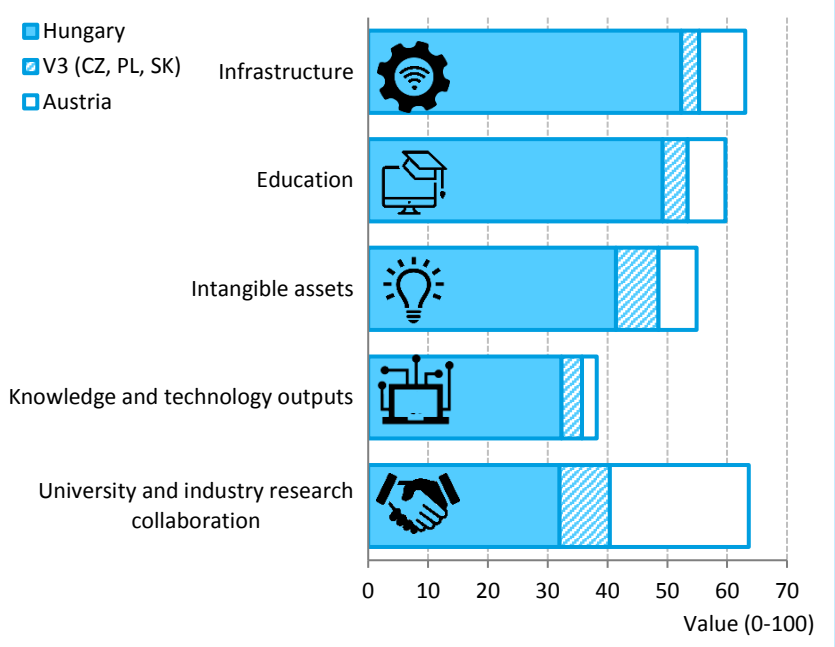


Note: Based on the countries' ranking in the Global Innovation Index (2017), Global Entrepreneurship Index (2018) and the technological readiness subindex of the Global Competitiveness Index (2017–2018).
Sources: Maddison Project Database, WEF, GEDI, Cornell University–INSEAD–WIPO

Strengthening competitiveness is indispensable for ensuring Hungary's long-term, sustainable real economic convergence.[4] Hungary's performance in the fields of developed infrastructure, education and training as well as innovative capabilities are below that of the Visegrad countries or Austria (Chart 3-32). Accordingly, in parallel with preserving full employment, the application of modern technologies and raising capital intensity are of key importance. For sustainable convergence, it is essential **to reduce corporate duality**, to **improve the SME sector's economies of scale**, **financial stability** and the **quality of physical and digital infrastructure**. The **development of human capital** is of primary importance because unfavourable demographic developments mean the quantity of labour that can be involved in production may be limited in the coming decades. In addition, the increase in productivity may be facilitated by the **rise in the economy's value-creating ability** and a **reduction of the import requirement** of production.

[4] The book entitled 'Competitiveness and Growth' published by the Magyar Nemzeti Bank formulates proposals for improving Hungarian competitiveness; the implementation of these is also monitored in the Competitiveness Report of the Magyar Nemzeti Bank.

Chart 3-32: Competitiveness of Hungary compared to Visegrad countries and Austria

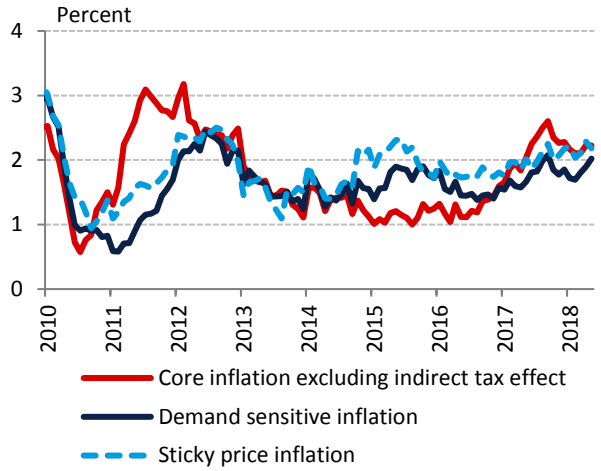


Source: Global Innovation Index (2017)

3.5. Costs and inflation

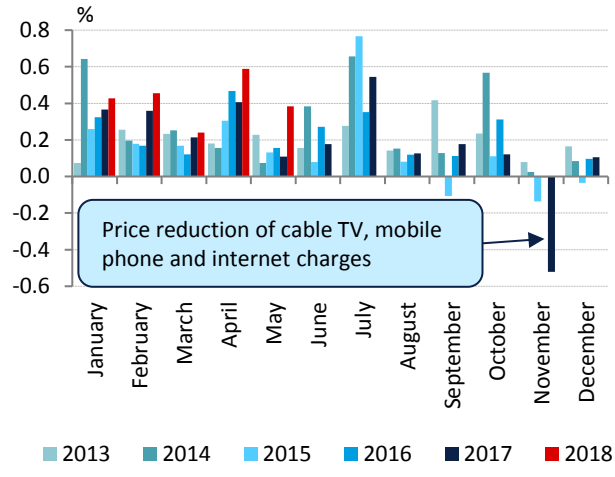
In spring months, inflation was close to the lower bound of the tolerance band, increasing to 2.8 percent in May owing to the significant rise in fuel prices. Core inflation has become stable around 2.5 percent in recent months. Indicators capturing longer-term inflation trends did not change significantly. The indicators are still around 2 percent, falling short of core inflation. Inflation expectations are still anchored at low levels. As a result of tight labour market conditions and hikes in the minimum wage and guaranteed wage minimum included in the wage agreement, gross average earnings in the private sector increased by 10.5 percent year on year in Q1. However, corporate cost growth is dampened by the reduction in the social contribution tax.

Chart 3-33: Underlying inflation indicators



Source: MNB calculation based on HCSO data

Chart 3-34: Price change of market services



Note: Adjusted for indirect tax effects. Percentage change compared to previous month.
Source: MNB calculation based on HCSO data

3.5.1. Consumer prices

In spring months, inflation stayed close to the lower bound of the tolerance band. In May, it increased to 2.8 percent, which was primarily attributable to a significant increase in fuel prices. Core inflation has become stable around 2.5 percent in recent months.

Indicators capturing longer-term inflation trends (the inflation of demand-sensitive and sticky-price products) **did not change substantially**. The indicators continue to be around 2 percent and still fall short of core inflation (Chart 3-33).

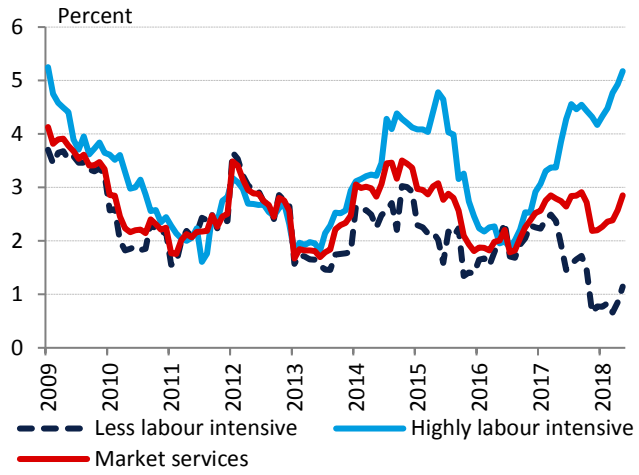
Price increases of industrial goods were restrained in the past months. Within this product group, the seasonally adjusted prices of durables declined, primarily owing to the price developments of used cars, while the prices of non-durable industrial goods rose because of articles of clothing and air fares. Prices of industrial goods continue to be influenced by the mutually opposing effects of moderate import prices and the steady pick-up in domestic demand.

Market services inflation was slightly up in the past months. The price rise of market services observed in the spring months somewhat exceeds the price dynamics of the same period last year. Within this group, accelerating price dynamics were experienced mainly in the case of highly labour-intensive services, with the price increases of accommodation services as the primary contributor (Chart 3-34 and Chart 3-35).

Seasonally adjusted **consumer prices of food** – excluding taxes – **increased slightly in the past months**, with contributions from both unprocessed and processed food**.** Within unprocessed food, mainly the prices of pork, potatoes, fresh vegetables and fruits were up, while in the case of processed food a wide range of products contributed to the increase.

Over the past period, world oil prices expressed in dollars have risen substantially. **In addition, the depreciation of the euro against the dollar has also increased the euro-denominated oil prices.** In line with changes in oil prices,

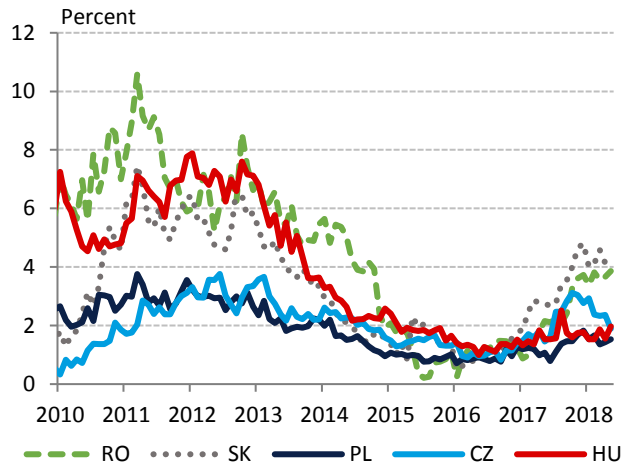
Chart 3-35: Inflation of market services



Note: Highly labour-intensive market services include accommodation, catering, education, healthcare and personal care services.

Source: MNB calculation based on HCSO data

Chart 3-36: Inflation expectations in the region



Source: MNB calculations based on European Commission data

fuel prices rose substantially in the spring months. There were no major changes in the case of regulated prices in the past months.

In the past period, core inflation was in line with our March forecast. Inflation was higher than the previous Report, which is explained by the rising oil prices since April.

3.5.2. Inflation expectations

Hungarian households' inflation expectations are still at moderate levels, indicating the anchoredness of expectations. Expectations in Hungary were in line with the expectations observed in the countries of the region, which were characterised by steadily low inflation in the past as well (Chart 3-36).

In line with the inflation developments, the price expectations of the enterprises in the retail sector remained practically unchanged in the past period (Chart 3-37)**.**

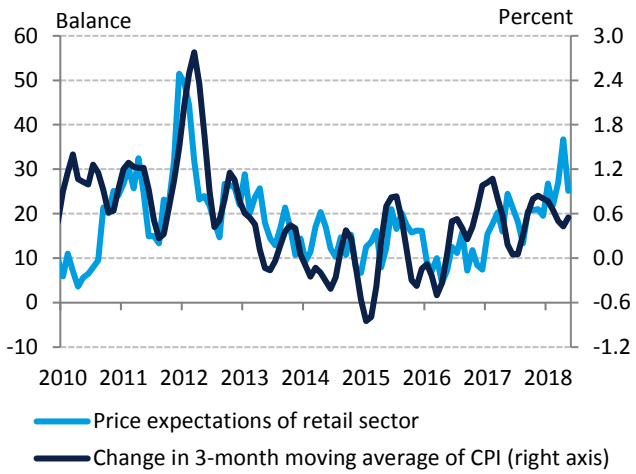
3.5.3. Wages

In 2018 Q1, gross average earnings in the private sector rose by 10.5 percent year on year (Chart 3-38). In addition to the historically tight labour market environment, hikes in the minimum wage and guaranteed wage minimum included in the wage agreement contributed to the buoyant wage dynamics. **The gradual deceleration in wage dynamics during Q1 can be considered general in a wide range of sectors**, but the wage increase is still greater in the sectors that pay below the average wage than in the ones where wages are above the average.

Changes in wages early in the year were influenced by the minimum wage increases, which were lower than in the previous year, and by increases in earnings at state-owned companies (classified into the competitive sector). Compared to the previous month and exceeding the historical average significantly, regular earnings increased by 4.8 percent in March, which contains the general pay rises as well and has a major impact on the underlying wage trend. **The persistently strong underlying wage trend was explained by economic growth and the tight labour market conditions.**

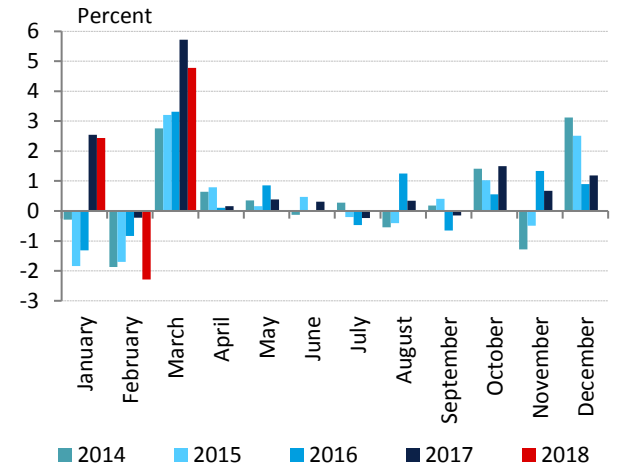
Due to the cut in the social contribution tax at the beginning of the year, compensation per employee is increasing at a slower pace than gross wages. In 2018 Q1, the annual dynamics of the unit labour cost exceeded the growth observed in the previous quarter to a lesser extent, as a result of the slight deceleration in productivity growth.

Chart 3-37: Price expectations in the retail and services sector



Note: Price expectations for the next 3 months.
Source: European Commission

Chart 3-38: Monthly changes in regular wages in the private sector



Source: MNB calculation based on HCSO data

3.5.4. Producer prices

Agricultural producer prices increased moderately in 2018 Q1 year on year. This is primarily attributable to the slowing price dynamics of milk and eggs. Overall, the prices of seasonal products declined slightly year on year; the drop in the price of potatoes and vegetables was partly offset by an increase in the price of fruits. The producer price of cereals rose, mainly due to quality problems concerning last year's harvest, which was lower than in 2016.

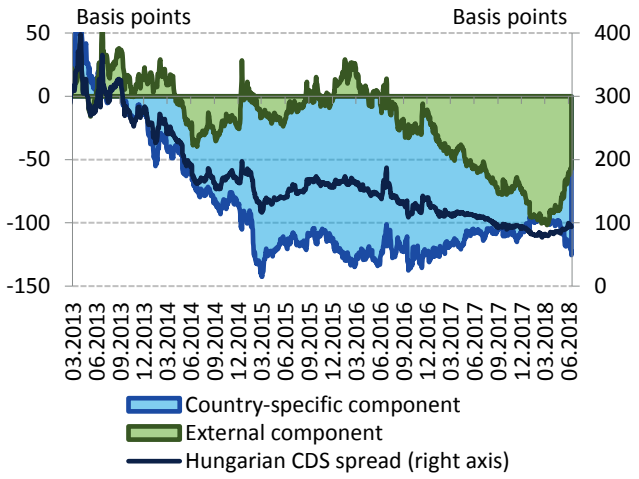
The producer prices of consumer goods rose slightly, while domestic sales prices of the industry as a whole increased in line with the historical average year on year.

4. Financial markets and interest rates

4.1. Domestic financial market developments

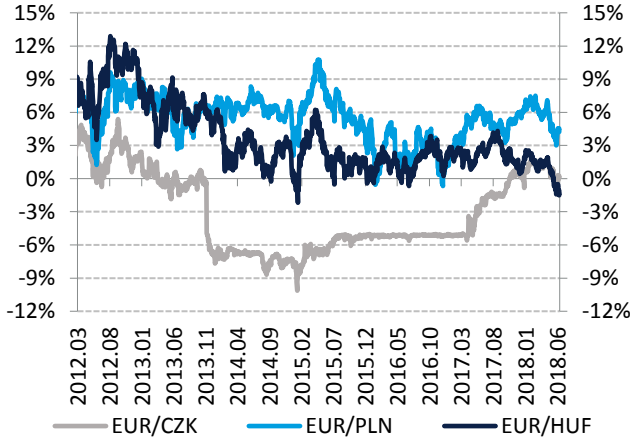
In the past quarter, risk appetite declined primarily in the emerging markets and in euro-area periphery countries. In the first half of the period, the tensions between China and the United States, and the strengthening of the geopolitical risks had a negative impact on developed markets as well. In the foreign exchange market, the dollar appreciated substantially and the ten-year US yield rose above 3 percent, which was accompanied by soaring emerging market yields through the start of capital outflows. In the second half of May, the decline in US and other developed market long-term yields caused a minor adjustment in the emerging market bond yields. The domestic political crisis in Italy had a negative impact on the asset prices of the periphery countries. Within the emerging region on the whole, a substantial rise was registered in the yields of countries more vulnerable in terms of their external and fiscal balance, while yields in the CEE region, with more favourable fundamentals and growth prospects, rose to a lesser extent. The money market developments of the Central and Eastern European region were determined by events in the developed and emerging markets. In line with the deterioration in market sentiment, yields in the CEE region also rose. The forint, together with most currencies of the region, depreciated slightly against the euro.

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. Hungary's risk perception

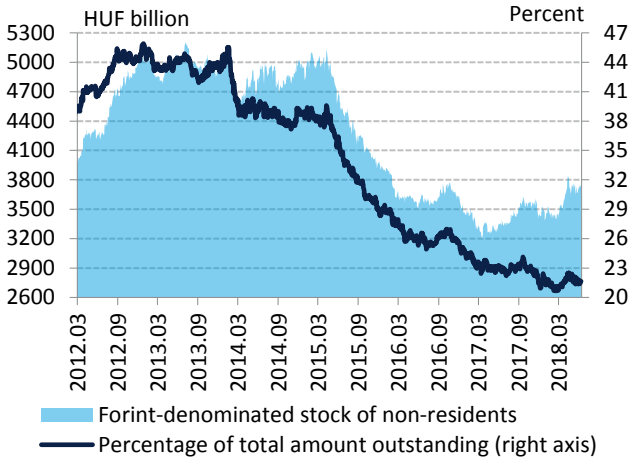
Hungary's risk indicators deteriorated slightly compared to mid-March (Chart 4-1). **The minor rise in the Hungarian credit risk spread was caused primarily by international factors.** Despite the moderate rise, in a historical comparison the Hungarian 5-year sovereign CDS spread remained at a low level during the period as a whole, which was due in part to the spread-decreasing effect of the domestic component. The spreads of other CEE countries responded similarly to the global turbulence.

The rise in the emerging market yields caused the Hungarian long-term yields to increase more than was observed for most countries of the region. Spreads on the forint interbank and government bond yields rose in the past quarter compared to the ten-year euro yields.

4.1.2. FX market developments

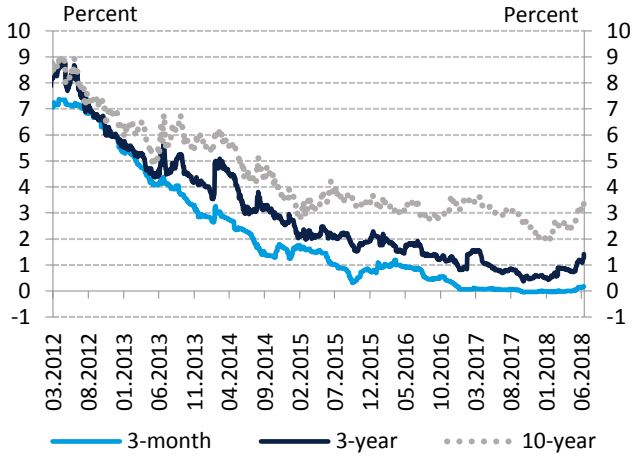
The forint exchange rate depreciated by roughly 2.5 percent against the euro, while the Czech koruna and the Polish zloty depreciated to a somewhat lesser degree, and the exchange rate of the Romanian leu remained unchanged (Chart 4-2). Since mid-March, the forint exchange rate has fluctuated in a wider band than before, i.e. 310-321.5. In the first half of the period the forint appreciated slightly, and then, from mid-April, it continuously depreciated, fluctuating close to 318-321.5 at the end of the period. The depreciation of the forint, together with the currencies of the region, is attributable to international impacts. Due to the more substantial appreciation of the dollar and the international risk aversion, the currencies of the CEE region depreciated by 5-7 percent against the US currency; however, the more

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



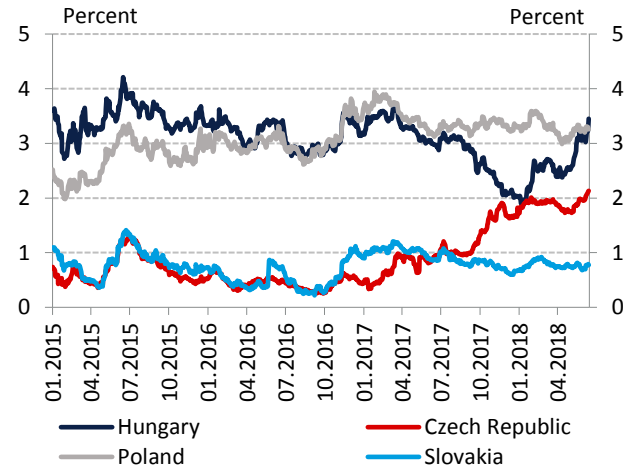
Note: The chart shows the stock of T-bills and T-bonds and the amount of government securities held by non-residents; retail securities are not included. Source: MNB

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

vulnerable emerging market currencies depreciated to a much greater degree than this, by more than 10 percent.

4.1.3. Government securities market and changes in yields

Non-residents' HUF-denominated government securities holdings rose in the past quarter (Chart 4-3). Following a practically continuous decline since 2015, non-residents' HUF-denominated government securities holdings first stabilised and then, from March 2018, started to rise. In the past quarter, despite the emerging market turbulence, the holdings have increased by roughly HUF 192 billion, while the ownership ratio of non-residents has remained steadily close to 21.5 percent, since the total Hungarian net government securities issuance also rose substantially in the meantime.

Demand in the primary market of government securities was strong even under the increased supply. In the case of longer-term securities, the Government Debt Management Agency often accepted higher amounts than what had been announced. Short-term treasury bill yields were up roughly 10-15 basis points, while medium- and long-term average auction yields tracked the international rise in yields and increased significantly, by 20-50 basis points.

The government securities secondary market yield curve became steeper as a result of a stronger rise in long-term yields (Chart 4-4). Short-term secondary market yields rose by 20-35 basis points, while the longer section of the yield curve shifted upwards by 40-75 basis points. In line with the introduction of the central bank's new monetary policy instruments and the communication of the central bank, long-term Hungarian yields declined substantially between September and mid-January, and then started to rise gradually. The 10-year yield stood at 3.45 percent at the end of the period.

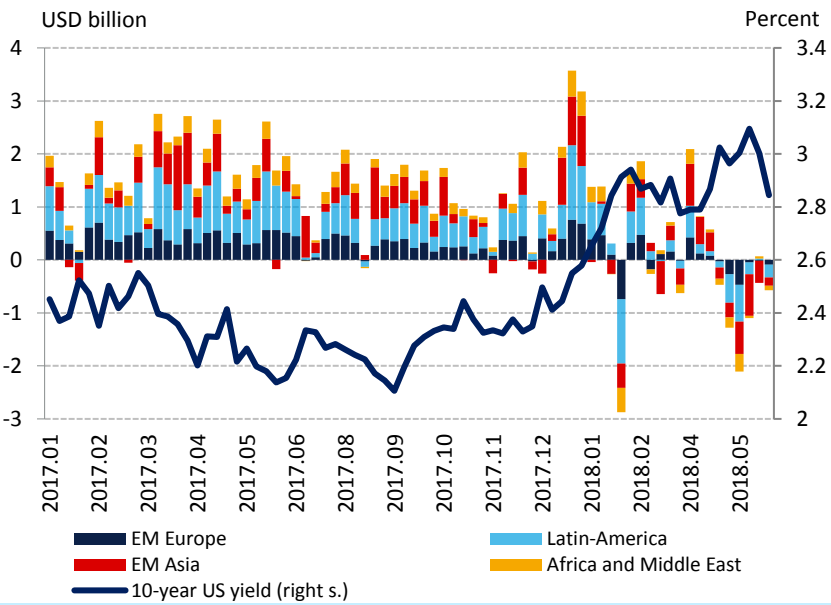
During the past quarter, Hungarian short-term interbank yields rose by around 10-15 basis points. The middle and longer segments of the interbank forward yield curve rose more substantially, similarly to the government security market yields, and thus the interbank yield curve also steepened.

Long-term benchmark yields varied across the region during the quarter (Chart 4-5). While the ten-year forint yield rose by 95 basis points compared to mid-March, the Polish and Slovakian long-term benchmark yields did not change, and the Czech yield rose moderately. The yield increase, observed from late April and generated by international sentiment, was experienced in the region as well, but in several cases it has merely offset the stronger decline registered at the end of March.

Box 4-1: Despite capital outflows from emerging markets, CEE countries are not in market focus

In the past period a number of strong factors affected the market sentiment simultaneously. One of the most important was the dynamic rise in US yields since the beginning of the year, as a result of which the **yields of 10-year US government securities reached 3 percent.** In connection with this, the **emerging markets experienced a capital outflow**, which practically affected all emerging regions (Chart 4-6). In the varying environment, the markets of certain countries deemed more vulnerable (primarily Argentina and Turkey) came under strong pressure. In addition, as a result of the political developments, the **markets of Italy were also hit**, which – due to contagion concerns – also affected other Southern European markets and the entire euro area. In the uncertain market environment, the **fast rise in oil prices also received special attention from the market due to the potential inflationary effects**, and it became a relevant factor also in terms of the market perception of certain oil exporter and oil importer countries.

Chart 4-6: Weekly emerging bond market capital flows and developments in 10-year US government securities

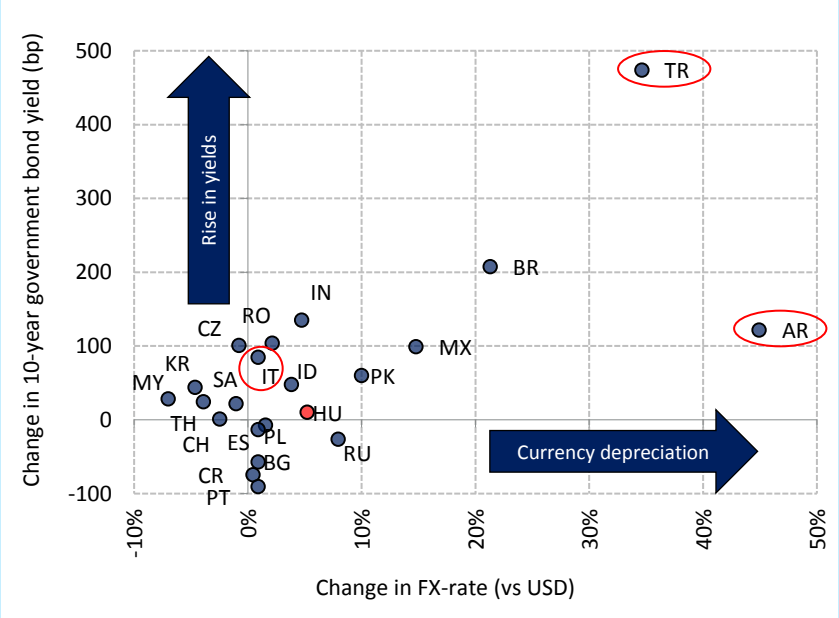


Source: EPFR

Changes in exchange rates and in the long-term government bond yields reflect the developments of the past period (Chart 4-7). Based on this, it should be emphasised that in the aforementioned cases of **Turkey and Argentina there were extreme exchange rate and yield fluctuations.** However, it is also clear that **market participants differentiate in the case of less affected countries too.** In this regard, Brazil and Mexico appear to be particularly affected.

As regards domestic market processes, since the beginning of April there has been a **yield increase that outstripped the average of the region,** which in the case of the 10-year government securities meant growth of around 60 basis points. The forint, similarly to the Polish zloty, depreciated by 7 percent against the US dollar, which is largely attributable to the depreciation of the euro against the dollar by 5 percent. Upon assessing the yield developments, it should be emphasised that in connection with the MNB's measures **the Hungarian government securities market registered a major decline in yields from September 2017.** Due to this, and despite the major rise observed in recent weeks, the forint yields returned close to their values registered last September. Compared to September, **there was only a minimal shift in the yield in Poland as well, while the Czech and Romanian long-term yields rose by about 100 basis points.**

Chart 4-7: Market shift in emerging countries and in euro-area periphery countries since September 2017



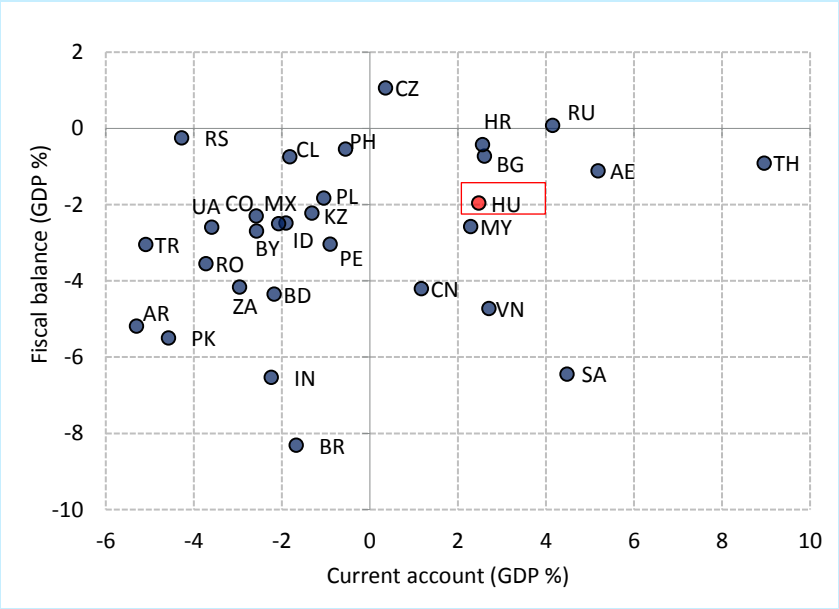
Source: Bloomberg

Based on the experiences of the past weeks, we can say on the whole that the differentiation related to changes in market sentiment mean the **focus is once again on the vulnerability indicators of certain countries and regions.** In this regard, most market participants highlighted countries with **twin deficits**, struggling with external and internal balance problems, as those more vulnerable (Chart 4-8).

In addition, noticeably greater market attention is directed to the level, structure and dynamics of **government debt**, the changes in gross and net **external debt**, the resilience of the **banking sector**, **foreign exchange adequacy**, and to **growth** and **inflation** figures.

In the case of the closely monitored indicators, the situation of Hungary (and the CEE region) has improved substantially in the past years. This may contribute to the fact that - based on market movements and published opinions - **Hungary and the countries of the region fall outside the focus of the market, despite the increased emerging market volatility.**

Chart 4-8: Current account and general government balance in the emerging countries



Note: *Average of the 2018-2019 forecast. Source: IMF World Economic Outlook

Box 4-2: Monetary and fiscal policy stances in some regions

Following the outbreak of the financial crisis, finding the right balance between stimulating the economy and strengthening macrofinancial stability posed a challenge to monetary and fiscal policies all over the world. The cyclical increase in yields has already started in some markets, while GDP growth has still not returned to the pre-crisis path in the developed countries, pushing several countries in the direction of fiscal stimulus. Our box compares monetary and fiscal policy stances in some developed economies and in our region.

Following a persistently loose post-crisis stance, the monetary policy of the United States has already entered its tightening phase, while fiscal policy is strongly stimulating demand against the background of the increasing deficit. Right after the outbreak of the crisis, in addition to interest rate cuts, the Federal Reserve also introduced other unconventional quantitative easing measures to treat the acute crisis as well as to stimulate economic growth and achieve the inflation target. Following the persistently loose monetary policy, the Fed raised its policy rate for the first time in December 2015. Since the start of the tightening cycle, a total of seven 25 basis point interest rate hikes have been carried out so far, while the central bank has also started to limit the reinvestment of maturing securities on its balance sheet. Looking ahead, the gradual interest rate hike cycle may continue. Based on the median of decision-makers' latest forecasts, two further interest rate hikes are anticipated for this year, while they expect the base rate to be in the 3.00–3.25 percent band by end-2019.

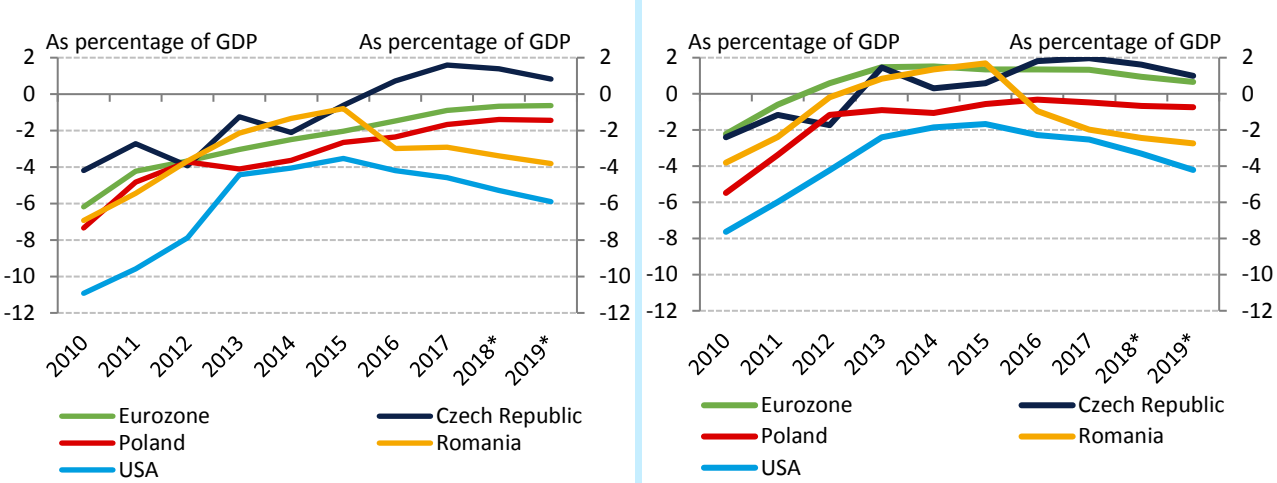
From around the 4 percent typical in recent years, the fiscal deficit to GDP ratio will rise to almost 6 percent in the United States by end-2019, while the cyclically adjusted primary balance, which indicates the fiscal stance, will deteriorate by 1.7 percentage points this year and next. One of the most important means of stimulating economic growth is the tax reform announced at the end of last year. As part of this, the personal income tax and corporate tax rates declined, and the system of personal income tax allowances as well as the taxation rules concerning international incomes were changed. According to the latest estimate of the US Congressional Budget Office (CBO), the package will increase the deficit by an annual 1 percent of GDP on average.

The monetary policy of the euro area, similarly to that of the United States, loosened considerably in the post-crisis period, and may remain loose overall in the future as well with a slight fiscal stimulus expected for the coming years. After the crisis, the ECB's easing steps followed the measures of the Fed with a little delay. Although the interest rate cuts and the asset purchase programmes significantly eased the monetary conditions in the euro area, the underlying inflation developments remain subdued. Accordingly, for the time being the ECB is maintaining the loose monetary policy stance. According to the central bank's forward guidance, decision-makers expect that the key ECB interest rates will remain at their current levels past the horizon of the net asset purchases, at least through the summer of 2019. Regarding non-standard monetary policy measures, the ECB will continue to make net asset purchases at a pace of EUR 30 billion per month until end-September 2018, and following that, subject to incoming data, purchases will be continue at a pace of EUR 15 billion until the end of 2018, when net purchases will be ended. The principal payment of maturing securities will be reinvested after the end of the net asset purchases too, and thus looking ahead the monetary policy stance of the euro area may remain loose overall.

As a result of the fiscal discipline observed for years, the average deficit-to-GDP ratio declined to below 1 percent by 2017 in the euro area, and the improvement in the balance is expected to continue. By contrast, according to the European Commission the cyclically adjusted primary surplus, which indicates the fiscal stance, will decline in two years from 1.3 percent to 0.7 percent by 2019, so after many years, fiscal policy will stimulate economic growth again slightly. All of this is mainly attributable to the easing in France, Greece and the Netherlands, but this process may also be strengthened by the coalition agreement of the new German government as well, which contains a total amount corresponding to 1.5 percent of GDP between 2018 and 2021 to be spent on the development of education and social infrastructure, supporting families, tax cuts as well as increasing defence and refugee-related expenditures.

In the years following the crisis, similarly to the world's leading central banks, the central banks of the CEE region started interest rate cut cycles, as a result of which the policy rates in the region sank to historical lows. In the majority of the neighbouring countries, fiscal policy tends to stimulate growth, although there are significant differences across fiscal positions (Chart 4-9). In spite of the easing, the Czech Republic will continue to have a budget surplus, but in Romania the increasing deficit will be close to 4 percent of GDP. The deficit in Poland is basically moderate, and according to the forecast of the European Commission its stance will remain neutral.

Chart 4-9: Fiscal balances (left panel) and cyclically adjusted primary balances (right panel) in the countries under review

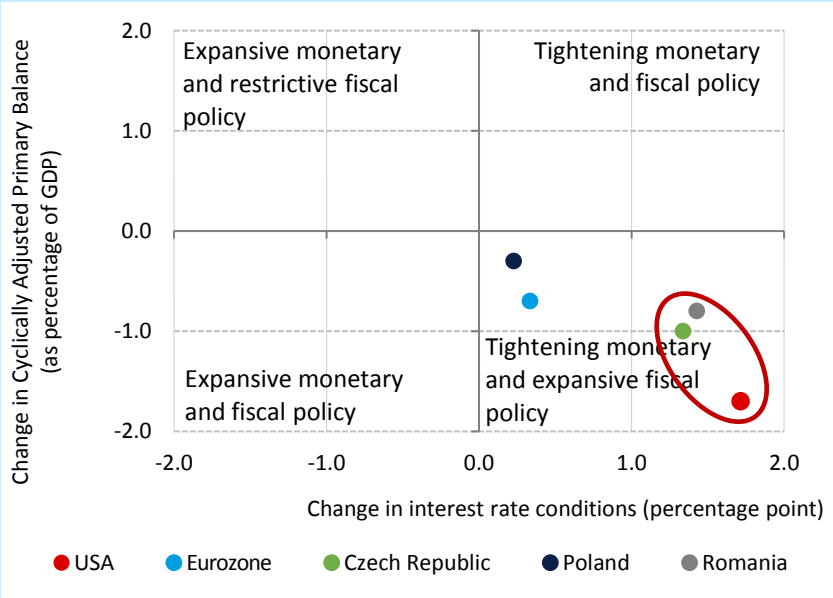


Note: Forecast.

Sources: European Commission, IMF

The Czech central bank is expected to continue tightening monetary conditions gradually, while some easing in fiscal policy is expected for the coming years (Chart 4-10). Following the interest rate cut cycle, starting from 2013 the central bank maintained a fixed exchange rate against the euro for years in order to prevent the appreciation of the koruna and thus keep monetary conditions loose. Following the cancellation of the exchange rate cap in April 2017, the decision-makers have increased the policy rate gradually since August 2017, in three steps to date. According to the Czech central bank's communication, monetary policy tightening may continue very gradually; the next interest rate hike is expected for end-2018. Following a successful period of consolidation, in recent years the Czech budget has had a surplus of around 1–2 percent, although some easing is expected in the coming years. According to the forecast of the European Commission, the cyclically adjusted primary surplus will decline in two years from 2 percent to 1 percent by 2019 relative to GDP, primarily as a result of a rise in public investment and pension expenditures as well as the wage rises of those working in the public sector.

Chart 4-10: Budget balances and changes in interest rate conditions



Note: The Change in Primary Balances (vertical axis) is the difference between the European Commission's 2019 forecast on cyclically adjusted primary balances and the 2017 actual data, while the change in interest rate conditions (horizontal axis) is the difference between the average of analysts' 2019 expectations on interest rates asked by Bloomberg and the average interest rate of 2017. Each quadrant shows the timely changes in fiscal and monetary policy.

Sources: Bloomberg, European Commission

The Polish central bank has kept its policy rate at 1.5 percent since March 2015, while the fiscal policy stance remained neutral. According to the central bank's assessment, the current interest rate level supports sustainable growth of the Polish economy, and inflation may be close to the target over the transmission horizon of monetary policy. The central bank's communication suggests that the base rate may remain at its current level even until end-2020, which means maintaining the current monetary policy stance. As a result of the balance improvement following the crisis, the budget deficit to GDP ratio declined to below 2 percent by 2017 and is expected to remain there in the coming years as well. Parallel to this, the cyclically adjusted primary deficit has been fluctuating between 0 and 1 percent of GDP for years, and according to the projection of the European Commission, this fiscal policy, which is neutral in terms of economic growth, may continue until 2019.

By changing its communication and narrowing the interest-rate corridor, the Romanian central bank started to tighten monetary conditions in 2017 H2, which was followed by raising the base rate this year. Recent years' strong fiscal stimulus may continue in the coming years as well. The Romanian central bank has kept its policy rate at 1.75 percent since May 2015. To date, the decision-makers have increased the base rate three times this year. According to analysts' expectations, the Romanian central bank may continue its interest rate hike cycle this year, so looking ahead, a further gradual tightening of monetary conditions is expected. As a result of easing in previous years, the budget deficit to GDP ratio in Romania has been around 3 percent for years and may come close to 4 percent in 2019. Parallel to this, according to the European Commission's projection, the cyclically adjusted primary balance will deteriorate by 0.8 percent of GDP in the coming years. A further stimulation of economic growth is primarily based on the wage rises announced in the public sector as well as on the tax reform and cuts concerning personal income tax and social security contributions.

Table 4-1: Impact of fiscal and monetary policies on economic growth

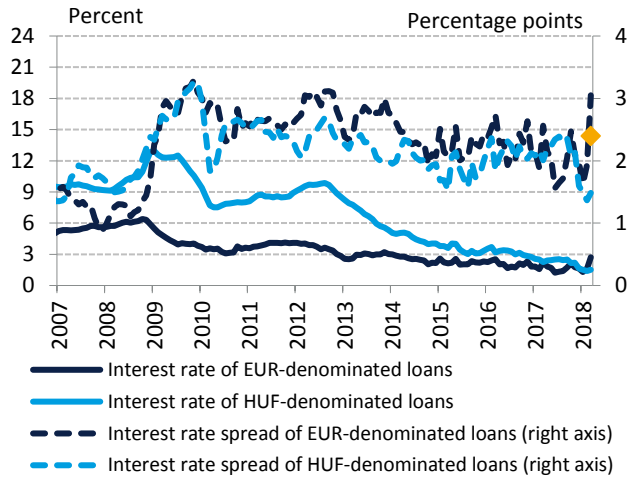
Country/Region	Effect on economic growth			
	Monetary policy		Fiscal policy	
USA	Restrictive	↓	Expansive	↑
Eurozone	Neutral	↔	Expansive	↑
Czech Republic	Restrictive	↓	Expansive	↑
Poland	Neutral	↔	Neutral	↔
Romania	Restrictive	↓	Expansive	↑

Source: MNB

4.2. Credit conditions of the financial intermediary system

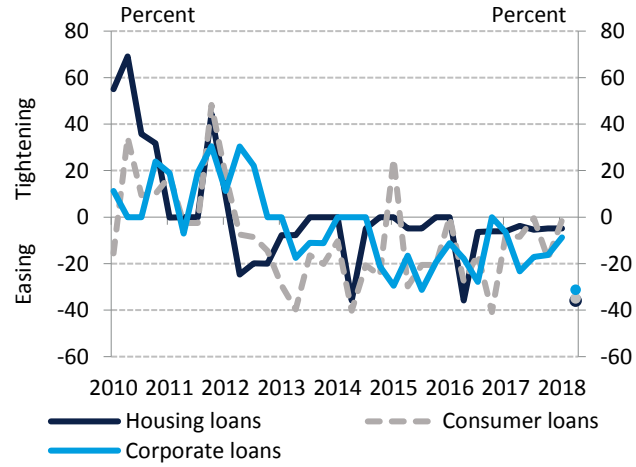
In 2018 Q1, a smaller circle of banks continued easing credit conditions in the micro and small enterprise segment, while household credit conditions remained unchanged. Looking ahead, lenders anticipate the easing of conditions in all segments. The average interest rate on corporate forint loans declined, contrary to the euro loans, where a rise was observed in the period under review. The annual percentage rate of housing loans continued to decline as a result of the fall in the spreads, while the financing cost of consumer loans remained constant. A rise in the one-year forward-looking real interest rate was observed during the quarter.

Chart 4-11: Smoothed interest rates and spreads on corporate loans by denomination



Note: Interest rates smoothed by the 3-month moving average. The spread is the 3-month moving average of spreads on the 3-month BUBOR and EURIBOR, respectively. Loans with floating interest rates or with up to 1-year initial rate fixation. Since January 2015, Money Market transactions are excluded.
Source: MNB

Chart 4-12: Changes in credit conditions in the corporate and household sectors



Note: Net percentage balance of respondents tightening/easing credit conditions weighted by market share. Dots indicate the banks' expectations for 2018 Q2 and Q3.
Source: MNB based on banks' responses

4.2.1. Corporate credit conditions

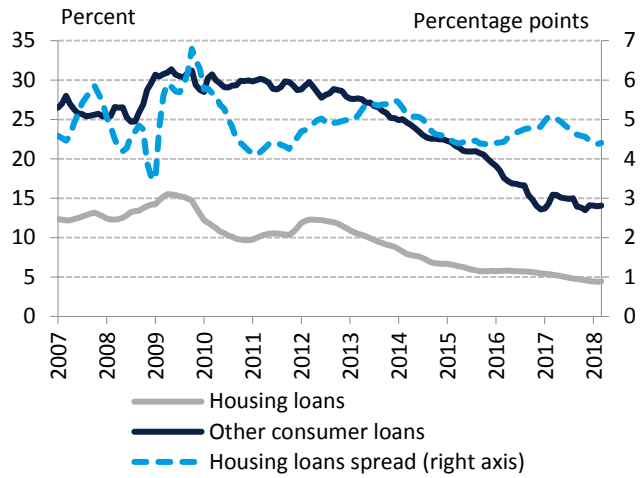
The average interest rate of corporate foreign currency loans rose in 2018 Q1. The interest rate on new market-based corporate forint loan contracts – excluding money market transactions – increased by 7 percentage points in the case of low-amount loans and declined by 13 percentage points in the case of high-amount loans in the period under review, so on the whole, forint interest rates fell to 1.51 percent by the end of the quarter. As regards euro loans, the average interest rate on low-amount loans declined by 10 basis points, whereas in the case of high-amount loans an increase could be observed quarter on quarter, and thus the average interest rate on euro loans rose to 2 percent by the end of the period under review (Chart 4-11). The 43-basis-point rise in the corporate euro interest rates is fully attributable to the growth in spreads, and thus the average spread in the case of the latter rose to 2.4 percentage points, while the spread on forint loans dropped to 1.47 percentage points by the end of 2018 Q1.

Banks eased corporate credit conditions slightly. Based on responses to the Lending Survey, in net terms 9 percent of the banks eased credit conditions in the micro and small enterprise segment, while in the case of medium-sized and large companies no easing was reported (Chart 4-12). The easing was mostly reflected in the extended credit line and the decline in spreads, explained by a further increase in market competition and favourable economic prospects. Looking ahead, respondent banks plan to ease the conditions in all size categories, primarily by reducing the fees related to loans, which is still driven by the developments in competition.

4.2.2. Household credit conditions

The spread on housing loans continued to decline during the quarter. The APR on newly granted housing loans declined by 6 basis points to 4.4 percent in the period under review (Chart 4-13). In terms of interest type, the APR level of both the variable-rate housing loans and housing loans with an interest rate fixed for more than one year declined by 30 basis points in 2018 Q1; however, due to the ground gained by fixed-rate loans bearing higher interest rates, the

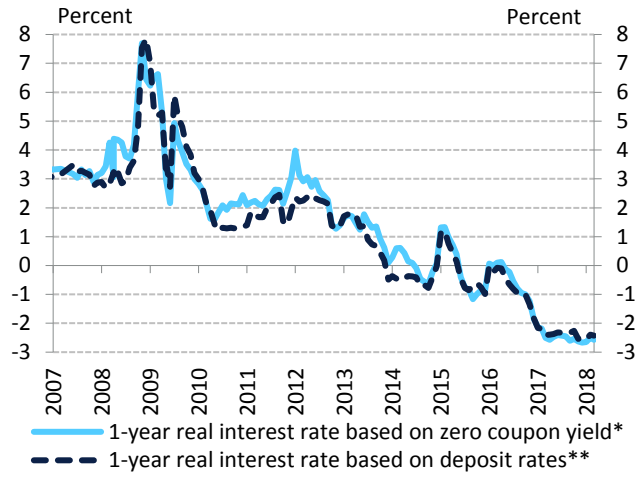
Chart 4-13: Smoothed annual percentage rate of charge (APRC) and spreads of housing and consumer loans



Note: For housing loans with floating or up to 1 year interest rate fixation the reference rate is the 3-month interbank rate, for over a year fixation the 3-year IRS.

Source: MNB

Chart 4-14: Forward-looking real interest rates



Note: * Based on the one-year forward-looking inflation expectations of analysts calculated by the MNB using the 1-year zero coupon yield and the Reuters poll. **Based on the one-year forward-looking inflation expectations of analysts calculated by the MNB using deposit rates with a maturity up to 1 year and the Reuters poll.

Source: MNB, Reuters poll

average APR declined to a lesser degree. As regards interest rate spreads, the decline was of a similar degree; the smoothed spread fell by 30 basis points to 3 percentage points in the case of variable-rate loans and by 47 basis points to 3.9 percentage points in the case of loans fixed for a period longer than one year. The increased demand for Certified Consumer-Friendly Housing Loan products is helping the development of a new housing loan portfolio with a sounder structure; by the end of the quarter, 76 percent of the new housing loans were already fixed-rate loans. The average APR on consumer loans remained at 14.1 percent in the period under review.

The conditions of loans extended to households remained unchanged during the quarter. In 2018 Q1, in net terms, 5 percent of the banks participating in the Lending Survey eased the conditions of housing loans (Chart 4-12). However, looking at the partial conditions, many of the institutions indicated easing: in net terms, 58 percent of the respondent banks reduced the interest rate spread in the case of less risky loans. Respondent banks primarily mentioned housing market developments and the favourable liquidity situation of the bank as factors supporting the easing. No substantial change was applied by the banks to the conditions of consumer loans during the quarter; looking ahead, strong credit demand may go hand in hand with an easing of the minimum conditions of eligibility for borrowing. In 2018 one third of banks plan to ease the conditions for housing loans and consumer loans.

4.2.3. Changes in real interest rates

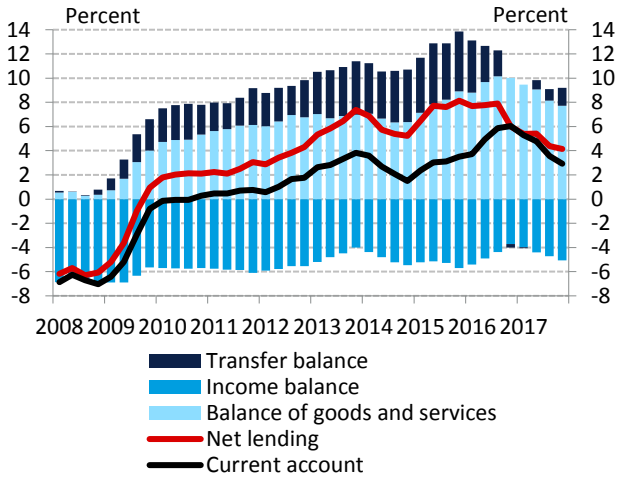
The one-year forward-looking real interest rate rose during the quarter (Chart 4-14). In 2018 Q1, based on the yield estimated from government securities yields, the real interest rate level reduced by inflation expectations rose by 10 percentage points quarter on quarter, and thus it stood at -2.6 percent at the end of the period. After a rise of 13 basis points, the real interest rate calculated on the basis of deposit rates stood at -2.4 percent in March 2018.

5. Balance position of the economy

5.1. External balance and financing

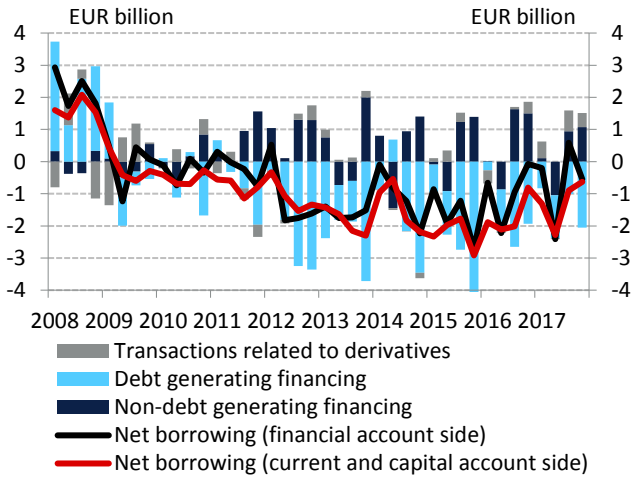
At end-2017, Hungary's net lending declined to 4.1 percent of GDP, while the current account balance decreased to 2.9 percent of GDP. The decline was mainly attributable to the decrease in the trade surplus, which is related to a rise in imports due to strengthening domestic demand. The transfer balance expanded considerably as a result of the increasing utilisation of EU transfers, which had a contrasting effect. The rise in foreign companies' profits resulted in an increase in the deficit of the income balance. In terms of items on the financing side, net external debt declined further, while foreign direct investment increased. At end-2017, net external debt – as the joint result of transactions and GDP growth – declined to 13 percent of GDP, while gross external debt decreased to 60 percent. Based on preliminary monthly data, in 2018 Q1 the net lending of the economy increased to a greater extent, while the current account balance rose to a lesser extent.

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



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

Chart 5-2: Structure of net lending



Note: The financing requirement calculated with a bottom-up method corresponds to the total of the external financing requirement and the BOP balance of statistical errors and residuals.
Source: MNB

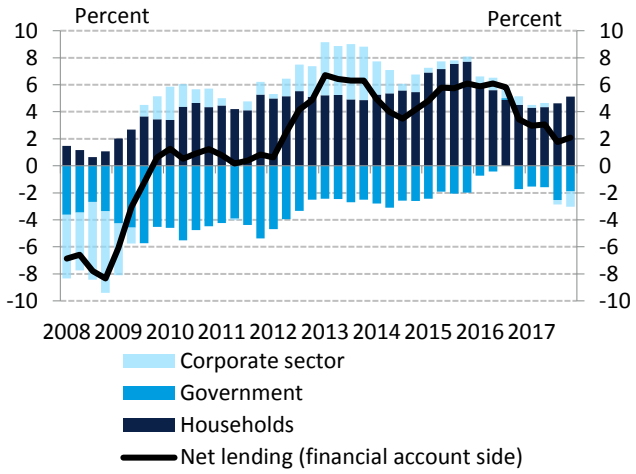
5.1.1. Developments in Hungary's external balance position

At end-2017, the net lending of the economy declined to 4.1 percent of GDP, while the current account balance decreased to 2.9 percent of GDP (Chart 5-1). The slight decline in the external balance indicators was primarily related to the upswing in domestic demand, whose effect was offset to some extent by the utilisation of EU transfers. The increasing expansion in imports was reflected in a decline in the **trade surplus**. The deficit of the **income account** was reduced by the decline in interest expenditure paid abroad and increased by the growing profits of foreign companies; on the whole, this resulted in a decline in the current account balance. The surplus of the significantly rising **transfer balance** was related to the increasing utilisation of funds from the new EU budget cycle. According to preliminary monthly data, which are partly based on estimation, the current account balance increased to a smaller degree, while net lending rose to a greater extent in Q1. The expansion of the latter was related to a significant increase in EU transfers, while the trade and income balances remained practically unchanged.

5.1.2. Developments in financing

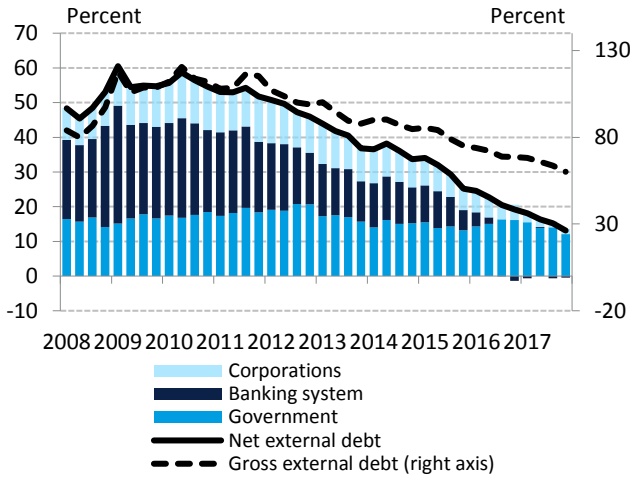
Based on financing-side developments, the country's net external debt continued to decline against the background of FDI inflows (Chart 5-2). The net lending calculated on the basis of the financial account was around EUR 0.5 billion in Q4, i.e. well below the average of the previous two years. This moderate net lending was the result of FDI inflows amounting to EUR 1.1 billion and a decline of EUR 2.1 billion in debt-type liabilities. According to the financial account, the 2018 Q1 net lending calculated on the basis of monthly data increased slightly, which took place in parallel with a major decline in FDI inflows and a decelerating decline in net debt. The outflow of debt-type liabilities was mainly

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: Excluding intercompany loans, as a percentage of GDP.
Source: MNB

related to a rise in external assets, although debt-type liabilities also increased to some extent.

In terms of the savings of sectors, the expansion in households' net financial savings exceeded the rising and falling net borrowing of companies and the state, respectively (Chart 5-3). The four-quarter net borrowing of the general government as a proportion of GDP declined slightly at the end of the year as a result of higher tax revenues. Increasing private investment was reflected in the rising demand for corporate sector funds. The rise in net financial savings of the household sector was attributable to a rapid increase in wages. According to preliminary monthly data, households' net savings continued to increase in 2018 Q1, while the net borrowing of the general government expanded to a lesser extent, and the corporate sector's net borrowing declined slightly.

Net external debt of the Hungarian economy decreased to 13.1 percent of GDP at the end of Q4 (Chart 5-4). Significant outflows of debt-generating liabilities and GDP growth jointly reduced the country's net external debt by 2.1 percentage points. The public sector was the main contributor to the decline in the debt ratio, but parallel to this, companies' net external debt was also down slightly. At end-2017 gross external debt declined significantly, amounting to 60.1 percent of GDP. As a result of continued net debt outflows, net external debt may have declined further in 2018 Q1 according to preliminary monthly data.

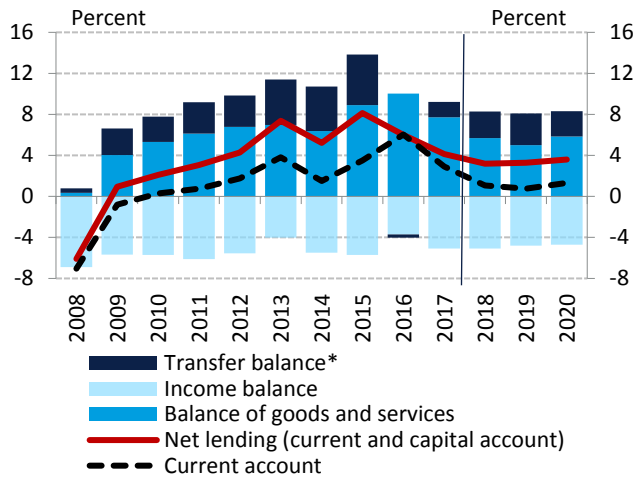
5.2. Forecast for Hungary's net lending position

The current account surplus will last throughout the forecast horizon, while net lending remains steadily high. In 2018-19 the current account sufficit will drop in connection with the growth in imports resulting from the strong domestic absorption and the rising oil prices, while net lending will stabilise above 3 percent of GDP owing to the soaring utilisation of EU transfers. In the second half of the forecast horizon, recovering exports will improve the trade balance due to the deployment of the developed export capacities, resulting in growth of the current account surplus. The income balance deficit will moderately decline over the forecast horizon. In terms of the sectors' saving approach, households' net financial savings will slightly decrease as the combined result of increasing income, buoyant consumption and rising net new borrowing. The net borrowing of corporations will rise in 2018 as a result of the increasing investments, followed by a decline due to the pick-up in exports. General government net borrowing will temporarily rise in 2018, partly due to the cut in tax and contribution rates. Over the forecast horizon, the high external position will have a favourable impact on external debt indicators, and thus net external debt may decline close to zero by 2020.

Net lending of the economy will fall to 3.2 percent of GDP in 2018, followed by a moderate rise (Chart 5-5). In 2018, the import-intensive investments and the considerable growth in household consumption will moderately reduce the trade surplus further, which is also shown by the decrease in net lending and the current account. The deterioration in the terms of trade, linked to the oil price rise, will impair the trade balance primarily this year, and to a smaller extent in the coming years as well. Due to the utilisation of EU transfers, the transfer balance surplus will rise to around 2.5 percent of GDP in 2018, thereby substantially improving the external balance position. Accompanied by major investment growth, the rise in imports will remain dynamic in 2019, which together with the moderately worsening terms of trade, points to a decline in the trade balance. The pick-up in exports, driven by previously developed productive capacities, will only slow the decline in the trade balance in 2019; however, in 2020 – together with a further slowdown in domestic absorption – it will generate a major improvement. As a result of this, the current account surplus will fall below 1 percent of GDP in 2019, followed by major growth in 2020, also reflected by the rise in net lending near to 4 percent. The income balance deficit will decrease slightly owing to the decreasing interest balance in line with the outstanding external debt. The impact of this is reduced by the rise in the profit of foreign-owned companies and by the decline in the income of those working temporarily abroad.

The net financial saving of households will decline moderately, accompanied by a drop in the government sector's net borrowing after a temporary rise (Chart 5-6). Favourable labour market conditions and increasing incomes will result in rising consumption, but the growth in net new borrowing, also containing the repayment of former loans, may remain moderate. As a result of this, households' net financial savings will be constant in 2018, followed by a moderate decline during the remaining part

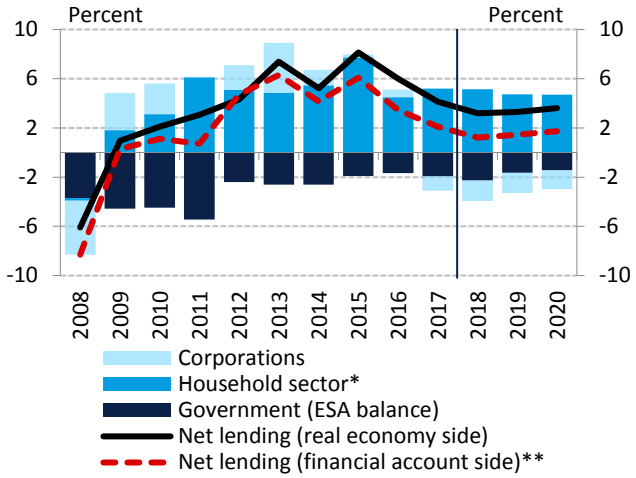
Chart 5-5: Evolution of net lending



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

Source: MNB

Chart 5-6: Changes in the savings of sectors



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

Source: MNB

of the forecast horizon. In 2018 the net borrowing of corporations will increase substantially, in line with the rising investments. Thereafter, primarily due to the acceleration in export dynamics, the rising utilisation of EU transfers and more moderate investments, the net borrowing of the sector will decline. The budget deficit will rise to 2.3 percent of GDP in 2018, explained by the cut in the social contribution tax rate and the targeted VAT cut, as well as by the loss of revenues from tax credit for growth and land sales. In the second half of the forecast horizon, the deficit will drop below 2 percent as a result of rising revenues generated by economic growth and declining interest expenditures.

Looking ahead, the high net lending will help reduce the economy's external vulnerability further. As a result of the high net lending, persisting throughout the forecast horizon, net external debt is expected to fall to zero by 2020, accompanied by a major decline in gross external debt as well.

5.3. Fiscal developments

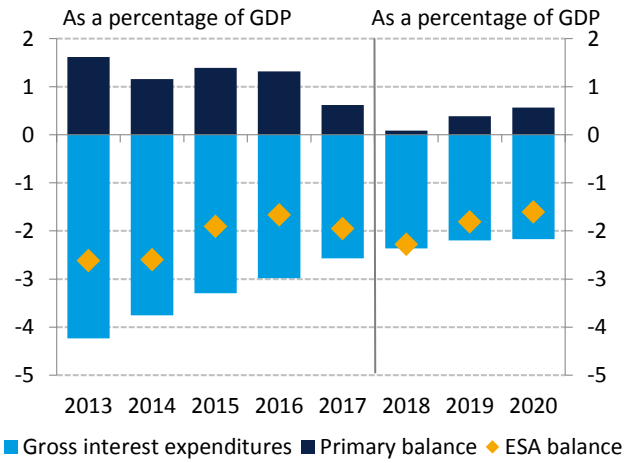
Based on our forecast, the budget deficit may remain low in the coming years, which – together with dynamic economic growth – will result in a steady decline in the government debt-to-GDP ratio. According to our projection, in 2018 the ESA deficit will be slightly below the government's deficit target, while in 2019 – in line with the submitted 2019 Budget Bill – it will decline to 1.8 percent. In the second period of the forecast horizon, due to the declining budget deficit, the fiscal policy will build up a countercyclical reserve. According to our forecast, a substantial fall can be expected in the Maastricht debt to GDP ratio, which will be temporarily reduced by the pre-financing of EU transfers this year. The value of the ratio will fall to 72.5 percent of GDP by the end of 2018, and by the end of the forecast horizon it will drop below 68 percent, accompanied by a continuing decline in foreign currency debt.

Table 5-1: General government balance indicators

	2018	2019	2020
ESA balance	(-2.2) – (-2.3)	(-1.7) – (-1.8)	(-1.4) – (-1.8)
Primary ESA-balance	0.2 – 0.3	0.4 – 0.5	0.4 – 0.8
Fiscal impulse*	0.8 – 0.9	(-0.5) – (-0.6)	(-0.1) – (-0.5)

As a percentage of GDP. The lower value of the forecast band shows the ESA balance if the Country Protection Fund is used, while the higher value shows the ESA balance if the Country Protection Fund is not used. *Change in the augmented (SNA) primary balance.
Source: HCSO, MNB

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



Note: The point estimate seen in the chart assumes either the cancellation or the utilisation of the Country Protection Fund depending on which one is closer to the government deficit target. The figures do not include the imputed interest expenditures from 2012 related to the reform of the pension system.
Source: Eurostat, MNB

5.3.1. Main balance indicators and the fiscal demand effect

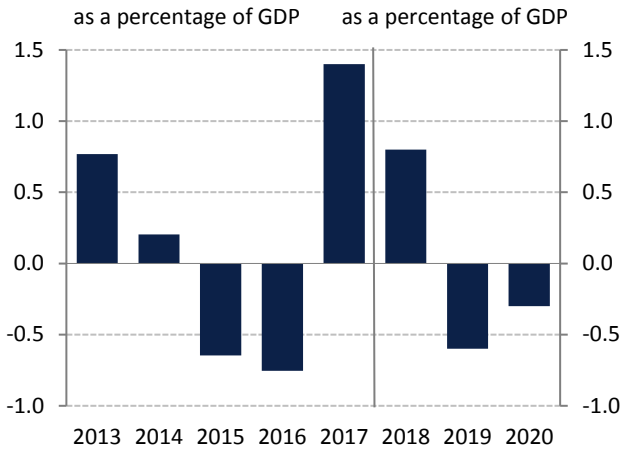
According to our projection, the ESA deficit may amount to 2.2-2.3 percent of GDP in 2018, while in line with the budget deficit target it may be 1.7-1.8 percent in 2019, and 1.4-1.8 percent in 2020 (Table 5-1)**.** As a result of tax cuts and the exhaustion of one-off revenues from previous years (land sales, tax credit for growth), the deficit of the general government will increase temporarily in 2018 compared to 2017. In 2019, in line with the Budget Act, the budget deficit will decline, supported by rising tax revenues resulting from the favourable macroeconomic developments. According to our forecast, the primary balance will remain positive throughout the forecast horizon, while interest expenditures will fall close to 2 percent of GDP. The yield increases observed in the past period will slightly raise the interest expenditures of the general government compared to previous expectations; nevertheless, we anticipate decreasing interest expenditures over the entire forecast horizon. The decline is caused by the gradual re-pricing of the debt, and thus as a result of the major yield decrease observed in the previous years, the share of low-interest debt components will increase in the medium run.

In 2018, fiscal demand expansion is expected as a result of the continued tax cuts, while fiscal policy in 2019 may narrow demand slightly (Chart 5-8)**.** In 2018 the VAT on additional products and services was reduced, and the rates of the social contribution tax and the health contribution were also cut further, while the tax allowance for families with two children increased. In 2019 and 2020, the budget may tighten demand moderately, which will result in a countercyclical fiscal policy on the whole.

5.3.2. Budget balance in 2018

According to our forecast, the ESA deficit in 2018 will be 2.2-2.3 percent of GDP, which is slightly lower than our March projection (Table 5-2)**.** Our projection for the budget deficit declined by 0.1 percentage point compared to our March forecast, which is primarily justified by the

Chart 5-8: The fiscal demand effect



Note: As a percentage of GDP. The fiscal demand effect corresponds to the change in the augmented (SNA) primary balance. The fiscal impulse contains the effect of EU funds to the extent of the co-financing. The positive prefix indicates demand expansion, while the negative prefix implies demand restraint.
Source: MNB

Table 5-2: Decomposition of change in 2018 ESA balance forecast (compared to previous Inflation Report)

	Economic developments	Measure and other
I. Central government revenues	0.4	0.0
Payment by economic units	0.1	
Taxes on consumption	0.2	
Taxes on labour	0.2	
II. Central government expenditures	0.0	-0.2
Investment and current expenditures		-0.2
III. Other effects	0.0	-0.1
Other		-0.1
Total (I.+II.+III.)	0.4	-0.3

Note: As a percentage of GDP. The positive and negative prefixes indicate deficit-reducing and deficit-increasing effects, respectively. The sum of partial data may differ from the aggregated values because of rounding.
Source: MNB

macroeconomic developments being more favourable than forecast in the March Inflation Report. The higher wage dynamics and the rise in consumption increased our projection for revenues from labour taxes and value added tax. Higher revenues were partly offset by the fact that on the expenditure side, based on the actual figures received since the March Inflation Report, the expenditures of budgetary organisations may be higher than previously expected.

Our projection for the 2018 deficit is slightly lower than the 2.4 percent appropriation. According to our forecast, the volume of revenues from labour taxes may substantially exceed the appropriation, which is explained by the more favourable labour market trends compared to those included in the Act. Our projection for VAT revenues is below this year's appropriation, which primarily might be attributable to the differences in estimates concerning the reduction of the shadow economy. On the expenditure side, the main reason for the differences is that we also factor in the impact of several implemented measures that were not yet included in the Budget Act (advance wage rise in healthcare, pension supplement in the form of the Erzsébet voucher, winter-related utility cost reduction).

5.3.3. 2019 and 2020 fiscal balances

According to our forecast, the budget deficit in 2019 will be around 1.8 percent of GDP, in line with the target included in the 2019 Budget Bill submitted to Parliament. According to our projection, tax revenues will fall short of the appropriation; however, this is offset by the fact that our estimate for the effective absorption of the EU transfers and the co-financing by the state related to the payment is lower than that in the Budget Bill. The difference in the tax revenues is mostly justified by the different projection related to the tax base. The Bill anticipates an increase in the wage bill that is nearly 3 percentage points higher than our forecast, while households' consumption expenditure will rise by 4.8 percent, which also exceeds the 3.2 percent growth expected by the MNB. Due to the high increase in the wage bill, the Act reflects the reduction of the social contribution tax by 2 percentage points from 1 July 2019, so we have taken this into account in the forecasts.

Due to the lack of any budget act, we prepare technical forecasts for 2020 which show a declining deficit. The decline of the deficit in 2019 is mainly due to the decreasing interest expenditures and the rising tax revenues stemming from the growth of the economy. The 0.2 percentage point decrease in the deficit compared to the March forecast is justified by the higher tax bases

Table 5-3: Differences between our forecast and the appropriations set out in the 2018 Budget Act

	Difference from appropriation
I. Central government revenues	0.1
Taxes on labour	0.3
Taxes on consumption	-0.2
II. Central government expenditures	-0.1
Pension expenditures	0.1
Advance wage raise in healthcare	-0.1
Winter-related utility cost reduction	-0.1
One-off pension vouchers	-0.1
III. Other effects	0.1 - 0.2
Cancellation of Country Protection Fund	0.0 - 0.1
Methodological changes	0.1
Total (I.+II.+III.)	0.1 - 0.2

Note: As a percentage of GDP. The positive and negative prefixes indicate deficit-reducing and deficit-increasing effects, respectively. The sum of partial data may differ from the aggregated values because of the rounding.
Source: MNB

Table 5-4: Differences between our forecast and the appropriations set out in the 2019 Budget Act

	Difference from appropriation
I. Central government revenues	-0.6
Taxes on consumption	-0.3
Taxes on labour	-0.3
II. Central government expenditures	0.5
Utilisation of EU transfers	0.4
Housing grant scheme	0.05
III. Other effects	0.1 - 0.2
Cancellation of Country Protection Fund	0.0 - 0.1
Other	0.1
Total (I.+II.+III.)	0.0 - 0.1

Note: As a percentage of GDP. The positive and negative prefixes indicate deficit-reducing and deficit-increasing effects, respectively. The sum of partial data may differ from the aggregated values because of the rounding.
Source: MNB

originating from the more favourable macroeconomic developments.

5.3.4. Risks surrounding the baseline scenario

Our forecast is continuously and significantly affected by the uncertainty related to the disbursement and utilisation of EU funds, and the transfers received from the European Union. The absorption of the transfers impacts on real economy processes, while the pre-financing of subsidies affects government debt. In our projection, we factor in substantial advance payments for 2018, which will significantly increase government debt temporarily. However, until 2020 the degree of the pre-financing is expected to decline significantly, and the subsidies paid out earlier may also be received in the budget. In these years EU transfers may help reduce the debt faster. According to our forecast, the real economy impact of the payments, i.e. the actual utilisation of EU funds, may be the highest in 2018 and 2019. This effect will stimulate the economy considerably, but through the increase in co-financing it will add to the budget deficit.

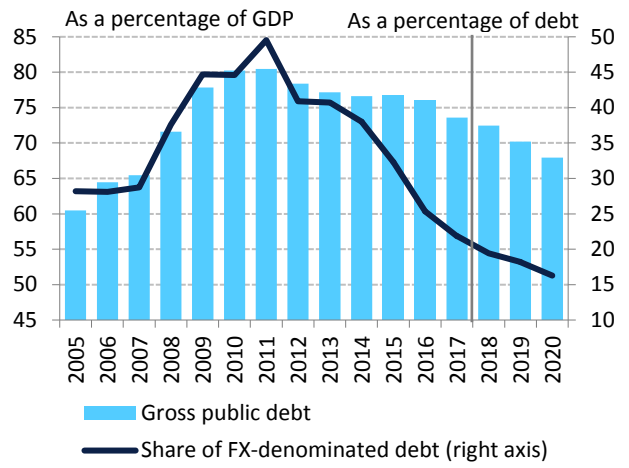
Based on the wage agreement concluded at the end of 2016, the next reduction of the social contribution tax rate should be performed two quarters after the average growth in real wages exceeds 6 percent since the previous rate cut (i.e. from the start of 2018). According to the 2019 Budget Bill submitted to Parliament, this criterion will be met in the first quarter of 2019, so the tax cut will be implemented from 1 July 2019. In our analysis we regarded this as the baseline scenario. If the tax cut is not implemented in mid-2019, then the budget deficit could be lower by 0.2 percent of GDP than in the baseline scenario.

5.3.5. Expected developments in public debt

According to preliminary data, at the end of 2018 Q1 the gross government debt ratio, including the debt of Eximbank, was 74.2 percent of GDP (Chart 5-9)**.** The debt ratio fell by 2.0 percentage points year on year, while compared to the end-2017 figure, it rose moderately by 0.6 percentage points in line with the usual mid-year processes. In the first quarter of the year, net debt issue and revaluations both raised the value of the debt.

According to our forecast, and assuming a constant end-2017 forint exchange rate, the gross government debt ratio will decline to 72.5 percent of GDP by the end of 2018, i.e. the debt rule of the Fundamental Law is expected to be complied with this year as well. Over the forecast horizon, underlying developments point to a significant decline in government debt, which will be

Chart 5-9: Gross public debt forecast – calculated with unchanged (end-of-2017) exchange rate over the forecast horizon



Source: MNB

substantially reduced by the advances on EU transfers in 2018. According to our forecast, the ratio may decline by 1.1 percentage points this year and approximately 2 percentage points annually in 2019 and 2020, falling below 68 percent by the end of the forecast period. Based on our projection, by end-2018 the FX ratio of central government debt will decline to 19.4 percent, and by the end of the forecast period it will be close to 16 percent.

6. Special topics

6.1. The impact of demographic trends on inflation

Developments in inflation are fundamentally determined by the cyclical position of the economy and longer-term structural changes. However, **based on recent domestic and international experiences, the impact of the domestic economic cycle on inflation has declined**. This is corroborated by the fact that contrary to the forecasts of theoretical models, the weak demand environment did not result in deflation during the crisis period, and price dynamics did not accelerate significantly during the subsequent upswing either. Additionally, no divergence can be observed in inflation developments despite the different labour market cycles, although the speed of recovery from the crisis varied widely across economies.

While the role of cyclical factors is becoming marginalised, investigating the impacts of structural changes on inflation has come to the fore. Three of the structural factors that affect and are expected to affect inflation in the future as well are highlighted below: **globalisation, technological development and the related digitalisation as well as demographic developments**. The effects of the first two factors have already been presented in our previous Inflation Reports. Therefore, in this analysis attention is paid to the relation between demography and inflation.[5]

Over decades, the changes in the number and composition of the population significantly affect economic developments; therefore, the impact of the current demographic trends is a key issue for economic policy. While the effects of demographic developments on economic growth are documented specifically, less attention is paid to how they affect consumer prices. **Demography has a special role among the structural factors that influence inflation.** The underlying reason is that while other structural factors may affect inflation developments in the shorter run as well, **demographic changes exert their effect on the changes in prices only slowly, over decades**. Consequently, **it is difficult to quantify the impact of demography on inflation because it is difficult to separate this effect exerted over decades from other structural factors that affect inflation**.

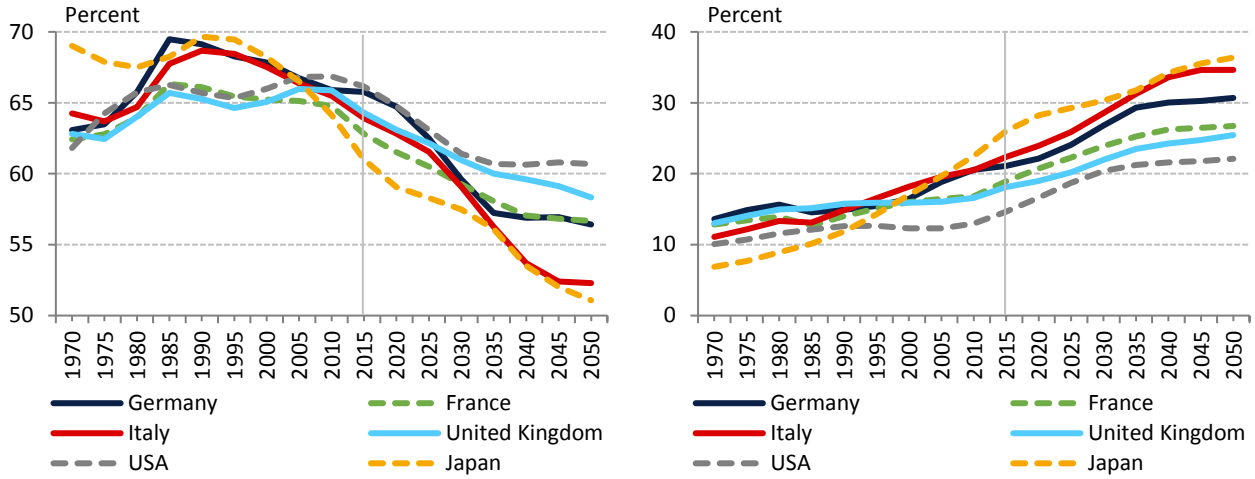
The importance of knowing the correlations between inflation and demographic trends lies in the fact that **significant demographic changes have taken place in recent decades both in Hungary and in developed countries. According to current forecasts, these changes will continue in the coming decades as well**; therefore, they may have a major impact on inflation developments. Three types of processes may be distinguished in demographic developments:

- change in the number of the population,
- changes in composition by age and
- rise in life expectancy.

Although, global population growth will continue in the next decades as well according to a UN forecast, the opposite is expected in Europe and in several developed countries: by 2050 the population of our continent will decline by some 26 million people, from 742 million to 716 million. The age composition of the population of developed countries will also change considerably in the coming decades: the ratio of working-age people is declining, while that of older people is increasing (Chart 6-1).

[5] The impact of globalisation on inflation was discussed in the special topic of the September 2017 Inflation Report, while the correlation between digitalisation and inflation was one of the special topics in the March 2018 Inflation Report.

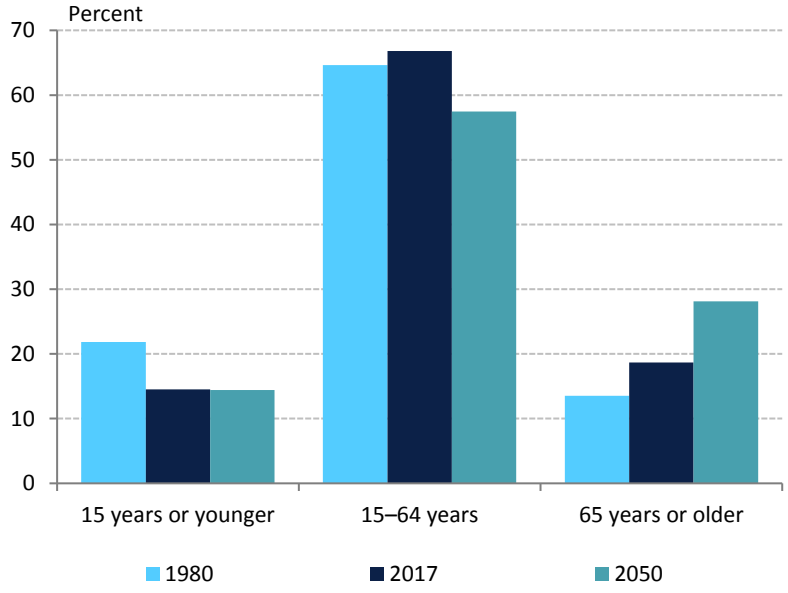
Chart 6-1: Ratio of working-age (left panel) and elderly (right panel) people within the population in selected developed countries



Note: Working-age people are aged between 15 and 64, while those older than 65 years constitute the elderly age group.
Source: UN Population Database

The demographic changes that have been observed in many developed countries for decades are taking place in Hungary as well. Since the 1980s, the population of the country has been steadily declining, and the average age has been increasing. If the current trends continue, **according to Eurostat's forecast the Hungarian population will decline by half a million from 9.8 million by 2050. In addition, the structure of the population may also change considerably: the ratio of the working-age population, i.e. those between 15 and 64 years of age, will decline from the current 66.8 percent to 57.5 percent, while the ratio of those aged 65 years or older will increase by some 10 percentage points to 28.1 percent** (Chart 6-2). In addition to the moderate number of births, the rise in life expectancy, which may increase from the current 73 years to more than 80 years by 2050, could also play a role.

Chart 6-2: Changes in age composition in Hungary



Note: Year 2050 demographic structure on the basis of the baseline scenario in the Eurostat forecast.
Sources: HCSO, Eurostat

The effects of the decline in population, the changing population structure and higher life expectancy emerge in inflation through various channels. Demographic trends have an impact on corporate costs and also influence the demand and supply of products, and thus **may result in inflationary or disinflationary effects from the cost side and through the**

balance of supply and demand as well. Although the individual channels are well identifiable, **various demographic developments have a contrasting effect on inflation**, making the quantification of inflationary effects related to demography more difficult (Table 6-1).

Table 6-1: Direction of inflationary effects of individual demographic developments

Demographic trends	Impact on inflation		
	Labour supply channel	Demand channel	Total
Decreasing population	↑	↓	↓
Decrease in ratio of working age population	↑	↑	↑
Longevity	↓	↓	↓

Source: MNB compilation

As a result of a **decline in population**, the working-age population decreases on the supply side, creating a **tighter labour market and thus faster wage increases** mainly in periods of economic upturns. Increases in wages add to corporate costs, resulting in higher prices over the longer term. At the same time, cost-side inflationary effects are offset **by the fact that consumer demand also decreases** as a result of the population decline. It has a disinflationary effect if supply is only able to conform to the decline in consumption with a delay (Yoon et al. 2014).[6] The adjustment of supply to demand may also be hindered by the fact that **companies may overestimate future demand in the case of a decline in population, whereas in the case of an increase they may underestimate it**, and adjust their capacities accordingly (Inoue et al. 2017).[7] Further disinflationary effect can emerge if **the long-term growth rate of the economy slows down** due to decelerating expansion in employment because of the declining population**, which reduces inflation expectations** and thus actual price dynamics as well (Shirakawa 2012).[8] Based on the findings of empirical analyses, we can state overall that **of all the contrasting factors the ones that have a disinflationary effect are more decisive, and thus a decline in population results in lower inflation**.

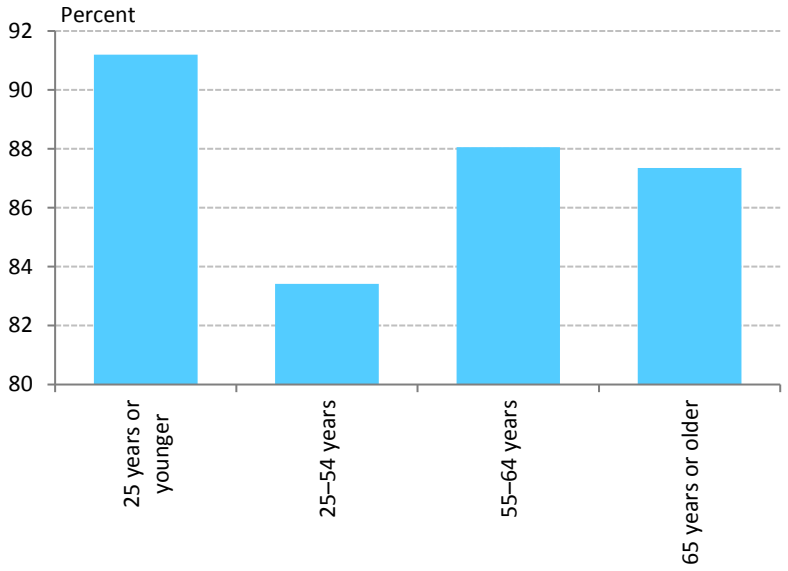
In addition to the decline in population, the **change in age composition also has a significant impact on inflation**. The underlying reason is that different age groups have different impacts in consumer price changes, which is basically attributable to the different consumption habits of individual age groups (Chart 6-3).

[6] Yoon, J., W., Kim, J., Lee, J. (2014) 'Impact of Demographic Changes on Inflation and the Macroeconomy', IMF Working Papers, No. 14/210.

[7] Inoue, T., Nishimura, K., G., Shimizu, C., Deng, Y. (2017) 'Aging, Inflation and the Phillips Curve', Presentation prepared for the Seminar at the University of Kent, November 2017.

[8] Shirakawa, M. (2012) 'Demographic changes and macroeconomic performance – Japanese experiences', Opening remarks at the 2012 BOJ-IMES Conference, Bank of Japan, Tokyo, 30 May 2012.

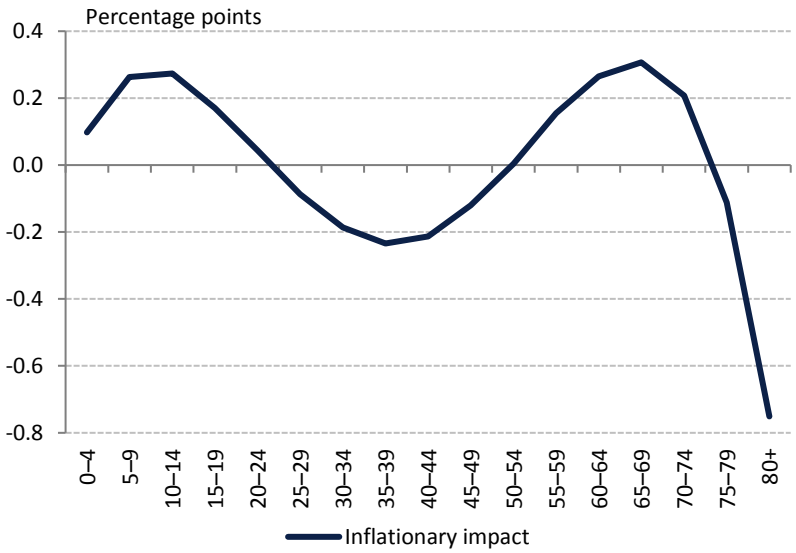
Chart 6-3: Households' consumption rate by age group in 2016



Note: Consumption expenditure of the whole household as a proportion of household level net income. The breakdown by age group is based on the age of the head of household.
Source: HCSO

The consumption rates of the younger and older age groups are basically higher, while their employment is lower. Therefore, **young and older people produce less than they consume, resulting in price increases through contrasting changes in supply and demand**. Unlike younger and older people, **the working-age population saves a greater part of their income** for later years, and thus their consumption rate is typically lower. Moreover, **wages may also increase more slowly as a result of the higher number of employees**. These two effects result in slower price increases. Accordingly, **a higher ratio of younger and older age groups within the population has an inflationary effect, while a higher ratio of the working-age population has a disinflationary effect**. This is also corroborated by the findings of Juselius and Takáts (2018): based on their estimates on the data of 22 developed countries between 1870 and 2016, the contribution to inflation of the 0–24 and 55–69 age groups are positive, while that of the 25–54 age group is negative (Chart 6-4).

Chart 6-4: Estimated impact of various age groups on inflation



Note: Effect on inflation of a one percentage point ratio of the given age group.
Source: Juselius – Takáts 2018

In addition to the decline in population and the changes in age composition, **the increase in life expectancy also affects changes in prices**. Due to the higher life expectancy **an individual has to allocate his income obtained during his whole life cycle for a longer period**. At working age this results in higher savings, while in the pension period it results in lower annual consumption, entailing lower demand compared to supply (Vlieghe 2016).[9] In addition to higher life expectancy, the working age is also becoming longer, mitigating the impact on wages stemming from the decline in population and the change in age composition. Accordingly, **longer life results in slower price dynamics**. This is corroborated by the findings of Juselius and Takáts (2018) too, who demonstrated a disinflationary effect in the case of the oldest age groups (75 years or older).

In summary, the three main demographic trends, which affect developed countries and Hungary as well, have contrasting effects on inflation, and thus their resultant determines how demographic developments influence the changes in inflation. Although Juselius and Takáts (2018) did not take the change in the number of the population into account in their analysis, their estimate provides a picture of how **the change in age composition and the increase in life expectancy jointly** affected inflation in the past decades and how this impact may change in the future. According to their findings, **in the past four decades these factors resulted in lower price dynamics** in many of the countries involved in the analysis. The underlying reason is that although the increase in the ratio of older people was already observed in 1970, its inflationary effects were still offset by the persistently high ratio of working-age people and rising life expectancy. However, this trend is expected to reverse in the coming decades as a result of an acceleration in the decline in the ratio of working-age people, and thus become unable to offset the inflationary effect stemming from the increase in the older age group. Accordingly, based on the estimates of Juselius and Takáts (2018), **contrary to the experiences of the past 40 years the contribution of demographic developments to inflation may already be positive in the coming decades**. However, to some extent this may be offset by the fact that significant declines in population are forecast for several of the countries involved in the analysis, which was not taken into account in the estimation.

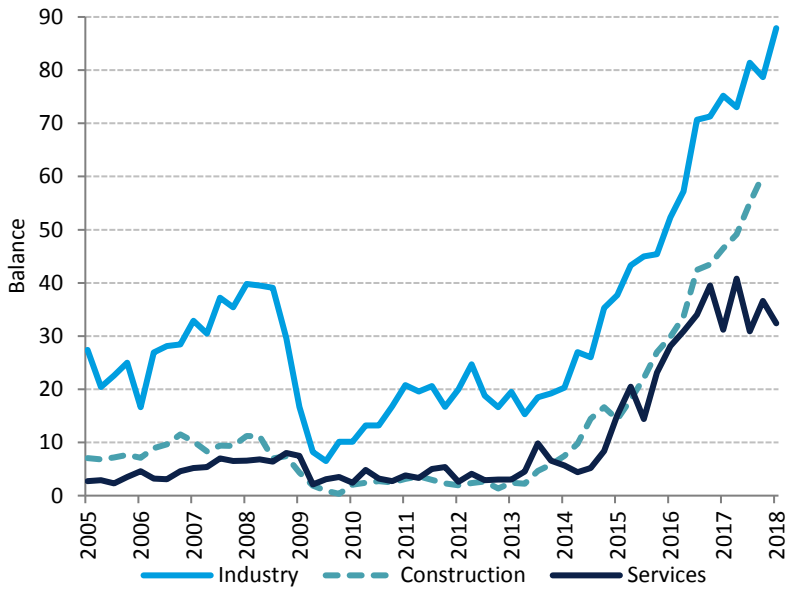
In Hungary, the decline in the population since the 1980s and the steadily rising life expectancy point to lower, and the changing population structure points to higher inflation. Although it cannot be clearly stated due to the difficulties of quantifying the inflationary effects related to individual developments, it can be presumed that **similarly to developed countries, current demographic trends tend to result in lower inflation in Hungary as well on the whole**. Looking ahead, however, inflationary effects stemming from the age composition are expected to strengthen because the decline in the ratio of the working-age population and the increase in the ratio of older people are tending to accelerate. Consequently, **in the coming decades the current disinflationary effect of demography may even reverse in the future, and demographic developments on the whole may result in price increases**.

[9] Vlieghe, G. (2016) 'Debt, Demographics and the Distribution of Income: New challenges for monetary policy', Bank of England, Speech at the London School of Economics, 18 January 2016.

6.2. The impact of labour market tightness on corporate behaviour

In recent years, companies producing in Hungary have faced increasing competition in the labour market (Chart 6-5). According to the ESI survey (Economic Sentiment Indicator), since end-2013, in all the sectors of the Hungarian economy, more and more companies have indicated difficulties accessing an adequate workforce as the main obstacle to production, significantly exceeding the pre-crisis levels as well. By end-2017, this ratio in industry reached 80 percent, which is the most significant (60 percentage point) increase across sectors since 2013. And even in the least affected services sector, the ratio of such companies increased by nearly 40 percentage points.

Chart 6-5: Labour shortage as production limiting factor



Sources: ESI, MNB

The strength of labour market competition can be quantified with the so-called labour market tightness indicator. The tightness shows the number of vacancies per unemployed person in a given labour market. **The higher the indicator, i.e. the tighter the labour market, the stronger the competition among employers for the potential employees is.** And the lower the number of the unemployed, or the higher the number of vacancies, the higher the labour market tightness is. As a quotient, it can be stated as follows:

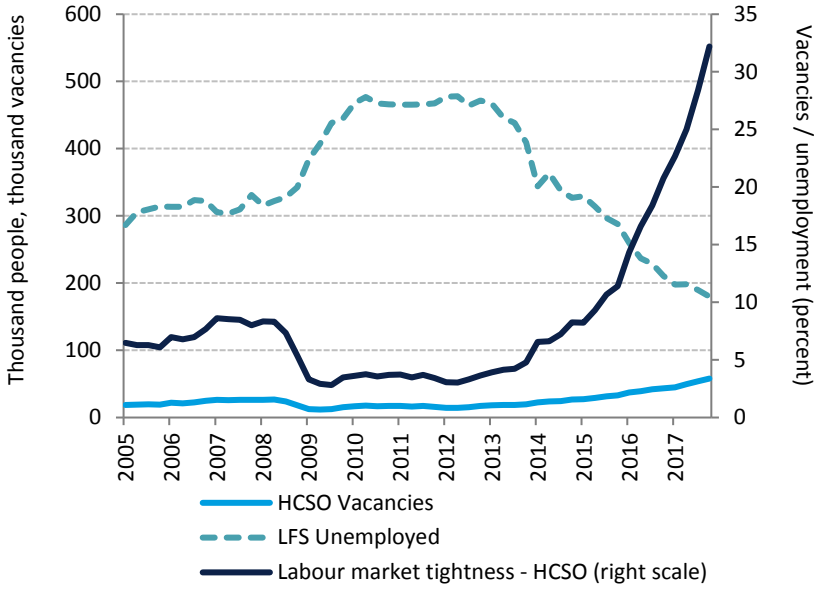
$$\text{Labour market tightness} = \frac{\text{number of vacancies}}{\text{number of unemployed}}$$

The primary index of the **unemployed** is the size of unemployment from the Labour Force Survey conducted by the Hungarian Central Statistical Office (hereinafter: HCSO); in the estimation this means the degree of unutilised labour capacity. Various statistics are available concerning the **number of vacancies**: in our calculations we use the number of vacancies from the HCSO's Institutional Labour Statistics.[10]

[10] For example, the number of vacancies from the HCSO's Institutional Labour Statistics or the number of unsubsidised vacancies available published by the National Employment Service (hereinafter: NES). The difference between the two statistics originates from the fact that while the NES only includes vacancies that have been reported by businesses to the labour centres, the HCSO's institutional data assess the number of vacancies at all the companies that employ at least 5 people in the private sector. Another difference between the two time series is that the HCSO data also include currently known jobs that are about to become vacant or are to be newly created in the following quarter. It is important to note that for the examination of robustness we prepared our estimates with tightness indicators calculated with both above-mentioned vacancy statistics, and we received similar results in terms of both volume and direction.

The steady tightening of the labour market since 2013 is attributable to the decline in the number of the unemployed as well as to the increase in the number of vacancies (Chart 6-6).

Chart 6-6: Tightness, vacancies and the number of unemployed



Sources: HCSO, MNB

6.2.1. Impact of labour market tightness on wage growth at macroeconomic level

The labour market naturally becomes tighter when growth turns as satisfying the increasing demand results in a greater need for labour at companies. As **it is becoming increasingly difficult for companies to meet their demand for labour** by employing new people, the **competition among employers for adequately trained employees is increasing**. One of the most obvious channels of corporate reactions to strengthening competition is wage adjustment.

The wage Phillips curve captures the correlation between wage changes and the cyclical position of the labour market at macroeconomic level. As accepted in economic practice, unemployment rate, labour market tightness or even the cyclical component produced by trend-filtering methods applied to unemployment may be used as indicators of the labour market situation. In our analysis, we measure the cyclical state of the labour market with an indicator derived from the tightness, using the unemployment figure relative to the number of vacancies.[11]

In the estimate, the impacts of labour productivity $\left(\frac{Y_t}{L_t}\right)$ and inflation expectations (π_t^e) as well as of administrative labour market measures (minimum wage increases, contribution reductions $(minw_t)$) on wages were taken into account:

$$\Delta log(w_t) = \alpha + \beta_1 \cdot tightness_t + \beta_2 \cdot \pi_t^e + \beta_3 \cdot \Delta \log\left(\frac{Y_t}{L_t}\right) + \delta_i \cdot minw_t + \varepsilon_t$$

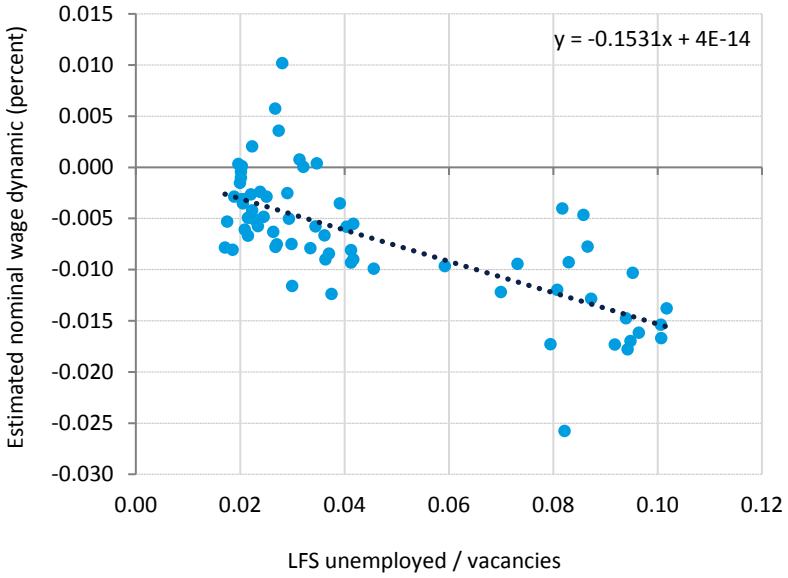
where ε_t indicates the error term.

In the period between 2000 and 2017 – contrary to the flattening of the price Phillips curve – a significant negative correlation can be detected between wage changes and the amended tightness that captures labour market developments (Chart 6-7), which confirms that stronger labour market competition due to lower unemployment is coupled with dynamic wage growth. With a Granger causality test it can be confirmed that there is a temporal causal relationship between the two variables: **wages follow developments in tightness**. Based on the estimate, if **there are 10 percentage**

[11] The indicator was produced as the inverse of the tightness index introduced at the beginning of the study, and thus the former expresses the number of jobseekers applying for 100 vacancies in the given period.

points more unemployed for the same number of vacancies, this reduces annual wage growth by 1.5 percentage points on average.

Chart 6-7: Wage Phillips curve

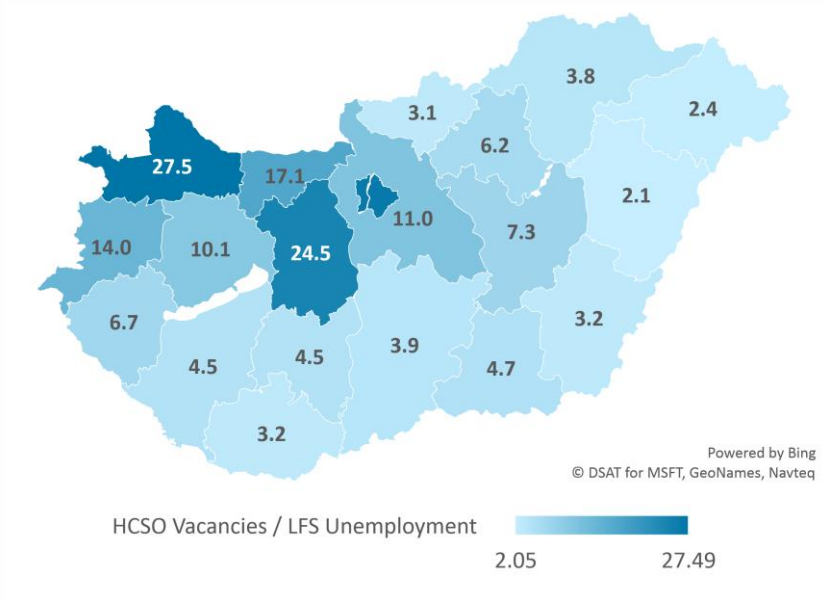


Note: The chart shows the inverse of the tightness indicator, for easier interpretation.
Sources: HCSO, MNB

6.2.2. Impact of labour market tightness on other channels of corporate adjustment at company and employee levels

In order to be able to measure the adjustment of a typical firm or typical employee to the tightening labour market, we performed a regression estimate on **data at corporate and employee level** (so-called micro data). We compared employees (and firms) that worked (operated) in labour markets of different tightness. What makes these comparisons feasible in our estimate is that the strengthening labour market competition changed not only over time, but also showed major differences across regions within the country: **higher tightness evolved in the north-western counties and Budapest** (Chart 6-8).

Chart 6-8: Tightness indicator calculated with HCSO vacancies by county, in 2015



Sources: HCSO, MNB

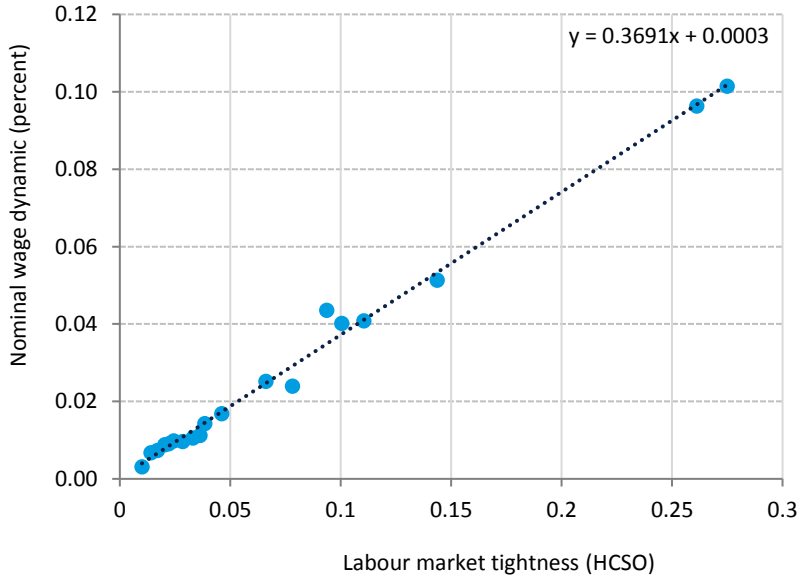
Our equation (obtained from panel econometric methods) can be stated in the following form:

$$d\ ln\ y_{ict} = \boldsymbol{\gamma} \cdot tightness_{ct} + \delta\ ln\ y_{ict} + X_{ict} \cdot \beta + FE_i + FT_t + u_{ict}$$

where y_{ict}, i.e. wage, hours worked (at employee level) and investment (corporate level) were used as regressed variables.[12] X_{ict} comprises corporate controls such as firm size, sector (NACE) where the company operates, the ratio of state and foreign ownership, capital–labour ratio, labour productivity and level of investment. In the case of our employee-level estimate, these controls (X_{ict}) are the gender, the age, the square of the age, the highest educational level, employment category (HSCO – Hungarian Standard Classification of Occupations), type of employment agreement as well as the logarithm of the left-hand side variable (wage, working hour). In addition, the model also contains corporate (FE_i) and time (FT_t) fixed effects, so that we are able to separate the impact of tightness from the impacts of the other characteristics of the companies under review.

The size of the estimated $\boldsymbol{\gamma}$ parameter answers the question of how tightness affects the left-hand side variables: the higher the positive value of $\boldsymbol{\gamma}$, the greater impact the tightness of the labour market has on the variable under review.

Chart 6-9: Correlation between wages and tightness

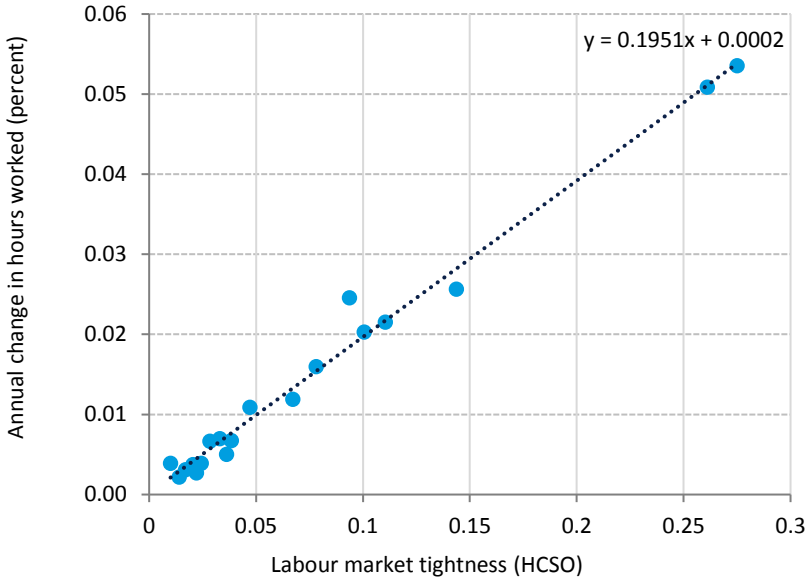


Source: The MNB's own calculation based on the Wage Survey database

Firms that face greater tightness have a chance to prevail in the competition for the fewer jobseekers by giving better wage offers. Accordingly, we expect that firms operating in tighter labour markets will increase wages to a greater extent. Examining corporate wage adjustment we found that the annual **wage increase of an employee at a firm operating in a 10 percentage points tighter labour market was 3.6 percentage points higher**, taking various corporate and employee characteristics into account for comparability (Chart 6-9).

[12] Where i indicates the given company/employee, c is the county where the firm operates, while t customarily means the time index, in years.

Chart 6-10: Correlation between hours worked and tightness



Source: The MNB's own calculation based on the Wage Survey database

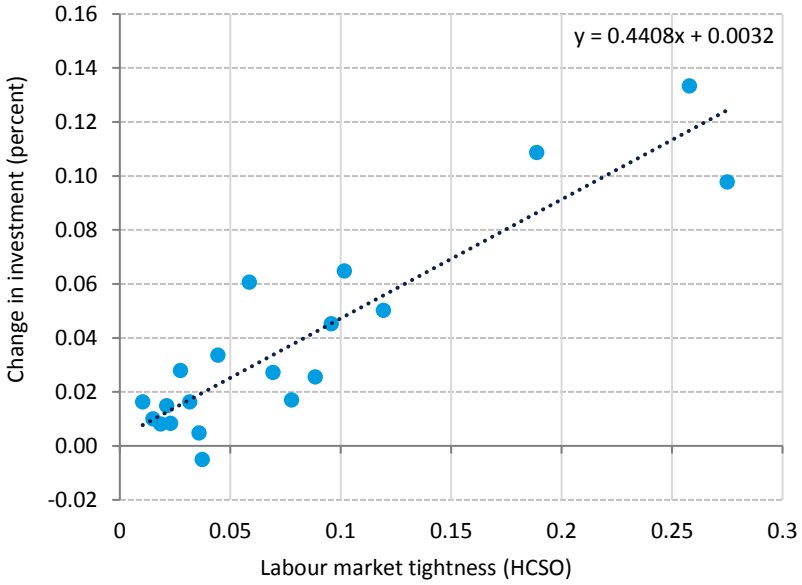
As it is more difficult for companies to expand their labour capacities in a tighter labour market environment, some **react to the strengthening labour market competition by work reorganisation**. This may also mean a more intensive utilisation of their existing capacities, which is seen in the data on the increase in working hours per employee. Accordingly, we expect the tighter labour market will entail an increase in the number of working hours. Based on our findings **the weekly hours worked by employees employed in a 10 percentage points tighter labour market amounted to 2 percent more on average** (Chart 6-10).

Reorganisation of work may also entail an increase in investment, as the improvement of working conditions are coupled with material expenses as well. In addition, it can happen that some companies substitute some of the labour that is more difficult or more expensive to access with mechanisation in their production technology (by increasing their capital stock), fitting into the global trend of robotisation. Both channels may result in an increase in investment in the short run. Accordingly, we expect that firms operating in the tighter labour market increased their investment to a greater extent. **Based on our findings, a company operating in a 10 percentage points tighter labour market made significantly more investment, i.e. 4.4 percentage points more on average** (Chart 6-11)**.**

Various growth-stimulus programmes of the Government and the central bank have also contributed to increased labour demand in recent years, which are reflected in the impact of tightness on investment too and which we cannot capture in this micro based estimate due to the omitted variable bias.[13] Therefore, the actual impact of labour market tightness on investment may be somewhat lower than what is estimated here.

[13] Due to the limitations of the corporate database used, in this estimate we do not control the financial position of companies and the age of the company, which thus results in distortion in the estimated parameter through the omitted variables.

Chart 6-11: Correlation between investment and tightness



Source: The MNB's own calculation based on the Wage Survey database.

6.2.3. Data used

To determine the number of vacancies we derive the labour demand of the private sector from the number of vacancies in the Institutional Labour Statistics of the HCSO. We measure the number of jobseekers with the number of the unemployed calculated from the Labour Force Survey. We prepare our tightness indicator by annually aggregating both variables at county level, as the quotient of the two. The indicator produced this way is our examined independent variable in our panel regression analysis. The years of the analysis cover the period between 2010 and 2015. In spite of the short time dimension of the available data, our findings may be extended to the period after 2015, as we presume that the correlations sought for, similarly to all such type of analysis, are linear, and therefore they are valid outside the sample as well.

We prepared our company-level estimates using the annual panel database of the National Tax and Customs Administration available until 2016, connecting them to the territorial (county-level) tightness aggregates made available by the NES. On average the database contains 400 thousand companies (between 366 and 418 thousand) at annual level.

For our individual employee level estimates we used the panel database of the annual Wage Survey for the period between 2010 and 2015. The NES prepares the survey on the structure of wages at companies annually; the observation unit of the micro database is the employee. The population includes one – varying – sample of firms with a headcount between 5–50 people, the whole sample of companies with more than 50 people as well as all the budgetary institutions. Companies with a statistical headcount of less than 50 employees and non-profit organisations supply data on all of their employees. Companies with at least 50 employees and budgetary institutions select the employees to be included in the data supply by random sampling.

6.2.4. Summary

The objective of our study was to learn through what channels and to what extent various Hungarian companies were able to adapt to the competition for employees, which has been increasing steadily since 2013. We measured the strength of labour market competition with the tightness indicator. Companies facing greater tightness adjusted **wages, working hours and investment** more significantly.

Based on our analysis of whole-economy data, **in the period between 2000 and 2017 a significant positive correlation can be detected between changes in wages and labour market tightness**. According to our estimates prepared on the basis of company level and employee level data, **the competition for employees contributed to the increase in wages, hours worked** and **investment. According to our estimate, the wage increase of an employee of a firm operating in a 10 percentage points tighter labour market was 3.5 percentage points higher on average.** As tightness increased by some

30 percentage points between 2013 and 2017, according to our calculations, around 10.5–14.5 percentage points of the overall 27.5 percent growth in gross average earnings observed in this period may be related to the strengthening labour market competition.

7. Breakdown of average consumer price index for 2018

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

	Effect on CPI in 2018		
	Carry-over effect	Incoming effect	Yearly index
Administered prices	0.0	0.0	0.0
Market prices	0.7	2.1	2.8
Indirect taxes and government measures	0.2	-0.2	0.0
CPI	**0.9**	**1.9**	**2.8**

Note: The tables show the decomposition of the yearly average change of the consumer price index. The yearly change is the sum of so-called carry-over and incoming effects. The carry-over effect is the part of the yearly index which can be explained by the preceding year's price changes, while the incoming effect reflects the changes in the recent year. We decomposed these indices to the sub-aggregates of the consumer price index and calculated the inflationary effects of changes in the indirect taxes, administered prices, and market prices (not administered prices excluding indirect tax effects). The subgroups may not add up 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)

	2018				
	Average carry-over effect	Carry-over indirect tax effect	Average incoming effect	Incoming indirect tax effect	Yearly index
Food	0.9	0.0	3.1	-0.1	3.9
non-processed	0.3	0.0	5.1	-0.3	5.1
processed	1.3	0.0	1.8	0.0	3.1
Traded goods	0.6	0.0	0.4	0.0	1.0
durables	-0.4	0.0	0.2	0.0	-0.2
non-durables	1.0	0.0	0.5	0.0	1.5
Market services	0.5	0.0	2.6	-0.6	2.5
Market energy	6.8	0.0	1.5	0.0	8.3
Alcohol and Tobacco	0.9	1.9	2.1	0.0	4.9
Fuel	1.5	-0.5	8.1	0.0	9.1
Administered prices	-0.3	0.0	0.6	0.0	0.3
Inflation	**0.7**	**0.2**	**2.1**	**-0.2**	**2.8**
Core inflation	0.7	0.3	1.6	-0.2	2.4

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