INFLATION REPORT / II

2017

CNB CZECH NATIONAL BANK

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This Inflation Report was approved by the CNB Bank Board on 10 May 2017 and contains the information available as of 21 April 2017. Unless stated otherwise, the sources of the data contained in this Inflation Report are the CZSO or the CNB. All the Inflation Reports published to date are available on our website. Underlying data for the tables and charts presented in the text of this Inflation Report, minutes of Bank Board meetings, and time series of selected economic and monetary indicators (available in the ARAD database) are also published there.

Dear Readers,

The Inflation Report is our key monetary policy publication. We have been publishing it since 1998. Over the years we have gradually developed it. The form as you see it here – in Inflation Report II/2017 – is evidence of this process. Section I of the Report presents the message of our new quarterly forecast and the reasons behind the monetary policy decision adopted by the CNB Bank Board. In section II you will find a detailed description of the new forecast and its risks. Section III contains our assessment of past economic and monetary developments.

According to the Czech Constitution and the Act on the CNB, our primary objective is to maintain price stability. In addition, we maintain financial stability and see to the sound and smooth operation of the financial system in the Czech Republic. Without prejudice to our primary objective, we also aim to support the general economic policies of the Government leading to sustainable economic growth. By maintaining price stability, we assist Czech firms and households in their decision-making and planning, which ultimately results in greater stability of the entire Czech economy. Our independence is a necessary condition for successful implementation of monetary policy focused on price stability. For that reason, we are not allowed to seek or take instructions from the President of the Republic, from the Government, from Parliament, from administrative authorities or from any other body.

We have been maintaining price stability in the inflation targeting regime since 1998. The main features of this regime are a publicly announced inflation target, a focus on forecasts of the future path of inflation, and open communication with the public. We set the inflation target as year-on-year growth in consumer prices of 2% starting from 2010. We endeavour to ensure that actual inflation does not differ from this target by more than one percentage point on either side. Most advanced economies have similar inflation targets. There are several reasons why we define price stability as slight growth in prices rather than zero inflation. Inflation measures tend to be distorted upward because of imperfect adjustment for the impacts of changes in the quality of goods and services, where growth in quality is sometimes statistically captured as growth in prices. This distortion is also due to an assumption of constant weights in the consumer basket, whereas in reality people have a natural tendency to move away from goods and services whose prices are rising faster to those which are recording below-average growth or even falling. Last but not least, if we were to target an inflation rate that was too low or even zero, there would often be a threat of deflation, which has very harmful consequences for society as a whole. In such situations, moreover, the central bank would repeatedly hit the zero lower bound on interest rates and would often have to use other, less conventional instruments.

Changes in the monetary policy settings manifest themselves in the economy with a lag. Therefore, it is the future evolution of the Czech economy, rather than its current situation, that is of prime importance for the CNB Bank Board's decisions. The forecast for inflation at the "monetary policy horizon" (about 12–18 months ahead) is of greatest relevance to our decision-making. Our forecast tells us the most likely future course of the economy. It is drawn up by experts from the Monetary Department using the "g3" structural macroeconomic model. The core model captures the basic characteristics of the Czech economy as described by key variables such as prices, wages, GDP components in both nominal and real terms, the koruna exchange rate and nominal interest rates. Given the openness of the Czech economy, foreign trade and the koruna-euro exchange rate play an important role in the model. The structural linkages in the model provide a comprehensive and consistent view of the relationships between nominal variables and the real economy. From the viewpoint of economic theory, g3 is a dynamic stochastic general equilibrium (DSGE) model. Forward-looking expectations and their interaction with monetary policy, which reacts to economic shocks through changes in interest rates in an effort to stabilise inflation close to 2% at the monetary policy horizon, are important features of the model. The main forecasting inputs are an assessment of the current state of the economy (the initial state), projected developments abroad, and the outlook for administered prices and domestic fiscal policy. Based on this input information, and using the model and additional detailed analyses drawn up by economists from the Monetary Department, a forecast of the most likely course of the Czech economy is then compiled. In addition to the baseline scenario of the forecast, alternative or sensitivity scenarios are prepared as needed using the core prediction model.

The forecast is the key, but not the only, input to our monetary policy decision-making. Unless the economic situation requires an extraordinary monetary policy meeting, the Bank Board meets eight times a year to discuss monetary policy issues. At four of the meetings (in February, May, August and November) we discuss a new forecast, while at the other four (in March, June, September and December) we discuss the risks and uncertainties of the most recent forecast in the light of newly available information on domestic and foreign economic developments. Due to the arrival of new information since the forecast was drawn up and to the possibility of the Bank Board members assessing its risks differently, the decision we adopt may not fully correspond to the message of the forecast prepared by our experts.

The CNB's main monetary policy instrument is the two-week repo rate. We also set the discount rate and the Lombard rate. By changing these monetary policy rates, we influence financial market interest rates from which commercial banks derive their loan and deposit rates for their customers. A rate increase leads – via the "transmission mechanism" – to slower demand growth in the economy, which, in turn, causes inflation to go down. Lowering the repo rate has the opposite effect. If the forecast indicates growing inflation pressures which might cause inflation to exceed the 2% target, this is a signal that our monetary policy should be more restrictive, i.e. that interest rates should be raised. The opposite applies, of course, if inflationary tendencies decrease, as monetary policy in the (future) inflation-targeting regime is symmetrical in both directions. The exception is a situation where inflation is affected by extraordinary supply-side shocks which we cannot influence and which will cause it to deviate from the target only temporarily. Changes to indirect taxes and sharp swings in oil prices are typical examples of such shocks. Attempts to keep inflation on target despite such shocks would lead to unnecessary volatility in economic growth and employment. We therefore usually look past the first-round effects of such factors in our decision-making and tolerate a temporary deviation of inflation from the target due to such price shocks. Inflation then returns to the target after the shocks fade away.

We have a whole range of other instruments besides the monetary policy rates described above. These we can use in situations where the use of interest rates is not enough to reach the inflation target. One such situation was the adoption of the exchange rate commitment in autumn 2013, which we did after monetary policy rates had been lowered to "technical zero" in November 2012 and the situation called for a further easing of the monetary conditions. This instrument was used until 6 April 2017, when the end of the exchange rate commitment was announced. In the standard managed float exchange rate regime to which we have returned, we can moreover respond to potential excessive fluctuations of the koruna exchange rate by intervening in the foreign exchange market. We use these instruments primarily to deliver price stability; to maintain financial stability we use a separate set of instruments called macroprudential tools. However, monetary policy and macroprudential policy affect one another, as monetary policy decisions have an impact on the financial sector and, conversely, macroprudential policy decisions influence the economy and inflation. We therefore take the interactions between the two policies into account. Additionally, these interactions have recently been strengthened by an increase in the weight of new property in the consumer price index implemented by the Czech Statistical Office.

We are proud of the fact that the CNB is one of the most transparent central banks in the world according to renowned international analyses. We publish our forecast and its risks – and subsequently also an explanation of the reasons for the Bank Board's decision – in order to make our monetary policy as transparent, comprehensible, predictable and therefore credible as possible. We are convinced that credible monetary policy effectively anchors inflation expectations and thereby significantly helps to maintain price stability and overall macroeconomic stability in the Czech Republic.

On behalf of the Czech National Bank

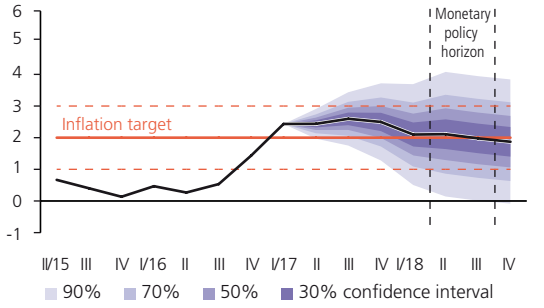
Jiří Rusnok
Governor

I. SUMMARY

Chart I.1

HEADLINE INFLATION FORECAST

Headline inflation will decline at the start of next year and will be very close to the 2% target at the monetary policy horizon
(year on year in %)

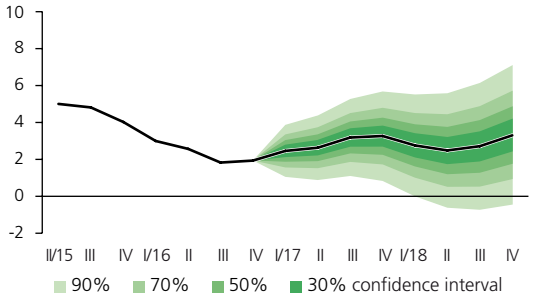


Note: The confidence intervals of the headline inflation forecast reflect the predictive power of past forecasts. They are symmetric and widening only for the first five quarters and then stay constant. This is consistent with both the past predictive power and the stabilising role of monetary policy.

Chart I.2

GDP GROWTH FORECAST

The growth of the Czech economy will fluctuate close to 3% over the next two years
(annual percentage changes; seasonally adjusted)



Note: The confidence intervals of the GDP growth forecast reflect the predictive power of past forecasts and the CZSO's revisions of the national accounts. They are symmetric and linearly widening.

Inflation will stay in the upper half of the tolerance band around the CNB's 2% target this year and return to the target early next year. The currently peaking inflation pressures reflect continued growth of the domestic economy and accelerating wage growth, supported by an increase in the minimum wage introduced in January. Import prices are also having an inflationary effect for the first time in a long time because of renewed growth in euro area producer prices. Inflation is also being affected by one-off factors, which include faster growth in food prices in addition to the launch of electronic sales registration. Growth in domestic costs will slow slightly in the period ahead due to rising labour productivity growth, despite slightly accelerating growth in wages and economic activity. By contrast, the effect of import prices will quickly turn anti-inflationary again due to slower quarterly growth in foreign producer prices coupled with the appreciation of the koruna. Inflation will thus decline at the start of next year and will be very close to the CNB's 2% target at the monetary policy horizon (see Chart I.1). As regards the structure of inflation, there will be a further – only modest – increase in core inflation. It will slow in early 2018, partly due to an unwinding of the aforementioned one-off factors and appreciation of the koruna. Food price inflation will also rise briefly owing to a slight recovery in world agricultural commodity prices. Administered prices will be unchanged overall this year and rise only modestly next year. The marked year-on-year increase in fuel prices observed at the start of this year will subside quickly. Fuel prices will then be broadly flat in line with the stable oil price outlook.

The growth of the Czech economy will rise to almost 3% this year and maintain this pace in 2018 (see Chart I.2). The economy will thus remain close to its potential output level. Growth in domestic economic activity will be driven mainly by robust growth in household consumption, reflecting consumers' optimism in an environment of continued growth in employment and wages. Investment will recover, especially in the government sector as a result of renewed drawdown of EU funds. To a lesser extent, fiscal policy will contribute to economic growth via buoyant growth in public sector pay, public investment funded from domestic sources and social benefits. The economy will continue to benefit from ongoing demand growth in the Czech Republic's main trading partner countries. However, the positive contribution of net exports to Czech economic growth will disappear gradually as a result of an acceleration in domestic demand, which will increase imports, and appreciation of the koruna. The continued economic growth will manifest itself in rising tightness in the labour market and a decline in unemployment, which is now already the lowest in the EU. This will result in a further acceleration in wage growth in the years ahead. The growth in employment and decline in the unemployment rate will slow gradually due to growing shortages of available labour.

According to the forecast, the koruna will appreciate following the exit from the exchange rate commitment, which happened in early April.[1] The short-term exchange rate forecast for 2017 Q2 takes into account the slight appreciation that occurred shortly after the exit from the exchange rate commitment in early April. According to the forecast, the koruna will appreciate over the rest of the forecast horizon due among other factors to continued real convergence of the Czech economy to the euro area countries. However, the speed of equilibrium real appreciation of the koruna will not reach the pre-crisis values and, according to the assumptions of the forecast, will stabilise close to 1.5% a year. Appreciation will also be fostered by a positive interest rate differential vis-à-vis the euro area and this year's asset purchases by the ECB. However, the exchange rate forecast does not take into account that the appreciation may be strongly dampened in the coming quarters by market "overboughtness", i.e. by past hedging of exchange rate risk by exporters before the exit from the CNB's exchange rate commitment and by the large koruna positions of financial investors.

Consistent with the forecast is an increase in domestic market interest rates in 2017 Q3 and later also in 2018. The exit from the exchange rate commitment represents a shift of monetary policy towards a neutral stance and use of the standard instrument, namely interest rates. Nevertheless, the forecast assumes that interest rates will remain at the current level in 2017 Q2. Consistent with the forecast is an increase in market interest rates thereafter (see Chart I.3) ensuring fulfilment of the 2% inflation target next year. However, the rate increase will be strongly dampened until around mid-2018 by the ECB's currently ongoing quantitative easing.

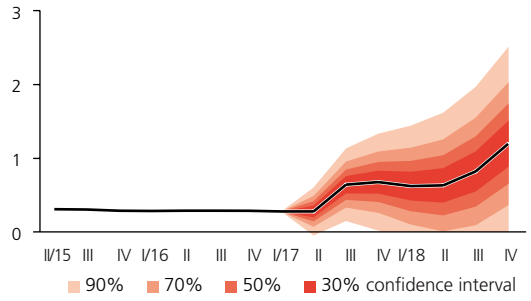
At its monetary policy meeting on 4 May 2017, the Bank Board decided to keep interest rates unchanged. The two-week repo rate was maintained at 0.05%, the discount rate at 0.05% and the Lombard rate at 0.25%.

The Bank Board assessed the risks to the inflation forecast at the monetary policy horizon as being slightly inflationary. The path of the exchange rate is still the main uncertainty of the forecast. The exchange rate may fluctuate in either direction after returning to the standard form of managed floating. Compared to the forecast, it may be weaker on average owing to the absence of a counterparty for the closing of koruna positions by financial investors. The extent to which the current inflation pressures are fundamental and persistent is also uncertain. The uncertainties regarding future economic developments also include domestic and foreign political risks.

CHART I.3

INTEREST RATE FORECAST

Consistent with the forecast is an increase in domestic market interest rates in 2017 Q3 and later also in 2018
(3M PRIBOR in %)



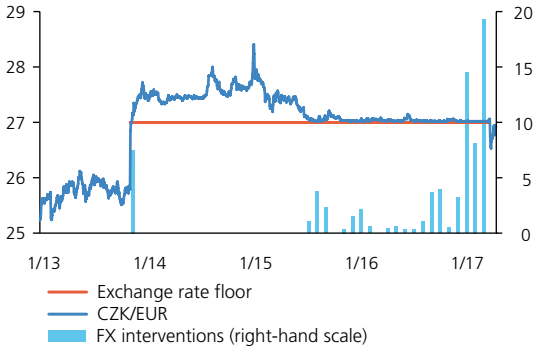
Note: The confidence intervals of the 3M PRIBOR forecast reflect the predictive power of past forecasts. They are symmetric, linearly widening and limited below by the zero lower bound.

1 The exit from the exchange rate commitment and its assessment is discussed in more detail in Box 1.

CHART 1 (BOX)

CZK/EUR EXCHANGE RATE AND THE CNB'S FX INTERVENTIONS

Until the summer of 2015, the koruna was above the exchange rate floor without the need for CNB interventions; the subsequent interventions grew in size as the exit neared
(CZK/EUR; FX interventions in EUR billions until 3/2017 – right-hand scale)



BOX 1
A LOOK BACK AT THE DISCONTINUED EXCHANGE RATE COMMITMENT

On 6 April 2017, the Bank Board decided to end the CNB's exchange rate commitment with immediate effect. The commitment had been introduced in November 2013 as an additional instrument for easing the monetary conditions in a situation where the Czech economy had been in danger of slipping into deflation. This box gives a brief summary of the economic developments during the existence of the commitment which led initially to its prolonging and later to gradual fulfilment of the conditions for its discontinuation this spring.

In 2013, the Czech economy remained in a protracted recession that had started in previous years. The share of unemployed persons was close to 8%, wages were stagnant and inflation net of tax changes was falling towards zero. Household income and consumption were dropping, and firms had lower profits and were investing less. At that time, the CNB had already kept interest rates at technical zero for a year and its forecasts were indicating that the economy would face a deflation-recession spiral if it did not intervene. It responded to this threat first by committing to leave interest rates at technical zero over a longer horizon until inflation pressures increased substantially. In addition, in the second half of 2013 it communicated that it was ready to use the exchange rate if a further monetary policy easing became necessary, and that the likelihood of such a measure was increasing. Eventually, an exchange rate commitment, or floor, of CZK 27 to the euro was adopted at the Bank Board's monetary policy meeting on 7 November 2013.

After the exchange rate commitment was announced, the koruna weakened above the required floor with the aid of foreign exchange interventions by the CNB (see Chart 1). The CNB clearly declared that it stood ready to intervene without any time or volume limits. Thanks to this, the exchange rate commitment quickly earned high credibility. Until the summer of 2015, the koruna was above the floor of CZK 27 to the euro without the need for CNB interventions. In summer 2015, however, quantitative easing by the ECB and continued favourable developments in the domestic economy pushed the koruna to the commitment level. From July 2015 onwards, the CNB therefore intervened against appreciation below the floor when needed. By March 2017, the interventions had totalled EUR 75 billion.

The weakened exchange rate contributed significantly to the economic recovery that occurred in 2014. Besides easy monetary policy, the turnaround in the domestic economy

was fostered by a recovery in external demand and the discontinuation of restrictive domestic fiscal policy. Household consumption and investment started to rise, the unemployment rate went down and the economic sentiment of consumers and businesses improved. Domestic economic developments remained favourable over the next more than two years.

The renewed economic growth and the improvement in the labour market have led to a rise in core inflation to more than 1% since late 2014. Core inflation had last reached this level before the global financial and economic crisis. However, headline inflation remained close to zero almost until the end of 2016 due to escalating deflationary tendencies in the euro area and falling world prices of oil and other commodities. These strengthening anti-inflationary pressures from abroad were reflected in domestic prices mainly through a deepening decline in foreign producer prices, which in the outlooks were rebounding from increasingly low levels (see Chart 2). In the end, they did not return to year-on-year growth until early 2017, i.e. roughly three years later than originally expected.

The CNB looked past the first-round anti-inflationary effects of the favourable supply-side shock linked with the drop in world oil prices. The exchange rate commitment was thus not moved to a weaker level. However, it had to be prolonged in several steps. This was sufficient to prevent the anti-inflationary shocks from having negative second-round effects on the Czech economy. Such effects could have taken the form of a fall in inflation expectations and more subdued nominal wage growth and could have jeopardised the fulfilment of the price stability mandate in the longer term. However, no such thing happened, thanks in part to the CNB's monetary policy and its communication. On the contrary, inflation rose towards the 2% inflation target in late 2016 as the anti-inflationary effect of import prices unwound and the inflationary effect of the domestic economy continued.

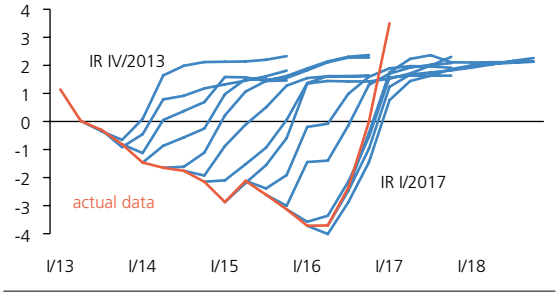
The prolonging of the exchange rate commitment also reflected an intensifying easing of ECB monetary policy. Besides lowering its deposit rate to negative levels (-0.4%), in March 2015 the ECB launched an asset purchase programme of EUR 60 billion a month as part of its unconventional (quantitative) easing of monetary policy. In April 2016, it increased the monthly purchases to EUR 80 billion. Since April 2017, its monthly purchases have been EUR 60 billion. They will continue at least until the end of the year.

Annual consumer price inflation continued to rise in the first few months of 2017, exceeding the CNB's target of 2%. However, inflation remained within the tolerance band around

CHART 2 (BOX)

SHIFT IN THE OUTLOOK FOR EFFECTIVE PPI

The outlook for industrial producer prices in the euro area shifted significantly downwards after autumn 2013
(annual percentage changes; seasonally adjusted)



the target. This rise in inflation was due, in addition to a further increase in fundamental cost pressures, to one-off effects in the form of rapid growth in traditionally volatile food prices and the price impact of the launch of electronic sales registration in accommodation and food services. The CNB had expected inflation to rise temporarily above the 2% target within the confines of the tolerance band since the very introduction of the commitment in late 2013.

Right from the start of the exchange rate commitment, shaping expectations about its discontinuation had been an important part of the CNB's communication. To this end, the CNB Bank Board primarily used a "hard commitment" specifying the minimum duration of the commitment. The hard commitment was fully met. The CNB also provided information on the exit date expected or considered likely by the Bank Board and on the timing of the exit assumed in the forecast (see Chart 3).

The commitment was discontinued quite soon after the end of the "hard commitment" at an extraordinary monetary policy meeting on 6 April 2017. At this meeting, the Bank Board stated that the conditions for sustainable fulfilment of the 2% inflation target in the future had been met. Therefore, continuation of the exchange rate commitment was no longer needed to fulfil the CNB's primary objective of price stability.

The exit from the exchange rate commitment was the first step towards a gradual return of the overall monetary conditions to normal. Persisting domestic cost pressures coupled with an unwinding of foreign anti-inflationary effects are generating a need to return the CNB's monetary policy to a neutral stance. According to the current forecast, the majority of this shift will be delivered by appreciation of the koruna, while a smaller part will reflect an increase in interest rates as from the second half of this year (see Chart 4). However, there is a significant uncertainty about the evolution of these two components of the overall monetary conditions in the quarters ahead. This uncertainty is due above all to uncertain exchange rate movements in the next few quarters, which will reflect past hedging of exchange rate risk by exporters before the exit from the exchange rate commitment and the closing of koruna positions by financial investors after the exit. In this situation, the CNB is ready to make flexible use of its instruments to fulfil its primary statutory mandate.

CHART 3 (BOX)

PROLONGING OF THE EXCHANGE RATE COMMITMENT

External anti-inflationary shocks led to the prolonging of the CNB's exchange rate commitment beyond the originally assumed 2015

(expected exit date/minimum duration of FX floor)

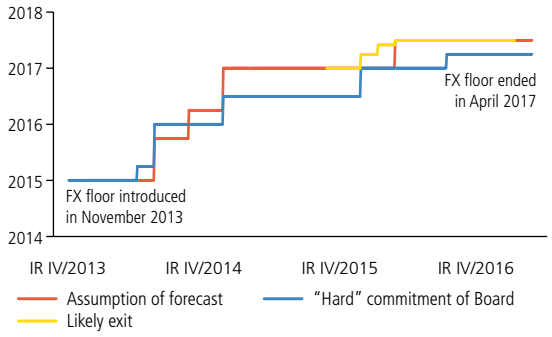
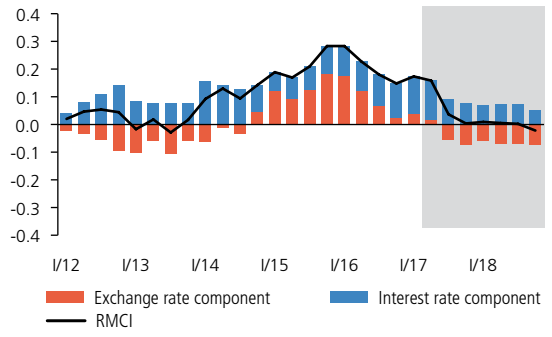


CHART 4 (BOX)

REAL MONETARY CONDITIONS INDEX

The forecast assumes a shift of the monetary conditions to a neutral stance, primarily through exchange rate appreciation

(index; positive values represent easy conditions and negative values tight conditions)



II. THE FORECAST, ITS CHANGES AND RISKS

II.1 DEVELOPMENTS ABROAD AND EXTERNAL ASSUMPTIONS OF THE FORECAST

World economy growth will rise this year and maintain higher momentum also in 2018. Economic growth in the effective euro area[2] will also increase and gradually return towards 2%. At the start of this year, inflation in the euro area mainly reflected strong year-on-year growth in prices of oil and other industrial commodities. However, this growth will gradually abate and the current high growth in industrial producer prices will thus decrease. Consumer price inflation in effective terms should be flat at current levels this year and accelerate towards 2% next year. The outlook for 3M EURIBOR market interest rates reflects the continued accommodative monetary policy of the ECB and is negative over the entire forecast horizon. However, the outlook for the interest rate differential vis-à-vis the equivalent dollar rate is now rising only modestly, so the euro-dollar exchange rate should remain broadly stable.

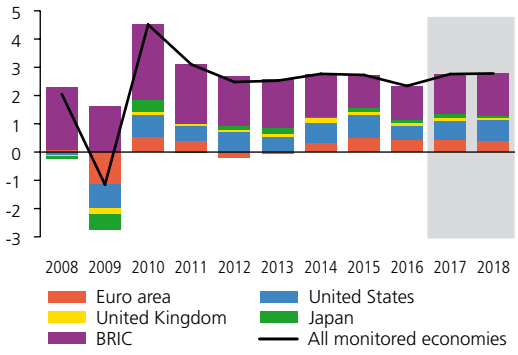
II.1.1 Economic developments abroad

Following a slowdown last year, world economy growth will accelerate this year and maintain higher momentum also in 2018 (see Chart II.1.1). Together with higher output from the main economies,[3] stronger growth in world trade – which, according to the WTO, last year recorded its lowest rate since the financial crisis (1.3%) – is expected. As for emerging economies, Russia and Brazil, which in the previous two years were hit by falling commodity prices and macroeconomic instability, are expected to return to growth. China is expected to grow at roughly the same pace this year as in previous quarters (6.5%), provided that its government or central bank does not take major steps to stabilise new lending. The advanced economies are expected to show solid growth. The global outlook is, however, subject to risks related to the measures of the new US administration, especially on fiscal expansion and foreign trade policy. The impacts of the UK's future exit from the EU are another uncertainty.

Chart II.1.1

WORLD ECONOMY GROWTH OUTLOOK

World economy growth will rise, mainly on the back of strengthening performance of emerging economies and the USA
(annual percentage changes in real GDP; contributions in percentage points; source: EIU, CF, CNB calculation)

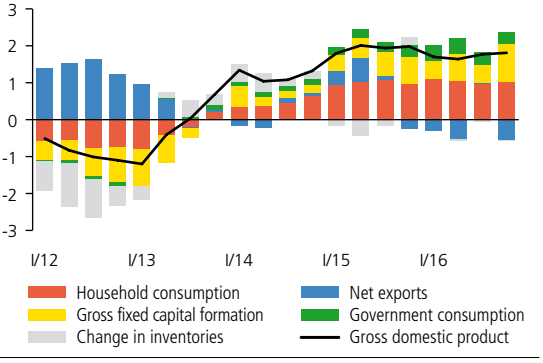


Note: World economy growth is proxied by the growth of the eight largest economies, which account for around 75% of global GDP. The weights of the individual economies are calculated on the basis of nominal GDP in USD over the period 2010–2015; the BRIC group consists of Brazil, Russia, India and China.

Chart II.1.2

STRUCTURE OF ANNUAL GDP GROWTH IN THE EURO AREA

The continuing GDP growth was again driven by domestic demand, within which the contribution of investment increased
(annual percentage changes; contributions in percentage points; seasonally adjusted; source: Datastream, CNB calcuation)



2 For the purposes of the forecast, external real and price developments are proxied by effective euro area indicators (see also the Glossary). In these indicators, the Czech Republic's major trading partners (especially Germany and Slovakia) have larger weights (50% and 14% respectively) than the actual relative sizes of their economies in the euro area (the weights used in the calculation are equal to the shares of the euro area countries in total Czech exports to the euro area). The outlooks for GDP, PPI and CPI in the individual euro area countries are based on the April Consensus Forecasts (CF). The outlooks for government bond yields, the euro-dollar exchange rate and the NEER are constructed on the same basis. The scenarios for the future paths of the 3M EURIBOR and 3M USD LIBOR and the Brent crude oil price are derived from prices of market contracts as of 10 April 2017. The outlook is indicated by the grey areas in the charts. This convention is used throughout this Report.

3 A more detailed description of expected developments abroad, updated every month, is available in Global Economic Outlook.

CHART II.1.3

PMI IN MANUFACTURING

Purchasing managers' assessment of the situation in industry continues to improve
(Purchasing Managers' Index; source: Bloomberg)

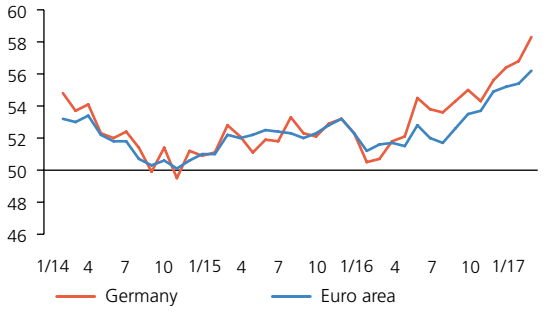


CHART II.1.4

EURO AREA GDP GROWTH OUTLOOK

Economic growth in the effective euro area will slow slightly further at the start of 2017 and then return towards 2%
(annual percentage changes; seasonally adjusted)

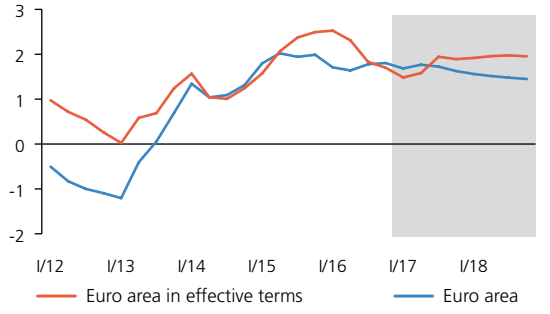
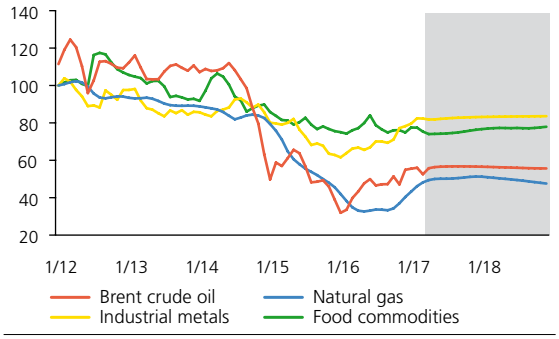


CHART II.1.5

PRICES OF CRUDE OIL AND OTHER COMMODITIES

The outlooks for prices of most commodities are approximately flat
(oil in USD/barrel; other commodities: index [January 2012 = 100]; natural gas [Russian in Germany]; source: Bloomberg, IMF, CNB calculation)



The euro area economy grew at a solid pace in late 2016, supported by rising domestic demand. In annual terms, GDP growth was 1.8%, the same as in Q3 (see Chart II.1.2). It continued to be driven mainly by household consumption and surging fixed investment growth. By contrast, the contribution of net exports was negative. In quarterly terms, the economy accelerated to 0.5%. This was aided by the Czech Republic's major trading partners; economic growth rose to 0.4% in Germany and 0.8% in Slovakia.

Monthly data from the start of this year suggest continuing robust economic growth in the euro area. However, the published data lag slightly behind leading indicators and sentiment indicators, which are at several-year highs. For example, the PMI in manufacturing for Germany and for the euro area as a whole was near a six-year high in March (see Chart II.1.3), indicating a further acceleration of industry, especially in Germany, Italy and France. By contrast, industrial production dropped unexpectedly in February (by 0.3% month on month), due mainly to a fall in energy sector output. Nonetheless, retail sales rose at a solid rate in February, reflecting rising consumer confidence and improving labour market developments. Unemployment fell again in February (to 9.5%), with a downward trend visible in all the major economies except France and Italy.

GDP growth in the effective euro area will gradually increase towards 2% due to a combination of several favourable factors (see Chart II.1.4). Growth will continue to be supported by monetary accommodation, an improving labour market situation and generally strong economic confidence. Exports will also be favourably affected by stable performance of emerging economies and a still weak euro exchange rate. Euro area growth will stay close to 2% in 2018. It may be affected from abroad, however, by potential fiscal stimuli in the USA, a change in US trade policy or a faster tightening of monetary policy by the Federal Reserve. Other uncertainties include the impacts of elections in major euro area countries and the Brexit negotiations.

II.2.2 Price developments abroad

The price of Brent crude oil has been fluctuating mostly close to USD 55 a barrel since the end of 2016, and the outlook expects it to be stable. At the end of November 2016, OPEC and other large oil producers agreed to cut production by up to 1.8 million barrels a day for six months. This supported the oil price and significantly reduced market volatility. However, the price increase also led to a recovery in US shale oil extraction, which is having the opposite effect. A view that the cut in production would not lead to a quick enough decrease in global oil stocks thus began to prevail in the first half of March. US oil stocks rose to historical highs. This eventually forced speculative investment funds to reduce their massive accumulated net long positions. This amplified the decline in oil prices, which temporarily fell by about USD 5 a barrel. However, oil prices started rising again at the end of March due to outages in Libya and signals that OPEC

might extend the agreement to cap output into the second half of this year. The market outlook foresees an average Brent crude oil price of USD 56 a barrel for both this year and the next (see Chart II.1.5). The analysts surveyed in the April CF expect virtually the same price.

The long-running upward trend in non-energy commodity prices – driven mainly by prices of base metals – halted in March. Base metal prices continue to be supported by favourable global manufacturing trends; their sub-index rose by 34% between January 2016 and February 2017. However, the rise halted in March (see Chart II.1.5), as optimism about growth in infrastructure investment in the USA is receding. By contrast, the food commodity price sub-index is close to its lowest level in many years. The outlooks for the two indices suggest that they will stay near their current levels.

Industrial producer prices started to go up for the first time in a long time at the start of this year, mainly because of year-on-year growth in energy prices. In February, industrial producer price inflation rose further (to 4.5%). While energy prices made the same contribution as in the previous month, the contributions of all the remaining components of the index increased (see Chart II.1.6). However, significant differences were visible across euro area countries. Industrial producer price inflation was highest in Belgium and the Netherlands. In the Czech Republic's most important trading partners – Germany and Slovakia – it stood at 3% and 3.2% respectively.

Industrial producer price inflation in the euro area will remain high in the near future but will then go down (see Chart II.1.7). Given the evolution of energy commodity prices, the forecast expects that the effective indicator of industrial producer prices will increase by 3.8% on average in 2017.[4] This will be due in part to year-on-year depreciation of the euro against the dollar. In 2018, industrial producer price inflation will slow to 2.1% on average. This will be due to fading growth in dollar prices of energy coupled with expected stability of the euro-dollar exchange rate. By contrast, prices in the non-energy sub-sector of industry should continue to rise amid solid growth of the euro area economy.

Consumer price inflation in the euro area also increased in early 2017, but slowed somewhat in March. Inflation in March (1.5%) was thus below the ECB's definition of price stability. The annual growth in consumer prices was due mainly to energy prices and to a lesser extent to food prices (see Chart II.1.8). Core inflation fell slightly (to 0.7%) following a period of stability.

4 The expected evolution of the industrial producer price index in the effective euro area and in the euro area proper has undergone an upward expert adjustment of 0.9 and 0.2 percentage point this year and the next respectively relative to the April CF outlook. This is because the observed faster increase in producer prices has yet to be taken sufficiently into account by the CF analysts.

CHART II.1.6

INDUSTRIAL PRODUCER PRICES IN THE EURO AREA

Industrial producer prices have been rising in all categories since the start of this year, the biggest contributor being energy prices

(annual percentage changes; differences in percentage points; source: Eurostat, CNB calculation)

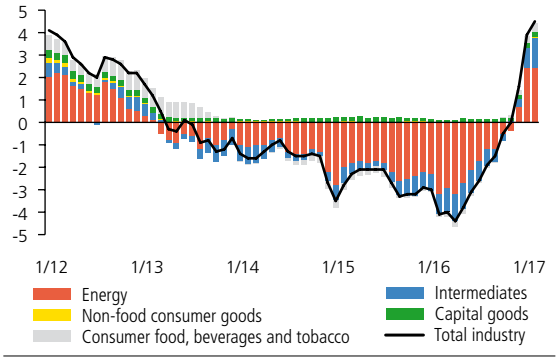


CHART II.1.7

PPI IN THE EURO AREA

The strong growth in industrial producer prices seen at the start of this year will gradually slacken

(year on year in %; seasonally adjusted)

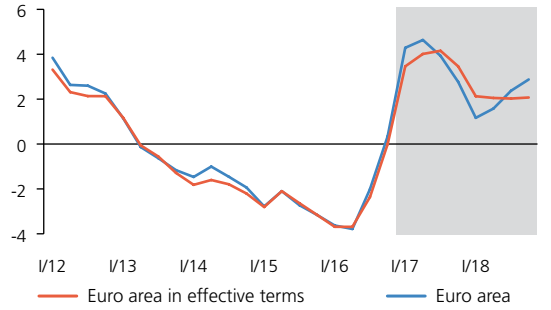
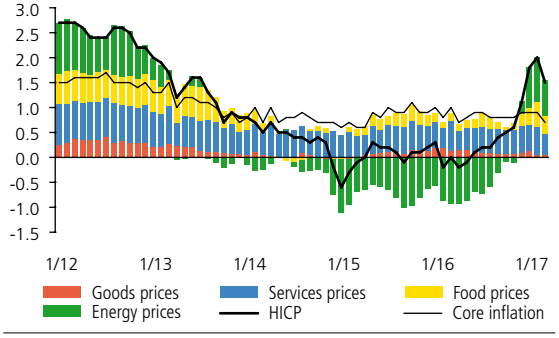


CHART II.1.8

INFLATION IN THE EURO AREA

The increase in HICP inflation was due mainly to energy prices and to a lesser extent to food prices

(annual percentage changes; differences in percentage points; source: Eurostat, CNB calculation)



Note: Core inflation is calculated on the basis of the HICP excluding prices of energy, food, alcohol and tobacco.

CHART II.1.9

CONSUMER PRICE INFLATION OUTLOOK IN THE EURO AREA

Growth in consumer prices in effective terms will remain stable this year at the level recorded at the start of the year and will then rise to 2% next year
(HICP; year on year in %; seasonally adjusted)

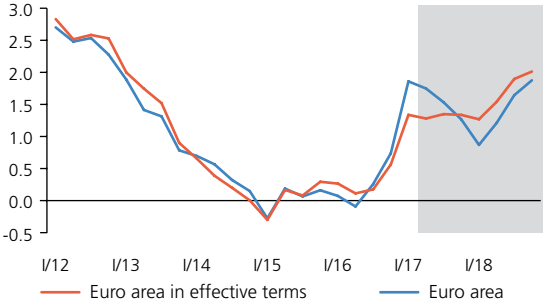


CHART II.1.10

3M EURIBOR AND 3M USD LIBOR

ECB monetary policy will remain easy; a further rise in interest rates is expected in the USA
(in %; differences in percentage points – right-hand scale)

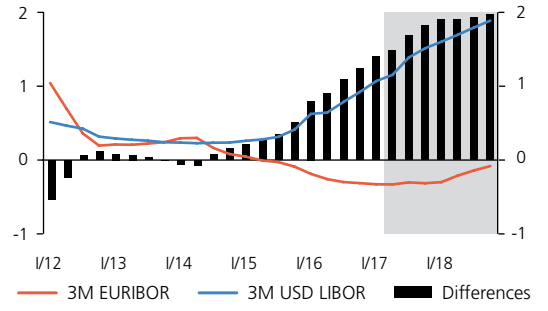
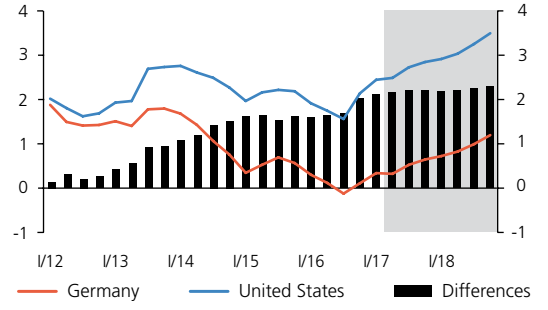


CHART II.1.11

10Y GOVERNMENT BOND YIELDS

According to CF, the yield differential between German and US government bonds will continue to increase slightly
(in %; differences in percentage points – right-hand scale)



The effective indicator of consumer price inflation in the euro area will stay below 1.5% until mid-2018. It will then rise towards 2% as a result of an expected increase in economic growth (see Chart II.1.9). In 2018, inflation in the Czech Republic's main trading partner countries will be higher than in the rest of the euro area, so the effective inflation indicator will exceed the standard indicator for the euro area.

II.1.3 Financial developments abroad

According to the market outlook, 3M EURIBOR rates will be negative until the end of 2018 (see Chart II.1.10). This outlook is in line with the expectations of the April CF analysts, who expect this rate to stand at -0.3% one year ahead. Monetary conditions in the euro area will remain easy, even though some adjustments have been made to ECB policy. The ECB lowered its monthly net asset purchases by one-quarter to EUR 60 billion with effect from April at least until the end of this year.[5] The final auction of targeted longer-term refinancing operations (TLTROs) also took place in March, with banks asking for four-year loans totalling EUR 233 billion. According to ECB President Mario Draghi, interest rates will stay at current levels at least until the end of the asset purchase programme. The ten-year German government bond yield edged up in 2017 Q1 as a result of higher inflation expectations. This was counteracted by financial market uncertainty associated with political events (elections in the Netherlands and France). According to the April CF, ten-year German government bond yields will rise gradually to over 1% at the end of next year (see Chart II.1.11).

The tightening of US monetary policy was reflected in a rising path of current and expected 3M USD LIBOR rates (see Chart II.1.10). In March, the Fed increased the target band for its policy rate to 0.75%–1.00%. Besides an increase in inflation pressures, a further improvement in the labour market situation combined with solid growth of the US economy contributed to the monetary policy tightening. Financial markets expect two further increases in Fed rates of 0.25 percentage point this year. The recent developments were reflected in the outlook for the ten-year US government bond yield, which should rise to 3% at the one-year horizon according to the April CF (see Chart II.1.11). The yield differential vis-à-vis German government bonds of the same maturity should thus stay above 2 percentage points over the entire horizon, with a slight upward tendency.

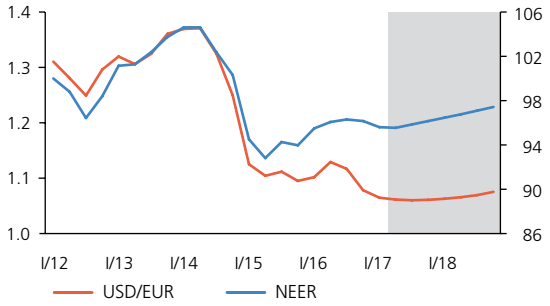
5 As in previous forecasts, this prediction takes into account the ECB's asset purchase programme (at least until the end of 2017) through expert adjustments using shadow interest rates. At their trough, these rates are about 1.25 percentage points lower than market rates. However, the difference gradually narrows over time and is almost zero at the end of 2018.

The market expects the euro-dollar rate to stay close to the current levels (see Chart II.1.12). The April CF is almost the same as the market outlook: at the one-year horizon it expects the euro to stand at USD 1.07. At the start of this year, the euro reached its weakest level against the dollar in 14 years. The appreciation of the dollar reflected not only the rising interest rate differential, but also financial market optimism linked with the new US president's plans to support the economy. Political uncertainties in Europe also fostered depreciation of the euro despite favourable economic news from the euro area. According to CF, the outlook for the nominal effective exchange rate indicates appreciation of the euro against the currencies of the main trading partner countries, especially the Japanese yen.

CHART II.1.12

EURO EXCHANGE RATE

The outlook for the euro-dollar exchange rate lies close to the current levels, i.e. just below USD 1.1 to the euro
(USD/EUR; NEER of euro against currencies of euro area countries' 18 main partners; 1999 Q1 = 100; right-hand scale)



II.2 THE FORECAST

The currently strong cost pressures – stemming from continued growth of the domestic economy, related increasing tightness in the labour market and inflationary import prices – will ease gradually. At the same time, the one-off effects that have increased inflation in recent months will subside. Inflation will thus decline at the start of next year and will be very close to the CNB's 2% target at the monetary policy horizon. The economy will be supported by continued growth in external demand and a gradual renewal of public investment co-financed from EU funds. Stable growth in labour demand coupled with an increasingly visible shortage of available labour will manifest itself in rapid wage growth. According to the forecast, the koruna will appreciate due among other factors to long-term real convergence, a positive interest rate differential and quantitative easing by the ECB. The exchange rate will thus foster a return of the monetary conditions to a neutral stance. Consistent with the forecast is an increase in domestic market interest rates in 2017 Q3 and later also in 2018.

II.2.1 Inflation and monetary policy

Inflation will stay in the upper half of the tolerance band this year and will be very close to the target over the monetary policy horizon (see Chart II.2.1). In addition to core inflation, rapid growth in food and fuel prices is contributing to the higher inflation this year (see Chart II.2.2). At the end of this year, however, inflation will start to decline as the one-off factors observed in late 2016 and early 2017 subside. This decline will also be fostered by a moderation of the currently peaking cost pressures from the labour market and the anti-inflationary effect of import prices connected with the appreciation of the koruna. Headline inflation will therefore return to the 2% target from above in early 2018. Monetary policy-relevant inflation, i.e. inflation adjusted for the first-round effects of changes to indirect taxes, will be very close to headline inflation.[6]

Core inflation will stay at elevated levels for most of this year as a result of an accumulation of past cost pressures. This will be apparent mainly for non-tradables prices, which have been showing gradually accelerating growth since the end of last year. Although this is partly due to one-off factors, including the launch of electronic sales registration (ESR) in cafés and restaurants, the main reason is inflation pressures from the domestic economy amid continued wage growth. By contrast, growth in tradables prices within core inflation will be dampened by appreciation of the koruna. Annual core inflation will slow to around 2% (see Chart II.2.3) in early 2018, partly due to the unwinding of the aforementioned one-off factors.

6 The impact of indirect tax changes on headline inflation will be negligible, with increases in excise duty on tobacco products (in both 2017 and 2018) being broadly offset by a reduction in the VAT rate applying to restaurants and other catering facilities from 21% to 15% (with effect from 1 December 2016) coupled with a decrease in VAT on newspapers and magazines from 15% to 10% (with effect from 1 March 2017).

TABLE II.2.1

FORECASTS OF SELECTED VARIABLES

The overall economic outlook is positive
(annual percentage changes unless otherwise indicated)

	2016 actual	2017 forecast	2018 forecast
Headline inflation	0.7	2.5	2.0
GDP	2.3	2.9	2.8
Average nominal wage	4.2	5.1	5.3
3M PRIBOR (in %)	0.3	0.5	0.8

CHART II.2.1

HEADLINE INFLATION AND MONETARY POLICY-RELEVANT INFLATION

Inflation will fall at the start of next year and stay close to the 2% target over the monetary policy horizon
(annual percentage changes)

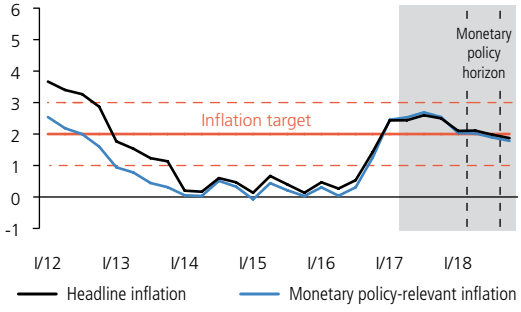
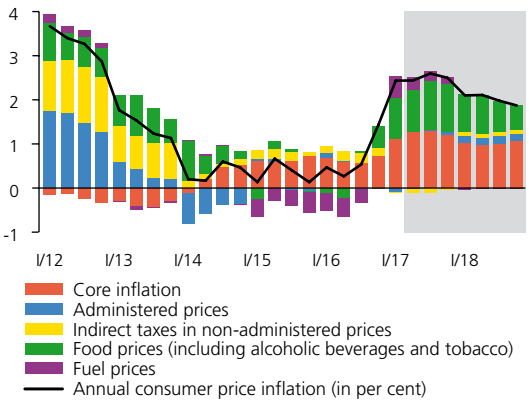


CHART II.2.2

STRUCTURE OF INFLATION AND THE INFLATION FORECAST

Food prices and elevated core inflation will be the biggest contributors to inflation
(annual percentage changes; contributions in percentage points)



Food price inflation will rise further in the next two quarters owing to a recovery in agricultural commodity price growth. The effects of previous anti-inflationary factors will dissipate fully during this year. Together with the expected evolution of key commodity prices on world markets, this will lead to rising growth in agricultural producer prices. Annual food price inflation will therefore gradually reach levels as high as 4% this year. The forecast expects it to go down gradually in 2018 (see Chart II.2.3). Besides an unwinding of base effects, this will be fostered by appreciation of the koruna.

The current rapid increase in fuel prices will slow gradually in connection with an outlook for stable oil prices. According to available indicators,[7] fuel prices were lower in April than in previous months. Their rapid year-on-year growth will thus moderate during 2017 Q2 and fuel prices are expected to show only modest growth at the end of this year (see Chart II.2.3). In the second half of 2018, fuel prices should decline slightly owing to a moderate year-on-year decrease in world prices of oil and petrol. An appreciating koruna-dollar exchange rate will also foster lower fuel prices over the entire forecast horizon.

Growth in administered prices will pick up as the current decline in natural gas prices unwinds. The negative contribution of gas prices to administered prices will decrease gradually, but will not disappear until 2018 Q2. Heat prices will also drop this year. This will be offset by growth in other items, so administered prices will be unchanged overall in 2017. Renewed growth in heat prices and continued growth in other prices will foster an increase in administered prices of 1% on average next year (see Table II.2.2).

According to the forecast, the koruna will appreciate over the entire forecast horizon. The short-term exchange rate forecast for 2017 Q2 takes into account the slight appreciation that occurred shortly after the exit from the exchange rate commitment in early April. According to the forecast, the koruna will appreciate over the rest of the forecast horizon due among other factors to continued real convergence of the Czech economy to the euro area countries. However, the speed of equilibrium real appreciation of the koruna will not reach the pre-crisis values and, according to the assumptions of the forecast, will stabilise close to 1.5% a year. Appreciation will also be fostered by a positive interest rate differential vis-à-vis the euro area and this year's asset purchases by the ECB. However, the exchange rate forecast does not take into account (with the exception of the short-term prediction for Q2) that the appreciation may be strongly dampened in the coming quarters by market "overboughtness", i.e. by past hedging of exchange rate risk by exporters before the exit from the CNB's exchange rate commitment and by the large koruna positions of financial investors.

7 CCS payment cards portal data and the CZSO's weekly surveys of fuel prices.

CHART II.2.3

COMPONENTS OF INFLATION

Fuel price inflation and later also food price inflation will go down as a result of the evolution of world commodity prices; appreciation of the koruna will help stabilise core inflation
(annual percentage changes)

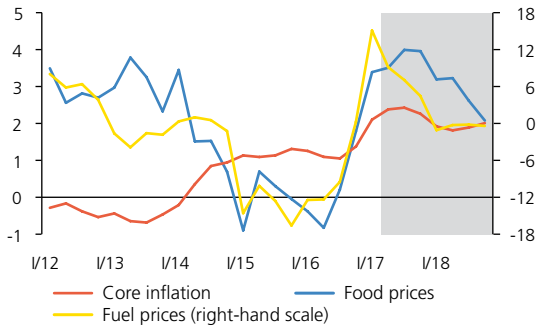


TABLE II.2.2

FORECAST OF ADMINISTRATIVE EFFECTS

Administered prices will be unchanged this year and will rise moderately next year on the back of growth in most of their components
(annual average percentage changes; contributions to headline inflation in percentage points)

	2016 actual		2017 forecast		2018 forecast	
ADMINISTERED PRICES[a)]	0.2	0.03	0.0	0.01	1.0	0.17
of which (main changes):						
electricity	1.2	0.06	0.4	0.02	0.5	0.02
natural gas	-4.7	-0.13	-3.4	-0.09	-0.5	-0.01
heat	1.0	0.02	-0.4	-0.01	1.0	0.02
water	1.4	0.01	1.3	0.01	2.0	0.02
health care	3.6	0.04	3.7	0.04	3.1	0.03

a) Including effects of indirect tax changes

CHART II.2.4

INTEREST RATE FORECAST

Consistent with the forecast is an increase in domestic market interest rates in 2017 Q3 and later also in 2018
(percentages)

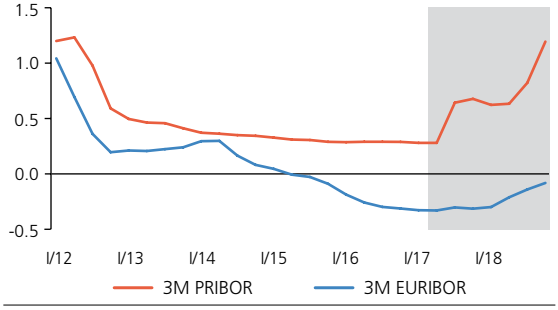


CHART II.2.5

COSTS IN THE CONSUMER SECTOR

The currently significant inflation pressures will ease substantially this year, mainly reflecting anti-inflationary import prices

(nominal quarterly percentage changes; contributions in percentage points; annualised)

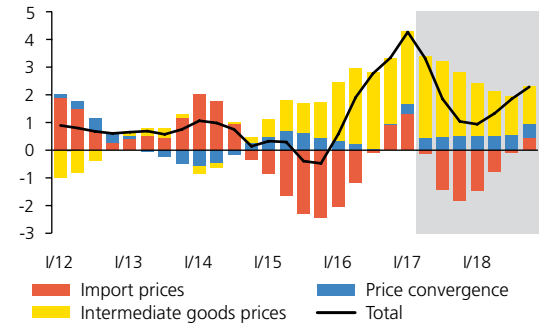


CHART II.2.6

COSTS IN THE INTERMEDIATE GOODS SECTOR

Domestic costs will continue to rise, albeit at a slower pace than at present, on the back of wage growth and a rising price of capital amid an upswing in labour efficiency

(nominal quarterly percentage changes; contributions in percentage points; annualised)

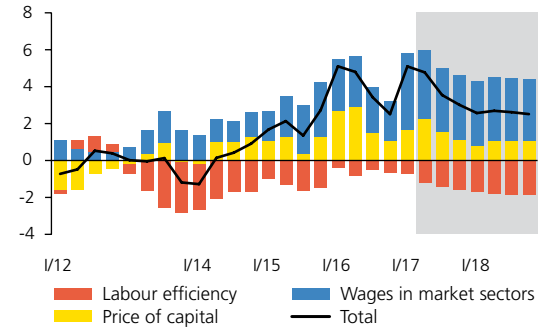
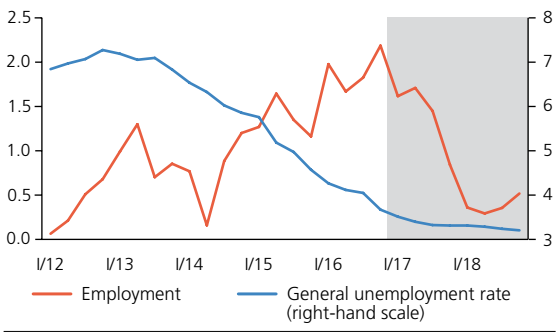


CHART II.2.7

LABOUR MARKET FORECAST

Total employment will continue to rise, although at a substantially slower pace than before, while the decline in the unemployment rate will slow

(annual percentage changes in employment; general unemployment rate in percentages; seasonally adjusted)



Consistent with the forecast is an increase in domestic market interest rates in 2017 Q3 and later also in 2018. The exit from the exchange rate commitment represents a shift of monetary policy towards a neutral stance and use of the standard instrument, namely interest rates. Nevertheless, the forecast assumes that interest rates will remain at the current level in 2017 Q2. Consistent with the forecast is an increase in market interest rates thereafter (see Chart II.2.4) ensuring fulfilment of the 2% inflation target next year. However, the rate increase will be strongly dampened until around mid-2018 by the ECB's currently ongoing quantitative easing, which is putting appreciation pressure on the koruna.

II.2.2 Costs and the labour market

The overall inflation pressures are currently peaking and will later ease owing to a renewed anti-inflationary effect of import prices. Growth in total nominal marginal costs in the consumer goods sector reached its high quarter-on-quarter levels at the start of this year. This was fostered both by significant pressures from the domestic economy and by quickly renewed growth in import prices; on the other hand, the contribution of price convergence increased only slightly (see Chart II.2.5). While the pressures from the domestic economy will decline only gradually over the forecast horizon, the effect of import prices will quickly switch back to negative contributions due to slower quarterly growth in foreign producer prices coupled with the appreciation of the koruna. The contribution of price convergence will return rapidly to its long-term levels. Growth in total nominal marginal costs will stabilise close to 2% towards the end of next year, with a renewed positive contribution of import prices.

The currently significant cost pressures, reflecting tightness in the labour market and growth in the price of capital, will gradually ease. Growth in nominal marginal costs in the intermediate goods sector mainly reflects the currently high quarterly nominal wage growth in market sectors and partly also a rising price of capital reflecting growth in total economic activity and external demand. The quarterly growth rate of costs at the start of this year was also affected by the January rise in the minimum wage. However, growth in domestic costs will slow slightly during this year due to gradually renewed growth in labour efficiency and slower growth in the price of capital coupled with the appreciating koruna. The growth rate of domestic costs will stabilise slightly above 2% in 2018 (see Chart II.2.6).

The previously strong growth in employment will slow due to an increasing shortage of labour. The annual growth rate of employment will decrease mainly towards the end of 2017 as the effect of its surge in 2016 Q4 unwinds (see Chart II.2.7). The growing tightness in the labour market connected with the now very low unemployment rate will be reduced only partly by growth in the labour force, reflecting a gradual increase in the statutory retirement age. The economic growth will thus be reflected in employment to only a limited extent (this topic is discussed

in Box 4 in section III.3). Growth in the number of employees converted into full-time equivalents will also slow compared to 2016. This indicator will increase almost exclusively through a further rise in the number of employees. Average hours worked per employee will be broadly flat, as the cyclical upward pressure on hours worked due to shortages of available labour will be broadly offset by a trend increase in the share of part-time employment in total employment. In 2018, growth in the converted number of employees will also be driven by a slight rise in average hours worked due to further increasing labour shortages.

From the long-term perspective, the now very low jobless rate is preventing unemployment from falling significantly further. The general unemployment rate will thus go down only slowly this year and the next (to 3.2% at the end of 2018; see Chart II.2.7). The forecast also expects a decline in the share of unemployed persons. This will reflect a continued decrease in the number of registered job applicants amid a gradual decline in the population aged 15–64.

The growing tightness in the labour market will exert upward pressure on wage growth in market sectors (see Chart II.2.8). According to the forecast, a pronounced pick-up in inflation, solid growth in economic activity, an increasing shortage of available labour and a further increase in the minimum wage[8] fostered stronger wage growth in market sectors[9] at the start of this year. Wage growth in market sectors will be above 5% as from mid-2017. According to an assumption of the forecast, strong wage growth will also continue in non-market sectors. This reflects the announced increase in wages of nurses and members of the security forces from July 2017. Wage growth in non-market sectors will slow in the second half of 2018 but will remain solid.

II.2.3 Economic activity

GDP growth will rise to almost 3% this year and maintain a similar pace next year. Growth in domestic economic activity will be driven mainly by robust growth in household consumption, reflecting consumers' optimism in an environment of continued growth in employment and wages. Increased drawdown of EU funds will be reflected mainly in renewed growth in gross capital formation. On the other hand, appreciation of the koruna – together with faster growth in domestic demand – will have a downward effect on the contribution of net exports (see Chart II.2.9).

8 The minimum wage was increased from CZK 9,900 to CZK 11,000 in January 2017. This fostered an increase in average wage growth in market sectors of around 0.3 percentage point.

9 The CZSO stopped publishing wages in the business sector and in the non-business sector when it released the data for 2016 Q4. The forecast for wages in the business sector is a key variable for the identification of domestic inflation pressures in the g3 model. The CNB has hence started to calculate the average wage in market sectors, which is roughly equivalent to the original average wage in the business sector. The differences in annual growth rates between the two series in the past amount to less than 0.3 percentage point.

CHART II.2.8

AVERAGE NOMINAL WAGES

Wage growth will pick up further in market sectors and will remain high in non-market sectors

(annual percentage changes; total wages – source: CZSO; wages in market and non-market sectors – source: CNB calculation)

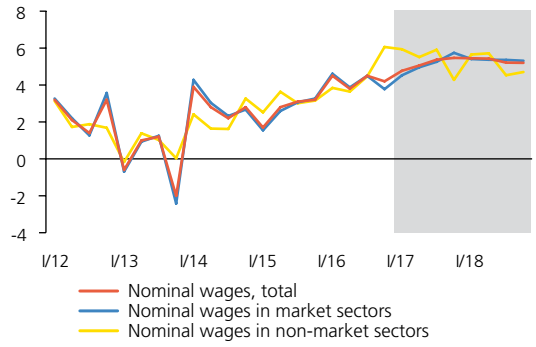


CHART II.2.9

ANNUAL GDP GROWTH STRUCTURE

Household consumption will remain a stable contributor to GDP growth, while investment will start to contribute positively again

(annual percentage changes; contributions in percentage points; seasonally adjusted)

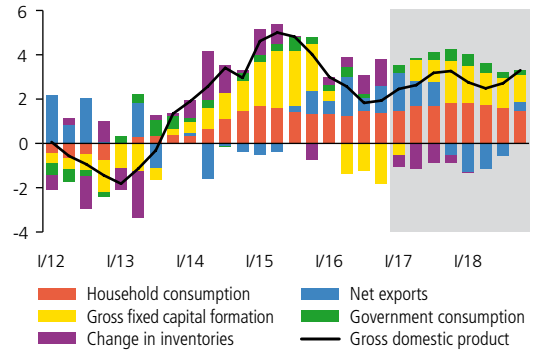


CHART II.2.10

REAL HOUSEHOLD AND GOVERNMENT CONSUMPTION

Household consumption will visibly outpace real government consumption

(annual percentage changes; seasonally adjusted)

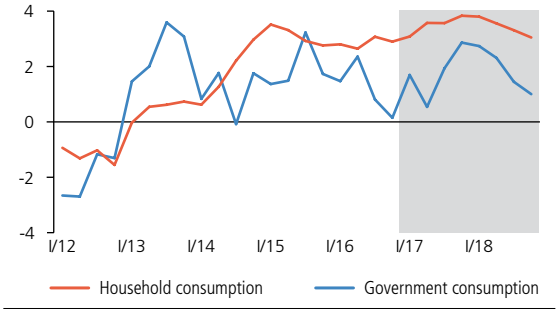


CHART II.2.11

NOMINAL DISPOSABLE INCOME

Disposable income growth will accelerate on the back of higher growth in income of entrepreneurs and property income amid continued high growth in wages and salaries
(annual percentage changes; contributions in percentage points)

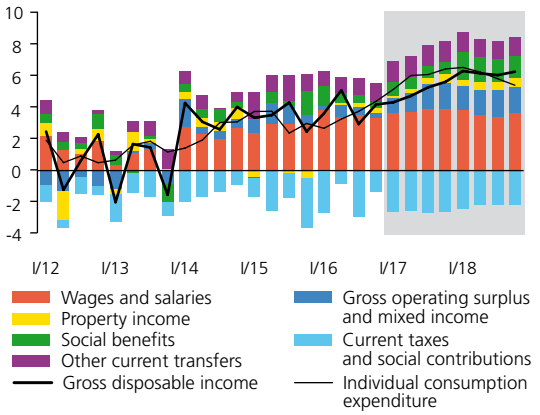


CHART II.2.12

INVESTMENT DECOMPOSITION

The decline in investment will fade this year as a result of renewed drawdown of European funds in the government sector
(annual percentage changes; contributions in percentage points; constant prices)

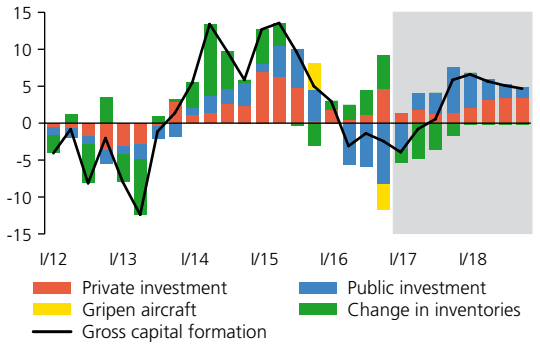
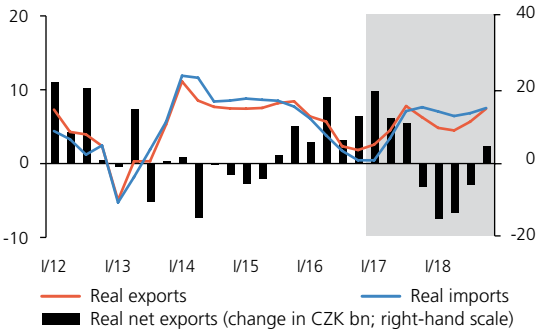


CHART II.2.13

REAL EXPORTS AND IMPORTS

Growth in both exports and imports will rise, reflecting the positive external demand outlook on the one hand and strengthening domestic demand on the other
(annual percentage changes; annual changes in CZK billions; seasonally adjusted)



The strong household consumption growth will reflect a further rise in wages and salaries and other sources of income. Annual household consumption growth will gradually rise this year, reaching almost 4% in late 2017 and early 2018 (see Chart II.2.10). This growth will be driven by high growth in disposable income connected with steadily rising wages and salaries and recovering income of entrepreneurs (see Chart II.2.11). Household consumption growth will also be fostered by a government-proposed increase in social benefits over the rest of 2018.

The growth in government consumption will be driven mainly by a sizeable rise in wages in the government sector and renewed growth in intermediate consumption. The forecast expects annual growth in real government consumption to rebound in the second half of this year (see Chart II.2.10); government consumption will rise by 1.8% in 2017 as a whole, mainly on the back of expected marked growth in compensation of employees in the government sector and health care expenditure. Government consumption will record similar full-year growth next year, too.

The currently observed decline in gross capital formation will fade, mainly as a result of renewed drawdown of EU funds. Investment will continue to decrease in the first half of 2017 due to an only gradual start to the drawdown of EU funds in the new programme period. However, the forecast expects strong renewed year-on-year growth in investment in the government sector in Q2 (see Chart II.2.12). Coupled with intensifying growth in private investment, this will lead to an increase in the contribution of gross fixed capital formation. The negative contribution of change in inventories will act in the opposite direction this year. Gross capital formation will thus increase by just 0.4% overall and will rise above 5% in 2018.

Growth in exports of goods and services will increase on the back of growth in external demand and an export recovery in the automotive industry. Following a temporary slowdown in the second half of last year, export growth will recover strongly at the start of 2017. This reflects the outlook for external demand and the number of new car registrations in Western Europe. The hampering effect of the appreciating exchange rate on exports will be apparent in late 2017 and early 2018, although it will be reduced and delayed by hedging against exchange rate risk by some exporters. Exports of goods and services will thus grow by more than 5% in both 2017 and 2018 (see Chart II.2.13).

The short-lived downturn in imports of goods and services will rebound as exports and domestic demand pick up. The marked recovery in import growth will be driven by faster growth in investment and exports, which are strongly import intensive. It will also reflect rising household consumption. Overall, imports of goods and services will grow by 4.6% in 2017 and 7% in 2018 (see Chart II.2.13).

Net exports will make a positive contribution to GDP growth this year and a negative one in 2018 due to a recovery in investment and appreciation of the koruna. The forecast expects a strongly positive contribution from net exports in the first three quarters of this year. At the end of this year, the contribution of net exports will turn negative as imports outpace exports. This will be due mainly to rising investment activity in the private sector and, to a lesser extent, to appreciation of the koruna. The contribution of net exports to annual GDP growth will thus be less than one percentage point in 2017 as a whole. Conversely, it will be negative in 2018.

II.2.4 The balance of payments

An improvement in the goods and services balances resulted in a record-high current account surplus in 2016 (see Table II.2.3). The surplus amounted CZK 52.6 billion, i.e. 1.1% of GDP. A year-on-year decline in energy commodity prices and growth in machinery exports were of key importance for the sharp rise in the goods surplus. The services surplus rose mainly in transport and other services (telecommunications, computer services and IT services). On the other hand, a higher primary income deficit due to a rise in the investment income deficit fostered a decrease in the current account surplus. A switch of the secondary income balance from a slight surplus to a relatively large deficit acted in the same direction. It was due to a decline in income from EU funds and also to growth in other ("private") transfers abroad.

The current account surplus will fall significantly in 2017, mainly because of a decline in the goods surplus. This will be due to a combination of faster growth in domestic demand, appreciation of the koruna and year-on-year growth in energy commodity prices amid only a gradual recovery of external demand. At the same time, the primary income deficit will rise due to growth in the direct investment income deficit. To a lesser extent, the lower current account surplus will also be due to a shift in the secondary income balance to a larger deficit linked with an expected further decrease in net drawdown of EU funds. The services balance will be virtually unchanged compared to 2016. The current account surplus will thus total just 0.3% of GDP.

The forecast expects the current account surplus to increase again to almost 1% of GDP in 2018. The goods surplus in nominal terms will rise modestly, while the secondary income deficit will decrease due to higher net drawdown of EU funds. The improvement in these two balances will outweigh the expected further deterioration of the primary income balance resulting from an increase in the direct investment income deficit. The services surplus will remain at the level of the previous two years.

The capital account surplus will continue to be affected mainly by the EU funding cycle. This surplus will fall sharply this year and increase again in 2018 with the start of drawdown in the new programme period.

Table II.2.3

BALANCE OF PAYMENTS FORECAST

The current account posted a record surplus in 2016, mainly as a result of growth in the goods surplus; the current account surplus will decrease this year

(CZK billions)

	2016 actual	2017 forecast	2018 forecast
A. CURRENT ACCOUNT	52.6	15.0	40.0
Goods	250.6	235.0	250.0
Services	101.1	100.0	100.0
Primary income	-271.8	-285.0	-300.0
Secondary income	-27.3	-35.0	-10.0
B. CAPITAL ACCOUNT	53.5	10.0	35.0
C. FINANCIAL ACCOUNT[a)]	117.7	-15.0	40.0
Direct investment	-141.0	-50.0	-50.0
Portfolio investment	-169.4	-40.0	40.0
Financial derivatives	11.3		
Other investment	-146.7	75.0	50.0
Reserve assets	563.5		

a) forecast excluding operations of banking sector, financial derivatives and reserve assets

On the financial account, the massive inflow of short-term capital that occurred as the end of the exchange rate commitment neared will come to a halt. This inflow was primarily due to the building of massive koruna positions by foreign investors betting on future appreciation of the koruna, combined with hedging against exchange rate risk by domestic exporters. The capital inflow was also fostered by the ECB's still exceptionally easy monetary policy. This inflowing capital was invested mainly in the form of short-term koruna deposits by non-residents in domestic banks, purchases of government koruna bonds with shorter maturities, and financial derivatives transactions. To a lesser extent, residents' deposits were transferred from abroad back to the Czech Republic. This inflow was only offset to a small extent by outflows of other capital in the business sector and therefore resulted in a large increase in the CNB's international reserves. Although flows of short-term capital can be expected to change after the already implemented exit from the CNB's exchange rate commitment, the speed of closure of koruna positions by financial investors remains subject to great uncertainty.

The net inflow of direct and portfolio investment will decline significantly this year. The net inflow of direct investment will largely reflect net reinvested earnings after the one-off effects that in the past caused a temporary increase in the net inflow fade. Moreover, the total net capital inflow under direct investment will be reduced by residents' acquisitions abroad and by a net outflow of debt capital. As for portfolio investment, the absence of a need to fund domestic activities from abroad – caused by an excess of domestic savings over loans – will continue to be apparent. Moreover, the forecast predicts that residents' interest in investing abroad will increase. Nevertheless, there will be a net capital inflow under portfolio investment in 2017. It will be associated with growth in the amount of government bonds held by non-residents – despite an expected gradual reduction in their positions compared with the end of Q1. The forecasted level will additionally be affected by accounting operations of the banking sector aimed at optimising contributions to the Resolution Fund.[10] In 2018, growth in portfolio investment by residents abroad and a decline in domestic government bonds held by non-residents will lead to an overall net outflow of portfolio investment. Turning to other investment, the net capital outflow in the business sector will continue next year, although the size of the outflow will be smaller than in 2017.

10 These operations are recorded on the other banking sector investment account in the same amount but with the opposite sign.

II.2.5 Fiscal developments

The improving public finances mainly reflect an increase in tax revenues due to government measures and continued economic growth. Public budgets last year recorded a surplus of 0.6% of GDP for the first time ever, although this was partly due to a fall in general government investment. The general government surplus will rise further to 1.1% of GDP this year and will remain at that level in 2018 (see Table II.2.4). On the expenditure side, this improvement will be aided by a drop in debt service costs resulting from a further reduction in the effective interest rate on government debt owing to financial market developments. The general government revenue side is being bolstered by the roll-out of ESR,[11] by additional revenues from last year's introduction of VAT control statements and by a further rise in excise duty. Faster public sector wage growth and an increase in expenditure on pensions and health care will act in the opposite direction this year. The tax discounts for "green diesel" and dependent children will also increase. Growth in social spending will rise in 2018 due to the launch of a new pension indexation scheme and the expected adoption of a whole range of new measures relating to social benefits.[12] On the revenue side, the tax discount for dependent children will increase and social security payments for employees are expected to go down depending on the number of children being raised.

The above developments will be reflected in a further increase in the general government structural surplus and a drop in government debt. General government structural surpluses will increase over the forecast horizon to levels around 1% of GDP. The medium-term objective of a structural deficit of 1% of GDP will thus be comfortably met at the forecast horizon. Government debt will gradually decline to as low as 32.8% of GDP in 2018 owing to the favourable evolution of the general government budget (i.e. significantly positive and increasing primary surpluses), still low interest rates on government debt and rising nominal GDP growth. At the same time, the government debt outlook takes into account the issuance activity of the Ministry of Finance in 2017 Q1 and the declared government debt management strategy.

Fiscal policy was significantly restrictive last year; by contrast, it will be moderately expansionary both this year and the next (see Table II.2.5). Its markedly negative contribution of 1 percentage point to economic growth last year was due mainly to a decrease in government investment connected with the end of the previous

Table II.2.4

FISCAL FORECAST

Starting in 2016, the general government balance switched into surpluses, which will increase this year
(% of nominal GDP)

	2016 actual	2017 forecast	2018 forecast
Government revenue	40.5	41.5	41.4
Government expenditure	39.9	40.4	40.3
of which: interest payments	0.9	0.8	0.7
GOVERNMENT BUDGET BALANCE	0.6	1.1	1.1
of which:			
primary balance[a)]	1.5	1.9	1.8
one-off measures[b)]	0.1	0.1	0.1
ADJUSTED BUDGET BALANCE[c)]	0.5	1.0	1.1
Cyclical component (ESCB method)[d)]	0.1	0.2	0.2
Structural balance (ESCB method)[d)]	0.4	0.8	0.9
Fiscal stance in pp (ESCB method)[e)]	0.7	0.4	0.1
Cyclical component (EC method)[d)]	-0.1	0.0	0.1
Structural balance (EC method)[d)]	0.6	1.0	1.0
Fiscal stance in pp (EC method)[e)]	1.0	0.4	0.0
GOVERNMENT DEBT	37.2	35.0	32.8

a) government budget balance minus interest payments
b) This item consists of expected revenue from sales of emission permits, expenditure on the (New) Green Savings Programme, guarantees, and revenue from the sale of frequency bands to mobile operators.
c) adjusted for one-off measures; CNB estimate
d) CNB estimate
e) year-on-year change in structural balance

Table II.2.5

FISCAL IMPULSE

The fiscal impulse was markedly negative in 2016, mainly as a result of a drop in government investment; it will be slightly positive this year, thanks mainly to a recovery in government investment
(contributions to GDP growth in percentage points)

	2016 actual	2017 forecast	2018 forecast
FISCAL IMPULSE	-1.0	0.3	0.3
of which impact through:			
private consumption	0.0	0.1	0.2
private investment	-0.1	-0.1	0.0
public investment, domestic	-0.1	0.0	0.0
public investment, EU funded	-0.8	0.2	0.1

11 The Ministry of Finance estimates the effect of the launch of ESR on VAT revenues at 0.3% of GDP. This estimate takes into account the expected negative effect of the ESR-related transfer of restaurant services to a reduced VAT rate.

12 These include support for disabled persons, higher sick pay, the introduction of paternal leave, carer's leave and advance payments of child support, higher child allowances, accelerated parental allowance and higher foster care benefits. The budgetary impact of these measures amounts to 0.3% of GDP.

programme period for European funds and an only gradual start to the new one. Government investment can be expected to recover this year. Mainly for this reason, a positive fiscal impulse of 0.3 percentage point is expected for this year. The forecast expects an equal positive fiscal impulse for next year. However, fiscal expansion will next year materialise to a greater extent through household consumption. In addition to continuing buoyant wage growth in the public sector, this will be driven by a package of new social measures approved by the current government coalition before this year's parliamentary elections. The main uncertainty of this fiscal forecast is a possible slower recovery in government investment this year.

II.3 COMPARISON WITH THE PREVIOUS FORECAST

The new inflation forecast is slightly lower at the monetary policy horizon, despite currently stronger cost pressures. These reflect faster-than-expected growth in foreign producer prices at the start of this year and higher domestic inflation due partly to one-off factors. By contrast, the slower-than-predicted growth in the average wage in market sectors recorded at the end of last year is assessed as only a temporary fluctuation. However, the exchange rate commitment was discontinued earlier than assumed by the previous forecast – in 2017 Q2. The koruna therefore appreciates earlier in the new forecast, leading to a more anti-inflationary effect of import prices. This is also reflected in the path of market interest rates, which has shifted towards slower growth in rates.

In the outlook for foreign variables, industrial producer price inflation has been increased significantly (see Chart II.3.1). This reflects unexpectedly sharp growth in these prices in 2017 Q1. A slightly stronger exchange rate of the euro against the US dollar coupled with an unchanged outlook for the dollar price of Brent crude oil will act in the opposite direction to a small extent. Rather higher growth in effective external demand is expected both this year and the next. This reflects continued growth in leading indicators in industry and overall economic sentiment in the euro area. The outlook for 3M EURIBOR market rates is slightly higher at the longer end of the forecast.

The forecast for overall domestic economic activity is little changed, although there are slight shifts in its structure (see Chart II.3.2). Household consumption growth is higher than in the previous forecast due to stronger expected growth in wages and salaries and social benefits. The contribution of net exports has also been revised upwards for this year. This reflects higher observed data from the end of last year, a slightly more optimistic outlook for external demand growth and a new assumption that the impact of appreciation of the koruna will be dampened by exchange rate hedging by exporters. At the same time, new data on gross capital formation indicate that investment has been affected by a slower start to the drawdown of EU funds under the new programme period than assumed by the previous forecast. Government investment growth will thus turn positive later.

The weaker observed nominal wage growth in market sectors at the end of last year is assessed as only a short-term fluctuation. This is indicated by the available data on labour market developments at the start of this year (see section III.3). Subsequent year-on-year wage growth in market sectors – supported by an increase in the minimum wage introduced at the start of 2017 – is close to the previous forecast and in 2018 shifts slightly higher (see Chart II.3.3). Overall, the domestic cost pressures will thus be similar as in the previous forecast.

CHART II.3.1

EFFECTIVE PPI IN THE EURO AREA

The significant revision of the outlook for industrial producer prices reflects their surprisingly sharp growth at the start of this year

(year on year in %; differences in percentage points – right-hand scale; seasonally adjusted)

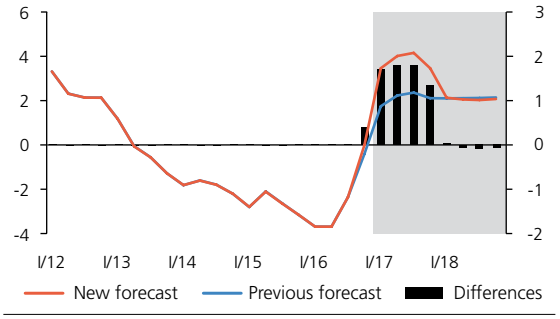


CHART II.3.2

CHANGE IN THE GDP FORECAST

The GDP growth forecast is almost unchanged for this year and the next

(annual percentage changes; differences in pp – right-hand scale; seasonally adjusted)

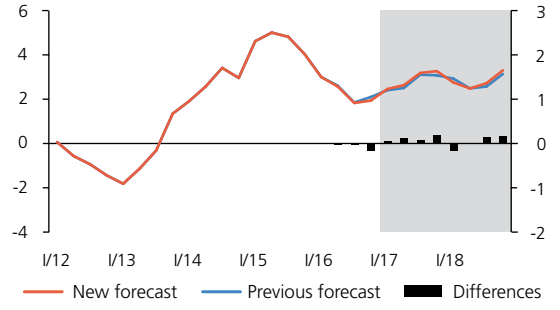


CHART II.3.3

CHANGE IN THE FORECAST FOR NOMINAL WAGES IN MARKET SECTORS

The low observed figures at the end of last year have affected the nominal wage prediction for the next few quarters; at the longer end of the horizon the forecast is slightly higher

(annual percentage changes; differences in pp – right-hand scale)

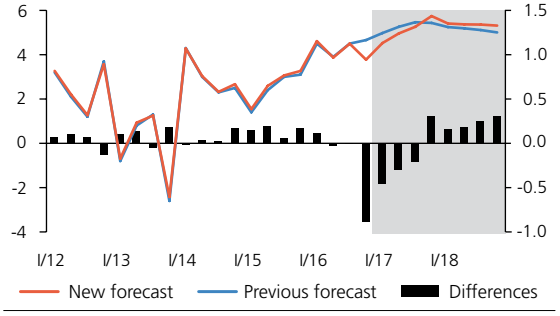


CHART II.3.4

CHANGE IN THE HEADLINE INFLATION FORECAST

The forecast for headline inflation is slightly lower over the entire horizon except for the very near term
(year on year in %; differences in pp – right-hand scale)

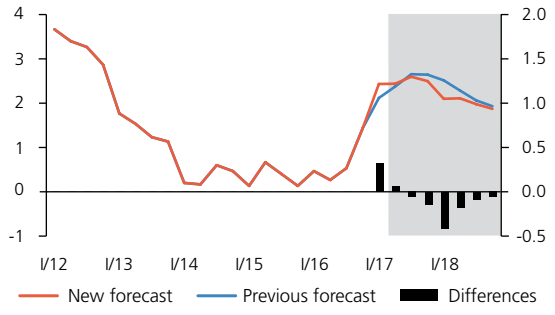
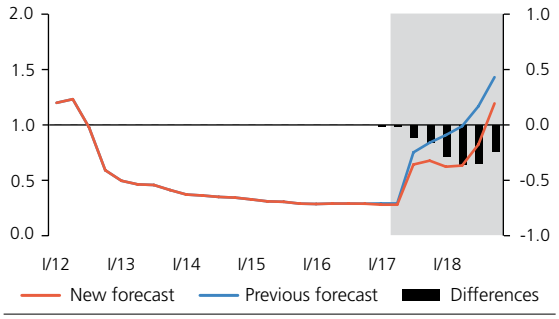


CHART II.3.5

CHANGE IN THE INTEREST RATE PATH

Market interest rates will rise at a slower pace, primarily as a result of the earlier exit from the exchange rate commitment and the slightly lower inflation forecast over the monetary policy horizon
(3M PRIBOR in %; differences in pp – right-hand scale)



The slightly lower inflation forecast over the monetary policy horizon is mainly a result of a stronger exchange rate (see Chart II.3.4). The overall cost pressures at the start of this year have been revised upwards compared to the previous forecast. They reflect faster observed growth in both domestic market prices and industrial producer prices in the effective euro area. However, the one-off factors that in recent months have increased inflation more than assumed by the previous forecast will partially unwind in 2017 Q2. At the same time, the anti-inflationary cost pressures from import prices – resulting from earlier and faster appreciation of the koruna – will be temporarily stronger than in the previous forecast, so growth in total costs in the consumer sector will be more subdued. The outlook for administered price growth has been lowered slightly due to lower growth in prices of heat and gas for households.

The koruna appreciates earlier and faster compared to the previous forecast due to the earlier exit from the exchange rate commitment. The exit happened in early April instead of mid-2017 as assumed by the previous forecast. The stronger appreciation of the koruna is also due to changes in the outlooks for foreign variables.

Market interest rates are rising at a slower pace than in the previous forecast due to the earlier exit from the exchange rate commitment. As in the previous forecast, domestic market interest rates remain stable until mid-2017 (see Chart II.3.5). The new forecast then points to a need for a more gradual increase in rates, mainly due to the earlier exit from the exchange rate commitment, the subsequent faster strengthening of the koruna and the related slightly lower inflation forecast over the monetary policy horizon.

II.4 RISKS AND UNCERTAINTIES OF THE FORECAST

At its May meeting, the Bank Board assessed the risks to the inflation forecast at the monetary policy horizon as being slightly inflationary. The main uncertainty is the path of the exchange rate following the exit from the exchange rate commitment in early April. The exchange rate may fluctuate in either direction after returning to the standard form of managed floating. A weaker-than-forecasted exchange rate may be caused by "overboughtness" of the koruna market, which – with the partial exception of the current quarter – is not taken into account by the forecast. A risk to the forecast in this regard is also signalled by the outlooks of other entities, which expect a weaker exchange rate than the CNB forecast, although with a slower rise in interest rates and an almost identical inflation outlook. Another uncertainty is the extent to which the current inflation pressures are fundamental and persistent. The uncertainties regarding future economic developments also include domestic and foreign political risks.

II.4.1 Risks perceived by the CNB

The main uncertainty identified by the Monetary Department during the preparation of the forecast was the path of the exchange rate. The current exchange rate is weaker than that expected by the short-term forecast for 2017 Q2. The situation may remain similar in the coming quarters. This is due to the absence of a counterparty for the closing of koruna positions by financial investors in a situation where many domestic exporters hedged against exchange rate risk before the exit, thereby in fact selling their export revenues in advance. At the same time, there is uncertainty about how possible major changes in the nominal exchange rate will transmit to domestic prices. This topic is analysed in Box 2. Uncertainty regarding the persistence and composition of the recently observed inflation pressures was also identified during the preparation of the forecast. The question is what part of these pressures are fundamental in nature and what part stem from one-off factors that will fade away quickly.

At its meeting, the Bank Board assessed the risks to the inflation forecast at the monetary policy horizon as being slightly inflationary. In line with the Monetary Department's perceptions, it repeatedly identified the path of the exchange rate – which strengthened only very slightly after the exit from the exchange rate commitment and may thus be weaker on average compared to the forecast – as the main uncertainty. The Bank Board mentioned in its discussion that, in addition to the strongly overbought market, the stability of the exchange rate may also be affected by long-term fundamental factors. If the exchange rate remained weaker than the forecast for these reasons, there would be more room for a tightening of the monetary conditions via their interest rate component. The Board stated that such developments would be more favourable from the financial stability perspective. However, there was a consensus that the tightening of the interest rate component of the monetary conditions in 2017 H2 should be gradual so as to avoid

an increase in credit risk, among other things. As regards domestic risks, the current government crisis and its potential negative impact on government investment through slower drawdown of EU funds was discussed. In connection with risks arising from the external environment, uncertainty regarding potential protectionist foreign trade measures in the USA and their impact on the global economy was mentioned several times. The Board also briefly discussed elections in some European countries and their possible impacts.

BOX 2
TRANSMISSION OF CHANGES IN THE NOMINAL EXCHANGE RATE TO DOMESTIC PRICES

Following the exit from the exchange rate commitment, inflation will start to be affected by changes in the exchange rate to an increased extent again. The high degree of openness of the Czech economy implies that a change in the exchange rate has a significant impact on the change in koruna prices of foreign trade. The latter change, however, is usually smaller than the initial exchange rate change. The lower pass-through of the exchange rate to prices is due, for example, to firms' plans to increase their market share, to the presence of competition, or to hedging and efforts to make sure that revenues and costs are in the same currency.[13] In addition to foreign trade prices, which are naturally exposed the most to an exchange rate shock, industrial producer prices and consumer prices respond to exchange rate movements. This is because both price categories contain imported final goods and components subsequently used for the final product or service. In the case of consumer prices, the size of the impact is also reduced by the fact that even seemingly fully tradable goods typically contain a non-tradable part (e.g. storage and distribution costs).[14]

The size of the pass-through of exchange rate changes to domestic prices depends strongly on the nature of the exchange rate change. Exchange rate changes perceived by economic agents as permanent have a stronger impact on prices than temporary changes. If an exchange rate shock is perceived to be a short-term one, it is less advantageous for both importers and sellers to change their prices if nominal rigidities exist.

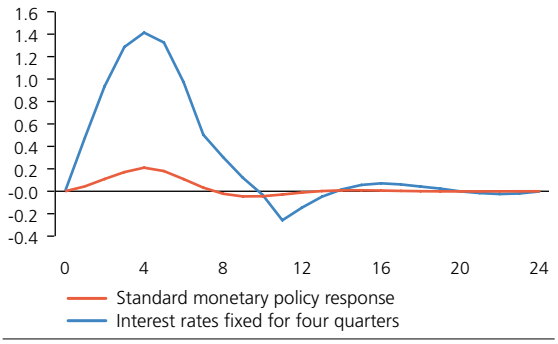
Monetary policy responses also significantly affect the size of the pass-through of exchange rate shocks to prices. In the floating exchange rate regime, the central bank typically

CHART 1 (BOX)

MODEL RESPONSES OF INFLATION TO A 5% DEPRECIATION

The rise in inflation in response to a depreciation shock is substantially stronger if the central bank does not respond by changing policy rates

(annual changes in percentage points; horizontal axis = number of quarters; source: Franta et al. (2014): "The exchange rate as an instrument at zero interest rates: The case of the Czech Republic", CNB RPN 3/2014)



13 These effects are sometimes called pricing to market.

14 This non-tradable part can be relatively high, as shown by Burstein, A., Neves, J. C. and Rebelo, S. (2003): "Distribution costs and real exchange rate dynamics during exchange-rate-based stabilizations", Journal of Monetary Economics 50(6), pp. 1189–1214.

responds to exchange rate movements by changing policy rates, as a change in the exchange rate affects the inflation forecast. Exchange rate shocks are therefore temporary and the response of domestic prices is low. However, if the central bank cannot respond to a change in the nominal exchange rate, as is the case, for example, when policy rates are at technical zero, changes in the nominal exchange rate propagate more strongly to prices. This is illustrated by Chart 1, which compares the model responses of domestic inflation to an exchange rate shock when the central bank can respond with the situation where policy rates are fully expectedly fixed for four quarters. It is clear that the pass-through is much greater if no monetary policy response is possible.

The size of the model response for a floating exchange rate regime is comparable to the results of empirical studies. Chart 2 shows the results of an econometric analysis of the transmission of changes in the nominal koruna exchange rate to domestic prices for the period overlapping that of the floating exchange rate until November 2013. These results reveal decreasing pass-through of the exchange rate along the price chain; the impact on consumer prices is less than 10%. A comparison of the Czech Republic with the euro area reveals that Czech import prices respond less strongly to a shock to the nominal effective exchange rate of the domestic currency. Despite quantitative differences, which can be explained by the fact that two different currencies and different trading partner structures are involved, the responses in the two territories are qualitatively similar.

The response to an exchange rate shock in the domestic consumer price index is mixed. Chart 3 shows the results for the individual subcategories. The pass-through is strongest in two price categories: food and transport. Both contain imported goods or goods produced using imported components. They also have a significant weight in the overall index (food accounts for 18% and transport for 10% of the domestic consumer basket[15]). The exchange rate pass-through to both components is the highest by comparison with the other CPI categories. Moreover, it is stronger in the case of the bilateral exchange rate of the euro than when the nominal effective exchange rate is used.[16] The incorrect sign of the estimate of the exchange rate pass-through for clothing and footwear is a statistically insignificant result.

15 According to the CZSO methodology since January 2016 at constant prices of 2014. For comparison, the share of food imports in total goods imports was just 5% in 2016, while that of machinery and transport equipment imports was 57%. The content of these categories is not identical to the relevant CPI categories, particularly in the case of the transport CPI, which comprises new and used cars, passenger transport and fuels.

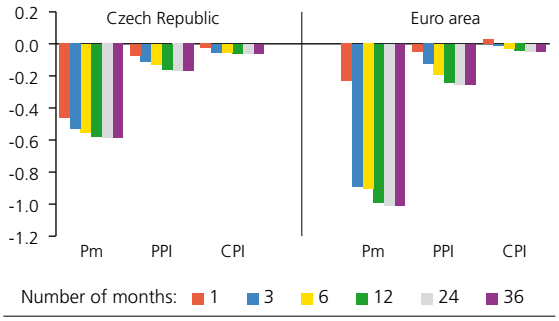
16 This result can be explained not only by trading partner structure (euro area: 58%, EU: 75%, 2016 data), but also by the widespread use of the euro as an invoicing currency even in transactions with partners from other currency zones. According to ECB (2016): "International role of the euro", the euro's share is 68% for goods imports and 77% for services imports.

CHART 2 (BOX)

EMPIRICAL PASS-THROUGH OF THE EXCHANGE RATE TO PRICES

Prices respond relatively quickly to an exchange rate shock; the exchange rate propagates to prices largely within the first three months; however, the total pass-through to consumer prices is very muted

(source: Datastream, CNB calculation)



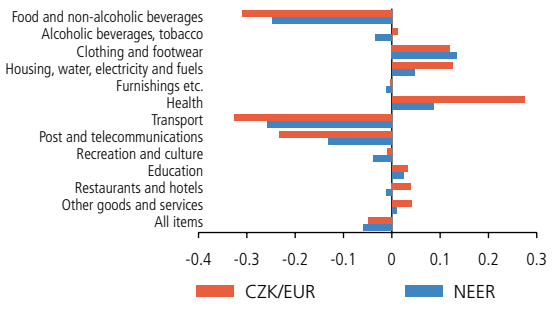
Note: Vector error correction model. For the methodology, see Babecká Kucharčuková, O. (2007), CNB WP 12/2007. Shock: appreciation of nominal effective exchange rate of domestic currency. Pm – import prices, PPI – industrial producer prices, CPI – consumer prices. The data are transformed into indices equal to 100 for the 2016 average and enter the model in logarithms. Impulse response to appreciation shock of magnitude 1, i.e. normalised to one standard deviation; Cholesky shock restriction. Period: Jan 2000–Jan 2017.

CHART 3 (BOX)

PASS-THROUGH OF THE EXCHANGE RATE TO INFLATION IN THE CZECH REPUBLIC

Prices of transport and food react most strongly to an exchange rate shock

(source: Datastream, CNB calculation)



Note: Vector error correction model. For the methodology, see Babecká Kucharčuková, O. (2007), CNB WP 12/2007. Appreciation shock of magnitude 1. The model was estimated for the overall consumer price index and its 12 main subcategories. Only one subcategory was included in the model at a time. Period: Jan 2000–Jan 2017.

The seemingly unintuitive response of prices of some non-tradable goods can be explained by the Balassa-Samuelson effect. In an inflation-targeting regime, which returns headline inflation towards the target, an appreciation based on an increase in labour productivity leading to a drop in tradable goods prices is necessarily reflected in growth in non-tradable goods prices. In the case of health care prices, the positive estimated coefficient may be a result of the timing of administrative effects in the past. The seemingly unintuitive response for these price categories thus does not represent a direct causal relationship.

An asymmetric response of prices to exchange rate changes has not been confirmed yet and prices usually respond in the same way to both appreciation and depreciation. The pass-through of the exchange rate and foreign prices to domestic inflation has recently been explicitly tested in the case of food prices.[17] The estimated pass-through asymmetry for this price category is insignificant both statistically and economically.

The Czech economy is in a period immediately following an exit from an exchange rate commitment, which is close to a regime change. This change was announced in advance and hence expected. Any appreciation below CZK 27 to the euro will probably be perceived as long-lasting and justified by fundamentals. It can thus be assumed that the pass-through of changes in the exchange rate to inflation will be stronger than model-based responses to an unexpected shock or to econometric estimates based on data from previous years, when exchange rate movements could be regarded as short-term unexpected shocks.

Table II.4.1

EXPECTED INDICATORS OF FMIE AND CORPORATIONS

The analysts' inflation expectations are at the CNB's target of 2% at both the one-year and three-year horizons
(at 1Y; annual percentage changes unless otherwise indicated)

	12/16	1/17	2/17	3/17	4/17
FMIE:					
CPI	2.0	2.0	2.1	2.0	2.0
CPI, 3Y horizon	2.0	2.0	2.0	2.0	1.9
Real GDP in 2017	2.6	2.5	2.6	2.6	2.6
Real GDP in 2018		2.6	2.7	2.6	2.7
Nominal wages in 2017	4.4	4.4	4.7	4.7	4.6
Nominal wages in 2018		4.1	4.4	4.4	4.5
CZK/EUR exchange rate (level)	26.2	26.2	26.2	26.0	25.9
2W repo rate (in per cent)	0.05	0.08	0.10	0.15	0.26
1Y PRIBOR (in per cent)	0.5	0.5	0.6	0.6	0.7
Corporations:					
CPI	1.5			1.7	
CPI, 3Y horizon	2.2			2.2	

II.4.2 Risks signalled by other entities' forecasts

Market inflation expectations have been anchored very close to the CNB's 2% target in recent months. Inflation forecasted by financial market analysts is currently exactly at 2% at the one-year horizon and just below it at the three-year horizon. The inflation expectations of business managers at the one-year horizon remain slightly below the target (see Table II.4.1).

The indicator of inflation perceived by households has been negative for almost three years now, whereas the indicator of expected inflation is positive (see Chart II.4.1). The first of these indicators thus suggests that households felt that prices did not

17 Babecká Kucharčuková, O., and Brůha, J. (2017, work in progress): "Food prices in Central European countries: Pass-through, determinants and predictions".

increase over the last 12 months overall. By contrast, the indicator of expected inflation signals that the number of respondents who expect prices to rise more rapidly over the next 12 months is slightly higher than the number of those who expect prices to stay the same or increase more slowly than they did previously. Both these indicators have been moving gradually higher since September 2016.

Analysts expect the economy to show growth of less than 3% this year and increase at a similar pace next year (see Table II.4.1 and Table II.4.2). The growth of the Czech economy will, they believe, continue to be supported by both domestic and external demand. Nominal wages are expected to rise by just over 4.5% in both years. The analysts on average forecast the koruna to appreciate to CZK 26 to the euro at the one-year horizon.[18] Before the Bank Board meeting in May, all sixteen FMIE analysts were expecting no changes in key interest rates at this meeting. Most of the analysts expect the 2W repo rate to increase at the one-year horizon, while a minority expect it to be left at the current level of 0.05%; the average estimate is 0.3%.

Compared to the CNB, the analysts expect slightly lower GDP growth both this year and the next, with almost the same inflation at the one-year horizon. The analysts' wage expectations are lower by comparison with the CNB. The analysts' lower interest rate outlook is due, among other things, to the fact that the exit from the exchange rate commitment will, in their opinion, be followed by an increase in interest rates with a longer time lag than that indicated by the CNB forecast.

The current market outlook for 3M rates implies only a slight increase at the one-year horizon. It is thus well below the interest rate level contained in the CNB forecast, consistent with which is an increase in market interest rates in 2017 Q3 (see Chart II.4.2).

18 The expected range is relatively wide: CZK 25.3–26.4/EUR in the FMIE survey and CZK 25.0–26.5/EUR in the CF survey.

CHART II.4.1

PERCEIVED AND EXPECTED INFLATION

Perceived inflation stayed negative, while expected inflation has long been slightly positive; both indicators are gradually rising
(balance of answers; source: European Commission Business and Consumer Survey)

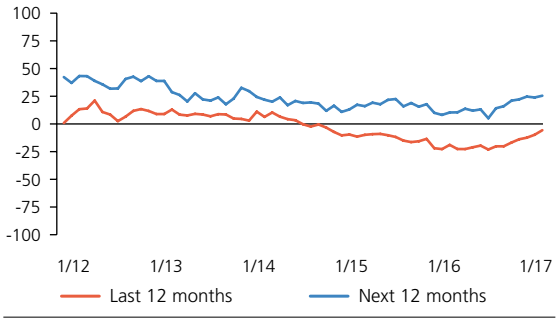


TABLE II.4.2

CF EXPECTED INDICATORS

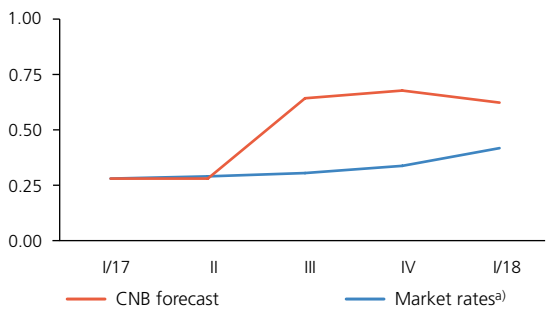
The CF analysts expect the economy to grow at a rate of 2.5% this year and maintain a similar pace of growth next year
(at 1Y; annual percentage changes unless otherwise indicated)

	12/16	1/17	2/17	3/17	4/17
Real GDP in 2017	2.5	2.5	2.5	2.5	2.5
Real GDP in 2018		2.6	2.6	2.6	2.6
Nominal wages in 2017	4.4	4.7	4.8	4.7	4.7
Nominal wages in 2018		4.4	4.6	4.7	4.7
CZK/EUR exchange rate (level)	26.5	26.4	26.2	26.0	26.0
3M PRIBOR (in per cent)	0.3	0.4	0.4	0.4	0.5

CHART II.4.2

FRA RATES VERSUS THE CNB FORECAST

Consistent with the CNB's forecast is an increase in market interest rates in 2017 Q3, which the market outlook does not expect
(percentages)



a) for 2017 Q1 and 2017 Q2 the 3M PRIBOR and for 2017 Q3–2018 Q1 the average values of the FRA 3*6, 6*9 and 9*12 rates for the last 10 trading days as of 21 April 2017

III. CURRENT ECONOMIC DEVELOPMENTS

III.1 PRICE DEVELOPMENTS

Inflation rose further to 2.4% in 2017 Q1, thus entering the upper half of the tolerance band around the CNB's target. Compared with the forecast published at the end of 2015, a retrospective assessment of which is relevant for evaluating the current fulfilment of the inflation target, stronger anti-inflationary pressures from abroad were in evidence for most of last year. They were only partly offset by the extension of the CNB's exchange rate commitment. Since late 2016, however, the continued inflationary effect of the domestic economy has been joined by one-off price effects. Together with an unwinding of the anti-inflationary effect of import prices, this contributed to inflation rising above the 2% target. With the benefit of hindsight, therefore, the CNB's monetary policy in the previous period can be assessed as having been roughly appropriate. Core inflation increased markedly, as did food and fuel price inflation. By contrast, administered prices continued to fall slightly. Continued growth in domestic economic activity in an environment of low interest rates was reflected in a further rise in house price inflation. Renewed growth in foreign producer prices and a higher oil price in year-on-year terms fostered growth in domestic industrial producer prices. Agricultural producer prices also started rising again for the first time in a long time. Growth in market services prices rose further and construction work prices increased at a steady pace.

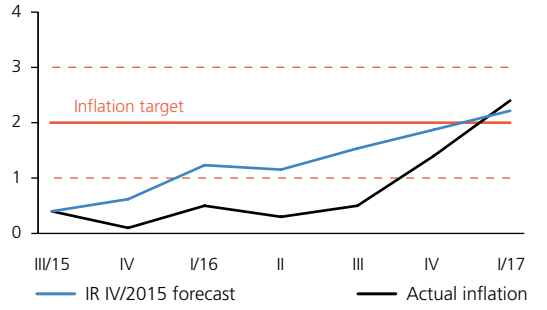
III.1.1 Fulfilment of the inflation target

Both headline and monetary policy-relevant inflation were above the forecast published in Inflation Report IV/2015 and above the CNB's target in 2017 Q1 (see Chart III.1.1).[19] This forecast was based on the assumption that the exchange rate would be used as an instrument for easing monetary policy with a CNB exchange rate commitment of CZK 27 to the euro until the end of 2016. The forecast expected both headline and monetary policy-relevant inflation to rise and hit the 2% target at the monetary policy horizon and slightly exceed it thereafter. The anti-inflationary effect of import prices – resulting from a decline in producer prices in the euro area and in global prices of most commodities, as well as from the previous appreciation of the koruna against the euro – was expected to subside gradually. Accelerating wage growth in conditions of continued growth in domestic economic activity was expected to foster growth in prices.

CHART III.1.1

FORECAST VERSUS ACTUAL HEADLINE INFLATION

In 2017 Q1, inflation was slightly above the IR IV/2015 forecast and above the CNB's 2% target in the upper half of the tolerance band
(year on year in %)



19 This section of the Inflation Report briefly analyses the contribution of the CNB's monetary policy to this situation. In order to assess the effect of monetary policy on the fulfilment of the inflation target one needs to analyse retrospectively the forecasts and the Bank Board's decisions based thereon in the past. To assess the fulfilment of the inflation target in 2017 Q1, we have to examine the period from July 2015 to December 2016, which takes into account the different lengths of transmission of interest rates and the exchange rate. This is because monetary policy passed through to inflation with a substantially shorter lag in the regime where the exchange rate was used as a monetary policy instrument than when interest rates were used. For the sake of clarity, however, the analysis of the fulfilment of the forecasts is limited here to a comparison of Inflation Report IV/2015 with subsequent inflation.

The observed inflation and its structure differed from the prediction. Headline inflation was below the forecast for almost the entire period[20] and then moved above it in late 2016 and early 2017. In 2017 Q1, the difference was 0.2 percentage point (see Table III.1.1). The positive deviation resulted from faster growth in food and fuel prices. Lower administered price inflation had the opposite effect. Core inflation was only slightly below the forecast.

External economic factors fostered lower-than-forecasted domestic inflation until late 2016. The biggest deviation was recorded by foreign production prices, which initially did not show the expected return to growth and continued to record strongly negative year-on-year dynamics until 2016 Q3 (see Table III.1.2). An unexpected further fall in oil prices in late 2015 and early 2016 contributed substantially to this situation. External demand growth was initially slightly stronger than predicted, but later moved below the expected levels. Foreign interest rates decreased further, even reaching negative levels, a trend which had not been expected by the forecast either. Overall, then, external developments had an anti-inflationary effect on the Czech economy, i.e. they fostered a need for easier monetary conditions.

The extension of the exchange rate commitment by the CNB only partly offset the stronger deflationary pressures from abroad. Market interest rates remained stable over the entire period because of the zero lower bound. The exchange rate stayed at levels close to the CNB's commitment until early April 2017, when the CNB ended the commitment[21] (see Table III.1.3). The impacts of the anti-inflationary external developments on domestic inflation were thus stronger than in an environment where monetary policy is not constrained by the zero lower bound. However, as foreign prices returned to growth in late 2016 and early 2017, domestic inflation rose rapidly, slightly exceeding the 2% target.

The domestic economy had a slightly anti-inflationary effect overall by comparison with the forecast. The observed GDP growth was strongly affected by revisions of historical data, the EU funding cycle and, in 2016 H2, by a slowdown in external demand growth. In terms of structure, growth in investment and partly also household consumption was more subdued, whereas the contribution of net exports was higher. Economic growth had a favourable effect on the labour market in the form of falling unemployment, but the observed nominal wage growth was lower than forecasted.

20 This was also due to the application of an ex-ante escape clause to the first-round effects of the sharp drop in oil prices, which the Bank Board decided on in February 2015.

21 The duration of the exchange rate commitment was extended by just one quarter relative to the assumption of the forecast contained in Inflation Report IV/2015. However, the "hard commitment", which was dominant in shaping economic agents' expectations, was extended twice in the period under review.

TABLE III.1.1

FULFILMENT OF THE INFLATION FORECAST

The deviation of inflation from the forecast was due to unexpectedly fast growth in food and fuel prices
(annual percentage changes; contributions in percentage points)

	IR IV/2015 forecast	2017 Q1 outturn	Contribution to total difference[c]
CONSUMER PRICES	2.2	2.4	0.2
of which:			
administered prices	1.1	-0.5	-0.3
first-round impacts of changes to indirect taxes[a]	0.1	0.0	-0.1
core inflation[b]	2.3	2.1	-0.1
food prices[b]	2.1	3.4	0.4
fuel prices[b]	4.0	15.1	0.4

a) impact on total inflation except non-administered prices
b) excluding the first-round effects of changes to indirect taxes
c) Owing to rounding, the total difference may not be equal.

TABLE III.1.2

FULFILMENT OF THE EXTERNAL ASSUMPTIONS

External factors had an anti-inflationary effect overall until the end of last year, especially the PPI in the euro area
(annual percentage changes unless otherwise indicated; p – prediction, o – outturn)

		IV/15	I/16	II/16	III/16	IV/16	I/17
GDP in euro area[a), b), c)]	p	2.3	2.2	2.2	2.0	1.9	2.0
	o	2.5	2.5	2.3	1.8	1.7	-
PPI in euro area[b), c)]	p	-1.9	-0.2	-0.1	1.0	1.6	1.9
	o	-3.2	-3.7	-3.7	-2.4	0.0	-
3M EURIBOR	p	0.0	-0.1	-0.1	-0.1	0.0	0.0
(percentages)	o	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3
USD/EUR exchange rate	p	1.11	1.09	1.08	1.08	1.07	1.08
(levels)	o	1.09	1.10	1.13	1.12	1.08	1.06
Brent crude oil price	p	50.5	52.3	54.0	55.3	56.5	57.6
(USD/barrel)	o	44.7	35.2	47.0	47.0	51.1	54.6

a) at constant prices
b) seasonally adjusted
c) IR IV/2015 outlook for effective indicator

TABLE III.1.3

FULFILMENT OF THE FORECAST FOR KEY VARIABLES

Actual domestic GDP growth and wage growth were below the forecast on average and thus fostered lower inflation until the end of 2016
(p – prediction, o – outturn)

		IV/15	I/16	II/16	III/16	IV/16	I/17
Consumer price index	p	0.6	1.2	1.2	1.5	1.9	2.2
(annual perc. changes)	o	0.1	0.5	0.3	0.5	1.4	2.4
3M PRIBOR	p	0.3	0.3	0.3	0.3	0.3	1.0
(percentages)	o	0.3	0.3	0.3	0.3	0.3	0.3
CZK/EUR exchange rate	p	ER commitment: close to CZK 27 to the euro					-
(levels)	o	27.1	27.0	27.0	27.0	27.0	27.0
Real GDP[a)]	p	5.2	2.6	2.5	2.8	3.2	3.7
(annual perc. changes)	o	4.0	3.0	2.6	1.8	1.9	-
Nominal wages[b)]	p	3.9	4.3	4.7	4.9	5.0	5.1
(annual perc. changes)	o	3.3	4.6	3.9	4.5	3.8	-

a) seasonally adjusted
b) in market sectors

CHART III.1.2

INFLATION

Inflation surged in 2017 Q1
(annual percentage changes)

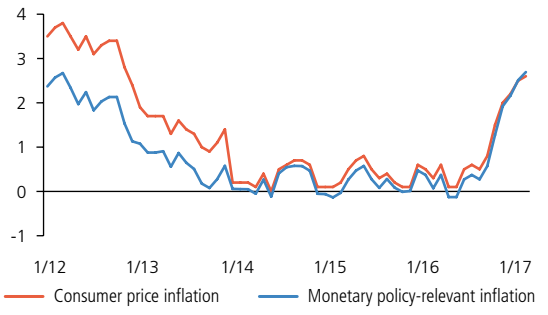


CHART III.1.3

STRUCTURE OF INFLATION

The surge in inflation was due mainly to an increase in core inflation and faster growth in food prices, which were joined by an increase in the contribution of fuel prices
(annual percentage changes; contributions in percentage points)

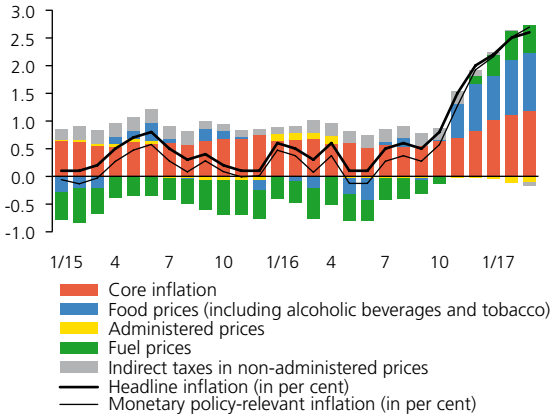
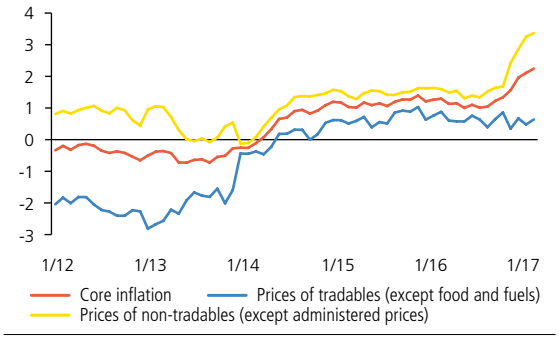


CHART III.1.4

CORE INFLATION

Core inflation has risen to 2% since the end of last year as a result of a sharp increase in non-tradables price inflation
(annual percentage changes)



Overall, the monetary policy pursued by the CNB between July 2015 and December 2016 can be assessed as roughly appropriate. In addition to the forecast, an assessment of the risks associated with the forecast is important for the Bank Board's decisions on monetary policy settings. With the benefit of hindsight, it can be said that the risks identified (particularly subdued inflation in the euro area as a result of low global prices of energy and food commodities) materialised for most of the period under review. At the end of 2016, however, one-off inflation-increasing price effects that had not been predicted by previous forecasts started to make themselves felt quickly, amid a persisting inflationary effect of the domestic economy and renewed growth in import prices. Inflation has thus been above the CNB's target of 2%, though within the tolerance band, since the start of this year. The conditions for sustainable fulfilment of the 2% inflation target in the future were thus met, so the CNB's exchange rate commitment was ended.

III.1.2 Consumer prices and property prices

Inflation gradually increased during 2017 Q1, reaching 2.6% in March (see Chart III.1.2). The increase in consumer prices was driven by rising core inflation[22] and food prices. Fuel price inflation went up as well, owing to much higher global oil prices in year-on-year terms (see Chart III.1.3). Monetary policy-relevant inflation was 0.1 percentage point above headline inflation on account of a negative first-round contribution of indirect tax changes. This was due mainly to a reduction in the VAT rate applying to restaurants and other catering facilities and partly also to a decrease in VAT on newspapers and magazines (effective from March 2017). Increases in excise duty on cigarettes and tobacco introduced in January 2016 and January 2017 acted in the opposite direction.[23]

Core inflation rose sharply, mainly as a result of a sharp increase in non-tradables price inflation (see Chart III.1.4).[24] The latter slightly exceeded 3%, driven by two main factors. The first was an increase in prices in restaurants and cafés in December 2016 and partly also in 2017 Q1 in reaction to the launch of electronic sales registration. The second factor acting in the same direction was growth in the contribution of imputed rent. This was due to a sharp rise in prices of new apartments, especially in and around Prague, although a change in the calculation method by the CZSO also played a role

22 As from this issue of the Inflation Report, the term "core inflation" replaces the previously used term "adjusted inflation excluding fuels". Core inflation is inflation net of the first-round effects of changes in indirect taxes, administered prices, food prices and fuel prices.

23 The impact of the increase in excise duty on tobacco products is spread over the first three months of the year.

24 Prices of non-tradable commodities primarily comprise non-administered services prices.

(see Box 3 for details).[25] Besides these two items, however, prices of other non-tradables, especially recreational and cultural services, accommodation and other housing-related services, also went up. As in previous quarters, tradables price inflation[26] was muted at around 0.5%.

Food price inflation increased further, mainly because of fast rising prices of vegetables and dairy products (see Chart III.1.5). However, prices of other foods – especially bread and cereals, meat, and sugar and confectionery products – also went up gradually year on year. Only prices of fruit, non-alcoholic beverages and beer fell in Q1. Prices of other alcoholic beverages rose modestly. Prices of tobacco products showed much higher growth, although this started to slow during 2017 Q1 (see Chart III.1.6).

BOX 3
CAUSES OF THE RAPID RISE IN SERVICES PRICES

Non-tradable goods price inflation surged at the turn of the year, especially in two components. Specifically, these were prices in restaurants and cafés and imputed rent for owner-occupied housing (see Chart 1). This box takes a closer look at the causes and persistence of these developments.

The increase in prices in restaurants and cafés was due among other things to the launch of electronic sales registration (ESR). Prices in this segment increased sharply despite a cut in the VAT rate applying to restaurants and other catering facilities from 21% to 15% with effect from December 2016. In addition to ESR-related costs, food services firms seem to have reflected in higher prices the effect of the increase in the minimum wage and wage growth in the economy in general, which for them implies long-term growth in personnel costs. ESR concentrated the pass-through of these fundamental cost effects to prices into a short time span. Renewed growth in food prices also accounted for part of the upswing in prices in this category. By its very nature, the effect of the launch of ESR on price growth will be only temporary, as already evidenced by month-on-month growth of prices in restaurants and cafés. During 2017 Q1, it fell gradually to levels common before ESR was introduced. Conversely, wage growth will continue to push up prices in food services and services in general.

25 At the end of 2016, the CZSO adjusted the structure and weights of the individual components of imputed rent. The weight of new apartments in the sub-index was doubled, which contributed to a sizeable increase in the growth rate of imputed rent.

26 Prices of tradable commodities comprise prices of goods excluding food and fuels.

CHART III.1.5

FOOD PRICES, ADMINISTERED PRICES AND FUEL PRICES

Fuel and food prices rose rapidly, while administered prices continued to fall slightly
(annual percentage changes)

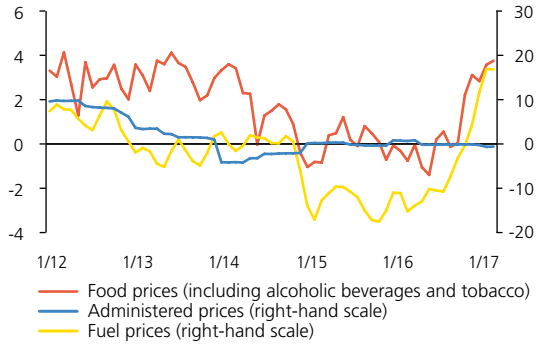


CHART III.1.6

STRUCTURE OF FOOD, ALCOHOL AND TOBACCO PRICE INFLATION IN 2017 Q1

The growth in food prices pertained to most items; only prices of non-alcoholic beverages, beer and fruit went down
(size of tile – relative weight in consumer basket; colour of tile – annual percentage changes)

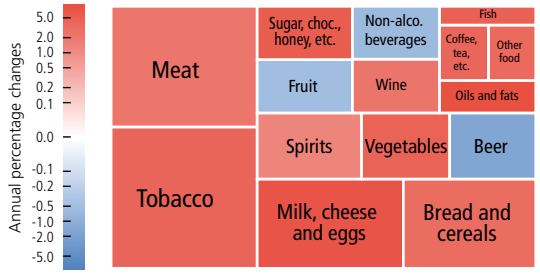


CHART 1 (BOX)

NON-TRADABLE GOODS INFLATION

The contributions of restaurant services and imputed rent have increased significantly in recent months
(contributions to year-on-year growth in percentage points)

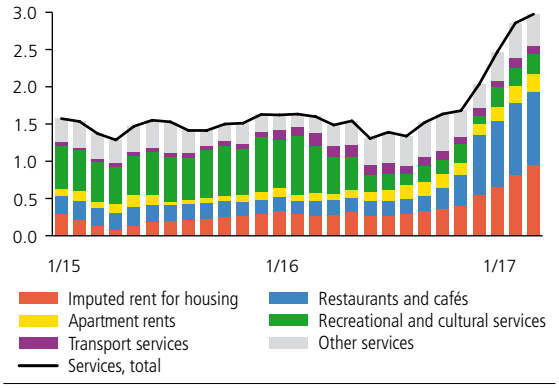
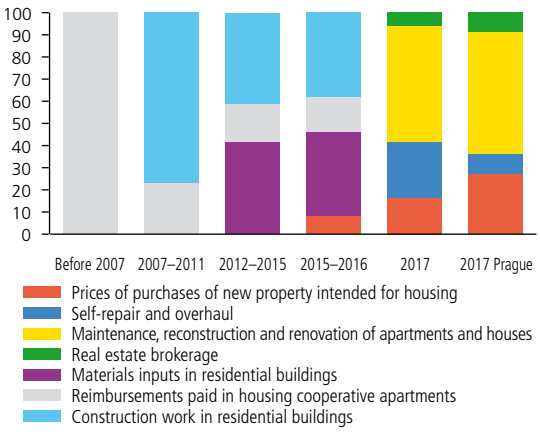


CHART 2 (BOX)

WEIGHTING SCHEME FOR IMPUTED RENT

The weight of prices of new property intended for housing in imputed rent has been increased in several steps
(percentage shares of components of imputed rent index)



The rise in the growth rate of imputed rent was linked with an increase in the weight of new property prices, which are currently rising rapidly. At the end of 2016, the CZSO changed the structure of imputed rent. The weight of new apartments jumped from 8% to 16.3% for regions outside Prague and to 27% in Prague (see Chart 2). These and previous changes together imply a gradual replacement of imputed rent by owner-occupied housing in the form of the net acquisition approach. This approach captures households' total property purchase expenditure, including spending on home improvements and maintenance and related services, net of their total property sale income. This concept thus covers new property prices in addition to the consumption component. It can therefore be viewed as a broader macrofinancial index partly linking elements of monetary policy and financial stability. This is because it opens up more space for capturing growth in prices of new apartments, which is currently very strong in Prague, directly in consumer price inflation. It can be expected that the growth in new property prices will not be temporary and that the higher inflation in this segment will persist over the forecast horizon.

Individual administered prices showed mixed trends, but a year-on-year decline in gas prices for households prevailed overall (see Chart III.1.5). The biggest suppliers cut gas prices again in January and February. Heat prices, waste collection charges and propane-butane prices also fell in year-on-year terms at the start of the year. Other administered prices increased year on year, although many of them, such as electricity prices and sewerage collection charges, did so at a slower pace than in the previous period. Prices in health care and water supply charges grew the fastest. Growth in administered prices in transport also increased due to rising fuel prices and other costs.

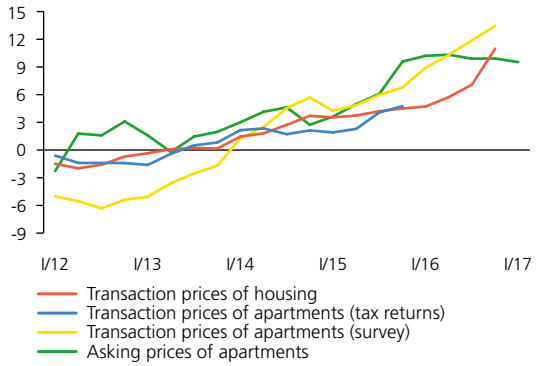
The fast growing energy commodity prices were reflected in fuel prices (see Chart III.1.5). Fuel prices thus followed the higher global Brent crude oil prices and petrol prices in year-on-year terms with the usual slight lag. The growth in fuel prices was also fostered by year-on-year depreciation of the koruna against the dollar.

The continuing economic recovery was reflected in a further acceleration in residential property prices. In an environment of low interest rates, transaction prices of housing rose by 11% year on year in 2016 Q4 (see Chart III.1.7). Transaction prices of older apartments grew at a similar pace in both Prague and the rest of the Czech Republic. Growth in these prices in the capital city rose significantly by comparison with the previous quarter, exceeding the growth rate of asking prices for the first time in a long time. Growth in transaction prices of older apartments outside Prague was

CHART III.1.7

TRANSACTION AND ASKING PRICES OF HOUSING

Prices of apartments and residential property continue to rise apace
(annual percentage changes)



comparable with that in the previous quarter, remaining higher than growth in asking prices. The first quarter of 2017 saw a further pick-up in asking prices of apartments in Prague, while growth in asking prices of apartments outside Prague cooled significantly.

III.1.3 Import prices and producer prices

The anti-inflationary effect of import prices faded away fully in December 2016 and these prices started to rise. Their growth recorded a further year-on-year increase at the start of the year, amounting to 5.8% in February (see Chart III.1.8). This was due to all components of import prices, most notably prices of mineral fuels and, to a lesser extent, prices of other commodities and semi-finished products.

The sharp upswing in import prices was due to developments in the mineral fuels market in response to the year-on-year rise in the Brent crude oil price. Its changes are reflected in import prices of mineral fuels with no substantial lag, and their growth rate therefore turned positive already at the end of 2016. The subsequent slowdown in oil prices in Q1 was slightly offset in import prices of mineral fuels by a delayed increase in gas prices, as gas prices usually follow oil price movements with a lag of approximately six months.

The renewed price growth in the other import price categories was due mainly to a broad-based increase in euro area producer prices. The growth in prices of commodities and semi-finished products picked up, significantly contributing to overall import price inflation. Annual growth in import prices of food, beverages and tobacco also increased markedly. The previous anti-inflationary developments in prices of commodities with a high degree of processing, i.e. miscellaneous manufactured articles and machinery and transport equipment, faded out and prices of these commodities also recorded slight growth at the start of this year.

The rising prices of imported inputs were also reflected in renewed growth in industrial producer prices. It reached 3% in March (see Chart III.1.9). As with import prices, it was fostered by most of the monitored components, most notably prices of refined petroleum products and coke, which surged in line with oil prices. This was only partially counteracted by a slight decline in energy prices and water supply charges. Owing to rising prices of non-energy commodities, growth in industrial producer prices started to be positively affected by producer prices of metals and fabricated metal products and prices in other sectors of manufacturing. As the sharp fall in agricultural commodity prices faded, producer prices of food, beverages and tobacco returned to modest growth. In terms of product use, particularly strong growth can be observed for prices of intermediate products, signalling intensifying cost pressures. At the same time, producer prices of non-durable goods and capital goods began to go up again. By contrast, prices of durable goods kept falling slightly.

Chart III.1.8

IMPORT PRICES

Import price inflation turned positive in December for the first time in a long time and continued to rise sharply at the start of the year

(annual percentage changes; contributions in percentage points)

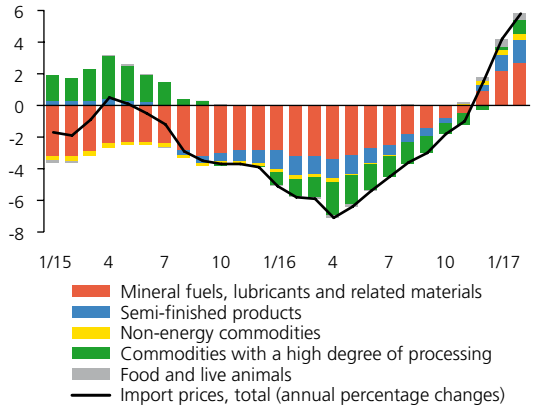


Chart III.1.9

INDUSTRIAL PRODUCER PRICES

Producer prices started to increase owing to renewed growth in import prices and a higher price of oil in year-on-year terms

(annual percentage changes; contributions in percentage points)

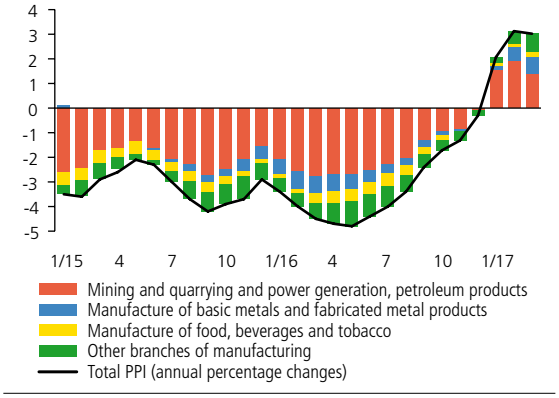


CHART III.1.10

AGRICULTURAL PRODUCER PRICES

After a long period of decline, agricultural producer prices started to go up again on the back of both crop and livestock prices
(annual percentage changes)

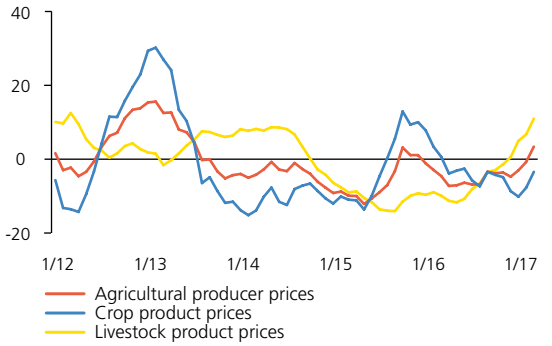
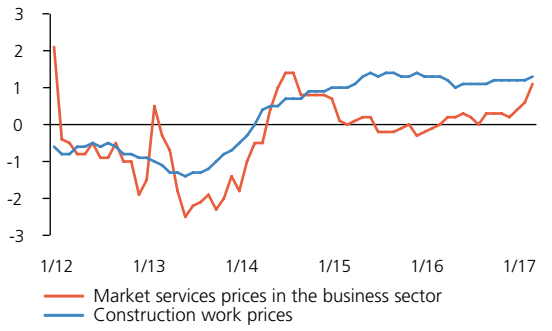


CHART III.1.11

MARKET SERVICES PRICES IN THE BUSINESS SECTOR AND CONSTRUCTION WORK PRICES

Market services prices accelerated slightly, while growth in construction work prices was flat at around 1%
(annual percentage changes)



Agricultural producer prices started to go up again for the first time in a long time, with prices of livestock products rising apace. Following a continuous decline of almost 5% on average last year, agricultural producer prices switched to annual growth of 3.4% in March (see Chart III.1.10). In livestock production, the effects of the liberalisation of the EU milk market in 2015 and the price impact of the continued retaliatory sanctions imposed by Russia on the EU disappeared. This resulted in a strong rebound in prices of milk and pork. Crop prices remained under the influence of favourable domestic and foreign harvests in previous years. This caused production to outpace consumption, leading to a constant decline in global prices, especially grain prices. Prices of vegetables and potatoes also fell sharply. However, the previous year-on-year decline in crop prices gradually slowed.

Prices continued to grow at a modest pace in the other monitored categories, with the growth rates rising especially in business services (see Chart III.1.11). Growth in prices of market services for the business sector increased to 1.1% in March. Higher inflation was recorded in postal and courier services, insurance services, and advertising and market research. Conversely, prices of architectural and engineering services fell slightly. Despite a persisting drop in construction output, construction work prices continued to rise at a pace of just over 1%. Prices of materials and products used in the construction industry also returned to growth due to rising non-energy commodity prices.

III.2 ECONOMIC DEVELOPMENTS

Despite having slowed last year, the Czech economy remains close to its potential output level. Growth in domestic demand continues to be driven by stable growth in household consumption in conditions of rapid wage and employment growth and consumer optimism. The contribution of net exports was also constantly positive, despite a slight slowdown in external demand. Net exports were affected by slower imports, reflecting a decrease in fixed investment. It was affected last year by a fall in government investment financed from EU funds due to an only gradual start of the new programme period. As a result, gross value added in construction dropped sharply. The positive contribution of industry to value added also decreased slightly owing to a combination of several short-term factors in the second half of 2016. Business confidence remains high. Labour shortages are a strong barrier to growth.

III.2.1 The cyclical position of the economy

The Czech economy remains close to its potential output level. The output gap remained only slightly positive at the end of 2016 (see Chart III.2.1). Its closure and switch to positive levels in past years was due to growth in both domestic and external demand. This was reflected in a resurgence of domestic inflation pressures. The deviation of the output gap into slightly positive levels in 2015 was also due to drawdown of EU funds. In 2016, on the other hand, a negative fiscal impulse reduced the output gap. The still very easy domestic monetary conditions are affecting the performance of the Czech economy. The tightening of monetary conditions following the exit from the exchange rate commitment will be offset over the forecast horizon by renewed growth in investment, higher growth in external demand and a positive fiscal stimulus for household consumption. The output gap will thus stay close to zero until the end of 2018.

The growth in the potential of the Czech economy is currently close to 2.5%, i.e. just below the assumed long-term rate. It reached approximately this level in the previous two years after the repercussions of the economic crisis faded, low-inflation economic growth returned and the labour market situation improved significantly (see Chart III.2.2). In 2015, faster growth in the potential of the economy was also fostered by increased investment activity reflecting drawdown of EU funds, although their impact on productivity growth is usually weaker or more gradual than in the case of purely private investment. However, given the temporary nature of this investment stimulus and the – partly related – subdued growth in whole-economy labour productivity, potential output growth slowed slightly in 2016. The rising participation rate in the labour market, which is boosting equilibrium employment growth, seems to have had a positive effect on potential output growth (see Box 4 in section III.3). Potential economic growth will rise further this year and the next. It will be affected by a recovery in both private and government investment, connected above all with the drawdown of larger amounts from the EU's new financial framework.

CHART III.2.1

OUTPUT GAP

The Czech economy is close to its potential output level, where it will stay over the next two years
(% of potential output)

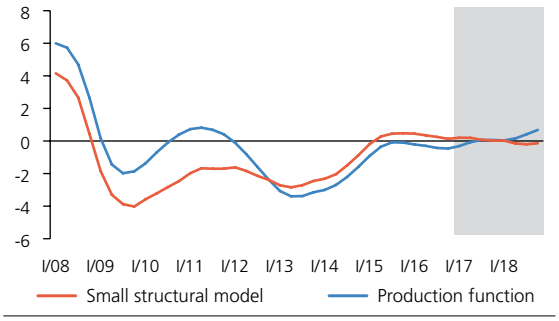


CHART III.2.2

POTENTIAL OUTPUT

The rate of growth of potential output is around 2.5%
(annual percentage changes)

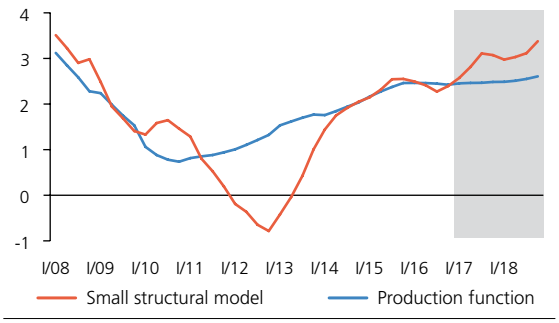


CHART III.2.3

GROSS DOMESTIC PRODUCT

The growth of the Czech economy picked up slightly to 1.9% in 2016 Q4

(annual percentage changes; contributions in percentage points; seasonally adjusted)

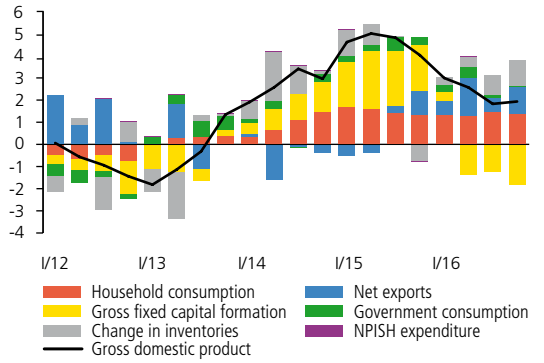


CHART III.2.4

DISPOSABLE INCOME

The biggest contributor to the constant growth in disposable income is sharply rising wages and salaries

(annual percentage changes; contributions in percentage points; current prices; seasonally unadjusted)

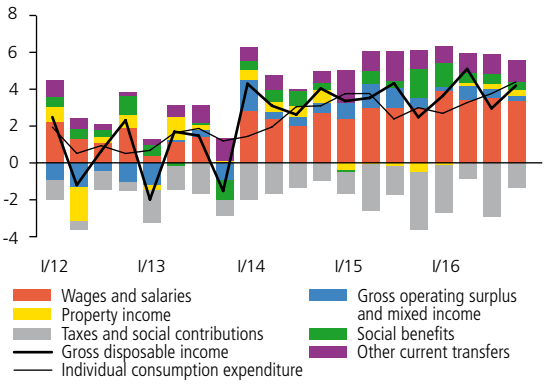
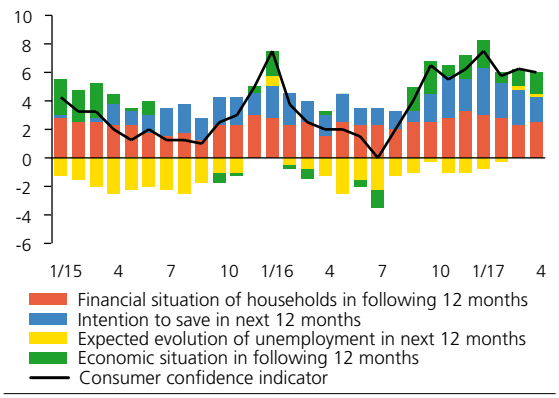


CHART III.2.5

CONSUMER CONFIDENCE BALANCE

Consumer confidence was close to historical highs

(2005 average = 100; balance: difference in per cent between answers expressing improvement and deterioration in expected and ongoing tendencies)



III.2.1 The expenditure side of the economy

The GDP growth slowdown observed for most of 2016 halted in Q4. Growth in economic activity picked up slightly in this quarter (to 1.9%), thanks mainly to foreign trade (see Chart III.2.3). Household consumption continued to rise at a steady pace, reflecting growth in households' income and strong consumer confidence. Government consumption was unchanged year on year. GDP growth was dampened by a decline in fixed investment. This decline deepened as a result of a further fall in its government component caused mainly by base effects resulting from the purchase of Gripen aircraft coupled with a continued slow start to the drawdown of EU funds in the new programme period.

Household consumption remained the main driver of domestic demand, increasing across the board in all segments. The slight pick-up in seasonally unadjusted growth in real household consumption at the year-end was due mainly to faster growing expenditure on short-term and medium-term consumption. However, the growth in household consumption was also due again to spending on services and durable goods.

Growth in household consumption was fostered by low interest rates and rapid growth in gross disposable income (see Chart III.2.4). As in the previous two years, it was supported most strongly by sharply rising wages and salaries. Other transfers and, to a lesser extent, other types of income went up as well. The traditionally negative contribution of tax payments decreased noticeably.

Increasing consumer confidence will foster growth in household expenditure in the near future as well. The January consumer confidence indicator rebounded to the historical high it reached in the same period last year. This was due mainly to improving perceptions of the economic situation (see Chart III.2.5). The confidence indicator went down only slightly in the following months. Consumers' optimism was confirmed by strong growth in retail sales driven by sales of non-food goods.

The long-running growth in government consumption halted – probably temporarily – at the end of last year. Growth in public sector wages and salaries was offset in real terms by a decline in other current expenditure. This was reflected in year-on-year stagnation of real government consumption.

Fixed investment continued to decline as a consequence of a fall in public investment caused mainly by the EU funding cycle. The decline in investment deepened further year on year, mainly because of the "accounting" effect of the purchase of Gripen aircraft at the end of 2015. However, fixed investment continued to decrease even when adjusted for this effect, primarily as a result of a continued year-on-year fall in general government investment (see Chart III.2.6). Rapid drawdown of EU structural funds from the previous programme period

in 2015 was followed by an only very gradual start to drawdown from the new programme period, due among other things to problems with environmental impact assessments of large infrastructure projects.

Unlike public investment, year-on-year growth in investment by non-financial corporations and households recovered sharply at the end of last year. Like public investment, growth in corporate investment was strongly affected for most of last year by a decline in investment co-financed from EU funds. Investment financed fully from sources other than EU subsidies rose steadily in this period. It is therefore possible that the component tied to drawdown of EU subsidies recovered in Q4. However, the latest results of the survey conducted by the CNB and the Confederation of Industry speak against a continuation of this sharp recovery in investment by non-financial corporations, as they do not signal any major rise in non-financial corporations' investment spending. In addition to corporate investment, household investment increased, with investment in housing predominating as usual.

Household investment also recorded sizeable growth in an environment of still favourable financing conditions. This was reflected in growing demand for new mortgage loans and increasing property prices. The number of apartment starts and completions also increased sharply.

Growth in inventories – mainly finished goods and work-in-progress – largely offset the lower fixed investment. The higher additions to inventories probably reflected the fall in exports observed in the second half of 2016, which was concentrated mostly in the automotive industry. Growth in stocks of work-in-progress and finished goods was also concentrated in this industry.

Export growth slowed slightly due to lower growth in demand for new cars in Western Europe (see Chart III.2.7). This affected not only exporters of transport equipment, but also suppliers of parts for the foreign automotive industry. Slower growth in goods exports was partly offset by faster growth in services exports.

The slower growth in exports combined with the deeper decline in total investment led to a further drop in import growth (see Chart III.2.7). This was due partly to base effects linked with the purchase of Gripen aircraft. This was reflected in goods imports, which rose only slightly. Services imports continued to fall year on year, although their decline was more moderate than in the previous quarter.

A more pronounced slowdown in imports than exports resulted in an increase in the contribution of net exports to GDP growth (see Chart III.2.3). The year-on-year increase in net exports was driven by both the goods balance and the services balance.

CHART III.2.6

INVESTMENT BY SECTOR

General government investment continued to fall in 2016 Q4, whereas investment by non-financial corporations recovered sharply

(annual percentage changes; contributions in percentage points; constant prices; seasonally unadjusted)

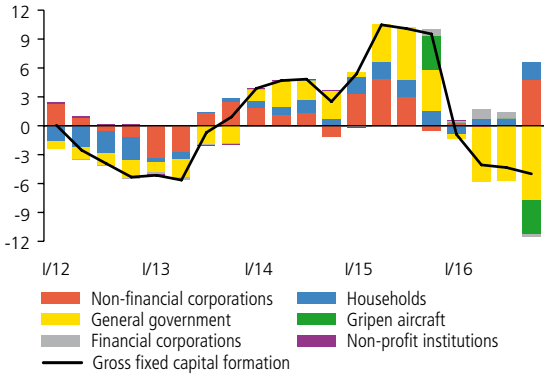


CHART III.2.7

EXPORTS AND IMPORTS

Net export growth increased, but export growth and import growth both remained subdued

(annual changes in per cent and CZK billions; constant prices; seasonally adjusted)

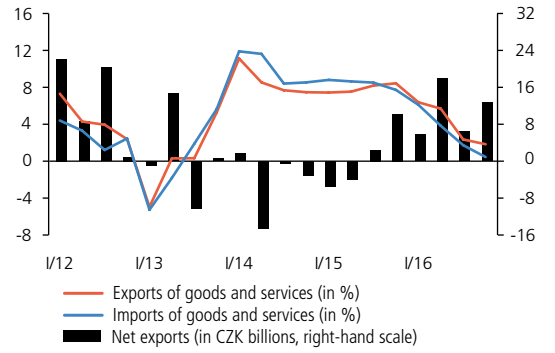


CHART III.2.8

CONTRIBUTIONS OF BRANCHES TO GVA GROWTH

Gross value added growth gradually slowed during 2016
(annual percentage changes; contributions in percentage points)

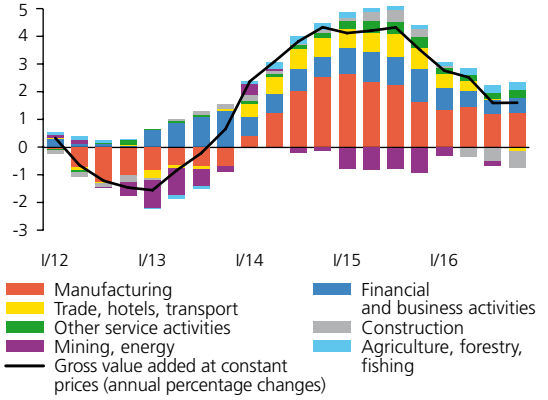


CHART III.2.9

INDUSTRIAL PRODUCTION AND CONSTRUCTION OUTPUT

Growth in industrial production rebounded slightly at the start of 2017, while the fall in construction output gradually weakened
(annual percentage changes)

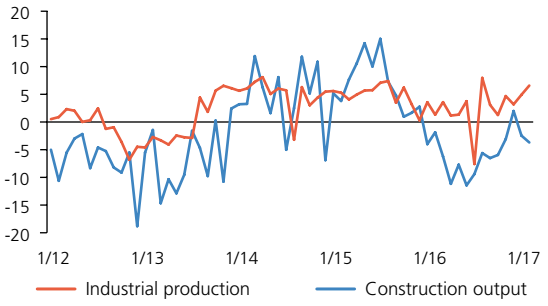
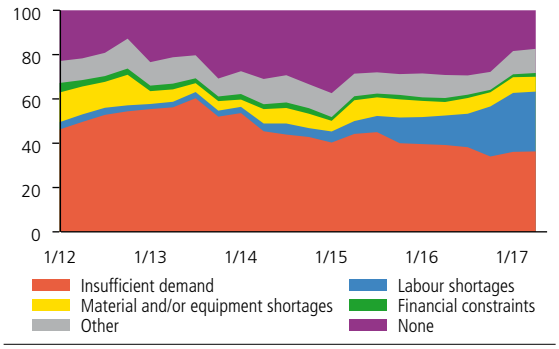


CHART III.2.10

BARRIERS TO GROWTH IN INDUSTRY

The effect of labour shortages as a barrier to growth in industrial production increased further
(percentages)



III.2.3 The output side of the economy

Gross value added growth continued to weaken last year as demand slackened. It stabilised at 1.6% in H2 (see Chart III.2.8). Growth in gross value added was dampened by the situation in construction due to the switch to the new programme period for EU funds and also by persisting problems in mining and energy supply. Manufacturing, especially the automotive industry, remained the biggest contributor to growth. The other services sector also grew steadily. On the other hand, trade, food services and transport showed mixed trends, contributing to gross value added growth only in the first half of 2016.

Growth in industrial production also moderated at the end of 2016 as gross value added slowed, but later rebounded slightly. It averaged just 2.1% in 2016 H2 (see Chart III.2.9), mainly because of slower output growth in manufacturing. The automotive industry recorded short-term fluctuations and slower growth overall than in H1. However, weak growth was recorded in other sectors, too. The latest January and February data, though, suggest a slight recovery in industrial production due to a gradual upswing in production in the chemical, electrical engineering and steel industries. Output also rose year on year in the energy industry. By contrast, production in mining and quarrying continued to fall sharply due to structural problems in this sector.

Labour shortages remain the biggest constraint on the production potential of industrial corporations. According to the results of the CZSO's April business survey, insufficient demand remains the main barrier to growth in industrial production (see Chart III.2.10). However, the effect of the constraint of labour shortages is at its strongest since 2009. Capacity utilisation in industry remained at around 84%.

The fall in investment due to the switch to the new programme period for EU funds was fully reflected in construction. This primarily affected civil engineering, where output slumped by 20% year on year in 2016 Q4. This sharp fall was largely expected and reflected the 2015 base, which was extremely high due to drawdown of EU funds from the previous programme period. These strong year-on-year falls started to fade at the start of this year. By contrast, growth in building construction output rose to 7% in Q4. However, the latest data for January and February indicate a renewed slowdown.

Business confidence remains high, despite having decreased slightly over the last three months. However, it differed across sectors (see Chart III.2.11). A slight decline in – albeit still high – confidence was observed in industry and wholesale. On the other hand, business confidence in services increased. Business confidence in construction remains low, despite having recorded a slight rise in recent months, as a result of the decline in demand for construction work.

The financial results of corporations indicate that firms were successful last year. Despite continued strong growth in wage costs, the gross operating surplus of non-financial corporations increased further year on year in Q4 (by 8.6%; see Chart III.2.12). The financial results were affected by still low prices of energy and non-energy commodities on global markets and renewed growth in the output of non-financial corporations. Growth in book value added rose to 7%, due among other things to a falling material cost-output ratio.

CHART III.2.11

BUSINESS CONFIDENCE BALANCES

With the exception of construction, business confidence remains positive, although it declined slightly in industry and wholesale
(2005 average = 100; balance is difference in per cent between answers expressing improvement and deterioration in expected and ongoing tendencies)

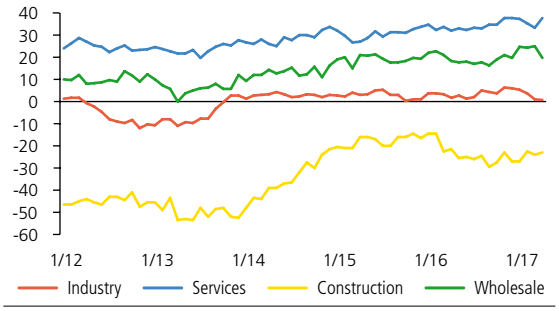


CHART III.2.12

KEY FINANCIAL INDICATORS

The gross operating surplus of non-financial corporations increased
(annual percentage changes)

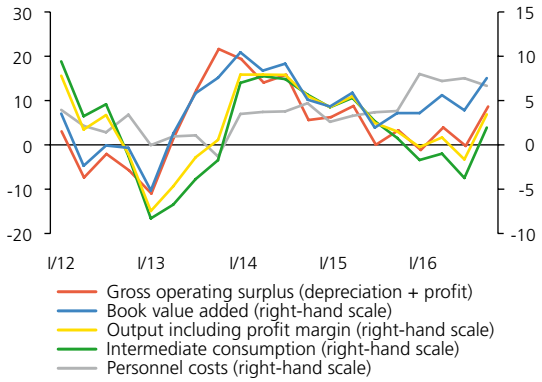


CHART III.3.1

LABOUR MARKET INDICATORS

Employment growth was at a record high in 2016 Q4, but wage growth slowed
(annual percentage changes)

CHART III.3.2

EMPLOYMENT BREAKDOWN BY BRANCHES

Non-market services and industry were the biggest contributors to the growth in employment in 2016 Q4
(contributions in percentage points to annual change; selected branches; source: LFS)

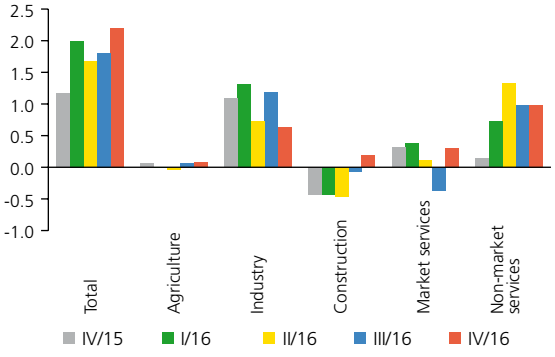
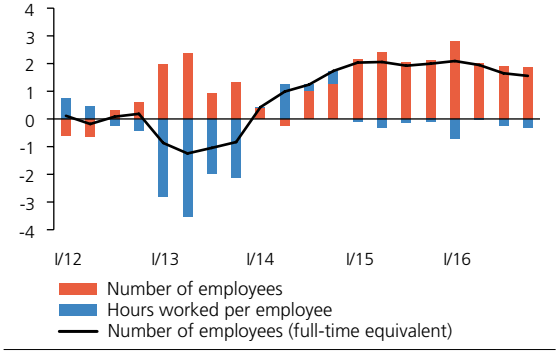


CHART III.3.3

NUMBER OF EMPLOYEES (FULL-TIME EQUIVALENT)

Rapid growth in the number of employees was accompanied by a slight decrease in average hours worked
(annual percentage changes; contributions in percentage points)



III.3 THE LABOUR MARKET

The long-running economic growth is being reflected in rising demand for labour, which, however, is now running into supply-side constraints. Employment growth has reached an all-time high and unemployment is declining steadily. Firms are finding it increasingly difficult to fill vacancies, as the growth in the labour force is not sufficient to meet demand for labour. Although the upward pressure on wages is generally intensifying, average wage growth slowed in market sectors in 2016 Q4. In light of growth in the hourly wage and the data for industry for January and February, however, this slowdown can be considered temporary. By contrast, wage growth in non-market sectors rose significantly further. Whole-economy labour productivity declined slightly for the second consecutive quarter, fostering still strong growth in nominal unit labour costs. This corresponds to persisting domestic inflation pressures, which, within core inflation, are passing through mainly to prices of services.

III.3.1 Employment and unemployment

Despite a growing shortage of available labour, employment growth reached an all-time high. In terms of employment structure, the year-on-year growth (2.2% in 2016 Q4; see Chart III.3.1) was due mainly to a continued marked increase in the number of employees. The number of self-employed without employees also rose significantly. As regards age structure, roughly 40% of the growth in employment was due to employees aged 60 or over, whose economic activity was affected by a continued rise in the retirement age in addition to growing demand for labour.

Employment rose in all sectors, but most of all in services. The continued strong growth in employment in non-market services, which was relatively broad-based, was joined again by growth in employment in market services, following a short-lived decline in 2016 Q3. Unlike in non-market services, however, employment was very mixed across the sectors of market services. Employment rose significantly in professional, scientific and technical activities. Transport and storage also profited from the good economic situation, due mainly to favourable output in manufacturing. On the other hand, employment decreased further in wholesale and retail trade and especially in accommodation and food service activities. Employment growth in industry slowed compared to the previous quarter. This was only partly offset by renewed growth in employment in construction.

Substantial growth in part-time employment dampened the increase in the converted number of employees. The increase in part-time work was across-the-board in all age groups and led to a slight year-on-year decrease in average hours worked per employee. Amid a pronounced rise in the number of employees, the converted number of employees thus increased by 1.6% in 2016 Q4 (see Chart III.3.3). Wholesale and retail trade and manufacturing had almost equal shares in its growth.

The strong growth in employment pushed unemployment down to historical lows (see Chart III.3.4). Employment growth was also fostered by a rise in the labour force, in particular among persons close to retirement age (see Box 4 below). The growth in the labour force coupled with the long-running decline in the population aged 15–64 led to an increase in the rate of economic activity, which rose to a historical high of almost 76%. The general unemployment rate continued to fall until January. Although it stopped declining in February, it is still the lowest in the EU. The share of unemployed persons fell throughout 2017 Q1, with the number of available job applicants continuing to decline and the population in the given age group shrinking slightly.

The favourable economic outlook is resulting in continued sharp growth in demand for labour. The number of vacancies exceeded 150,000 in March, about a quarter of which were in manufacturing. Wholesale and retail trade and construction offered a further significant proportion of the vacancies. As regards skills structure, the largest supply of employment was for craft and related trades workers, plant and machine operators and elementary occupations, together accounting for more than 65% of all vacancies. At the same time, the solid economic growth is leading to a sizeable decline in the number of unemployed persons. A particularly large decline was recorded for the long-term unemployed, whose number fell by almost 50,000 year on year to 180,000 in March. Viewed in terms of the Beveridge curve, the current labour market situation resembles the situation observed at the start of 2008 (see Chart III.3.5), although with currently much higher levels of employment and the labour force and slightly higher core inflation, which is, however, due also to some one-off factors (see Box 3 in section III.1).

BOX 4
THE POTENTIAL FOR FURTHER GROWTH IN TOTAL EMPLOYMENT

Total employment recorded its highest-ever year-on-year growth in 2016 Q4. At the same time, the general unemployment rate fell well below the 4% level. This raises the questions of what is fostering such sharp employment growth and what further developments we can expect when the unemployment rate is already so low.

The labour force has been contributing increasingly strongly to employment growth as the unemployment rate has declined. Unlike in 2014 and 2015, when employment growth was driven mainly by a falling number of unemployed persons, its surge has been supported chiefly by growth in the labour force (see Chart 1). The potential for growth in employment through a further drop in the

CHART III.3.4

UNEMPLOYMENT INDICATORS

The general unemployment rate and the share of unemployed persons both decreased further
(percentages; seasonally adjusted; source: MLSA, CZSO)

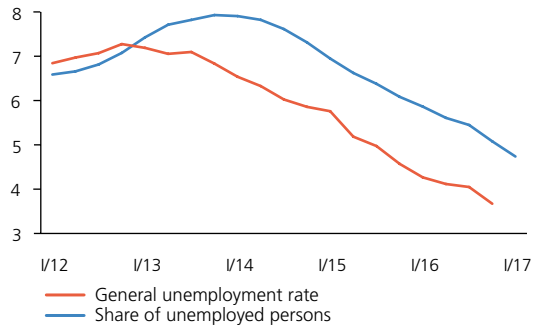


CHART III.3.5

BEVERIDGE CURVE

The number of unemployed persons fell steadily, while the number of vacancies continued to increase slightly
(numbers in thousands; seasonally adjusted; annual percentage changes for core inflation; source: MLSA, CZSO)

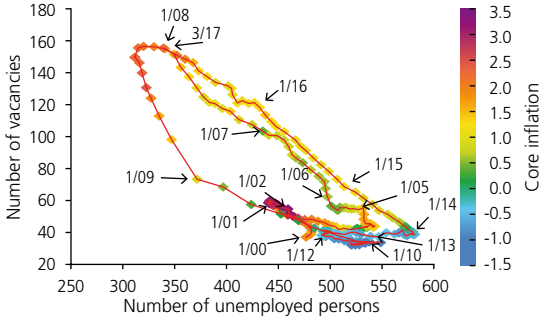


CHART 1 (BOX)

EMPLOYMENT AND THE LABOUR FORCE

The share of the labour force in employment growth increased during 2016
(annual percentage changes; age 15 years or more)

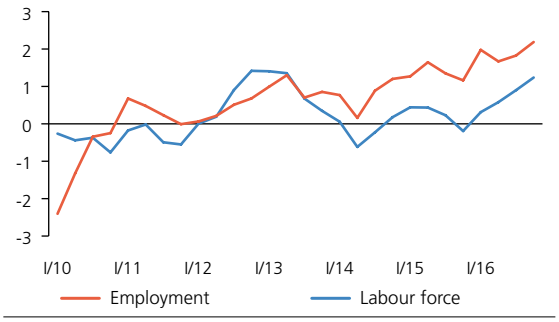


CHART 2 (BOX)

DECOMPOSITION OF LABOUR FORCE GROWTH

Labour force growth has been driven in recent years by the participation rate
(annual percentage changes; contributions in percentage points; age 15 years or more)

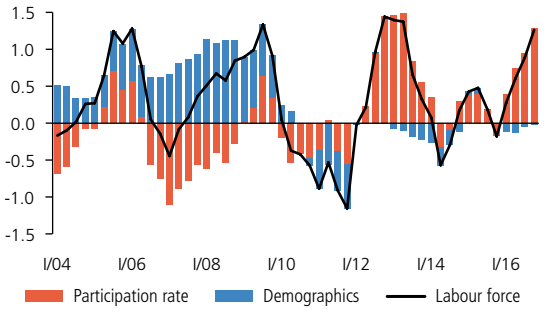


CHART 3 (BOX)

DECOMPOSITION OF THE PARTICIPATION RATE

The oldest age group has been the main driver of growth in the participation rate in recent years
(annual percentage changes; contributions in percentage points; age 15 years or more)

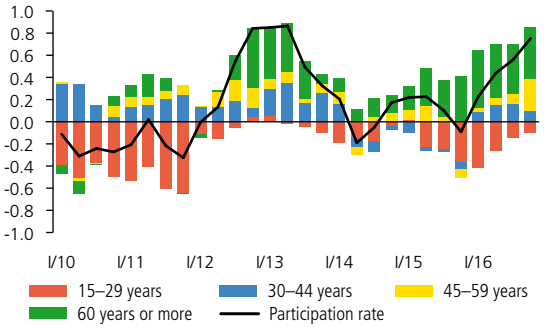
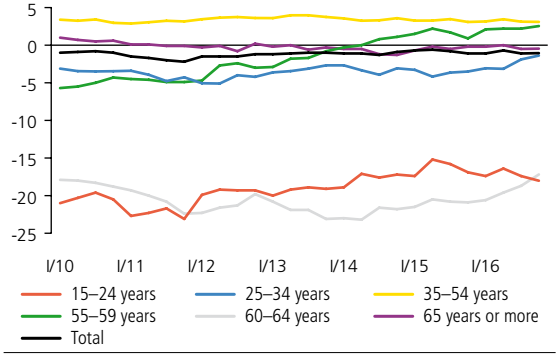


CHART 4 (BOX)

DIFFERENCES IN PARTICIPATION RATES COMPARED WITH GERMANY

The biggest differences between the Czech and German participation rates are in the youngest age group and the 60–64 age group
(Czech Republic minus Germany; percentage points; age 15 years or more)



number of unemployed persons continues to decrease as the unemployment rate falls to a historical low. In the event of continued economic growth coupled with rising demand for labour, any further growth in employment will be conditional on an increase in the labour force.

The labour force has long been growing due to demographic trends. Since 2010, however, the contribution of this factor has been mostly negative (see Chart 2). This is due mainly to the baby bust generation born from the mid-1990s onwards. According to demographic outlooks, the population will not rise markedly in the coming years either, and the contribution of the size and age composition of the population to labour force growth will probably remain negative.

As in the last few years, labour force growth will continue to be closely determined by the participation rate.[27] As with employment growth, the growth in the participation rate – the share of the number of employed and unemployed persons in the population in the given age group – in the last five years or so has been driven by the over 60s, i.e. people of (pre-)retirement age (see Chart 3). This is due to two factors. The first is a higher supply of part-time employment, which has helped lift the participation of other age groups as well, especially last year. In addition, the participation rate of the oldest age group is being strongly affected by a gradual increase in the retirement age, which has raised the labour force by almost 100,000 persons in the past five years. A gradually rising statutory retirement age until 2037 (with a current cap at 65 years and regular revision of this figure) will affect the participation rate in the coming years, too.

The expectation of continued convergence of the Czech and German participation rates opens up space for further growth in the labour force. To estimate the potential increase in the labour force due to growth in the participation rate, we can compare the participation rates in the Czech Republic and Germany.[28] This comparison reveals that the Czech figures are much lower in the 15–24 and 60–64 age groups (by almost 20 percentage points; see Chart 4). If the German participation rates were applied to the Czech demographic structure, the result would be an increase in the labour force in the Czech Republic of almost 250,000

27 This holds if the conditions for migration are not significantly relaxed despite the observed increased demand of Czech firms for foreign workers. Foreign workers are monitored by the Labour Force Survey to only a limited extent.

28 The retirement age in Germany has gradually been raised from 65 years to 67 years since 2012.

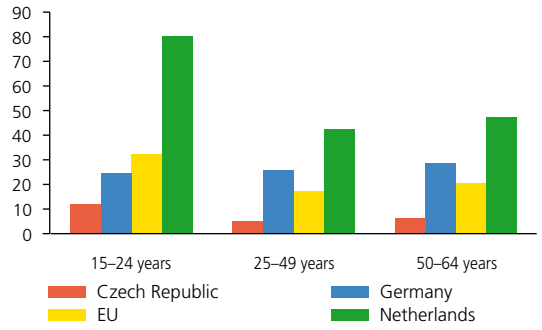
persons.[29] However, such a sizeable increase is not likely in the near future, as the participation rate in the youngest category is affected to a large degree by the parameters of the education system, and the higher participation rates in higher age groups in Germany are linked with a markedly higher percentage of part-time employment (see Chart 5). Part-time employment is far lower in all age categories in the Czech Republic than in the EU[30] despite a significant increase in the share of part-time jobs in total employment growth last year.

To sum up, any further growth in employment will probably be very limited. Given the low unemployment rate, the potential for further employment growth lies mainly in growth in the labour force and, owing to the Czech demographics, will depend heavily on the participation rate. The latter will probably increase further due to a gradually rising retirement age and expected growth in the supply of part-time employment. However, both these factors indicate that growth in the labour force will be sluggish, amounting to a few tens of thousands of persons a year. Given the currently favourable economic outlooks, this will lead to gradually strengthening upward pressures on wages (see section II.2.2).

CHART 5 (BOX)

SHARE OF PART-TIME EMPLOYMENT IN TOTAL EMPLOYMENT

The share of part-time employment in the Czech Republic is low in the European context
(broken down by age group; percentages; age 15–64 years)



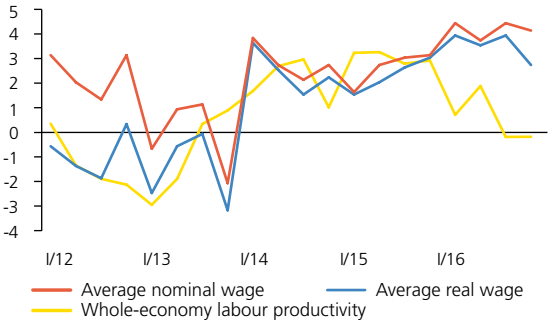
III.3.2 Wages and productivity

Average wage growth recorded a – probably temporary – slowdown at the end of 2016. This was due exclusively to market sectors, where wage growth slowed to 3.8% year on year. Wage growth moderated mainly in services. However, it was also weaker in industry, partly because of adverse developments in mining and quarrying.[31] As in the whole of 2016, wage growth was fostered by a rise in the minimum wage (from CZK 9,200 to CZK 9,900) in January, which was reflected in a more than 7% wage increase in accommodation and food service activities. In non-market sectors, wage growth rose further, exceeding 6% on average in 2016 Q4. This acceleration was driven mainly by full pass-through of the pay rise in education recorded in September 2016. Wages in public administration and defence also rose at a rapid pace, reflecting a brought-forward pay rise in November. Wage growth in all the non-market sectors was well above that in market sectors in 2016 Q4. In addition to data from industry for the first two months of 2017, the probably temporary nature of the wage slowdown in market sectors is evidenced by the

CHART III.3.6

AVERAGE WAGE AND WHOLE-ECONOMY LABOUR PRODUCTIVITY

Wage growth slowed, while labour productivity fell for the second consecutive quarter
(annual percentage changes)



29 The calculation is done across five-year groups broken down by gender. As Chart 4 shows, this would mean a drop in the participation rate for some age groups.

30 The Netherlands has long had the highest share of part-time jobs in employment in the EU.

31 The fall in mining and quarrying output accelerated in 2016 H2.

Chart III.3.7

PRODUCTIVITY BY SECTOR

Labour productivity dived in construction, but also weakened in other sectors except industry
(annual percentage changes)

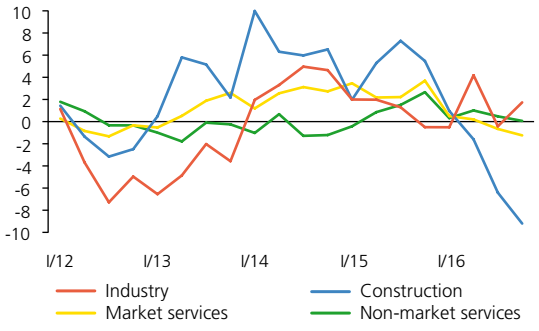
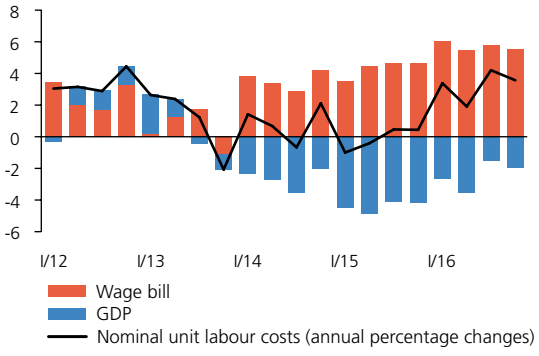


Chart III.3.8

UNIT LABOUR COSTS

The faster nominal unit labour cost growth last year reflected stable growth in the wage bill and a simultaneous slowdown in GDP growth
(annual percentage changes; contributions in percentage points)



evolution of the hourly wage. It is indicating strong wage growth across the employee skills structure amid a decline in hours worked (and hours paid but not worked). This decline is expected to subside in 2017 Q1 due to year-on-year growth in the number of working days.

Labour productivity remained subdued amid rapid employment growth and, conversely, slightly slower GDP growth. Labour productivity continued to decline slightly year on year in 2016 Q4 (by 0.1%; see Chart III.3.6).[32] The adverse labour productivity trend in 2016 H2 reflected a fall in value added in construction, due mainly to the EU funding cycle, and developments in market services. According to national accounts data, the marked growth in employment outpaced growth in value added in this sector. Productivity growth in industry increased due to a marked rise in gross value added. Even so, it remained relatively insignificant (see Chart III.3.7).

The downswing in productivity amid rapid wage growth led to continued high growth in nominal unit labour costs. In 2016 Q4, this growth reached 3.6%. With growth in the wage bill roughly stable, this reflected the slowdown in economic activity in 2016 (see Chart III.3.8). However, the trends in nominal unit labour costs were very mixed across sectors. Labour costs per unit of output rose markedly in services and construction, whereas in industry they recorded a drop due to labour productivity growth. This is consistent with manifestations of the renewed Balassa-Samuelson effect.[33]

32 Total whole-economy productivity is calculated as the ratio of seasonally unadjusted GDP to employment (i.e. including the effect of taxes and subsidies on products). Labour productivity in individual sectors is calculated as the ratio of gross value added to employment (i.e. excluding taxes and subsidies on products).

33 This topic was also analysed in Box 2 in Inflation Report III/2016.

III.4 FINANCIAL AND MONETARY DEVELOPMENTS

The monetary policy settings were left unchanged in 2017 Q1, but in early April the CNB discontinued its exchange rate commitment at an extraordinary policy meeting of the Bank Board. Monetary policy rates remained at technical zero. PRIBOR rates also stayed at historical lows at all maturities. Government bond yields increased, remaining negative only at the shortest maturities. This, coupled with the CNB's macroprudential measures, started to be reflected in a gradual rise in most client interest rates. The koruna was mostly just above CZK 27 to the euro until early April. After the exit from the CNB's exchange rate commitment it appreciated moderately. The positive interest rate differentials vis-à-vis euro rates were unchanged. Loans continued to rise apace, supported by growing demand in all credit market segments. Credit standards for loans to households were tightened, while those for corporate loans were eased further. M3 growth remained high in an environment of easy monetary conditions in 2017 Q1.

III.4.1 Monetary policy and interest rates

The Bank Board discontinued the CNB's exchange rate commitment at its extraordinary policy meeting on 6 April 2017. This decision was the first step towards a gradual return of the overall monetary conditions to normal. The discontinuation of the use of the exchange rate as an additional monetary policy instrument means that the koruna exchange rate will move according to supply and demand on the foreign exchange market. As a result, it may fluctuate in either direction in the short term. The CNB stands ready to use its instruments to mitigate potential excessive exchange rate fluctuations if needed.[34]

By contrast, monetary policy interest rates remained unchanged at technical zero in the past months[35] (see Chart III.4.1). The sustained low monetary policy rates have passed through to financial market rates and subsequently also to client rates in recent years. The drop in market rates (even to negative levels in some market segments) was also due to the exchange rate commitment and the related speculative inflow of foreign capital, which has, particularly recently, sharply increased demand for Czech government bonds.

PRIBOR rates remained at historical lows at all maturities (see Chart III.4.2). They thus reflected the setting of the CNB's monetary policy interest rates at technical zero and expectations of only gradual growth in those rates in the coming quarters. The average 3M PRIBOR remained stable at 0.3% in 2017 Q1 in line with the assumption of

Chart III.4.1

CNB KEY RATES

The CNB left its key interest rates at technical zero
(percentages)

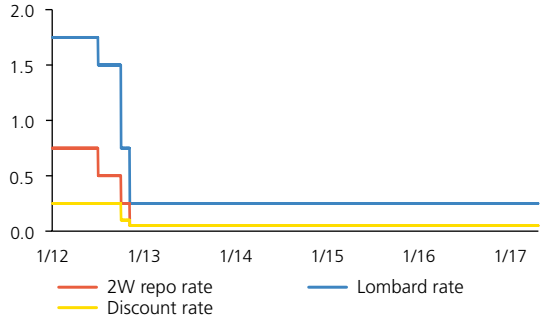
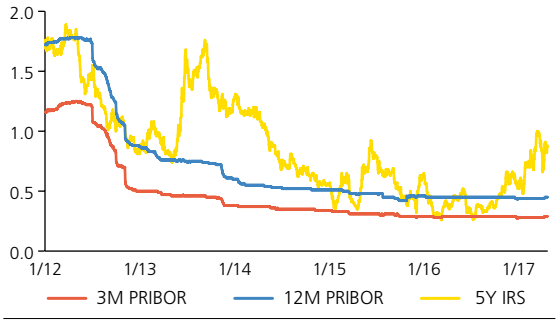


Chart III.4.2

MARKET INTEREST RATES

Money market interest rates stayed at historical lows, while IRS rates with longer maturities went up
(percentages)



34 For more details about the CNB's exchange rate commitment and its discontinuation, see Box 1 in section I of this Report.

35 The two-week repo rate and the discount rate were thus set at 0.05% and the Lombard rate at 0.25% with effect from 2 November 2012.

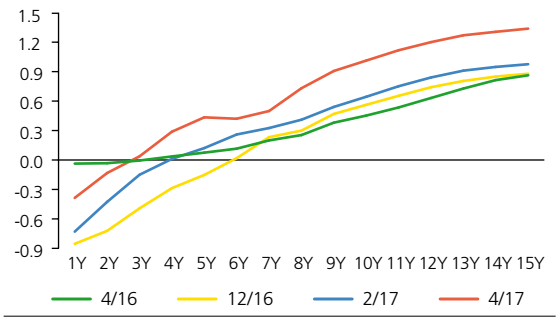
the previous forecast. The money market premium, as measured by the spread between the 3M PRIBOR and the 2W repo rate, stayed at around 0.25 percentage point. The 12M PRIBOR recorded virtually no shift either. FRA derivative rates went up gradually in response to the rise in inflation. Speculation on the introduction of negative monetary policy interest rates by the CNB meanwhile subsided. The expected 3M market rate curve thus took on a positive slope for the first time in about three years.

Domestic interest rates with longer maturities (IRS) mostly went up, thus rebounding from their historical lows. This was due both to domestic macroeconomic data and developments on foreign markets. The main domestic factor was rising inflation. Foreign rates reflected the expected – and in mid-March implemented – rate hike in the USA, along with growing optimism related to the improving euro area growth outlook and increased inflation expectations. Corrections occurred as a result of uncertainty ahead of the upcoming elections in the Netherlands (March) and France (April) and the approaching activation of Article 50 of the Lisbon Treaty on the UK's exit from the EU. Another impetus for growth in domestic rates was the exit from the CNB's exchange rate commitment in early April. Overall, domestic IRS rates rose by 0.2–0.4 percentage point compared to the start of January (see Chart III.4.2). Domestic government bond yields rose even more, by as much as 0.8 percentage point. Their entire yield curve thus moved upwards, staying negative only at maturities of up to two years (see Chart III.4.3).

CHART III.4.3

GOVERNMENT BOND YIELD CURVE

Yields increased across all maturities and are now negative only at the shortest end of the curve
(percentages)



Despite negative yields, excess demand continued to prevail in the primary government bond market in the first few months of this year. Demand for Czech government bonds, linked with inflows of portfolio investment amid expectations of an exit from the exchange rate commitment and persisting distortion of the derivatives market, remained high. This was reflected in excess demand in primary auctions – especially for shorter-maturity bonds. Twenty-four auctions of fixed coupon bonds and one auction of variable coupon bonds have been held on the primary government bond market since the start of this year. The total volume of bonds issued was CZK 111.1 billion.[36] Demand exceeded supply in most of the auctions; the average bid-to-cover ratio was 1.5. The Ministry of Finance again took advantage of the favourable market conditions and held most of its auctions in the first few months of this year to profit from foreign investors' increased demand (especially for shorter-maturity bonds[37]) before the exit from the exchange rate commitment. The share of non-residents in total holdings of medium-term and long-term government bonds thus rose to 47.3% at the end of March 2017.

36 The Czech Republic's Funding and Debt Management Strategy for 2017 assumes issues of medium- and long-term government bonds of at least CZK 150 billion.

37 T-bills with maturities of up to one year were also issued to an increased extent in the first few months of this year. This halted the trend of replacing them with zero-coupon medium-term and long-term government bonds, which started in 2015.

The growth in government bond yields and the CNB's macroprudential measures started to be reflected in an increase in interest rates on loans for house purchase (see Chart III.4.4). However, growth in the mortgage rate was still only moderate, amounting to 0.1 percentage point between November 2016 and February 2017. It was thus lower than the growth in ten-year government bond yields, changes in which take around three months to pass through to rates on house purchase loans. Interest rates on loans with fixation periods of up to one year and over five years rose slightly (see Chart III.4.5). The rate on new mortgage loans with the most common fixation period of over one year and up to five years also went up slightly, reaching 1.9% in February. According to the latest data, these rates went up slightly further in March. The decline in the rate on mortgage loans with the most common LTV ratio of 80%–90% almost halted in 2016 Q4 (1.87%), while rates on mortgages with other LTVs were still slightly falling. Subsequently, banks began raising their rates on mortgages with higher LTVs at the start of this year according to some information.

The interest rate on loans to non-financial corporations also grew, to just above 2%, amid a slight increase in credit premiums. Credit premiums, as expressed by the spread between financial market client and reference rates, had previously been mostly slightly falling (since the end of 2014). The spread between client interest rates in the Czech Republic and the euro area is 0.3 percentage point. The exception is consumer credit, where the spread remains at around 5 percentage points despite a steady decline. Real client interest rates on loans to corporations and loans to households for house purchase were close to zero in the Czech Republic.

Bank financing costs on the financial market went up, while deposit interest costs stayed low. The average deposit rate was at a record low of 0.2% in 2017 Q1. However, the rise in government bond yields was reflected in an increase in the rate on long-term household deposits above 1%.

III.4.2 The exchange rate

The koruna strengthened only slightly following the exit from the CNB's exchange rate commitment and, moreover, then started to return gradually to its initial level. The exchange rate was thus again around CZK 27 to the euro in late April. The behaviour of financial speculators and exchange rate risk hedging by domestic exporters ahead of the exit from the commitment led to the koruna market being heavily overbought. This was simultaneously reflected in a rise in the CNB's international reserves. This fact – in line with the CNB's previous communications – is currently preventing a sharper and longer-lasting appreciation of the koruna.

Chart III.4.4

CLIENT INTEREST RATES IN THE CZECH REPUBLIC AND THE EURO AREA

Interest rates on loans for house purchase went up slightly in both the Czech Republic and the euro area; a similar trend was recorded in the Czech Republic for the rate on corporate loans
(cost of borrowing indicators; new business; percentages)

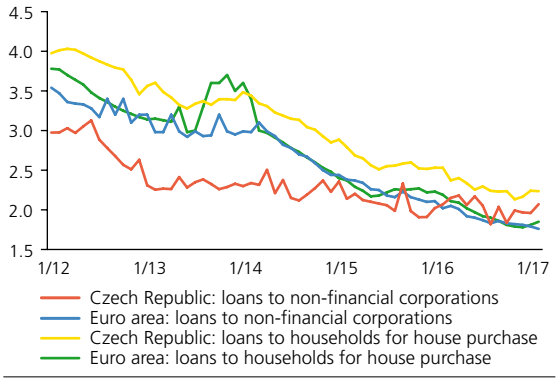


Chart III.4.5

INTEREST RATES ON LOANS TO HOUSEHOLDS

Interest rates on loans for house purchase with fixation periods of up to one year and over five years rose slightly, while the consumer credit rate is close to 10% and showing a downward trend
(new business; percentages)

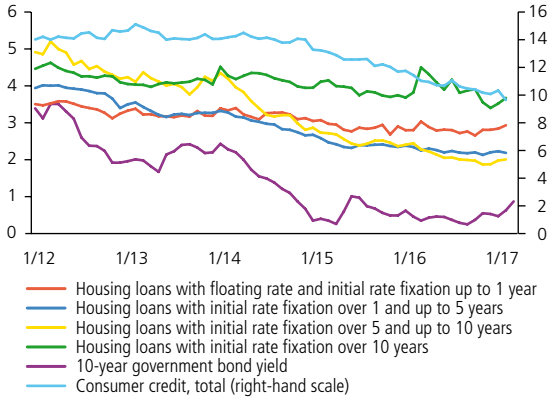
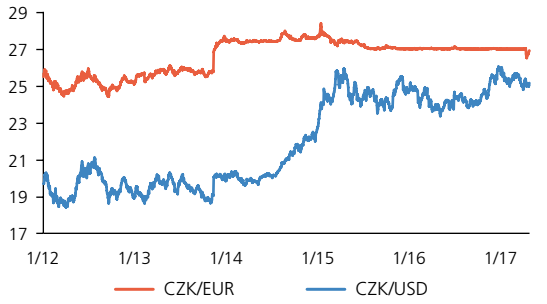


CHART III.4.6

CZK/EUR AND CZK/USD EXCHANGE RATES

The koruna remained just above the CNB's exchange rate floor in 2017 Q1 and appreciated only slightly after the exchange rate commitment was ended



The koruna stood at just above CZK 27 to the euro before the exchange rate commitment was discontinued. The only exception was a temporary depreciation to CZK 27.15 at the very end of 2017 Q1 after speculation in part of the market that the commitment might be ended at the Bank Board's regular monetary policy meeting on 30 March was not confirmed. In year-on-year terms, the koruna appreciated slightly by 0.1% to CZK 27.02 to the euro in 2017 Q1 (see Chart III.4.6).

The shortening period of the CNB's "hard" commitment led to a sharp capital inflow in 2017 Q1. This was due to speculation on a subsequent strengthening of the koruna and to hedging against exchange rate risk by domestic exporters. The size of the CNB's interventions, which ultimately kept the koruna above the exchange rate floor, therefore increased sharply. The interventions amounted to around CZK 1.1 trillion in 2017 Q1.

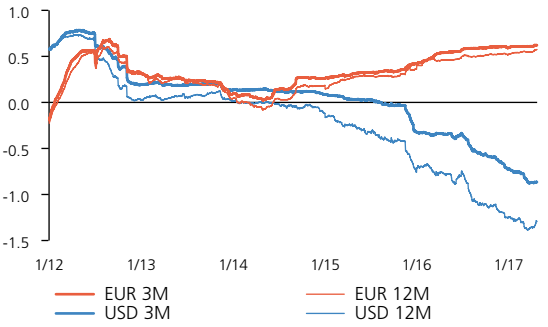
The fundamental factors putting the koruna under appreciation pressure include the long-running highly accommodative monetary policy in the euro area. With its unconventional instruments, the ECB is contributing to growth in short-term liquidity, and through negative interest rates it is crowding out short-term capital, partly abroad. Until the start of April, the Czech Republic was one of the recipients of this capital owing to its sound macroeconomic performance and non-negative monetary policy rates in an environment of an exchange rate commitment and an expected strengthening of the koruna after its discontinuation.

CHART III.4.7

INTEREST RATE DIFFERENTIALS

The positive interest rate differentials of the koruna vis-à-vis the euro were unchanged, while the negative differentials vis-à-vis the dollar widened

(percentage points)



The ECB's highly accommodative monetary policy has resulted in a positive short-term koruna-euro interest rate differential. The interest rate differential between 3M PRIBOR and 3M EURIBOR money market rates remained at around 0.6 percentage point on average in 2017 Q1 and was still at roughly the same level in early April (see Chart III.4.7). Information available at the start of Q2 indicates the possibility of increasing divergence between the CNB's and ECB's monetary policies. Markets feel that rates in the Czech Republic might be raised as early as the end of 2017 or the start of 2018, depending on future inflation. By contrast, monetary policy in the euro area is mostly expected to remain easy owing to still relatively low core inflation, persisting concerns about the sustainability of the euro area in its present form and banking sector problems in some countries. Conversely, calls for less accommodative ECB monetary policy are coming mainly from Germany and Austria.

The koruna weakened against the dollar year on year. The exchange rate of the koruna against the dollar was CZK 25.4 in 2017 Q1. This represented a year-on-year depreciation of 3.4% (see Chart III.4.6). The dollar's appreciation on global financial markets was due mainly to a rise in interest rates in the USA and expectations of their further growth this year, whereas central banks administering the other reserve currencies had yet to even hint at a future tightening of their monetary policies. The positive short-term interest rate

differential between 3M USD LIBOR and 3M EURIBOR rates increased further, reaching 1.5 percentage points at the end of the period under review. In late April, the exchange rate of the koruna against the dollar was fluctuating at slightly stronger levels (around CZK 24.6) compared to the Q1 average, due mainly to the dollar weakening against the euro.

The nominal effective exchange rate of the koruna weakened slightly year on year in 2017 Q1. The key factor behind the depreciation of the NEER by 0.5% (see Chart III.4.8) was a sharp appreciation of the Russian rouble on global markets.[38] The koruna weakened by a sizeable 31.5% year on year against the rouble. Besides the rouble, the koruna depreciated to a lesser extent against the Japanese yen (by 4.9%) and the US dollar (see above). The weakening of the koruna's NEER was dampened by the koruna strengthening by 10.5% against the British pound. The movements of the koruna against the other currencies in the basket did not exceed 3%.

III.4.3 Credit

Growth in loans, driven by lower interest rates and solid economic growth, continued across the entire market. Growth in loans to households accelerated, while growth in loans to non-financial corporations slowed (see Chart III.4.9). Overall, loans rose by 9.8% year on year. Still low client interest rates and rising demand fuelled growth in loans in all credit market segments.

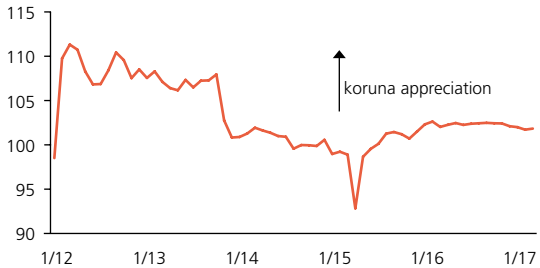
Banks tightened their credit standards for loans to households while further easing their standards for loans to non-financial corporations (see Chart III.4.10). According to the Bank Lending Survey, the tightening of credit standards for loans to households was due to macroprudential and legislative changes, an increase in long-term bank financing costs resulting from growth in government bond yields, and to perceived risk stemming from expected property market developments. Banks tightened their credit terms and conditions by lowering the LTV ratio in connection with a CNB measure intended to reduce the proportion of mortgage loans with LTVs above 80%. By contrast, the easing of credit standards for corporate loans reflected competition, high liquidity of banks and the favourable economic outlook. However, the taking into account of the impacts of the expected exit from the CNB's exchange rate commitment fostered a tightening in part of the market. Downward pressure on interest margins persisted. In 2017 Q2, banks expect a further tightening of credit standards for house purchase loans, a stabilisation of standards for consumer credit and a continued easing of standards for loans to non-financial corporations.

38 Although this represented only a partial (roughly 40%) correction of the rouble's previous weakening on global markets in 2014 and 2015, the appreciation of the rouble also positively affected Czech exports to Russia, which had previously been hit hard by the fall in the rouble.

CHART III.4.8

NOMINAL EFFECTIVE KORUNA EXCHANGE RATE

The koruna depreciated modestly year on year in effective terms, most of all against the Russian rouble
(basic index; year 2015 = 100)



Note: In the calculation of the nominal effective exchange rate of the koruna (NEER), the euro has the largest share in the basket (more than 65%). The renminbi, the zloty, the pound, the dollar and the forint have smaller, but still significant shares (2.2%–7.2%). The shares of the remaining six currencies range between 0.8% and 1.6%. The calculation method (as applied by the IMF) includes all SITC categories.

CHART III.4.9

LOANS TO THE PRIVATE SECTOR

Loans grew quickly in all segments of the credit market
(annual percentage rates of growth)

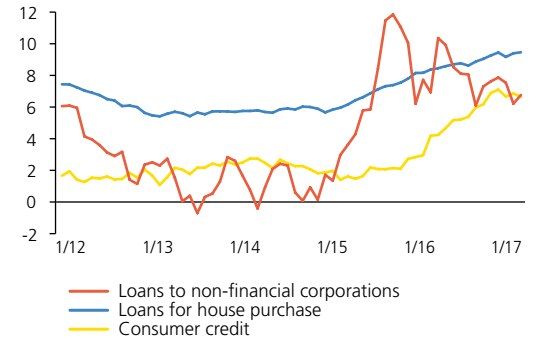


CHART III.4.10

CREDIT STANDARDS OF BANKS

Credit standards for loans to households were tightened, while those for corporate loans were eased further in part of the banking market
(net percentages of banking market; positive value = tightening, negative value = easing)

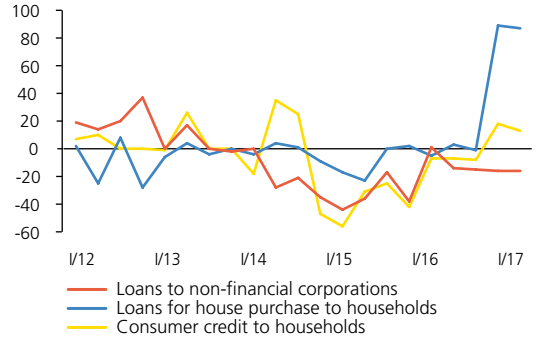


CHART III.4.11

LOANS TO HOUSEHOLDS

The growth in loans to households is being driven predominantly by loans for house purchase
(annual percentage rates of growth; contributions in percentage points; end-of-quarter data; most recent data are for February 2017)

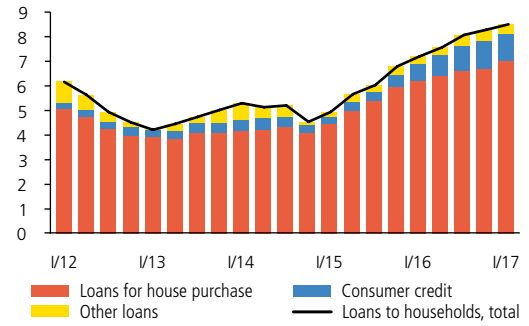


CHART III.4.12

NEW HOUSING LOANS TO HOUSEHOLDS

New housing loans grew rapidly despite the tightening of credit standards and conditions
(monthly volumes in CZK billions; annual percentage changes; seasonally adjusted data)

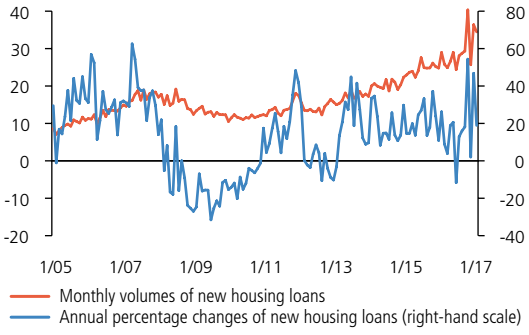
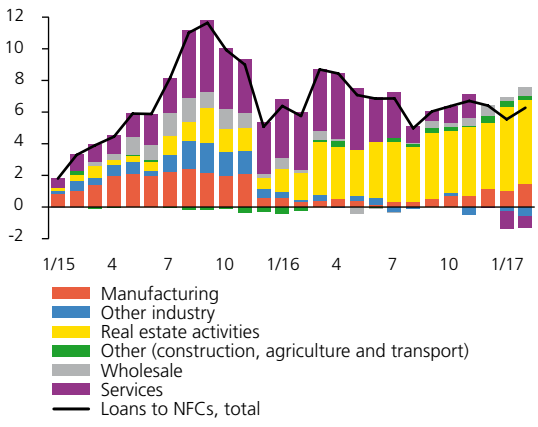


CHART III.4.13

LOANS TO NON-FINANCIAL CORPORATIONS BY SECTOR OF ACTIVITY

The growth in loans is concentrated in real estate activities, with manufacturing also contributing to a lesser extent
(annual percentage changes; contributions in percentage points)



The growth in loans to the private sector was mostly due to loans for house purchase, with household demand for mortgage loans remaining high (see Chart III.4.11). Mortgage growth rose during Q1, reaching 10% in March. New housing loans grew rapidly despite the tightening of credit standards and conditions (see Chart III.4.12). The demand was fuelled by expectations of a further reduction in the availability of mortgages, an outlook for continued growth in property prices, and consumer optimism.

Consumer credit continued to rise, contributing partially to growth in household consumption. Its growth rate stayed just below 7% and – amid a continuing decline in interest rates in this segment – was driven by non-specific loans (particularly for property furnishings and car purchases). By contrast, credit card debt and current account overdrafts declined.

The total indebtedness of households increased faster than their income. This was reflected in an increase in the ratio of loans and other financial obligations to aggregate annual nominal disposable income to around 66% in 2016 Q4. Despite the drop in interest rates, total net debt-servicing costs have thus recently remained essentially unchanged at just below 2%.

Year-on-year growth in loans to non-financial corporations slowed as a result of a fall in loans in the services sector. The growth in loans of almost 7% was due mainly to long-term loans. Demand was driven in 2017 Q1 mainly by financing of mergers and acquisitions and business and debt restructuring. From a sectoral perspective, the growth in corporate loans was fuelled mainly by financing of real estate activities (with foreign currency loans accounting for a large share) and partly by manufacturing (see Chart III.4.13). By contrast, loans in market services started to decline. These sectors helped growth in foreign currency loans to accelerate to around 33%. The acceleration was due both to natural hedging against exchange rate risk by developers and to similarly motivated activities of some industrial companies ahead of the exit from the CNB's exchange rate commitment (manufacturing firms accounted for about one-third of the growth in foreign currency loans). The share of foreign currency loans in total loans thus reached a new historical high of 28%.

Total external financing of corporations increased, but the ratio of corporate debt to GDP stabilised. External financing of corporations was dominated by loans, while issues of debt securities and quoted corporate shares declined. The ratio of corporate debt to GDP remained at roughly 59% (or 112% including other accounts payable and trade credits). The ratio of corporate debt to liquid financial assets has been showing a falling trend since 2012 due to faster growth in liquid assets. Firms expanded their cash holdings considerably. Loans to other firms and shares also increased.

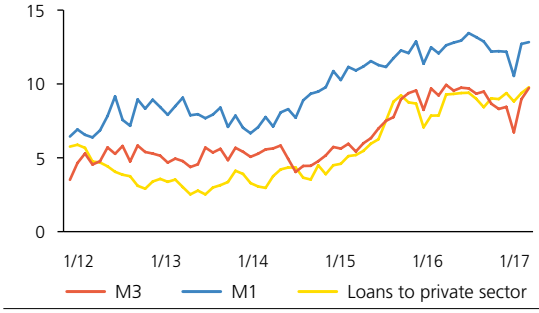
III.4.4 Money

M3 growth remained high in an environment of easy monetary conditions (see Chart III.4.14).[39] Turning to the creation of money, the M3 growth reflected the aforementioned high growth in domestic credit and inflows of capital from abroad, which are leading to growth in the net foreign assets of the banking sector. M3 continued to considerably outpace nominal GDP. The M3 growth reflected economic agents' demand for overnight deposits and bank repo transactions, especially from non-monetary financial institutions. This was connected mainly with inflows of foreign capital invested in domestic government bonds, which pushed their yields into negative territory, as a result of which domestic institutional investors preferred to deposit koruna liquidity in short-term bank instruments. Household deposits continued to be a significant driver of M3 growth amid an upswing in growth in deposits of non-financial corporations.

CHART III.4.14

MONETARY AGGREGATES AND LOANS

M3 growth fluctuated just below 10%
(annual percentage rates of growth)



39 The M3 volatility recorded in late 2016 and in early 2017 was related to optimisation of banks' balance sheets linked with contributions to the Resolution Fund. This involved a temporary transfer of local government deposits on the Treasury account at the CNB and partly also temporary extraordinary loan repayments by clients from their deposits at banks.

ABBREVIATIONS

AEIS	Average Earnings Information System
BoE	Bank of England
BoJ	Bank of Japan
CEB	Czech Export Bank
CF	Consensus Forecasts
CNB	Czech National Bank
CPI	consumer price index
CZK	Czech koruna
CZ-ISCO	employment classification (used since 2011)
CZSO	Czech Statistical Office
ECB	European Central Bank
EEA	European Economic Area
EGAP	Export Guarantee and Insurance Company
EIA	Environmental Impact Assessment
EIA	U.S. Energy Information Administration
EIU	Economist Intelligence Unit
ESA	European System of Accounts
ESR	electronic sales registration
ESCB	European System of Central Banks
EU	European Union
EUR	euro
EURIBOR	Euro Interbank Offered Rate
FDI	foreign direct investment
Fed	US central bank
FMIE	Financial Market Inflation Expectations
FRA	forward rate agreement
GBP	pound sterling
GDP	gross domestic product
GNP	gross national product
GVA	gross value added
HICP	harmonised index of consumer prices
HP filter	Hodrick-Prescott filter
IEA	International Energy Agency
ILO	International Labour Organization
IMF	International Monetary Fund
IRI	Institute for Regional Information
IRS	interest rate swap
JPY	Japanese yen
KZAM	employment classification (used up to 2011)
LFS	Labour Force Survey
LIBOR	London Interbank Offered Rate
LTV	loan to value
M1, M3	monetary aggregates
MFIs	monetary financial institutions
MLSA	Ministry of Labour and Social Affairs
NAIRU	non-accelerating inflation rate of unemployment
NBS	National Bank of Slovakia
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
PMI	Purchasing Managers Index
pp	percentage points
PPI	producer price index
PRIBOR	Prague Interbank Offered Rate
1W, 1M, 1Y	one-week, one-month, one-year
repo rate	repurchase agreement rate
USD	US dollar
VAT	value added tax
WTI	West Texas Intermediate

This glossary explains some terms frequently used in the Inflation Report. A more detailed glossary can be found on the CNB website (www.cnb.cz/en/general/glossary/index.html).

Administered prices: A sub-category of the consumer basket consisting of items with price ceilings (set at either central or local level), prices regulated on a cost-plus basis (items whose prices may only reflect economically justified costs and a reasonable profit) and administratively fixed fees. The selection of these items is based on the Price Bulletin of the Czech Ministry of Finance.

Balance of payments: Records economic transactions with other countries (i.e. between residents and non-residents) over a particular period. The basic structure of the balance of payments includes the current account, the capital and financial accounts and the change in CNB international reserves.

Bid-to-cover ratio: The ratio of total demand to demand coverage in primary auctions of medium-term and long-term government bonds.

Consensus Forecasts: A regular monthly publication issued by Consensus Economics bringing together the forecasts of hundreds of prominent economists and analytical teams regarding future world developments. The CNB uses these predictions in its macroeconomic forecast when forming assumptions regarding the future development of the external environment.

Core inflation: (Formerly called adjusted inflation excluding fuels.) The increase in prices of non-food items of the consumer basket excluding items with administered prices, indirect tax changes and fuels.

Covered bond: A bond collateralised (backed) by long-term assets, usually mortgage loans or public sector loans. The issuers are mostly banks and the issuance of covered bonds is subject to strict legislative rules. Compared to standard bonds, this type of bond has lower credit risk thanks to higher coverage (known as dual recourse), which gives the covered bond holder a preferential claim on the issuer's receivables underlying the mortgage loans or public sector loans and likewise a claim on the issuer. If the issuer defaults, the holder therefore has a preferential right to the assets backing the covered bond.

Current account: Records exports and imports of goods and services, income from capital, investment and labour and unrequited transfers.

Cyclical component of the general government balance: Expresses the effect of the business cycle on the general government fiscal balance.

Discount rate: A monetary policy rate which as a rule represents the floor for short-term money market interest rates. The CNB applies it to the excess liquidity which banks deposit with the CNB overnight under the deposit facility.

Disinflation: A decline in inflation.

Effective euro area indicators: Proxy for the effect of economic activity (effective GDP) and inflation (effective producer prices and consumer prices) in the euro area on the Czech economy. The weights used in the calculation are equal to the shares of the individual euro area countries in the total exports of the Czech Republic to the euro area.

Effective exchange rate: Shows the appreciation (index > 100) or depreciation (index < 100) of the national currency against a basket of selected currencies for a certain time period relative to a base period. The weights applied in the basket are the shares of major trading partners in foreign trade turnover.

Escape clause: Excuses the central bank from its obligation to hit the inflation target. In the flexible inflation targeting regime, it is applied in the event of large shock changes in exogenous factors (particularly supply-side shocks, e.g. indirect tax changes) that are completely or largely outside the purview of central bank monetary policy.

Euro area: The territory of all Member States of the European Union that have adopted the euro as a single currency pursuant to the Treaty Establishing the European Community.

Financial account: Records transactions connected with the creation, liquidation and change in ownership of the financial assets and liabilities of the government, the banking and corporate sectors and other entities vis-à-vis the rest of the world. It consist of direct investment, portfolio investment, other investment and financial derivatives transactions.

Fiscal impulse: A variable taking into account the effect of fiscal policy on economic activity in the short run.

Fiscal stance: The annual change in the general government structural balance (in percentage points). A positive figure indicates fiscal restriction and a negative figure indicates fiscal expansion.

Food prices: In CNB documents, the term food prices refers to the consolidated category of prices of food and non-alcoholic beverages and prices of alcoholic beverages and tobacco.

General government balance: Revenues minus expenditures of the general government sector. A negative government balance is called a general government deficit and a positive government balance is called a general government surplus.

General government primary balance: The general government balance net of interest payments (i.e. debt service).

General government structural balance: The cyclically adjusted general government balance adjusted for extraordinary one-off operations. It captures the structural configuration of fiscal policy.

General unemployment rate: Covers the 15–64 age group (as measured by the ILO methodology in the LFS). It is the ratio of the number of unemployed persons to the labour force (i.e. the sum of employed and unemployed persons) in the given age group.

Goods and services balance: The sum of the trade balance and the services balance.

Gross domestic product (GDP): The key indicator of economic development. It represents the sum of the value added by all economic sectors. In terms of use it consists of expenditure on final consumption (consumption of households, the government and non-profit institutions), gross capital formation (fixed investment and changes in inventories) and foreign trade (net exports of goods and services).

Gross operating surplus and mixed income of the household sector: Gross operating surplus – as a part of the gross disposable income of households – is the difference between gross value added in the household sector and the sum of compensation of employees and other taxes less other subsidies on production in this sector. Gross mixed income is generated only in the household sector, where remuneration for labour performed by a firm's owner or by family members cannot be distinguished from the entrepreneurial profit of the owner.

Inflation: Commonly, inflation is considered to be recurring growth of most prices in the economy. It means a decrease in the real value (i.e. purchasing power) of a given currency relative to the goods and services which consumers buy – if there is inflation in the economy, consumers need ever more currency units of the given country to buy the same basket of goods and services. In practice, inflation is measured by the increment of the consumer price index.

Inflation pressures: Determined in the CNB's modelling system by real marginal costs in the consumption sector and are divided into domestic (in the intermediate goods sector) and imported (in the import price sector).

Inflation rate: The increase in the average (basic) consumer price index for the last 12 months relative to the average for the previous 12 months.

Inflation target: The level of consumer price inflation that the CNB endeavours to achieve, set publicly and well in advance.

Loan-to-value ratio (LTV): The ratio of the amount of a loan to the value of the property securing the financing.

Lombard rate: A monetary policy interest rate which provides a ceiling for short-term interest rates on the money market. The CNB applies it to the liquidity which it provides to banks overnight under the lending facility.

Monetary aggregates: Represent the amount of money in the economy covered in the monetary survey. According to the national definition, they are calculated from the monetary liabilities of resident monetary financial institutions to other resident sectors in the Czech Republic (households, non-financial corporations and financial institutions excluding the general government). Monetary aggregates differ according to the degree of liquidity of the individual components. The narrow monetary aggregate M1 comprises currency in circulation and overnight deposits. The broad monetary aggregate M2 comprises M1 plus total deposits with agreed maturity and redeemable at notice and repurchase agreements. The broad monetary aggregate M3 (harmonised with EU standards) comprises currency in circulation, overnight deposits, deposits with agreed maturity of up to two years, deposits redeemable at notice of up to three months, repurchase agreements, money market fund shares/units and issued debt securities with maturity of up to two years.

Monetary conditions: Represent the combined effect of interest rates (the interest rate component of the monetary conditions) and the exchange rate (the exchange rate component) on the economy. These are the key variables through which monetary policy can affect economic activity and, through it, inflation. Interest rates and the exchange rate do not necessarily affect the economy in the same direction.

Monetary policy horizon: The time horizon which monetary policy-makers focus on when making decisions and which takes into account the monetary policy transmission lag. This horizon is about 12–18 months ahead.

Monetary policy interest rates: Short-term interest rates associated with monetary policy-making. They comprise the two-week repo rate, the discount rate and the Lombard rate.

Monetary policy-relevant inflation: Inflation to which monetary policy reacts. It is defined as headline inflation adjusted for the first-round effects of changes to indirect taxes.

Money market: The part of the financial markets which is used to obtain short-term loans and where debt instruments maturing in less than one year are traded. T-bills are typical securities traded on this market. Within this market the CNB carries out its repo operations.

Nominal costs in the consumption sector: These comprise output prices in the intermediate goods sector and import sector, as final consumption goods are produced using inputs from these sectors. They also include price convergence, which approximates the productivity differential between the tradables sector and the non-tradables sector and its price effect, known as an analogy to the Balassa-Samuelson effect.

Nominal costs in the intermediate goods sector: Co-determined by prices of production factors, i.e. labour costs in the market sector and the price of capital. In addition to these components, they are determined by labour efficiency. It can be understood as a concept similar to total factor productivity, e.g. in the Cobb-Douglas production function. Besides domestic and external demand, the price of capital also reflects the price deflator of fixed investment, which is also affected by movements in prices of imported capital goods.

Nominal unit labour costs: The labour costs needed to produce a unit of output. Nominal unit labour costs are calculated as the ratio of the nominal volume of wages and salaries to GDP at constant prices.

Price-to-average wage ratio: The ratio of the price of an apartment to the sum of the annual average wage over the last four quarters. Higher values of this indicator usually mean that apartments are overpriced. The index is calculated from property transaction prices; the latest data are estimated from asking prices.

Property asking prices: Property sale asking prices in estate agencies. Asking prices should be higher than transaction prices. Property asking prices in the Czech Republic are published, for example, by the CZSO and the Institute for Regional Information (IRI).

Property transaction prices: Prices based, on the one hand, on Ministry of Finance statistics from property transfer tax returns and published by the CZSO. These prices are the closest to actual market prices in terms of methodology, but are published with a time delay. The second, alternative source of data on transaction prices is CZSO data from a survey in estate agencies, for which the time lag is considerably shorter.

Repo rate: The CNB's key monetary policy rate, paid on commercial banks' excess liquidity as withdrawn by the CNB in two-week repo tenders.

Share of unemployed persons: The ratio of available job applicants aged 15–64 to the population of the same age.

Unemployment rate: The ratio of the number of unemployed persons to the total labour force. We distinguish between the general unemployment rate, as determined by the CZSO according to International Labour Organisation methodology, and the share of unemployed persons, as determined by the Ministry of Labour and Social Affairs.

KEY MACROECONOMIC INDICATORS

		years										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
DEMAND AND SUPPLY												
Gross domestic product												
GDP	CZK bn, constant p. of 2010, seas. adjusted	4,057.2	3,866.7	3,949.3	4,028.7	3,999.6	3,980.2	4,088.2	4,276.9	4,376.4	**4,502.7**	**4,629.5**
GDP	%, y-o-y, real terms, seas. adjusted	2.5	-4.7	2.1	2.0	-0.7	-0.5	2.7	4.6	2.3	**2.9**	**2.8**
Household consumption	%, y-o-y, real terms, seas. adjusted	2.8	-0.6	0.9	0.3	-1.2	0.5	1.8	3.1	2.9	**3.5**	**3.4**
Government consumption	%, y-o-y, real terms, seas. adjusted	1.1	3.0	0.4	-2.2	-2.0	2.5	1.1	2.0	1.2	**1.8**	**1.9**
Gross capital formation	%, y-o-y, real terms, seas. adjusted	0.8	-17.8	4.1	1.9	-3.8	-5.1	8.5	10.2	-1.0	**0.4**	**5.5**
Gross fixed capital formation	%, y-o-y, real terms, seas. adjusted	2.2	-9.8	1.0	0.9	-2.9	-2.5	3.9	9.1	-3.9	**3.3**	**5.7**
Exports of goods and services	%, y-o-y, real terms, seas. adjusted	3.8	-9.5	14.4	9.2	4.5	0.2	8.7	7.9	4.0	**5.3**	**5.6**
Imports of goods and services	%, y-o-y, real terms, seas. adjusted	2.8	-10.7	14.5	6.7	2.8	0.1	10.1	8.4	3.0	**4.6**	**7.0**
Net exports	CZK bn, constant p. of 2010, seas. adjusted	86.6	107.9	121.5	193.7	245.8	249.7	233.1	236.2	279.3	**315.6**	**286.0**
Coincidence indicators												
Industrial production	%, y-o-y, real terms	-1.8	-13.6	8.6	5.9	-0.8	-0.1	5.0	4.6	2.9	-	-
Construction output	%, y-o-y, real terms	0.0	-0.9	-7.4	-3.6	-7.6	-6.7	4.3	7.1	-5.9	-	-
Receipts in retail sales	%, y-o-y, real terms	2.7	-4.7	1.5	1.7	-1.1	1.2	5.5	8.1	6.3	-	-
PRICES												
Main price indicators												
Inflation rate	%, end-of-period	6.4	1.1	1.5	1.9	3.3	1.4	0.4	0.3	0.7	-	-
Consumer Price Index	%, y-o-y, average	6.4	1.1	1.5	1.9	3.3	1.4	0.4	0.3	0.7	**2.5**	**2.0**
Regulated prices (18.70%)*	%, y-o-y, average	15.6	8.4	2.6	4.7	8.6	2.2	-3.0	0.0	0.2	**0.0**	**1.0**
Food prices (including alcoholic beverages and tobacco) (24.58%)*	%, y-o-y, average	3.0	-0.9	0.9	3.9	2.8	3.1	1.8	0.0	0.2	**3.7**	**2.8**
Core inflation (53.32%)*	%, y-o-y, average	2.0	0.0	-1.2	-0.7	-0.4	-0.6	0.5	1.2	1.2	**2.3**	**1.9**
Fuel prices (3.39%)*	%, y-o-y, average	4.3	-11.1	12.8	9.9	6.0	-2.3	0.2	-13.5	-8.5	**8.9**	**-0.5**
Monetary policy inflation (excluding tax changes)	%, y-o-y, average	4.3	0.9	0.4	1.9	2.1	0.6	0.2	0.2	0.5	**2.6**	**1.9**
GDP deflator	%, y-o-y, seas. adjusted	2.0	2.6	-1.4	0.0	1.5	1.4	2.5	1.0	1.1	**0.6**	**2.7**
Partial price indicators												
Industrial producer prices	%, y-o-y, average	4.5	-3.1	1.2	5.6	2.1	0.8	-0.8	-3.2	-3.3	**2.5**	**1.2**
Agricultural prices	%, y-o-y, average	9.3	-24.9	7.1	22.1	3.3	5.0	4.7	-6.7	-5.1	**4.4**	**0.7**
Construction work prices	%, y-o-y, average	4.5	1.2	-0.2	-0.5	-0.7	-1.1	0.5	1.2	1.2	-	-
Brent crude oil (USD/barrel)	%, y-o-y, average	35.4	-36.5	28.4	38.2	0.7	-2.6	-8.5	-46.1	-16.0	**24.5**	**0.0**
LABOUR MARKET												
Average monthly wage	%, y-o-y, nominal terms	7.8	3.3	2.2	2.5	2.5	-0.1	2.9	2.7	4.2	**5.1**	**5.3**
Average monthly wage	%, y-o-y, real terms	1.4	2.3	0.7	0.6	-0.8	-1.5	2.5	2.4	3.5	**2.7**	**3.3**
Number of employees	%, y-o-y	1.6	-2.2	-2.2	0.0	-0.1	1.6	0.6	2.2	2.1	**1.2**	**0.4**
Unit labour costs	%, y-o-y	4.7	3.0	-1.7	0.3	3.4	1.0	0.9	-0.1	3.3	**3.3**	**3.0**
Unit labour costs in industry	%, y-o-y	-1.7	3.3	-6.2	0.7	5.9	5.1	-0.4	1.8	2.0	-	-
Aggregate labour productivity	%, y-o-y	0.5	-3.1	3.4	2.3	-1.2	-0.8	2.2	3.1	0.6	**1.5**	**2.4**
ILO general unemployment rate	%, average, age 15–64	4.4	6.7	7.4	6.8	7.0	7.1	6.2	5.1	4.0	**3.4**	**3.3**
Share of unemployed persons (MLSA)	%, average	4.1	6.2	7.0	6.7	6.8	7.7	7.7	6.5	5.5	**4.3**	**4.0**
PUBLIC FINANCE												
Government budget balance (ESA2010)	CZK bn, current prices	-84.6	-216.2	-174.5	-109.9	-159.6	-51.1	-83.1	-29.0	27.6	**51.3**	**58.5**
Government budget balance / GDP**	%, nominal terms	-2.1	-5.5	-4.4	-2.7	-3.9	-1.2	-1.9	-0.6	0.6	**1.1**	**1.1**
Government debt (ESA2010)	CZK bn, current prices	1,150.7	1,335.7	1,508.5	1,606.5	1,805.4	1,840.4	1,819.1	1,836.3	1,754.9	**1,710.2**	**1,689.5**
Government debt / GDP**	%, nominal terms	28.7	34.1	38.2	39.8	44.5	44.9	42.2	40.3	37.2	**35.0**	**32.8**
EXTERNAL RELATIONS												
Current account												
Trade balance	CZK bn, current prices	-4.4	65.0	40.4	75.5	123.8	167.0	220.0	188.0	250.6	**235.0**	**250.0**
Trade balance / GDP	%, nominal terms	-0.1	1.7	1.0	1.9	3.0	4.1	5.1	4.1	5.3	**4.8**	**4.8**
Balance of services	CZK bn, current prices	89.3	81.9	78.5	81.3	77.6	70.4	55.7	78.0	101.1	**100.0**	**100.0**
Current account	CZK bn, current prices	-75.3	-89.2	-141.8	-84.8	-63.3	-21.8	7.9	11.3	52.6	**15.0**	**40.0**
Current account / GDP	%, nominal terms	-1.9	-2.3	-3.6	-2.1	-1.6	-0.5	0.2	0.2	1.1	**0.3**	**0.8**
Foreign direct investment												
Direct investment	CZK bn, current prices	-36.3	-37.7	-95.0	-46.8	-121.3	7.4	-80.4	49.7	-141.0	**-50.0**	**-50.0**
Exchange rates												
CZK/USD	average	17.1	19.1	19.1	17.7	19.6	19.6	20.8	24.6	24.4	-	-
CZK/EUR	average	25.0	26.5	25.3	24.6	25.1	26.0	27.5	27.3	27.0	-	-
CZK/EUR	%, y-o-y, real (CPI euro area), avg.	-12.5	5.5	-4.7	-2.0	1.6	3.5	5.9	-1.2	-1.3	-	-
CZK/EUR	%, y-o-y, real (PPI euro area), avg.	-8.6	4.6	-4.1	-3.1	2.6	2.3	4.8	-0.4	-0.1	-	-
Foreign trade prices												
Prices of exports of goods	%, y-o-y, average	-4.6	0.2	-1.0	1.7	2.9	1.2	3.5	-1.7	-3.1	**1.1**	**-0.8**
Prices of imports of goods	%, y-o-y, average	-3.3	-3.5	2.0	4.3	4.2	-0.2	1.9	-1.9	4.0	**3.1**	**-1.3**
MONEY AND INTEREST RATES												
M3	%, y-o-y, average	14.2	6.5	0.2	1.0	5.1	5.1	5.1	7.3	9.1	**10.1**	**7.7**
2W repo rate	%, end-of-period, CNB forecast = average	2.25	1.00	0.75	0.75	0.05	0.05	0.05	0.05	0.05	**0.23**	**0.58**
3M PRIBOR	%, average	4.0	2.2	1.3	1.2	1.0	0.5	0.4	0.3	0.3	**0.5**	**0.8**

* figures in brackets are constant weights in current consumer basket
** CNB calculation
– data not available/forecasted/released
data in bold = CNB forecast

2014				2015				2016				2017				2018			
QI	**QII**	**QIII**	**QIV**	**QI**	**QII**	**QIII**	**QIV**	**QI**	**QII**	**QIII**	**QIV**	**QI**	**QII**	**QIII**	**QIV**	**QI**	**QII**	**QIII**	**QIV**
1,006.3	1,015.9	1,027.6	1,038.4	1,052.8	1,066.7	1,077.1	1,080.2	1,084.3	1,094.1	1,096.8	1,101.2	**1,111.0**	**1,122.9**	**1,131.7**	**1,137.1**	**1,141.6**	**1,150.8**	**1,162.4**	**1,174.7**
1.9	2.6	3.4	3.0	4.6	5.0	4.8	4.0	3.0	2.6	1.8	1.9	**2.5**	**2.6**	**3.2**	**3.3**	**2.8**	**2.5**	**2.7**	**3.3**
0.6	1.3	2.2	3.0	3.5	3.3	2.9	2.8	2.8	2.6	3.1	2.9	**3.1**	**3.6**	**3.6**	**3.8**	**3.8**	**3.6**	**3.3**	**3.0**
0.8	1.8	-0.1	1.8	1.4	1.5	3.2	1.7	1.5	2.4	0.8	0.1	**1.7**	**0.5**	**1.9**	**2.9**	**2.7**	**2.3**	**1.4**	**1.0**
5.5	13.4	9.8	5.9	12.7	13.6	9.7	5.0	3.0	-3.1	-1.4	-2.4	**-3.9**	**-0.8**	**0.5**	**5.9**	**6.6**	**5.7**	**5.1**	**4.7**
2.0	3.7	4.6	5.3	8.0	10.4	10.0	8.2	1.6	-5.2	-4.8	-6.9	**-2.1**	**4.0**	**4.1**	**7.6**	**6.8**	**5.9**	**5.3**	**4.8**
11.1	8.5	7.7	7.5	7.4	7.5	8.2	8.4	6.4	5.7	2.4	1.8	**2.6**	**4.5**	**7.8**	**6.3**	**4.8**	**4.5**	**5.7**	**7.4**
11.9	11.6	8.4	8.5	8.8	8.6	8.5	7.7	6.1	3.8	1.7	0.4	**0.4**	**3.4**	**7.1**	**7.6**	**7.1**	**6.4**	**6.8**	**7.5**
62.3	56.0	58.6	56.1	56.9	52.0	61.0	66.3	62.8	70.0	67.5	79.1	**82.3**	**82.2**	**78.4**	**72.7**	**67.4**	**68.8**	**72.6**	**77.3**
6.9	6.0	4.0	3.2	5.1	5.6	4.1	3.7	2.9	5.7	0.3	2.7	-	-	-	-	-	-	-	-
13.3	5.6	2.9	0.7	9.5	12.3	7.3	1.5	-6.9	-8.9	-6.6	-2.0	-	-	-	-	-	-	-	-
7.0	4.7	5.7	4.7	8.3	8.7	6.2	9.1	7.5	8.8	5.1	4.2	-	-	-	-	-	-	-	-
1.0	0.7	0.5	0.4	0.3	0.5	0.4	0.3	0.4	0.3	0.4	0.7	1.2	-	-	-	-	-	-	-
0.2	0.2	0.6	0.5	0.1	0.7	0.4	0.1	0.5	0.3	0.5	1.4	2.4	**2.4**	**2.6**	**2.5**	**2.1**	**2.1**	**2.0**	**1.9**
-4.1	-3.5	-2.2	-2.1	0.2	0.3	-0.2	-0.4	0.7	0.2	-0.1	-0.1	-0.5	**-0.1**	**0.3**	**0.5**	**1.0**	**1.1**	**1.1**	**1.0**
3.4	1.5	1.5	0.7	-0.9	0.7	0.3	0.0	-0.4	-0.8	0.2	1.8	3.4	**3.5**	**4.0**	**4.0**	**3.2**	**3.2**	**2.6**	**2.1**
-0.2	0.4	0.8	0.9	1.1	1.1	1.1	1.3	1.3	1.1	1.1	1.4	2.1	**2.4**	**2.4**	**2.3**	**1.9**	**1.8**	**1.9**	**2.0**
0.3	1.0	0.5	-1.2	-14.6	-10.1	-12.6	-16.6	-12.4	-12.4	-9.5	0.2	15.1	**9.1**	**7.1**	**4.5**	**-1.1**	**-0.3**	**-0.2**	**-0.4**
0.1	0.0	0.5	0.3	-0.1	0.4	0.2	0.0	0.3	0.0	0.3	1.3	2.5	**2.5**	**2.7**	**2.5**	**2.0**	**2.0**	**1.9**	**1.8**
2.1	2.8	2.9	2.1	1.5	1.1	0.8	0.6	1.2	1.0	1.3	0.8	**0.3**	**0.7**	**-0.1**	**1.4**	**2.3**	**2.8**	**3.5**	**2.3**
-0.7	-0.2	-0.1	-1.9	-3.3	-2.3	-3.6	-3.5	-4.0	-4.6	-3.3	-1.1	2.7	**2.7**	**2.5**	**1.8**	**0.9**	**1.2**	**1.4**	**1.5**
-4.4	-2.1	-2.3	-6.0	-9.3	-10.9	-6.5	1.8	-2.9	-6.9	-5.7	-4.1	-0.2	**7.7**	**7.2**	**2.5**	**1.4**	**-0.2**	**0.7**	**1.2**
-0.3	0.5	0.7	0.9	1.0	1.3	1.4	1.3	1.3	1.1	1.1	1.2	1.2	-	-	-	-	-	-	-
-4.2	6.2	-5.7	-29.5	-48.9	-42.1	-50.6	-41.6	-36.3	-26.1	-7.6	16.0	57.6	**20.1**	**20.7**	**11.3**	**3.3**	**-0.1**	**-1.5**	**-1.8**
3.9	2.8	2.2	2.8	1.7	2.8	3.1	3.2	4.5	3.8	4.5	4.2	**4.8**	**5.1**	**5.4**	**5.5**	**5.4**	**5.4**	**5.2**	**5.2**
3.7	2.6	1.6	2.3	1.6	2.1	2.7	3.1	4.0	3.6	4.0	2.8	**2.3**	**2.6**	**2.8**	**3.0**	**3.4**	**3.3**	**3.2**	**3.3**
0.4	-0.2	1.0	1.2	2.1	2.4	2.0	2.1	2.8	2.0	1.9	1.9	**1.1**	**1.6**	**1.4**	**0.9**	**0.4**	**0.3**	**0.3**	**0.5**
1.4	0.7	-0.7	2.1	-1.0	-0.4	0.5	0.4	3.4	1.9	4.2	3.6	**3.3**	**3.4**	**3.2**	**3.0**	**3.2**	**3.2**	**2.9**	**2.5**
2.0	0.3	-2.4	-1.6	0.3	0.9	2.3	3.8	4.1	-0.4	3.9	0.8	-	-	-	-	-	-	-	-
1.7	2.8	3.0	1.1	3.3	3.3	2.9	3.0	0.8	1.9	-0.1	-0.1	**0.8**	**0.9**	**1.7**	**2.4**	**2.4**	**2.2**	**2.4**	**2.8**
6.9	6.1	6.0	5.8	6.1	5.0	4.9	4.5	4.4	4.0	4.0	3.6	**3.6**	**3.3**	**3.3**	**3.3**	**3.4**	**3.2**	**3.2**	**3.2**
8.5	7.6	7.4	7.2	7.5	6.4	6.2	6.0	6.3	5.4	5.3	5.0	5.1	**4.2**	**4.0**	**4.1**	**4.4**	**3.9**	**3.8**	**3.8**
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
71.6	65.3	47.8	35.2	74.4	45.9	33.1	34.6	83.7	81.5	45.5	39.9	**81.0**	**70.0**	**42.0**	**42.0**	**85.0**	**74.0**	**45.0**	**46.0**
7.2	6.1	4.3	3.1	7.1	4.0	2.8	2.9	7.7	6.8	3.8	3.2	**7.2**	**5.7**	**3.4**	**3.3**	**7.2**	**5.7**	**3.4**	**3.4**
19.6	15.2	12.8	8.0	19.2	19.4	20.2	19.3	24.5	24.8	27.4	24.4	**24.0**	**25.0**	**27.0**	**24.0**	**24.0**	**25.0**	**27.0**	**24.0**
81.9	-37.6	-38.5	2.1	93.4	-48.4	-48.4	14.7	109.9	-11.6	-22.8	-22.8	**93.0**	**-35.0**	**-47.0**	**4.0**	**104.0**	**-28.0**	**-46.0**	**10.0**
8.3	-3.5	-3.5	0.2	8.9	-4.2	-4.2	1.2	10.0	-1.0	-1.9	-1.9	**8.3**	**-2.8**	**-3.8**	**0.3**	**8.8**	**-2.2**	**-3.5**	**0.7**
-25.4	-45.7	-16.3	7.1	3.3	-1.4	20.2	27.6	9.6	-84.2	-51.6	-14.8	-	-	-	-	-	-	-	-
20.0	20.0	20.9	22.1	24.5	24.8	24.3	24.7	24.5	23.9	24.2	25.1	25.4	-	-	-	-	-	-	-
27.4	27.4	27.6	27.6	27.6	27.4	27.1	27.1	27.0	27.0	27.0	27.0	27.0	-	-	-	-	-	-	-
7.8	6.6	6.5	3.0	0.3	-0.8	-2.3	-1.9	-2.3	-1.4	-0.5	-0.9	-1.1	-	-	-	-	-	-	-
6.2	4.8	5.1	3.1	1.2	0.0	-1.0	-1.7	-1.8	-0.3	0.7	1.0	0.6	-	-	-	-	-	-	-
4.1	3.4	4.7	2.0	-0.5	-0.5	-2.7	-3.3	-4.2	-4.3	-2.7	-1.3	**2.3**	**2.1**	**0.6**	**-0.5**	**-2.5**	**-1.7**	**0.1**	**0.9**
2.4	1.3	2.9	1.2	-1.5	0.0	-2.5	-3.8	-5.6	-6.3	-3.7	-0.4	**5.2**	**4.9**	**2.5**	**-0.1**	**-2.5**	**-2.1**	**-0.4**	**0.3**
5.3	5.5	4.3	5.2	5.7	6.5	8.0	9.1	9.6	9.7	9.1	7.9	**9.4**	**10.0**	**10.3**	**10.6**	**8.7**	**7.8**	**7.2**	**7.0**
0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	**0.05**	**0.40**	**0.44**	**0.38**	**0.39**	**0.58**	**0.95**
0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	**0.3**	**0.6**	**0.7**	**0.6**	**0.6**	**0.8**	**1.2**

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