INFLATION REPORT / IV

2018

CNB CZECH NATIONAL BANK

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This Inflation Report was approved by the CNB Bank Board on 8 November 2018 and – with some exceptions – contains the information available as of 19 October 2018. 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 has been in place since spring 2017. 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 Bank Board decided to discontinue the exchange rate commitment. 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.

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

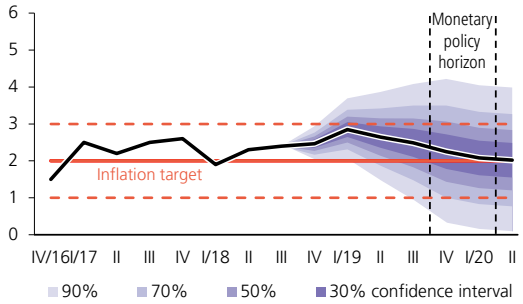
Inflation will be above the 2% target in 2019 and return close to it at the monetary policy horizon (see Chart I.1). In 2018 Q3, inflation edged up owing to a rise in core inflation and faster growth in administered prices amid still high fuel price growth. By contrast, growth in food prices slowed considerably. The overall fundamental inflation pressures in the domestic economy remain strong, owing mainly to buoyant wage growth and continued growth of the real economy. At the same time, the inflationary effect of import prices was restored, reflecting rapid growth in foreign prices as well as the koruna's recent depreciation stemming from negative sentiment on global markets. Inflation will increase further in late 2018 and early 2019. In the subsequent period, however, the overall inflation pressures will ease owing to growth in interest rates, renewed appreciation of the koruna and a gradual slowdown in wage growth. Inflation will therefore approach the CNB's 2% target from above over the monetary policy horizon and stay at the target during the rest of 2020. As regards the structure of inflation, core inflation will rise further owing to import prices in the near future and then fall again as a result of a decrease in the overall inflation pressures. Food price inflation will increase markedly on the back of an expected rise in food commodity prices. By contrast, the current rapid growth in fuel prices will gradually slow and switch to a year-on-year decline at the end of next year owing to an expected gradual decline in global oil prices. Continued growth in administered prices will be driven mainly by prices of electricity and natural gas.

The growth of the Czech economy has slowed, but from the whole-year perspective it will stay above 3% (see Chart I.2). The economy will thus be slightly above its potential output level. The increase in domestic economic activity will be driven mainly by growth in household consumption, reflecting buoyant growth in household income and optimistic expectations. Rising demand and increasingly distinct labour shortages are motivating domestic firms to invest, which is helping to improve labour efficiency. Public investment expenditure will also grow further as a result of higher drawdown of EU funds. Fiscal policy will also contribute to domestic demand growth this year and the next via a significant rise in public sector pay, pensions and social benefits. The economy will also benefit from continued, albeit slowing, demand growth in the Czech Republic's main trading partner countries. The negative contribution of net exports to GDP growth will disappear temporarily owing to accelerating exports. Next year, net exports will again dampen economic growth owing to a rise in import-intensive components of domestic demand and appreciation of the koruna. The monetary conditions will tighten further in the interest rate component and, once the koruna starts appreciating again, also in the exchange rate component. The continued economic growth is reflected in a tight labour market. The unemployment rate is at a record low and there is little room for it to decrease further. This will lead to slower employment growth and continued high – albeit moderating – wage growth.

CHART I.1

HEADLINE INFLATION FORECAST

Inflation will stay in the upper half of the tolerance band and will approach the 2% target from above over the monetary policy horizon
(year on year in %)

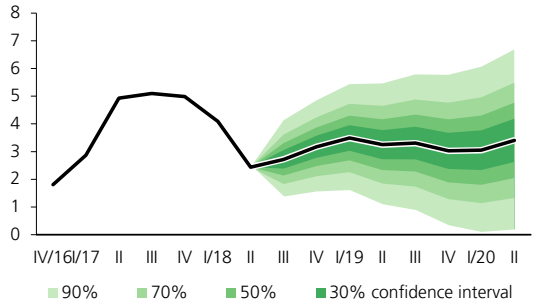


Note: The confidence intervals of the headline inflation forecast reflect the predictive power of past forecasts. They are symmetric and widening only for the first five quarters and then stay constant. This is consistent with both the past predictive power and the stabilising role of monetary policy.

CHART I.2

GDP GROWTH FORECAST

The growth of the Czech economy has slowed from last year's high pace, but will exceed 3% on average this year and in the following two years
(annual percentage changes; seasonally adjusted)



Note: The confidence intervals of the GDP growth forecast reflect the predictive power of past forecasts. They are symmetric and linearly widening.

The koruna will return to an appreciation trend in 2019 from its current weak levels. The exchange rate forecast for 2018 Q4 at CZK 25.7 to the euro reflects persisting negative sentiment on foreign exchange markets and an outflow of short-term capital from emerging markets to assets that investors perceive as less risky. The forecast assumes that this global effect will partly persist in the next two quarters. However, the koruna will start appreciating again next year, driven by a distinctly positive interest rate differential vis-à-vis the euro area and continued real convergence of the Czech economy connected with growth in labour efficiency. The koruna will thus appreciate to just above CZK 25 to the euro in early 2019 and then quickly move distinctly below it (see Chart I.3). In the following period, the appreciation will slow in connection with the start of monetary policy normalisation by the ECB. In 2020, the rate will temporarily stabilise above CZK 24 to the euro.

Consistent with the forecast is a continued rise in interest rates towards their long-run neutral level (see Chart I.4). The rate increase at the start of the forecast is mainly a response to depreciation of the koruna, which leads to a renewed inflationary effect of import prices. Pronounced inflation pressures from the domestic economy act in the same direction. They will be fostered further by a sharp increase in the minimum wage and old-age pensions in January 2019. The subsequent broad stability of rates in 2019 is a result of the forecasted appreciation of the koruna amid continuing very easy monetary policy in the euro area. A broadly stable koruna exchange rate combined with a tightening of policy by the ECB will then create room for further gradual growth in domestic rates in 2020. Rates will converge towards their assumed long-run neutral level (i.e. 3% for the 3M PRIBOR) from below at the end of 2020.

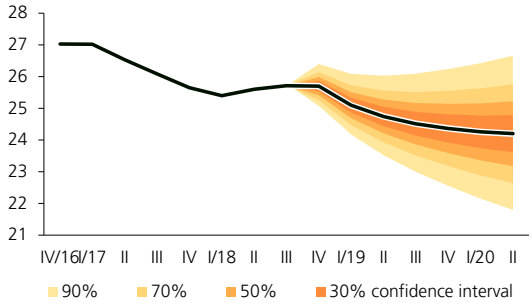
At its monetary policy meeting in November, the CNB Bank Board increased the two-week repo rate by 25 basis points to 1.75%. At the same time, it increased the Lombard rate to 2.75% and the discount rate to 0.75%. Five members voted in favour of this decision, one member voted for leaving interest rates unchanged and one member voted for raising them by 50 basis points. The new interest rate levels come into effect on 2 November 2018.

The Bank Board assessed the risks to the forecast at the monetary policy horizon as being slightly inflationary. This assessment reflects the risk of a weaker-than-predicted exchange rate, which is connected with a possibly longer duration of negative sentiment on global markets. This could lead to faster and smoother growth in interest rates than in the forecast. Growth in protectionist measures in global trade and the manner of the exit of the United Kingdom from the European Union remain sources of external uncertainty. They have been joined recently by uncertainty related to the approval of Italy's state budget. The future path of world oil prices, which have recently been very volatile, is also uncertain.

CHART I.3

EXCHANGE RATE FORECAST

Following its recent depreciation, the koruna will return to its appreciation trend next year according to the forecast
(CZK/EUR)

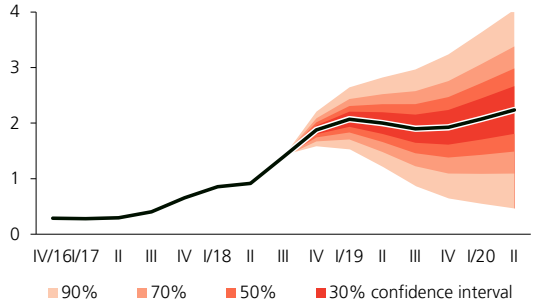


Note: The confidence intervals of the CZK/EUR exchange rate reflect the predictive power of past forecasts (from the period before the exchange rate commitment was adopted). They are symmetric and linearly widening.

CHART I.4

INTEREST RATE FORECAST

A continued rise in interest rates until the start of 2019 and again in 2020 will help stabilise inflation at the target
(3M PRIBOR in %)



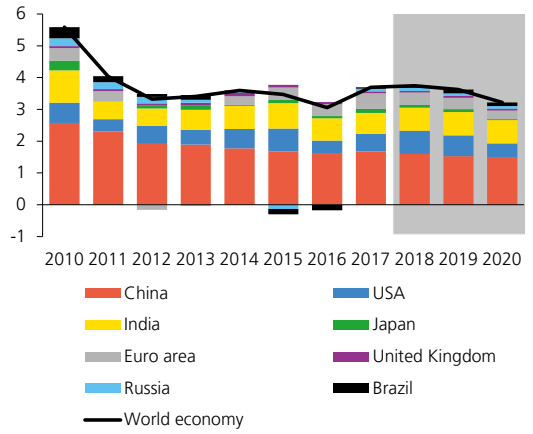
Note: The confidence intervals of the 3M PRIBOR forecast reflect the predictive power of past forecasts (from the period before the exchange rate commitment was adopted). They are symmetric and linearly widening.

CHART II.1.1

WORLD ECONOMY GROWTH OUTLOOK

The growth of the world economy will ease over the next two years

(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 at purchasing power parity. The sources of the outlooks are CF and EIU.

CHART II.1.2

STRUCTURE OF ANNUAL GDP GROWTH IN THE EURO AREA

GDP growth slowed further in Q2; all its components made positive contributions

(annual percentage changes; contributions in percentage points; seasonally adjusted; source: Datastream, CNB calculation)

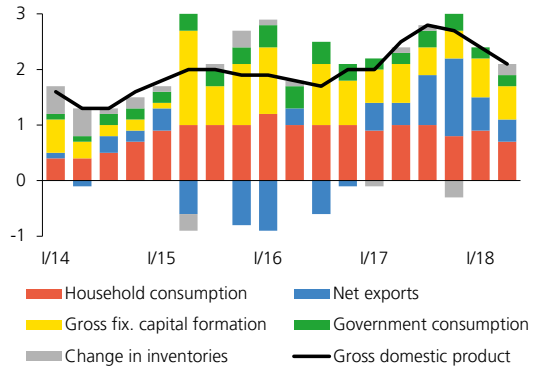
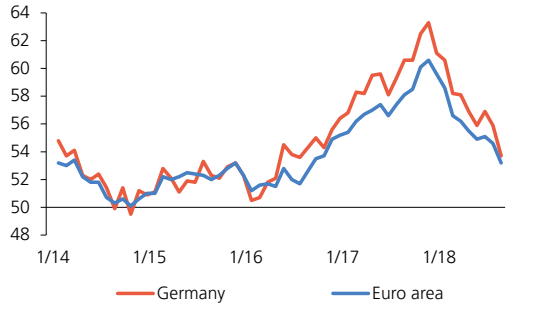


CHART II.1.3

PMI IN MANUFACTURING

Growth in industrial activity can be expected to slow further both in Germany and in the euro area as a whole

(Purchasing Managers' Index; source: Bloomberg)



II. THE FORECAST, ITS CHANGES AND RISKS

II.1 DEVELOPMENTS ABROAD AND EXTERNAL ASSUMPTIONS OF THE FORECAST

The world economy is growing at a solid pace but will slow somewhat in the years ahead. Moreover, the risks to growth are tilted to the downside. Economic growth in the euro area is already cooling slightly this year. This is reflected in the currently weakened exchange rate of the euro against the dollar. Together with distinctly higher energy prices, the weaker euro has moved the outlook for both producer and consumer price inflation upwards. Inflation will be around 2% over the next two years. This will enable the ECB to end its asset purchase programme at the end of this year. However, the ECB has stated that it will not start increasing interest rates until quite some time later. The 3M EURIBOR is thus expected to remain negative until late 2019. As a result of faster monetary policy tightening in the USA, the negative differential between the short-term euro rate and the equivalent dollar rate will therefore widen further. This outlook also contributed to the current weakening of the euro against the dollar, but a slight gradual strengthening of the euro is expected over the forecast horizon.

II.1.1 Economic developments abroad

The world economy is continuing to grow at a relatively rapid pace, which will, however, ease over the next two years.[1] In the USA, the robust growth is being supported by a decrease in the tax burden and an increase in public expenditure this year, while on the other hand the Fed is tightening monetary policy. The economies of Japan and the UK will grow at lower rates than last year. The Chinese economy will slow this year, mainly because of the changes in US trade policy. On the other hand, the Chinese central bank has taken a series of measures to support the funding of the economy in recent months (the GDP growth target is 6.5%). Overall, the weighted growth of the monitored economies is expected to stay at 3.7% this year (see Chart II.1.1) and slow gradually to 3.2% in 2020. A further escalation of international trade tensions and adverse knock-on effects on sentiment, asset prices and investment are a downside risk to this outlook. An additional risk arises from possible excessive tightening of financial conditions in some emerging economies, especially those with external macroeconomic imbalances.

The euro area economy continued to show solid growth in Q2, but its pace decreased markedly compared to last year. In year-on-year terms, GDP growth slowed by 0.3 percentage point to 2.1% (see Chart II.1.2), while in quarter-on-quarter terms it was flat at 0.4%. Economic growth continued to be driven by domestic demand, although with a lower contribution of household consumption. The contribution of

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

net exports also decreased, owing to slower growth in goods and services exports. As for the large euro area countries, growth in Germany edged down to 1.9%, growth in France recorded a sharper decrease to 1.7% and growth in Italy dropped to 1.2%. By contrast, the Slovak economy accelerated to 3.9%.

Data for Q3 suggest a continued slowdown in euro area economic growth. Leading indicators continued to follow the downward trend observed since early this year (see Chart II.1.3), reflecting above all concerns regarding global trade, but also political uncertainty and higher energy prices. Nevertheless, they are still signalling continued economic expansion. Industrial production returned to growth in August after a two-month hiatus, but the year-on-year growth rate was just 0.9%. In Germany, industrial production was flat following two months of decline, reflecting temporary problems of car manufacturers connected with the switch to new emission standards. Household consumption is being supported by still easy monetary policy of the ECB and favourable labour market developments, while higher energy prices are acting in the opposite direction. The unemployment rate fell to 8.1% in August and wage cost growth accelerated to 1.9% in Q2. However, retail sales declined in both July and August.

GDP growth in the effective euro area is expected to slow gradually over the forecast horizon[2] (see Chart II.1.4). The average growth rate is expected to reach 2.2% this year and slow in the next two years to 2% and 1.8% respectively. Slightly lower growth rates are expected in the euro area proper. The rise in protectionist measures, the still unclear shape of Brexit and the possibility of a more marked economic deterioration in emerging countries remain downside risks.

II.1.2 Price developments abroad

The price of Brent crude oil rose sharply but is expected to decline gradually in the years ahead according to the market outlook (see Chart II.1.5). In August, concerns prevailed on the oil market as to whether OPEC and Russia would be able to make up for the expected fall in production in Iran and Venezuela. These concerns gradually intensified, as some large countries limited purchases of Iranian oil in advance and Iranian exports therefore fell faster than originally expected. In early October, therefore, the Brent crude oil price hit a four-year high. However, a fall in global stock markets then led to a sharp correction,

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 their shares in the euro area proper (the weights used in the calculation of the effective indicators 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 October 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 8 October 2018. The outlook is indicated by the grey areas in the charts. This convention is used throughout this Report.

CHART II.1.4

EURO AREA GDP GROWTH OUTLOOK

Growth in economic activity in the euro area will continue to slow

(annual percentage changes; seasonally adjusted)

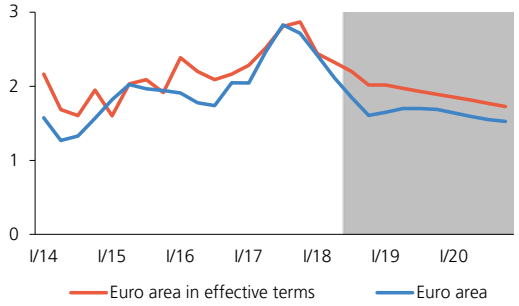


CHART II.1.5

PRICES OF CRUDE OIL AND OTHER COMMODITIES

Oil prices are still elevated even after a correction in mid-October, but their longer-term outlook remains falling

(oil in USD/barrel; other commodities: index [January 2014 = 100]; average price of natural gas in Europe; source: Bloomberg, World Bank, CNB calculation)

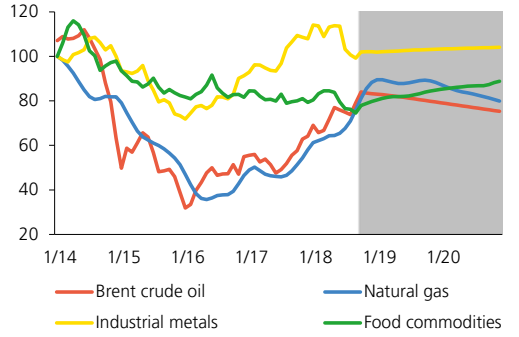
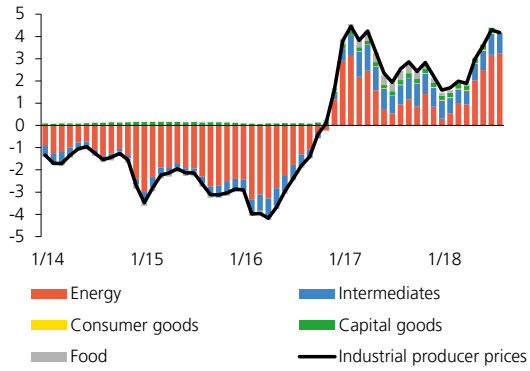


CHART II.1.6

INDUSTRIAL PRODUCER PRICES IN THE EURO AREA

Industrial producer price inflation went up in the summer owing to higher energy prices

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



Note: Food prices including beverages and tobacco; consumer goods excluding food.

CHART II.1.7

PPI IN THE EURO AREA

The current rapid growth in industrial producer prices will slow below 2% next year
(year on year in %; seasonally adjusted)

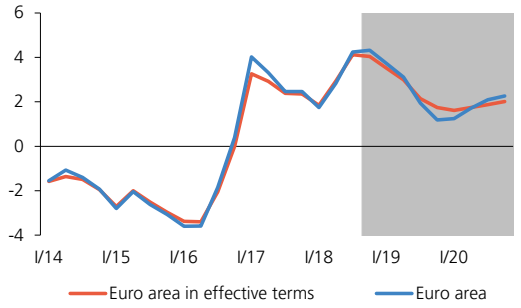
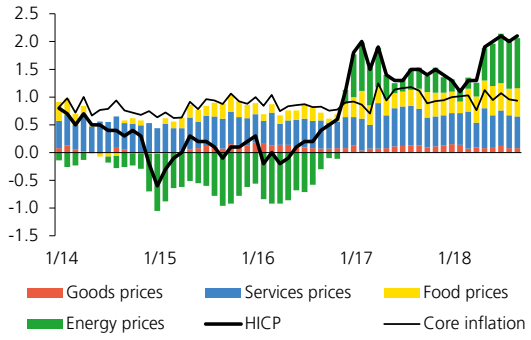


CHART II.1.8

INFLATION IN THE EURO AREA

The increase in consumer price inflation in recent months has been driven mainly by energy prices
(annual percentage changes; contributions in percentage points; source: Eurostat, CNB calculation)

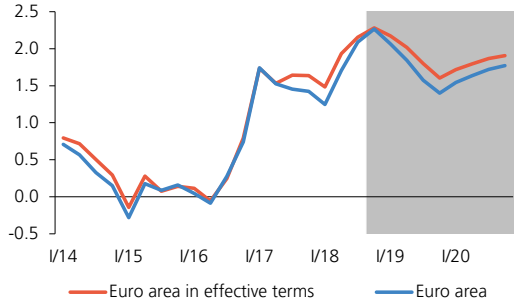


Note: Core inflation is calculated on the basis of the HICP excluding prices of energy, food, alcohol and tobacco.

CHART II.1.9

CONSUMER PRICE INFLATION OUTLOOK IN THE EURO AREA

Inflation will fluctuate around 2%
(HICP; year on year in %; seasonally adjusted)



and in mid-October the Brent crude oil price returned to USD 80 a barrel. The market curve is falling and implies an average price of USD 83.6 a barrel for the rest of this year and USD 81.4 a barrel next year. The October CF forecast is much lower at the one-year horizon (USD 76 a barrel). According to the EIA, global oil supply will next year be roughly in line with demand (whose growth has been revised downwards) and the Brent crude oil price will fluctuate around USD 75 a barrel.

The aggregate non-energy commodity price index stopped declining in mid-September and rose slightly in mid-October. Its two sub-indices showed similar developments (see Chart II.1.5). The food commodity price index remains close to an 11-year low but is expected to grow fairly strongly until the end of 2020. The outlook for the industrial metals price index is only slightly rising, as prices remain under pressure due to a weakening global manufacturing outlook and concerns regarding the trade disputes between the USA and China.

Annual industrial producer price inflation in the euro area was rising until July and was flat at 4.2% in August (see Chart II.1.6). This mainly reflected a higher contribution of energy prices. Adjusted for energy prices, industrial producer prices rose by 1.5% in August.

Annual industrial producer price inflation in the effective euro area will peak in 2018 Q3 (see Chart II.1.7). The producer price inflation rate of 3.2%[3] expected for this year mainly reflects strong cost-push pressures (growth in oil prices and the weakening of the euro against the dollar). Industrial producer price inflation will slow to 2.6% in 2019 and accelerate slightly again in the course of 2020. The patterns for the euro area proper and the effective euro area will be similar.

Consumer price inflation in the euro area stood at 2.1% in September (see Chart II.1.8). The current inflation level is due mainly to energy prices. Core inflation remains relatively low at around 1%. Fundamental inflation pressures remain muted, even with regard to nominal wage growth, which is increasing only slowly.

The effective indicator of consumer price inflation in the euro area will fluctuate around 2% over the forecast horizon (see Chart II.1.9). It will exceed this level in the next few quarters and then come down as the contribution of high prices of oil and other energy sources diminishes. Inflation is expected to gradually receive more support from domestic fundamentals. They will be reflected to a greater degree in capacity utilisation amid rising labour market tightness (especially in Germany), which is expected to result in higher wage growth. The effective indicator of consumer price inflation will be above the standard inflation measure

3 The forecast for euro area industrial producer price inflation this year and the next has undergone an upward expert adjustment of 0.6 percentage point relative to the CF forecast, as the CF analysts did not take sufficient account of the markedly higher Brent crude oil price outlook and weaker euro against the dollar. The October CF expects industrial producer prices to increase by 2.6% on average this year and 2.0% in 2019.

for the euro area, as higher inflation is expected in the Czech Republic's main trading partner countries than in the rest of the euro area.

II.1.3 Financial developments abroad

According to the market outlook, the 3M EURIBOR will turn positive in early 2020 (see Chart II.1.10). The outlook reflects the ECB's declared intention to leave key rates at the current levels at least through the summer of 2019.[4] The asset purchase programme was reduced to a monthly pace of EUR 15 billion as from October 2018 until the end of this year, when it is expected to be ended completely given the current economic situation. The market outlook for rates is in line with the analysts' predictions in the October CF, which expect the 3M EURIBOR to be at -0.3% at the three-month horizon and -0.1% at the one-year horizon. Elevated risk aversion was visible on bond markets from the beginning of September. The negotiations on Italy's budget for 2019 were a source of concern, especially with regard to compliance with EU rules and the sustainability of Italy's public debt. The Italian ten-year bond yield rose to 3.5% and the spread vis-à-vis the German bond exceeded 300 basis points. Yields on other euro area countries' bonds increased only to a limited extent. According to the October CF, the German government bond yield will rise gradually, reaching 1.2% at the close of 2020 (see Chart II.1.11).

The further expected tightening of Fed monetary policy is reflected in a rising market outlook for the 3M USD LIBOR (see Chart II.1.10). As expected, the US central bank raised the target range for its policy rates by 25 basis points to 2.00%–2.25% in September. A further increase of the same magnitude in December 2018 and another three increases in 2019 can be expected according to the FOMC members' median estimates. The current market outlook therefore expects the 3M USD LIBOR to go up gradually to 3.3% in late 2019. The ten-year US bond yield is expected to be just 0.1 percentage point higher at the same horizon (see Chart II.1.11).

According to the October CF outlook, the euro will gradually strengthen against the dollar (see Chart II.1.12). The currently weaker euro is due mainly to political developments in Italy, but also to signs of a slowdown in euro area industrial activity. Acting in the same direction were many positive reports from the US economy, a further tightening of monetary policy by the Fed and a rise in risk aversion due to the trade disputes with China. In effective terms, however, the euro remained stable on account of its appreciation against the currencies of emerging economies (the Turkish lira, the Brazilian real and the Russian rouble). According to the October CF, the euro will depreciate gradually in effective terms.

4 As in previous forecasts, this prediction takes into account the ECB's asset purchase programme through expert adjustments using shadow interest rates, which are lower than market rates.

CHART II.1.10

3M EURIBOR AND 3M USD LIBOR

The spread between 3M rates in the USA and the euro area will exceed 3 percentage points, due mainly to tighter Fed policy

(in %, differences in percentage points)

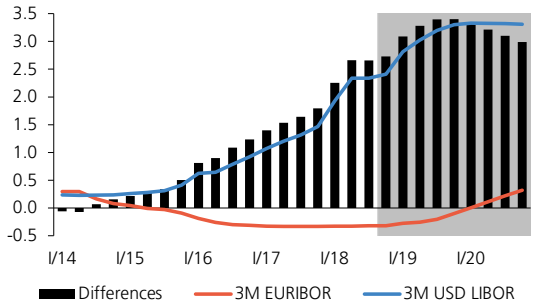


CHART II.1.11

10Y GOVERNMENT BOND YIELDS

The differential between ten-year government bond yields in the USA and Germany is expected to narrow gradually

(in %, differences in percentage points)

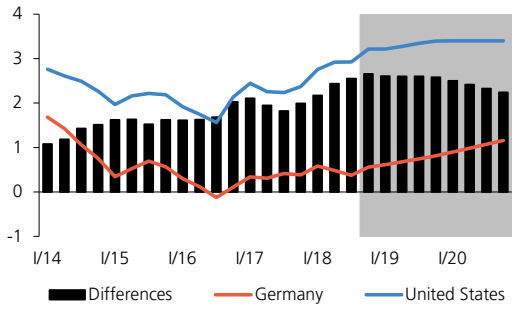


CHART II.1.12

EURO EXCHANGE RATE

The euro will strengthen against the dollar, but will weaken gradually in effective terms

(USD/EUR, NEER of euro against currencies of euro area countries' 18 main partners; 2012 Q1 = 100; right-hand scale)

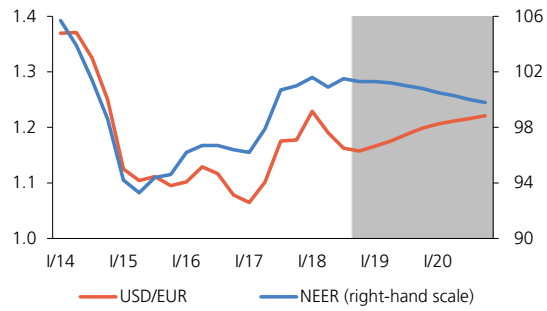


TABLE II.2.1

FORECASTS OF SELECTED VARIABLES

The continuing return of the domestic monetary conditions towards a neutral stance will help stabilise inflation at the target and GDP growth near its potential
(annual percentage changes unless otherwise indicated)

	2017 actual	2018 forecast	2019 forecast	2020 forecast
Headline inflation	2.5	2.2	2.6	2.0
GDP	4.5	3.1	3.3	3.3
Average nominal wage	7.0	8.2	6.9	5.6
Exchange rate (CZK/EUR)	26.3	25.6	24.7	24.2
3M PRIBOR (in %)	0.4	1.3	2.0	2.3

CHART II.2.1

HEADLINE INFLATION AND MONETARY POLICY-RELEVANT INFLATION

Inflation will stay in the upper half of the tolerance band around the 2% target next year and then return to the target
(annual percentage changes)

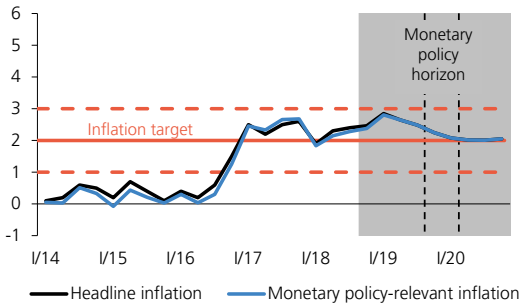
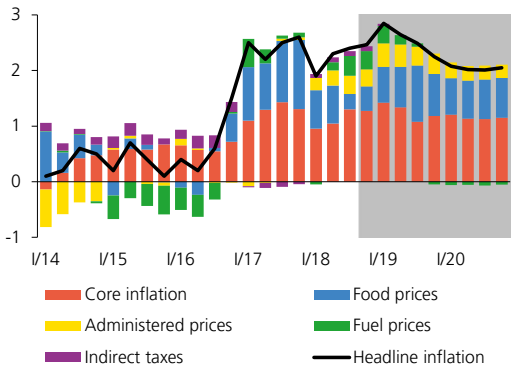


CHART II.2.2

STRUCTURE OF INFLATION AND THE INFLATION FORECAST

Inflation will rise temporarily in late 2018 and early 2019, with most of its components contributing
(annual percentage changes; contributions in percentage points)



Note: Food prices also include prices of alcoholic beverages and tobacco. Indirect taxes relate to non-administered prices.

II.2 THE FORECAST

Inflation will rise further inside the upper half of the tolerance band around the CNB's target in the near future. It will then approach the target from above over the monetary policy horizon, aided by further growth in interest rates. Inflation pressures continue to be generated above all by a tight labour market, characterised by rapid wage growth and record-low unemployment. The recent depreciation of the koruna stemming from negative sentiment on global markets is meanwhile fostering a rise in import prices. According to the forecast, however, this global factor will dissipate and the koruna will appreciate again owing to a positive interest rate differential and continued real convergence. Together with gradually slowing wage growth, this will lead to a decrease in the overall inflation pressures and thereby to stabilisation of inflation at the target in 2020. The growth of the Czech economy, exceeding 3%, will continue to be driven by household consumption and investment amid steady growth in external demand.

II.2.1 Inflation and monetary policy

Inflation will be in the upper half of the tolerance band in 2019 and will approach the 2% target from above over the monetary policy horizon (see Chart II.2.1). A rise in core inflation, a renewed recovery in food price inflation and faster growth in administered prices will foster a continued increase in inflation in late 2018 and early 2019 (see Chart II.2.2). Inflation will remain driven primarily by strong domestic inflation pressures augmented by a further increase in the minimum wage and old-age pensions at the start of next year. The contribution of import prices to growth in costs has also temporarily turned positive again, owing to a weaker koruna and rapid growth in foreign prices. Administered price inflation is picking up as well. Headline inflation will thus stay in the upper half of the tolerance band around the target in 2019. It will then return to the target, aided by monetary policy tightening. Monetary policy-relevant inflation, i.e. inflation adjusted for the first-round effects of changes to indirect taxes, will be the same as headline inflation in the next two years.[5]

Core inflation will rise further in the short term but will return to 2% in the second half of next year. The forecast expects continued strong inflation pressures from the domestic economy, driving up prices in services in particular. The previous depreciation of the koruna coupled with rising foreign producer price inflation will be reflected above all in tradables prices in the coming quarters. These factors, together with the effect of the low comparison base in early 2018, will cause core inflation to rise to 2.6% at the start of 2019 (see Chart II.2.3). It will then start

5 The forecast only incorporates the increase in excise duty on tobacco products in January 2018 with a total impact on headline inflation of 0.1 percentage point. This effect will fully dissipate at the start of 2019 Q2, and after that the impact of indirect tax changes on headline inflation will be zero according to the assumptions of the forecast.

creeping down towards 2% owing to a gradually moderating inflationary effect of the domestic economy and a renewed decline in import prices.

Food price inflation will increase markedly on the back of an expected rise in food commodity prices. The rise will reflect the lower harvest of many key crops around the world this year. The recent depreciation of the koruna and strong inflation pressures from the domestic economy will also contribute to the increase in food prices. Food price inflation is expected to peak in 2019 Q3 at almost 4% (see Chart II.2.3) and then decrease due to expected stability of agricultural prices in conditions of an appreciating koruna.

The current rapid growth in fuel prices will gradually slow and switch to a year-on-year decline at the end of next year. According to short-term indicators,[6] fuel prices at filling stations increased further in October 2018. The forecast nonetheless expects their rapid year-on-year growth to dissipate gradually in the quarters ahead owing to an expected gradual decline in global oil and petrol prices. Renewed appreciation of the koruna against the dollar will also start to foster lower prices. Fuel prices are thus expected to start falling slightly year on year at the end of 2019 (see Chart II.2.3).

Fast growing energy commodity prices will foster an increase in administered price inflation. The current electricity price growth will go up slightly further due to the pass-through of the previous sizeable increase in prices on exchanges. Gas prices for households are falling year on year, but the forecast expects them to start rising again quickly as the currently high gas prices on global markets feed through to retail prices. Heat prices are also expected to accelerate in response to higher global prices of energy inputs amid a persisting weaker exchange rate of the koruna. Conversely, growth in administered prices will be slowed at the one-year horizon by falling prices of transport services due to the fare discounts for students and senior citizens introduced in September. Growth in the other administered price items will be close to 2%. Overall, this means that administered prices will rise by just under 2% this year, accelerating to 2.5% next year (see Table II.2.2). According to the outlook from exchanges, the current rapid growth in electricity generation and gas prices will gradually abate next year. This, combined with renewed appreciation of the koruna, will cause administered price inflation to drop again in 2020.

The koruna will return to an appreciation trend in 2019 from its current weak levels. The exchange rate forecast for 2018 Q4 at CZK 25.7 to the euro reflects persisting negative sentiment on foreign exchange markets and an outflow of short-term capital from emerging markets to assets that investors perceive as less risky. The forecast assumes that this global effect will partly persist in the next two quarters.

CHART II.2.3

COMPONENTS OF INFLATION

Food price inflation and core inflation will rise, while fuel price growth will weaken markedly next year
(annual percentage changes)

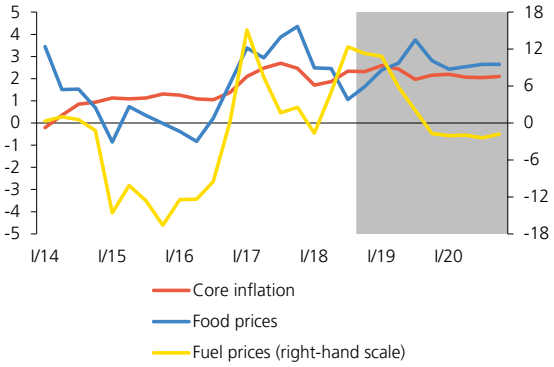


TABLE II.2.2

FORECAST OF ADMINISTRATIVE EFFECTS

Administered prices will rise, driven mainly by energy prices
(annual average percentage changes; contributions to headline inflation in percentage points)

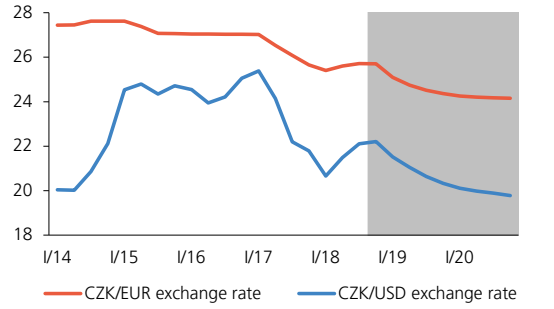
	2017 actual		2018 forecast		2019 forecast		2020 forecast	
ADMINISTERED PRICES[a)]	0.0	0.00	1.8	0.28	2.5	0.38	1.7	0.26
of which (main changes):								
electricity	0.3	0.01	4.4	0.19	3.9	0.17	2.0	0.09
natural gas	-2.8	-0.08	-0.5	-0.01	5.0	0.12	0.3	0.01
heat	-1.6	-0.03	-0.1	0.00	2.0	0.04	1.5	0.03
water	1.4	0.01	1.7	0.01	1.9	0.02	2.0	0.02
health care	4.5	0.05	5.2	0.06	3.3	0.04	2.3	0.03
transport	0.2	0.00	-1.8	-0.03	-4.0	-0.06	1.5	0.02

a) including effects of indirect tax changes

CHART II.2.4

EXCHANGE RATE FORECAST

Following its recent depreciation, the koruna will return to its appreciation trend next year according to the forecast
(CZK/EUR and CZK/USD)



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

CHART II.2.5

INTEREST RATE FORECAST

A continued rise in interest rates until the start of 2019 and again in 2020 will help stabilise inflation at the target
(percentages)

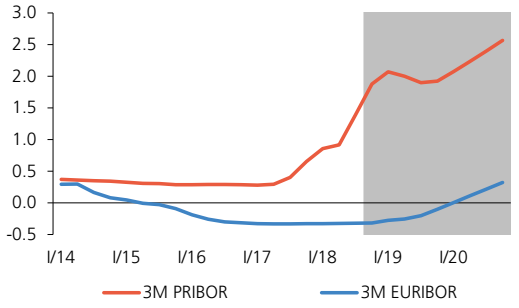


CHART II.2.6

COSTS IN THE CONSUMER SECTOR

Inflation pressures will moderate from their current high level, aided by a renewed decline in import prices and later also by lower growth in domestic costs
(nominal quarterly percentage changes; contributions in percentage points; annualised)

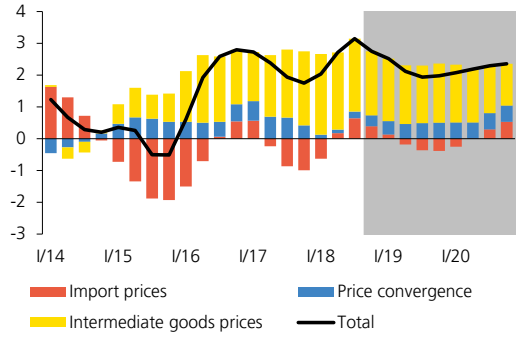
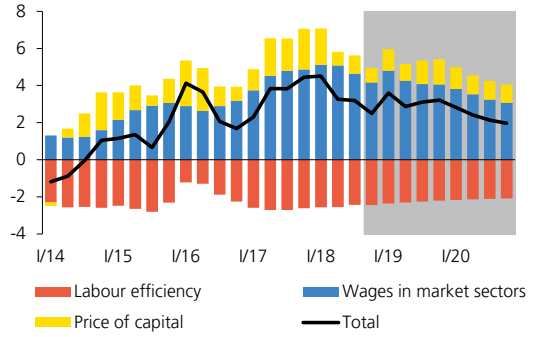


CHART II.2.7

COSTS IN THE INTERMEDIATE GOODS SECTOR

Growth in domestic costs is strong but will gradually slow, mainly as a result of falling wage growth
(nominal quarterly percentage changes; contributions in percentage points; annualised)



However, the koruna will start appreciating again next year, driven by a distinctly positive interest rate differential vis-à-vis the euro area and continued real convergence of the Czech economy connected with growth in labour efficiency. The koruna will thus appreciate to just above CZK 25 to the euro in early 2019 and then fall distinctly below it (see Chart II.2.4). In the following period, the appreciation will slow in connection with the start of monetary policy normalisation by the ECB. In 2020, the rate will temporarily stabilise above CZK 24 to the euro.

Consistent with the forecast is a continued rise in interest rates towards their long-run neutral level (see Chart II.2.5). The rate increase at the start of the forecast is mainly a response to depreciation of the koruna, which leads to a renewed inflationary effect of import prices. Pronounced inflation pressures from the domestic economy act in the same direction. They will be fostered further by a sharp increase in the minimum wage and old-age pensions in January 2019. The subsequent broad stability of rates in 2019 is a result of the forecasted appreciation of the koruna amid continuing very easy monetary policy in the euro area. A broadly stable koruna exchange rate coupled with a tightening of policy by the ECB will then create room for further gradual growth in domestic rates in 2020. Rates will converge towards their assumed long-run neutral level (i.e. 3% for the 3M PRIBOR) from below at the end of 2020.

II.2.2 Costs and the labour market

Growth in total costs peaked at high levels and will gradually weaken, due mainly to appreciation of the koruna (see Chart II.2.6). Total costs in the consumer sector intensified in 2018 Q3 due to the contribution of import prices turning positive again. This was linked with the previous weakening of the koruna amid relatively buoyant growth in foreign producer prices. In addition, continued growth of the domestic real economy combined with persisting labour market tightness continued to be reflected in strong fundamental inflation pressures. Growth in total costs will gradually slow to 2% next year due to renewed appreciation of the koruna. The slowdown in total cost growth will be counteracted by a recovery in the contribution of price convergence. Inflation pressures from the domestic economy will start to weaken noticeably during 2020. However, the contribution of import prices will turn positive again at the same time. It will reflect stable growth in foreign prices amid a temporary slowdown in the appreciation trend of the koruna.

The strong domestic inflation pressures, reflecting labour market developments and continued economic growth, will persist in 2019 (see Chart II.2.7). Growth in domestic nominal marginal costs in the intermediate goods sector slowed in 2018. This was due to both lower quarter-on-quarter nominal wage growth in market sectors and a lower contribution of the price of capital resulting from weaker growth in economic activity. Inflation pressures were meanwhile dampened by still rising labour efficiency, reflecting buoyant growth in private investment in machinery and equipment, which will continue over the forecast

horizon. A large increase in the minimum wage will have an effect at the start of 2019, but wage growth in market sectors will then continue to slow. The minimum wage hike coupled with an above-average rise in old-age pensions will boost overall economic activity next year, exerting pressure for renewed faster growth in the price of capital. Strong domestic inflation pressures will thus persist next year. Wage growth will gradually return to its long-run equilibrium levels. Growth in domestic costs will thus slow to 2% at the end of 2020.

Employment growth will gradually slow due to labour shortages. However, the employment growth rate will remain strongly positive (see Chart II.2.8). Tightness in the labour market, linked with a record-low unemployment rate, will be reduced only partially by growth in the labour force. The latter will continue to be fostered by a gradual increase in the statutory retirement age. In addition, growth in the number of employees converted into full-time equivalents will slacken. This will be due mainly to slowing growth in the number of employees. A slight rise in average hours worked is expected to contribute positively to growth in the converted number of employees from the end of 2019 onwards. However, its contribution will be relatively weak, as the cyclical increase in average hours worked will continue to be largely offset by an upward trend in the number of part-time jobs.

The current very low unemployment rate will not decrease significantly further. The general unemployment rate will go down only slightly, reaching 2% by the end of 2020 (see Chart II.2.8).[7] The forecast also expects a slight decline in the share of unemployed persons. This will reflect an only marginal decrease in the number of registered job applicants amid a continued gradual decline in the population aged 15–64.

Wage growth in market sectors is peaking at a high level in the tight labour market, but will gradually decline. According to the forecast, wage growth in market sectors remained stable at around 8% in 2018 Q3 (see Chart II.2.9) but slowed further in quarter-on-quarter terms. The January increase in the minimum wage will have an upward effect in 2019.[8] Tightening monetary conditions and firms' efforts to maintain their price competitiveness and profitability will act in the opposite direction. Wage growth will thus slow next year but will stay well above its long-run equilibrium level of 5%. It will gradually near that level in 2020. Pronounced, albeit slowing, year-on-year wage growth will continue in non-market sectors, reflecting an increase in the wages of teachers and, to a lesser extent, other public employees. The forecast expects wage growth in the non-market segment of the economy to slow to just below 5% in 2020.

7 Its rise to 2.7% in August 2018 is interpreted as a one-off swing not affecting the trend.
8 The forecast incorporates the Ministry of Labour and Social Affairs' plan to raise the minimum wage by CZK 1,200 to CZK 13,400.

CHART II.2.8

LABOUR MARKET FORECAST

Total employment will rise at a substantially slower pace than before, while the decline in the unemployment rate will be only weak

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

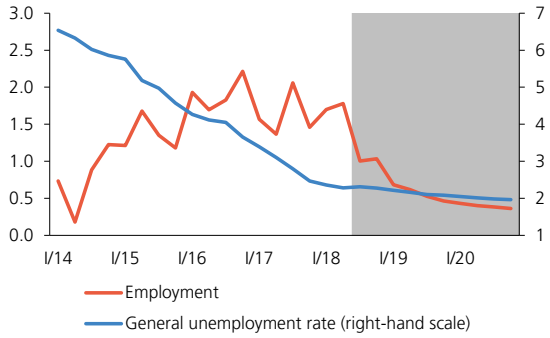


CHART II.2.9

AVERAGE NOMINAL WAGES

Wage growth will slow gradually from its current high rates in market sectors and even more so in non-market sectors

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

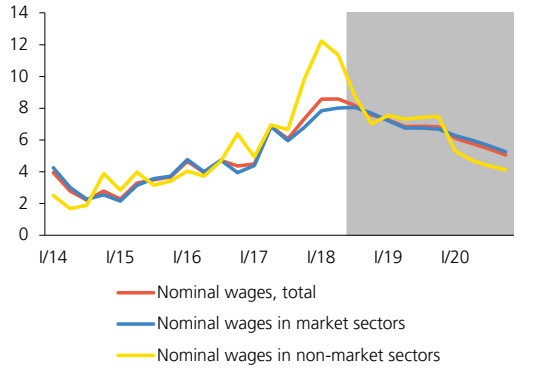


CHART II.2.10

ANNUAL GDP GROWTH STRUCTURE

Consumption and fixed investment will contribute to GDP growth over the entire forecast horizon

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

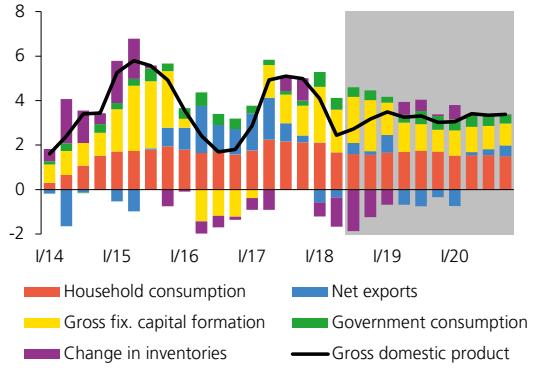


CHART II.2.11

REAL HOUSEHOLD AND GOVERNMENT CONSUMPTION

Household consumption growth will continue to outpace real government consumption growth
(annual percentage changes; seasonally adjusted)

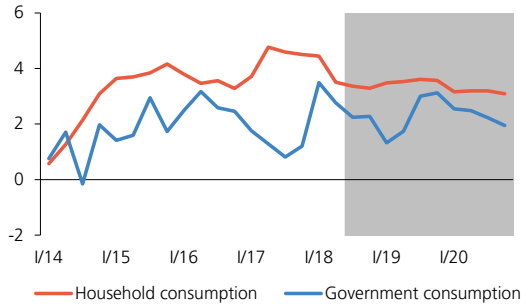
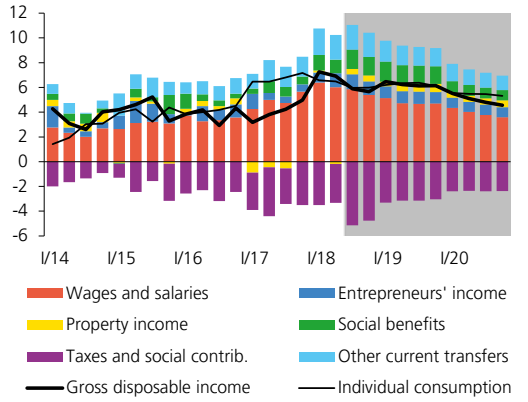


CHART II.2.12

NOMINAL DISPOSABLE INCOME

The still high growth in disposable income will be a result of continued substantial growth in wages and salaries and other income
(annual percentage changes; contributions in percentage points)

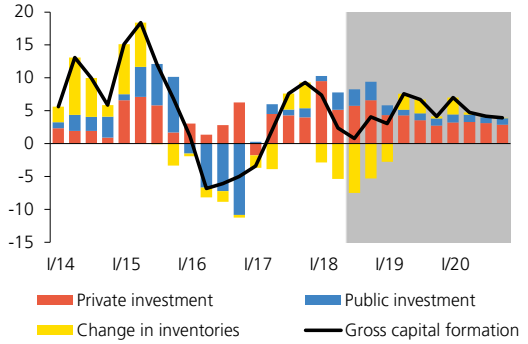


Note: Entrepreneurs' income comprises gross operating surplus and mixed income.

CHART II.2.13

INVESTMENT DECOMPOSITION

Gross capital formation will rise due to continued growth in both private and government investment
(annual percentage changes; contributions in percentage points; constant prices; seasonally adjusted; source: CZSO; contributions of private and government investment: CNB calculation)



II.2.3 Economic activity

GDP growth slowed from last year's high levels; from the whole-year perspective it will be just above 3% this year and in the years ahead. Domestic economic activity will continue to be driven by household consumption and investment. Both these components of domestic demand will be supported by persisting consumer and business optimism amid continued growth in external demand. Rising interest rates will have a mild opposite effect. The contribution of government consumption will also remain positive. By contrast, net exports will have a dampening effect on economic growth in 2019 due to relatively high import growth, which will reflect fast growing domestic demand. Net exports will make a roughly neutral contribution to GDP growth on average in 2020 (see Chart II.2.10). GDP will grow by 3.1% overall this year and pick up pace slightly in the next two years.

The continued household consumption growth will reflect strong growth in wages and salaries and other income. According to the forecast, annual household consumption growth slowed slightly in 2018 Q3, due partly to base effects. Even so, household consumption growth remains robust (see Chart II.2.11). Household expenditure will continue to be supported by brisk disposable income growth connected with a continued surge in wages and salaries and increasing income of entrepreneurs (see Chart II.2.12). Social benefit income will also make a positive contribution. The forecast incorporates an extraordinary increase in pensions in January 2019 going beyond the usual indexation. Given the high propensity to consume among households of old-age pensioners, this will boost private consumption growth next year. Private consumption growth will thus remain close to 3.5% this year and the next and slow slightly in 2020.

Real government consumption will continue to rise, mainly due to growth in current expenditure and wage growth in the government sector. Its pace will accelerate to almost 3% this year (see Chart II.2.11). Real government consumption will record a slightly lower pace in the next two years. Nominal government consumption will be driven mainly by growth in compensation of employees, but its growth will be dampened in real terms by a rapidly increasing deflator. Government consumption growth will continue to be fostered by current expenditure and temporarily also by a social transfer in kind in the form of public transport fare discounts for students and senior citizens introduced in September 2018.

Gross capital formation will continue to be supported by both private and government investment. Growth in total investment is currently being dampened by a negative effect of changes in inventories, while fixed investment continues to grow apace (see Chart II.2.13). Still solid growth in external demand combined with a tight labour market will lead to continued investment activity in the business sector, fostering a further increase in labour efficiency. Conversely, a gradual increase in interest rates will have a slight dampening effect on investment. Government investment will strengthen further this year due to faster

absorption of EU funds. The large stock of inventories will continue to be released over the rest of 2018, so total investment growth will remain subdued.[9] This factor will fade out in 2019 and 2020 and total investment growth will rise to 5%.

Export growth will gradually recover from its current muted rates. Goods exports will continue to be held back for the rest of this year by the situation in the automotive industry as a result of supply-side constraints and a transitory decline in exports due to the introduction of new environmental standards for the manufacture and testing of new cars in the EU. After these short-term effects unwind, exports of goods and services will pick up again in the coming two years. However, they will be dampened by continued growth in domestic personnel costs and renewed appreciation of the koruna. Exports of goods and services will thus grow by around 5% this year and gradually accelerate above 7% in subsequent years (see Chart II.2.14).

Robust aggregate domestic demand and an export recovery will foster fairly strong import growth. That growth will be driven mainly by a rise in import-intensive investment and household consumption. The appreciating koruna will also have some effect from next year. Conversely, year-on-year lower changes in inventories will foster lower import growth in late 2018 and early 2019. Overall, imports of goods and services will grow by more than 5% this year. Owing to renewed higher export growth and partly also to positive changes in inventories, import growth will accelerate to 7% and 8% in 2019 and 2020 respectively (see Chart II.2.14).

The contribution of net exports to GDP growth will be negative next year. However, it will turn positive temporarily at the shorter end of the forecast. This will be fostered by faster growth in exports amid flat import growth. Higher changes in import-intensive inventories next year will result in the contribution of net exports turning negative again. The growth rates of exports and imports will converge in 2020 and the contribution of net exports to GDP growth will be zero on average.

II.2.4 The balance of payments

The forecast expects the current account surplus to decrease to 0.8% of GDP this year. The goods surplus (see Table II.2.3) will drop below the levels reached in the past two years due to slower growth in exports (lower growth in exports of cars and auto parts) and higher nominal import growth, linked, among other things, with pronounced year-on-year growth in energy commodity prices. The primary income deficit will widen as a result of an increase in the investment income deficit and a decline in the compensation of employees surplus due to

9 Inventories will be affected in the short run by problems with the approval of newly manufactured cars, which will foster a short-term increase initially and a decline to the previous level later on.

CHART II.2.14

REAL EXPORTS AND IMPORTS

Export and import growth will gradually pick up, reflecting a positive outlook for external and domestic demand
(annual changes in per cent and CZK billions; seasonally adjusted)

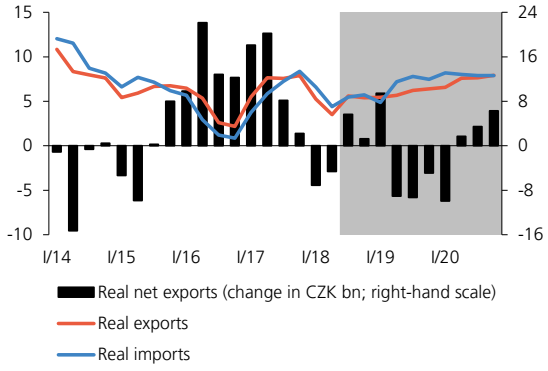


TABLE II.2.3

BALANCE OF PAYMENTS FORECAST

The current and capital account surpluses will be lower than in 2017
(CZK billions)

	2017 actual	2018 forecast	2019 forecast	2020 forecast
A. CURRENT ACCOUNT	54.2	40.0	35.0	35.0
Goods	240.9	225.0	215.0	225.0
Services	122.0	135.0	140.0	145.0
Primary income	-260.8	-275.0	-285.0	-295.0
Secondary income	-47.9	-45.0	-35.0	-40.0
B. CAPITAL ACCOUNT	46.5	15.0	30.0	30.0
C. FINANCIAL ACCOUNT[a)]	117.1	25.0	5.0	70.0
Direct investment	-135.3	-80.0	-60.0	-60.0
Portfolio investment	-268.3	10.0	-70.0	-10.0
Financial derivatives	-14.2	-	-	-
Other investment	-711.5	35.0	40.0	40.0
Reserve assets	1246.4	60.0	95.0	100.0

a) forecast excluding operations of banking sector and financial derivatives

rapid growth in payments of compensation to non-residents. The decline in the current account surplus will be counteracted by continued growth in the services surplus due to a rise in surpluses on all the component balances. A marginal decline in the secondary income deficit due to an expected recovery in net drawdown of EU funds will act in the same direction.

A further modest year-on-year decrease in the current account surplus to 0.6% of GDP is forecasted for 2019. A drop in the trade surplus will mainly reflect faster growth in domestic demand amid slower growth in external demand and further growth in average prices of energy commodities (especially natural gas). Rising direct investment earnings of non-residents and private transfers abroad will foster a lower current account surplus. The fall in the current account surplus will be dampened by expected growth in EU funds income and to a lesser extent by a further improvement in the services balance.

The forecast expects the current account surplus to be flat at the 2019 level in absolute terms in 2020 (see Table II.2.3). A moderately rising goods and services surplus due to a decline in domestic demand growth and a fall in energy commodity prices is predicted to foster an increase in the surplus. Conversely, the current account surplus will be moderated by a higher income deficit (an increase in the investment income deficit and growth in private transfers abroad).

The capital account surplus will continue to be affected mainly by drawdown of EU funds over the entire forecast horizon. The much lower expected surplus over the entire forecast horizon (especially this year) compared to the 2015–2017 levels is due mainly to the usual gradual start to the drawdown of EU funds in the programme period. The surplus may also be affected by revenues and expenditure relating to trading in emission permits, the price of which has risen sharply over the last year; however, the size of these trades with non-residents is hard to estimate, so the forecast for 2019 and 2020 excludes them.

The volume of financial account transactions will drop sharply year on year and a slight outflow of funds will be reported in 2018.[10] This year has seen no repeat of the massive capital movements associated with the exit from the exchange rate commitment in 2017. The net inflow of direct investment into the Czech Republic will fall sharply this year. This will be due mainly to a marked drop in the inflow of FDI debt capital into the Czech Republic.[11] By contrast, the expected disinvestment by ČEZ in Bulgaria and the completion of the investment by Nexen in the Czech Republic will act against a decline in the net inflow. The massive net inflow of portfolio investment recorded last year

10 Excluding operations of banking sector under other investment, which must always ensure that the balance of payments is balanced overall.

11 The total net inflow in 2018 will also be reduced by a one-off financial operation of a major Czech foreign-owned firm linked with the payment of part of its retained earnings to its foreign owner.

will be replaced by a slight outflow this year. It will be due almost entirely to investment by residents in foreign equity securities on the asset side. Conversely, residents' holdings of foreign bonds are expected to edge down. The liabilities side will remain unchanged compared to the end of 2017. The forecast incorporates expected banking sector accounting operations at the end of the year aimed at optimising contributions to the Resolution Fund.[12] Turning to other investment in the corporate sector, the net outflow of capital will resume as a result of the traditional provision of export loans and also due to lower interest of firms with foreign links in holding financial capital in the Czech Republic. However, this outflow of capital under other investment will be moderated by a short-term foreign loan drawn by the government sector to take advantage of the exceptionally advantageous foreign currency financing conditions. The forecasted growth in reserve assets this year reflects expected returns on international reserves and net operations vis-à-vis the EU.

The financial account (including change in reserve assets) will be practically balanced in 2019. The net inflow of direct investment will decline slightly due to the unwinding of one-off effects (the disinvestment by ČEZ and the investment by Nexen). On the other hand, the net inflow of portfolio investment will resume, due mainly to interest among non-residents in investing in government bonds. However, a gradual renewal of residents' interest in investing abroad will act in the opposite direction. The net inflow of debt capital will continue to be supported by a relatively high and slightly rising positive differential between domestic and euro area interest rates. A significant year-on-year decline in the net capital outflow from the corporate sector under other investment is due to an assumption that part of the strong outflow of capital in early 2018 was one-off in nature, involving the return of capital moved temporarily to the Czech Republic last year. In the government sector, a short-term foreign loan is expected to be revolved due to persisting favourable foreign currency financing conditions. The forecasted higher growth in reserve assets than in 2018 is associated with an expected slight increase in returns on the CNB's reserves and a year-on-year increase in the surplus on operations vis-à-vis the EU.

The forecast for 2020 expects a renewed sharp decrease in the net inflow of capital under portfolio investment. Residents' interest in investing abroad will rise further. At the same time, non-residents' interest in investing further in domestic government bonds will disappear in an environment of expected interest rate growth in the euro area. The other financial account items are predicted to be broadly at their 2019 levels.

12 These operations are recorded on the other banking sector investment account in the same amount but with the opposite sign. However, this account is not part of the forecast.

TABLE II.2.4

FISCAL FORECAST

The government sector balance will remain in surplus
(% of nominal GDP)

	2017 actual	2018 forecast	2019 forecast	2020 forecast
Government revenue	40.5	41.5	41.8	41.6
Government expenditure	39.0	40.0	40.4	40.1
of which: interest payments	0.7	0.7	0.7	0.6
GOVERNMENT BUDGET BALANCE	1.5	1.5	1.3	1.5
of which:				
primary balance[a)]	2.3	2.2	2.0	2.1
one-off measures[b)]	0.1	0.0	0.1	0.1
ADJUSTED BUDGET BALANCE[c)]	1.5	1.5	1.3	1.5
Cyclical component (ESCB method)[d)]	0.2	0.5	0.4	0.4
Structural balance (ESCB method)[d)]	1.3	1.0	0.8	1.1
Fiscal stance in pp (ESCB method)[e)]	0.5	-0.2	-0.2	0.3
Cyclical component (EC method)[d)]	0.2	0.0	0.1	0.1
Structural balance (EC method)[d)]	1.3	1.5	1.2	1.3
Fiscal stance in pp (EC method)[e)]	0.3	0.2	-0.3	0.1
GOVERNMENT DEBT	34.7	33.1	30.9	28.9

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 will be positive in 2018 and 2019, due to the support of household consumption and growth in government investment
(contributions to GDP growth in percentage points)

	2017 actual	2018 forecast	2019 forecast	2020 forecast
FISCAL IMPULSE[a)]	0.2	0.5	0.4	0.0
of which impact through:				
private consumption	0.2	0.3	0.2	0.0
private investment	-0.1	0.0	0.0	0.0
government investment, domestic	0.1	0.1	0.0	0.0
government investment, EU funded	0.0	0.1	0.1	0.0

a) Figures may not add up owing to rounding.

II.2.5 Fiscal developments

The government budget surpluses, primarily reflecting growth in tax revenues, will persist. Like last year, the general government surplus will reach 1.5% of GDP this year and remain at a similar level in the next two years (see Table II.2.4). In addition to the economic growth effect, the general government revenue side is being bolstered by the impact of VAT control statements and the first two phases of ESR introduced in previous years and by the further rise in excise duty on cigarettes introduced in January 2018. An increase in the tax discount for dependent children has the opposite effect. Strong wage growth in the government sector, continued growth in government investment (aided by a recovery in investment co-financed from EU funds) and faster growth in social transfers will continue to increase government expenditure. The social transfers forecast includes more generous pension indexation,[13] a package of social measures[14] and fare discounts for students and senior citizens.

Positive fiscal developments will also be apparent in continued structural surpluses and a further drop in government debt. The general government structural surpluses will continue to exceed 1% of GDP. The medium-term objective of a structural deficit of no more than 1% of GDP will thus also be comfortably met at the forecast horizon. Government debt will gradually decline to below 30% of GDP in 2020 owing to general government primary surpluses and still low interest rates on government debt relative to the buoyant nominal GDP growth.

Fiscal policy will remain expansionary this year and the next (see Table II.2.5). The fiscal impulse this year will be distinctly positive – at 0.5 percentage point – after last year's slightly positive fiscal policy effect. The fiscal expansion will relate mainly to measures supporting household consumption, buoyant wage growth in the government sector and faster growth in government investment. The forecast expects a positive fiscal impulse of 0.4 percentage point for next year, reflecting an above-average rise in old-age pensions, continued growth in government investment and strong wage growth. According to the assumptions of the forecast, the effect of fiscal policy will be neutral in 2020.

13 The indexation equation was adjusted this year to take into account half of the growth in real wages instead of the one-third applied previously. According to the assumptions of the forecast, from 2019 the flat-rate component of pensions will increase to 10% of the average wage and senior citizens aged over 85 will receive an extra CZK 1,000 a month. This will increase pension spending by 0.3% of GDP.
14 These include higher sick pay, paternity leave, carer's leave and child allowances, accelerated parental allowance and higher foster care benefits introduced this year. The total budgetary impact of these measures for this year is 0.25% of GDP.

II.3 COMPARISON WITH THE PREVIOUS FORECAST

The overall story of the forecast is essentially unchanged. The biggest change from the previous forecast is a later renewal of the appreciation of the koruna. Coupled with higher foreign producer price inflation, it leads to higher import price inflation. By contrast, the strength of domestic inflation pressures has been revised down slightly this year due to less pronounced observed wage growth. Next year, by contrast, the inflation pressures will weaken rather more slowly owing to the newly incorporated minimum wage increase. The inflation forecast has shifted upwards, especially at the one-year horizon; besides the fundamental factors mentioned above, it reflects a higher outlook for administered prices. Overall, the new forecast thus leads to a slightly higher interest rate path next year. This revision reflects the path of the exchange rate most of all. The prediction for domestic economic activity is virtually unchanged.

Producer price inflation in the effective euro area has been revised upwards in the outlook for foreign variables (see Chart II.3.1).[15] Compared to the previous forecast, the outlook for producer prices has increased the most – by 0.8 percentage point – in 2019.[16] This shift mainly takes into account the markedly higher oil prices. A weaker euro against the dollar is also observed and expected, reflecting slightly lower economic growth in the euro area and global sentiment. The market outlook for 3M EURIBOR rates is unchanged until mid-2019 and remains in line with the ECB's communications, which continue to indicate that rates will stay at the present levels at least through the summer of 2019. The market outlook then shifts upwards slightly, mainly on the back of stronger inflation pressures. The outlook for shadow 3M EURIBOR rates has moved in the same direction and to the same extent as the market outlook, as the assumptions regarding the end of the ECB's asset purchase programme remain unchanged.

The forecast for domestic economic growth this year and the next is only imperceptibly lower (see Chart II.3.2). The forecast thus reflects the slightly weaker-than-expected domestic economic growth observed in 2018 Q2 and slightly lower growth in external demand at its shorter end. The growth rate of total investment reflects greater volatility of change in inventories, so its contribution to GDP will be lower at first and higher from 2019 Q2 onwards relative to the previous prediction. The opposite applies to the contribution of net exports. An increase in the minimum wage and old-age pensions going beyond the usual indexation will be reflected in a higher contribution of household consumption to

15 See section II.1. The differences relative to the past are due to time series revisions and changes in weights in the PPI index for some euro area countries.

16 A newly incorporated expert adjustment for 2019 accounts for three-quarters of the growth. The adjustment was made because the CF analysts had probably taken insufficient account of the distinctly higher Brent crude oil price outlook and significantly weaker euro against the dollar.

CHART II.3.1

CHANGE IN THE FORECAST FOR EFFECTIVE PPI IN THE EURO AREA

The higher producer price inflation in the euro area reflects a markedly higher outlook for the Brent crude oil price coupled with a weaker euro against the dollar

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

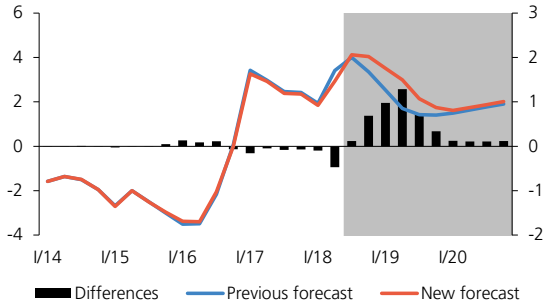


CHART II.3.2

CHANGE IN THE GDP FORECAST

The forecast for domestic economic activity is almost unchanged

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

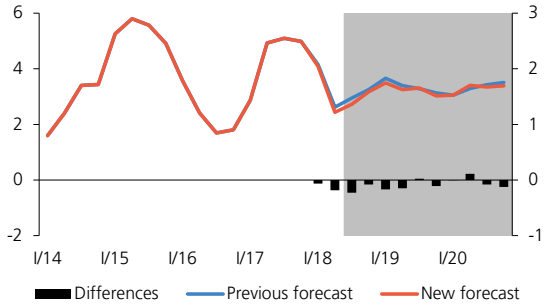


CHART II.3.3

CHANGE IN THE FORECAST FOR NOMINAL WAGES IN MARKET SECTORS

The lower wage growth forecast for the coming three quarters takes the latest developments and leading indicators into account; subsequently, it will reflect the newly incorporated increase in the minimum wage

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

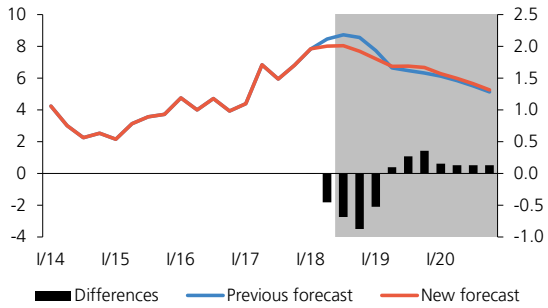


CHART II.3.4

CHANGE IN THE HEADLINE INFLATION FORECAST

The headline inflation forecast is higher at the horizon of up to one year due to a combination of factors, while the changes at the longer horizon are small
(year on year in %; differences in pp – right-hand scale)

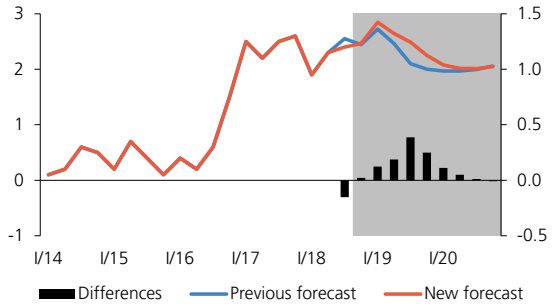


CHART II.3.5

CHANGE IN THE EXCHANGE RATE FORECAST

The koruna will initially be weaker due to longer-lasting negative sentiment on financial markets; it returns to the levels of the previous forecast at the longer horizon
(CZK/EUR; differences in CZK – right-hand scale)

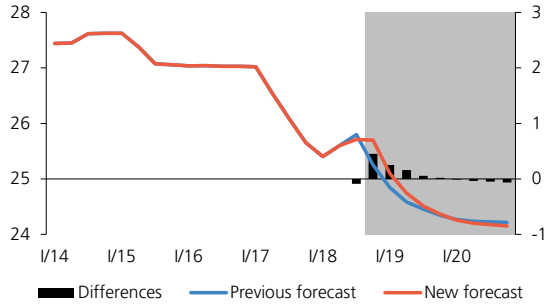
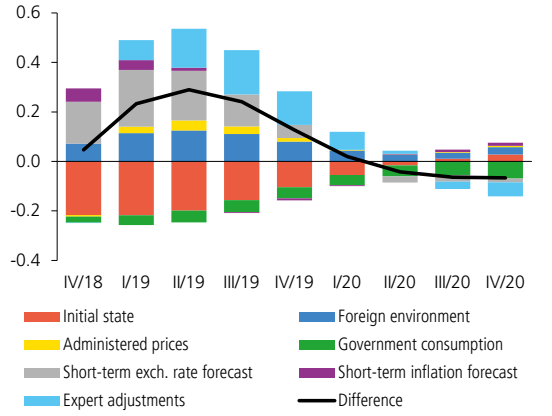


CHART II.3.6

DECOMPOSITION OF CHANGES IN THE INTEREST RATE FORECAST

The higher interest rate outlook at the horizon of up to one year is due mainly to a weaker koruna and the external outlook, while the domestic initial state is acting in the opposite direction
(3M PRIBOR, percentage points)



economic growth than in the previous forecast. Real government consumption will foster lower growth until mid-2019.

Wage growth will initially be weaker, but in the longer term it will decelerate at a somewhat slower pace than in the previous forecast (see Chart II.3.3). Available indicators suggest that wage growth peaked in 2018 Q3 at a lower level than expected by the previous forecast. By contrast, wage growth will be somewhat brisker from 2019 Q2 onwards due to the incorporation of the increase in the minimum wage at the start of next year into the forecast. Wage growth will thus return to its long-term equilibrium rate rather more slowly. Overall, domestic inflation pressures will be slightly stronger in the next two years than in the previous forecast.

The inflation forecast is higher for the next year but is little changed at its longer end (see Chart II.3.4). The higher inflation outlook at the start of 2019 compared to the previous forecast is due to a combination of factors, including a higher outlook for administered prices (mainly of energy) and higher foreign producer price inflation. A weaker koruna will also foster higher prices in the near term, causing a slight rise in overall inflation pressures relative to the previous forecast. In the longer run, stronger domestic inflation pressures due to more robust wage growth will be roughly offset by lower growth in import prices due to faster appreciation of the koruna. The assumptions regarding the first-round effects of changes to indirect taxes are unchanged, so the outlook for monetary policy-relevant inflation has been revised to the same extent as that for headline inflation.

The weaker outlook for the koruna exchange rate for the coming quarters takes into account past market developments driven by persisting global factors. The forecast assumes that the effect of negative sentiment will not unwind until 2019 H1, so the koruna will start to firm later than in the previous prediction (see Chart II.3.5). From mid-2019, the exchange rate path returns to the levels of the previous forecast. This return will be supported, among other things, by higher domestic interest rates than in the previous forecast.

The forecast contains a higher domestic interest rate path until the start of 2020 compared to the previous prediction (see Chart II.3.6). This is due to a longer-lasting weakening of the koruna. The faster expected return of euro area interest rates to positive levels acts in the same direction. Expert adjustments also have an upward effect on the rate of increase of domestic interest rates from the start of next year. The adjustments include the impacts of government policy (an increase in the minimum wage and an above-average increase in old-age pensions) and the assumption of a later fade-out of negative sentiment on the foreign exchange market. By contrast, the initial state of the forecast, i.e. slightly lower observed growth in wages, inflation and domestic demand, fosters lower rates. The above factors will gradually dissipate next year and the interest rate path in 2020 is thus little changed from the previous forecast.

II.4 RISKS AND UNCERTAINTIES OF THE FORECAST

The Bank Board assessed the risks to the forecast at the monetary policy horizon as being slightly inflationary. The main risk of the forecast is the duration of the global factors associated with the change in sentiment on global markets affecting the exchange rate of the koruna. The outlooks of other entities indicate a weaker exchange rate at the one-year horizon than the CNB forecast amid higher interest rates and a similar inflation prediction. This risk of a weaker exchange rate was described by a sensitivity scenario. In addition, growth in protectionist measures in global trade[17] and the manner of the exit of the United Kingdom from the EU remain sources of external uncertainty.

II.4.1 Risks perceived by the CNB

The main risk of the forecast, captured by a one-sided sensitivity scenario, is the exchange rate path. Since around April this year, global financial markets have been affected by a change in sentiment leading to an outflow of short-term capital from emerging markets into assets perceived as less risky by investors. The koruna, along with other Central European currencies, has thus weakened against both the euro and the dollar.

The sensitivity scenario assumes that the negative sentiment has a longer-lasting and universally expected influence on the exchange rate compared to the forecast.[18] The sensitivity scenario therefore incorporates an expected longer-lasting exchange rate shock reflecting the greater attractiveness of dollar assets relative to domestic ones from investors' perspective. The exchange rate in the sensitivity scenario thus remains weaker than in the forecast over the entire horizon, despite significantly higher domestic interest rates. The simulation results, expressed as deviations from the forecast, are given in Table II.4.1.

The pressure for a longer-lasting depreciation in the sensitivity scenario leads to a distinctly higher interest rate path than in the forecast. Monetary policy thus responds with a significant increase in interest rates to prevent stronger inflation pressures which a markedly weaker exchange rate would otherwise create via faster growth in import prices. The increase in interest rates widens the interest rate differential and counteracts the depreciation pressure, although it cannot fully prevent it. Inflation thus returns to the target in response to the tighter monetary conditions, but does so somewhat later than in the forecast.

TABLE II.4.1

EXCHANGE RATE SENSITIVITY SCENARIO

The pressure for a longer-lasting depreciation leads to significantly higher interest rates and slightly higher inflation
(deviations from baseline scenario paths)

	CPI inflation (in pp)	3M PRIBOR (in pp)	GDP growth (in pp)	Nominal exchange rate (CZK/EUR)
IV/18	0.0	0.5	-0.1	0.0
I/19	0.1	0.8	0.0	0.3
II/19	0.1	0.9	0.0	0.4
III/19	0.2	0.8	0.1	0.3
IV/19	0.2	0.6	0.1	0.2
I/20	0.2	0.4	0.0	0.2
II/20	0.1	0.2	-0.1	0.1
III/20	0.1	0.1	-0.1	0.1
IV/20	0.0	0.0	-0.1	0.1

17 The protectionist measures already introduced or being considered were described in a box in IR III/2018.

18 The standard exchange rate sensitivity scenario assumes a one-off swing in the nominal exchange rate of ±3% in the first quarter of the forecast only, without any further persistence. However, the depreciation shock has manifested itself for some time now and has been incorporated into the baseline scenario in the initial quarters of the forecast. The possibility of this shock showing greater persistence is a risk, though.

Another effect of the weaker exchange rate is an improvement in exporters' price competitiveness, which positively affects GDP via higher net exports. By contrast, the rising interest rates depress domestic demand. Growth in domestic economic activity is thus similar to that in the forecast overall.

Potential administrative effects in the coming years not taken into account by the forecast constitute a domestic uncertainty. They include the third and fourth phases of the electronic sales registration project and proposed VAT changes. The size of next year's minimum wage increase had not been definitively approved as of the date of preparation of the forecast either; the forecast incorporates an increase of CZK 1,200.

The Bank Board assessed the risks to the forecast at the monetary policy horizon as being slightly inflationary. This assessment reflects the risk of a weaker-than-predicted exchange rate, which is connected with a possibly longer duration of negative sentiment on global markets. This could lead to faster and smoother growth in interest rates than in the forecast. Growth in protectionist measures in global trade and the manner of the exit of the United Kingdom from the European Union remain sources of external uncertainty. They have been joined recently by uncertainty related to the approval of Italy's state budget. The future path of world oil prices, which have recently been very volatile, is also uncertain.

II.4.2 Risks signalled by other entities' forecasts

Inflation expectations in the economy continue to be firmly anchored by the CNB's 2% target. Inflation forecasted by financial market analysts is currently only just above the CNB's 2% target at the one-year horizon. At the three-year horizon, it is exactly at the target. Box 1 examines the 20 years of measuring inflation expectations. The inflation expectations of business managers are also close to the central bank's target at the one-year horizon (see Table II.4.2).

TABLE II.4.2

EXPECTED INDICATORS OF FMIE, CF AND CORPORATIONS

The analysts' inflation expectations are close to the CNB's 2% target at both the one-year and three-year horizons; the analysts believe that the economy will grow at a pace of about 3%

(at 1Y; annual percentage changes unless otherwise indicated)

	6/18	7/18	8/18	9/18	10/18
FMIE:					
CPI	2.1	2.1	2.2	2.1	2.1
CPI, 3Y horizon	2.0	2.0	2.0	2.0	2.0
Real GDP in 2018	3.4	3.4	3.1	3.1	3.1
Real GDP in 2019	3.0	3.0	3.0	2.9	3.0
Nominal wages in 2018	7.8	7.8	7.9	8.2	8.3
Nominal wages in 2019	5.6	5.7	5.8	6.3	6.4
CZK/EUR exchange rate (level)	24.6	24.8	24.9	24.8	24.9
2W repo rate (in per cent)	1.4	1.6	2.0	2.2	2.3
1Y PRIBOR (in per cent)	1.8	2.0	2.3	2.5	2.6
Corporations:					
CPI	2.0			2.2	
CPI, 3Y horizon	2.6			2.8	
CF:					
Real GDP in 2018	3.4	3.4	3.3	3.2	3.1
Real GDP in 2019	3.0	3.0	3.1	3.0	3.0
Nominal wages in 2018	7.6	7.5	7.6	8.1	8.3
Nominal wages in 2019	6.0	5.9	6.1	6.5	6.5
CZK/EUR exchange rate (level)	24.8	25.0	25.1	25.1	25.1
3M PRIBOR (in per cent)	1.5	1.6	2.1	2.2	2.3

BOX 1 Assessment of financial market analysts' inflation expectations

Inflation-targeting central banks usually monitor or directly measure inflation expectations themselves. Such analysis is also part of the monetary policy formulation process at the CNB. Knowledge of inflation expectations helps the CNB to identify potential risks to its macroeconomic forecast and can also help it retrospectively assess whether past monetary policy decisions had the desired effect and were considered credible by the market. Anchoring inflation expectations is simultaneously a key condition for successful monetary policy-making

under inflation targeting. This box evaluates the information contained in Financial Market Inflation Expectations (FMIE) questionnaires over the past 20 years or so, covering almost the entire period of inflation targeting in the Czech economy.[19]

The volatility of analysts' expectations has shown a downward trend. The early phase of inflation targeting – in the late 1990s and early 2000s – was dominated by a high degree of uncertainty. This was a period of macroeconomic instability and high sensitivity of domestic inflation to internal and external shocks. Actual inflation levels were even more volatile than the average levels expected by analysts. The estimates in each survey round also differed greatly from one analyst to another. The spread of the estimates, defined as the difference between the maximum and minimum estimates at the one-year (1Y) horizon, was 1.4 percentage points on average for the period as a whole, but was close to 4 percentage points in autumn 1999 and summer 2003. The scatter of the forecasts across the individual estimates in the individual surveys, as measured by the standard deviation, peaked at the same time. The characteristics of the estimates were also affected by the CNB's targets, the form and level of which changed over time (see Chart 1). Table 1 shows that the above uncertainty indicators fell considerably over time. Expected inflation was less volatile at the three-year (3Y) horizon (see Chart 2) than in the 1Y outlook (with standard deviations of 0.6 and 0.9 respectively), but the spread between the maximum and minimum estimates of long-term expectations was slightly higher.

The expected inflation levels were overestimated compared to the actual ones on average. The mean error (ME) of the forecast is negative (see Table 1), so the forecasted levels were higher than the subsequent actual levels. This mainly reflected episodes of exceptionally low inflation in 2002–2003, 2009 and 2014–2016, when inflation was negative for several months. Higher statistics for the MAE (mean absolute error) than for the ME indicate that the analysts made estimation errors in both the negative and positive directions. The analysts underestimated actual inflation most of all in early 2008, when inflation was affected by an unexpected build-up of internal and external cost shocks (increases in indirect taxes, high growth in food and energy prices and rent deregulation) in addition to an overheated domestic economy. The relatively high estimation errors are therefore no surprise. The root mean squared error (RMSE) statistics reveal that the error rate of the estimates in individual surveys is higher at the 3Y than the 1Y horizon. This is probably because short-term forecasts can rely more on inflation persistence and better reflect the impacts of shocks

19 The full survey results are available with monthly frequency since 1999 (see: http://www.cnb.cz/en/financial_markets/inflation_expectations_ft/index.html). The respondents are analysts from large banks and brokerages that are highly active on the financial market. The current line-up consists of 17 analysts, 14 of whom are Czech and three are from other countries.

CHART 1 (BOX)

EXPECTED INFLATION AT THE 1Y HORIZON

A high degree of uncertainty was observed in inflation expectations after the introduction of inflation targeting; the uncertainty, however, decreased considerably over time

(average; min and max in %; standard deviation in percentage points)

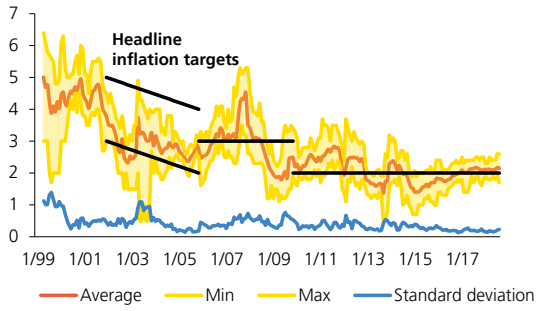


TABLE 1 (BOX)

FMIE SURVEY CHARACTERISTICS

Standard expectations are a better predictor of inflation than implicit expectations derived from economic growth and wages

(averages in %; max - min spreads and standard deviations in percentage points)

	average	scatter of forecasts[a)]	max - min spread	standard deviation[b)]	ME	MAE	RMSE
period 5/99–9/18							
reported expectations at 1Y horizon	2.7	0.4	1.4	0.9	-0.6	1.2	1.6
reported expectations at 3Y horizon	2.6	0.4	1.5	0.6	-0.8	1.5	1.9
period 1/07–9/18							
reported expectations at 1Y horizon	2.3	0.4	1.2	0.6	-0.3	1.1	1.5
reported expectations at 3Y horizon	2.2	0.4	1.4	0.3	-0.4	1.4	1.7
implicit expectations at 1Y horizon	1.6	0.7	2.1	0.9	0.4	1.3	1.8
period 1/12–9/18							
reported expectations at 1Y horizon	2.0	0.3	1.0	0.3	-0.6	1.0	1.1
reported expectations at 3Y horizon	2.0	0.3	1.1	0.1	-0.8	1.2	1.4
implicit expectations at 1Y horizon	1.4	0.5	1.8	0.8	0.2	0.8	1.0

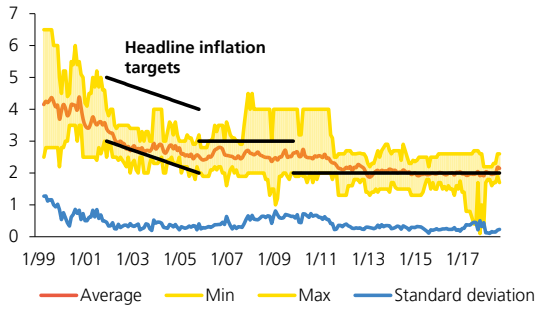
a) scatter of forecasts across individual estimates in individual surveys as measured by standard deviation
b) standard deviation of mean forecast level between individual surveys

CHART 2 (BOX)

EXPECTED INFLATION AT THE 3Y HORIZON

Inflation expectations show little volatility at the 3Y horizon

(average; min and max in %; standard deviation in percentage points)



and because their fulfilment is unaffected by shocks that occur two to three years ahead. As the period under assessment moves closer to the present, the statistics decrease at both horizons, so the predictive power of the indicators steadily improves over time (see Table 1).

The stability of inflation expectations at the 3Y horizon also reflects strong trust in the CNB's ability to return inflation to the target. Long-term expectations are closely linked to the credibility of the central bank's medium-term inflation target. Longer-term forecasts should not be affected by short-term swings or shocks, which are difficult to predict at this horizon. The lower volatility of long-term inflation expectations reflects the fact that they are not affected by economic shocks (such as changes to VAT rates or oil shocks). The correlation coefficient for changes in inflation expectations at the 1Y and 3Y horizons is low at 0.2. Long-term expectations decreased to the CNB's 2% target (in effect since the start of 2010) in late 2011 and have shown little volatile since then.

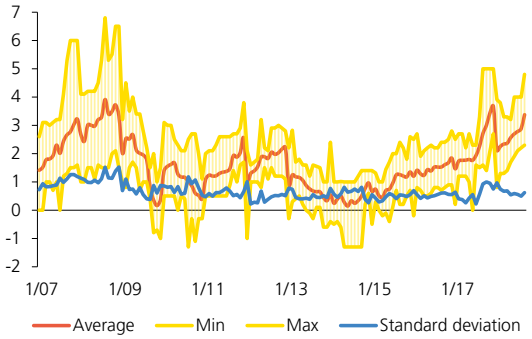
An alternative to directly reported expectations is implicit inflation expectations derived from economic growth and wage growth[20] (see Chart 3). The difference between the two variables, which are also predicted by the analysts in their FMIE survey responses, can be considered an indicator of expected inflation on the assumption that productivity growth passes through to growth in real economic output and growth in real wages to similar extents; the difference between expected nominal wage growth and real GDP growth then reflects expected inflation at the 1Y horizon. Implicit inflation expectations have worse predictive power overall than directly reported expectations. Unlike standard expectations, they underestimated inflation on average. They also display greater scatter. However, it is interesting to note that implicit inflation expectations better predicted the low inflation at the time of the exchange rate commitment (see Chart 4), when inflation was below the lower boundary of the CNB's tolerance band.

To sum up, the predictive power of measured expectations is improving over time and their scatter and volatility is simultaneously decreasing. The CNB's 2% target has thus been a good nominal anchor for the financial market in recent years. Based on measured inflation expectations, this target remained credible at the time of the exchange rate commitment, when – by historical standards – reported expectations deviated from the CNB's target only a little at the 1Y horizon and hardly at all at the 3Y horizon.

CHART 3 (BOX)

IMPLICIT EXPECTED INFLATION AT THE 1Y HORIZON

Expected inflation derived from the predicted path of GDP and wages is relatively volatile
(average; min and max in %; standard deviation in percentage points)

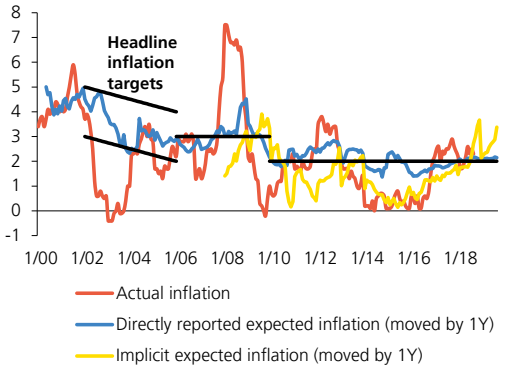


Note: The wage and GDP predictions used to calculate implicit inflation are fixed-event forecasts relating to some future point in time. The time interval for which the prediction is made thus shortens over time; the figures expected for the following year are used in this case. Implicit inflation has been available since 2007, when expected nominal wage growth estimates were incorporated into the FMIE questionnaires.

CHART 4 (BOX)

COMPARISON OF INFLATION EXPECTED AT THE 1Y HORIZON WITH THE ACTUAL LEVEL

Inflation expectations have been firmly anchored close to the CNB's 2% target in recent years
(percentages)



20 Implicit expectations were examined in the box *The anchoring of inflation expectations in the Czech Republic* in IR I/2017 (see http://www.cnb.cz/en/monetary_policy/inflation_reports/2017/2017_I/boxes_and_annexes/zoi_2017_I_box_1.html). There are substantial differences between implicit and reported expectations. This may be due partly to the different constructions of these two indicators of expected inflation. Another likely reason is the less than perfect mutual consistency of the analysts' predicted figures for inflation, real GDP and nominal wages.

The indicators of inflation perceived and expected by households increased modestly. The slightly positive level of perceived inflation suggests that households overall felt that prices rose over the last 12 months, though only slightly (see Chart II.4.1). Expected inflation rose to its highest level since the start of 2013, signalling that the respondents who expect prices to rise more rapidly over the next 12 months slightly outnumber those who expect prices to stay the same or increase more slowly than they did previously.

The analysts estimate that the Czech economy will show growth of about 3% both this year and the next (see Table II.4.2). The analysts believe that the current slowdown of the domestic economy is largely related to labour shortages and other capacity constraints. According to the analysts, labour productivity – growth of which is essential for continued sustainable economic growth – is rising at a relatively low rate despite the strong investment activity in the private sector. The analysts expect GDP growth to continue to be driven most of all by household consumption and corporate investment. According to the analysts, a renewed acceleration of economic growth in Germany could give a major growth impulse to the Czech economy, while tightening domestic monetary conditions in both the exchange rate and interest rate components will have the opposite effect. Despite the slowdown in economic growth, the domestic labour market remains tight and demand for labour is still high. This is resulting in strong upward pressure on wages in both the private and public sectors. Nominal wage growth will thus increase further this year, according to the respondents. A slowdown – of up to 2 percentage points – is predicted next year. The analysts on average forecast the koruna to appreciate to CZK 25 to the euro at the one-year horizon.[21] Most of the analysts in the October FMIE survey were expecting the CNB Bank Board to raise key interest rates by 0.25 percentage point at the November meeting, while a minority were expecting them to be left unchanged. Their average estimate of the 2W repo rate at the one-year horizon was 2.3%.

Compared to the CNB, the analysts expect similar GDP growth and almost the same inflation, but with a different monetary conditions structure. The analysts' wage expectations are slightly lower by comparison with the CNB. The exchange rate at the one-year horizon is weaker on average in the analysts' predictions than in the CNB forecast, while the interest rate forecast is higher.

The current market outlook for 3M rates implies a steady increase over the one-year horizon. Consistent with the CNB forecast is a further increase in interest rates until the start of next year, followed by a period of stability. The two paths are thus initially consistent with each other, while at the one-year horizon the market outlook is slightly higher (see Chart II.4.2).

21 The expected range between the maximum and minimum values of the koruna in the analysts' estimates has widened in the last few surveys. This is probably linked with the recent change in market sentiment and the uncertainty regarding its duration. The range is CZK 24.0–25.4 to the euro in the October FMIE survey and CZK 24.5–26.0 to the euro in the CF survey.

CHART II.4.1

PERCEIVED AND EXPECTED INFLATION

The indicators of perceived and expected inflation increased modestly

(balance of answers; source: European Commission Business and Consumer Survey)

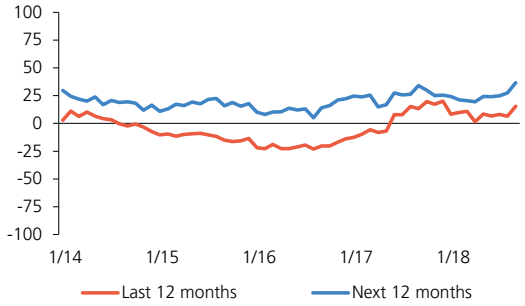
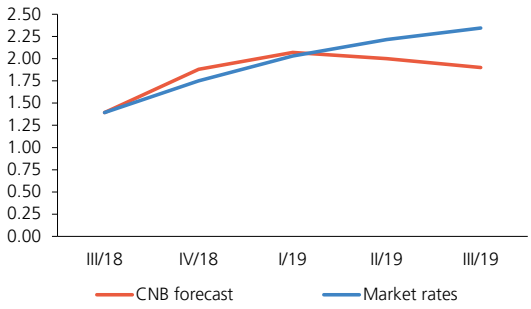


CHART II.4.2

FRA RATES VERSUS THE CNB FORECAST

The market outlook for interest rates is gradually rising; at the one-year horizon it is slightly above the rates contained in the CNB forecast

(percentages)



Note: Market rates represent for 2018 Q3 and 2018 Q4 the 3M PRIBOR and for 2019 Q1–2019 Q3 the average values of the FRA 3*6, 6*9 and 9*12 rates for the last 10 trading days as of 19 October 2018.

III. CURRENT ECONOMIC DEVELOPMENTS

III.1 PRICE DEVELOPMENTS

Observed inflation differed little from the spring 2017 forecast, a retrospective assessment of which is relevant for evaluating the current fulfilment of the inflation target. This assessment pertains to the first forecast following the exit from the exchange rate commitment. With the benefit of hindsight, the CNB's monetary policy in the past period can be assessed as having been appropriate. Inflation edged up to 2.4% on average in 2018 Q3. This was due mainly to a rise in core inflation amid continued rapid growth in fuel prices. By contrast, the previously strong contribution of food prices decreased. Core inflation was driven solely by non-tradables prices, pointing to still strong domestic demand and the effect of rising wage costs. Administered price inflation initially went up but fell in September owing to the introduction of transport fare discounts. The rapid growth in prices on the property market is beginning to cool slightly. Import prices switched to year-on-year growth as a result of the recent depreciation of the koruna against the euro and fast growing energy commodity prices. This was followed by a rise in industrial producer price inflation. The decline in agricultural producer prices almost halted owing to an increase in crop product prices. Growth in construction work prices also accelerated significantly in an environment of increasing demand and wages. Growth in prices of services for the business sector remains stable at a moderate level.

III.1.1 Fulfilment of the inflation target

In 2018 Q3, inflation was slightly above the level projected in the forecast published in IR II/2017[22] and hence also above the CNB's target (see Chart III.1.1). That forecast – the first following the exit from the exchange rate commitment in early April 2017 – had been based on an assumption of the standard monetary policy regime with an endogenous exchange rate and monetary policy interest rates. The forecast had expected inflation to stay in the upper half of the tolerance band around the CNB's 2% target and to return to the target in early 2018. The growing domestic economy had been expected to foster higher costs and hence higher consumer prices, mainly via rising wage growth. The then inflationary effect of import prices had been expected to quickly turn anti-inflationary due to slower growth in foreign producer prices coupled with expected appreciation of the koruna.

22 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 it is appropriate to analyse retrospectively the forecasts and the Bank Board's decisions based thereon in the past. To assess the fulfilment of the target in 2018 Q3, we have to examine – in view of the monetary policy transmission lag – the period from January to September 2017 (the "reference period"). For the sake of clarity, the analysis of the fulfilment of the forecasts in this section is limited to a comparison of Inflation Report II/2017 with subsequent inflation.

CHART III.1.1

FORECAST VERSUS ACTUAL HEADLINE INFLATION

Actual inflation was broadly in line with the forecast
(year on year in %)

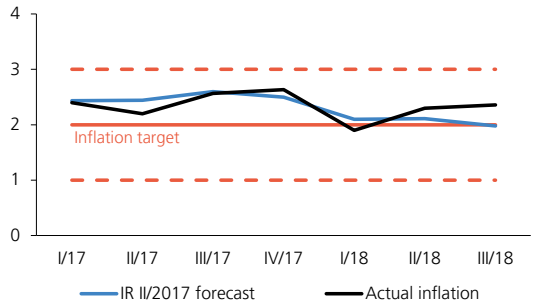


TABLE III.1.1

FULFILMENT OF THE INFLATION FORECAST

Actual inflation was slightly above the forecast in Q3; the deviations of the individual components partly offset each other
(annual percentage changes; contributions in percentage points)

	IR II/2017 forecast	2018 Q3 outturn	Contribution to total difference
CONSUMER PRICES	2.0	2.4	0.4
of which:			
administered prices	1.1	2.1	0.2
first-round impacts of changes to indirect taxes[a)]	0.1	0.1	0.0
core inflation[b)]	1.9	2.3	0.2
food prices[b)]	2.6	1.1	-0.4
fuel prices[b)]	-0.2	12.4	0.4

a) impact on headline inflation except administered prices
b) excluding the first-round effects of changes to indirect taxes

Inflation was close to the forecast for most of the period under review. The difference in 2018 Q3 was 0.4 percentage point (see Table II.1.1). Deviations from the forecast were recorded for all consumer basket items (except for the effects of changes to indirect taxes). The positive deviation was due to sizeable year-on-year growth in fuel prices and higher-than-expected core inflation and administered prices, in particular electricity prices. More subdued food price inflation had the opposite effect.

Turning to external factors, stronger external demand represented the biggest deviation from the forecast. At first, industrial price inflation was much lower than expected. This was due mainly to a significantly stronger euro against the dollar and also to a lower oil price. In 2018, conversely, stronger demand pressures stemming from higher economic growth in the euro area combined with an unexpectedly higher oil price were reflected in higher producer price inflation. The forecast that foreign interest rates would remain at slightly negative levels[23] materialised (see Table III.1.2). Overall, according to the assessment based on the CNB's core prediction model, the effect of external developments on domestic inflation was broadly neutral through pressure for slightly greater appreciation of the koruna and somewhat lower domestic interest rates.

Domestic economic activity and wages fostered higher-than-forecasted inflation. As regards the components of GDP, more robust growth was recorded mainly by private investment and household consumption; exports were also higher due to higher external demand. Owing to unexpectedly strong economic growth, the labour market situation tightened further. This was reflected in growing labour shortages and much faster wage growth than expected.

The structure of the monetary conditions deviated partially from the forecast over time. The exchange rate initially appreciated more gradually and then weakened unexpectedly in spring and summer 2018 as a result of global factors. Monetary policy responded to this with a faster increase in interest rates (see Table III.1.3). The monetary conditions were thus easier in the exchange rate component at the end of the period under review, whereas the interest rate component was shifted towards a neutral stance more quickly than forecasted.

The monetary policy pursued by the CNB between January and September 2017 can be assessed as 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. The Bank Board assessed the risks to the forecasts initially as being balanced and later as being skewed in a mildly inflationary direction. This was one

23 The observed 3M EURIBOR market rates do not fully reflect the introduction of the ECB's unconventional measures. These measures are captured in the forecast by shadow rates, which were more negative.

TABLE III.1.2

FULFILMENT OF THE EXTERNAL ASSUMPTIONS

External economic activity rose more strongly than forecasted; the oil price was also higher in 2018
(annual percentage changes unless otherwise indicated;
p – prediction, o – outturn)

		II/17	III/17	IV/17	I/18	II/18	III/18
GDP in euro area[a), b), c)]	p	1.6	1.9	1.9	1.9	2.0	2.0
	o	2.5	2.8	2.9	2.4	2.3	-
PPI in euro area[b), c)]	p	4.0	4.2	3.5	2.1	2.1	2.0
	o	2.9	2.4	2.4	1.8	2.9	-
3M EURIBOR	p	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1
(percentages)	o	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
USD/EUR exchange rate	p	1.06	1.06	1.06	1.06	1.07	1.07
(levels)	o	1.10	1.18	1.18	1.23	1.19	1.16
Brent crude oil price	p	56.2	56.7	56.7	56.5	56.2	55.9
(USD/barrel)	o	50.8	52.2	61.5	67.2	75.0	75.8

a) at constant prices
b) seasonally adjusted
c) IR II/2017 outlook for effective indicator

TABLE III.1.3

FULFILMENT OF THE FORECAST FOR KEY VARIABLES

Domestic GDP growth and nominal wage growth both exceeded the forecast, thus fostering higher inflation
(p – prediction, o – outturn)

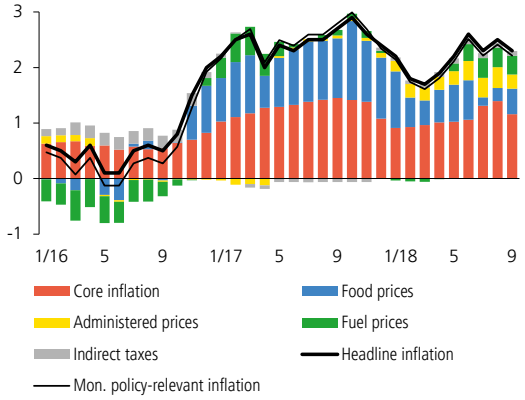
		II/17	III/17	IV/17	I/18	II/18	III/18
Consumer price index	p	2.4	2.6	2.5	2.1	2.1	2.0
(annual perc. changes)	o	2.2	2.6	2.6	1.9	2.3	2.4
3M PRIBOR	p	0.3	0.6	0.7	0.6	0.6	0.8
(percentages)	o	0.3	0.4	0.7	0.9	0.9	1.4
CZK/EUR exchange rate	p	26.5	25.5	25.1	25.0	25.0	24.9
(levels)	o	26.5	26.1	25.7	25.4	25.6	25.7
Real GDP[a)]	p	2.6	3.2	3.3	2.8	2.5	2.7
(annual perc. changes)	o	4.9	5.1	5.0	4.1	2.4	-
Nominal wages[b)]	p	5.5	5.9	4.3	5.7	5.7	4.5
(annual perc. changes)	o	6.8	6.0	6.8	7.8	8.0	-

a) seasonally adjusted
b) in market sectors

CHART III.1.2

STRUCTURE OF INFLATION

Inflation remained above 2% in Q3 amid contrary volatile movements in core inflation and food prices
(annual percentage changes; contributions in percentage points)



Note: Food prices also include prices of alcoholic beverages and tobacco. Indirect taxes relate to non-administered prices.

CHART III.1.3

CORE INFLATION

Core inflation rose owing to faster growth in non-tradables prices
(annual percentage changes)

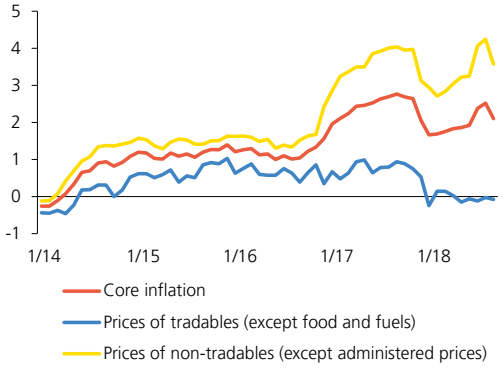


CHART III.1.4

FOOD PRICES, ADMINISTERED PRICES AND FUEL PRICES

Fuel prices have risen the most recently; growth in food prices has slowed
(annual percentage changes)

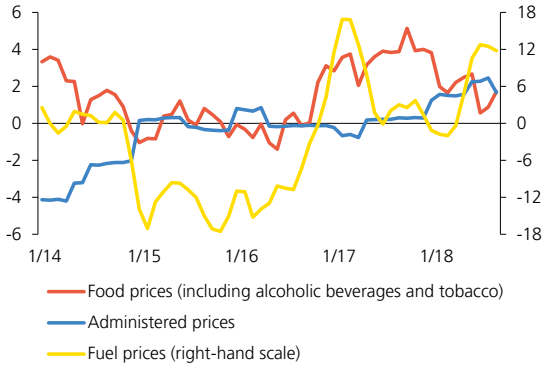
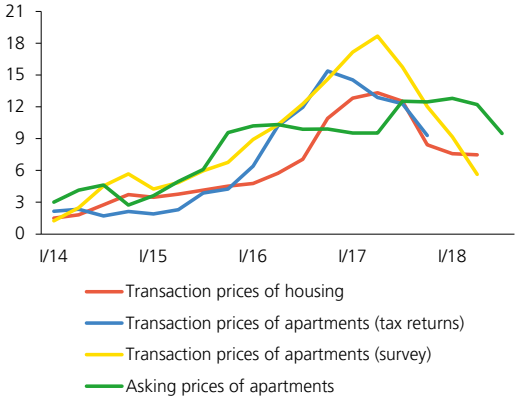


CHART III.1.5

TRANSACTION AND ASKING PRICES OF HOUSING

Slowing growth in property transaction prices was joined by a slight decline in growth in asking prices
(annual percentage changes)



reason why the exchange rate commitment was discontinued slightly earlier than originally assumed. Observed inflation was slightly above the target, inside the upper half of the tolerance band, in 2018 Q3. With the benefit of hindsight and given the exit strategy (a condition for which was sustainable fulfilment of the CNB's 2% target after the discontinuation of the commitment even with gradually tightening monetary conditions), monetary policy can be assessed as having been appropriate in the reference period.

III.1.2 Consumer prices and property prices

Consumer price inflation continued to be driven most of all by core inflation in Q3, while the contribution of food prices declined (see Chart III.1.2). The increase in core inflation was due to strong consumer demand. The lower food price inflation reflected falling agricultural commodity prices. Moreover, the seasonal drop in fruit and vegetable prices occurred earlier than usual, in July. Growth in fuel prices stayed in double figures due to a sizeable increase in oil prices coupled with a weaker koruna. Administered price inflation also edged up due to a further gradual pick-up in electricity prices. Monetary policy-relevant inflation was around 0.1 percentage point lower than headline inflation.[24]

The increase in core inflation was fostered mainly by rising package holiday prices in the summer, but housing prices and prices of other services were also higher. However, the surge in package holiday prices disappeared as the summer season ended and core inflation fell slightly (see Chart III.1.3). Imputed rents and prices of other services[25] started to accelerate further in August due to higher consumer demand supported by strong wage growth. Apartment rent growth also went up gradually. Tradables prices recorded a further slight year-on-year decline in Q3. This reflected a gradual pass-through of the previous appreciation of the exchange rate[26] to prices in this segment of the consumer basket, which, however, was offset by the intensifying inflationary effect of the domestic economy.

Food price inflation was volatile but slowed further overall (see Chart III.1.4). The fall in food price inflation of more than 2 percentage points to 0.6% in July was due mainly to a sharp decline in prices of vegetables, which, however reversed in September. Owing to falling agricultural commodity prices, growth simultaneously decreased in numerous other food categories, turning negative in the case of bread. The year-on-year decline in prices of sugar deepened further owing to the abolition of quotas in Europe and an excess of this commodity on global markets. Growth in prices of alcoholic beverages also slowed

24 The tax impact is due to rises in excise duty on cigarettes and tobacco in January 2018.
25 This mainly involves prices of minor repairs, hairdressing services, financial services and insurance.
26 Despite having weakened in recent months, the koruna appreciated against the euro by around 1.5% year on year on average in Q3.

compared to the previous quarter, while growth in tobacco prices was flat.

Administered price inflation rose in July and August but fell in September due to transport fare discounts (see Chart III.1.4). The discounts apply to bus and train fares for students and senior citizens and were introduced by the government. This was accompanied by public transport discounts in numerous cities. Administered prices in transport thus fell by more than 6%. By contrast, electricity prices recorded a further slight increase. Administered items in health care also rose at a pace exceeding 5%. Conversely, still falling prices of gas and flat prices of heat for households prevented a larger increase in administered prices. Overall, administered prices rose by 1.7% in September.

Fast growing oil prices resulted in rapid growth in fuel prices (see Chart III.1.4). Despite slowing slightly in Q3, oil price growth on global markets exceeded 40%. Moreover, the depreciation of the koruna against the dollar caused the previous dampening effect on koruna prices to disappear. Overall, this caused fuel price growth to stay in double figures.

A slowdown in property transaction price growth was joined by lower growth in asking prices (see Chart III.1.5). Transaction prices of older apartments in Prague showed a sharp slowdown in Q2, rising by less than 1% year on year. In the rest of the Czech Republic, transaction price growth hovered around 7%. Growth in prices of new apartments in Prague remained slightly higher. After having stayed above 12% for roughly a year, growth in property asking prices dropped into single figures in Q3. Slower growth in asking prices was observed both inside and outside Prague.

Growth in the experimental CPIH index moved in parallel with the consumer price index in 2018 Q2. This index, consisting of prices of both new and older property as well as land (with a relatively large weight – see Box 1 in IR III/2017), accelerated to 3% (see Chart III.1.6). It thus maintained roughly the same distance from CPI inflation as in the previous quarter, standing 0.7 percentage point higher.

III.1.3 Import prices and producer prices

Import prices inflation rose on the back of increasing energy commodity prices and fading year-on-year appreciation of the koruna (see Chart III.1.7). Global oil prices recorded particularly strong growth. The recent weakening of the koruna and faster growth in producer prices in the effective euro area pushed up prices of imported products, specifically machinery and transport equipment and miscellaneous manufactured articles. Prices of semi-finished products also started to contribute positively to the growth. Only food prices continued to fall, but their negative contribution gradually diminished.

Industrial producer prices also responded to the fast growing prices of commodities and energy (see Chart III.1.8). As in the case of

CHART III.1.6

THE EXPERIMENTAL CPIH PRICE INDEX

Growth in the CPIH index rose slightly in 2018 Q2, just like consumer price inflation
(annual percentage changes)

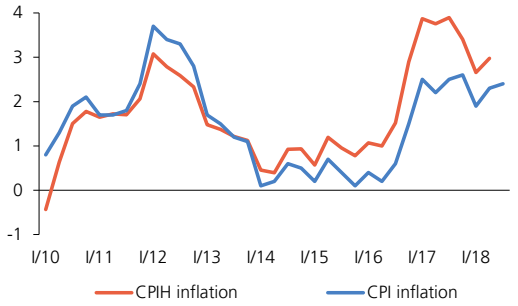
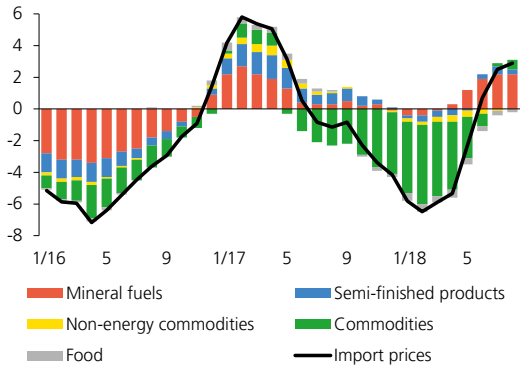


CHART III.1.7

IMPORT PRICES

Increased mineral fuel prices combined with the disappearance of the anti-inflationary effect of the exchange rate caused import price inflation to rise
(annual percentage changes; contributions in percentage points)



Note: Food also includes beverages and tobacco.

CHART III.1.8

INDUSTRIAL PRODUCER PRICES

Industrial producer price inflation stayed above 3%, mainly due to a large contribution of prices of commodities and energy
(annual percentage changes; contributions in percentage points)

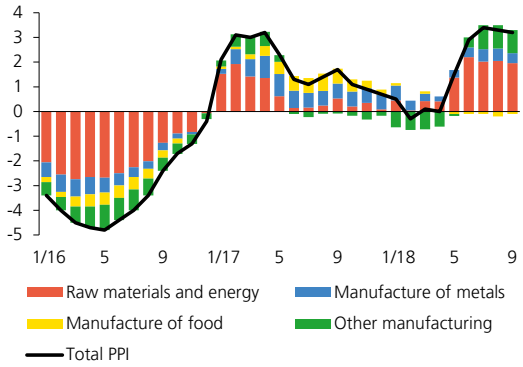


CHART III.1.9

AGRICULTURAL PRODUCER PRICES

The decline in agricultural producer prices moderated in Q3
(annual percentage changes)

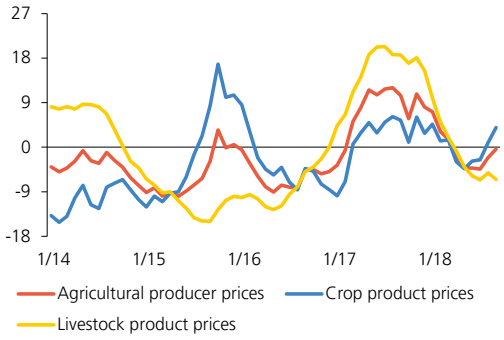
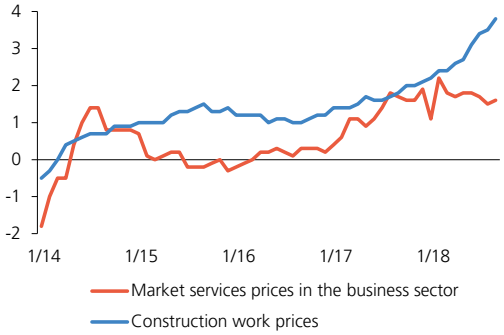


CHART III.1.10

MARKET SERVICES PRICES IN THE BUSINESS SECTOR AND CONSTRUCTION WORK PRICES

Growth in construction work prices rose further, while prices of market services recorded a steady moderate increase
(annual percentage changes)



import prices, producer price inflation was affected mainly by the surge in oil prices. However, the growth in energy commodity prices also pushed up prices in related areas of industrial production (manufacture of chemical products and rubber and plastic products). Inflation in the sector of metals and fabricated metal products stabilised just above 3%. Prices of electronic and optical equipment grew faster due to exchange rate movements. By contrast, prices of transport equipment and prices in the food industry continued to decline year on year. In terms of use, prices of energy and intermediate goods showed the strongest growth in 2018 Q3. Conversely, prices of non-durable goods kept falling.

The decline in agricultural producer prices almost disappeared in Q3 due to a recovery in crop price inflation (see Chart III.1.9). Prices of cereals accelerated strongly. This was due to a lower domestic harvest this year and especially to a decline in production by major global producers (Australia and Russia) and a related decrease in global stocks. Unlike in the first half of this year, the growth in prices of imported commodities was offset to only a limited extent by the subsiding year-on-year appreciation of the koruna. As for crop production, growth in vegetable prices also rose in year-on-year terms. Conversely, prices of most other items kept falling. Prices in livestock production decreased substantially across all categories.

Prices of market services for businesses grew at a stable moderate pace, while growth in prices of construction increased further (see Chart III.1.10). In market services, marked price growth was recorded by employment placement services, private security agencies and real estate activities. Constantly falling prices of telecommunication services and storage and transport services had the opposite effect. Growth in construction work prices gradually increased to 4%, its highest level since 2009. This reflects rising demand for construction production and fast growing prices of materials and products used in the construction industry.

III.2 ECONOMIC DEVELOPMENTS

Czech economic growth slowed to 2.4% in Q2. This led the positive output gap to close slightly. The contribution of fixed investment decreased, but its growth remained robust thanks to the private and government sectors. The positive contribution of household consumption likewise diminished. Its still buoyant growth reflected strong income growth and optimistic expectations. Changes in inventories recorded a substantial decline. By contrast, the negative contribution of net exports shrank due to slower growth in import-intensive private investment and lower changes in inventories, despite slower growth in exports. Continued favourable, albeit slowing growth in economic activity can be seen in most sectors. Slower growth in gross value added was due mainly to manufacturing, accompanied by a slight slowdown in wholesale and retail trade and market services. Business confidence remains high, with a decline in sentiment in manufacturing being offset by an improvement in construction. Labour shortages remain the biggest barrier to growth of industrial enterprises.

III.2.1 The cyclical position of the economy

The output gap of the Czech economy remains positive but has narrowed somewhat. According to the small structural model, it was close to 1% in 2018 Q2 (see Chart III.2.1). This is consistent with the still tight labour market situation and continued growth in domestic and external demand. Renewed growth in demand in previous years led to the negative output gap closing and turning positive. This was fostered by easy monetary policy and, in 2015, drawdown of EU funds. In 2016, conversely, a negative fiscal impulse resulted in the economy temporarily nearing its potential output level from above. However, this effect faded out last year and the positive output gap opened up again. The output gap will gradually close over the forecast horizon. Tighter monetary conditions and gradually slowing external demand will be felt, while the fiscal impulse will remain positive until 2019. By contrast, an alternative estimate using the production function, which does not take the inflation rate and the effect of monetary policy directly into account, indicates closure of the previously positive output gap. It opens up again slightly over the forecasting horizon.

Potential output is estimated at just below 4%. It accelerated to this level in previous years after the repercussions of the economic crisis subsided and pronounced growth in economic activity resumed amid muted inflation pressures (see Chart III.2.2). Potential output growth will return to 3% at the forecast horizon. As regards the factors entering the production function, the labour market improved, with a rising participation rate causing faster growth in equilibrium employment. Investment by non-financial corporations also saw renewed growth, although total fixed investment has been volatile in previous years due to the EU funding cycle. Investment will also have a positive effect this year, when a pick-up in labour productivity growth is also forecasted.

CHART III.2.1

OUTPUT GAP

According to the small structural model, the positive output gap will gradually close further; according to the production function, conversely, it will gradually increase from its currently low level
(% of potential output)

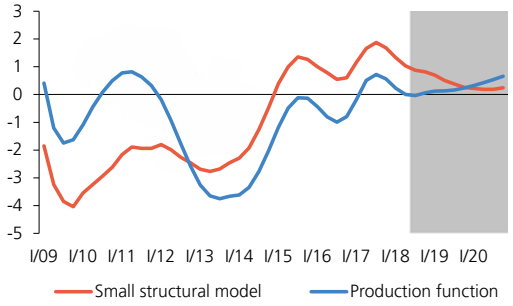


CHART III.2.2

POTENTIAL OUTPUT

According to the small structural model, potential output growth rose to 4% but will gradually slow; according to the production function, it will fluctuate around 3%
(annual percentage changes)

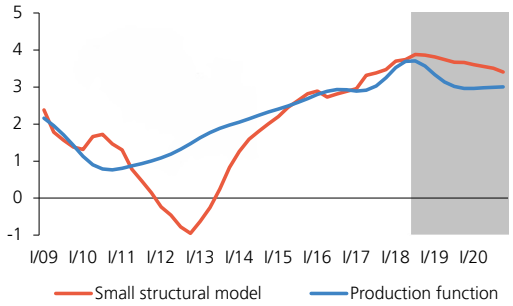


CHART III.2.3

GROSS DOMESTIC PRODUCT

Czech economic growth slowed due to lower contributions of all components of domestic demand, changes in inventories in particular
(annual percentage changes; contributions in percentage points; seasonally adjusted)

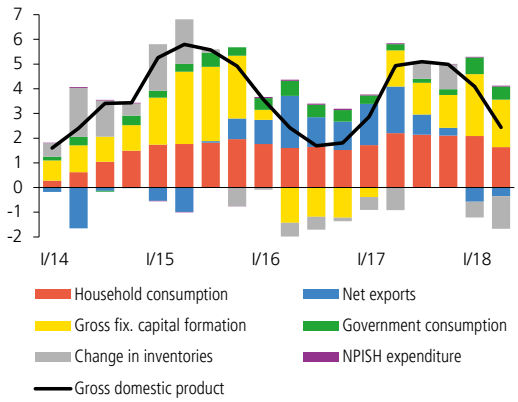
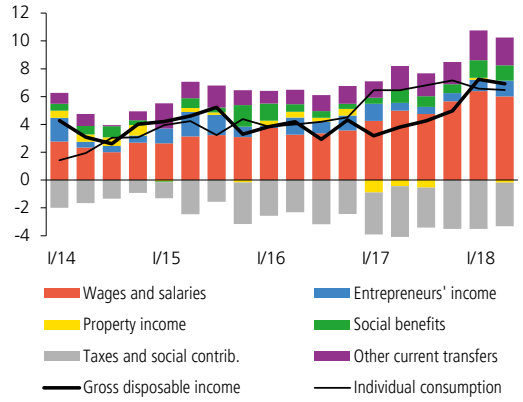


CHART III.2.4

DISPOSABLE INCOME

The buoyant growth in wages and salaries was joined by a small increase in the contribution of income of entrepreneurs; disposable income growth is thus fluctuating around 7% this year

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



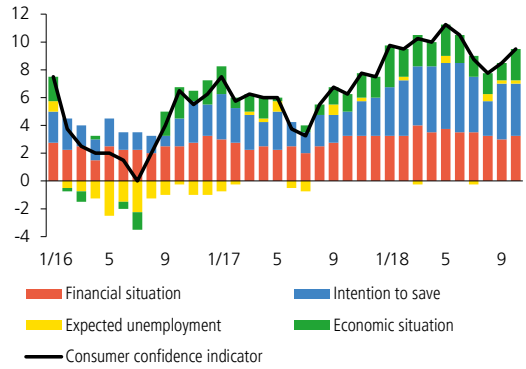
Note: Entrepreneurs' income comprises gross operating surplus and mixed income.

CHART III.2.5

CONSUMER CONFIDENCE BALANCE

Despite a slight decline, consumer confidence remains strong

(balance is difference in per cent between answers expressing improvement and deterioration in expected and ongoing tendencies)



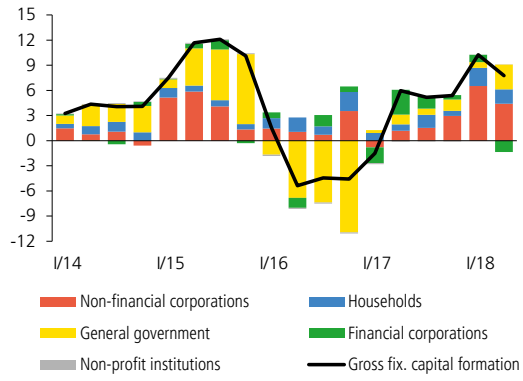
Note: Expectations 12 months ahead.

CHART III.2.6

INVESTMENT BY SECTOR

Growth in investment by non-financial corporations slowed slightly in Q2, while government investment picked up significantly; financial institutions conversely recorded a decline in investment

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



III.2.2 The expenditure side of the economy

GDP growth slowed to 2.4% in 2018 Q2 (see Chart III.2.3). Growth in fixed investment and household consumption slackened but remained robust. Real government consumption growth also declined. Changes in inventories meanwhile recorded a year-on-year decrease. The high stock of inventories has been shrinking since the start of the year, most probably in line with the business cycle. Buoyant growth in import-intensive private investment and increasing household consumption resulted in a negative contribution of net exports, which, however, decreased compared to the start of the year.

Despite a slight slowdown, household consumption growth remains solid in all segments. The growth in real household consumption was due mainly to expenditure on short-term consumption and services. Spending on semi-durable and durable goods also made a positive contribution to total growth.

The growth in household consumption reflected strong growth in gross disposable income. The latter continues to be supported most strongly by rapid growth in wages and salaries, the contribution of which, however, declined slightly (see Chart III.2.4). Consistent with this was a slight decrease in the negative contribution of taxes and social contributions. Conversely, the contribution of entrepreneurs' income recorded a small increase in Q2.

Consumer confidence dropped somewhat in 2018 Q3 but remains high. This is being fostered by a positive outlook for the Czech economy and by expectations of a good financial situation of households (see Chart III.2.5). With income rising dynamically, there was an increase in the intention to save, which has been reflected in slight growth in the saving rate since the end of 2017. The consumer optimism was reflected in still strong growth in retail sales.

Real government consumption growth slowed, while government investment growth surged. Government consumption in nominal terms was driven mainly by fast growing wages in the public sector, which, however, also led to higher growth in its deflator. Growth in non-wage government expenditure also went down. Growth in government investment is rising at both the general and local government levels, aided by increasing drawdown of EU funds.

The growth in private investment was due mainly to investment by non-financial corporations (see Chart III.2.6). As regards the material breakdown, all components again contributed to the increase in fixed investment. In addition to investment in buildings and structures, investment in machinery and equipment and investment in transport equipment continued to rise. This reflects continued growth in domestic and external demand and firms' efforts to streamline production amid labour market constraints linked with labour shortages and fast growing wage costs. The impacts of corporate investment in manufacturing on labour productivity are discussed in Box 2.

BOX 2 The effect of corporate investment on productivity

Labour productivity is a key variable for monetary policy, as productivity growth reduces domestic cost-push inflation pressures. Those pressures are currently relatively strong in the Czech economy, mainly reflecting the tight labour market situation, which is leading to rapid wage growth. One way to deal with high cost pressures is to raise labour productivity. This is aided by investment. This box analyses the impact of investment on labour productivity in manufacturing, which is the most important sector and to some extent also determines overall investment activity in the domestic economy.

Fixed investment can foster future growth in labour productivity. There are at least two reasons for this. First, buying new and more efficient machinery and equipment represents technological progress for firms. It enables them to raise production while keeping labour factor inputs unchanged, which directly increases labour productivity. Second, if economic agents expect a favourable economic situation, they invest in order to expand their production capacity. Observed labour productivity growth is thus partially also cyclical in nature due to economies of scale. At the microeconomic level, investment can therefore be a leading indicator of productivity even in the absence of technological progress. However, investment decisions are also affected by non-market factors such as EU funding. So, the empirical question is how strong the above market mechanisms are and whether corporate investment really signals future productivity growth.

The relationship between productivity and corporate investment can be assessed using microdata from manufacturing. The analysis below is based on CZSO data on more than 800 large firms in this sector.[27] Besides having a large range of information on the firms selected, the database also has the advantage that labour productivity can be defined here as the ratio of value added to the number of employees converted into full-time equivalents[28] (see Chart 1). The data also contain the average koruna wage per full-time employee, which is one of firms' main cost factors that can be reduced by productivity growth.

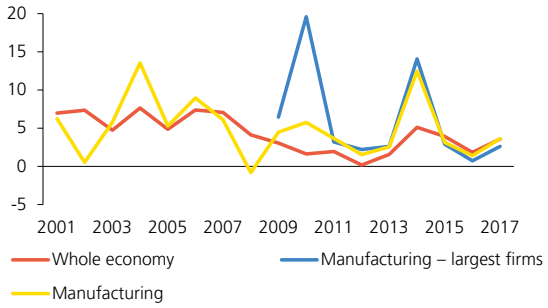
27 The data come from questionnaire P6-04, which contains information on roughly the 2,000 largest firms in terms of assets in the Czech economy. These data cover almost half of the manufacturing sector by number of employees and represent more than half of the value added created in the sector. The difference in coverage level between the number of employees and valued added indicates that firms with a higher number of employees are more productive due to a probably higher level of technology. Quarterly data are aggregated into annual figures in the analysis.

28 This definition is slightly different from labour productivity constructed from the national accounts as the ratio of GDP (or value added) to employment, which can be found in section III.3 of the Inflation Report.

CHART 1 (BOX)

COMPARISON OF LABOUR PRODUCTIVITY INDICATORS

The various definitions of labour productivity have recorded similar dynamics in recent years despite some deviations
(annual percentage changes; source: CZSO data; CNB calculation)



Note: Labour productivity is defined as the ratio of value added to the converted number of employees.

CHART 2 (BOX)

INVESTMENT IN MACHINERY AND EQUIPMENT

Investment in machinery and equipment per employee is markedly higher in manufacturing than in the economy as a whole
(investment per converted employee in CZK thousands; source: CZSO data, CNB calculation)

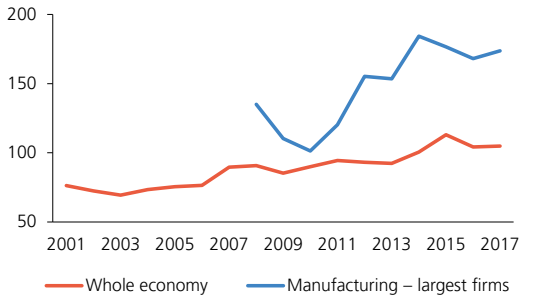
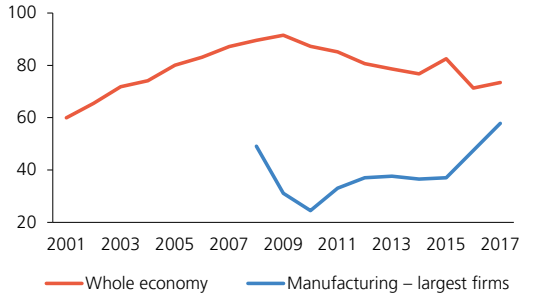


CHART 3 (BOX)

INVESTMENT IN BUILDINGS AND STRUCTURES

Manufacturing is lagging behind the rest of the economy in terms of investment in buildings and structures
(investment per converted employee in CZK thousands; source: CZSO data, CNB calculation)



Most investment by manufacturing firms consists of investment in machinery and equipment. It has long accounted for about 70% of total investment in the set of firms under review.[29] Calculated per employee, this investment significantly exceeds the average for the Czech economy (see Chart 2). About 20% of the investment of the firms monitored goes into buildings and structures. This, by contrast, is well below the whole-economy average (see Chart 3).

Investment in manufacturing significantly affects labour productivity in this sector, most of all with a lag of one year. A method based on Lasso regression[30] was used to analyse the data referred to above. The advantage of this method is that it allows other explanatory variables to be included in the regression as control variables.[31] An analysis of industrial data for 2008–2017 reveals that investment considerably increases labour productivity, most of all with a lag of one year. If CZK 1,000 per converted employee is invested in equipment and machinery in a typical manufacturing firm, its labour productivity increases by CZK 1,050 on average the following year. The same investment in buildings and structures will raise future annual productivity by CZK 730.[32]

The analysis thus reveals that cost-push pressures in manufacturing are considerably reduced by investment growth. Investment in machinery and equipment has the strongest effect. Investment in buildings and structures has a quantitatively smaller, but still significant, effect. Overall, given the high investment activity in manufacturing, the analysis – along with appreciation of the koruna – helps explain why the surge in wage growth observed in 2017 was not accompanied by subsequent growth in prices of tradable goods.

Growth in household investment, a large proportion of which is in new property, remained strong. This was reflected in the material structure of fixed capital formation, where investment in dwellings makes a significant growth contribution. A positive signal on the supply side is continued brisk growth in the number of apartment starts and completions. Conversely, household demand is beginning to be dampened somewhat by tighter bank standards for housing loans.

29 This is equivalent to about one-fifth of all investment in machinery and equipment in the Czech economy.
30 For a more detailed description of the method, see W. Hess, M. Persson, S. Rubenbauer and J. Gertheis (2013): *Using Lasso-Type Penalties to Model Time-Varying Covariate Effects in Panel Data Regressions*, Working Paper 2013:5 School of Economics and Management, Lund University.
31 As shown in the literature, such variables can include firm size and lagged productivity growth. These variables were used to eliminate the effect of false correlation between investment and productivity.
32 Growth in productivity should not be confused with growth in profitability. The results should therefore be interpreted solely as a signal of a future increase in productivity.

Compared to last year, the contribution of changes in inventories turned very negative. According to revised data, it was negative not only in Q2, but also in Q1. The large stock of inventories built up in the past is thus probably being gradually released. This is going on in a situation of high production capacity utilisation and still strong demand.

Net exports recorded a year-on-year decrease due to export growth slowing more than import growth (see Chart III.2.7). The slower growth in total foreign trade turnover in 2018 H1 was due predominantly to the slowdown in external demand. This was reflected mainly in lower exports of transport equipment. The previous appreciation of the koruna and capacity constraints on firms also had an effect. Given the high import intensity of exports, imports slowed slightly as well. On the other hand, imports were supported by the strong domestic demand.

III.2.3 The output side of the economy

Growth in gross value added weakened significantly in 2018 Q2, primarily in manufacturing (see Chart III.2.8). Its contribution fell for the third time in row. This is probably related to the observed slowdown in external demand. Base effects are also playing an important role. Value added growth also slowed in wholesale and retail trade and market services. The contribution of other sectors was stable.

Sales grew in almost all branches of services and industry in Q2. The biggest increase was recorded in transport and storage. Information and communication activities also performed well. Unlike in the previous quarter, manufacturing made a positive contribution, too. Conversely, real estate activities recorded a year-on-year drop in sales.

Growth in industrial production slowed to 2.2% in Q2 (see Chart III.2.9). Although growth went down in manufacturing, it remains the biggest driver of total growth in industrial production. Mining and quarrying was flat and the energy sector fell slightly. The slowdown in manufacturing was largely due to base effects, which will also push down growth in the period ahead, as partly confirmed by the August data. However, an increasing number of new orders in July and August indicates relatively good prospects for this segment of the economy.

Labour shortages continue to be the most important constraint on the production potential of industrial corporations (see Chart III.2.10). Insufficient demand remains the second constraint, despite declining over time. According to the October business survey, the share of corporations facing material shortages meanwhile increased further. Capacity utilisation in industry remained at around 85%.

Although construction output growth slowed slightly in Q2, it remains buoyant (see Chart III.2.9). Slower growth in building construction was offset to some extent by higher growth in civil engineering, which probably benefited from the drawdown of EU funds. The positive condition of construction output is being fostered by an

CHART III.2.7

EXPORTS AND IMPORTS

Export growth stayed below import growth and net imports continued to decrease year on year

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

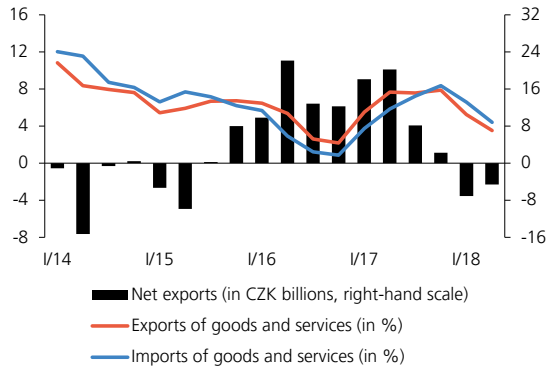
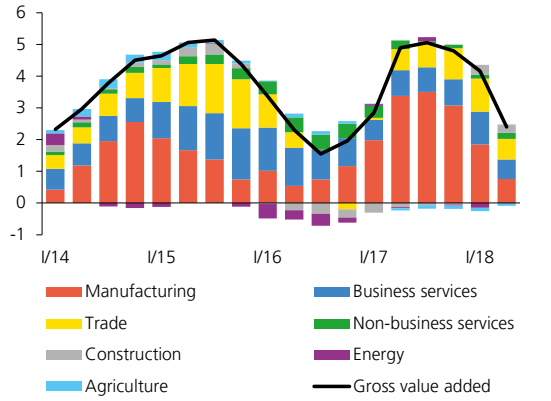


CHART III.2.8

CONTRIBUTIONS OF BRANCHES TO GVA GROWTH

Gross value added growth slowed further, owing mainly to manufacturing

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



Note: Trade also includes hotels and restaurants and transport. Energy also includes mining and quarrying.

CHART III.2.9

INDUSTRIAL PRODUCTION AND CONSTRUCTION OUTPUT

Annual industrial production growth slowed, while construction output continues to grow apace

(annual percentage changes)

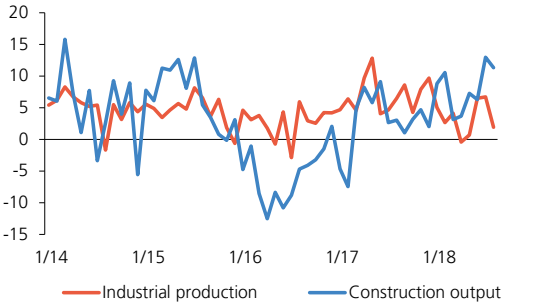


CHART III.2.10

BARRIERS TO GROWTH IN INDUSTRY

Labour shortages are still the main barrier to growth in industrial production
(percentages)

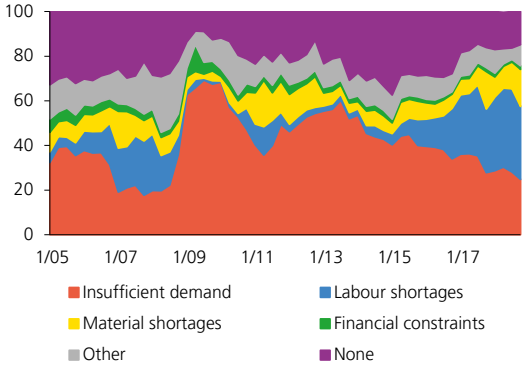
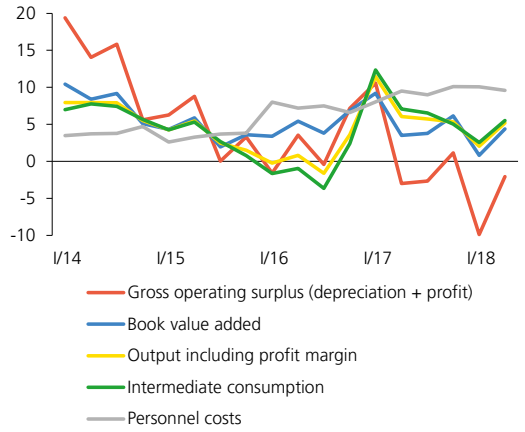


CHART III.2.11

KEY FINANCIAL INDICATORS

Rising output growth fostered a more moderate decline in the gross operating surplus of non-financial corporations
(annual percentage changes)



increasing value of orders, which went up by almost 26%. According to the latest monthly data, growth in construction picked up noticeably.

Business sentiment remains high. A decline in business confidence in industry was roughly offset by an increase in confidence in construction. Business confidence remained flat in wholesale and retail trade and services.

Output growth returned almost to the end-2017 levels, reducing the decline in the gross operating surplus. The largest contributions to the growth in the output of non-financial corporations were recorded in manufacturing and information and communication activities. As a result, growth in book value added increased to 4.4%. Given the overheated labour market and increasing energy commodity prices, however, both personnel and material costs are still rising significantly. The gross operating surplus therefore continued to decrease, though at a much slower pace than in the previous quarter (see Chart III.2.11).

III.3 THE LABOUR MARKET

The Labour Utilisation Composite Index continues to indicate a tight labour market situation overall, although some indicators are now suggesting that it is nearing the peak of the current cycle. Continued economic growth led to a further rise in employment and only a slight decrease in the unemployment rate in 2018 Q2. Firms are finding it increasingly difficult to fill vacancies, as the labour force is not growing sufficiently to meet demand for labour. This situation is exerting strong upward pressure on wages, bolstered by growth in the minimum wage in recent years. Average wage growth in market sectors amounted to 8% in Q2 but slowed in quarter-on-quarter terms. Wages in non-market sectors continued to increase at double-digit rates. Growth in whole-economy labour productivity slowed further in 2018 Q2. Growth in nominal unit labour costs thus remained high.

III.3.1 Employment and unemployment

The continued growth in economic activity is pushing up employment and fostering persisting labour market tightness (see Chart III.3.1). Despite labour shortages, employment growth remained brisk in 2018 Q2 (at 1.8%; see Chart III.3.2). It was fostered mainly by growth in the number of employees, which was also slightly supported by an increasing number of entrepreneurs. As regards age structure, the rise in employment was due mainly to the 45–59 age group. As in previous quarters, the growth was driven significantly by university degree holders, who accounted for around 60% of the year-on-year increase. Growth in the labour force and a drop in the number of unemployed contributed in roughly equal measure to the increase in total employment. The potential labour force reserve, consisting of persons who are not actively seeking a job[33] but are willing to work, fell further. As for the sector structure, the growth in employment continued to be due mainly to the services sector. Wholesale and retail trade, information and communication activities and accommodation were the biggest contributors in market services. Growth in employment in non-market services was driven by public administration and education. In industry, employment increased only weakly due to a slight decline in employment in the highest-weight manufacturing sector, which was offset by increases in employment in mining and electricity generation.

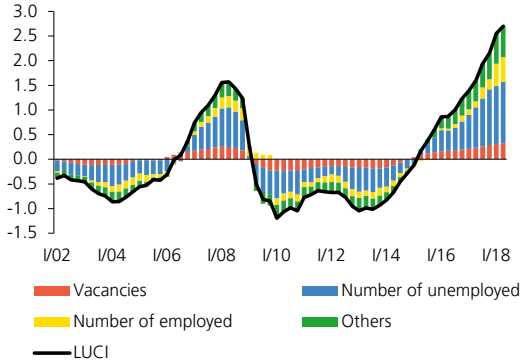
Growth in the converted number of employees slowed slightly owing to a decline in average hours worked per employee (see Chart III.3.3). New positions were largely agreed for shorter working hours. Longer working hours in industry accounted for about one-quarter of the increase in the converted number of employees. The remainder was due to the services sector, where the number of employees rose sharply amid a slight fall in average working hours. The increase in the

33 These persons are thus not identified as unemployed under the ILO methodology. Their number dropped by around 12,000 year on year to 108,000 in Q2.

CHART III.3.1

LUCI – LABOUR UTILISATION COMPOSITE INDEX

The current labour market tightness markedly exceeds the peak of the previous cycle
(standard deviations from long-term average)



Note: The contributions are a result of the aggregation of the contributions of the individual time series in the given categories.

CHART III.3.2

EMPLOYMENT BREAKDOWN BY BRANCHES

The sharp growth in employment was due almost solely to the services sector
(contributions in percentage points to annual change; selected branches; source: LFS)

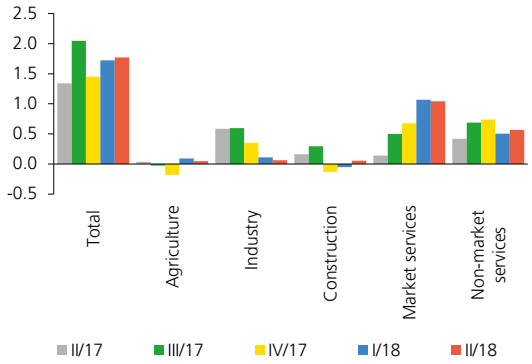


CHART III.3.3

NUMBER OF EMPLOYEES (FULL-TIME EQUIVALENT)

The increase in the number of employees was accompanied by a decline in average hours worked
(annual percentage changes; contributions in percentage points)

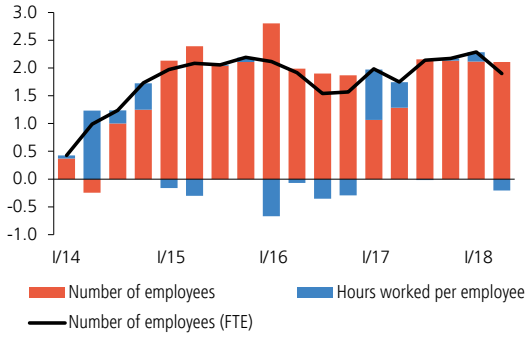


CHART III.3.4

UNEMPLOYMENT INDICATORS

Both the general unemployment rate and the share of unemployed persons are hitting new historical lows, but the decline is only slight
(percentages; seasonally adjusted; source: MLSA, CZSO)

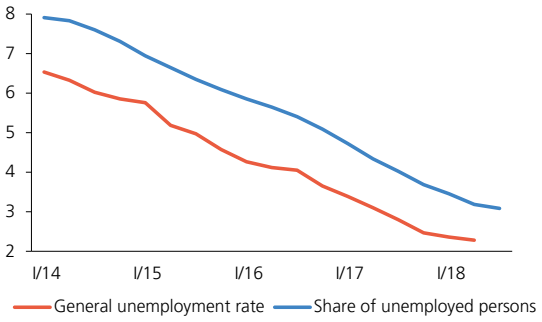


CHART III.3.5

BEVERIDGE CURVE

The number of vacancies reached record highs, exceeding the number of unemployed, but the changes are only minor compared to the past
(numbers in thousands; seasonally adjusted; annual percentage changes for core inflation; source: MLSA, CZSO)

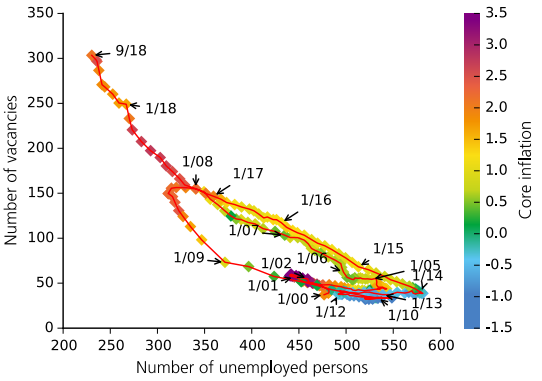


CHART III.3.6

AVERAGE WAGE AND WHOLE-ECONOMY LABOUR PRODUCTIVITY

Labour productivity growth has been lagging well behind real wage growth so far this year
(annual percentage changes)

converted number of employees in market services was due mainly to wholesale and retail trade, while that in non-market services was due to education.

The share of unemployed persons and the general unemployment rate are declining only very moderately (see Chart III.3.4). Having hit a historical low, the general unemployment rate remains the lowest in the EU.[34] This is due mainly to a continued decline in the number of long-term unemployed, which accounted for more than half of the decrease in the number of unemployed persons. The labour market tightness is being partially eased by moderate growth in the number of economically active persons, which moved the rate of economic activity to a new historical high of 77.3% in August. According to labour offices, the seasonally adjusted share of unemployed persons dropped somewhat further to 3% in September. This continues to reflect a declining number of available job applicants (especially in the category of those unemployed for more than one year) amid a slight drop in the population aged 15–64.

Vacancies currently significantly outnumber the unemployed. The number of vacancies offered via labour offices amounted to 316,000 in September, a significant proportion of which were in manufacturing. There was also strong demand for new employees in wholesale and retail trade and in construction. In August, almost 60% of vacancies were for employees with basic education and another one-sixth were for employees with vocational training with a school leaving certificate. Viewed in terms of the Beveridge curve (see Chart III.3.5), the ratio of the number of vacancies to unemployed persons is currently at an all-time high (amid record-high employment and labour force levels). This is being reflected in marked wage growth. It helped to keep core inflation, which is at a similar level as at the peak of the previous cycle in 2008, distinctly positive.

III.3.2 Wages and productivity

Year-on-year wage growth remained high in Q2. Both market and non-market sectors recorded strong earnings growth. The fast wage growth was also due, among other things, to an increase in the minimum wage from CZK 11,000 to CZK 12,200 at the start of 2018. Nominal wages in market sectors rose by 8% year on year (although their growth slowed in quarter-on-quarter terms). The rise was driven by an upswing in wage growth in most sectors, with wages in mining and quarrying and manufacturing seeing the fastest growth. Non-market sectors recorded even faster growth (over 11%). In non-market sectors, wages rose fastest in the culture sector. Wage growth in education, public administration and defence was only slightly lower. The median wage went up by 9.4% year on year in 2018 Q2, i.e. by more than the average wage for the

34 According to monthly indicators for August, the unemployment rate rose to 2.7%, but this is probably a short-term fluctuation.

economy as a whole (8.6%). Wage differentiation thus continued to decrease after a one-off hiatus in Q1.

Labour productivity growth decreased further, due mainly to slower economic growth. Whole-economy labour productivity rose by just 0.8% in Q2 (see Chart III.3.6). However, the productivity trends were mixed across sectors (see Chart III.3.7). Productivity growth in market services weakened markedly due to parallel higher growth in employment and lower GVA growth. Labour productivity growth in construction, industry and non-market services was little changed from Q1. Productivity continued to grow apace in construction, was subdued in industry and kept falling modestly in non-market services.

Growth in nominal unit labour costs rose slightly further due to lower GDP growth, while the contribution of the wage bill remained stable. Nominal unit labour costs increased by 7.3% year on year (see Chart III.3.8). Growth in nominal unit labour costs rose in all the main branches of the economy except non-market services. However, non-market services recorded the fastest growth in labour costs per unit of output (almost 12%). The growth in other sectors was significantly lower. In industry and market services, nominal unit labour costs grew by about 6%. By contrast, in construction they were flat year on year due to significant growth in productivity.

CHART III.3.7

PRODUCTIVITY BY SECTOR

Labour productivity continued to grow apace in construction, was subdued in industry and market services and kept falling in non-market services
(annual percentage changes)

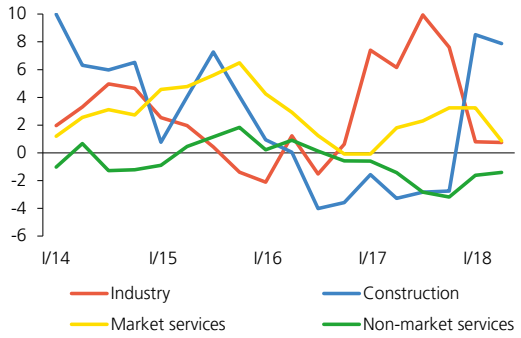
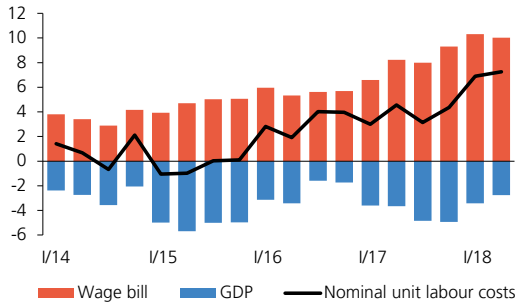


CHART III.3.8

UNIT LABOUR COSTS

Growth in nominal unit labour costs rose slightly due to a slowdown in economic growth
(annual percentage changes; contributions in percentage points)



III.4 FINANCIAL AND MONETARY DEVELOPMENTS

The increases in the CNB's monetary policy rates in early August, late September and early November 2018 represented further steps towards their gradual return to a long-run neutral stance. Interest rates on the financial market, and gradually also some client interest rates, responded to the raising of the two-week repo rate. The koruna initially appreciated and then depreciated again in Q3. Growth in loans to the private sector increased slightly as a result of a moderate rise in growth in loans to non-financial corporations amid continued strong growth in loans to households. M3 growth stabilised close to credit growth.

III.4.1 Monetary policy and interest rates

The CNB Bank Board raised monetary policy interest rates at its August, September and November meetings.[35] The latest decision was the seventh increase in rates since the exit from the CNB's exchange rate commitment in early April 2017. Nominal interest rates thus continue to move gradually towards a long-run neutral stance.

Money market rates responded to the increase in the CNB's policy rates by rising further (see Chart III.4.1). The 3M PRIBOR was 1.4% on average in 2018 Q3 and has stabilised just below 2% since the start of November. The money market premium, as measured by the spread between the 3M PRIBOR and the 2W repo rate, thus remained close to 0.2 percentage point. FRA rates also moved higher. The market responded to strong data from the domestic economy (wage growth, retail sales, industry, construction and new orders) and comments made by several Bank Board members, according to whom the process of normalising the CNB's interest rates will continue. The end-October outlook for FRA rates implied expectations of smooth growth in the 3M PRIBOR over the one-year horizon.

The rise in the CNB's key rates also determines the path of domestic IRS rates and government bond yields. Foreign factors, which included concerns about barriers to international trade, the situation in Italy and the depreciation and subsequent stabilisation of the Turkish lira and some other emerging market currencies, were reflected in domestic rates to a far smaller extent. Overall, domestic IRS rates have risen by 0.7 percentage point since the start of July 2018 (see Chart III.4.1). The growth in rates in the USA and the euro area was much lower. Domestic government bond yields also moved higher, especially at the shortest maturities (see Chart III.4.2).

The Czech government has recently raised funds in the primary market almost exclusively through longer-maturity bonds. Short-term T-bills were issued in large amounts at the start of this year with the

CHART III.4.1

INTEREST RATES

Financial market interest rates responded to the increase in the CNB's policy rates by rising at all maturities
(percentages)

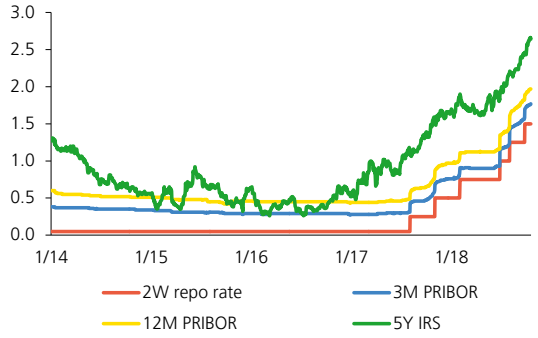
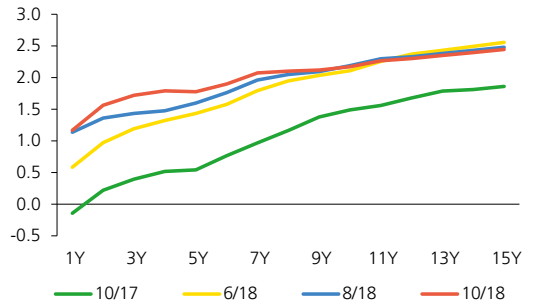


CHART III.4.2

GOVERNMENT BOND YIELD CURVE

The yield curve moved to a higher level in its short and medium-term sections and therefore flattened out
(percentages)



35 The two-week repo rate was set at 1.75%, the Lombard rate at 2.75% and the discount rate at 0.75% with effect from 2 November 2018.

aim, among other things, of investing the funds raised at better rates of return on the money market. At that time, the corresponding PRIBOR rates were much higher than the interest costs of T-bills in primary auctions. However, the relative advantageousness of T-bills decreased compared with the previous period and the Ministry of Finance is no longer doing this.[36] The lower issuance is also due to a lower funding need, as the state budget has so far recorded surpluses. According to Ministry of Finance data, the share of non-residents in total government bond holdings was 39.9%, or CZK 568 billion in absolute terms, at the end of September. Non-residents' total koruna assets in the Czech Republic (including short-term deposits at banks) thus remain high, despite having declined since the exit from the exchange rate commitment in April. The investor structure is probably changing simultaneously, with the short-term speculative positions built at the time of the exchange rate commitment being replaced by positions with longer investment horizons.

The interest rate on new loans for house purchase increased slightly. The rate on new mortgages was 2.5% in August and was only gradually indicating the increase in rates announced by banks. The rate on new mortgages rose by 0.7 percentage point compared with the end of 2016, when it reached a historical low (see Table III.4.1). The mortgage rate has been rising at a much slower pace than long-term financial market rates. The interest margin, which affects banks' profitability, remained low by historical standards for mortgages. Banks have already announced a further rise in the mortgage rate in response to the September increase in monetary policy rates. According to the latest Fincentrum Hypoindex data, the mortgage rate increased slightly further to 2.6% in September. The long-running decline in the consumer credit rate halted, suggesting a reversal in trend in this credit market segment as well.

The interest rate on loans to non-financial corporations kept rising. In August, the average rate reached 2.8%, 1.3 percentage points higher than in the euro area (see Chart III.4.3). The interest rate on the total stock of loans also increased further due to rapid pass-through of the changes in financial market rates to rates on new corporate loans. The rate on the stock of short-term loans has gone up by 0.9 percentage point and that on long-term loans by 0.4 percentage point since August 2017. The interest margin on corporate loans increased slightly further. Real interest rates on loans to corporations and loans to households for house purchase are slightly above zero.

Bank financing costs increased. The financial market yield curve is markedly higher than it was in mid-2017. The rate on new deposits with agreed maturity also rose, while that on overnight current account deposits, which account for 81% of total household deposits, remains

36 T-bills totalling CZK 170 billion and government bonds with maturities of over one year amounting to CZK 173 billion were issued in 2018 H1. The volumes issued since July 2018 were CZK 5 billion and CZK 72 billion respectively.

TABLE III.4.1

CLIENT INTEREST RATES ON LOANS AND DEPOSITS

The growth in the monetary policy rate is so far being reflected most strongly in interest rates on corporate loans via market rates

(interest rate in percentages in August 2018; change in percentage points)

	Interest rate	Change since November 2016	Change since August 2017
HOUSEHOLDS			
Mortgages	2.5	0.6	0.4
Mortgages with rate fixation 1–5 years	2.5	0.5	0.4
Mortgages with rate fixation 5–10 years	2.5	0.7	0.4
New mortgages	2.5	0.7	0.5
Refinanced mortgages	2.5	0.7	0.5
Consumer credit	8.5	-1.7	-1.0
Deposits			
Overnight deposits	0.1	0.0	0.0
New deposits with agreed maturity	1.0	0.0	0.6
NON-FINANCIAL CORPORATIONS			
Total new loans	2.8	0.9	0.9
Small loans (up to CZK 30 million)	3.2	0.8	1.0
Large loans (over CZK 30 million)	2.7	0.9	0.8
Total outstanding loans	3.1	0.6	0.6

CHART III.4.3

CLIENT INTEREST RATES IN THE CZECH REPUBLIC AND THE EURO AREA

The differences between client interest rates in the Czech Republic and the euro area continue to grow

(cost of borrowing indicators; percentages)

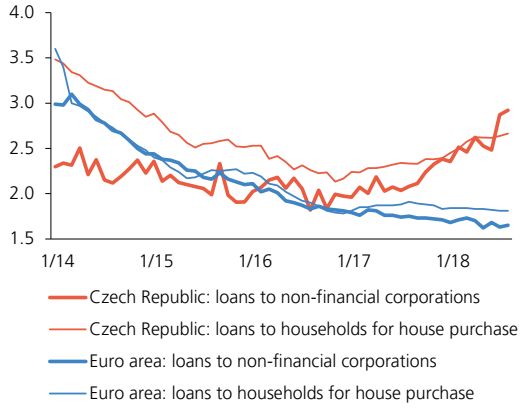


CHART III.4.4

CZK/EUR AND CZK/USD EXCHANGE RATES

The koruna appreciated slightly against both the euro and the dollar in Q3 and then weakened again

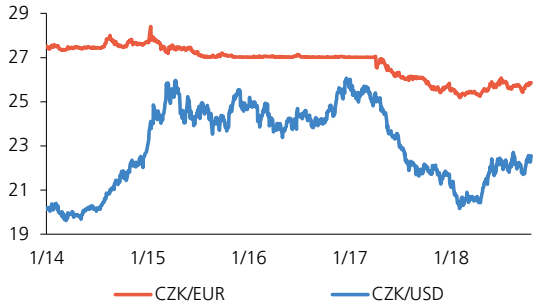


CHART III.4.5

INTEREST RATE DIFFERENTIALS

The interest rate differential of the koruna vis-à-vis the euro increased due to continued growth in CNB rates, while the negative differential vis-à-vis the dollar narrowed by a similar amount, responding only to the CNB's actions

(percentage points)

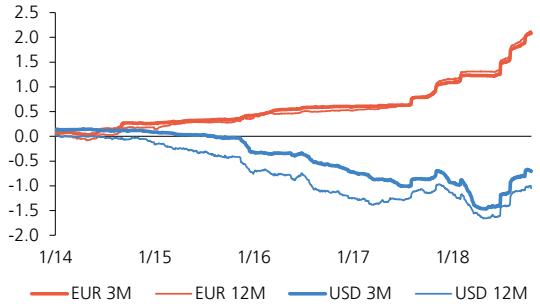
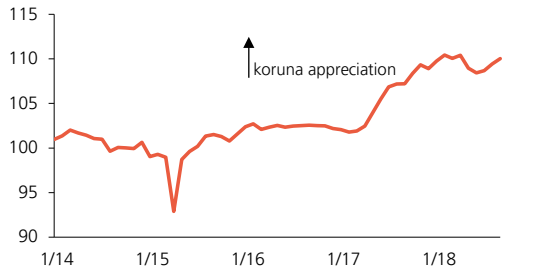


CHART III.4.6

NOMINAL EFFECTIVE KORUNA EXCHANGE RATE

The koruna strengthened markedly in effective terms in Q3, due mainly to sharp appreciation against the rouble and the renminbi and a modest firming against the euro

(basic index; 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 (64.3%). The renminbi, the zloty, the pound, the forint, the dollar and the rouble have smaller, but still significant shares (2.6%–7.8%). The shares of the remaining six currencies range between 0.9% and 1.4%. The calculation method (as applied by the IMF) includes all SITC categories.

close to zero. Interest rates on total deposits thus remain very low – at 0.3% for households and 0.1% for non-financial corporations.

III.4.2 The exchange rate

The koruna appreciated against the euro for most of Q3 but then weakened. It strengthened gradually to CZK 25.4 to the euro in late September from levels just above CZK 26 to the euro recorded in early July (see Chart III.4.4). It appreciated visibly in the second half of July and again in mid-September due to changes in expectations regarding the speed of further increase of the CNB's key interest rates. However, the appreciation was counteracted over the entire period by global factors, most notably worsening financial market sentiment about emerging market currencies. This negative sentiment was dominant at the close of September and the koruna weakened to CZK 25.8 to the euro. It then fluctuated around this level in the first half of October. The average exchange rate in Q3 was CZK 25.7 to the euro, which represents a year-on-year appreciation of 1.4%.

From late June onwards, the koruna-dollar rate showed elevated volatility rather than a clear trend (see Chart III.4.4). The average rate was CZK 22.1 to the dollar in Q3, only slightly stronger than in the same period a year earlier. In late September and early October, the koruna depreciated to CZK 22.6 to the dollar. By mid-October, however, the rate had corrected partly.

The increase in the CNB's rates is leading to growth in the short-term interest rate differential vis-à-vis the euro and a narrowing of the negative differential vis-à-vis the dollar. The difference between koruna and euro 3M money market rates widened to 2 percentage points in Q3 in response to the CNB's monetary policy rate increases (see Chart III.4.5). The growth in the 3M interbank koruna rate was also reflected in the koruna-dollar short-term interest rate differential. It also rose by 0.5 percentage point in the same period, as the 3M dollar rate increased only negligibly despite a hike in US policy rates in September. The short-term koruna-dollar interest rate differential was thus -0.7 percentage point in mid-October.

The koruna also strengthened in effective terms, appreciating sharply mainly against emerging market currencies (see Chart III.4.6). Its gains against the Russian rouble and the Chinese renminbi exceeded 5% in Q3. However, the koruna also appreciated against all the other currencies of the NEER basket except the Swiss franc in this period. The year-on-year appreciation of the koruna's nominal effective exchange rate was 2.6% in September. The most important factor is still the year-on-year strengthening of the koruna against the euro (given its weight in the index), followed by its sharp appreciation against the Russian rouble (of almost 15%).

III.4.3 Credit

The annual rate of growth of loans to the private sector has increased slightly recently, reaching 6.5% in August. Over the last three months, this growth has been due to a slightly faster rise in loans to non-financial corporations coupled with steady buoyant growth in loans for house purchase and rising growth in consumer credit (see Chart III.4.7). Credit growth is being supported by still relatively low interest rates and economic growth. However, according to the Bank Lending Survey credit standards for housing loans were further tightened on the supply side due to stricter client creditworthiness requirements and growth in banks' cost of funds. The standards for loans to non-financial corporations remained unchanged (see Chart III.4.8). For Q4, banks expect a decrease in demand for loans for house purchase, unchanged demand for consumer credit and an increase in demand for corporate loans.

Growth in loans for house purchase remains high (see Chart III.4.7). The growth was driven by increased demand before the October date of effect of changes to the CNB's recommendations setting the DTI and DSTI limits. Household demand for loans was only slightly dampened by gradually rising mortgage rates. Growth in house purchase loans thus stayed at 8.4% in August. This was reflected in stable growth in total loans to households (see Chart III.4.9).

Consumer credit has been growing at a relatively rapid rate. Household demand for loans in this segment has long been favourably affected by growth in consumption, persisting optimism and a previous decline in interest rates on these loans. The consumer credit market is characterised by new lending this year, whereas consolidation of past loans dominated last year.

Total household indebtedness remains close to a historical high. The ratio of loans and other household obligations to aggregate disposable income has been close to 66% since mid-2017. However, households' financial obligations have long been growing at a slower rate than their financial assets (see Box 3).

BOX 3 Households' net wealth, income, savings and debt

The growth in household income is being reflected in an increase in consumption and indebtedness and is being accompanied by a decline in the gross saving rate. This rate has decreased since 2016, probably due to optimistic expectations arising from the labour market situation and low interest rates. This box analyses households' net wealth and their income, savings and debt by income groups.

Households' net wealth has increased due mainly to growth in

CHART III.4.7

LOANS TO THE PRIVATE NON-FINANCIAL SECTOR

Growth in corporate loans has recently increased slightly and has been accompanied by steady growth in housing loans and rising growth in loans for household consumption
(annual percentage rates of growth)

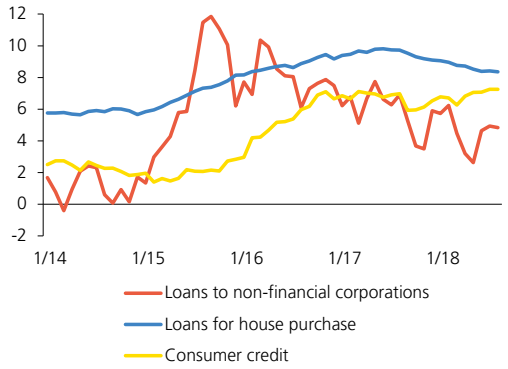


CHART III.4.8

CREDIT STANDARDS OF BANKS

Credit standards for loans for house purchase continue to tighten, while those for non-financial corporations remain unchanged
(net percentages of banking market; positive value = tightening, negative value = easing)

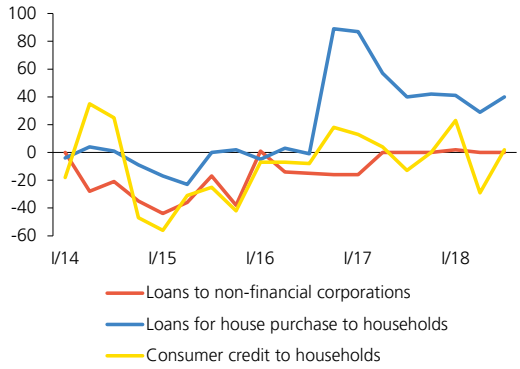


CHART III.4.9

LOANS TO HOUSEHOLDS

The stable growth in loans for house purchase was reflected in total loans to households
(annual percentage rates of growth; contributions in percentage points; end-of-quarter data; most recent data are for August 2018)

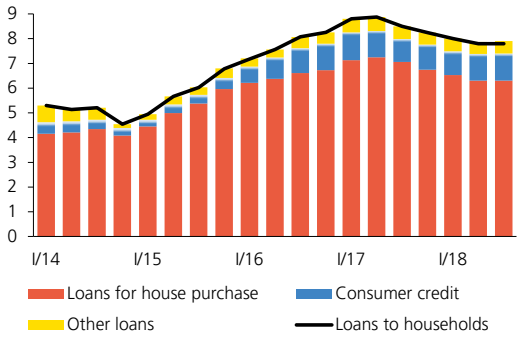


CHART 1 (BOX)

NET WEALTH OF HOUSEHOLDS

The net wealth of households has risen in recent years
(index; year 2000 = 100)

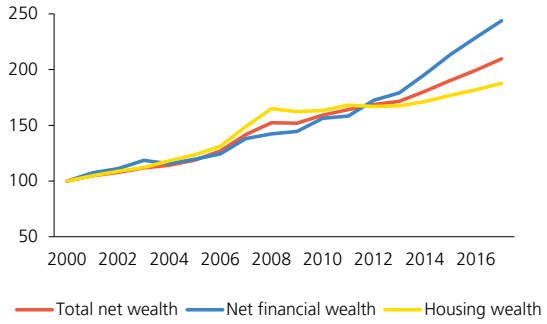


CHART 2 (BOX)

STRUCTURE OF HOUSEHOLDS' NET WEALTH

Households' financial and non-financial assets significantly exceed their financial liabilities
(CZK billions)

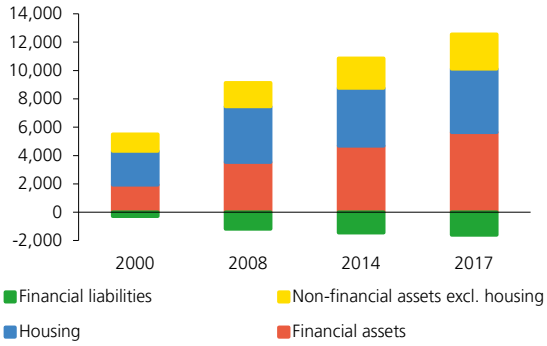
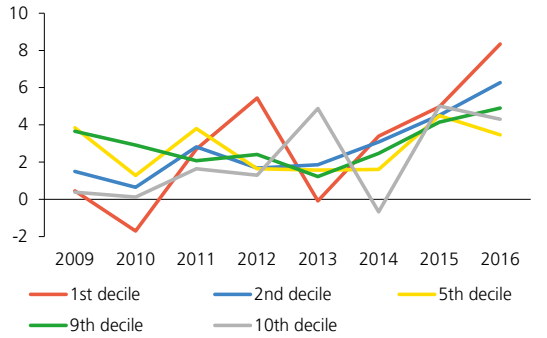


CHART 3 (BOX)

NET MONEY INCOME OF SELECTED HOUSEHOLD INCOME GROUPS

Household incomes have risen across all income deciles
(annual percentage changes; in nominal terms)



financial assets. Investment in housing has also risen amid growth in property prices.[37] Households' balance sheet position is thus stronger overall than in the past (see Chart 1). Net wealth, which is important for smoothing consumption over time, has increased by 38% over the last ten years. Until 2016, this growth was accompanied by the gross saving rate fluctuating close to its long-term average (around 12%). Households' financial and non-financial assets are still substantially higher than their financial liabilities (see Chart 2). Their net financial wealth rose at an even faster rate, by 71%, in the same period. The rise was driven mainly by growth in liquid deposits and currency and, to a lesser extent, by an increase in investment fund shares, insurance and pension reserves and purchases of long-term debt securities. A similar trend in households' net financial wealth can be observed in the euro area. However, its ratio to annualised income is much higher there than in the Czech Republic (243%, as against a domestic ratio of 157%).[38]

Faster growth in consumption than in savings started to be reflected in a falling gross saving rate at the end of 2016. The household investment rate (9%) meanwhile increased further and was accompanied by growth in indebtedness. Growth in net financial wealth slowed, mainly due to lower growth in bank deposits. In terms of quarterly transactions, households were briefly in a net borrower position in 2017 Q3 for the first time since 1999. However, a survey conducted by the CZSO in 2018 reveals that households subsequently started to perceive an expected slowdown in economic growth, their motivation to save increased and the gross saving rate rebounded slightly (to 10%). Nonetheless, households' optimism about their financial situation over the next 12 months remains at a historical high.

Households' incomes have risen in all income groups (see Chart 3). According to the Statistics on Income and Living Conditions for 2017, incomes grew fastest in the first two income deciles and rather slower in the last three deciles[39] in the previous year. In 2017, households viewed their financial situation as more favourable than in the previous period. The share of households that had no difficulty making ends meet rose to 42%. This improvement was observed for households in the first to seventh deciles, whereas the perceptions of households in the highest income deciles were essentially unchanged. Even so, one-third of households – and a full 65% of lowest-income households – could not afford to pay unexpected expenses.

37 However, the Czech data do not indicate that the rising property prices are affecting households' consumption and saving decisions, as property owners tend to have a higher saving rate and a lower propensity to consume than households living in rented properties, independently of whether property prices are moving up or down (J. Brůha, M. Hlaváček and L. Komárek (2017): *House Prices and Household Consumption: The Case of the Czech Republic*, CNB Working Paper 11/2017).

38 According to Eurostat, the net financial wealth to income ratio of households in the Czech Republic is one of the highest in the Central European region (Slovakia, Poland and Hungary have ratios of 68%, 107% and 179% respectively).

39 Households are divided into income deciles according to annual income per person.

The share of households with mortgages has increased in the medium- and high-income categories (see Chart 4). While the share of households with mortgages grew fastest in the highest income decile in the past, this share also rose for most medium- and low-income households between 2013 and 2017.[40] The share of households with mortgages rose to 18% overall in 2017. In the highest income decile it reached 24%. By contrast, the share of households using consumer credit fell to around 9%. A decline was observed across all income groups. The ratio of total debt to annual income is highest for low-income households (about 50%), while for medium- and high-income households it is around 35% and 46% respectively.

The saving rate increases with increasing income (see Chart 5). The highest saving rates in 2017 were recorded in the ninth and the tenth income deciles. In the other income deciles they were much lower and below the overall rate. The saving rates in the highest income decile and some lower-income groups started to decline in 2016 due to consumption growing faster than income. Compared with the pre-crisis period, however, the consumption-to-income ratio was down in all income groups. Households thus had a rather larger proportion of their income left even after covering loan repayments.

The shape of the Lorenz curve indicates persisting inequality in the creation of money savings (see Chart 6). Households with above-median incomes accounted for around 76% of total savings in 2017. The Gini coefficient, measuring the rate of relative inequality, was 0.41 for savings.[41] The inequality in the distribution of income has decreased slightly. Households with above-median incomes account for 67% of incomes. This is consistent with the Gini coefficient, which has fallen to 0.25.

To sum up, households' balance sheet position is stronger than it was in the past, but differences persist among income groups. Financial assets have grown at a higher rate than liabilities. The proportion of households with mortgages has risen in most income groups. The distribution of money savings remains very unequal.

40 The relatively high share of households with mortgages in low-income groups is due to the division of households into income deciles by annual income per person, where the number of household members plays an important role.

41 The Gini coefficient ranges from 0 to 1, with a higher value indicating higher inequality and a lower value lower inequality.

CHART 4 (BOX)

SHARES OF HOUSEHOLDS WITH MORTGAGES BY INCOME GROUPS

The shares of households with mortgages has increased in most income groups
(shares in %; change in shares in percentage points)

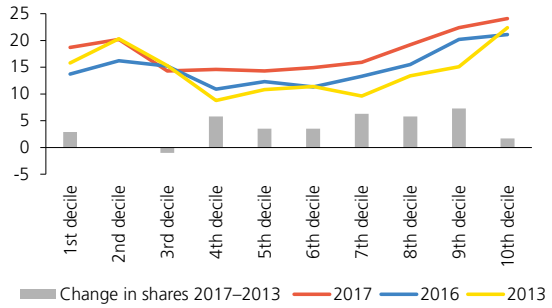


CHART 5 (BOX)

SAVING RATES OF INDIVIDUAL HOUSEHOLD INCOME GROUPS

The saving rates in the two highest income deciles are much higher than those in the other household income groups
(percentages; 2017)

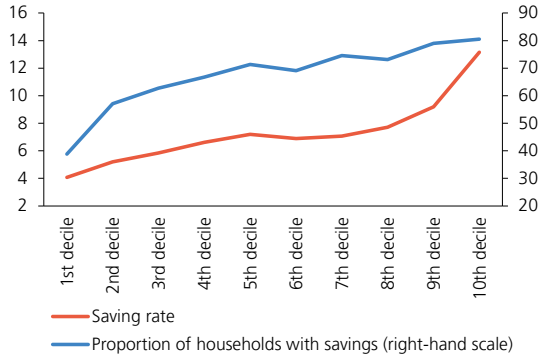
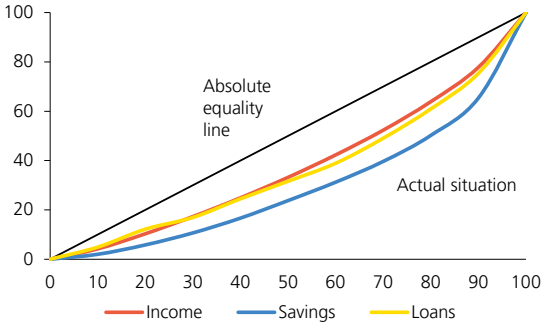


CHART 6 (BOX)

LORENZ CURVE

The inequality in the distribution of money savings was higher than the inequality in income and loans
(percentages on both axes; 2017)

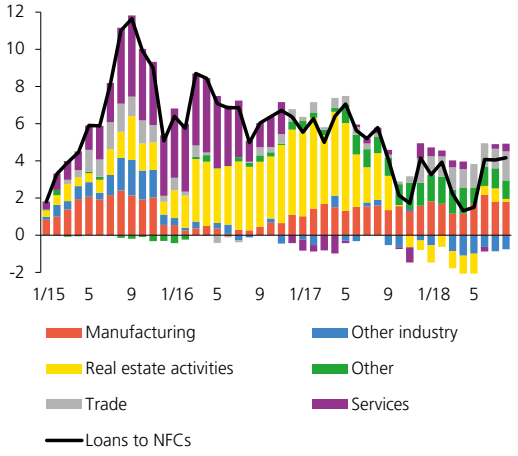


Note: The x-axis is the percentage cumulative share of households by income and the y-axis is the percentage cumulative share of households in income, savings and loans.

CHART III.4.10

LOANS TO NON-FINANCIAL CORPORATIONS BY SECTOR OF ACTIVITY

Growth in loans in the trade and services sectors has recently increased amid a stable contribution of loans to manufacturing
(annual percentage changes; contributions in percentage points)

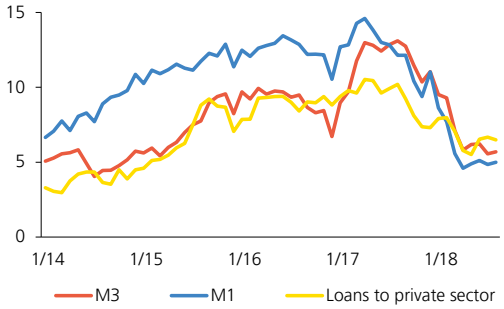


Note: Other comprises construction, agriculture and transport.

CHART III.4.11

MONETARY AGGREGATES AND LOANS

Growth in monetary aggregates stabilised close to credit growth after a previous correction
(annual percentage rates of growth)



Growth in loans to corporations has accelerated slightly over the last three months. The annual growth rate of these loans reached 4.8% in August. Growth in loans in wholesale and retail trade and services increased amid continued rapid growth of loans in manufacturing and construction (see Chart III.4.10). The strong growth in the property sector observed in previous years cooled significantly, but the volumes of loans provided remain relatively high. Demand for long-term loans grew, driven by financing of fixed investment, debt restructuring and still low interest rates. The stock of foreign currency loans remains high due to the developments seen before the exchange rate commitment was ended. Moreover, their growth has started to rise again owing to the interest rate on euro-denominated loans being lower than the rate on koruna loans. The share of foreign currency loans in total corporate loans thus rose slightly to 31%.

The share of debt securities in the structure of external financing of corporations increased. The biggest sources of external financing of corporations in Q2 were loans from domestic banks and, to a lesser extent, loans from abroad, accompanied by issuance of debt securities, which rose by 15% year on year. Trade credits, which firms used heavily for financing last year, conversely declined. The ratio of corporate debt to GDP was close to the long-term average. However, the ratio to the gross operating surplus increased and was accompanied by a drop in corporate financial assets.

III.4.4 Money

M3 growth stayed close to 6% in Q3 (see Chart III.4.11). Following a correction of the high levels recorded in the period around the exit from the exchange rate commitment, M3 growth is now at the average level observed since 2009. The highly liquid overnight deposits comprising M1 remain the biggest contributor to M3 growth. However, growth in deposits with an agreed maturity of up to two years has recently increased due to a rise in interest rates in this segment. Turning to the sector breakdown, the biggest contribution came from household deposits, whose rate of growth increased again after a previous slowdown, reaching 8.4% in August. By contrast, year-on-year growth in deposits of non-financial corporations slowed considerably to around 1% in August.

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
CPIH	experimental consumer price index incorporating prices of older properties
CZK	Czech koruna
CZSO	Czech Statistical Office
DSTI	debt service-to-income
DTI	debt-to-income
ECB	European Central Bank
EEA	European Economic Area
EIA	Environmental Impact Assessment
EIA	U.S. Energy Information Administration
EIU	Economist Intelligence Unit
ESA	European System of Accounts
ESCB	European System of Central Banks
ESR	electronic sales registration
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
HPI	house price index
ICT	Information and communications technology
IEA	International Energy Agency
ILO	International Labour Organization
IMF	International Monetary Fund
IRI	Institute for Regional Information
IRS	interest rate swap
JPY	Japanese yen
LFS	Labour Force Survey
LIBOR	London Interbank Offered Rate
LTV	loan to value
LUCI	Labour Utilisation Composite Index
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
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.

Agricultural producer prices: Surveyed by the CZSO monthly on the basis of exercise contract prices (excluding their own consumption) of products intended solely for the domestic market excluding VAT.

Apartment asking prices: Asking prices of apartments as estimated by the CZSO.

Apartment transaction prices (returns): Prices based on Ministry of Finance statistics from property transfer tax returns and published by the CZSO. These prices are the closest to actual market prices of apartments in terms of methodology, but are published with a time delay.

Apartment transaction prices (survey): An alternative source of data on transaction prices of older apartments based on a CZSO survey in estate agencies and available with a shorter time delay.

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.

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.

Housing transaction prices: An internationally comparable House Price Index (HPI), which measures movements in the price level of apartments and houses including related plots of land according to a single harmonised EU standard. It includes both new and older (previously inhabited) residential property. The source of the data is the CZSO.

Industrial producer prices: Surveyed by the CZSO monthly on the basis of data provided by selected organisations. Industrial producer prices are those agreed upon between the supplier and the customer inland. They exclude VAT, excise tax, costs of transport to the customer and costs incidental to transport, and are invoiced for more important trade cases.

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.

Labour efficiency: Affects the quantity of output per unit of labour. From a model perspective, it is the productivity of the production factor of labour in the Cobb-Douglas production function. A rise in labour efficiency enables a higher real volume of output to be produced using the same quantity of production factors. It therefore increases supply and causes the price of output relative to inputs to go down.

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.

Market services prices: Surveyed by the CZSO monthly. Market services prices comprise prices of domestic freight transport, postal and telecommunications services, banking and finance and insurance and sewerage charges.

Monetary aggregates: Represent the amount of money in the economy and are calculated from the liquid liabilities of a monetary nature of resident monetary financial institutions (the "money-issuing" sector) to other resident sectors (the "money-holding" sector). Besides households, the latter include non-financial corporations and non-monetary financial institutions, as well as local government authorities and social security funds (excluding central government). The Eurosystem has defined a narrow (M1), an intermediate (M2) and a broad aggregate (M3). These aggregates differ with respect to the degree of moneyness of the assets of residents of the Czech Republic included. The monetary aggregates also include liquid assets denominated in foreign currency of residents of the Czech Republic which are held with monetary financial institutions located in the Czech Republic. Narrow money (M1) consists of currency in circulation and overnight deposits. Intermediate money (M2) comprises narrow money (M1) and, in addition, deposits with an agreed maturity of up to two years and deposits redeemable at notice of up to three months. Broad money (M3) comprises M2 and marketable instruments issued by the monetary financial institutions sector. Certain money market instruments, in particular money market fund shares/units, and repurchase agreements, which are close substitutes for deposits, are included in this aggregate.

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. In addition to domestic and external demand, the price of capital reflects the price deflator of fixed investment, which is affected by movements in the 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.

Non-tradables prices: Prices of items in the CZSO consumer basket which have the nature of services. These items can be divided into administered (e.g. water supply and sewerage collection charges, waste collection charges, public transport, electricity and gas, health care and education) and other (e.g. imputed rent proxying for housing prices, rental housing, repair services, recreation and accommodation, restaurants and canteens, body care services and financial and insurance services). These other items are included in core inflation.

Primary income: An item on the current account of the balance of payments comprising income from labour, capital, financial resources provided and non-produced non-financial assets (wages and salaries, dividends, reinvested earnings, interest, rent as well as taxes and subsidies on production and on imports, which represent a part of the financial flows vis-à-vis the EU budget). In a more detailed breakdown, primary income consists of three balances: compensation of employees, investment income and other primary income.

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.

Secondary income: An item on the current account of the balance of payments covering offsets to real and financial resources provided or acquired without a quid pro quo (subsidies and contributions vis-à-vis the EU budget and EU funds, pensions, foreign assistance, benefits, etc.)

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

Tradables prices: Prices of items of the CZSO consumer basket which are included in core inflation and have the nature of goods. They include, for example, clothing, footwear, equipment for housing and gardening, transport equipment and IT equipment. However, this category excludes prices of food, alcohol, tobacco and fuels, which follow specific patterns.

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.

Whole-economy labour productivity: Calculated as the ratio of seasonally adjusted 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.

		years										
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
DEMAND AND SUPPLY												
Gross domestic product												
GDP	CZK bn, constant p. of 2010, seas. adjusted	3958.4	4028.9	3999.6	3980.2	4088.2	4308.3	4409.9	4607.3	**4750.2**	**4905.4**	**5067.2**
GDP	%, y-o-y, real terms, seas. adjusted	2.1	1.8	-0.7	-0.5	2.7	5.4	2.4	4.5	**3.1**	**3.3**	**3.3**
Household consumption	%, y-o-y, real terms, seas. adjusted	1.0	0.3	-1.2	0.5	1.8	3.8	3.5	4.4	**3.6**	**3.5**	**3.2**
Government consumption	%, y-o-y, real terms, seas. adjusted	0.5	-3.2	-2.0	2.5	1.1	1.9	2.7	1.3	**2.7**	**2.3**	**2.3**
Gross capital formation	%, y-o-y, real terms, seas. adjusted	4.2	1.8	-3.9	-5.1	8.5	13.0	-4.3	3.8	**3.6**	**5.3**	**4.9**
Gross fixed capital formation	%, y-o-y, real terms, seas. adjusted	1.0	0.9	-2.9	-2.5	3.9	10.4	-3.3	3.7	**8.9**	**4.8**	**4.2**
Exports of goods and services	%, y-o-y, real terms, seas. adjusted	14.3	9.2	4.5	0.2	8.7	6.2	4.1	7.2	**4.9**	**5.9**	**7.4**
Imports of goods and services	%, y-o-y, real terms, seas. adjusted	14.4	6.7	2.8	0.1	10.1	6.9	2.6	6.3	**5.5**	**6.8**	**8.0**
Net exports	CZK bn, constant p. of 2010, seas. adjusted	121.1	193.5	246.5	250.4	233.8	226.8	283.9	332.7	**327.8**	**314.0**	**315.5**
Coincidence indicators												
Industrial production	%, y-o-y, real terms	8.6	5.9	-0.8	-0.1	5.0	4.3	3.4	6.5	**-**	**-**	**-**
Construction output	%, y-o-y, real terms	-7.4	-3.6	-7.6	-6.7	4.3	6.8	-5.6	3.3	**-**	**-**	**-**
Receipts in retail sales	%, y-o-y, real terms	1.5	1.7	-1.1	1.2	5.5	7.7	6.1	4.5	**-**	**-**	**-**
PRICES												
Main price indicators												
Inflation rate	%, end-of-period	1.5	1.9	3.3	1.4	0.4	0.3	0.7	2.5	**-**	**-**	**-**
Consumer Price Index	%, y-o-y, average	1.5	1.9	3.3	1.4	0.4	0.3	0.7	2.5	**2.2**	**2.6**	**2.0**
Regulated prices (18.70%)*	%, y-o-y, average	2.6	4.7	8.6	2.2	-3.0	0.0	0.2	0.0	**1.8**	**2.5**	**1.7**
Food prices (including alcoholic beverages and tobacco) (24.58%)*	%, y-o-y, average	0.9	4.3	2.9	3.1	1.8	0.0	0.2	3.6	**1.9**	**2.9**	**2.6**
Core inflation (53.32%)*	%, y-o-y, average	-1.2	-0.4	-0.3	-0.5	0.5	1.2	1.2	2.4	**2.1**	**2.3**	**2.1**
Fuel prices (3.39%)*	%, y-o-y, average	12.8	7.2	6.0	-2.1	0.2	-13.5	-8.5	6.7	**6.8**	**4.3**	**-2.1**
Monetary policy inflation (excluding tax changes)	%, y-o-y, average	0.4	1.9	2.1	0.6	0.2	0.2	0.5	2.5	**2.2**	**2.5**	**2.0**
GDP deflator	%, y-o-y, seas. adjusted	-1.4	0.0	1.5	1.4	2.5	1.2	1.3	1.5	**2.0**	**2.4**	**2.0**
Partial price indicators												
Industrial producer prices	%, y-o-y, average	1.2	5.6	2.1	0.8	-0.8	-3.2	-3.3	1.8	**2.1**	**2.5**	**1.2**
Agricultural prices	%, y-o-y, average	7.1	22.1	3.3	-12.1	4.7	-6.2	-6.0	7.4	**-0.3**	**4.8**	**-0.3**
Construction work prices	%, y-o-y, average	-0.2	-0.5	-0.7	-1.1	0.5	1.2	1.1	1.7	-	-	-
Brent crude oil (in USD/barrel)	%, y-o-y, average	28.4	38.2	0.7	-2.6	-8.5	-46.1	-16.0	21.7	**37.5**	**7.9**	**-5.1**
LABOUR MARKET												
Average monthly wage	%, y-o-y, nominal terms	2.2	2.5	2.5	-0.1	2.9	3.2	3.7	7.0	**8.2**	**6.9**	**5.6**
Average monthly wage	%, y-o-y, real terms	0.7	0.6	-0.8	-1.5	2.5	2.9	3.0	4.4	**6.0**	**4.4**	**3.5**
Number of employees	%, y-o-y	-2.2	0.0	-0.1	1.6	0.6	2.2	2.1	1.7	**1.7**	**0.8**	**0.5**
Unit labour costs	%, y-o-y	-1.5	0.3	3.4	1.0	0.9	-0.5	3.2	3.8	**6.5**	**4.1**	**2.6**
Unit labour costs in industry	%, y-o-y	-6.2	0.7	5.9	5.1	-0.4	1.8	4.3	-0.4	-	-	-
Aggregate labour productivity	%, y-o-y	3.3	2.1	-1.2	-0.8	2.2	3.8	0.8	2.7	**1.5**	**2.7**	**2.9**
ILO general unemployment rate	%, average, age 15–64	7.4	6.8	7.0	7.1	6.2	5.1	4.0	2.9	**2.3**	**2.1**	**2.0**
Share of unemployed persons (MLSA)	%, average	7.0	6.7	6.8	7.7	7.7	6.5	5.5	4.2	**3.2**	**3.0**	**2.9**
PUBLIC FINANCE												
Government budget balance (ESA2010)	CZK bn, current prices	-166.0	-109.9	-159.6	-51.1	-90.6	-27.9	34.6	78.2	**80.0**	**75.0**	**89.0**
Government budget balance / GDP**	%, nominal terms	-4.2	-2.7	-3.9	-1.2	-2.1	-0.6	0.7	1.5	**1.5**	**1.3**	**1.5**
Government debt (ESA2010)	CZK bn, current prices	1480.2	1606.5	1805.4	1840.4	1819.1	1836.3	1754.9	1749.5	**1753.2**	**1734.1**	**1710.0**
Government debt / GDP**	%, nominal terms	37.4	39.8	44.5	44.9	42.2	40.0	36.8	34.7	**33.1**	**30.9**	**28.9**
EXTERNAL RELATIONS												
Current account												
Trade balance	CZK bn, current prices	40.4	75.5	123.8	167.0	220.0	188.0	245.7	240.9	**225.0**	**215.0**	**225.0**
Trade balance / GDP	%, nominal terms	1.0	1.9	3.0	4.1	5.1	4.1	5.2	4.8	**4.2**	**3.8**	**3.8**
Balance of services	CZK bn, current prices	78.5	81.3	77.6	70.4	55.7	78.0	107.6	122.0	**135.0**	**140.0**	**145.0**
Current account	CZK bn, current prices	-141.8	-84.8	-63.3	-21.8	7.9	11.3	74.2	54.2	**40.0**	**35.0**	**35.0**
Current account / GDP	%, nominal terms	-3.6	-2.1	-1.6	-0.5	0.2	0.2	1.6	1.1	**0.8**	**0.6**	**0.6**
Foreign direct investment												
Direct investment	CZK bn, current prices	-95.0	-46.8	-121.3	7.4	-80.4	49.7	-186.5	-135.3	**-80.0**	**-60.0**	**-60.0**
Exchange rates												
CZK/USD	average	19.1	17.7	19.6	19.6	20.8	24.6	24.4	23.4	**21.6**	**20.9**	**19.9**
CZK/EUR	average	25.3	24.6	25.1	26.0	27.5	27.3	27.0	26.3	**25.6**	**24.7**	**24.2**
CZK/EUR	%, y-o-y, real (CPI euro area), avg.	-4.5	-1.9	1.5	3.5	6.3	-1.2	-1.3	-3.4	**-3.0**	**-4.1**	**-1.7**
CZK/EUR	%, y-o-y, real (PPI euro area), avg.	-3.9	-3.0	2.2	2.4	5.1	-0.2	0.1	-1.8	**-1.6**	**-3.5**	**-1.4**
Foreign trade prices												
Prices of exports of goods	%, y-o-y, average	-1.0	1.7	2.9	1.2	3.5	-1.7	-3.1	-0.1	**-0.3**	**0.1**	**0.0**
Prices of imports of goods	%, y-o-y, average	2.0	4.3	4.2	-0.2	1.9	-1.9	4.0	0.9	**-0.3**	**1.1**	**-0.7**
MONEY AND INTEREST RATES												
M3	%, y-o-y, average	0.2	1.0	5.1	5.1	5.1	7.3	9.1	11.7	**6.8**	**7.6**	**9.3**
2W repo rate	%, end-of-period, CNB forecast = average	0.75	0.75	0.05	0.05	0.05	0.05	0.05	0.50	**1.07**	**1.77**	**2.12**
3M PRIBOR	%, average	1.3	1.2	1.0	0.5	0.4	0.3	0.3	0.4	**1.3**	**2.0**	**2.3**

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

2016				2017				2018				2019				2020			
QI	QII	QIII	QIV	QI	QII	QIII	QIV	QI	QII	QIII	QIV	QI	QII	QIII	QIV	QI	QII	QIII	QIV
1095.5	1099.2	1103.3	1112.0	1126.9	1153.4	1159.5	1167.4	1173.0	1181.5	1191.1	1204.5	1214.0	1219.9	1230.5	1241.0	1251.0	1261.5	1271.7	1283.0
3.6	2.4	1.7	1.8	2.9	4.9	5.1	5.0	4.1	2.4	2.7	3.2	3.5	3.2	3.3	3.0	3.1	3.4	3.3	3.4
3.8	3.5	3.6	3.3	3.7	4.8	4.6	4.5	4.4	3.5	3.4	3.3	3.5	3.5	3.6	3.6	3.2	3.2	3.2	3.1
2.5	3.2	2.6	2.5	1.8	1.3	0.8	1.2	3.5	2.8	2.2	2.3	1.3	1.7	3.0	3.1	2.5	2.5	2.2	2.0
1.1	-6.8	-6.1	-5.0	-3.4	2.1	7.6	9.3	7.4	2.4	0.8	4.1	3.0	7.6	6.7	4.1	7.0	4.7	4.2	3.9
1.5	-5.4	-4.4	-4.6	-1.5	6.0	5.2	5.4	10.3	7.8	8.3	9.4	5.8	5.1	4.6	3.8	4.4	4.4	4.0	3.8
6.5	5.4	2.6	2.2	5.5	7.7	7.6	7.9	5.3	3.5	5.6	5.4	5.4	5.7	6.2	6.4	6.6	7.6	7.7	7.9
5.7	2.9	1.2	0.8	3.7	5.8	7.2	8.4	6.6	4.4	5.5	5.7	4.9	7.2	7.8	7.5	8.2	8.0	7.9	7.9
65.9	69.1	71.2	77.8	84.0	89.4	79.3	80.0	76.9	84.8	85.0	81.2	86.3	75.7	75.7	76.3	76.4	77.4	79.1	82.6
3.2	6.1	0.8	3.5	8.4	4.3	5.5	7.8	1.9	2.9	-	-	-	-	-	-	-	-	-	-
-6.8	-8.8	-6.2	-1.6	0.9	7.2	1.6	3.0	11.9	6.7	-	-	-	-	-	-	-	-	-	-
7.1	8.5	4.7	4.3	7.0	3.5	3.3	4.6	2.7	2.9	-	-	-	-	-	-	-	-	-	-
0.4	0.3	0.4	0.7	1.2	1.5	2.0	2.5	2.4	2.3	2.3	-	-	-	-	-	-	-	-	-
0.4	0.2	0.6	1.5	2.5	2.2	2.5	2.6	1.9	2.3	2.4	2.5	2.8	2.6	2.5	2.2	2.1	2.0	2.0	2.0
0.7	0.2	-0.1	-0.1	-0.5	-0.1	0.2	0.3	1.4	1.8	2.1	2.0	2.8	2.6	2.2	2.4	1.8	1.7	1.6	1.6
-0.4	-0.8	0.2	1.8	3.4	2.9	3.9	4.4	2.5	2.5	1.1	1.6	2.4	2.7	3.7	2.8	2.4	2.5	2.6	2.6
1.3	1.1	1.1	1.4	2.1	2.5	2.7	2.5	1.7	1.9	2.3	2.3	2.6	2.4	2.0	2.2	2.2	2.1	2.1	2.1
-12.4	-12.4	-9.5	0.2	15.1	7.5	1.7	2.6	-1.6	5.0	12.4	11.3	10.9	5.8	2.1	-1.7	-2.0	-2.0	-2.4	-1.8
0.3	0.0	0.3	1.3	2.5	2.3	2.7	2.7	1.8	2.1	2.3	2.4	2.8	2.6	2.5	2.2	2.1	2.0	2.0	2.0
1.4	1.1	1.3	1.2	0.7	1.0	1.7	2.4	2.6	2.3	1.3	2.0	1.9	2.5	2.8	2.2	2.3	2.2	2.1	1.7
-4.0	-4.6	-3.3	-1.1	2.7	2.3	1.4	0.9	0.1	1.5	3.3	3.6	3.8	2.9	1.9	1.4	1.1	1.1	1.3	1.5
-3.2	-8.2	-7.0	-4.9	0.2	10.1	11.4	8.2	4.0	-3.4	-2.3	1.1	3.7	8.1	5.9	0.6	-1.0	-1.2	-0.2	1.4
1.2	1.1	1.0	1.2	1.4	1.6	1.7	2.0	2.3	2.8	3.6	-	-	-	-	-	-	-	-	-
-36.3	-26.1	-7.6	16.0	57.6	9.1	11.0	20.8	22.9	47.6	45.8	36.1	23.3	9.5	6.6	-4.4	-4.8	-5.1	-5.2	-5.3
4.7	4.0	4.7	4.4	4.5	6.9	6.1	7.4	8.6	8.6	8.2	7.6	7.3	6.8	6.9	6.8	6.1	5.8	5.4	5.1
4.2	3.8	4.2	3.0	2.1	4.6	3.5	4.7	6.6	6.2	5.8	5.1	4.4	4.2	4.4	4.6	4.0	3.7	3.4	3.0
2.8	2.0	1.9	1.9	1.1	1.3	2.2	2.1	2.1	2.1	1.4	1.1	1.0	0.8	0.7	0.6	0.5	0.5	0.5	0.5
2.8	1.9	4.0	4.0	3.0	4.6	3.1	4.4	6.9	7.3	6.6	5.2	4.2	4.0	3.9	4.1	3.4	2.7	2.4	2.0
6.4	3.1	5.4	2.5	-1.0	1.9	-2.8	-0.1	5.6	6.0	-	-	-	-	-	-	-	-	-	-
1.5	2.1	0.1	-0.1	2.1	2.3	2.9	3.5	1.6	0.8	1.7	2.1	2.8	2.6	2.8	2.6	2.6	3.0	2.9	3.0
4.4	4.0	4.0	3.6	3.5	3.0	2.8	2.4	2.4	2.2	2.3	2.2	2.3	2.1	2.1	2.1	2.1	2.0	2.0	1.9
6.3	5.4	5.3	5.0	5.1	4.2	3.9	3.6	3.7	3.1	3.0	3.0	3.3	2.8	2.9	2.9	3.2	2.8	2.8	2.8
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83.1	80.5	44.7	37.4	88.8	71.7	42.7	37.8	83.4	71.6	34.0	36.0	80.0	67.0	35.0	33.0	81.0	70.0	38.0	36.0
7.5	6.7	3.7	3.0	7.7	5.7	3.3	2.8	6.8	5.4	2.5	2.6	6.2	4.8	2.5	2.2	5.9	4.7	2.5	2.3
25.3	26.4	28.7	27.2	28.5	33.3	31.5	28.7	33.6	36.2	34.0	31.2	35.0	37.0	35.0	33.0	36.0	38.0	37.0	34.0
119.5	-10.0	-19.2	-16.1	97.5	-8.1	-34.5	-0.7	55.8	8.5	-30.0	5.7	96.0	-5.0	-49.0	-7.0	92.0	-7.0	-45.0	-5.0
10.8	-0.8	-1.6	-1.3	8.4	-0.6	-2.7	-0.1	4.5	0.6	-2.2	0.4	7.4	-0.4	-3.4	-0.5	6.7	-0.5	-3.0	-0.3
-1.8	-95.6	-63.0	-26.2	-62.7	-26.2	-12.1	-34.3	-9.6	-46.2	-	-	-	-	-	-	-	-	-	-
24.5	23.9	24.2	25.1	25.4	24.1	22.2	21.8	20.7	21.5	22.1	22.2	21.5	21.0	20.6	20.3	20.1	20.0	19.9	19.8
27.0	27.0	27.0	27.0	27.0	26.5	26.1	25.7	25.4	25.6	25.7	25.7	25.1	24.7	24.5	24.4	24.3	24.2	24.2	24.2
-2.4	-1.5	-0.4	-0.7	-0.7	-2.6	-4.3	-6.0	-6.3	-3.8	-1.7	0.0	-1.8	-3.9	-5.2	-5.5	-3.3	-2.0	-1.0	-0.6
-1.5	0.0	1.1	1.0	0.4	-1.3	-2.6	-3.7	-4.4	-2.1	-0.6	0.6	-1.5	-3.3	-4.4	-4.9	-2.8	-1.6	-0.8	-0.3
-4.1	-4.3	-2.6	-1.3	2.2	0.9	-1.1	-2.4	-4.4	-1.6	1.7	3.2	2.4	0.6	-0.9	-1.8	-1.0	-0.3	0.3	0.8
-5.7	-6.3	-3.7	-0.4	5.1	2.9	-0.9	-3.3	-6.1	-2.3	2.8	4.9	4.9	2.3	-0.4	-2.3	-1.8	-1.0	-0.4	0.2
9.7	9.6	9.0	8.0	10.2	12.7	12.7	11.1	8.7	6.1	5.6	6.7	6.8	7.3	7.8	8.6	9.1	9.4	9.5	9.4
0.05	0.05	0.05	0.05	0.05	0.05	0.25	0.50	0.75	1.00	1.50	1.68	1.87	1.80	1.70	1.72	1.88	2.04	2.20	2.37
0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.7	0.9	0.9	1.4	1.9	2.1	2.0	1.9	1.9	2.1	2.2	2.4	2.6

Issued by:
CZECH NATIONAL BANK
Na Příkopě 28
115 03 Praha 1
Czech Republic

Contact:
COMMUNICATIONS DIVISION
GENERAL SECRETARIAT
Tel.: +420 22441 3112
Fax: +420 22441 2179

http://www.cnb.cz

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