Monetary Policy Report
Winter 2023

Czech National Bank —— Monetary Policy Report —— Winter 2023

CNB CZECH NATIONAL BANK

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This Monetary Policy Report was approved by the CNB Bank Board on 9 February 2023 and (with some exceptions) contains the information available as of 20 January 2023. By means of this document, the CNB fulfils its statutory duty to regularly inform constitutional officials and the public about monetary developments. Unless stated otherwise, the sources of the data are the CZSO or the CNB. All the reports published to date, along with the underlying data, are available on our website. A large part of the data we evaluate in our monetary policy decision-making can be found in the Chartbook, which is a parallel publication to the Monetary Policy Report.

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We maintain price stability

Under the Constitution of the Czech Republic and in accordance with primary EU law, the primary objective of the Czech National Bank is to maintain price stability. The central bank contributes to sustainable economic growth by maintaining a low-inflation environment. We have been pursuing price stability in an inflation targeting regime since 1998.

We are transparent

Our monetary policy is based on a publicly announced inflation target of 2% and open communication with the public. We believe that by being transparent and predictable, the central bank assists households and companies in their economic decision-making.

We look to the future

A decision made by the CNB Bank Board today will affect inflation 12–18 months ahead. The CNB's forecast describes the most likely future path of the economy as seen by our Monetary Department's economists. The Bank Board is also consulted in the forecasting process. The forecast is produced four times a year and, along with a discussion of related risks and uncertainties, is the key, but not the only, input to the CNB Bank Board's monetary policy decisions.

We decide on rates

The CNB's main monetary policy instrument is the two-week repo rate. The decision on the level of this rate sends an impulse through the financial market to the whole economy, ultimately affecting inflation in such a way as to keep it close to the target. The Bank Board meets eight times a year to discuss monetary policy issues. When making rate decisions, the members of the Bank Board discuss the current forecast and assess the newly available information and the risks and uncertainties of the forecast.

Governor's foreword

Dear Readers,

It is my pleasure to present the winter issue of the Monetary Policy Report. The Report is one of the main inputs to the Bank Board's decision-making on CNB monetary policy.

At our February meeting, my Bank Board colleagues and I kept interest rates unchanged. The two-week repo rate remains at 7%, the highest level since 1999. Five members voted in favour of this decision, and two members voted for increasing rates by 0.5 percentage point. The Czech National Bank will continue to prevent excessive fluctuations of the koruna.

The CNB's interest rates are at a level that is dampening domestic demand pressures. They are slowing growth in koruna bank loans to households and firms and hence also in the quantity of money in the economy. Taking into account the inflation outlook one year ahead, real interest rates have risen to positive levels for the first time in many years. Monetary conditions have also tightened further due to the koruna appreciating against the euro. The Bank Board will wait for further data and will assess them. It will decide at the next meeting whether rates will remain unchanged or increase.

The decision adopted is underpinned by a new macroeconomic forecast, which is presented in detail in this Report. The monetary policy horizon in the baseline scenario is the first half of 2024, as in the previous forecast. We have thus returned to the original monetary policy horizon. The baseline scenario implies temporary growth in the market interest rate, followed by a decline from 2023 Q2 onwards. In addition, the Bank Board discussed a scenario in which the CNB's key interest rates remain at the current level for longer. In both scenarios, inflation falls close to the target in the first half of next year.

At the same time, the Bank Board confirmed its determination to continue fighting inflation until it is fully under control, i.e. stabilised at the 2% target. This means interest rates will remain relatively high for some time.

The Bank Board assures the public that the CNB's actions will be sufficient to restore price stability in accordance with its statutory mandate. In addition, the Bank Board is ready to react appropriately to any materialisation of the risks of the forecast.

On behalf of the Czech National Bank

Aleš Michl

Governor

The decision, and the current outlook and its risks

At its February meeting, the Bank Board kept the two-week repo rate unchanged at 7%. The decision is based on the baseline scenario of the CNB's winter macroeconomic forecast. In the forecast, the central bank looks at a monetary policy horizon 12–18 months ahead. The horizon is thus currently the first half of 2024, as in the previous two forecasts. The distance between the decision-making moment and the monetary policy horizon has been shortened by one quarter compared to the previous forecast. This mainly reflects easing external cost pressures. Consistent with the winter forecast is a rise in market interest rates initially, ensuring robust fulfilment of the inflation target next year. In expectation of the latter, interest rates will be able to start coming down in the course of this year. Domestic economic activity will decrease in the first half of this year, as economic output will be dampened by a worsening financial situation of households, slowing external demand and receding problems in global value chains. Inflation will rise again in early 2023, mainly because of a rise in electricity prices. It will then slow sharply due to decreasing foreign and domestic cost pressures, dropping to single digits in the second half of 2023. Inflation will decline to the CNB's 2% target at the monetary policy horizon. The Bank Board assessed the uncertainties and risks of the baseline scenario of the winter macroeconomic forecast as being significant and going in both directions.

The exceptionally strong price pressures in the Czech economy have started to ease after peaking last year. This is being fostered by a decline in global inflation pressures amid a dampening of domestic and external demand together with energy consumption savings and the mild winter so far. Import prices of energy, which have been a major cost factor up to now, will begin to reduce inflation gradually. The decrease in inflation pressures will also be due to slower growth in domestic costs. However, the latter will remain elevated, as wage growth will fall only gradually.

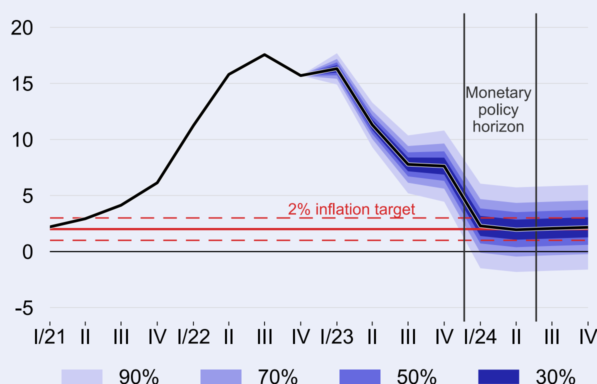
Consumer price inflation is showing considerable volatility at the turn of the year due to movements in energy prices. Inflation fell in autumn 2022 owing to the inclusion of a government measure to help with the high energy prices (the energy savings tariff). This was reflected in a temporary but sizeable drop in electricity prices in Q4. Administered price inflation – and hence also consumer price inflation – will rise again in early 2023. This will be caused mainly by a rise in electricity prices, which will stop at the government price cap that replaces the energy savings tariff. At the same time, the usual January repricing of goods and services will be above the long-term average.

Consumer price inflation will rise again in January, exceeding 17%. However, it will start to fall in the subsequent months, dropping to single digits in the second half of the year. In the first half of 2024, inflation will decline to the CNB's 2% target, with all its components contributing. Core inflation started to come down in 2022 Q4, and a continued decrease will be fostered by diminishing growth in foreign producer prices and cooling domestic demand. The contribution of imputed rent is falling rapidly, fully reflecting the previous interest rate increases, which have slowed growth in house purchase loans and property prices. Declining global agricultural commodity prices and domestic agricultural producer prices will foster a further slowdown in food price inflation, which peaked in November 2022. Fuel prices will start to decline year on year in 2023 Q1. Administered price inflation will be extremely high and volatile this year and will not decline significantly until next year.

The Czech economy will contract overall this year. The downturn will be concentrated mainly in the first half of the year, due to falling household consumption expenditure and gross investment. Czech households are facing a deep decline in real income, which is being partly offset by government support. This, together with negative sentiment, is being reflected in a decline in their consumption. Fixed investment will fall in the first half of the year owing to a downturn in external demand and worse business sentiment. The cooling of external demand will hold back export activity in early 2023. However, exports will gradually be supported in the first half of this year by the fading of problems with global logistics and supplies of materials and components for production. Those problems have been weighing heavily on industry, fostering higher additions to inventories. The downturn in domestic demand will cause import growth to lag well behind export growth this year. The contribution of net exports to economic growth will be strongly positive in 2023. It will continue to support GDP growth slightly in 2024.

Inflation will rise again in 2023 Q1 and then start to fall, dropping to the 2% target in the first half of 2024

headline inflation; y-o-y in %; confidence intervals in colours



Following a slight decrease in output this year, the economy will start to grow again in 2024

y-o-y changes in % (unless otherwise indicated); changes in pp compared to previous forecast in brackets

	2022	2023	2024
Headline inflation (%)	**15.1**	**10.8**	**2.1**
	(-0.7)	(1.7)	(-0.2)
GDP	**2.5**	**-0.3**	**2.2**
	(0.3)	(0.4)	(-0.3)
Average nominal wage	**6.5**	**8.5**	**6.9**
	(0.2)	(0.8)	(0.0)
3M PRIBOR (%)	**6.3**	**7.0**	**4.8**
	(-0.3)	(0.0)	(-0.5)
Exchange rate (CZK/EUR)	**24.6**	**24.5**	**24.6**
	(-0.1)	(-0.4)	(-0.1)

Green indicates a shift of the forecast to higher levels, or to a weaker koruna exchange rate, compared with the previous forecast. Red indicates a shift in the opposite direction.

Fiscal policy will make a slightly positive contribution to GDP growth overall this year, despite the fading out of part of last year's support expenditure. This is because the effect of the government measures to fight high energy prices and the addition of a child-raising bonus to pensions will dominate. In 2024, by contrast, fiscal policy will dampen economic growth due to the termination of the support measures and an only slow start to the absorption of investment from EU funds in the new programme period.

The previous overheating of the Czech economy dissipated as its growth slowed last year. By the close of the year, the economy was operating below its potential, the growth of which was adversely affected by the problems in international logistics and in the supply of materials and production components. The output gap will stay negative until mid-2024. The labour market is also cooling and its tightness will decrease slightly further. The economic downturn is fostering a drop in labour demand. The decline in employment and gradual rise in unemployment will continue this year. The excess demand for labour will decrease further. Nominal wage growth, which rose sharply at the close of last year, will remain high over the next two years. The bargaining position of employees will stay strong for some time. Firms' still good financial condition and a further increase in the minimum wage in January 2023 will also foster buoyant wage growth. However, the scope for wage increases in firms will be reduced by high energy prices and lingering problems in global value chains. As a result, wages will catch up only gradually with inflation and will start to rise in real terms at the end of this year.

The koruna appreciated in late 2022 and early 2023. This was due to a correction of energy prices caused by the mild winter, among other factors, and to better market sentiment related to the CNB's declaration that it was ready to prevent excessive fluctuations of the koruna. The koruna will weaken slightly this year, mainly as a result of a narrowing interest rate differential vis-à-vis the euro area. The exchange rate will strengthen gradually in 2024 as the high energy prices and the problems in global value chains unwind.

Consistent with the forecast is a rise in market interest rates initially, followed by a gradual decline. The temporary rise in interest rates reflects the fading extraordinary inflation pressures and the central bank's effort to fulfil the 2% inflation target at the monetary policy horizon. In the course of 2023, CNB interest rates will be able to start coming down in expectation of inflation stabilising at the target in 2024.

There are numerous substantial risks and uncertainties associated with the forecast. More expansionary fiscal policy is an upside risk. The threat of inflation expectations becoming unanchored and the related risk of a wage-price spiral also remain significant risks in the same direction. By contrast, a stronger-than-forecasted downturn in domestic consumer and investment demand is a downside risk. A faster-than-expected decline in core inflation is also an anti-inflationary risk. The extent of repricing of goods and services in January, which will affect annual inflation throughout 2023, is a risk in both directions. The general uncertainties of the outlook include the future course of the war in Ukraine, the availability and prices of energy, and the future monetary policy stance abroad.

I. ECONOMIC DEVELOPMENTS ABROAD

The euro area, and Germany in particular, is showing substantial economic resilience to the energy crisis. However, the recovery is being held back by slowing global demand and tightening monetary conditions both inside and outside the monetary union. The budgets of euro area households are tight as a result of high inflation and energy prices, but continued government support measures coupled with a robust labour market have so far prevented a marked decline in private consumption. Concerns about a possible recession in late 2022 and early 2023 have therefore receded. This is being aided by the mild winter so far, which has limited the use of gas from European storage facilities. Coupled with savings in energy consumption, this has led to a significant drop in current and expected prices of gas and electricity. Cheaper energy and fading supply chain problems will foster diminishing inflation pressures in the euro area production sector.

The global inflation pressures will gradually dissipate this year, amid further monetary policy tightening by major central banks and slowing international trade

The major central banks will continue to tighten monetary conditions this year. After the meetings of the ECB and the Fed in December, financial markets saw the growth in those two central banks' interest rates peaking at a slightly different level than the banks themselves did (see Chart I.1). Global economic growth will fall at the same time. China will be the exception, as its economy will recover (see Table I.1) on the back of the rapid lifting of anti-pandemic measures. The first impacts of the rate hikes have so far been visible in the banking and property sectors, but industry is also showing noticeable signs of cooling. According to the S&P Global indicator, the situation in industry worsened further last year, mainly because of a decline in new orders. While firms primarily faced commodity and labour shortages during the year, at the close of the year they lowered headcounts and purchases of input components and commodities so as to downsize their inventories in expectation of weaker demand. This helped ease the inflation pressures in the goods production sector and reduce supply chain tensions.

The US Fed has declared it is determined to raise rates above 5%, primarily because of the recent autonomous easing of financial conditions at a time of falling long-term yields on the financial market, a still robust labour market and strong core inflation. Economic growth in the USA will slow slightly and a shallow recession will start in the second half of this year. Inflation will drop gradually, due mainly to an only slow decline in services inflation, and will not fall to the target until 2024.

By contrast, China, which is exiting its zero-tolerance policy on Covid, will see an economy recovery. Analysts estimate that its GDP will rise by around 5% this year. The reopening of China means an impetus for tourism around the world and an improvement in

Chart I.1

The financial market expects growth in euro area interest rates to peak at a higher level than the central bank does; the opposite is true for the USA

%; outlook based on ECB expectations (as of 15 Dec 2022), Fed expectations (as of 20 Dec 2022) and Overnight Index Swaps (as of 20 Dec 2022); source Bloomberg; CNB calculation

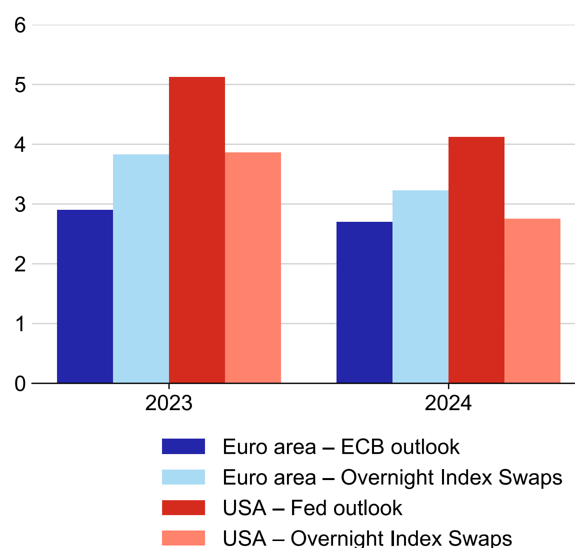


Table I.1

Economic growth will slow sharply in advanced countries but recover in China this year

real GDP; y-o-y changes in %; source Refinitiv, CF

	2021	2022 Q2	2022 Q3	2022	2023	2024
Euro area	5.3	4.2	2.3	3.3	0.0	1.2
USA	5.9	1.8	1.9	2.0	0.3	1.1
China	8.0	0.1	3.6	2.9	4.6	5.3
United Kingdom	7.6	4.0	1.9	4.2	-0.3	0.6

global value chains. However, it is also an inflationary factor due to higher demand for commodities.

The effective euro area economy has been surprisingly resilient during the energy crisis but will be hampered by slowing global demand

Annual GDP growth in the effective euro area slowed to 1.8% year on year in 2022 Q3 (see Chart I.2). In quarter-on-quarter terms, economic activity surprisingly rose by 0.3%. The recovery in demand for services following the reopening of economies continued to have a positive effect. The trade, transport and restaurant services sectors therefore drove the growth in many economies. A greater improvement of the situation in industry was prevented by persisting supply chain problems, which are fading only gradually. On the demand side, household consumption was the biggest contributor to the growth, followed by government investment and consumption. By contrast, the contribution of net exports was negative.

During the autumn, leading indicators were pointing to a switch of the euro area economy to a decline. The PMI indicators of activity in manufacturing and services were in the contraction band. The economic sentiment of euro area consumers hit historical lows and business sentiment also turned negative. The situation in German industry was better, as German firms benefited from pending orders accumulated as a result of the pandemic and material shortages (see Chart I.3). The availability of materials and components also improved during the autumn. The decrease in supply chain tensions was accompanied by a further drop in sea transport prices. German firms also handled the energy crisis very well. According to an ifo survey, 75% of companies using gas in their production processes saved on gas in the summer and autumn without curtailing production.[1]

The resilience of German industry and ongoing favourable trends in services are affecting the labour market, which is showing a stable unemployment rate and a record-high number of employed persons. German firms are still seeking new staff (see Chart I.4). Although the high inflation is weighing on German households, the worsening of their situation is being largely offset by government measures to counter the high energy prices. For example, households and small

Chart I.2

A stagnation in effective euro area GDP will be fostered by a slowdown in global demand growth amid tightened monetary conditions

annual GDP growth in %; contributions in pp; seasonally adjusted

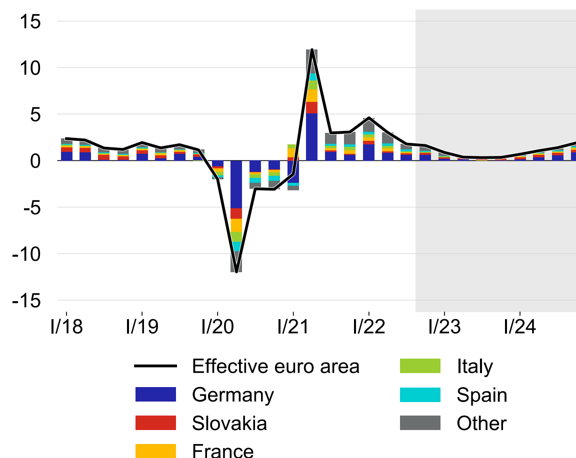
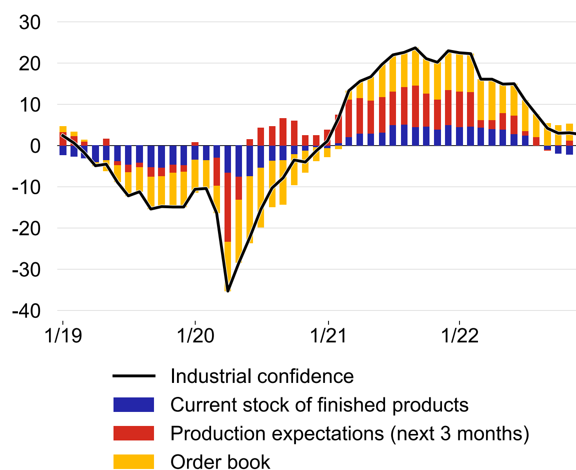


Chart I.3

The German industrial sentiment indicator remained positive, thanks mainly to orders

German industrial confidence indicator; contributions in pp; source European Commission



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1 See the ifo study. Printing, metal production and processing, and textile manufacture were the most successful industries in this regard. By contrast, the record-high prices and jeopardised supply of gas weighed heavily on the chemical industry and other energy-intensive sectors. In November, however, they benefited from warm weather, which reduced the use of gas from storage facilities and caused gas prices to fall on commodity exchanges.

firms were exempted from advance payments for gas in December. According to the forecast, effective euro area GDP[2] will thus be flat in 2022 Q4, due mainly to economic developments in Germany.

This year, economic activity will be pushed down chiefly by an expected slowdown in global demand growth amid tightening monetary conditions and a real decline in households' income. The deterioration in the demand situation will no longer be cushioned by accumulated pending orders. Conversely, the problems in global supply chains will fade out completely in the first half of the year. Government support measures will largely dampen the adverse situation. Markedly lower energy prices will enable energy-intensive sectors to return to full production. GDP in the effective euro area will grow by 0.5% overall this year and accelerate to 1.3% next year. As a result, the output gap will turn negative in the second quarter of this year and remain in negative territory until the end of the forecast horizon.

Inflation in the production sector is being driven down by falling natural gas and electricity prices due to the mild winter so far

Oil prices fell below USD 80 a barrel during the autumn due to a worse outlook for global demand. The decline in prices was not prevented by the uncertainty regarding the impact of EU sanctions on Russian exports or by the possibility of further oil production cuts in OPEC+ countries, the lifting of anti-Covid measures in China and the slower pace of sales of oil from US government reserves. Despite a slight correction in December, no major change in oil prices is expected. In two years' time, they should be above USD 70 a barrel. By contrast, the outlook for electricity and gas prices has declined considerably. The unusually mild winter so far has led to only limited use of gas from storage facilities in EU countries, so demand for this commodity has also dropped sharply. Spot prices of gas on exchanges in Europe have thus fallen below LNG prices in Asia (see Chart I.5). Food commodity prices have been stagnating. Conversely, demand for metals has risen slightly due to a recovery in industrial activity in China.

The dramatic energy price developments last year were reflected in producer prices in the effective euro area, especially the energy component of the PPI (see Chart I.6). However, the price pressures linked to the energy crisis peaked and started to decline at the close of last year. In 2022 Q4, prices were affected mainly by an unexpected decrease in electricity and natural gas supply prices in Germany, which fell by 12% month on

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2 According to Eurostat's flash estimate, GDP in the effective euro area fell by 0.1% quarter on quarter and rose by 1.6% year on year in 2022 Q4. This figure is not included in the forecast, as it was released on 31 January, i.e. after the closing date of the latter.

Chart I.4

The willingness of German firms to hire new staff is particularly strong in services

willingness to hire and lay off staff; seasonally adjusted; source ifo Employment Barometer

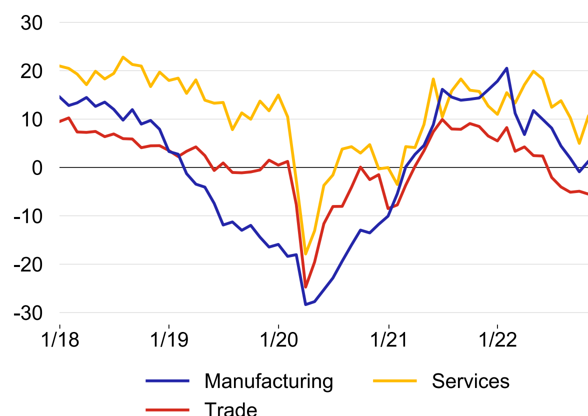
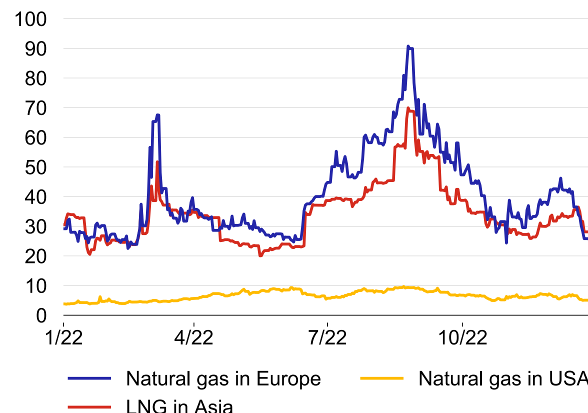


Chart I.5

Spot prices of gas have fallen from their all-time highs, thanks mainly to favourable weather and high storage filling rates in Europe

USD/MMBtu; source Bloomberg; CNB calculation

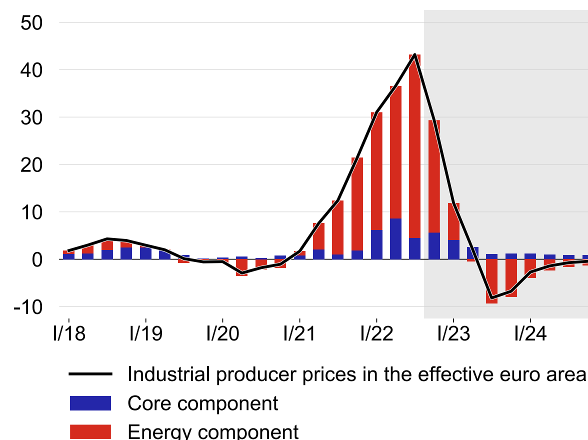


Note: Btu (British Thermal Unit) is a unit of energy used to express gas prices on commodity exchanges. MMBtu = million Btu.

Chart I.6

A sharp halt in producer price inflation will be caused mainly by cheaper gas and electricity

y-o-y changes in %; contributions in pp; seasonally adjusted



month in October. Inflation expectations are also moderating according to the European Commission and PMI leading indicators. The price growth due to overloaded supply chains is decreasing in intensity as well. This is fostering a reduction in the pressure on core inflation. Prices of miscellaneous manufactured articles (see Chart I.7) are a significant component of core inflation. They peaked at the end of 2022, as did the same category of goods in consumer prices. Industrial producer price inflation in the effective euro area stood at 35% in 2022. The outlook for this year is strongly affected by an expected sizeable correction of gas and electricity prices, and producer prices will fall by 0.8%. In 2024, industrial producer price inflation will turn slightly more negative. By contrast, the consumer price inflation outlook in the effective euro area has been revised upwards, mainly as a result of higher core prices and food prices than previously expected. Inflation in the euro area will reach 2% in mid-2024.

In line with market expectations, the ECB raised its key interest rates in December and announced a reduction in its balance sheet size

The ECB and the Fed raised interest rates by 0.5 pp at their December meetings.[3] As rates started to be raised earlier in the USA, monetary policy remains tighter there than in the euro area. The future 3M EURIBOR path reflects an expected further increase in euro area interest rates (see Chart I.8). Moreover, the ECB declared it was also willing to tighten monetary conditions by reducing the size of its balance sheet. Besides repayments of liquidity loans by commercial banks, this will involve a reduction in the amount of bonds held in the ECB's balance sheet, i.e. a halt to reinvestment from the asset purchase programme of EUR 15 billion from spring 2023 onwards (see Box 1 at the end of this section for details). The announced measure is affecting the shadow rate, the estimate of which has moved above the 3M EURIBOR. For a short time, the euro-dollar exchange rate reflected changes in monetary policy on both sides of the Atlantic and financial market expectations. However, the ECB's strongly hawkish communication helped return the dollar above parity with the euro. The market outlook expects the exchange rate to stay broadly flat at this level for the next two years.

Chart I.7

Prices of miscellaneous manufactured articles in the effective euro area peaked at the close of 2022

y-o-y changes in %

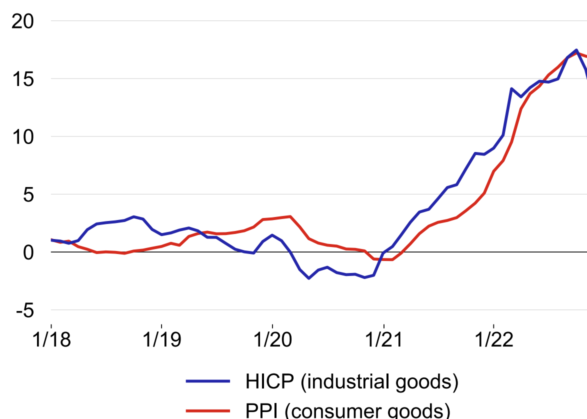
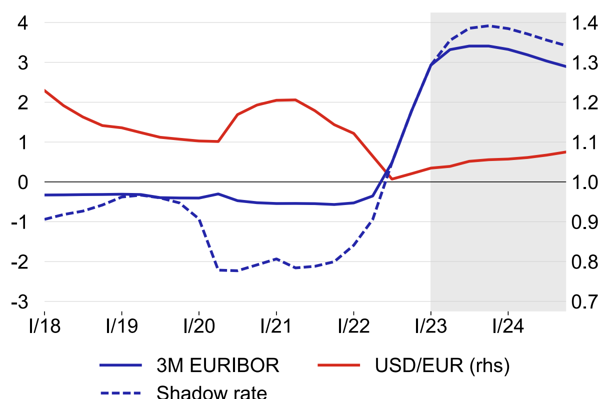


Chart I.8

The market outlook for rising interest rates reflects the expected further tightening of monetary policy by the ECB to return inflation to the target

3M EURIBOR and shadow interest rate in %; USD/EUR nominal exchange rate



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3 At its February meeting, the ECB raised key interest rates by 0.5 pp. It confirmed its balance sheet reduction intentions for the spring of 2023 announced in December. Future plans for the purchased assets were not specified. The Fed raised benchmark interest rates by 0.25 pp at its February meeting.

COMPARISON WITH THE PREVIOUS FORECAST: Economic developments abroad

		2022	2023	2024	
GDP (in the effective EA)	y-o-y changes in % pp	**2.7** (0.4)	**0.5** (0.7)	**1.3** (-0.6)	The improvement in the effective euro area growth outlook for this year is due mainly to the European economy's greater-than-expected resilience during the energy crisis.
Consumer prices (in the effective EA)	y-o-y changes in % pp	**9.2** (0.2)	**6.2** (0.7)	**2.3** (0.4)	The higher expected consumer price inflation is due chiefly to the observed outcomes coupled with a higher outlook for core inflation and food prices.
Producer prices (in the effective EA)	y-o-y changes in % pp	**35.0** (-2.0)	**-0.8** (-15.2)	**-1.3** (-0.7)	The lower exp. prod. price inflation mainly reflects a sizeable drop in the market outlooks for gas and electricity prices in Europe, due among other factors to this year's mild winter.
Brent crude oil price	USD/barrel	**98.9** (-0.2)	**80.7** (-0.9)	**76.4** (0.9)	The oil price outlook is little changed; there is still a falling trend as a result of weak growth in the global economy and hence also in demand for oil.
3M EURIBOR	% pp	**0.3** (-0.1)	**3.3** (0.2)	**3.1** (0.1)	The market interest rate outlook is slightly higher, reflecting the ECB's hawkish communication in response to a higher outlook for consumer price inflation in the euro area.
Exchange rate	USD/EUR	**1.05** (0.00)	**1.05** (0.02)	**1.07** (0.00)	The expected euro-dollar exchange rate remains broadly stable.

Note: Changes compared to the previous forecast in brackets (a green label indicates an increase in value or a shift to a weaker dollar, while a red label indicates a decrease in value or a shift to a stronger dollar)

BOX 1 Tightening of ECB monetary policy using balance-sheet operations

The ECB's balance sheet grew from 39% to 64% of euro area GDP over the past three years. This growth was due to the use of unconventional monetary policy, which involved the ECB purchasing bonds to increase inflation to its target (i.e. conducting quantitative easing). This policy fostered an additional easing of euro area monetary conditions at a time when conventional easing using interest rates was no longer possible. Now, though, the situation is quite the opposite and the ECB is trying to subdue inflation pressures by raising its policy rates. Moreover, the ECB announced at its December 2022 meeting that it would also use unconventional policy to tighten monetary conditions. From spring 2023 onwards, therefore, maturing assets from the Asset Purchase Programme (APP) will no longer be fully reinvested (see Chart 1). The ECB will continue to reinvest, in full, the principal payments from maturing securities purchased under the Pandemic Emergency Purchase Programme (PEPP) at least until the end of 2024.

The CNB's modelling system explicitly captures the effect of ECB monetary policy – including its unconventional part – using a "shadow rate", which incorporates the effect of asset purchase programmes in addition to the 3M EURIBOR market rate.[1] From spring 2020 to spring 2022, the ECB purchased assets at a monthly pace of approximately EUR 75 billion on average (and now has EUR 3.26 trillion of assets in its APP portfolio). The CNB's current outlook (see Chart 2) reflects the announced pace of decline in assets of EUR 15 billion per month from spring 2023 onwards. Subsequently, we expect the amount of non-reinvested maturing APP assets to rise to EUR 30 billion. This is reflected in the shadow rate, which will be around 0.5 pp above the 3M EURIBOR.

Besides APP redemptions, the total size of the ECB's balance sheet will decrease as a result of the repayment of loans (liquidity facilities) provided by the central bank to commercial banks. In the past, the ECB used longer-term refinancing operations (LTROs) to offer funding to euro area commercial banks in order to support lending to the real economy.[2] There have been three phases of these operations since 2014. The last one was focused on supporting the economy during the pandemic. In November 2022, the programme was adjusted to strengthen the transmission of the ECB's key interest rates to banks' lending conditions. The stricter conditions of the facilities and the possibility of early repayment led banks to repay loans from the ECB more quickly (see Chart 3). The volume of refinancing operations fell by about one-third between late October 2022 and mid-January 2023. Together with the end of reinvestment, this should foster a decline in the excess liquidity in the euro area banking system to the pre-pandemic level two years from now.

Chart 1

The volume of assets purchased by the ECB will start falling in spring 2023

EUR billions; source ECB; CNB calculation and forecast

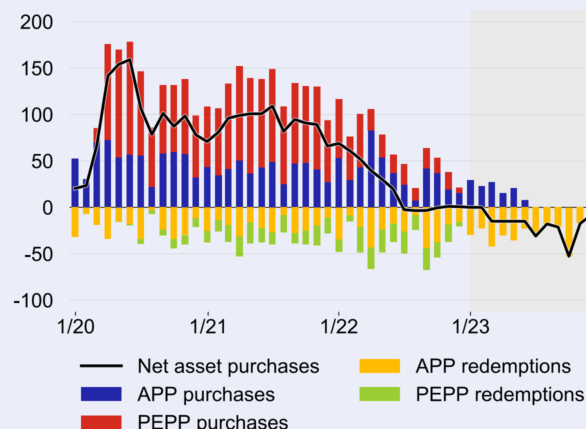


Chart 2

The euro area shadow rate will move above the 3M EURIBOR due to the unconventional part

%; CNB calculation

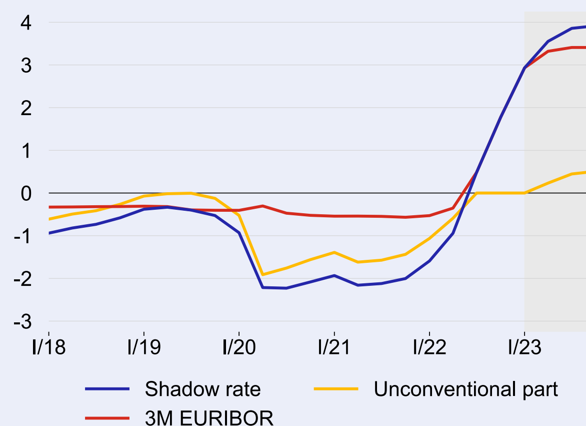
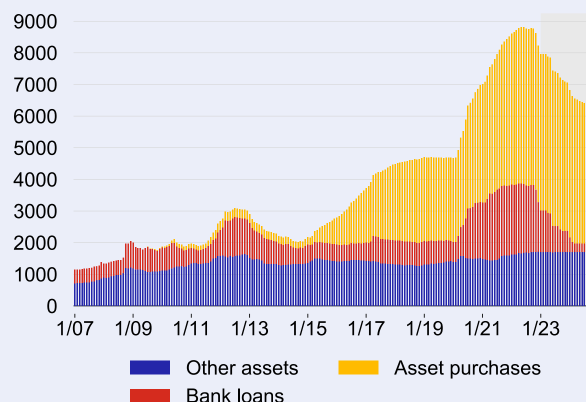


Chart 3

The size of the ECB's balance sheet will decrease over the next two years owing to repayment of refinancing operations

EUR billions; source ECB and Bloomberg; CNB calculation and forecast



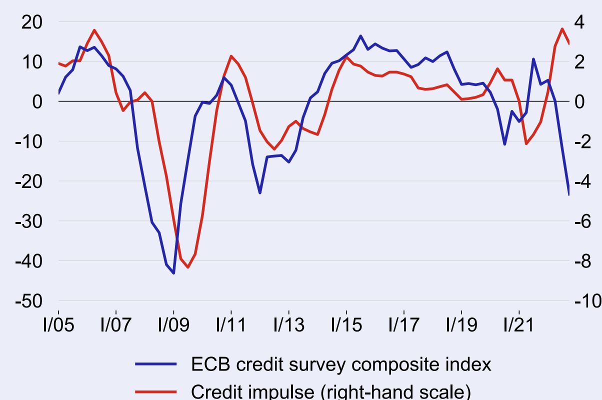
In the context of LTRO loan repayment, a further tightening of credit conditions and a decline in credit growth in the euro area can be expected. In the Bank Lending Survey,[3] commercial banks repeatedly stated in the past that ECB financing was having a positive impact on their performance, lending conditions and credit supply. However, the situation started to turn around last summer. According to the latest ECB survey, banks tightened their lending conditions for households and firms in 2022 Q3. Firms' demand for loans continued to rise slightly, but households' demand dropped, especially in the case of loans for house purchase. According to banks, a further decline in demand and tightening of lending conditions was recorded at the end of 2022. The situation is illustrated by the composite index (see Chart 4) compiled by Bloomberg using the ECB survey data. The index has dropped to a level comparable to that seen during the euro area debt crisis. The credit impulse – the change in year-on-year credit growth – also peaked during summer and started to decline in the autumn. When the effect of the monetary policy tightening manifests itself in full, the credit impulse will also fall markedly and will probably turn negative.

The decrease in liquidity is also being reflected in a desirable tightening of financial and monetary conditions. The increase in key ECB interest rates has passed through to a large extent to other financial market interest rates, returning the financial conditions indicator to the level observed at the start of the previous decade (see Chart 5). The spillover to client interest rates for households and firms is more gradual,[4] so the monetary conditions index lags slightly behind financial market developments. In real terms, however, financial conditions in the euro area remain very relaxed, as the swift growth in rates is lagging significantly behind the record-high inflation, which is also affecting inflation expectations. According to an ECB survey among economists, the outlook for inflation one year ahead is above 5%.

Chart 4

Euro area lending indicators suggest a distinct turnaround towards tighter conditions

left-hand scale: composite index; right-hand scale: credit impulse in pp; source Bloomberg and ECB; CNB calculation

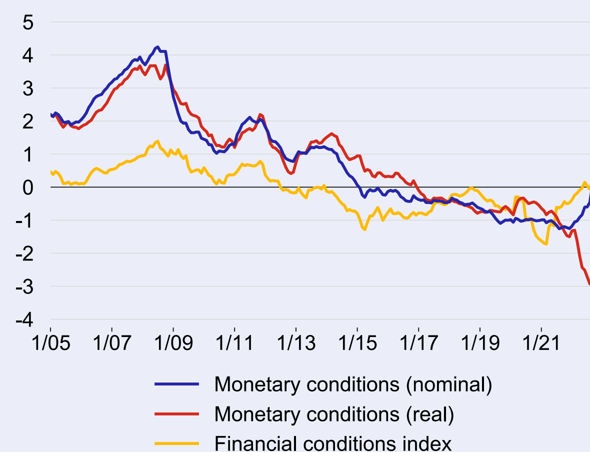


Note: The composite index aggregates information on credit demand and supply and expected changes therein from the ECB's lending survey. The credit impulse is the change in credit growth.

Chart 5

Financial and monetary conditions are tightening but remain relaxed in real terms

indices; source Bloomberg and ECB; CNB calculation



Note: The financial conditions index captures the co-movement of financial market interest rates, while the monetary conditions indicator also includes client interest rates on loans to households and firms. In real terms it is adjusted for inflation expectations.

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1 This issue was examined in more detail in the October 2015 issue of *Global Economic Outlook*.

2 Unlike asset purchases, credit operations do not enter the CNB's considerations of the effective monetary policy stance of the ECB. Nonetheless, the operations do affect the expectations of analysts and markets regarding future economic developments in the euro area. The CNB forecast takes these expectations into account in the formulation of its economic outlook for the Czech Republic's main trading partners, which are euro area countries.

3 See the Bank Lending Survey.

4 This topic is discussed in more detail in the thematic article of the January 2023 issue of *Global Economic Outlook*.

II. THE REAL ECONOMY AND THE LABOUR MARKET

The first half of this year will be characterised by a year-on-year contraction of the Czech economy. This will mainly reflect a drop in household consumption along with a fall in investment activity. Households will again face a decline in real income this year as a result of rapid growth in living costs and will continue to save more and consume less. Firms are entering the recession in good shape. However, the significantly weakened domestic demand will foster a temporary slight decline in their investment activity. Recovering external demand and investment by firms and the government related to growing use of renewable energy sources will later have the opposite effect on gross capital formation. Additions to inventories will decrease during the year as the problems in global value chains fade out. In whole-year terms, the Czech economy will contract slightly this year and will operate below its potential. The subdued domestic economic activity will cause the labour market to become less tight. The unemployment rate will start to go up gradually. Wage growth will pick up but will continue to lag behind inflation over the next few quarters.

Domestic economic growth is being dampened by a worsening financial situation of households, slowing external demand and receding problems in global value chains

The problems in global value chains are slowly abating, but the issues with supplies of some components escalated temporarily in late 2022. Material shortages – mostly in industrial production – will drag on the Czech economy in the first half of this year, too (see Chart II.1). The forecast assumes that the supply problems will ease, disappearing entirely in mid-2023. The worsening financial situation of households and firms will significantly dampen consumer demand and private investment activity at the start of this year. Overall economic activity will thus fall in quarter-on-quarter terms at the turn of 2022/2023 and the economy will also start to decline modestly in year-on-year terms.[4] In whole-year terms, the Czech economy will contract by around 0.5% this year (see Chart II.2). Economic activity will return to growth of more than 2% in 2024.

Household consumption will be adversely affected by a sharp drop in real income and negative sentiment, but this fall will be partly offset by government assistance

Household consumption will continue to fall significantly year on year (see Chart II.3). Spending of the remaining forced savings accumulated during the pandemic, coupled with a temporary decrease in electricity prices due to the energy savings tariff in late 2022, dampened the drop in consumption. However, the termination of this government measure together

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4 According to a preliminary CZSO estimate, Czech GDP decreased by 0.3% quarter on quarter and increased by 0.4% year on year in 2022 Q4. This is almost in line with the CNB forecast. This figure was published on 31 January 2023.

Chart II.1

Material and component shortages continue to limit domestic industrial production, though to a lesser extent

share of domestic industrial firms in % reporting shortages of materials or equipment as factor limiting production; smoothed by HP filter (lambda = 1); source CZSO business survey

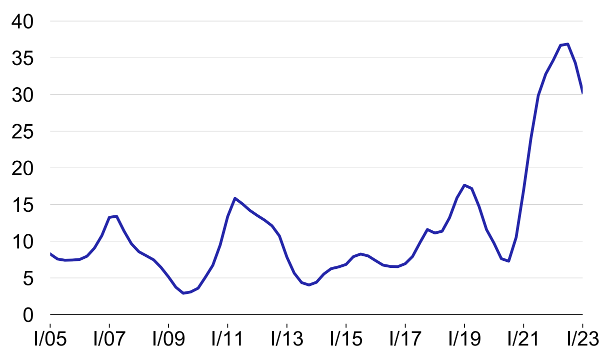
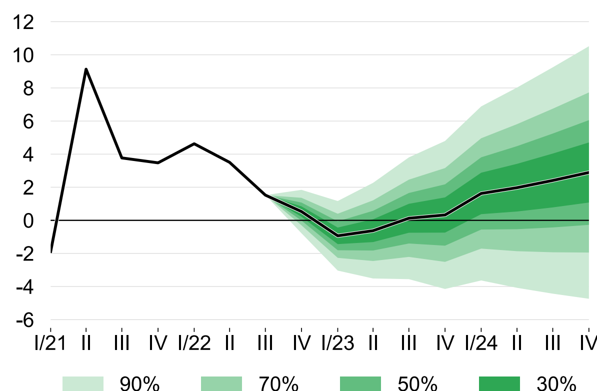


Chart II.2

Economic activity will fall slightly in the period ahead and return to year-on-year growth at the end of 2023

y-o-y changes in %; seasonally adjusted; confidence interval



with still adverse purchasing appetite[5] and falling real purchasing power of households will lead to a further pronounced drop in household consumption. Fiscal policy will partly offset this fall at the start of the year (see Chart II.4). Household consumption will decrease by almost 3% in whole-year terms this year.

Growth in households' nominal gross disposable income will be driven over the entire forecast horizon primarily by a broadly stable contribution of wages and salaries (see Chart II.5), which reflects the still strong labour market. Growth in gross disposable income will slacken in the first half of 2023, due among other things to a slowdown in entrepreneurs' income. Higher contributions of property income and growth in other current transfers and social benefits, including repeated pension increases and some other fiscal support measures, will have the opposite effect.

Like retail sales and sales in services, household consumption will continue to rise quickly in nominal terms due to solid income growth. The fall in households' purchasing power will slow significantly as the high inflation gradually comes down. The subsequent renewal of real wage growth will then also trigger a recovery in private consumption in late 2023 and early 2024. In whole-year terms, consumption will thus increase next year after having declined for almost two years.

Under the national accounts methodology, Ukrainian war refugees were deemed non-residents (de facto tourists) in the Czech Republic until 2022 Q3. In line with the CZSO's interpretation, their purchases of goods and services in the Czech Republic were thus classified in the national accounts as exports, not as household consumption (as is the case with residents). From 2022 Q4 onwards, this expenditure is to be treated as household consumption. In the said quarter, this will lessen the fall in consumption and simultaneously reduce exports (and hence have no effect on total GDP overall).[6] The forecast assumes that expenditure by Ukrainian war refugees totalled around CZK 40 billion in 2022.[7] It will gradually decline this year and the next due to the expected partial return home of Ukrainian nationals.

The saving rate will remain above the long-term average and return only slowly to the pre-pandemic level

The saving rate increased in 2022 Q3. This was caused by a deterioration in consumer demand and by

Chart II.3

Household consumption will decline for most of this year, while general government consumption will start to grow again

household and government consumption; y-o-y changes in %; constant prices; seasonally adjusted

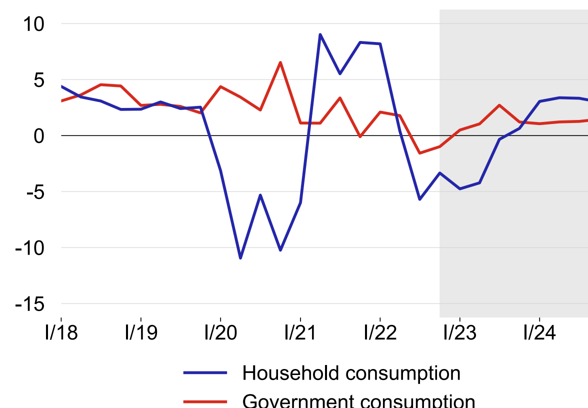
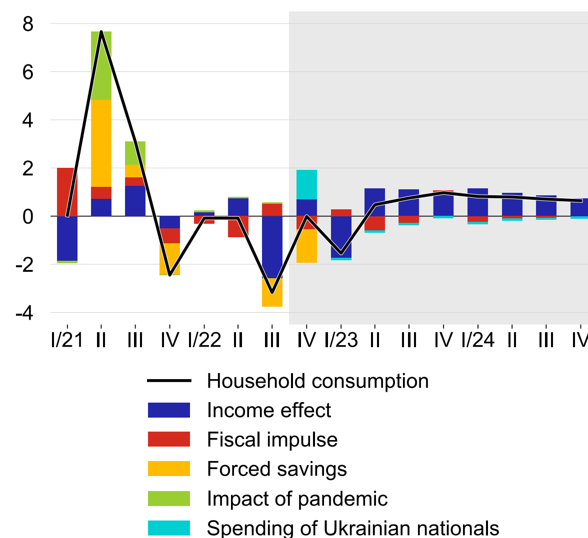


Chart II.4

The current pace of growth of household consumption is being adversely affected by a sharp fall in households' real income, which will be partly dampened by fiscal policy

household consumption; q-o-q changes in %; contributions in pp; constant prices; seasonally adjusted



Note: "Income effect" reflects real income (including wages and salaries) and energy commodity prices. "Impact of pandemic" embodies the effect of shutdowns and the subsequent reopening of the economy and the return to normal consumer behaviour, for example in terms of how often people go to the cinema, eat out and so on.

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5 According to the January business cycle survey data, consumer and business sentiment improved. However, they both remain below their long-term average.

6 We estimate the impact of including the consumption expenditure of Ukrainian refugees on the real quarterly growth rate of household consumption in 2022 Q4 at 1.2 pp.

7 This would represent around 1.3% of nominal household consumption in 2022 as a whole.

precautionary saving connected with rapid growth in living costs amid an increase in social transfers, which was mostly across-the-board in nature. These effects will persist in the following quarters. The saving rate will return to its long-term average at the end of 2024.

Slower growth in external demand amid persisting shortages of components and materials will be reflected in lower export growth and still high additions to inventories

The export-oriented part of the domestic economy (especially the automotive industry) continues to face input supply problems (see Chart II.1). These difficulties have gradually been lessening but are still having a negative effect on industrial production.

Growth in external demand will halt in quarter-on-quarter terms in early 2023. This will be reflected in a stagnation of Czech exports. The subsequent fade-out of the problems in global value chains will foster growth in exports, but renewed tensions on the energy market relating to the start of next winter will constrain export growth slightly (see Chart II.6).

Together with a downturn in import-intensive fixed investment, import growth will be dampened by a fall in household consumption. The year-on-year growth rate of imports will thus be lower than that of exports and the contribution of net exports to GDP growth will be strongly positive throughout 2023. Next year, the difference between growth in exports and imports of goods and services will shrink, but the contribution of net exports will remain positive (see Chart II.6).

Fixed investment will decline in year-on-year terms at the start of this year due to slower growth in external demand and a temporary deterioration in firms' financial situation

The financial situation of firms remains solid despite the extreme growth in energy prices, as evidenced by increasing profit rates for most of last year. However, the situation in the corporate sector will worsen temporarily in early 2023. This will be due to the impact of the high energy prices, falling domestic demand and slowing external demand. Investment in renewing and expanding production will be postponed in many cases. The main dampening factors will thus be concerns of a global recession, persisting disruptions to value chains and uncertainty linked with the war in Ukraine and its impacts on energy prices. High domestic and gradually rising foreign interest rates will also dampen the investment appetite of firms for some time. Fiscal support aimed at mitigating the impact of the high energy prices and energy savings-related investment will have the opposite effect. Overall, private fixed investment growth will remain very subdued this year (see Chart II.7). General government investment will increase overall in real terms this year, as it will be

Chart II.5

Growth in nominal disposable income will slow in 2023 due mainly to a decrease in the contributions of entrepreneurs' income and property income, while wages and salaries will grow at a broadly steady rate

household consumption and gross disposable income; y-o-y changes in %; contributions in pp; current prices; seasonally unadjusted

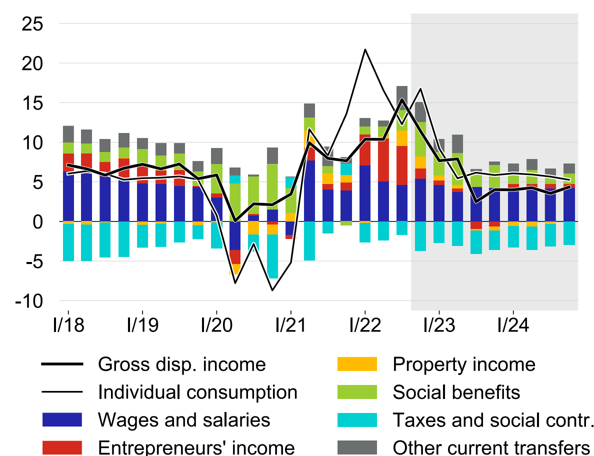
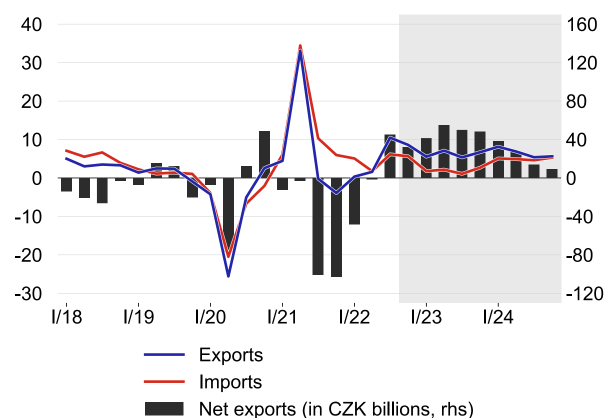


Chart II.6

Export and import growth will slow slightly this year due to a downturn in external and domestic demand

real exports and imports; y-o-y changes in % and CZK billions; seasonally adjusted



supported by the absorption of EU funds and a one-off purchase of military helicopters.[8]

Growth in private fixed investment will recover towards the end of 2023 as external economic growth strengthens. Investment will also be spurred by efforts to switch to alternative energy sources amid a long-term shift to automation, robotisation and digitalisation. Private investment growth will be flat next year, while general government investment will decrease due to a slow start to EU funding in the new programme period coupled with base effects. Total fixed investment will grow by around 1% in 2023 and pick up to almost 5% in 2024.

Additions to inventories will remain above their long-term level until mid-2023, amid continued bottlenecks on the supply side of the economy (see Chart II.8). Firms will later be able to complete their forced stocks of unfinished products, as the supply disruptions are expected to fade out in the second half of 2023. Total gross capital formation growth will thus stay negative this year due to subdued fixed investment and declining additions to inventories. Gross capital formation will also decrease next year due to inventories, despite solid growth in fixed investment.

Fiscal policy will contribute slightly positively to GDP growth this year, despite the fading out of part of last year's support expenditure

Real government consumption growth will increase above 1% this year in whole-year terms (see Chart II.3). This will be due to an increase in public expenditure mainly in health care and education, linked with the arrival of Ukrainian nationals, and a rise in the total amount of housing benefits paid. Moreover, growth in nominal general government consumption will reflect the expected increase in wages and salaries in the non-market sector.

Fiscal policy will stimulate GDP growth slightly this year (see Chart II.9). This is due to the continuation of some of the support measures adopted on both the revenue and expenditure sides of public budgets relating to the rise in inflation and the fight against high energy prices. These measures include an extended reduction in excise duty on diesel, an increase in the VAT registration threshold and the payment of a child-raising bonus on top of an extra increase in pensions.[9] The discontinuation of the energy savings tariff and the phasing out of measures to support Ukrainian refugees will have the opposite effect. The complete end of the temporary support measures and a fall in absorption of EU funds due to a slow start to the new programme period will significantly dampen GDP growth in 2024.

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8 The investment will amount to CZK 14 billion, distributed evenly across the whole of 2023.

9 As well as the regular January increase, pensions will see an extraordinary inflation-linked increase again in June this year.

Chart II.7

Growth in total gross investment will be affected predominantly by additions to inventories

investment activity; y-o-y changes in %; contributions in pp; constant prices; seasonally adjusted

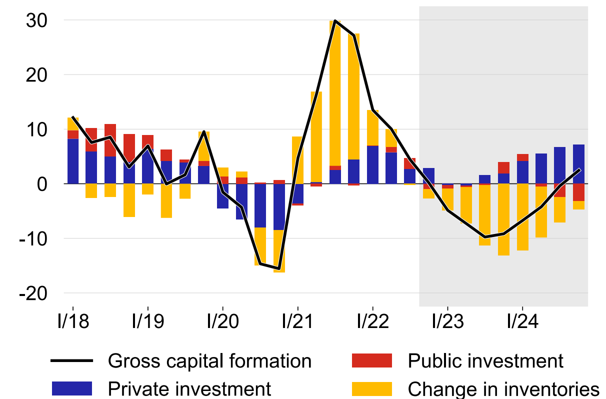


Chart II.8

Change in inventories will start to fall sharply this year and will be close to pre-pandemic levels next year

change in inventories in CZK billions; constant prices; seasonally adjusted

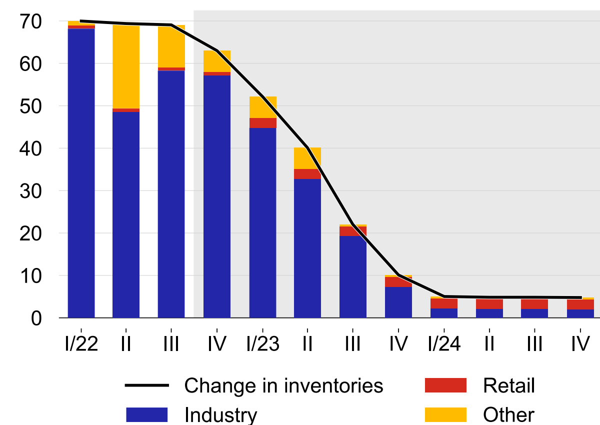
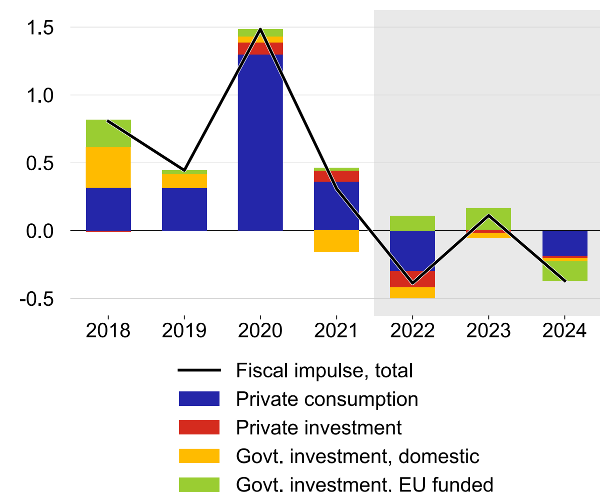


Chart II.9

Fiscal policy will stimulate GDP growth slightly this year and dampen it next year after the measures to help with the high energy prices fade out

fiscal impulse; contributions to GDP growth in pp



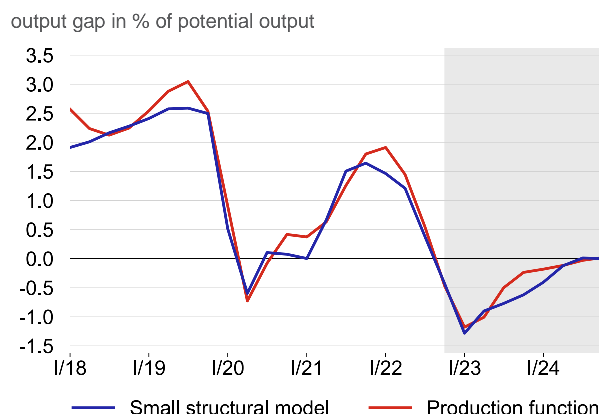
The Czech economy fell below its potential at the end of last year and will remain there over most of the forecast horizon

The economic downturn in the second half of last year led to rapid closure of the positive output gap. The domestic economy fell below its potential with the onset of the recession and will remain there until mid-2024 (see Chart II.10). This will be reflected in a cooling of the labour market. All this will go on amid slowly abating supply constraints, which will drag on potential output growth again this year. Potential output growth will start to return slowly to its long-term rate as domestic demand recovers and the problems in global value chains begin to fade away in mid-2023. Growth in potential output will recover fully at the start of 2024 as the winter-related energy market tensions unwind. The negative output gap will meanwhile close gradually.

Chart II.10

The previous overheating of the economy faded away quickly and the economy will be below its potential this year

output gap in % of potential output



COMPARISON WITH THE PREVIOUS FORECAST: The real economy and the labour market

		2022	2023	2024	
GDP	y-o-y changes in % pp	**2.5** (0.3)	**-0.3** (0.4)	**2.2** (-0.3)	The GDP growth outlook for this year is higher due to a smaller-than-expected cooling of external demand; next year, the growth will be slightly slower.
Household consumption	y-o-y changes in % pp	**-0.3** (-0.3)	**-2.2** (-0.9)	**3.2** (-0.3)	The forecast for household consumption is lower due to a sharper expected fall in real wages, especially this year.
Government consumption	y-o-y changes in % pp	**0.3** (-0.5)	**1.4** (-0.3)	**1.3** (-0.1)	The government consumption forecast has been revised downwards slightly this year due to higher inflation; it remains almost the same next year.
Gross fixed capital formation	y-o-y changes in % pp	**5.1** (0.2)	**0.9** (-0.5)	**4.7** (0.3)	Weaker growth in fixed investment this year is replaced by slightly faster growth next year.
Net exports	contr. to GDP growth pp	**0.5** (0.8)	**3.1** (0.7)	**1.2** (-0.2)	The contribution of net exports is distinctly higher this year than previously forecasted, due to stronger external demand amid lower domestic demand; it will be slightly lower in 2024.
Employment	y-o-y changes in % pp	**1.6** (-0.3)	**-0.4** (-0.4)	**-0.1** (0.1)	This year's lower growth in employment mainly reflects the weaker figures observed in the second half of last year.
Unemployment (ILO)	% pp	**2.4** (-0.1)	**2.7** (-0.4)	**3.3** (-0.4)	The outlook for the general unemployment rate is lower due to higher expected economic activity and lower figures observed at the end of last year.
Average monthly nominal wage	y-o-y changes in % pp	**6.5** (0.2)	**8.5** (0.8)	**6.9** (0.0)	The faster wage growth this year mainly reflects stronger wage growth at the end of last year.

Note: Changes compared to the previous forecast in brackets (a green label indicates an increase in value and a red label a decrease)

The tightness in the labour market will decrease slightly further

The labour market cooled (see Chart II.11) and employment fell quarter on quarter in the second half of 2022. This trend will continue this year, as will the gradual increase in the unemployment rate, caused by both a rise in the jobless total and a decline in economically active persons. The excess demand for labour will decrease. This will be reflected in a continued significant decline in vacancies. Nominal wage growth picked up considerably in the second half of last year and will continue to rise in early 2023.

Real income fell sharply last year and will continue to do so to a lesser extent this year

Nominal wage growth in the market sector surged at the end of 2022 (see Chart II.12). This was due largely to the payment of extraordinary bonuses in industry. Double-digit wage growth was seen in the construction sector data in the autumn. The higher wage growth was also due to high inflation and the better-than-expected condition of firms, which are still able at least partly to accept higher wage costs. The persisting relatively strong bargaining position of employees – who are still in relatively short supply on the market – was reflected in the Czech and Moravian Confederation of Trade Unions' wage bargaining recommendation for 2023 (growth of 9%–10%). Firms' scope to raise wages will be less limited this year than previously expected, as the risk of a deep recession both in the Czech Republic and abroad is diminishing. The corporate sector's financial results have so far remained fairly solid, too. In 2023 Q1, the average wage will also be affected by a further increase in the minimum wage of CZK 1,100 to CZK 17,300. This will affect around 128,000 employees.[10] Firms will be constrained in terms of raising wages by lingering problems in global value chains and by continued high energy prices.

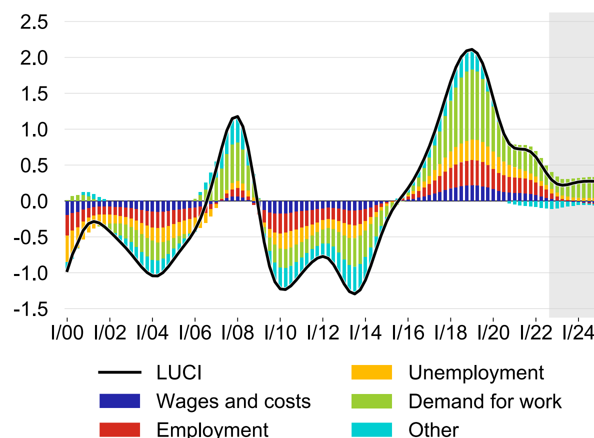
The real wage will decline significantly again this year, but the loss in employees' purchasing power will be much smaller than last year. Moreover, real wage growth will be volatile in the individual quarters of 2023 due to the base effect of the energy savings tariff, which affected inflation in late 2022. In 2024, as the problems in global value chains and the energy crisis subside, inflation will drop significantly and economic growth will resume. This will result in solid growth in real wages.

Wages in non-market sectors will grow at a more modest pace than in the private sector in the years ahead. The state budget expects the pay of the

Chart II.11

From the perspective of the LUCI, the labour market will cool slightly further this year

LUCI; vertical axis shows standard deviations

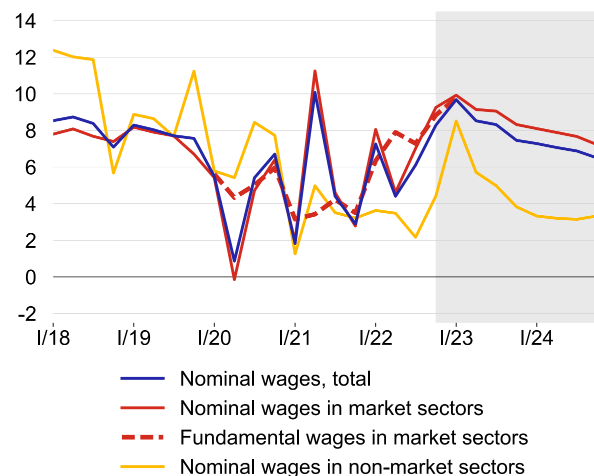


Note: The figure for 2022 Q3 is an estimate, due to incomplete time series for some input indicators.

Chart II.12

Nominal wage growth will accelerate sharply in market and non-market sectors at the start of 2023; this will reduce the decline in wages in real terms

nominal wages; y-o-y changes in %



Note: Until 2019 Q4 and again from 2023 Q2, the fundamental wage coincides with the officially reported wage in market sectors.

10 Only the first and eighth categories of guaranteed wages are to increase this year, not the entire cascade as is usually the case when the minimum wage is increased. More information on the minimum wage increase is available in a Ministry of Labour and Social Affairs information leaflet and a Ministry of Labour and Social Affairs press release (both in Czech only).

majority of state administration employees to increase this year. The effect of the extraordinary increase in the wages of selected lowest-income workers last September will simultaneously fade.

Growth in the wage bill is also being affected predominantly by the increased average wage growth observed and expected last year and this year. By contrast, the rise in the wage bill will be dampened by a halt in the growth in the full-time equivalent of employees, which does not reflect the arrival of Ukrainian nationals very strongly. Growth in the full-time equivalent of employees will turn slightly negative over the outlook horizon in response to a contraction in economic activity and a drop in demand for labour. This will result in broadly stable growth in the wage bill at a slightly higher pace. In real terms, the wage bill dropped sharply in 2022 (see Chart II.13). This was due to nominal wage growth lagging well behind inflation. The real purchasing power in the economy will start to grow again at the end of this year, mainly on the back of sharply slowing inflation and rigid nominal wage growth amid an improving overall macroeconomic situation.

The labour market will cool via a continuing fall in demand for labour

Employment peaked in 2022 and started to decline moderately in the second half of the year (see Chart II.14). This decline will continue into 2023 due to a cooling of domestic economic activity. The already observed drop in the number of reported new vacancies and the total number of vacancies is consistent with this. The until recently strong corporate recruitment has thus halted amid growing uncertainty about future economic developments. In terms of structure, total employment will be determined mainly by a falling number of employees, while the number of entrepreneurs will be broadly flat. The decline in economic activity and firms' worse financial situation will be reflected in moderate layoffs, with firms dismissing less productive staff, agency workers and part-time employees. This will result – in line with the evolution of GDP – in only a slight decline in firms' total production capacity.

Some high-frequency and leading indicators and the European Commission survey are also indicating flat or slightly falling employment in the coming months.[11] The general unemployment rate switched to modest growth at the end of last year and will continue to rise this year. The forecast also expects a similar trend in the share of unemployed persons.

Chart II.13

Growth in the real wage bill will be negative over the next few quarters due to high inflation and will thus lead to a decline in household consumption

wage bill; y-o-y changes in %

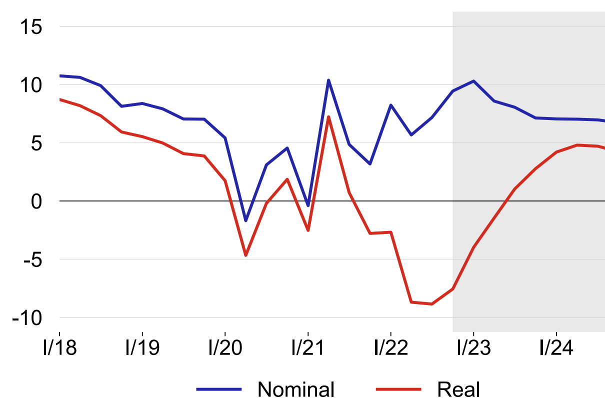
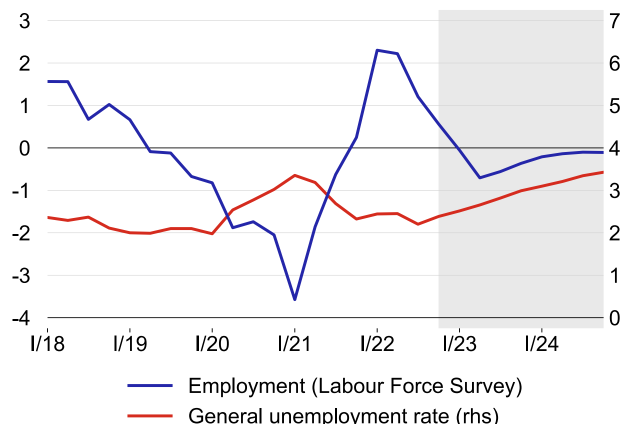


Chart II.14

Employment will continue to fall and unemployment will gradually increase due to a worsening macroeconomic situation

employment, y-o-y changes in %; general unemployment rate in %; seasonally adjusted



11 The Manpower Group index of expected employment for 2023 Q1 expects a slight decline. The Google Trends scores for "unemployment" and "unemployment benefit" have increased slightly in recent weeks.

III. INFLATION

Inflation was significantly affected at the end of last year by a temporary drop in electricity prices caused by government measures to help with the high energy prices. Inflation will increase temporarily at the start of this year and exceed 16% on average in Q1. This will be due mainly to a marked increase in administered price inflation, which will be driven above all by electricity prices rising to the government price cap after the energy savings tariff ends. Inflation will then fall rapidly, reaching single digits in the second half of this year, as its market components will decline due to decreasing cost pressures from both the foreign and domestic economies. At the same time, the currently peaking profit margins of domestic producers, retailers and service providers will undergo a gradual correction. At the start of 2024, both headline and monetary policy-relevant inflation will decline close to the CNB's 2% target, where they will stay until the end of the forecast horizon. Tighter monetary policy will contribute to this decline.

The strong overall cost pressures eased at the end of last year and will continue to weaken this year as energy import prices decline

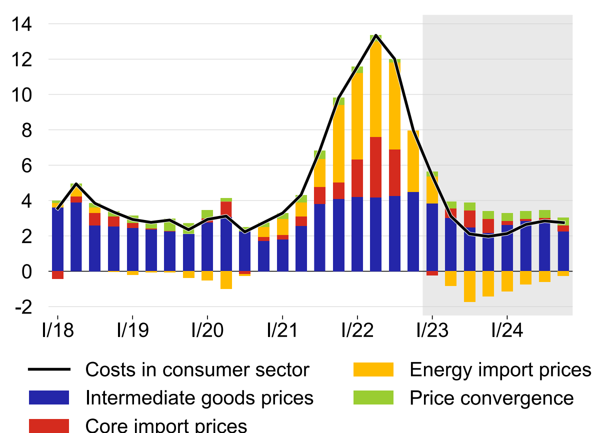
Growth of total costs in the consumer sector slowed in 2022 Q4, mainly because of lower growth in import prices (see Chart III.1). Core import prices had a neutral effect on the growth in total costs due to appreciation of the koruna and above all a decline in the high growth in core foreign industrial producer prices. This reflected a continued easing of the problems in global value chains, among other factors. The sharp drop in the energy component of foreign producer prices at the year-end has been reflected only partially in energy import prices so far. Their contribution has thus decreased. However, it will not turn negative for a while yet due to price rigidities. The growth in total costs at the end of last year was also driven significantly by growth in prices of domestic intermediate goods.

The overall cost pressures will continue to weaken this year. This will be due mainly to a drop in energy import prices. This drop will reflect a marked fall in the energy component of foreign producer prices linked with the current correction of gas and electricity prices on commodity exchanges. The contribution of prices of domestic intermediate goods will also decrease this year. This will be due to a fall in the currently elevated profit margins in the intermediate goods sector and later also to a gradual slowdown in quarter-on-quarter wage growth. The contribution of core import prices to growth in costs will be slightly positive on average this year. This will reflect continued, though relatively modest, growth in core foreign producer prices amid an expected, mostly modest weakening of the koruna. Growth in total costs will pick up slightly at the start of next year and stay moderately above its steady-state level until the end of 2024. This will be due mainly to a gradually fading effect of the decline in energy prices amid still solid growth in domestic costs.

Chart III.1

The until recently exceptionally strong cost pressures will ease, due mainly to a drop in energy import prices

costs in consumer sector; q-o-q changes in %; contributions in pp; current prices; annualised



The domestic cost pressures will ease slightly this year after having strengthened at the end of last year, but will remain elevated

The faster growth in domestic costs (see Chart III.2) in the second half of last year was due largely to stronger wage growth. The contribution of the price of capital to the growth in costs was negative due to a continued, though only slow, cooling of economic activity during the autumn. Labour efficiency meanwhile worsened slightly further. As a result, its contribution to the growth in domestic costs was conversely inflationary.

The domestic cost pressures will ease slightly at the start of this year but still remain elevated. They will be driven mainly by brisk wage growth, which will fade out only gradually. This will reflect efforts to make up at least partly for last year's drop in real income. Wage costs also reflect another increase in the minimum wage. Economic activity will decline markedly quarter on quarter in the first quarter of this year due to a continued cooling of domestic demand, which has been hit by a sharp drop in real household income as a result of high inflation. The negative contribution of the price of capital to growth in costs will thus increase markedly. A further substantial worsening of labour efficiency will continue to have the opposite (i.e. inflationary) effect, as the labour market situation will not deteriorate significantly despite a temporary slowdown in the domestic economy. Economic performance will gradually recover as the year progresses, due, among other things, to the fade-out of the problems in global value chains, and the economy will grow despite a resurgence of some tensions in the energy market during the next heating season. The effect of the contribution of the price of capital to domestic costs will thus turn positive again. It will be roughly offset by the anti-inflationary effect of renewed growth in labour efficiency.

In 2024, the contribution of the price of capital will increase growth in costs, as economic growth will recover noticeably. Meanwhile, however, the anti-inflationary effect of labour efficiency will also strengthen. The overheated labour market will continue to cool gradually. This will lead to some slowdown in growth in wage costs. Overall, domestic cost pressures will not thus decrease visibly until next year.

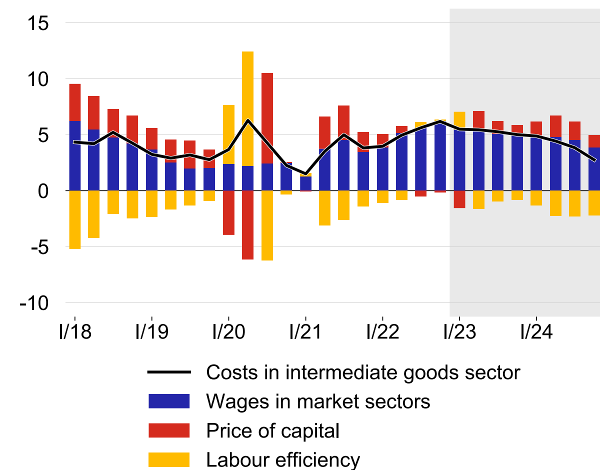
The positive gap in mark-ups will peak at the start of this year and then close gradually due to weaker demand amid decreasing growth in costs

The previously strongly positive and increasing gap in mark-ups – reflecting growth in prices far outpacing growth in the costs of domestic producers, retailers and service providers – will start to close this year (see Chart III.3). This will be due mainly to a considerable decline in private consumption, reflecting households' lower purchasing power, and the previous tightening of

Chart III.2

The domestic cost pressures will start to ease gradually in the first half of this year but will not return to their steady-state level until the end of 2024

costs in intermediate consumption sector; q-o-q changes in %; contributions in pp; current prices; annualised

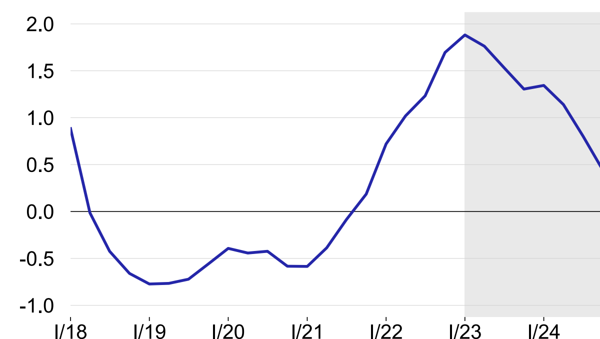


***Mark-ups in the consumer sector** represent the difference between the prices and marginal unit costs of producers of final consumer goods. The gap in mark-ups shows the deviation of current mark-ups from their steady-state level. A positive gap in mark-ups thus implies a higher-than-usual "profit margin", while a negative gap represents a lower-than-usual one. If the gap increases (decreases) over time, it gives rise to an additional inflationary (anti-inflationary) effect, i.e. upward (downward) pressure on consumer prices going beyond the increase (decrease) in costs.*

Chart III.3

The highly positive gap in mark-ups will close only gradually as domestic demand cools, aided by the previous monetary policy tightening

gap in mark-ups on consumer goods in %



monetary policy. These effects will suppress consumer appetite. Retailers will thus have to gradually lower their profit margins amid lower demand. However, decreasing energy prices – and hence falling growth in costs – will create some room for them to decline more slowly. Moreover, a renewed short-term increase in mark-ups can be expected in 2024 Q1, when the forecast assumes – as it does for this year – further above-average repricing in January. However, the generally prevailing gradual closure of the positive gap in mark-ups will foster a slowdown in consumer price inflation over the outlook.

Inflation will rise temporarily at the start of 2023 and drop to single digits in the second half of the year

The growth in headline inflation (see Chart III.4) above 17% in January will be fostered by a surge in administered price inflation. By contrast, the contribution of food prices will decrease relative to previous months. In addition, core inflation will decline further and fuel price growth will slow. The rise in prices of goods and services in the usual January repricing will be above the long-term average but smaller than last year. Year-on-year growth in all inflation components will decrease in February and March. Overall, consumer prices will grow by around 16% year on year in 2023 Q1. Their growth will then fall and return to single digits in roughly the middle of this year, with all inflation components contributing (see Chart III.5). Inflation will fall further at the start of next year.

Administered price inflation will pick up considerably at the start of the year

Administered price inflation will be extremely high in January. This will be due mainly to an unprecedented rise in electricity prices. It will be caused by growth in the cost of electricity itself (excluding fees) to the price cap set by the government at CZK 6.05 per kWh including VAT and the simultaneous discontinuation of the energy savings tariff.[12] The tariff led to a temporary drop in electricity prices from October until December and thus considerably reduced administered price inflation in 2022 Q4. Increases in heat prices, water supply and sewerage charges and administered prices in transport in January will act in the same direction. By contrast, gas prices for households were in most cases above the government price cap (CZK 3.025 per kWh including VAT) at the end of last year and will in fact drop in January. Energy prices are discussed in more detail in Box 2 at the end of this section.

Chart III.4
Inflation will rise above 16% in 2023 Q1 and then start to fall, returning close to the 2% target in the first half of 2024
headline inflation; y-o-y in %; confidence interval

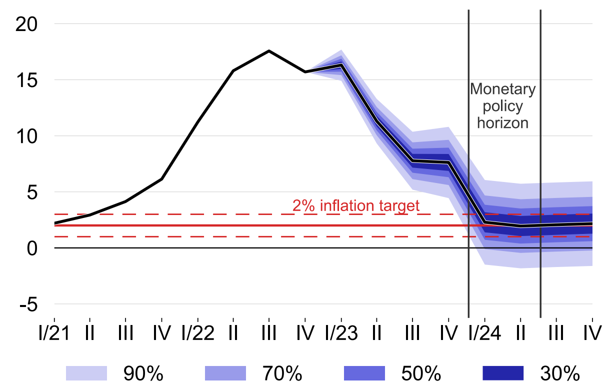


Chart III.5
Consumer price inflation will remain broad-based at the start of 2023; in addition to core inflation, it will be driven by a marked increase in the contribution of administered prices and still high food price inflation
structure of inflation; y-o-y changes in %; contributions in pp

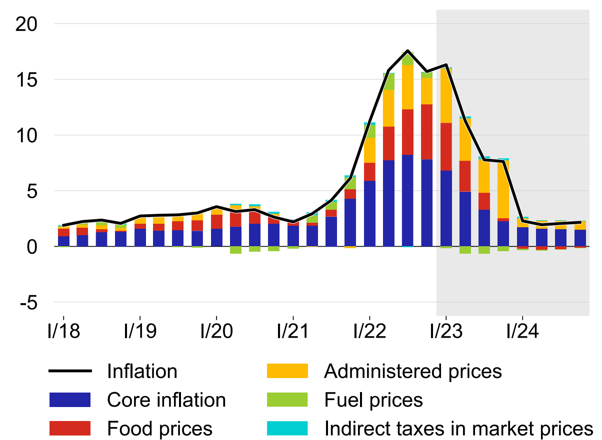
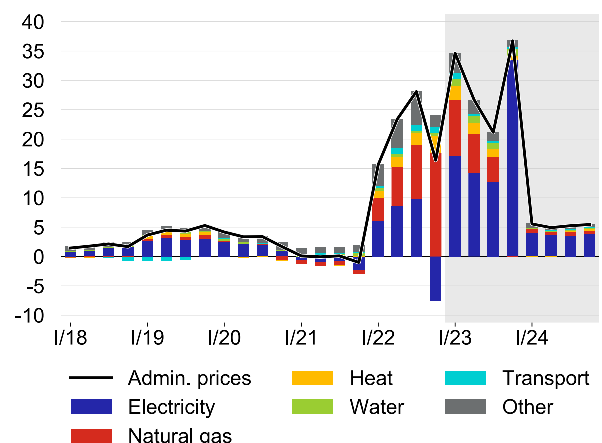


Chart III.6
Administered price inflation will be extremely high and simultaneously very volatile this year; it will not fall markedly until next year
administered prices; y-o-y changes in %; contributions in pp; including taxes



12 The direct effect of the energy savings tariff on unit electricity prices was not taken into account in the previous inflation forecast. It was treated as a fiscal compensation measure.

Administered price inflation will gradually fall over the rest of this year but will surge in late 2023 due to base effects (see Chart III.6). Growth in administered prices will ease in 2024. However, the renewable sources fee will simultaneously be reintroduced,[13] so administered price inflation will not drop to 2% next year.

Within core inflation, growth in tradables and non-tradables prices has started to slow

Core inflation decreased gradually in Q4 on account of slowing growth in prices of goods and services. It will continue to fall in 2023 Q1 (see Chart III.5), due mainly to relatively quickly diminishing growth in foreign industrial producer prices, which is spilling over into domestic industrial and consumer prices. Cooling domestic demand will act in the same direction. The falling core inflation will also be linked with a continued decline in the contribution of imputed rent (see Chart III.7), which is an important item of core inflation.

The slower growth in imputed rent reflects a combination of weakening year-on-year growth in prices of new properties (from 25% to around 15% in 2022 Q3), sharply falling demand for new mortgages and decreasing growth in construction materials prices. Growth in materials prices continued to decline gradually in 2022 Q4, reaching 15.8% in December. Growth in construction work prices stayed at around 12% at the end of last year. According to the latest available data, year-on-year growth of house prices as a whole (new and existing apartments and houses, including land) also started to slacken to around 17% in 2022 Q3.[14] This slowdown will continue in the period ahead, due, among other things, to higher mortgage interest rates. Core inflation will continue to come down throughout 2023, aided by tighter domestic monetary conditions and a partial cooling of the labour market.

Growth in food prices peaked in 2022 Q4

Year-on-year food price inflation peaked in November 2022 and started to decline in December. It will continue to come down in 2023 Q1 (see Chart III.5), partly because of falling world agricultural commodity prices and domestic agricultural producer prices. Over the rest of this year, food price inflation will drop distinctly. At the end of 2023, food prices will begin to fall in year-on-year terms.

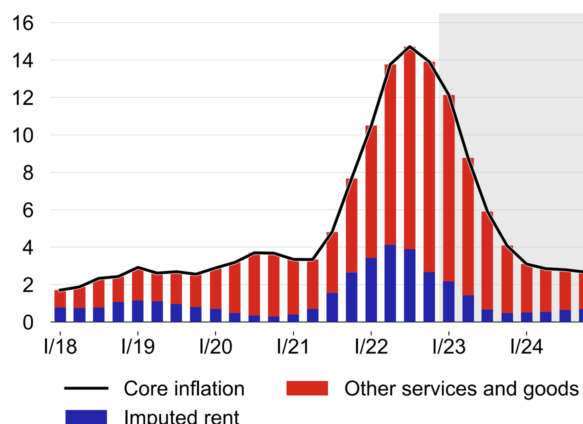
Fuel prices will start to decline in 2023 Q1

Fuel prices (adjusted for a temporary decrease in excise duty on diesel; see below) decreased markedly in 2022 Q4 owing to a drop in oil prices and margins

Chart III.7

The declining contribution of imputed rent will foster a drop in core inflation in the quarters ahead

y-o-y changes in %; contributions in pp



We distinguish two types of price effects in relation to ***changes to indirect taxes*** *– first-round and second-round. The first-round effects are the calculated price changes due to the indirect tax changes implied by full (accounting) pass-through of the tax changes to prices of the relevant items of the consumer basket. The second-round effects capture the price changes due to indirect tax changes going beyond their first-round effects. The second-round effects may be positive or negative. In the case of an indirect tax increase (decrease), they are positive if the prices of the items concerned rise (fall) more (less) than implied by mechanistic pass-through of the tax changes. Conversely, they are negative if prices rise (fall) less (more) than the tax increase (decrease) would imply. The CNB applies escape clauses to the first-round effects of indirect tax changes.*

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13 The waiver of the fee for renewable energy sources approved by the Czech government will be in effect from October 2022 until December 2023. The price effect of this measure was incorporated into the previous forecast.

14 As measured by the CZSO House Price Index. This index does not directly enter the cost of owner-occupied housing in the CPI (imputed rent).

along the entire value chain. Prices at filling stations will decrease year on year in 2023 Q1, due mainly to a high base, and will continue to fall for the rest of this year.

Headline inflation will be above monetary policy-relevant inflation over the entire outlook

Changes to indirect taxes will affect consumer price inflation in opposite directions. A reduction in excise duty on fuel of CZK 1.50 a litre in June last year led to a slightly negative contribution of changes to indirect taxes to inflation (see Chart III.8). In the case of diesel, the reduction in excise duty was extended until the end of 2023, when the rate of duty will return to its original level.[15] This is the only increase in indirect taxes in 2024 considered in the forecast. By contrast, excise duty on cigarettes was increased again (by 5%) in January this year. Overall, these changes to indirect taxes will lift consumer price inflation over the entire outlook horizon. They do not affect monetary policy-relevant inflation, so the CNB does not respond to them. This is because they are one-off changes in the price level caused by the corresponding pass-through of changes to indirect taxes. The central bank usually disregards such changes, especially if, as in this case, they do not have clear long-term second-round effects on inflation.

Monetary policy-relevant inflation will fall close to the inflation target over the monetary policy horizon (12–18 months ahead, i.e. in the first half of 2024), due in part to tighter monetary policy (see Chart III.9).

Chart III.8

The first-round effects of changes to indirect taxes will reflect changes in excise duty on tobacco and fuel

first-round and second-round effects of tax changes; contributions to annual inflation in pp

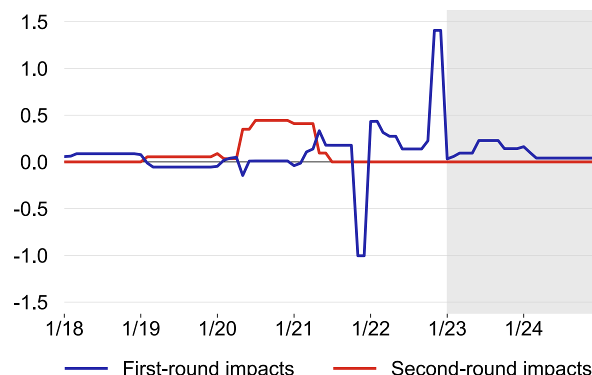
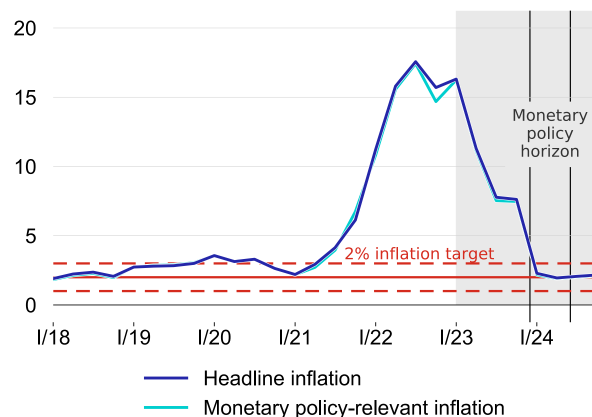


Chart III.9

Monetary policy-relevant inflation will decrease close to the 2% target at the monetary policy horizon; headline inflation will be slightly above it over the entire outlook

headline and monetary policy-relevant inflation; in %



15 Excise duty on petrol returned to its original level in October 2022.

COMPARISON WITH THE PREVIOUS FORECAST: Price developments

		2022	2023	2024	
Consumer prices	y-o-y changes in % pp	**15.1** (-0.7)	**10.8** (1.7)	**2.1** (-0.2)	The upward revision of the inflation forecast this year is due to higher administered price and food price inflation.
Administered prices	y-o-y changes in % pp	**20.9** (-5.3)	**29.9** (13.0)	**5.3** (-0.5)	The administered price outlook for 2023 is higher due to higher electricity prices (including the effect of the energy savings tariff at the end of 2022) and a higher outlook for heat prices and water supply and sewerage charges.
Core inflation	% pp	**13.2** (0.0)	**7.7** (-0.7)	**2.9** (-0.3)	The downward revision of the core inflation forecast is due to a faster declining contribution of imputed rent and lower domestic demand.
Food prices (incl. alc. bev. and tobacco)	y-o-y changes in % pp	**12.9** (0.6)	**8.3** (2.0)	**-0.8** (0.0)	The food price forecast for this year is higher due to higher observations at the end of last year.
Fuel prices	y-o-y changes in % pp	**33.6** (-1.5)	**-15.0** (-14.0)	**-1.6** (1.8)	Fuel price inflation is markedly lower this year due to its more rapid slowdown in 2022 Q4 and a lower outlook for koruna oil prices.

Note: Changes compared to the previous forecast in brackets (a green label indicates an increase in value and a red label a decrease)

BOX 2 The impact of elevated energy prices on households and businesses

Strong growth in energy prices is currently a major inflation factor, as energy payments form a large part of household expenditure. The period of low electricity and gas prices ended around mid-2021, and energy prices started to surge at the end of that year. In 2022, the energy crisis was exacerbated by Russia's military aggression in Ukraine and the related sharp rise in energy prices on commodity exchanges, which is gradually being reflected in rising retail prices. Many customers will also see a sharp increase in energy bills in 2023.

This box examines the impact of the elevated energy prices on inflation in the Czech Republic from the perspective of both direct (easy to measure) and indirect (relying on qualitative judgement) effects.

The direct effects relate to the weights of electricity and gas in the consumer basket (almost 4% and almost 2% respectively). At the start of 2023, the largest domestic suppliers stopped increasing retail electricity prices at the government price cap (CZK 6,050/MWh including VAT). This still meant price hikes in the high tens of per cent for customers with the most common type of contract: open-ended contracts for existing customers.[1] The main suppliers raised their electricity prices by almost half on average, with ČEZ increasing its rates the most (see Chart 1). At the same time, suppliers published hypothetical tariffs indicating the electricity prices households would have paid if there were no government price caps. According to these tariffs, the increases would have been even bigger. For ČEZ customers, for example, the electricity price would have been almost triple that in 2022.

In the case of gas, most major suppliers reduced retail prices to the government price cap (CZK 3,025/MWh including VAT) in January 2023. Unlike electricity, gas prices were already above the cap in most cases at the end of 2022, so gas went down in price for households in January compared with the previous month, albeit only by a few per cent. Without the price cap, gas prices would have kept rising at the start of this year, though less significantly than electricity prices (see Chart 1).

The indirect effects of high energy prices on a wide range of consumer prices manifest themselves via the energy intensity of the various stages of the product and distribution vertical, which, together with other costs and margins, culminates in the final goods price. This box looks at the production of miscellaneous manufactured articles and food. One can calculate their energy intensity[2] and simultaneously assign them to individual items of the consumer basket under food and core inflation (goods) using correspondence tables.[3]

Chart 1

Electricity and gas prices for households would be much higher without the price cap

average electricity and gas prices for households including VAT; largest domestic suppliers; CZK/MWh

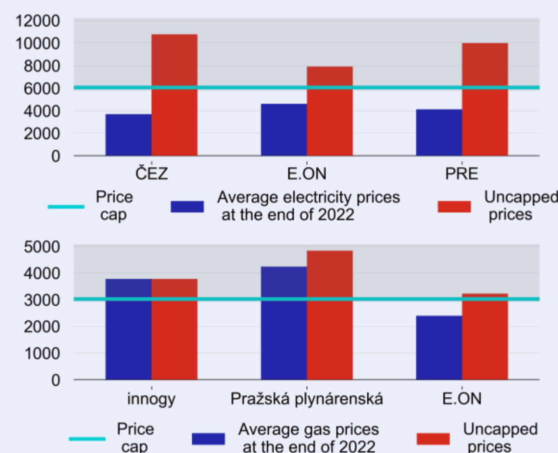


Chart 2

The energy intensity of food production is higher than that for consumer goods

x-axis: energy intensity in %; y-axis: weight of items in consumer basket in ‰

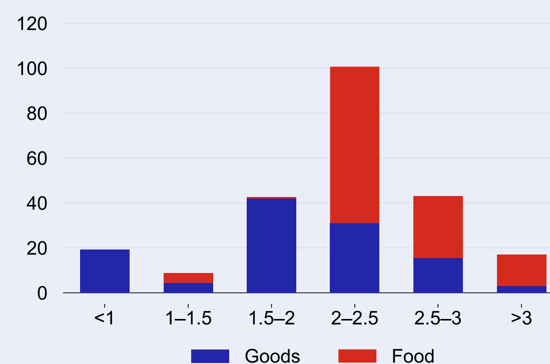
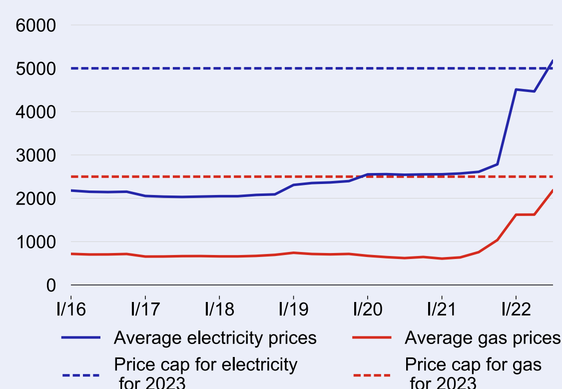


Chart 3

Electricity and gas prices for industry were several times higher than in previous years in 2022 Q3

electricity and gas prices for supplies to industry; CZK/MWh excluding VAT and other taxes



The energy intensity of miscellaneous manufactured articles is more homogeneous and lower than that of food, mostly lying between 2% and 2.5% (see Chart 2). However, the low share of energy costs in total production costs is related to input data availability. The latest available data are for 2020, when energy prices were still much lower (see Chart 3). By 2022 Q3, the average prices of electricity and gas for industry were more than double and triple the 2020 levels respectively.[4] In both cases, they were close to the price caps which started to apply to businesses at the same level as those to households in January 2023.[5] The government price cap should thus protect industry from further significant energy price increases, at least until the end of 2023.[6]

Despite the relatively low energy intensity, it turns out that there is a positive relationship between energy intensity and price growth due to the unprecedented magnitude of this shock. This is true for both industrial producer prices (see Chart 4) and consumer prices (see Chart 5). The increase in energy prices last year fed through first to producer prices and then to consumer prices. Given the current electricity and gas prices for industrial firms, or more specifically the caps on those prices, energy prices this year may not provide a strong impetus for further price increases. In addition, the growth in energy prices for this year relative to previous years should not imply a significant deterioration in the economic condition of firms on average.

In 2023 or 2024, energy prices could even fall below the government's price caps (equivalent to around EUR 200/MWh for electricity and EUR 100/MWh for gas, both excluding VAT). This is because prices of exchange contracts for electricity and gas for the Czech Republic for delivery in 2024 are gradually falling due to energy savings, the securing of gas supplies from alternative sources, increased use of renewable energy sources and the warm winter so far, and are currently below EUR 170/MWh for electricity and EUR 70/MWh for gas (see Chart 6). If these prices were to remain close to their current levels, this could provide some relief to businesses and households from high expenditure on energy.

Chart 4

At the production price level, a positive relationship is evident between price growth and energy intensity, despite its low level

data for December 2022; x-axis: energy intensity in %; y-axis: annual producer price inflation in %; size of bubble corresponds to weight of related item in consumer basket

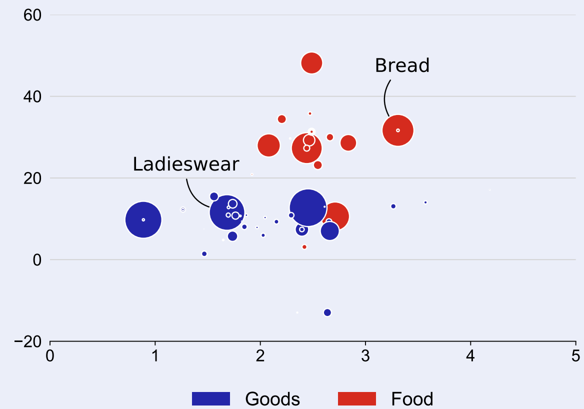


Chart 5

The sizeable energy price shock is propagating through the product vertical to consumer prices

data for December 2022; x-axis: energy intensity in %; y-axis: annual consumer price inflation in %; size of bubble corresponds to weight of item in consumer basket

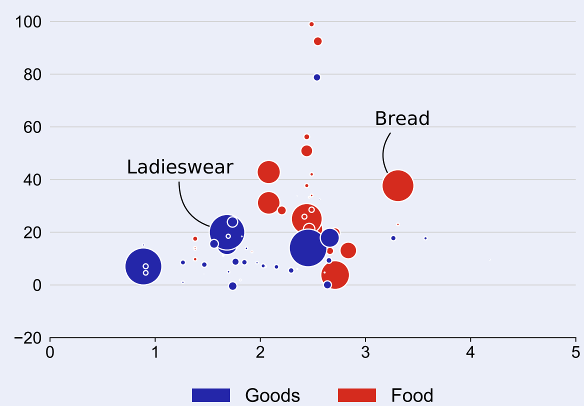
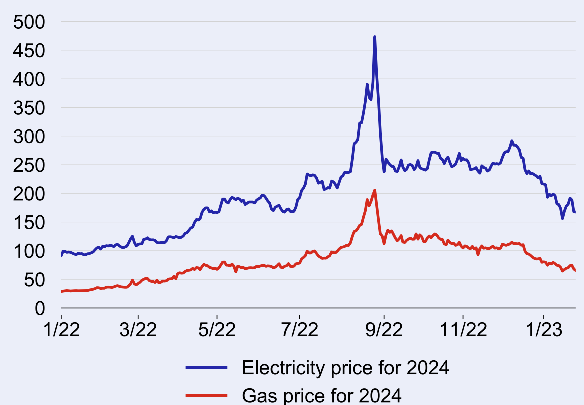


Chart 6

A downward trend is evident for exchange prices of electricity and gas for 2024

exchange prices of electricity and gas for Czech Republic for 2024; EUR/MWh



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1 After the collapse of Bohemia Energy in October 2021, electricity suppliers began to differentiate between existing customers, for whom they had already bought electricity, and new customers, for whom they were purchasing electricity at the higher current exchange prices. Prices for new customers were thus much higher than those for existing ones. This year, energy prices for new customers will move towards the government price cap from above and those for existing customers will move towards it from below.

2 The energy intensity of a sector is defined as the share of energy expenditure in total costs. See, for example, *Study on energy prices, costs and subsidies and their impact on industry and households*.

3 The items selected in this analysis cover around a quarter of the consumer basket. Food and goods contribute in equal measure.

4 In recent years, electricity and gas have accounted for around 60% of the energy consumption of industrial companies.

5 Unlike households, the price caps for businesses are limited to 80% of the company's highest monthly consumption of gas or electricity in the past five years.

6 However, this may differ across industries or at the company level. According to the autumn survey conducted by the Confederation of Industry of the Czech Republic, around two-thirds of firms had fixed electricity and gas prices in 2022 (with about half paying 2021 prices). This is now down to one-fifth of companies for 2023.

BOX 3 Assessment of the fulfilment of the inflation target over the last two years

The CNB's price stability mandate involves regularly assessing the fulfilment of the mandate and determining the causes of any past deviations of actual inflation from the central bank's inflation target. In the interests of making the CNB's monetary policy transparent to experts and the general public, this analysis has become an annual feature of the Monetary Policy Report.[1] Here, we assess the deviations of inflation from the 2% target over the past two years, i.e. in 2021–2022.

In 2021, inflation started to deviate increasingly from the CNB's 2% target. At the start of 2022, it even climbed to double figures (see Chart 1). The factors underlying the deviation of inflation from the target were identified using the core prediction model.[2] This identification provides an insight into the origin of the inflation pressures faced by the Czech economy in the past two years (see Chart 2).

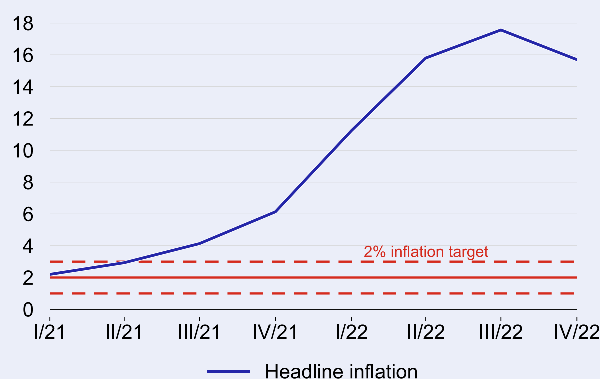
Economic developments abroad had an anti-inflationary effect in 2021, albeit with gradually decreasing intensity. This predominantly reflected the lingering effect of the fall in foreign producer prices in 2020, which fed through to domestic price pressures with a lag. In spring 2022, the foreign environment slowly started to gain inflationary momentum. This was due to record-high growth in foreign producer prices in the effective euro area. It reflected second-round effects of the pandemic in the form of disrupted global value chains and a surge in energy commodity prices on international exchanges. The latter was exacerbated by Russia's aggression against Ukraine, which fuelled the already enormous rise in energy commodity prices (energy crisis). An inflationary effect of foreign prices on the Czech economy was identified for most of the period under review. However, its impact was partly dampened by appreciation of the koruna related to the slower tightening of the ECB's monetary policy, as the ECB started to raise interest rates later (in July 2022) and with less intensity by comparison with the domestic monetary tightening. A widening interest rate differential thus exerted latent appreciation pressure on the koruna and hence downward pressure on domestic inflation.

__The monetary policy rule in the g3+ model__ sets interest rates so as to ensure that inflation returns to the 2% target at the monetary policy horizon. The inflation outlook takes on board the forecasts for all relevant macroeconomic variables. The emphasis on the monetary policy horizon reflects the gradual transmission of interest rates to future economic developments and in turn to inflation. By concentrating on inflation at this horizon, the central bank simultaneously abstracts from short-term inflation shocks. Their impact can be controlled by monetary policy to only a minimal extent. In addition, any efforts to mitigate them quickly would cause excessive interest rate volatility, which would destabilise the economy. The monetary policy rule also includes interest rate smoothing by the central bank. Nonetheless, active monetary policy stabilises inflation at the target in the medium term. This is usually accompanied by gradual movement of interest rates towards their neutral long-run level (3%).

Chart 1

Inflation gradually deviated from the 2% target during the period under review, reaching double figures in 2022

consumer prices in %



The domestic economy had a slight anti-inflationary effect at the start of 2021 but began to contribute positively to the deviation of inflation from the target in the spring. The government reintroduced anti-pandemic measures at the start of 2021 during the third (winter) wave of Covid-19. These measures curbed household consumption and had an anti-inflationary effect. In mid-2021, however, the contribution of the domestic economy turned inflationary as domestic demand quickly recovered after most anti-pandemic restrictions were lifted. Along with deferred consumption and forced savings, demand was boosted by the abolition of the super-gross wage and by other generous fiscal measures amid a still highly overheated labour market and low unemployment. Households therefore accepted rising prices, thanks in part to strong consumer appetite. This allowed firms to raise their prices further and make up for their previous pandemic-related losses by increasing their profit margins. In addition, the already strong domestic inflation pressures were joined in late 2021 and early 2022 by a sizeable increase in administered prices caused by a surge in energy prices on international exchanges. This continued for the rest of 2022. The broad-based nature of inflation – which, together with the rapid growth in

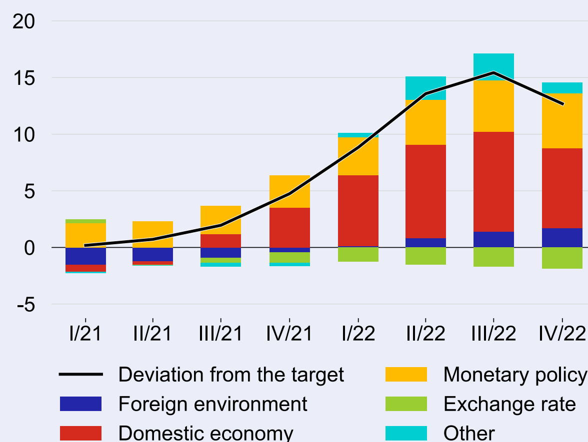
costs, reflected rising profit margins in sectors that had not been affected so much by the rise in energy prices, or had even profited from it – also contributed to the significantly positive and further increasing deviation of inflation from the target for most of 2022. The deviation of inflation from the target narrowed at the end of 2022 as a result of a government measure to counter the high energy prices – the energy savings tariff (including a waiver of the fee for renewable energy sources), which temporarily reduced administered price inflation.

The koruna depreciated sharply to CZK 27 to the euro in spring 2020. This was due to a sudden deterioration in sentiment and to the high degree of uncertainty associated with Covid-19. The koruna then appreciated markedly from its previous temporarily weaker levels as the pandemic receded during 2021. It thus fostered a negative deviation of inflation from the target from the second half of 2021 onwards. Despite a renewed deterioration in sentiment as a result of the energy crisis and the war in Ukraine, the koruna remained relatively stable in 2022, due in part to the CNB's foreign exchange interventions. It strengthened further at the year-end, mainly on the back of improved financial market sentiment towards the region. This stemmed among other things from the securing of sufficient gas stocks for the current heating season amid favourable temperatures. The appreciation of the koruna thus partly offset the surge in import prices and had an anti-inflationary effect.

Chart 2

The significant and increasing overshooting of the target in 2021 and 2022 was due mainly to an overheating domestic economy, high energy prices and previous easy monetary policy

deviation of monetary policy-relevant inflation from CNB's 2% target; contributions in pp



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

In 2021, the Bank Board viewed the uncertainties and risks of the CNB's forecasts at the time mostly as substantial and related mainly to the reopening of the domestic and foreign economies in the context of a constantly changing epidemic situation. Closely related to this was uncertainty about the duration of the disruptions to global value chains and their pass-through to prices. The central bank therefore kept interest rates close to zero at the start of 2021. However, the expected cooling of demand-pull inflation pressures did not materialise, due in part to fiscal measures. This led to inflation staying above the target. From around mid-2021 onwards, the Bank Board communicated the upside risks to inflation of the forecasts. At the same time, it identified a risk of weaker anchoring of inflation expectations in an environment of long-running overshooting of the inflation target. The upside risks were later joined by unprecedentedly high growth in energy prices and imputed rent and a weakened reaction of the koruna to the growth in domestic interest rates.

The already sharp rise in energy commodity prices intensified in early 2022 due to the outbreak of the war in Ukraine. There was also a related risk of more expansionary domestic fiscal policy (measures aimed at mitigating the impacts of the energy and refugee crises). The future monetary policy stance abroad was a significant uncertainty. In the second half of the year, the Bank Board assessed the risks and uncertainties as being significant and going in both directions. The growing likelihood of recession abroad and a stronger-than-forecasted downturn in domestic consumer and investment demand were newly identified risks.

The CNB responded to the exceptionally strong across-the-board inflation pressures by raising interest rates from June 2021 onwards. The rate hikes gained in intensity during the autumn and continued until June 2022. The aim was to limit the pass-through of these pressures to prices in the longer term, ensure the return of inflation close to the 2% target at the monetary policy horizon and help anchor inflation expectations to the target so that the CNB fulfilled its price stability mandate. Overall, the CNB Bank Board increased the two-week repo rate by 675 basis points to 7% in nine steps during this period.

Inflation was above the 2% target over the entire period under assessment. From mid-2021 onwards, the inflationary effect of monetary policy was joined by the effect of the overheated domestic economy/labour market and by high growth in energy prices, which gradually fed through to all price categories. It was counterbalanced to only a limited extent by the anti-inflationary effect of the exchange rate and – until the start of 2022 – also by foreign factors (mainly the pass-through of the previously falling foreign producer prices to domestic inflation). From this perspective, it can be said that monetary policy should have been much less accommodative in the past.[3]

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1 The previous assessment of the fulfilment of the inflation target was presented in Box 3 in *Monetary Policy Report – Spring 2022*. Starting with this Report, this analysis will be part of the winter issue of the Report.

2 The g3+ core prediction model is used to prepare the CNB's macroeconomic forecasts. It is also used to assess the fulfilment of previous forecasts and to determine the sources of deviations of the actual figures from the forecasts under assessment and the inflation target. For details, see *The g3+ Model: An Upgrade of the Czech National Bank's Core Forecasting Framework*, CNB WP 7/2020.

3 The Czech economy had already been strongly overheated for some time before it was hit by the Covid-19 pandemic, which was identified in hindsight as a negative supply shock. The CNB's response in the form of stabilising anti-crisis measures (including a sharp reduction in interest rates and the relaxation of limits in the financial stability area) was similar to the course of action taken by most central banks in advanced countries. In the context of other factors (including relaxed fiscal policy), this supportive policy nonetheless led to excessive stimulation of demand and soon proved to be too inflationary. The following study deals in detail with the overheating of the Czech economy in the Covid period: *Assessment of the Nature of the Pandemic Shock: Implications for Monetary Policy*, CNB Research Policy Notes 1/2022.

IV. MONETARY POLICY

At its February monetary policy meeting, the CNB Bank Board kept interest rates unchanged. The two-week repo rate thus remained at 7%, the discount rate at 6% and the Lombard rate at 8%. The Bank Board assessed the uncertainties and risks of the new forecast as being significant and going in both directions. Consistent with the winter forecast is a rise in interest rates initially, followed by a gradual decline. The rise in interest rates at the start of the forecast reflects the need to lower inflation close to 2% at the monetary policy horizon. The initial domestic monetary policy tightening, supported by an appreciating koruna, coupled with fading cost price pressures, will subsequently create room to lower interest rates gradually. In the forecast, the central bank looks at a monetary policy horizon 12–18 months ahead. The horizon is thus currently the first half of 2024, as in the previous two forecasts. The distance between the decision-making moment and the monetary policy horizon has been shortened by one quarter compared to the previous forecast. This reflects easing external cost pressures. There are numerous substantial risks and uncertainties associated with the forecast. More expansionary fiscal policy is an upside risk. The threat of inflation expectations becoming unanchored and the related risk of a wage-price spiral also remain significant risks in the same direction. By contrast, a stronger-than-forecasted downturn in domestic consumer and investment demand is a downside risk. A faster-than-expected decline in core inflation is also an anti-inflationary risk. The extent of repricing of goods and services in January, which will affect annual inflation throughout 2023, is a risk in both directions. The general uncertainties of the outlook include the future course of the war in Ukraine, the availability and prices of energy, and the future monetary policy stance abroad.

Consistent with the winter forecast is a rise in market interest rates initially, followed by a gradual decline

The winter forecast implies a temporary rise in short-term market rates to just over 8% (see Chart IV.1). In the forecast, this corresponds to a reaction to the expected pass-through of the previous extraordinary inflation pressures. The interest rate reaction reflects the central bank's efforts to fulfil the 2% target robustly at the monetary policy horizon 12–18 months ahead, i.e. in the first half of 2024. The initial monetary policy tightening will foster a desirable deferral of current consumer and investment demand and reduce the price impacts of the previous excess demand. This will help anchor inflation expectations and, coupled with fading cost price pressures, result in inflation falling to the target in the first half of next year. This will open up room for monetary policy to be eased gradually. Interest rates will thus be able to start coming down in the course of this year.

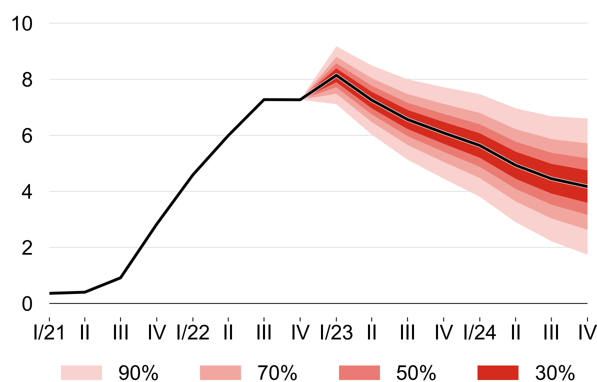
The forecast assumes that the central bank sets interest rates in order to fulfil the 2% target at a monetary policy horizon 12–18 months ahead

The previous strong external cost pressures have recently been easing greatly and will largely fade out

Chart IV.1

Consistent with the forecast is a rise in interest rates initially, followed by a gradual decline

3M PRIBOR in %; confidence interval



***The confidence intervals of the forecasts** for key macroeconomic variables reflect the predictive power of past forecasts. They are symmetric and linearly widening. In the case of headline inflation, they widen 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.*

before the end of this year. Energy prices will dampen the rise in costs in the quarters ahead. Foreign producer price inflation will stabilise at the usual subdued level in the longer run. In the previous two forecasts, the CNB exempted major price movements caused by external cost pressures. As a result, the monetary policy horizon was located further into the future than usual. Given the expected path of the cost pressures, this approach is no longer relevant and monetary policy has been returned to the standard framework. In this framework, the monetary policy horizon is 12–18 months ahead, which in this forecast corresponds to the first half of 2024. The anchoring of medium-term inflation expectations to the 2% target remains an important forecast assumption. This helps inflation return quickly close to the 2% target.

The koruna appreciated at the turn of the year

The koruna firmed from CZK 24.7 to the euro in late September to around CZK 24.0 at the year-end. It fluctuated close to this level in January, too. The key factor of the koruna's appreciation in early autumn was a decline in the domestic banking sector's external debt as a result of CNB interventions. The CNB operated only marginally on the market in Q4 (in October), but it continued to declare its preparedness to prevent excessive fluctuations of the koruna exchange rate. This increased investors' interest in investing in koruna assets, amid a weakening of the dollar against the euro. The appreciation of the koruna was also fostered by the very mild winter so far, which greatly reduced exchange prices of energy and hence also the cost of importing energy commodities into the Czech Republic. The average exchange rate of the koruna against the euro was CZK 24.4 in Q4. This represents a year-on-year appreciation of 4%.

The koruna will weaken to around CZK 24.5 to the euro this year

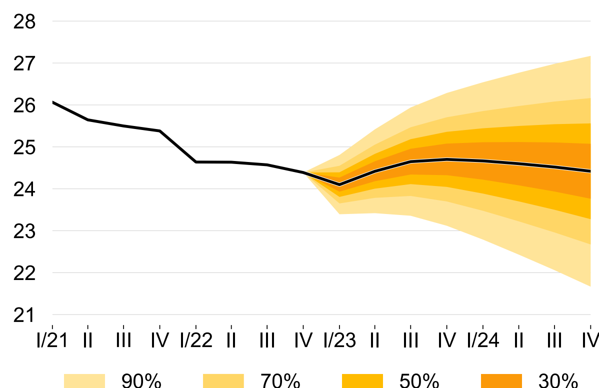
The forecast expects the koruna to average CZK 24.1 to the euro in 2023 Q1. The exchange rate will gradually weaken to around CZK 24.5 to the euro in the following quarters and then appreciate gradually again next year (see Chart IV.2). The exchange rate will be affected by a narrowing interest rate differential vis-à-vis the euro area (see Chart IV.3), which will have a weakening effect. In the forecast, however, this effect is lessened by expert adjustments. After the negative impacts of disrupted global value chains and the direct economic impacts of the war in Ukraine fade out, the balance of trade will return to a surplus and global sentiment will improve. This will in turn be reflected in gradual appreciation of the koruna during 2024.

The market interest rate outlook for the near future is below the CNB forecast; the

Chart IV.2

Following an initial strengthening, the koruna will depreciate slightly this year and appreciate again in 2024

CZK/EUR exchange rate; confidence interval

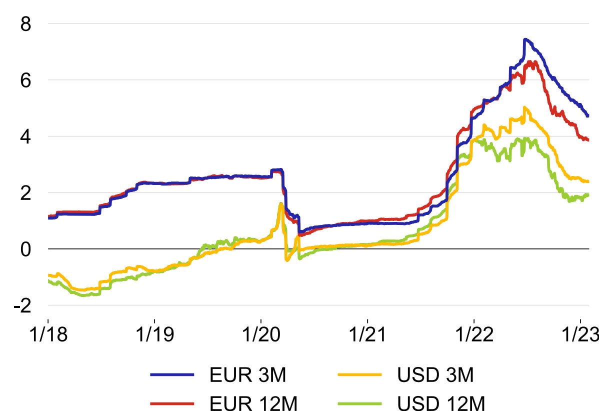


***The monetary policy horizon** is the future time period which the CNB focuses on when making its monetary policy decisions and which reflects the lag in the transmission of monetary policy. By concentrating on inflation at this horizon, the central bank also abstracts from short-term inflation shocks, whose impact monetary policy can control to only a minimal extent.*

Chart IV.3

The interest rate differential vis-à-vis euro and dollar rates is gradually narrowing

pp; differential of Czech money market rates vis-à-vis EUR and USD rates



exchange rate path expected by analysts is similar to the central bank's forecast

The market outlook for short-term FRA rates has been fluctuating slightly with a prevailing downward trend in recent weeks and months. The market currently expects the 3M PRIBOR to decline gradually at the one-year horizon (see Chart IV.4). This outlook is lower than the CNB forecast until spring 2023. All the respondents in the FMIE survey were expecting the 2W repo rate to be left at its current level at the monetary policy meeting in February. The analysts expect the CNB's key interest rate to be in the range of 5%–6.75% (5.9% on average) at the one-year horizon.

On average, the analysts in the FMIE and FECF surveys expect the koruna to weaken slightly from its current level at the one-year horizon (see Table IV.1). The exchange rate level they expect is broadly the same as the central bank's outlook. The analysts attribute the depreciation of the koruna to the expected contraction of the economy, which is highly dependent on imports of expensive energy commodities. Related to this is a deterioration in foreign trade and the current account balance, which exerts depreciation pressure on the Czech currency. The narrowing interest rate differential should act in the same direction. According to the analysts, potential foreign exchange interventions by the CNB would prevent a stronger depreciation of the koruna. The difference between the minimum and maximum expected exchange rate against the euro at the one-year horizon in the two surveys is CZK 2 and CZK 3 respectively.

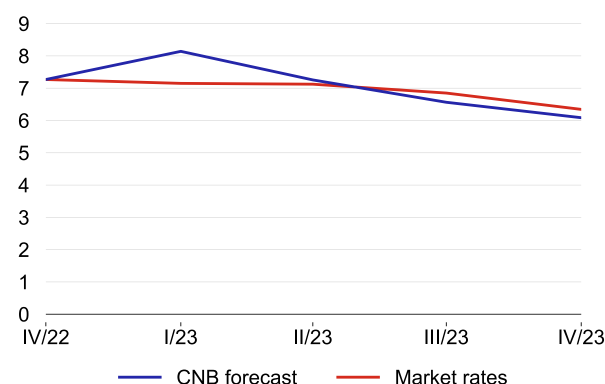
The Bank Board members' communications regarding future rates sent a mixed message

In their communications, five of the Bank Board members have said they prefer to keep rates unchanged, as they believe the current interest rate level is having a sufficiently restrictive effect on the domestic economy. Two of them have said that the rate could go up if the demand pressures in the economy increase and the January price adjustments are stronger than expected. At the same time, they are against increasing rates as a precautionary move. Since the monetary policy meeting in December, the remaining members have spoken in favour of raising the policy rate in order to reduce inflation faster. As regards the length of the period of higher rates, some of the members have said they wouldn't want to promise that the rate will start to fall in the next quarter. They have communicated that they will lower the rate after the inflation pressures subside.

Chart IV.4

The market expects rates to be left unchanged at the February meeting and the market outlook is below the CNB forecast in the short term

3M PRIBOR; FRA in %



Note: Market rates represent for 2022 Q4 the 3M PRIBOR and for 2023 Q1–2023 Q4 the average values of the FRA 1*4, 3*6, 6*9 and 9*12 rates for the last 10 trading days as of 31 January 2023.

*The **3M PRIBOR market interest rate** is a money market reference rate with a maturity of three months which is closely linked to the CNB's monetary policy rates. The CNB's key rate is the **two-week (2W) repo rate**, paid on commercial banks' excess liquidity as absorbed by the CNB in two-week repo operations. The difference between the 3M PRIBOR and the 2W repo rate fluctuates over time and reflects, among other things, expectations regarding the future path of monetary policy interest rates. This difference has been 0.2–0.3 pp since the end of June 2022.*

Table IV.1

Analysts' inflation expectations at the three-year horizon have been above the inflation target for several months, while those of firms are at 7%

sample of approximately 18 analysts and 150 corporations; 1Y horizon; annual percentage changes unless otherwise indicated

	9/22	10/22	11/22	12/22	1/23
FMIE:					
CPI	6.7	6.2	7.3	7.0	4.8
CPI, 3Y horizon	2.8	2.7	2.5	2.7	2.6
Real GDP in 2022	2.4	2.4	2.4	2.4	
Real GDP in 2023	1.2	0.7	0.0	0.0	0.0
Nominal wages in 2022	6.8	7.0	6.6	6.6	
Nominal wages in 2023	7.7	8.0	7.6	7.4	8.1
CZK/EUR exchange rate (level)	25.0	25.1	24.9	24.7	24.4
2W repo rate (%)	6.0	5.9	6.0	6.0	5.9
1Y PRIBOR (%)	6.0	6.0	6.0	5.7	5.7
Corporations:					
CPI	10.3			10.2	
CPI, 3Y horizon	7.5			7.0	
CF:					
Real GDP in 2022	2.4	2.4	2.4	2.4	
Real GDP in 2023	0.8	0.4	0.1	0.1	0.0
Nominal wages in 2022	7.2	6.7	6.8	6.3	
Nominal wages in 2023	7.6	8.1	7.8	7.6	7.5
CZK/EUR exchange rate (level)	24.9	24.9	24.8	24.8	24.7
3M PRIBOR (%)	5.5	6.1	5.9	5.8	5.4

COMPARISON WITH THE PREVIOUS FORECAST: Interest rates and the exchange rate

Chart IV.5

The interest rate path has moved lower next year

decomposition of changes in 3M PRIBOR forecast in pp

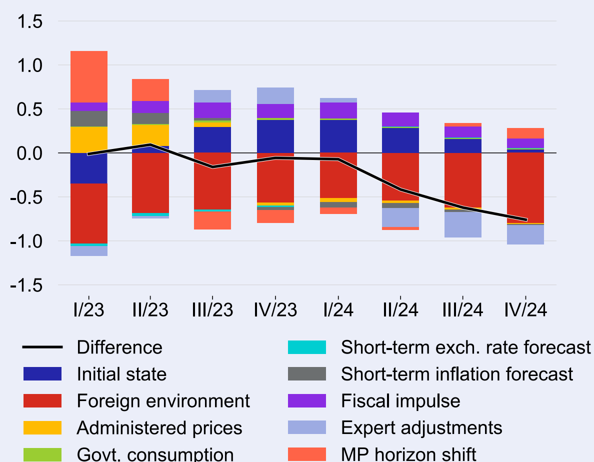
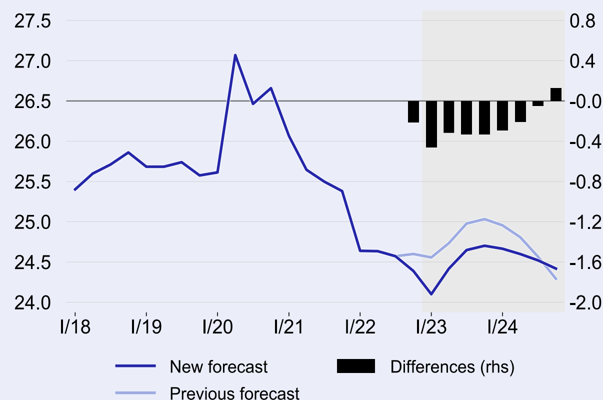


Chart IV.6

The koruna will be stronger than in the previous forecast, especially this year

change in CZK/EUR exchange rate forecast; differences in CZK – right-hand scale



Comparison of the interest rate path with the previous forecast (Chart IV.5)

- **The foreign outlook** fosters lower rates over the entire forecast horizon. This is due mainly to much lower growth in the energy component of foreign producer prices than in the previous outlook. Stronger expected tightening of monetary policy by the ECB, including the recently announced reduction of its balance-sheet size, has the opposite effect.
- **The initial state** initially fosters lower rates. This is due to a lower initial rate level and to the smoothing effect in the reaction function. Further ahead, the initial state fosters slightly higher rates. This mainly reflects faster wage growth and a smaller decline in domestic economic activity at the end of last year.
- **The short-term inflation forecast** and the outlook for faster growth in **administered prices** lead to slightly higher rates this year.
- The positive contribution of **the fiscal impulse** reflects the surprisingly low take-up of energy benefits at the end of last year. This will imply a more modest year-on-year decrease in government financial support this year than in the previous forecast.
- **Expert adjustments** initially have a broadly neutral effect, as the expert incorporation of the sharper fall in domestic demand in early 2023 than in the previous forecast is almost offset by the opposite effect of lower growth in labour efficiency. The entire outlook contains expert adjustments reducing the effect of the narrowing interest rate differential on the exchange rate, which foster lower rates. In the second half of this year, these adjustments are outweighed by the effect of an expert reduction of the pass-through of slowing costs to consumer prices amid high inflation.
- **The shift of the monetary policy horizon** one quarter closer to the present fosters higher interest rates in the first half of this year.
- **The exchange rate of the koruna** will be stronger this year compared with the previous forecast. This fosters a negligible downward revision of the interest rate path.

Comparison of the koruna exchange rate with the previous forecast (Chart IV.6)

- The shift in the exchange rate to stronger levels at the nearer end of the forecast horizon is due to its **observed levels**. The assumption of a limited pass-through of the rapidly rising interest rates abroad to the koruna's exchange rate via the **interest rate differential** acts in the same direction.

Long-term financing conditions have eased autonomously

Money market interest rates have been broadly flat since the end of June, when the CNB last raised its monetary policy rates. Domestic rates with longer maturities mostly decreased in Q4, mainly due to a decrease in the risk premium. By contrast, interest rates on foreign markets were largely unchanged overall. Their volatility was linked with uncertainty about the depth of the impending recessions in individual economies and the degree to which central banks will tighten monetary conditions in an effort to tame inflation (see Chart IV.7).

Long-term rates in the Czech Republic continued to decline in January, amid optimistic market sentiment, a strengthening koruna and lower-than-expected inflation. IRS rates dropped by up to 0.9 pp and government bond yields[16] by up to 0.8 pp compared with the end of September. Long-term financing conditions thus eased autonomously. The negative slope of the domestic IRS and government bond yield curves remained broadly unchanged (see Chart IV.8).

Client interest rates reflect the movements of domestic market rates

The rate on loans to corporations fluctuated close to 9% in Q4 following a significant increase in the previous period (see Chart IV.9). The rate on genuinely new mortgages remained at 6.1% in December, due to the gradual transmission of the previous growth in long-term market rates. However, the rate on new loans for house purchase remains below 5%, as it also includes, among other things, rates on refixed mortgages, which were negotiated well in advance at some banks. The rate on new deposits with agreed maturity fluctuated around 6.1% in Q4. This was reflected in further migration of some deposits to these higher-interest-rate products, although to a lesser extent than in previous quarters. The rate on overnight deposits, which still account for a large part of household deposits, remains low due to the rate on current accounts.

Growth in loans to the private sector slowed due to higher interest rates

The rise in interest rates, coupled with households' increased living costs, fostered a general fall in demand for housing loans. This was reflected in a further deepening of the year-on-year decline in genuinely new mortgages to -81.2% in December. The cooling of demand for consumer credit is more moderate, with genuinely new loans having fallen by around 6% year on year. This is resulting in slowing

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16 The Ministry of Finance issued CZK 378 billion of government bonds and EUR 1 billion of euro bonds on the primary market in 2022. The Funding and Debt Management Strategy for 2023 assumes issues amounting to CZK 400–500 billion.

Chart IV.7

Interest rates with longer maturities have declined markedly in the Czech Republic, while they have been broadly flat abroad in recent months

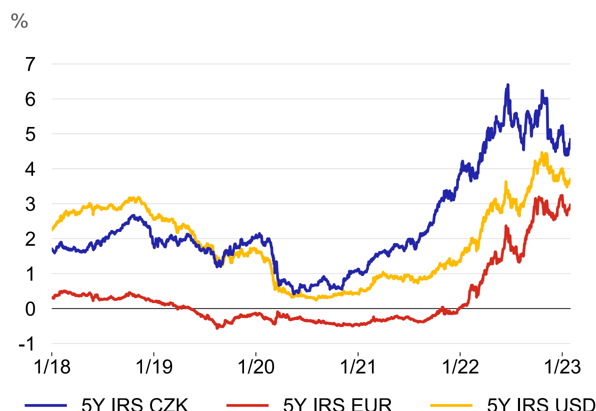


Chart IV.8

The Czech government bond yield curve shifted downwards; it still has a negative slope

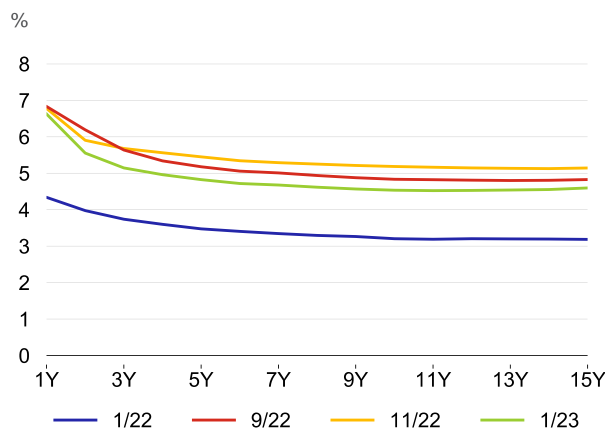
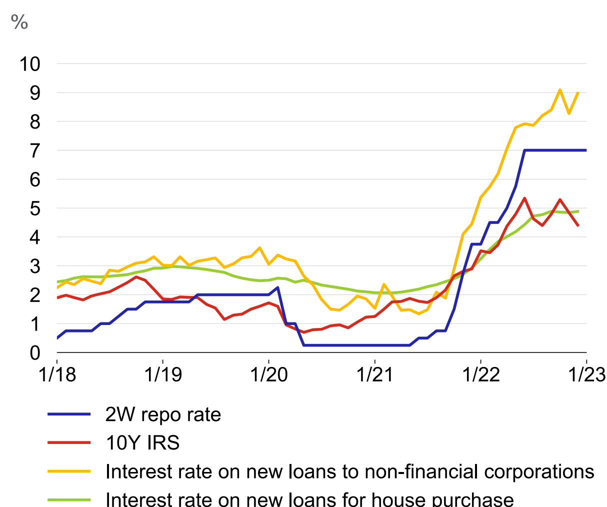


Chart IV.9

The interest rate on new loans to corporations is close to 9%, while the rate on new housing loans is around 4 pp lower



growth of both categories of loans. A similar trend is expected for the next two years (see Chart IV.10).

Growth in the stock of corporate loans also slackened, due to a continued decline in the amount of new koruna loans and slower growth in foreign currency loans. The share of foreign currency loans remained at 45.2% in December. Therefore, the growth in this share slowed in the last quarter, partly because of a decrease in the interest rate differential vis-à-vis the rest of the world. There has been a sharp increase in short-term loans as a result of growth in prices of inputs and a greater need to finance firms' working capital. On the other hand, demand for long-term investment loans has been falling. According to the forecast, growth in loans to firms will continue to slow in response to the high interest rates and the expected cooling of economic growth (see Chart IV.10).

Growth in the quantity of money in the economy increased slightly

M3 growth rose slightly to 7.3% on average in Q4 (see Chart IV.11). As regards the sources of money creation, growth in loans to the private sector fostered M3 growth, as did the contribution of government debt issuance. Conversely, net external assets fell, with the high energy prices fostering a trade deficit. The rise in interest rates is being reflected in a decrease in the highly liquid M1 and in migration of deposits to products with higher interest rates.

The risks and uncertainties of the forecast are significant and going in both directions

Given the protracted high inflation, which will stay in double figures until the middle of this year, there is still a risk of inflation expectations becoming unanchored from the CNB's 2% target. We will discuss this in more detail below. This risk may already have been reflected in the repricing of goods and services this January (and possibly February).

An unanchoring of inflation expectations from the CNB's 2% inflation target is a significant inflationary risk to the forecast

The anchoring of inflation expectations ensures that shocks to inflation (due, for example, to growth in energy prices or a weakening of the exchange rate) tend to disappear relatively quickly. However, if inflation expectations are not sufficiently anchored, major price shocks can have persistent effects on inflation. An unanchoring of inflation expectations would put further upward pressure on prices, for example in the form of a longer period of high wage growth, higher mark-ups, and possibly a bringing forward of future consumption. This would result in inflation returning more slowly to the CNB's 2% target. A simulation in the Autumn 2022 MPR showed that increased inflation expectations would require tighter monetary policy.

Chart IV.10

According to the forecast, growth in loans to households and firms will slow further

annual percentage rates of growth

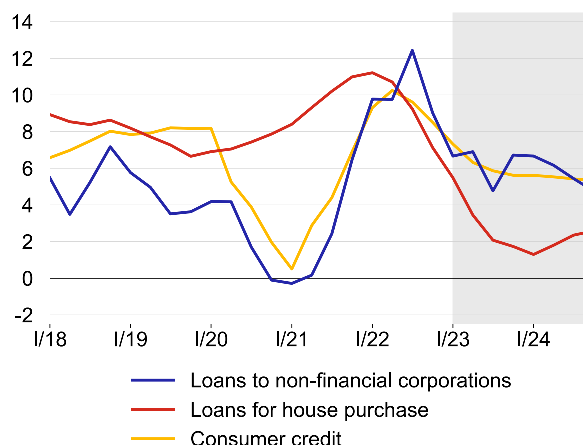


Chart IV.11

M3 growth increased slightly

annual rates of growth in %

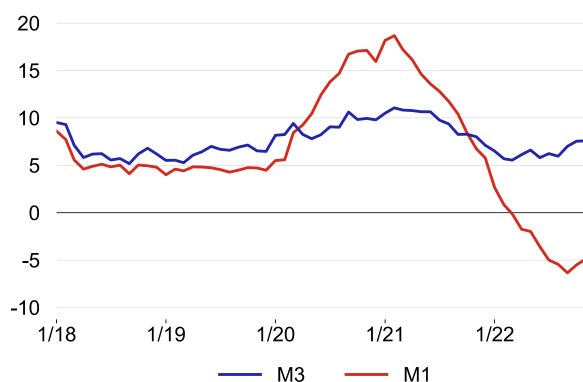
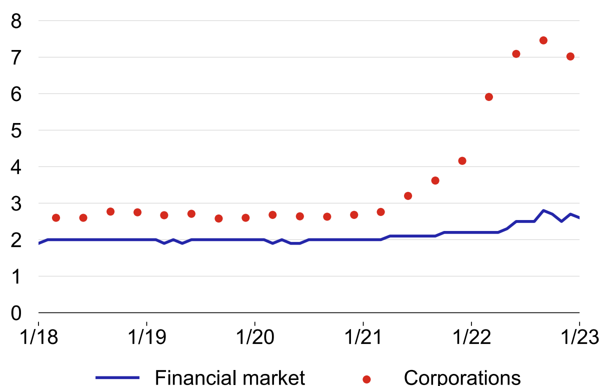


Chart IV.12

Inflation expectations declined slightly among non-financial corporations at the three-year horizon but remain well above the 2% target

sample of approximately 18 analysts and 150 corporations; %



The available indicators are signalling that there is still a risk of inflation expectations becoming unanchored. In December, the inflation expectations of non-financial corporations one year ahead remained above 10%. Three years ahead, they fell slightly to 7% but are still well above the CNB's 2% inflation target (see Chart IV.12). In a survey conducted by the Confederation of Industry of the Czech Republic and the CNB, firms are also asked about their producer prices one year ahead. This forward-looking indicator saw a significant increase to 10% in December. The European Commission's business surveys show that the share of firms expecting the prices of their products and services to go up in the near term has declined but remains high.

Concerns about rising prices also persist among households. The indicator of inflation perceived by households in the European Commission survey is close to an all-time high. The indicator of the inflation rate expected one year ahead has fallen in recent months, but most of the respondents expect inflation to continue rising (see Chart IV.13). According to the CZSO's business survey, consumers remain pessimistic about the future economic situation. The outlook for their financial situation is also still worsening, due mainly to rapid growth in housing-related energy prices.

The analysts continue to project inflation well above the CNB's 2% target at the three-year horizon (in the January FMIE survey they were expecting 2.6% on average). This section of the public is very familiar with the central bank's monetary policy regime and therefore usually has great confidence in its ability to achieve the inflation target in the medium term.

Domestic uncertainties relate to consumption, the labour market and fiscal policy

There is uncertainty in the domestic economy about the depth of the fall in household consumption at the end of 2022 and the start of 2023. Consumption has been affected by a combination of many factors associated with high energy prices and the related drop in real wages and poor consumer sentiment.

A related uncertainty is the situation on the labour market, which, despite having cooled last year, remains very robust even by European comparison. The question is to what extent the high inflation will be reflected in wage contracts this year.

Another uncertainty is the effect of fiscal policy this year and the next. Fiscal developments will be significantly affected by discretionary support measures for households and firms. These measures were adopted in response to the rising inflation and energy prices. Their fiscal impacts[17] will depend on

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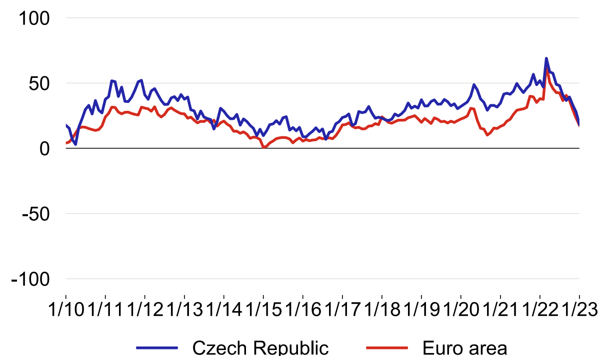
17 The current assumption is that the introduction of energy price caps, combined with revenue from the taxation of the windfall

Chart IV.13

The inflation expectations of Czech and euro area households remain elevated

households' inflation expectations in next 12 months according to European Commission Business and Consumer Survey; sample of approximately 1,000 households; balance of answers; expectations can take values from -100 to 100



***The inflation expectations of households, firms and the financial markets** fundamentally affect their behaviour and decision-making, and hence also the overall economic situation and the resulting inflation rate. As expectations can be largely self-fulfilling, it is important that central banks monitor them and try to keep them close to their inflation target.*

conditions on the energy market, where further developments are still very uncertain (see also below). The consolidation package announced by the government may foster a more restrictive effect of fiscal policy next year. The consolidation package is to include increases in some taxes and introduce savings on the expenditure side of the budget. However, the concrete form of the package will only emerge from the government's upcoming discussions. The government plans to submit the package to parliament for approval at the end of the spring.[18]

Economic developments abroad also remain a source of uncertainty

In recent weeks, the outlooks have been predicting quite a significant turnaround towards lower inflation abroad. However, these new outlooks are subject to very great uncertainty. There is similar uncertainty regarding the pace and intensity of monetary policy tightening abroad. The Fed and the ECB are likely to continue raising interest rates and reducing their balance sheets (from spring 2023 onwards in the case of the ECB). However, given the weakening global demand and negative household sentiment, it is not certain where their interest rates will peak.

Additional interest rate smoothing leads to slightly higher inflation

As we approach the point where the need to tighten monetary policy is replaced by the need to gradually ease it, discussions on the optimal rate of smoothing of interest rate movements are becoming more important. Interest rates are already smoothed in the model rule. An increase in interest rates at the start of the forecast is important for inflation to return robustly to the 2% target at the monetary policy horizon.

However, one can consider a monetary policy response which would not deliver this monetary policy tightening to begin with, but would subsequently offset the deviation by commencing the interest rate reduction cycle later. For this purpose, a simulation was drawn up of interest rates remaining unchanged at the current level for three quarters (see below).

The greater smoothing of interest rates leads to slightly higher inflation this year. Like the baseline scenario, this scenario is based on the assumption of anchored inflation expectations.

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profits of energy firms and banks and a levy on electricity production in the coming two years, will have a roughly neutral impact on public finances. The termination of the energy compensation measures should foster a considerable decline in the general government balance and a restrictive effect of fiscal policy next year.

18 By contrast, a rise in teachers' pay to 130% of the national average wage next year, which has passed its first reading in the Chamber of Deputies and is not yet part of the forecast, will have the opposite effect.

Simulation of unchanged rates

In this simulation, interest rates are kept at their current levels for three quarters. The simulation continues to assume that monetary policy maintains full credibility and inflation expectations remain anchored to the 2% target.

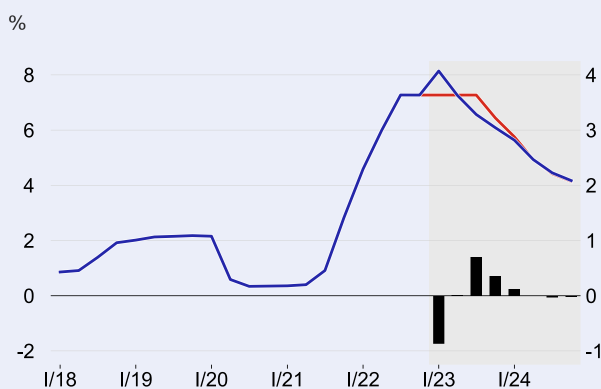
The market interest rate path is lower than in the baseline scenario in 2023 Q1. This leads to a weaker koruna at the start of the outlook than in the baseline scenario. Subsequently, the interest rate path is higher than in the baseline scenario, making room for the exchange rate to return to the baseline scenario path. In 2023, inflation will stay higher than in the baseline scenario, mainly because of the weaker koruna. Inflation will return close to the 2% target at the monetary policy horizon, i.e. in the first half of next year. This is due to a more restrictive effect of interest rates in the second half of this year than in the baseline scenario.

Chart IV.14

Greater interest rate smoothing leads to slightly higher inflation this year

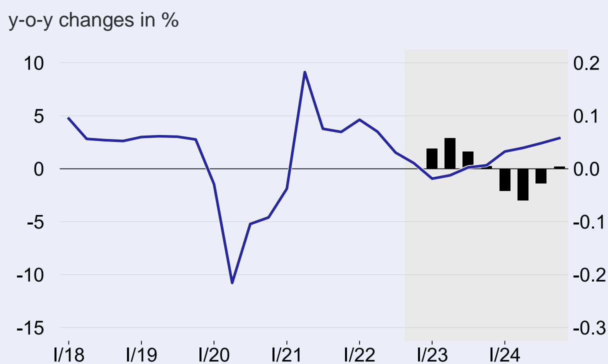
comparison of baseline scenario with simulation of unchanged rates

3M PRIBOR
%

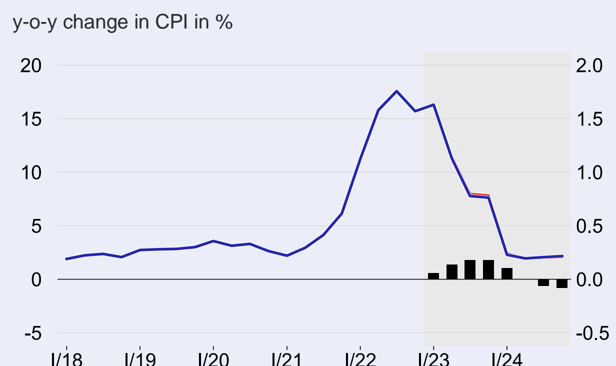


Nominal exchange rate
CZK/EUR

Real GDP growth
y-o-y changes in %



Inflation
y-o-y change in CPI in %



Baseline scenario
Simulation of unchanged rates
Difference (rhs)

Abbreviations

AEIS	Average Earnings Information System
BoE	Bank of England
BoJ	Bank of Japan
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	US Energy Information Administration
EIA	Environmental Impact Assessment
EIU	Economist Intelligence Unit
ESA	European System of Accounts
ESCB	European System of Central Banks
ESI	Economic Sentiment Indicator
ESR	electronic sales registration
EU	European Union
EUR	euro
EURIBOR	Euro Interbank Offered Rate
FDI	foreign direct investment
FECF	Foreign Exchange Consensus Forecasts
Fed	US central bank
FMIE	Financial Market Inflation Expectations
FOMC	Federal Open Market Committee
FRA	forward rate agreement
GDP	gross domestic product
GNP	gross national product
GVA	gross value added
GVCs	global value chains
HP filter	Hodrick-Prescott filter
HPI	house price index
ICT	information and communications technology
IEA	International Energy Agency
ifo	index of economic confidence in Germany
ILO	International Labour Organization
IMF	International Monetary Fund
IR	Inflation Report
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
MFI	monetary financial institutions
MLSA	Ministry of Labour and Social Affairs
m-o-m	month-on-month
MPR	Monetary Policy Report
NAIRU	non-accelerating inflation rate of unemployment
NBS	National Bank of Slovakia
OECD	Organisation for Economic Co-operation and Development
OPEC+	The OPEC member countries and another ten oil-exporting countries (the most important being Russia, Mexico and Kazakhstan)
PMI	Purchasing Managers Index
pp	percentage points
PPI	producer price index
PRIBOR	Prague Interbank Offered Rate
q-o-q	quarter-on-quarter
repo rate	repurchase agreement rate
rhs	right-hand scale
USD	US dollar
VAT	value added tax
WTI	West Texas Intermediate
y-o-y	year-on-year

Key macroeconomic indicators

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
DEMAND AND SUPPLY												
Gross domestic product												
GDP (CZK bn, constant p. of 2015, seas. adjusted)	4290.8	4387.8	4627.4	4740.8	4994.2	5154.3	5307.2	5014.3	5189.6	**5320.5**	**5305.8**	**5423.9**
GDP (CZK bn, current p., seas. adjusted)	4141.9	4344.6	4627.4	4794.9	5116.8	5416.4	5793.9	5710.7	6107.0	**6805.4**	**7446.1**	**7857.6**
GDP (%, y-o-y, real terms, seas. adjusted)	0.0	2.3	5.5	2.5	5.3	3.2	3.0	-5.5	3.5	**2.5**	**-0.3**	**2.2**
GDP (%, q-o-q, real terms, seas. adjusted)	-	-	-	-	-	-	-	-	-	-	-	-
Household consumption (%, y-o-y, real terms, seas. adjusted)	0.9	1.4	3.9	3.7	4.0	3.3	2.6	-7.4	4.1	**-0.3**	**-2.2**	**3.2**
Government consumption (%, y-o-y, real terms, seas. adjusted)	2.4	1.0	1.8	2.5	1.8	3.9	2.5	4.2	1.4	**0.3**	**1.4**	**1.3**
Gross capital formation (%, y-o-y, real terms, seas. adjusted)	-4.2	7.1	13.1	-3.9	6.5	7.7	4.5	-9.2	19.1	**6.8**	**-7.8**	**-2.3**
Gross fixed capital formation (%, y-o-y, real terms, seas. adjusted)	-2.2	3.3	9.8	-3.1	5.1	10.0	5.9	-6.0	0.8	**5.1**	**0.9**	**4.7**
Exports of goods and services (%, y-o-y, real terms, seas. adjusted)	0.3	8.7	6.2	4.1	7.6	3.7	1.3	-8.1	6.8	**5.2**	**6.2**	**6.5**
Imports of goods and services (%, y-o-y, real terms, seas. adjusted)	0.1	10.0	7.0	2.7	6.5	5.8	1.5	-8.2	13.2	**4.7**	**1.9**	**5.0**
Net exports (CZK bn, constant p. of 2015, seas. adjusted)	295.5	283.3	276.7	337.5	401.7	338.1	338.4	315.6	96.8	**124.5**	**318.9**	**407.2**
PRICES												
Main price indicators												
Consumer Price Index (%, y-o-y, average)	1.4	0.4	0.3	0.7	2.5	2.1	2.8	3.2	3.8	15.1	**10.8**	**2.1**
Administered prices (14.21%)* (%, y-o-y, average)	2.2	-3.0	0.0	0.2	0.0	1.8	4.4	3.1	-0.2	20.9	**29.9**	**5.3**
Food prices (incl. alcoholic beverages and tobacco) (26.50%)* (%, y-o-y, average)	3.1	1.8	0.1	0.2	3.6	1.6	2.6	4.2	2.1	12.9	**8.3**	**-0.8**
Core inflation (56.14%)* (%, y-o-y, average)	-0.5	0.5	1.2	1.2	2.4	2.1	2.7	3.4	4.8	13.2	**7.7**	**2.9**
Fuel prices (3.15%)* (%, y-o-y, average)	-2.1	0.2	-13.5	-8.5	6.7	6.3	-0.4	-11.4	16.7	33.6	**-15.0**	**-1.6**
Monetary policy-relevant inflation (%, y-o-y, average)	0.6	0.2	0.2	0.5	2.5	2.1	2.9	3.2	3.9	14.6	**10.6**	**2.1**
Partial price indicators												
Industrial producer prices (%, y-o-y, average)	0.8	-0.8	-3.2	-3.3	1.8	2.0	2.6	0.1	7.1	24.3	**3.6**	**0.4**
Agricultural prices (%, y-o-y, average)	-12.1	4.7	-6.2	-6.0	7.4	-0.2	5.7	-3.2	5.9	32.4	**-4.7**	**-7.8**
LABOUR MARKET												
Average monthly wage (%, y-o-y, nominal terms)	-0.1	2.9	3.2	4.4	6.7	8.2	7.9	4.6	4.7	**6.5**	**8.5**	**6.9**
Average monthly wage in market sectors (%, y-o-y, nominal terms)	-0.3	3.0	3.2	4.3	6.7	7.7	7.6	4.1	5.1	**7.2**	**9.1**	**7.7**
Average monthly wage (%, y-o-y, real terms)	-1.6	2.6	2.8	3.8	4.3	6.0	5.0	1.5	0.9	**-9.2**	**-0.4**	**4.6**
Unit labour costs (%, y-o-y)	0.9	1.6	-0.4	3.1	3.9	6.2	4.7	5.9	2.2	**6.3**	**7.5**	**4.6**
Aggregate labour productivity (%, y-o-y)	-0.4	1.7	3.9	0.9	3.6	1.9	2.8	-3.8	3.1	**0.8**	**-0.1**	**2.4**
ILO general unemployment rate (%, average, age 15–64, seas. adjusted)	7.0	6.2	5.1	4.0	2.9	2.3	2.0	2.6	2.9	**2.4**	**2.7**	**3.3**
Share of unemployed persons (MLSA) (%, average, seas. adjusted)	7.7	7.7	6.5	5.5	4.2	3.2	2.8	3.6	3.8	**3.4**	**4.4**	**5.3**
Employment (ILO) (%, y-o-y)	0.9	0.7	1.3	1.8	1.5	1.2	-0.1	-1.6	-1.5	**1.6**	**-0.4**	**-0.1**
Full-time employment (%, y-o-y)	-1.0	1.1	2.1	1.8	2.2	1.5	-0.3	-1.7	-0.3	**1.0**	**0.0**	**0.0**
PUBLIC FINANCE												
Government budget balance (ESA2010) (CZK bn, current prices)	-53.2	-90.2	-29.8	34.1	76.7	48.3	16.7	-329.2	-311.5	**-268.2**	**-335.0**	**-220.0**
Government budget balance/GDP** (%, nominal terms)	-1.3	-2.1	-0.6	0.7	1.5	0.9	0.3	-5.8	-5.1	**-3.9**	**-4.5**	**-2.8**
Government debt (ESA2010) (CZK bn, current prices)	1840.2	1818.9	1836.0	1754.7	1749.7	1734.6	1740.3	2149.8	2566.8	**2929.5**	**3283.2**	**3519.7**
Government debt/GDP** (%, nominal terms)	44.4	41.9	39.7	36.6	34.2	32.1	30.0	37.7	42.0	**43.0**	**44.1**	**44.8**
EXTERNAL RELATIONS												
Current account												
Trade balance (CZK bn, current prices)	167.0	220.0	187.7	258.5	259.3	200.9	239.8	280.3	73.3	**-130.2**	**97.1**	**206.9**
Trade balance/GDP (%, nominal terms)	4.0	5.1	4.1	5.4	5.1	3.7	4.1	4.9	1.2	**-1.9**	**1.3**	**2.6**
Balance of services (CZK bn, current prices)	70.4	55.7	86.6	106.6	124.6	120.0	106.0	103.5	110.1	**103.0**	**129.1**	**127.8**
Current account (CZK bn, current prices)	-21.8	7.9	20.7	85.2	79.1	24.1	19.2	113.7	-51.1	**-389.6**	**-34.5**	**38.5**
Current account/GDP (%, nominal terms)	-0.5	0.2	0.4	1.8	1.5	0.4	0.3	2.0	-0.8	**-5.7**	**-0.5**	**0.5**
Foreign direct investment												
Direct investment (CZK bn, current prices)	7.4	-80.4	49.7	-186.5	-45.9	-51.0	-137.1	-149.1	-4.8	**-120.0**	**-90.0**	**-90.0**
Exchange rates												
CZK/USD (average)	19.6	20.8	24.6	24.4	23.4	21.7	22.9	23.2	21.7	23.4	**23.4**	**23.0**
CZK/EUR (average)	26.0	27.5	27.3	27.0	26.3	25.6	25.7	26.5	25.6	24.6	**24.5**	**24.6**
MONEY AND INTEREST RATES												
M3 (%, y-o-y, average)	5.1	5.1	7.3	9.1	11.7	6.6	6.3	9.0	9.6	6.4	**6.5**	**9.2**
2W repo rate (%, average)	0.1	0.1	0.1	0.1	0.2	1.1	1.9	0.8	0.9	5.9	**6.7**	**4.5**
3M PRIBOR (%, average)	0.5	0.4	0.3	0.3	0.4	1.3	2.1	0.9	1.1	6.3	**7.0**	**4.8**
EXTERNAL ASSUMPTIONS												
Foreign GDP (%, y-o-y, seas. adjusted, effective)	0.3	1.9	2.0	2.0	2.8	1.8	1.5	-5.0	3.9	**2.7**	**0.5**	**1.3**
Foreign GDP (%, q-o-q, seas. adjusted, effective)	-	-	-	-	-	-	-	-	-	-	-	-
Foreign HICP (%, y-o-y, seas. adjusted, effective)	1.6	0.6	0.4	0.3	1.6	2.0	1.5	0.6	2.9	**9.2**	**6.2**	**2.3**
Foreign PPI (%, y-o-y, seas. adjusted, effective)	-0.1	-1.6	-2.5	-2.3	2.7	3.3	1.1	-1.6	10.8	**35.0**	**-0.8**	**-1.3**
Brent crude oil (in USD/barrel) (average)	108.8	99.5	53.6	45.0	54.8	71.5	64.2	43.2	70.8	98.9	**80.7**	**76.4**
3M EURIBOR (%, average)	0.2	0.2	0.0	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5	0.3	**3.3**	**3.1**
USD/EUR (average)	1.3	1.3	1.1	1.1	1.1	1.2	1.1	1.1	1.2	1.1	**1.0**	**1.1**

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

	2022				2023				2024			
	QI	QII	QIII	QIV	QI	QII	QIII	QIV	QI	QII	QIII	QIV
DEMAND AND SUPPLY												
Gross domestic product												
GDP (CZK bn, constant p. of 2015, seas. adjusted)	1329.2	1333.3	1329.9	**1328.1**	**1316.8**	**1324.9**	**1331.6**	**1332.4**	**1338.2**	**1351.1**	**1363.7**	**1370.9**
GDP (CZK bn, current p., seas. adjusted)	1637.6	1677.3	1739.3	**1751.3**	**1794.8**	**1854.0**	**1885.9**	**1911.5**	**1931.7**	**1953.8**	**1975.3**	**1996.9**
GDP (%, y-o-y, real terms, seas. adjusted)	4.6	3.5	1.5	**0.5**	**-0.9**	**-0.6**	**0.1**	**0.3**	**1.6**	**2.0**	**2.4**	**2.9**
GDP (%, q-o-q, real terms, seas. adjusted)	0.6	0.3	-0.2	**-0.1**	**-0.9**	**0.6**	**0.5**	**0.1**	**0.4**	**1.0**	**0.9**	**0.5**
Household consumption (%, y-o-y, real terms, seas. adjusted)	8.2	0.4	-5.7	**-3.3**	**-4.8**	**-4.2**	**-0.3**	**0.6**	**3.1**	**3.4**	**3.3**	**3.0**
Government consumption (%, y-o-y, real terms, seas. adjusted)	2.1	1.8	-1.6	**-1.0**	**0.5**	**1.0**	**2.7**	**1.2**	**1.1**	**1.2**	**1.3**	**1.5**
Gross capital formation (%, y-o-y, real terms, seas. adjusted)	13.5	10.0	4.5	**0.2**	**-4.9**	**-7.3**	**-9.8**	**-9.2**	**-6.7**	**-4.2**	**-0.4**	**2.5**
Gross fixed capital formation (%, y-o-y, real terms, seas. adjusted)	7.0	6.8	4.7	**1.9**	**-0.9**	**-0.6**	**1.3**	**4.0**	**5.5**	**5.0**	**4.3**	**3.9**
Exports of goods and services (%, y-o-y, real terms, seas. adjusted)	0.4	1.6	10.5	**8.6**	**5.5**	**7.1**	**5.3**	**6.7**	**8.1**	**6.9**	**5.4**	**5.6**
Imports of goods and services (%, y-o-y, real terms, seas. adjusted)	5.1	1.8	6.2	**5.7**	**1.8**	**2.2**	**1.1**	**2.7**	**5.1**	**4.9**	**4.6**	**5.3**
Net exports (CZK bn, constant p. of 2015, seas. adjusted)	17.1	18.5	41.6	**47.2**	**58.6**	**73.6**	**91.7**	**95.1**	**96.8**	**100.6**	**105.4**	**104.4**
PRICES												
Main price indicators												
Consumer Price Index (%, y-o-y, average)	11.2	15.8	17.6	15.7	**16.3**	**11.3**	**7.8**	**7.6**	**2.3**	**2.0**	**2.1**	**2.2**
Administered prices (14.21%)* (%, y-o-y, average)	15.7	23.4	28.1	16.4	**34.6**	**26.7**	**21.2**	**36.7**	**5.5**	**4.9**	**5.3**	**5.5**
Food prices (incl. alcoholic beverages and tobacco) (26.50%)* (%, y-o-y, average)	6.2	11.4	15.2	18.8	**16.1**	**10.5**	**5.6**	**0.8**	**-0.7**	**-1.2**	**-1.0**	**-0.5**
Core inflation (56.14%)* (%, y-o-y, average)	10.5	13.8	14.7	13.9	**12.1**	**8.8**	**5.9**	**4.1**	**3.1**	**2.9**	**2.8**	**2.7**
Fuel prices (3.15%)* (%, y-o-y, average)	36.9	46.3	36.1	15.1	**-5.1**	**-20.9**	**-20.3**	**-13.6**	**-4.0**	**-1.6**	**-0.6**	**-0.1**
Monetary policy-relevant inflation (%, y-o-y, average)	10.8	15.6	17.4	14.7	**16.2**	**11.2**	**7.5**	**7.5**	**2.2**	**1.9**	**2.0**	**2.1**
Partial price indicators												
Industrial producer prices (%, y-o-y, average)	21.8	27.7	25.9	21.8	**11.5**	**3.1**	**0.4**	**0.1**	**0.3**	**0.3**	**0.4**	**0.5**
Agricultural prices (%, y-o-y, average)	23.9	39.1	37.2	28.1	**12.5**	**-8.8**	**-10.1**	**-10.3**	**-10.0**	**-7.7**	**-6.9**	**-6.2**
LABOUR MARKET												
Average monthly wage (%, y-o-y, nominal terms)	7.3	4.4	6.1	**8.3**	**9.7**	**8.5**	**8.3**	**7.5**	**7.3**	**7.1**	**6.9**	**6.5**
Average monthly wage in market sectors (%, y-o-y, nominal terms)	8.1	4.6	7.0	**9.3**	**9.9**	**9.1**	**9.1**	**8.3**	**8.1**	**7.9**	**7.7**	**7.2**
Average monthly wage (%, y-o-y, real terms)	-3.6	-9.8	-9.8	**-8.5**	**-4.5**	**-1.5**	**1.3**	**3.1**	**4.4**	**4.8**	**4.6**	**4.0**
Unit labour costs (%, y-o-y)	6.6	4.9	6.0	**7.7**	**8.7**	**7.0**	**7.7**	**6.8**	**5.3**	**4.9**	**4.4**	**3.8**
Aggregate labour productivity (%, y-o-y)	3.3	1.0	-0.1	**-1.0**	**-1.9**	**0.0**	**0.7**	**0.7**	**1.8**	**2.1**	**2.5**	**3.0**
ILO general unemployment rate (%, average, age 15–64, seas. adjusted)	2.4	2.5	2.2	**2.4**	**2.5**	**2.7**	**2.8**	**3.0**	**3.1**	**3.2**	**3.3**	**3.4**
Share of unemployed persons (MLSA) (%, average, seas. adjusted)	3.3	3.3	3.4	**3.7**	**3.9**	**4.2**	**4.5**	**4.8**	**5.0**	**5.3**	**5.4**	**5.5**
Employment (ILO) (%, y-o-y)	2.3	2.2	1.2	**0.6**	**-0.1**	**-0.7**	**-0.6**	**-0.4**	**-0.2**	**-0.1**	**-0.1**	**-0.1**
Full-time employment (%, y-o-y)	0.9	1.2	1.0	**1.1**	**0.6**	**0.0**	**-0.3**	**-0.3**	**-0.2**	**0.0**	**0.1**	**0.2**
PUBLIC FINANCE												
Government budget balance (ESA2010) (CZK bn, current prices)	-	-	-	-	-	-	-	-	-	-	-	-
Government budget balance/GDP** (%, nominal terms)	-	-	-	-	-	-	-	-	-	-	-	-
Government debt (ESA2010) (CZK bn, current prices)	-	-	-	-	-	-	-	-	-	-	-	-
Government debt/GDP** (%, nominal terms)	-	-	-	-	-	-	-	-	-	-	-	-
EXTERNAL RELATIONS												
Current account												
Trade balance (CZK bn, current prices)	7.1	-36.6	-54.2	**-46.4**	**46.9**	**38.5**	**4.8**	**6.8**	**73.1**	**66.4**	**30.4**	**37.1**
Trade balance/GDP (%, nominal terms)	0.5	-2.2	-3.1	**-2.6**	**2.8**	**2.1**	**0.3**	**0.3**	**4.0**	**3.4**	**1.5**	**1.8**
Balance of services (CZK bn, current prices)	24.8	31.8	28.3	**18.0**	**31.6**	**36.6**	**33.4**	**27.5**	**36.2**	**33.6**	**29.7**	**28.3**
Current account (CZK bn, current prices)	-13.5	-74.1	-210.7	**-91.3**	**62.0**	**-8.7**	**-56.6**	**-31.2**	**91.6**	**5.6**	**-52.2**	**-6.5**
Current account/GDP (%, nominal terms)	-0.9	-4.4	-12.0	**-5.0**	**3.7**	**-0.5**	**-3.0**	**-1.6**	**5.0**	**0.3**	**-2.6**	**-0.3**
Foreign direct investment												
Direct investment (CZK bn, current prices)	-16.0	-38.7	-27.4	**-37.9**	**-22.5**	**-22.5**	**-22.5**	**-22.5**	**-22.5**	**-22.5**	**-22.5**	**-22.5**
Exchange rates												
CZK/USD (average)	22.0	23.1	24.4	23.9	**23.3**	**23.5**	**23.4**	**23.4**	**23.3**	**23.2**	**23.0**	**22.7**
CZK/EUR (average)	24.6	24.6	24.6	24.4	**24.1**	**24.4**	**24.6**	**24.7**	**24.7**	**24.6**	**24.5**	**24.4**
MONEY AND INTEREST RATES												
M3 (%, y-o-y, average)	6.0	6.2	6.4	7.1	**6.6**	**5.9**	**6.4**	**6.9**	**8.8**	**9.2**	**9.4**	**9.4**
2W repo rate (%, average)	4.2	5.6	7.0	7.0	**7.8**	**7.0**	**6.3**	**5.8**	**5.3**	**4.6**	**4.2**	**3.9**
3M PRIBOR (%, average)	4.6	6.0	7.3	7.3	**8.1**	**7.3**	**6.6**	**6.1**	**5.6**	**4.9**	**4.5**	**4.2**
EXTERNAL ASSUMPTIONS												
Foreign GDP (%, y-o-y, seas. adjusted, effective)	4.6	3.0	1.8	**1.6**	**0.9**	**0.4**	**0.3**	**0.3**	**0.7**	**1.1**	**1.4**	**1.9**
Foreign GDP (%, q-o-q, seas. adjusted, effective)	0.7	0.6	0.3	**0.1**	**-0.1**	**0.1**	**0.2**	**0.1**	**0.3**	**0.5**	**0.6**	**0.6**
Foreign HICP (%, y-o-y, seas. adjusted, effective)	6.6	8.8	10.2	**11.2**	**9.0**	**7.1**	**5.6**	**3.5**	**2.8**	**2.4**	**2.1**	**1.9**
Foreign PPI (%, y-o-y, seas. adjusted, effective)	31.0	36.6	43.2	**29.5**	**11.9**	**2.2**	**-8.2**	**-6.8**	**-2.7**	**-1.4**	**-0.7**	**-0.4**
Brent crude oil (in USD/barrel) (average)	97.9	112.0	97.7	88.6	**82.2**	**81.4**	**80.2**	**78.9**	**77.8**	**76.8**	**76.0**	**75.0**
3M EURIBOR (%, average)	-0.5	-0.4	0.5	1.8	**2.9**	**3.3**	**3.4**	**3.4**	**3.3**	**3.2**	**3.0**	**2.9**
USD/EUR (average)	1.1	1.1	1.0	1.0	**1.0**	**1.0**	**1.1**	**1.1**	**1.1**	**1.1**	**1.1**	**1.1**

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

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