II. THE REAL ECONOMY AND FINANCIAL MARKETS

The solid economic growth was interrupted by the COVID-19 pandemic. Economic activity plummeted in March 2020 and the world economy found itself on the verge of a deep recession. The financial conditions deteriorated sharply and risk premia were abruptly repriced. Massive stabilisation measures adopted by governments and central banks calmed the financial markets and have prevented a precipitous global wave of credit defaults. However, the pace of recovery of world economies remains highly uncertain. A worsening profitability outlook and rising debt burden are already being reflected in downgrades of the credit ratings of firms and governments. The pressure on public finances is being mitigated by measures adopted by central banks, which are helping to keep government bond yields low. Central bank operations have also helped stabilise risk premia and interest rates on private sector loans. However, long-running provision of very cheap liquidity and compression of risk premia on financial assets may cause a build-up of financial imbalances and hidden generation of systemic risks.

The domestic economy also contracted sharply in March 2020. The CNB's May forecast expects GDP to drop by 8% and the unemployment rate to increase in 2020. A rise global risk aversion led to a partial outflow of portfolio investment from Central Europe, reflected in a temporary rise in Czech government bond yields. The situation calmed after monetary policy rates were lowered and the CNB communicated that it stood ready to adopt extraordinary measures. So far, prices of commercial and residential property have not seen any substantial changes. The coronavirus crisis hit the household and corporate sectors. Its impacts are being mitigated by government support measures. The current adverse economic situation will have a negative effect on the profitability of firms and the income of households, which may make it more difficult for them to service their debts. The most significant source of risk to the stability of the domestic financial system is thus the adverse macroeconomic developments, whose extent and duration will be affected to a large degree by the course of the pandemic and the related speed of normalisation of the economic situation in the Czech Republic and around the world.

II.1 THE MACROECONOMIC AND FINANCIAL ENVIRONMENT

II.1.1 The external environment

The favourable conditions of early 2020 were replaced by uncertainty…

The world economy grew by a solid 2.9% in 2019, and economic activity was still developing favourably at the start of 2020. The price losses recorded on global financial markets in late 2018 had been reversed, the key stock indices were frequently hitting historical highs in January and February 2020 (see Chart II.1) and risk premia on corporate bonds were falling further (see Chart II.2). However, long-term yields were already being affected by expectations of a slowdown of the world economy (see Chart II.3) and uncertainty regarding the economic impacts of the COVID-19 infection in China. When the coronavirus reached Europe in late February, it became clear that the infection had spread from China and had caused a global pandemic.[2]

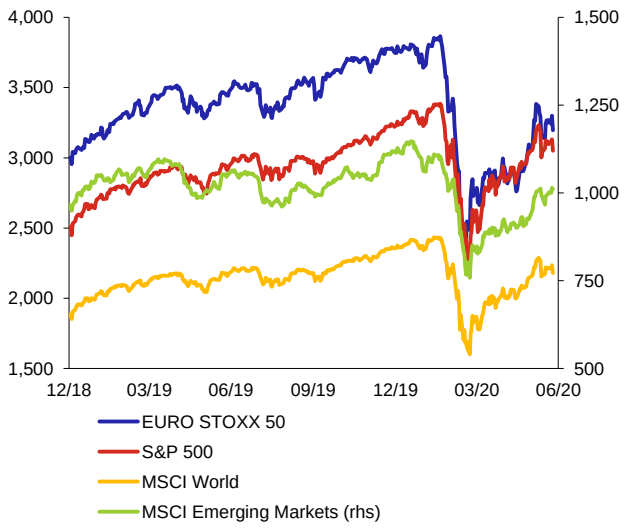
…as the world was hit by the coronavirus crisis

The coronavirus progressively hit most countries. Many governments adopted anti-pandemic measures in the form of restrictions on the free movement of persons (see Chart II.1 CB), shutdown of the services sector, and partly also restriction of production. These measures adversely affected the supply of goods and services by firms and consumer demand and brought some sectors to an almost complete halt.[3] Given the economic links between countries, international supply chains were significantly disrupted and global trade plunged.

2 Given the number of countries affected and the speed of the spread of the disease, the WHO officially reclassified the original COVID-19 epidemic as a worldwide pandemic on 11 March 2020.

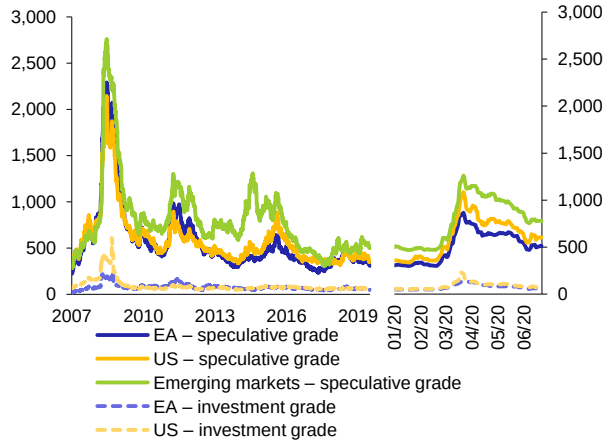
3 Estimates of the impacts of the early freeze of the economy and the restrictions on movement based on daily data over one month indicate that across-the-board quarantine significantly lowered the numbers of infections and fatalities, but also involved sizeable economic and social costs. In California, for example, such measures resulted in 400 jobs lost per life saved – see Friedson, A. I., McNichols, D., Sabia, J. J. and Dave, D. (2020). *Did California's Shelter-in-Place Order Work? Early Coronavirus-Related Public Health Effects*. NBER Working Paper No. 26992, https://www.nber.org/papers/w26992.

Chart II.1
Key global stock indices
(indices in points)



Source: Refinitiv

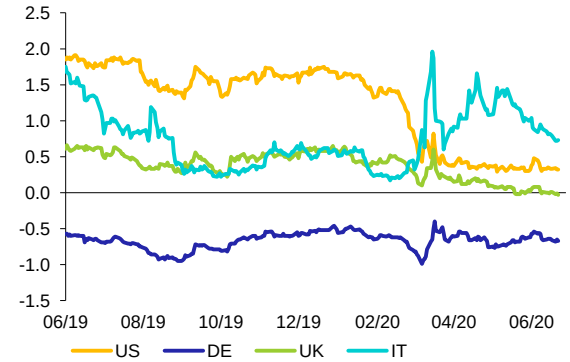
Chart II.2
Credit spreads on corporate bond yields
(bp)



Source: Bank of America Merrill Lynch

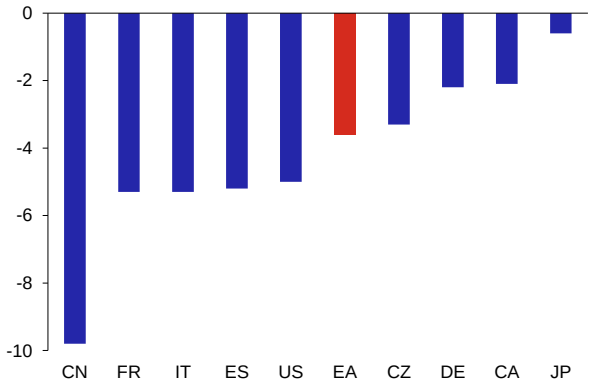
Note: Credit spread means the yield spread over government bond yields adjusted for any embedded options (option-adjusted spread). Higher values represent a higher risk premium. Speculative grade is a rating of BB+ or lower.

Chart II.3
Five-year government bond yields for selected countries
(%)



Source: Refinitiv

Chart II.4
GDP of selected countries in 2020 Q1
(%; quarter-on-quarter change in real GDP)



Source: OECD, CZSO

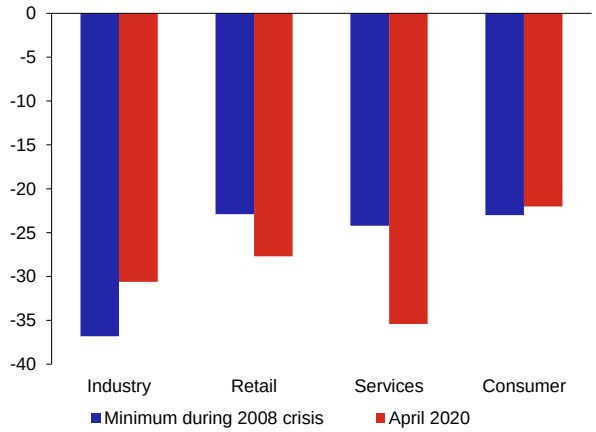
The global financial conditions deteriorated, with the corporate bond market hit the hardest…

The world economy slowed sharply in mid-March 2020 and found itself on the verge of a deep recession (see Chart II.4). The overall euro area Purchasing Managers' Index fell to an all-time low in April and the sentiment of economic agents generally worsened (see Chart II.5). Expectations of catastrophic economic scenarios were also signalled by an investor panic on global financial markets and a flight to liquidity and quality. Portfolio investment flowed out rapidly from emerging countries (see Chart II.2 CB) and some advanced countries' government bond yields declined (see Chart II.6). In the euro area, yields diverged across countries like during the 2012 debt crisis (see Chart II.3 CB). An abrupt rise in risk aversion (see Chart II.4 CB and Chart II.2) and a concurrent reassessment of profitability outlooks across sectors led to a sharp drop in stock prices, especially in advanced economies (see Chart II.1 and Chart II.5 CB). Many global corporations faced a risk of liquidity shortages. Moreover, corporate sectors in many countries entered the crisis with high debt, caused, among other things, by numerous mergers undertaken in previous years financed largely from external funds.[4] Yields surged, especially on risky corporate bonds (see Chart II.2). Markets in bonds secured by loans (CLOs) were also affected (see Chart II.6 CB). Rating agencies revised their outlooks and downgraded their ratings.[5]

4 https://www.fsb.org/wp-content/uploads/P191219.pdf.

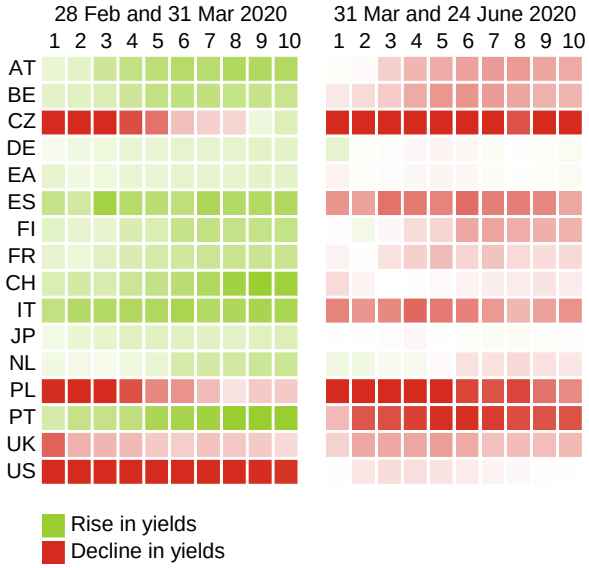
5 https://www.spglobal.com/ratings/en/research/articles/200318-covid-19-coronavirus-related-public-rating-actions-on-non-financial-corporations-to-date-11393186.

Chart II.5
Sub-indicators of economic confidence in the EU
(balance of answers in %)



Source: Eurostat

Chart II.6
Change in government bond yields for selected countries
(columns: change in yields for individual maturities in years)



Source: Bloomberg

Central banks adopted many extraordinary measures…

Central banks reacted to the situation quickly and intensively (see Chart II.7). Since March 2020, monetary policies have been eased dramatically and additional measures have been introduced to support liquidity and financial stability (see Table II.1 CB). The US Fed during March cut its monetary policy rates to zero (see Chart II.8), strengthened banks' access to dollar liquidity via swap lines[6] and launched programmes totalling up to USD 2.6 trillion. The Fed also supported the corporate bond market, first by buying bond funds and subsequently by making direct purchases of individual corporate bonds. It emphasised in its communications that monetary policy rates would stay at the current level until the economy recovers, and pledged to use additional instruments according to the seriousness of the situation.[7] The ECB kept its monetary policy rates unchanged at 0% and -0.5%. However, it made substantial changes to its extraordinary measures. It increased the volume of TLTRO III,[8] relaxed the eligibility requirements for corporate bonds used as collateral, and announced a Pandemic Emergency Purchase Programme (PEPP) of EUR 1,350 billion for government and private securities. The conditions of this programme are softer than those of the original ones, enabling the ECB to purchase assets regardless of the capital keys of individual euro area countries.[9] The ECB also started to provide euro liquidity to European central banks outside the euro area (under the EUREP facility[10]). Besides adopting measures to support market and balance sheet liquidity, many central banks and supervisory authorities have eased some of the regulatory requirements applying to financial institutions (see section V).

…which partly mitigated the adverse financial market developments

The quickly adopted central bank measures prevented money markets, which many global institutions tap for funding, from becoming dysfunctional and partly eased the tensions on stock and bond markets (see Chart II.1 and Chart II.2). The initial sharp drop in stock indices (the MSCI World Index fell by as much as 34.2% from its high) was therefore followed by a relatively large correction. Despite the partial calming of the market situation, however, highly indebted firms may continue to face elevated risk premia (see Chart II.2). As suggested by the ongoing developments in 2020 Q2, the potential risk of migration of their bonds from investment to speculative grade and a subsequent jump in their yields persists (see Chart II.7 CB), as many institutional investors' investment policies oblige them to invest solely or mostly in investment grade bonds. Any sell-offs of speculative assets could thus generate additional market stress.

6 Swap maturity was extended and swap prices lowered for EA, UK, CA, JP, CH, AU, BR, DK, KR, MX, NO, NZ, SGP and SE.

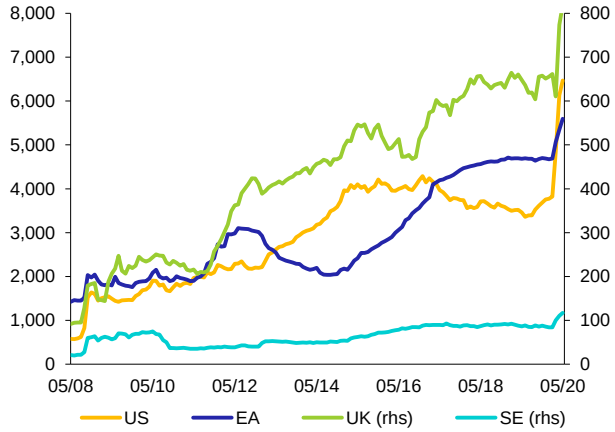
7 The Fed's measures are described at https://www.federalreserve.gov/publications/files/financial-stability-report-20200515.pdf.

8 For more details on the asset purchase programme, see https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200430~fa46f38486.en.html and https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.mp200604~a307d3429c.en.html.

9 https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html.

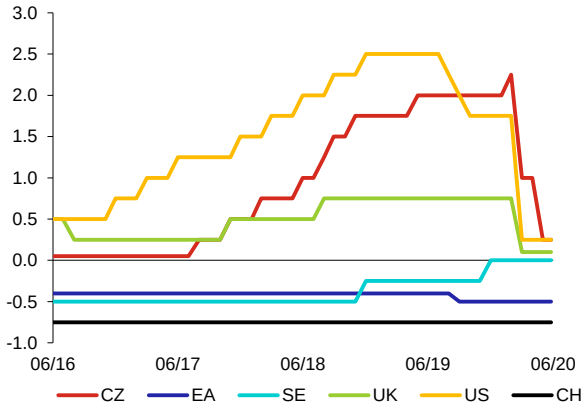
10 https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200625~60373986e5.en.html.

Chart II.7
Total assets of selected central banks
(EUR billions)



Source: Bloomberg, BoE

Chart II.8
Main monetary policy rates of selected central banks
(%)



Source: Refinitiv
Note: In the case of EA, the chart shows the deposit rate.

A range of fiscal measures were also adopted to mitigate the impacts of the coronavirus crisis

The governments of the affected countries announced massive stabilisation programmes to mitigate the adverse impacts of the pandemic (see Table II.1 CB).[11] The goal of the programmes was to reduce the liquidity problems of firms and households and stop them spilling over into solvency problems. The measures for firms included tax relief, various forms of aid to cover operating costs (rents, invoices), wage contributions and social security contribution waivers to prevent quick dismissals, state guarantees for loans, and loan moratoria. Assistance was provided to households on both the income side (attendance allowances, one-off extraordinary benefits) and the expenditure side (loan moratoria).[12] In the EU, measures to mitigate the effects of the coronavirus are being adopted at both national and central level.[13]

Economic outlooks are subject to a high degree of uncertainty, and the risk of forecast reassessment is high

The first estimates of the impact of the coronavirus crisis on the world economy started to appear during April. Updated forecasts for 2020 expect an exceptionally deep economic downturn. It is predicted to be larger on the worldwide scale than during the global financial crisis, as the coronavirus crisis has hit most countries (see Chart II.9).[14] In its April 2020 forecast, the IMF expects the world economy to contract by 3% this year and return to growth of almost 6% next year.[15] A resurgence of the pandemic poses a risk to the economy in the months ahead. The IMF April 2020 forecast presented three alternative scenarios modelling more pessimistic developments. According to the IMF, if further waves of the pandemic necessitate restrictions on economic activity, in the extremely adverse scenario GDP would be almost 8% lower in 2021 compared with the baseline and the return to growth would take several years (see Chart II.10). The behaviour and sentiment of economic agents, whose confidence about the future has worsened markedly, will play a crucial role in the economic recovery (see Chart II.5). The restart of the services sector, which accounts for a large share of employment and GDP in advanced economies, is likely to take a long time. The share of services in GDP is 65% in the EU, 77% in the USA and 52% in China (see Chart II.8 CB). A slow return to the pre-crisis level is also suggested by a rise in savings and a marked drop in sentiment in services in the EU.[16] The uncertainty surrounding the forecast is increased by persisting tense US–China relations and the still non-existent Brexit deal between the EU and the UK.

11 Aid totalling almost USD 3 trillion (almost 15% of GDP) was approved for firms and individuals in the USA. The European Commission announced the provision of assistance to EU Member Sates of EUR 750 billion (almost 6% of EU GDP) in the form of gifts and loans. https://ec.europa.eu/info/sites/info/files/communication-europe-moment-repair-prepare-next-generation.pdf.

12 The macroeconomic literature emphasises the different impacts of the pandemic on different groups of people, For example, quarantine has a greater impact on lower-income and younger people. The pandemic thus also has major consequences for the redistribution of income and consumption. A summary of the macroeconomic literature is available at https://idea.cerge-ei.cz/images/COVID/IDEA_Makro_politika_COVID-19_Duben2020_16.pdf.

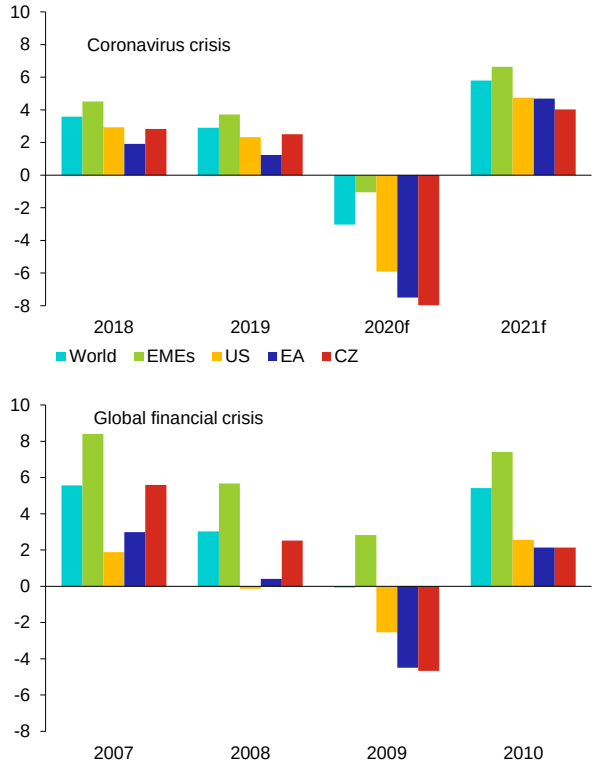
13 For an overview of the measures taken in the EU in response to the pandemic, see https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response_en.

14 Estimates of job losses in the USA (https://fred.stlouisfed.org/series/FRBKCLMCIM), which are significantly higher than in previous recessions, also point to a deeper recession. According to CF outlooks, unemployment in the USA will increase to 8.4% by the end of this year.

15 The IMF published an updated economic forecast in June 2020. The expected contraction of GDP in 2020 and the speed of economic recovery in 2021 both saw a deterioration compared with April. The IMF expects the global economy to contract by 4.9% in 2020, i.e. 1.9 pp more than in the April forecast (declines of 3%, 8% and 10.2% are projected for EMEs, the US and the EA respectively). For 2021, the IMF expects global growth at 5.4%, which is 0.6 pp less than in April (https://www.imf.org/en/Publications/WEO/Issues/2020/06/24/WEOUpdateJune2020). The macroeconomic forecast remains subject to a high degree of uncertainty.

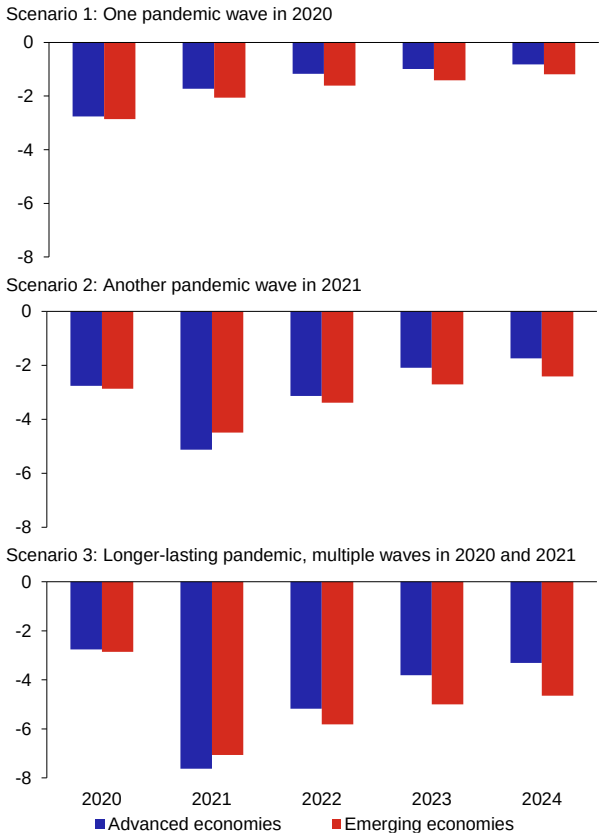
16 The normalisation of the Chinese economy, which was hit by the coronavirus in 2020 Q1, indicates a higher saving rate of households, reflected in subdued consumption and a very slow restart of services. April data from the USA confirm a bigger impact of the anti-pandemic measures on services. Industrial production fell by 11.2%, while retail sales dropped by 16.4% (https://www.federalreserve.gov/data.htm).

Chart II.9
Economic growth in selected countries
(annual real GDP growth in %)



Source: IMF, CNB
Note: f = forecast. The forecast for the Czech Republic is based on the CNB forecast published in Inflation Report II/2020. The forecasts for the other countries are based on the IMF's April forecast published in World Economic Outlook, April 2020.

Chart II.10
IMF alternative economic growth scenarios due to the coronavirus pandemic
(deviation from real GDP in IMF baseline scenario in %)



Source: IMF (World Economic Outlook, April 2020)

The risk of a protracted recession is also high because of the private sector's already high debt

For firms in particular, the anti-pandemic measures led to a greater need to borrow to overcome their sudden drop in revenues, which increased their future debt burden. In many countries, however, private sector debt had already hit all-time highs before the coronavirus crisis started (see Chart II.11). Some European economies had been in a strongly expansionary phase of the credit cycle for some time, during which strong growth in property prices and swift growth in credit had been recorded (see Chart II.9 CB). Non-financial corporations in many countries took advantage of extraordinarily low yields to issue debt securities, which made them more vulnerable to a change in market conditions when refinancing. The current adverse economic developments may adversely affect the income of economic agents for some time, and a further marked increase in private sector debt may dampen the economic recovery.

Macroeconomic risk is putting private sector debt sustainability at considerable risk

Despite programmes to support the liquidity of economic agents and measures enabling postponed repayment, the probability of a deterioration in overall payment discipline and a rise in the financial sector's credit losses is increasing. Apart from low-income households, the most vulnerable group is firms with low margins and high dependence on short-term market funding. In their case, even a short-term loss of revenue could turn into insolvency. The increasingly protracted coronavirus crisis, which is increasing credit risk (the number of defaulters in the corporate and household sectors), thus significantly threatens global financial stability in the short and medium term.

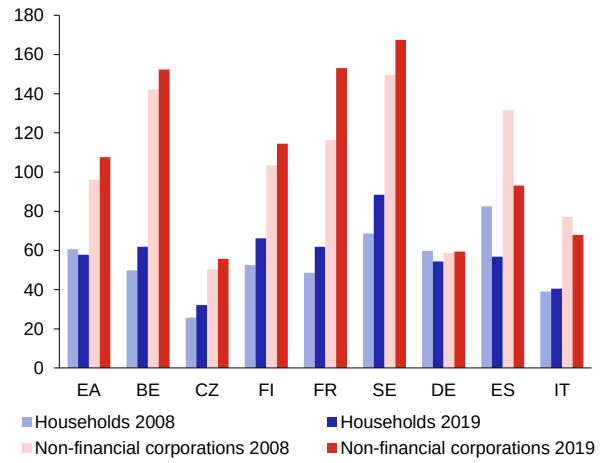
Public finances are also under considerable pressure

The coronavirus crisis has put public finances under pressure.[17] Government debt will rise in a significant proportion of countries at least in 2020. On the one hand, revenue has declined due to lower tax collection, while on the other hand expenditure has risen via built-in stabilisers and support programmes. In the EU, the coronavirus contagion has often had the biggest impacts on countries which are among the most indebted and therefore have the least fiscal room to expand (see Chart II.10 CB). High debt generally fosters high sensitivity of government bond prices to bad macroeconomic and geopolitical news and hence growth in their volatility. For countries with a BBB rating and a negative outlook, financial markets are very sensitive to high public finance sustainability risk.[18] Seven EU countries have general government debt above the notional sustainability threshold of 90%, and 14 Member States are likely to exceed the Maastricht debt criterion this year[19] (see Chart II.12). The massive government bond purchase programmes adopted by the ECB have lowered funding costs and increased the multiplier effect of European governments' fiscal policies. However, the financing of globally rising debt is draining large amounts of funding from international financial markets. If the risk of loss of confidence in the ability of some European governments to continue funding their debt smoothly were to recur, pressure for a decrease in real rates into negative territory (fiscal dominance) can be expected to return. Moreover, as some studies show, the long-term fiscal multiplier may turn negative even at a government debt level lower than the notional sustainability threshold.[20] From a medium-term perspective, fiscal dominance thus poses significant risks to economic growth in these countries in the years ahead and, given the interconnectedness of financial systems across the EU, also risks to their stability.

Chart II.11

Private sector debt in selected EU countries

(% of GDP)

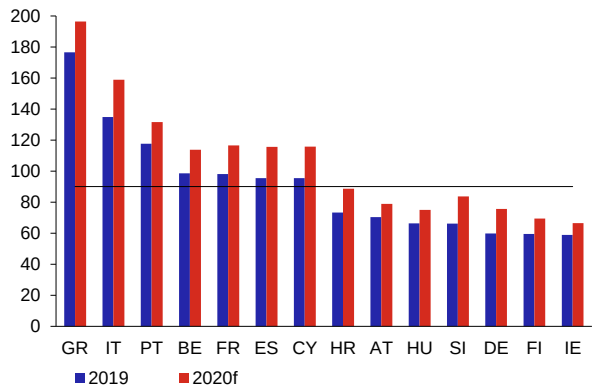


Source: BIS

Chart II.12

EU countries with high debt service levels

(% of GDP)



Source: Eurostat, EC Economic Forecast (May 2020)

Note: The horizontal line illustrates the general government debt sustainability threshold. According to the literature, the sustainability threshold is 90%.

Central banks' extraordinary measures should be in place only for as long as is necessary

If central banks' extraordinary measures to provide cheap liquidity or compress risk premia on financial assets stay in place for too long, they may become a source of risks to financial stability. It is therefore desirable for the emergency measures to be time-limited and not become the new normal. Similar central bank measures were introduced to mitigate the impacts of the global financial crisis, but in some countries they were still in place ten years after its onset, fostering excessive growth in asset prices. Given the scale of the current measures taken by some central banks (see Chart II.7), their effect on asset prices may be stronger than a decade earlier.

17 Many countries have already applied for IMF financial assistance. An overview of the credit programmes provided is available at https://www.imf.org/en/Topics/imf-and-covid19/COVID-Lending-Tracker.

18 In the case of Italy, for example, a rating downgrade would mean that some institutional investors would not be able to invest in Italian government bonds. A sell-off of these government bonds could take place, followed by an increase in debt service costs. Italy expects its government deficit to reach 10.4% of GDP this year and its debt to rise to 155.7% of GDP.

19 The sizeable expected economic downturn due to the spread of the coronavirus in the EU meant that the conditions were fulfilled for activating the general escape clause from the Stability and Growth Pact. This clause allows the Member States to deviate temporarily from the EU's budgetary objectives set forth in the European fiscal framework.

20 https://www.cnb.cz/export/sites/cnb/en/monetary-policy/.galleries/geo/geo_2020/gev_2020_05_en.pdf.

II.1.2 The domestic environment

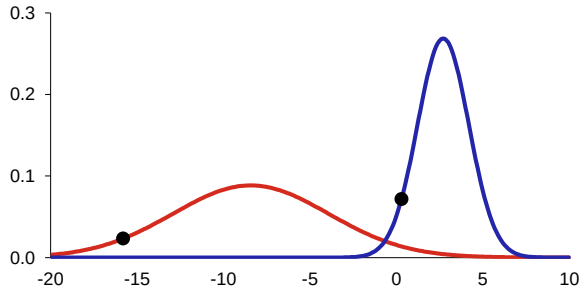
The coronavirus pandemic has caused a deep decline of the domestic economy

The domestic economy was also hit by the coronavirus contagion. The government responded by declaring a state of emergency in March 2020. Domestic activity plummeted in the first half of 2020 as a result of the anti-pandemic measures, plant shutdowns in some firms, and a drop in external demand. In terms of the components of GDP, the contraction was due mainly to household consumption (see section II.2.3), exports and corporate investment (see section II.2.2).[21] The decline in economic activity will moderate gradually in the second half of 2020 on the back of gradual relaxation of the anti-pandemic measures and an expected recovery in external demand. According to the CNB's forecast published in Inflation Report II/2020, GDP will fall by 8% in 2020 (see Chart II.23A). However, the risks to the forecast are exceptionally high.[22] If the *Adverse Scenario* were to materialise, the domestic economy could contract by as much as 13% in 2020. The uncertainty regarding the real GDP growth estimate in the CNB's May forecast also suggests that the probability of a decline in GDP as deep as 15% is not negligible (see Chart II.13).

Chart II.13

The worse GDP growth outlook and its high uncertainty

(probability density; x-axis: annual real GDP growth)



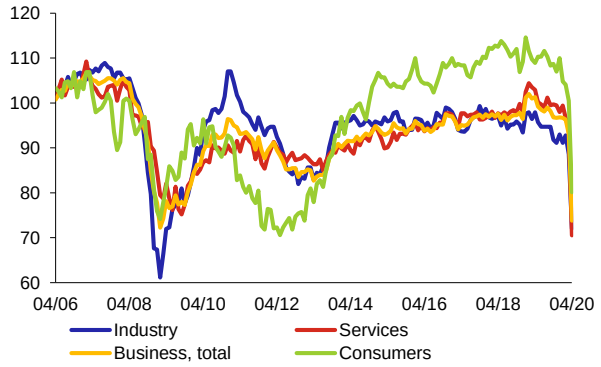
Source: CNB

Note: The blue line shows the GDP growth forecast for 2020 Q4 in Inflation Report IV/2019. The red line shows the GDP growth forecast for 2020 Q4 in Inflation Report II/2020. The black points indicate the 5% quantile.

Chart II.14

Confidence indicators

(base indices relative to 2005 average)



Source: CZSO

The government introduced numerous measures to mitigate the negative impacts of the coronavirus crisis on households and firms

The Czech government introduced a number of stabilisation and support measures to maintain the liquidity of economic agents and support the domestic economy (see Table II.1). These include an employment support programme (Antivirus), support for the self-employed, an attendance allowance, and a measure relating to the "Liberation Packages". These measures are expected to have significant impacts on the state budget in 2020 (see section II.2.1). Programmes with no immediate impact on the state budget, such as a loan moratorium (see section II.2.3) and guarantees for business loans (see section II.2.2), have also been introduced. The measures are expected to total up to 3.3% of GDP in 2020 (see Table II.2).

However, the return of the domestic economy to pre-crisis levels will probably be slow

The effectiveness and pace of implementation of the support measures will affect the length and depth of the current recession.[23] Despite the measures, the labour market situation will worsen. According to the CNB's forecast in Inflation Report II/2020, the unemployment rate will go up, peaking at 5% in 2021 (see Chart II.23D and section II.1.3). Given the structure of the domestic economy, the return to growth will depend largely on the renewal of supply relationships with foreign trading partners.[24] The economic recovery may also be hampered by the very subdued sentiment of economic agents (see Chart II.14), who may be driven by precautionary motives. This would cause consumption and investment to fall and saving to rise. The CNB's forecast expects economic activity not to reach its pre-crisis levels by the end of 2021 despite a gradual recovery. These none too favourable prospects for the income and expenditure situation of firms and households create room for an increase in their credit risk (see section II.2.2 and section II.2.3).

21 Industrial production contracted by 10% and the automotive industry by 25% y-o-y in March; see https://www.czso.cz/csu/czso/ari/industry-march-2020.

22 Inflation Report II/2020 indicated this with the aid of two additional scenarios for the domestic economy: a longer-lasting pandemic scenario assuming that the pandemic will recede more slowly and have longer-lasting negative impacts abroad, and a strongly adverse pandemic resurgence scenario assuming that government quarantine measures will be reintroduced in the Czech Republic in the second half of 2020. The *Adverse Scenario* tested in this Report is based on the pandemic resurgence scenario (see section II.1.3 and section IV).

23 https://www.piie.com/blogs/realtime-economic-issues-watch/designing-fiscal-response-covid-19-pandemic.

24 This process could be slow and complicated. According to the Economist Intelligence Unit, the coronavirus crisis may cause structural changes in the functioning of the global economy. Its report *The Great Unwinding. Covid-19 and the Regionalisation of Global Supply Chains* states that the pandemic is motivating firms to reduce their links with China in the sense of preferring local supply chains and minimising the impacts of border closures on production: https://www.eiu.com/n/campaigns/the-great-unwinding-covid-19-supply-chains-and-regional-blocs/.

Table II.1
Brief overview of stabilisation and support measures introduced in the Czech Republic

	Measure	Description	Responsible
Real sector	Reduction of monetary policy interest rates	On 7 May, the two-week repo rate was lowered by 75 bp to 0.25% and the Lombard rate to 1.00%, and the discount rate was left unchanged at 0.05%.	CNB
	Loan moratorium	Borrowers may apply for their loan instalments to be postponed by three or six months; applies to loans for consumption and loans secured by property. Payments of both principal and interest may be postponed for natural persons, but only payments of principal may be postponed for legal entities.	MF
	Liberation tax packages I–II	Postponement of filing of tax returns; postponement of tax and advance payments. Across-the-board forgiveness of fines for late tax returns and interest on late payment. Waiver of tax advances for income tax of natural persons and legal entities. Introduction of loss carryback for income tax of natural persons and legal entities; can be applied retroactively in tax returns for 2019 and 2018. ESR suspended until 1 Jan 2021.	MF
	Tax relief	A reduction in VAT on selected services (accommodation, culture, sport).	MF
Households	Postponement of rent payments	Possibility to apply for postponement of rent for 12 March to 31 July 2020. The rent owed must be paid by 31 December 2020.	MRD
	Extraordinary immediate assistance	One-off benefit for persons in financial difficulties. Granted for basic living requirements; may be combined with attendance allowance.	MLSA
	Extension of attendance allowance	Attendance allowance paid between 16 March and 30 June 2020. Until 31 March 60% of the daily assessment base; from 1 April increased to 80% of the daily assessment base. Child age increased from 10 to 13 years.	MLSA
Firms and self-employed	"25" programme – direct support for self-employed	Support for self-employed persons who could not carry on their activities due to the pandemic. A compensation bonus of CZK 500 a day for the period 12 March–8 June.	MF
	Waiver of mandatory health and pension insurance payments	Between March and August 2020, self-employed persons are not required to pay pension and health insurance advances. For minimum advances, the mandatory payments are waived in full. The state will thus pay CZK 29,376 over six months. For higher advances, the statutory minimum is waived from March to August 2020. The difference will be paid retrospectively during settlement for 2020.	MLSA
	Deferral and reduction of social insurance contributions	Employees may defer payment of social insurance contributions for employees for May–July (contributions owed must be paid by 20 October 2020). On fulfilment of the payment conditions, the penalty for late payment of contributions will be reduced by 80%.	MLSA
	COVID Rent programme	The lessor waives 30% of the full rent and the state contributes 50% to the lessee. The lessee thus pays 20% of the rent (programme in effect from 1 April to 30 June 2020).	MIT
	Attendance allowance for self-employed	Attendance allowance of CZK 424 a day between 12 March and 31 March 2020 and CZK 500 between 1 April and 30 June 2020. Can be combined with the "25" programme.	MIT
	Antivirus programme – wage and salary compensation	Mode A: The state contributes 80% to employers for wages and contributions (max. CZK 39,000) for employees in quarantine or if the business is closed by government decree. Mode B: The state contributes 60% to employers for wages and contributions (max. CZK 29,000) in the case of obstacles on the employer's part or limited availability inputs necessary to work or limited demand for products and services.	MLSA
	COVID I credit programme	Interest-free loan of CZK 500,000–CZK 15 million (up to 90% of the project's eligible costs, with a maturity of two years and a loan moratorium of up to 12 months).	MIT
	COVID II–III and COVID Praha guarantees	Guarantees for loans for firms and the self-employed to cover operating expenses. COVID II, with a capacity of CZK 15 billion, offers guarantees of up to 90% of the principal of the loan. COVID III, with a capacity of CZK 500 billion, offers guarantees of 80%–90% of the principal of the loan depending on the number of employees. Provided in the form of guarantees from the Czech-Moravian Guarantee and Development Bank.	MIT
	COVID PLUS guarantee	A guarantee for export-oriented firms with 250 employees or more and a share of exports in total sales of at least 20% in 2019. Loan size between CZK 5 million and CZK 2 billion. The maximum loan size is 25% of total annual sales of products and services in 2019. EGAP covers the principal of the loan up to 80%. A commercial bank applies for the guarantee.	MIT
	Compensation bonus for limited liability companies	Compensation bonus for members of limited liability companies of CZK 500 a day between 12 March and 8 June 2020. Conditional on the company having a turnover of at least CZK 180,000 in 2019 or expecting to achieve this turnover in 2020 or 2021.	MF
	Postponement of rent for business premises	The possibility to apply for a postponement of rent for 12 March–30 June 2020; termination of lease not possible. Rent instalments must be paid by 31 Dec 2020.	MIT
Banks	Reduction of CCyB rate	The CCyB rate was reduced to 0.50% with effect from 1 July 2020.	CNB
	Liquidity-providing repo operations	From 18 March 2020, liquidity-providing repo operations are announced three times a week. Banks' bids are fully satisfied at a fixed rate corresponding to the two-week repo rate. Eligible collateral extended to mortgage bonds and three-month repos.	CNB
	Relaxation of credit ratio limits for mortgages	Relaxation of credit ratio limits for the assessment of applications for new mortgages. LTV increased to 90%, except for investment mortgages. The recommended DSTI and DTI limits were abolished.	CNB
IC, PMC, investment funds	Liquidity-providing tool	The possibility to obtain liquid funds in the form of a short-term loan from the CNB at the repo rate plus 20 bp; eligible collateral – T-bills, government bonds and CNB bills.	CNB
Financial institutions	Restrictions on dividend payouts	Credit institutions, insurance companies and pension management companies to refrain from making dividend payouts until both the acute and longer-term impacts of the coronavirus disappear.	CNB

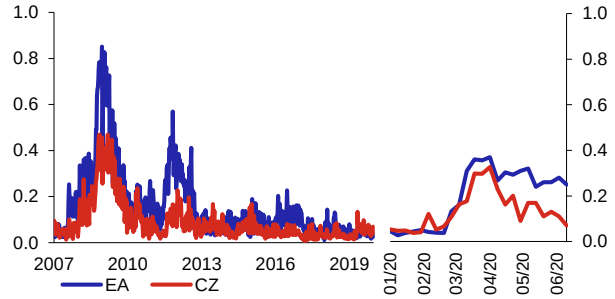
Source: websites of ministries of the Czech Republic, CNB

Note: IC – insurance companies, MF – Ministry of Finance, MRD – Ministry for Regional Development, MIT – Ministry of Industry and Trade, MLSA – Ministry of Labour and Social Affairs, PMC – pension management companies. Information as of 30 June 2020.

The global increase in risk aversion manifested itself on the domestic financial market

Global shifts in investment portfolios led to a partial exit of foreign investors from the CEE region in March 2020. This was apparent from a sharp change in the CISS composite indicator of market stress for the Czech Republic (see Chart II.15), a rise in yields on Czech government bonds with long residual maturities (see Chart II.16 and Chart II.17)[25] and a related weakening of the koruna (see Chart II.11 CB). The developments on the two markets were accompanied by a widening of bid-ask spreads (see Chart II.12 CB). The weakening of the koruna led to losses on domestic institutional investors' exchange rate hedging transactions and in some cases to a need to top up margins in these transactions. This temporarily worsened the liquidity situation of some institutions (see section III.2). Moreover, the rise in bid-ask spreads on koruna forwards resulted in a temporary rise in the cost of hedging against exchange rate risk.

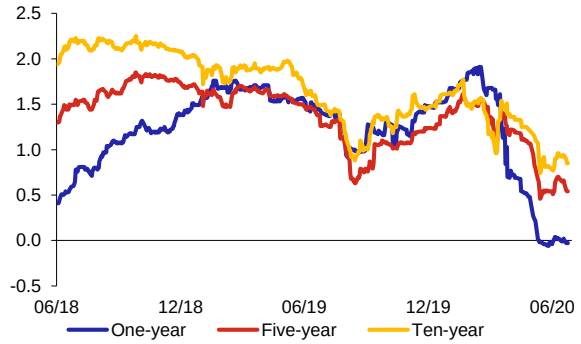
Chart II.15
CISS composite indicator of market stress
(index between 0 and 1)



Source: Refinitiv, CNB

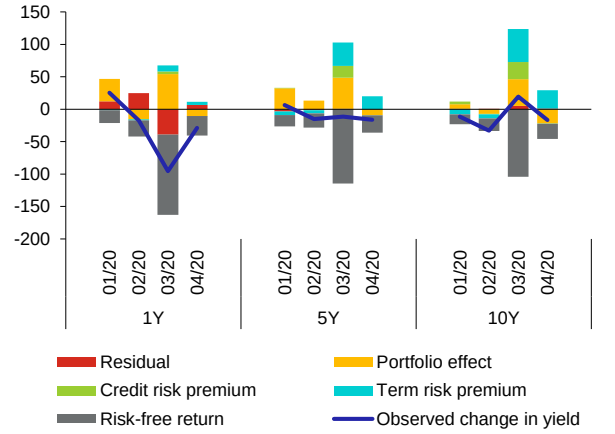
Note: For the calculation methodology see The CNB's approach to setting the countercyclical capital buffer.

Chart II.16
Czech government bond yields
(%)



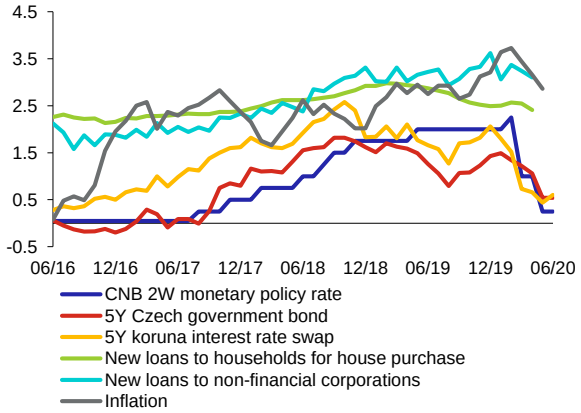
Source: CNB

Chart II.17
Decomposition of the contributions of changes in Czech government bond yields
(bp)



Source: MTS, CNB

Chart II.18
Selected interest rates, yields and inflation
(%)



Source: CNB

Note: Month-end values are used, except for client rates, where monthly averages are used instead.

The CNB reacted very quickly to the extremely adverse situation

The CNB reacted to the risks related to the coronavirus crisis by substantially easing monetary conditions. It lowered monetary policy rates three times, by a total of 2 pp. The key policy rate has been 0.25% since 11 May 2020 (see Chart II.18). Furthermore, the CNB declared it was ready to adopt additional measures in this extraordinary situation, primarily to support the stability of the financial system. It was aided in this by the approval of an amendment to the Act on the CNB in March 2020. The amendment gave the CNB the option to trade on the domestic financial market without restrictions in terms of instruments, their maturity and counterparties until the end of 2021. In this context, the CNB in May 2020 broadened its framework for the liquidity-providing repo operations through which it supplies koruna liquidity to financial institutions (see Box 1). Besides monetary policy measures, it also eased some macroprudential measures (see section V).

25 Yields rose temporarily during March on account of higher risk premia. At the end of March, however, the effect of the monetary policy decisions leading to a decline in the risk-free return outweighed the positive contribution of the other components.

BOX 1 Change in the framework for the CNB's liquidity-providing operations

The CNB provides koruna liquidity on the basis of its mandate to maintain price and financial stability. By providing koruna liquidity to various financial institutions at various maturities, it seeks to facilitate balance-sheet liquidity management according to institutions' specific needs. In doing so, the CNB indirectly supports the smooth transmission of liquidity across the Czech financial system. Especially in periods of market stress, various liquidity shortages and disruptions to liquidity flows may occur on financial markets due to a lack of information and a high degree of uncertainty. This leads to growth in counterparty risk. In such a situation, it could become more difficult not just for banks, but also for non-bank financial institutions to access liquidity through standard financial market operations. This would make it harder for them to conduct their asset operations.

The CNB first introduced liquidity-providing repo operations in the context of the global financial crisis in autumn 2008, doing so solely for credit institutions operating in the Czech Republic.[26] The system for these operations was changed in May 2020 following an amendment of the Act on the CNB.[27] This change was made purely for preventive reasons and did not involve any reaction of the CNB to the worsened liquidity situation in the domestic financial system.

For the provision of koruna liquidity to credit institutions, the framework for eligible collateral (for short-term credit) was changed to include mortgage bonds (see Box 6), the weekly number of operations was increased to three, and the maximum loan maturity was extended to three months. Non-bank financial institutions licensed by the CNB – insurance companies, pension management companies and management companies – can also now obtain koruna liquidity from the CNB in its two-week liquidity-providing repo operations. These operations are regarded as extraordinary ones and monetary policy is not conducted through them. Although non-bank institutions may borrow against eligible collateral without limits and repeatedly, the loan parameters are slightly stricter for them than for credit institutions.

The tense market situation calmed following the CNB's reaction

The CNB's reaction, including its announcement that it was ready to adopt additional measures, helped calm the domestic market situation, especially on the government bond and foreign exchange markets. The CISS market stress indicator fell (see Chart II.15), as did government bond yields (see Chart II.16) and koruna interest rate swap rates. Client interest rates also reacted to the new interest rate environment by going down, although less so than monetary policy rates because of a rise in risk premia (see Chart II.18).

The coronavirus crisis has not significantly affected residential property prices so far…

Property transaction prices continued to rise at a brisk pace of close to 9% year on year in 2019 Q4 (see Chart II.19). As a result, housing affordability deteriorated slightly despite robust growth in income (see Chart II.20). Available unofficial data for Q1 and the subsequent months of 2020[28] suggest that the pandemic has not had a major effect on transaction prices so far, although the April and May statistics for Prague may indicate a halt in price growth or even slight month-on-month declines.[29] However, growth in property prices in Prague has been gradually slowing by comparison with the rest of the Czech Republic for several quarters (see Chart II.13 CB). The same is true of asking prices (see Chart II.14 CB). Growth in transaction prices was broadly balanced across different types of property (see Chart II.15 CB).

…but there is a risk of them falling substantially in the quarters ahead

The estimate of future property prices is subject to significant uncertainty. As a result of the coronavirus pandemic, fundamental factors will exert downward pressure on transaction prices; however, their actual dynamics will depend on the evolution of the current overvaluation gap. The *Baseline Scenario* assumes that the decrease in housing price overvaluation from its current levels will be only partial and the price gap will not close fully and across the board.[30] Transaction prices should thus stagnate during 2020 and then return to moderate growth (see Chart II.23E). However, there is a significant risk that a sharper decline in transaction prices than assumed in the *Baseline Scenario* will occur. This applies above all to apartment prices in Prague and Brno, where the degree of overvaluation is highest (see Chart II.16 CB). The degree of apartment price overvaluation at the national level ranges approximately between 15%

26 Banks, foreign bank branches and credit unions.

27 The parameters of the liquidity-providing repo operations are described at https://www.cnb.cz/en/financial-markets/money-market/parameters-of-the-liquidity-providing-repo-operations/.

28 Official CZSO data (House Price Index) were not available at the time of writing of the FSR. HB Index data (Hypoteční banka) are available for 2020 Q1. For April and May, Realitymix.cz statistics are available, for example.

29 In the centre of Prague, only prices of short-term leases have declined so far, owing to the restrictions on tourism, amid a rapid rise in the supply of apartments available for short-term lease.

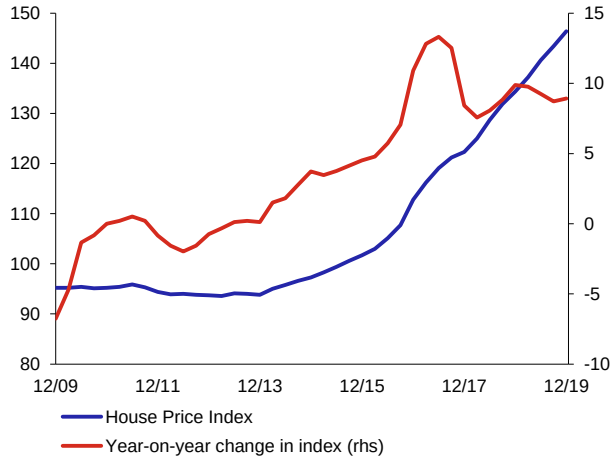
30 The *Baseline Scenario* assumes that, especially in Prague, sellers will be unwilling to cut prices significantly and most transactions will therefore be postponed.

(prudential approach) and 25% (valuation approach). A strong increase in price overvaluation under the valuation approach suggests that the decline could primarily affect selected localities with a high share of investment property (see Chart II.21). In the *Adverse Scenario*, a longer-lasting worse economic situation, a marked rise in pessimism and a sharp increase in non-performing loans are likely to result in a rapid and across-the-board return of transaction prices to their fundamental levels or even below them. In the *Adverse Scenario*, transaction prices should record markedly negative growth during 2021, dropping by more than 15% year on year (see Chart II.23E).

Chart II.19

Transaction prices of residential property

(2015 = 100; right-hand scale: %)

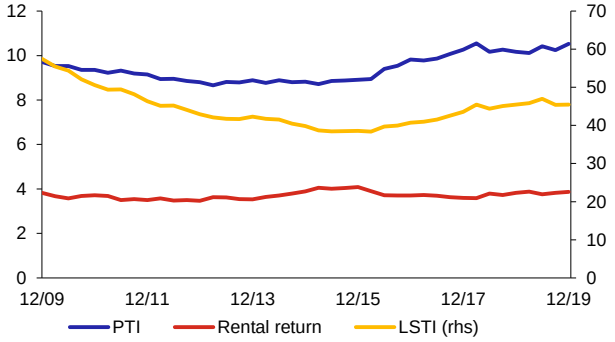


Source: CZSO

Chart II.20

Selected apartment affordability indicators

(PTI in years; yields in %; right-hand scale: %)



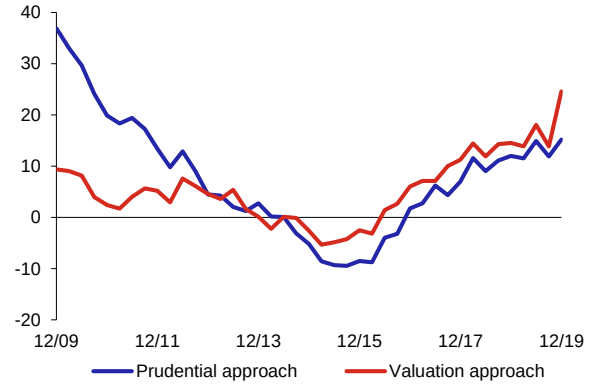
Source: CNB, CZSO, IRI, Společnost pro cenové mapy ČR, s.r.o.

Note: PTI is the price-to-income ratio and LSTI the loan service-to-income ratio. The apartment price is defined as the average price of a 68 m^2 apartment. Income is defined as the annual moving total of the average gross wage. A loan with an LTV of 80% and a repayment period of 25 years was considered for the LSTI calculation.

Chart II.21

Estimated overvaluation of apartment prices

(%)



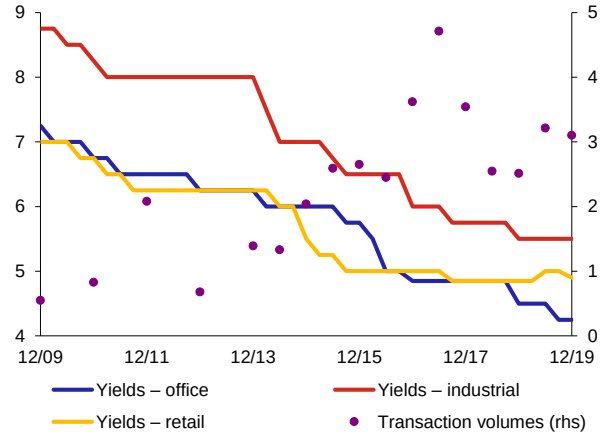
Source: CNB

Note: The methodology of the indicators is described in Plašil, M., Andrle, M. (2019): *Assessing House Price Sustainability*, Thematic Article on Financial Stability 1/2019, CNB. Overvaluation is based on the official forecast published in Inflation Report II/2020. The deterioration in the economic outlook is reflected mainly in the size of overvaluation in the valuation approach, which takes into account the expected decrease in future rental income at constant current prices.

Chart II.22

Yields on commercial property and transaction volumes

(%; right-hand scale: EUR billions)



Source: Jones Lang LaSalle

Note: Prime yields. Transaction volumes are reported at annual frequency until 2013 and as annual moving totals at semi-annual frequency from 2014 onwards.

The long-running downward trend in yields on the monitored types of commercial property continued, with all-time lows reached in some cases

Prices of prime commercial property rose further in 2019. Yields demanded by investors remained at historical lows or – in the case of office property – declined further (see Chart II.22). The size of completed premises in new office and industrial property decreased compared with 2018 but was still high by historical comparison (see Chart II.17 CB). Overall transaction activity was slightly higher than in 2018 (see Chart II.22 and section V.3.2). The market expects the coronavirus pandemic to be reflected in the monitored indicators from 2020 Q2 onwards. Future developments will depend mainly on the expectations of key market players regarding the time needed for advanced economies to return to growth and on perceptions of yields on commercial property relative to alternative forms of investment.

II.1.3 Alternative economic scenarios

Two scenarios were used for the purposes of the stress tests: a *Baseline Scenario* based on the CNB's official macroeconomic forecast, and an *Adverse Scenario* assuming a resurgence of the pandemic and a longer economic contraction. The CNB's macroeconomic forecast and the pandemic resurgence scenario were published in Inflation Report II/2020 (see Table II.3.2).[31] Charts II.23A–F illustrate the evolution of the key macroeconomic variables in the *Baseline Scenario* and the *Adverse Scenario*. The evolution of the other indicators is described in sections II–V.

Baseline Scenario

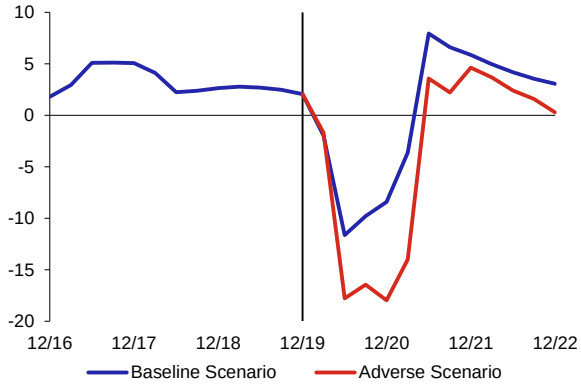
In the *Baseline Scenario*, the Czech economy is hit by a deep economic downturn as a result of the government's anti-pandemic measures, plant shutdowns in some firms, and a drop in external demand. GDP falls by 8% in 2020. All expenditure components except government consumption contribute to the downturn in the first half of this year. The year-on-year decline in economic activity starts to moderate in the second half of 2020. General government gets into significant budget deficits due to the stabilising fiscal measures. Despite the economic policy stabilisation measures, this significantly affects the labour market. The situation cools down significantly in the first half of 2020, when wage growth slows considerably and employment declines appreciably. The unemployment rate thus increases rapidly, peaking at the start of 2021. The worse sentiment of firms fosters restricted investment activity in 2020, which partially recovers in the subsequent year. The scenario assumes a gradual decrease in property price overvaluation, but the gap does not close fully owing to a fall in transaction activity and postponement of sales. In late 2020 and early 2021, a pronounced cooling of the overall price pressures leads inflation to return close to the 2% target. Following the sharp decrease in domestic market interest rates and yields in March 2020, consistent with this is a further decline in Q2 followed by broad stability. The scenario expects rates to increase towards the end of the test horizon.

Adverse Scenario

The *Adverse Scenario* assumes that the first wave of the pandemic recedes more gradually and, above all, that another wave hits Europe in late 2020. The anti-pandemic measures are extended across the effective euro area. In the Czech Republic, they are reintroduced from October to December 2020, although to a lesser extent than during the first wave. Fiscal policy again reacts using support expenditure measures, though on a smaller scale than during the first wave due to the risk of high deficits and rapidly rising debt. Government investment funded from domestic sources falls in 2021. The new wave of the pandemic starts in late 2020 and intensifies in 2021. In this scenario, GDP falls by as much as 13% in 2020. Many exhausted firms close, leading to a dramatic cooling of the labour market. Households' income situation deteriorates, with the average wage in market sectors declining in absolute terms in 2020 as a whole. Unemployment rises towards 8%. In this adverse economic situation, the funds of households and non-financial corporations are gradually exhausted. Coupled with a rise in real debt, this causes their debt servicing ability to worsen significantly. The problems in the real economy also affect the financial sector, which records considerable credit losses and a marked drop in profits. Lower growth in wage costs amid non-existent demand pressures reflecting worse consumer sentiment affects inflation, which temporarily dips below the lower boundary of the tolerance band around the target in early 2021. A markedly weaker koruna exchange rate and a hypothetically deeply negative path of market interest rates support a gradual recovery in economic activity and help inflation return to the 2% target at the end of next year. However, long-term bond yields surge on the back of a rise in global risk aversion, which, in the case of European government bonds, is also connected with returning uncertainty regarding debt sustainability in some euro area countries. Domestic banks tighten their view of credit risk and increase their risk mark-ups on interest rates on new loans. Client interest rates thus rise to a much higher level, also due partly to an increase in long-term interest rates. The rise in debt service coupled with the other impacts of the recession increases the default rate on loans to both households and non-financial corporations.

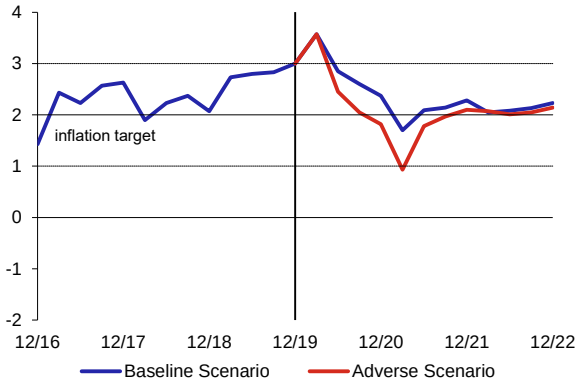
31 In both the *Baseline Scenario* and the *Adverse Scenario*, the time series of variables for the third year were created solely for the purpose of stress testing the individual sectors. For this reason, neither the *Baseline Scenario* beyond the forecast horizon, nor the *Adverse Scenario* is the CNB's official forecast.

Chart II.23A
Alternative scenarios: real GDP growth
(year on year in %)



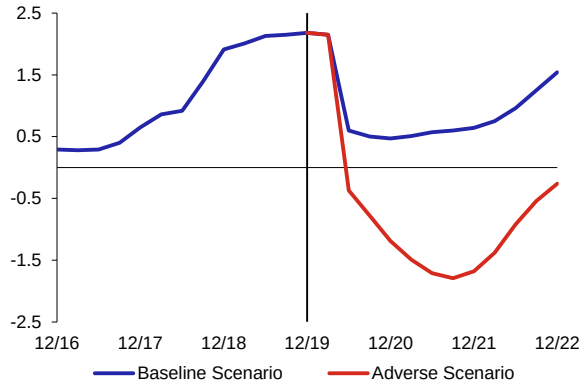
Source: CNB

Chart II.23B
Alternative scenarios: inflation
(year on year in %)



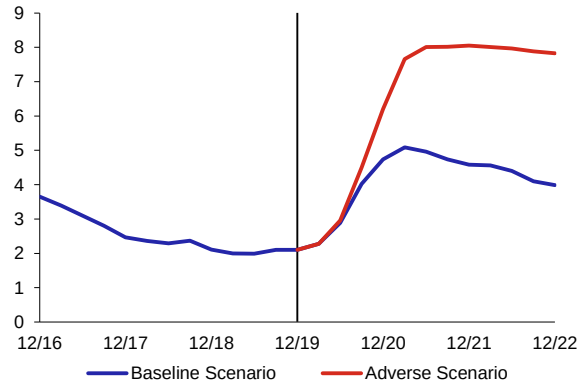
Source: CNB

Chart II.23C
Alternative scenarios: 3M PRIBOR
(%)



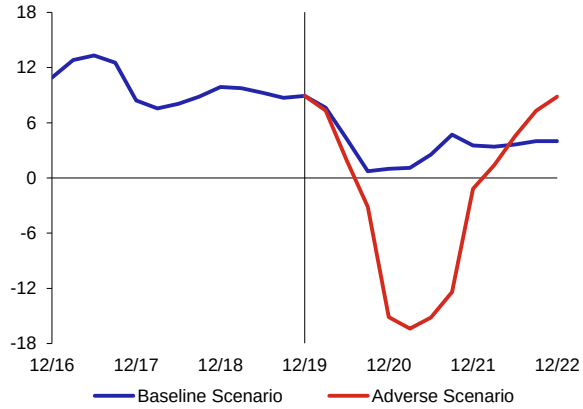
Source: CNB

Chart II.23D
Alternative scenarios: unemployment
(%)



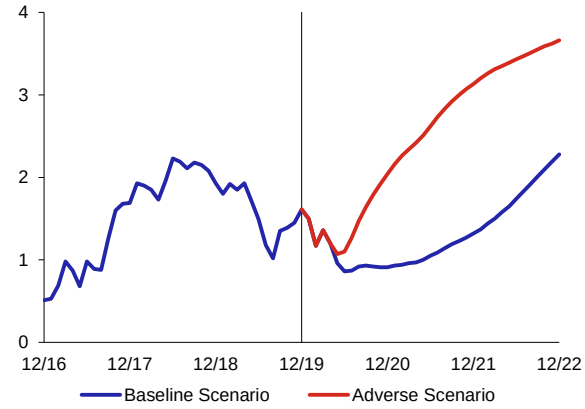
Source: CNB

Chart II.23E
Alternative scenarios: year-on-year property price growth
(%)



Source: CNB

Chart II.23F
Alternative scenarios: ten-year Czech government bond yield
(%)



Source: CNB

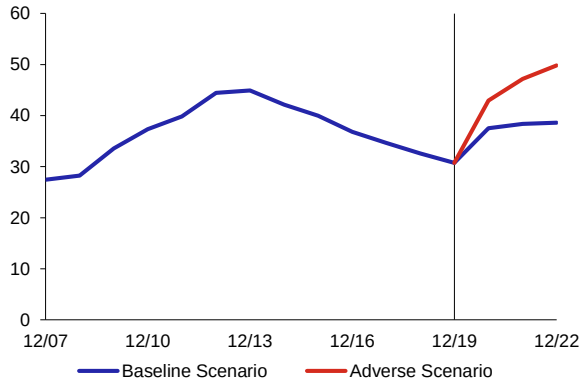
II.2 THE NON-FINANCIAL SECTOR

II.2.1 The public sector

The government debt-to-GDP ratio continued to decline in 2019, but current government expenditure rose

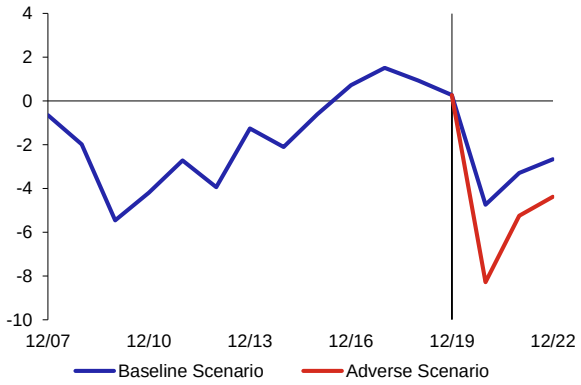
The Czech Republic's government debt-to-GDP ratio continued to decline in 2019 (see Chart II.24), thanks above all to continued solid growth of the domestic economy (see Chart II.22A). The favourable conditions associated with the economic growth were not used to implement reforms of the financial and health systems. Instead, procyclical domestic fiscal policy was manifested in growth of government expenditure,[32] primarily due to higher valorisation of pensions and brisk wage growth in the public sector. The general government balance also fell to 0.3% of GDP (see Chart II.25). An increasing share of mandatory and quasi-mandatory expenditure in total government budget expenditure simultaneously narrowed the room for active fiscal policy in the event of adverse shocks.

Chart II.24
General government debt
(% of nominal GDP)



Source: CNB

Chart II.25
General government balance
(% of nominal GDP)



Source: CNB

A sizeable government deficit and growth in government debt can be expected in 2020 and 2021 as a result of the government measures

In connection with the adoption of fiscal measures to support the economy (see Table II.2) and an expected significant loss of tax revenue, the CNB's May forecast (Inflation Report II/2020) expects a deterioration in government finances (a government deficit of -4.8% of GDP and growth of government debt to 37.6% of GDP in 2020, and a deficit of -3.4% of GDP and government debt of 38.6% of GDP in 2021; see Chart II.24 and Chart II.25). The risks to the forecast are high, however.[33] In the event of materialisation of the *Adverse Scenario*, which assumes a resurgence of the pandemic and the reintroduction of quarantine measures, the government deficit could reach 8.3% and government debt could rise to 43%. Given the future economic uncertainty, the government adopted an amendment to Act No. 23/2017 Coll., on Budget Responsibility, enabling it to create fiscal room for 2021 with a structural deficit of 4% of GDP, and pledged to improve the structural deficit by at least 0.5 pp of GDP by 2028.

The government's good position on the government bond market aids its current increased funding need

To cover the additional government expenditure and the regular debt instalments in 2020, and to strengthen the Treasury liquidity buffers, the Ministry of Finance issued significantly higher amounts of government securities than in previous years (see Chart II.26). As of mid-June 2020, it had issued CZK 535 billion of government debt securities. The Czech Republic's rating remains very solid with a stable outlook (see Table II.3), enabling it to finance the government debt at still low risk mark-ups on the part of investors. The new debt was financed by bonds with lower yields than the average yield on the existing debt (2.33%). The higher issue volumes did not lead to a drop in the average debt maturity, which remains at six years. Domestic financial corporations were predominant among investors in government securities. Demand from non-residents also remained very high (see Chart II.27).

32 Total current general government primary expenditure rose by a sizeable 7.7% year on year in 2019 (and even by 8.2% in 2018).

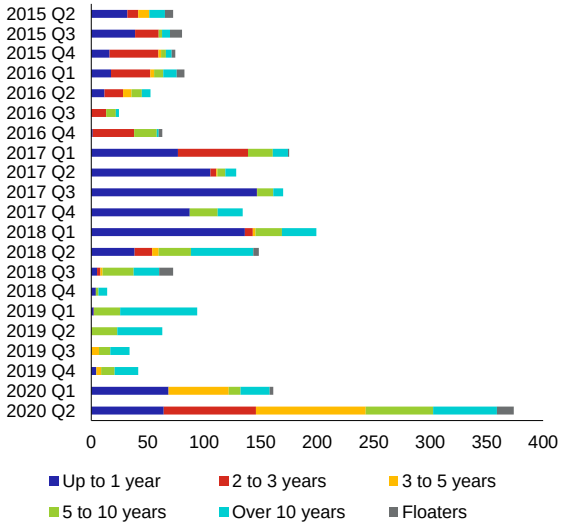
33 The risks to the forecast are affected to a large degree by the course of the pandemic. On 8 June 2020, the Czech government approved a state budget deficit of CZK 500 billion, which was not known at the time the forecast was prepared.

Table II.2
Fiscal measures to support the economy and maintain liquidity
(% of nominal GDP)

Measures	2020
Waiver of social security and health insurance contributions for self-employed	0.43
Increase and extension of attendance allowance	0.20
Compensation for employers (Antivirus)	0.42
Compensation bonus for self-employed ("25" programme)	0.45
Higher healthcare and emergency services expenditure	0.36
Compensation in cultural sector	0.03
Postponement of third and fourth phases of ESR	0.06
Compensation bonus for limited liability companies	0.17
Partial rent payment by government (COVID Rent)	0.07
Cancellation of property purchase tax	0.20
Subsidies for farmers to alleviate debt	0.02
Waiver of CAP for employers	0.27
Loss carryback	0.57
Reduction of road tax rate	0.02
Reduction of VAT on accommodation, cultural and sports services	0.02
Measures, total	**3.29**

Source: CNB
Note: CNB estimate as of 10 June 2020.

Chart II.26
Czech government security issue volumes
(CZK billions)



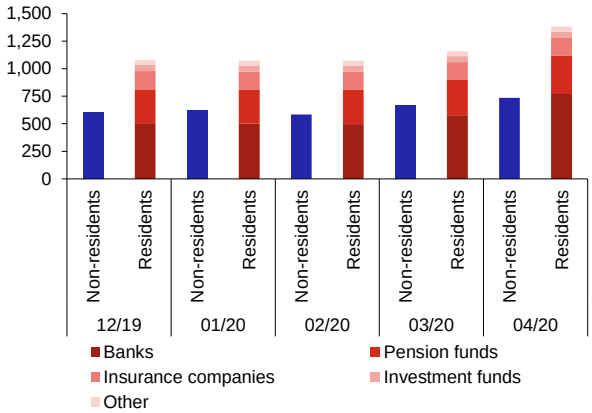
Source: CNB
Note: Data as of 24 June 2020. Colours indicate maturity baskets.

Table II.3
The Czech Republic's credit ratings

Rating agency	Domestic long-term liabilities	Outlook	External long-term liabilities	Outlook
Moody's	Aa3	Stable	Aa3	Stable
S&P Global Ratings	AA	Stable	AA-	Stable
Fitch Ratings	AA-	Stable	AA-	Stable
JCR	AA	Stable	AA-	Stable
R&I	AA-	Stable	AA-	Stable
Scope Ratings	AA	Stable	AA	Stable
Dagong Global Credit Rating	A+	Stable	A+	Stable
ACRA Europe	AA	Stable	AA	Stable
ACRA	AA	Stable	AA	Stable

Source: Ministry of Finance of the Czech Republic
Note: Sovereign credit rating.

Chart II.27
Czech government bonds in circulation by type of holder
(CZK billions at market value)



Source: CNB

The growing government debt poses risks to financial stability from the medium-term perspective

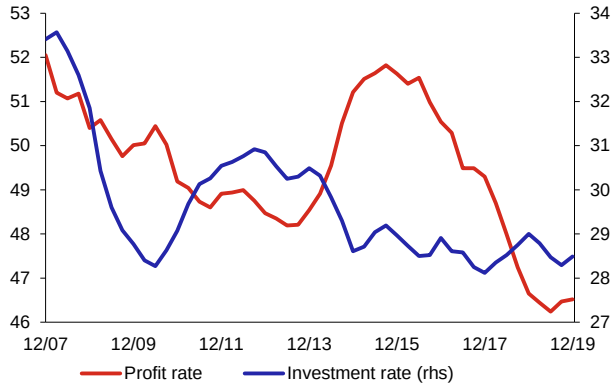
Expansionary fiscal policies have a positive effect on aggregate demand, contributing significantly to maintaining economic activity at times of recession or crisis. They simultaneously increase the government's financing needs. A sustained period of growing government demand for domestic savings might not only be gradually reflected in growth in yields on Czech government bonds, but might also crowd out the domestic private sector, mainly through growth of client interest rates. However, the risk of crowding-out of private investment through rising government expenditure is reduced by the still solid demand for Czech government bonds from non-residents. This demand could potentially grow, since central banks' government bond purchase programmes (see section II.1.1) have been causing a shortage of high-quality, liquid assets on global markets for several years now. However, countries with higher levels of government indebtedness with debt located in non-residents' balance sheets are generally exposed to a higher risk of potential contagion from countries that are high risk in terms of debt sustainability. Without credible fiscal consolidation, non-residents could cause higher volatility and, consequently, a rise in domestic market interest rates in the event of a negative demand shock. Moreover, the higher long-term interest rate volatility could in turn generate higher exchange rate volatility via capital flows. However, a stabilising factor in the case of domestic public finances is that non-residents hold Czech debt largely in Czech koruna. Given its significant foreign exchange reserves, the CNB additionally has considerable scope to curb market volatility.

II.2.2 Non-financial corporations

The pandemic hit the non-financial corporations sector in a phase of sustained decline in the profit rate and a stabilised debt ratio

The Czech Republic's economic growth and slightly weakening wage growth were reflected in renewed growth in the operating profits of non-financial corporations during 2019. This caused the profit rate to stop falling sharply and flatten out. Investment activity remained relatively low (see Chart II.28) and, consistent with that, credit growth and the sector's overall debt dynamics were also subdued (see Chart II.18 CB). At the end of 2019, the debt ratio was around 40 pp below its 2012 and 2013 peak (see Chart II.29). The level of credit risk – as measured by the 12-month default rate – remained very low in 2019, at around 1%. Optimistic expectations arising from the good financial results of non-financial corporations may have been reflected in lower formation of financial reserves. This is indicated by liquid assets, which rose at a slower pace than operating profit, and by the current account primary income statistics, which indicate increased payment of dividends abroad for 2019 (see Chart II.19 CB). Despite this, non-financial corporations entered the period of high economic stress caused by the coronavirus pandemic with sufficient room for potential growth in indebtedness, which they can use to temporarily address liquidity shortages.

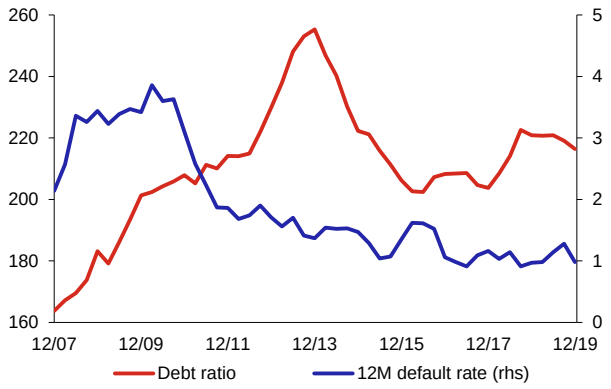
Chart II.28
Profit rate and investment rate in the non-financial corporations sector
(% of gross value added; calculated from annual moving totals)



Source: CZSO

Note: The profit rate is the ratio of gross operating surplus to the gross value added of the sector. The investment rate is the ratio of gross fixed capital formation to the gross value added of the sector.

Chart II.29
Default rate and debt ratio in the non-financial corporations sector
(% of annual total of gross operating surplus; right-hand scale: %)



Source: CNB, CZSO

Note: The debt ratio is the ratio of the total volume of loans taken out and debt securities issued to the gross operating surplus of the sector.

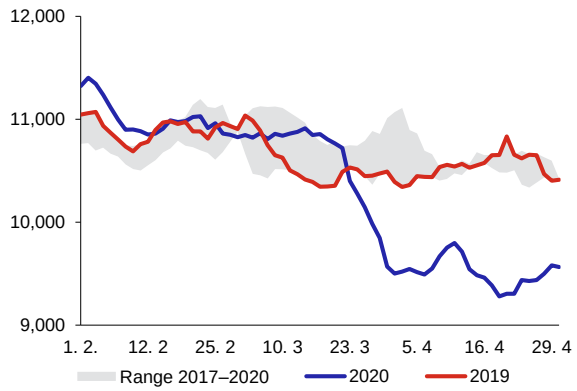
The current combination of strong demand and supply shocks is putting a heavy burden even on healthy firms

The global coronavirus pandemic, accompanied by the introduction of anti-pandemic measures, hit domestic non-financial corporations hard, with services worst affected (see Chart II.5). Mandatory shutdowns impacted particularly strongly on hotels and restaurants and passenger transport. Given the continuing restrictions on international tourism, it can be assumed that the impact on firms operating in these areas will be of a long-term nature. Developments in the domestic and external environment have also had an appreciable impact on industrial firms. Some of them were forced to halt production, and after reopening they face shortages of production inputs and weaker demand due to the disruption of supply chains. This is evidenced by data on electricity consumption (see Chart II.30).

Firms are facing major liquidity shortages as a result of shutdowns…

The anti-pandemic measures had a strongly negative impact on operating cash flow. Retail sales fell by 9.3% year on year in March, with hotels and restaurants and transport and storage recording the biggest drops. Most other sectors can be expected to record similar plunges in sales as that in services. Sudden revenue losses combined with insufficient financial reserves may be reflected in increased difficulties in servicing loans and paying rents and wages. Firms usually cover liquidity shortages with higher borrowing on existing lines of credit and by taking out new operating loans. Increased borrowing, however, only temporarily alleviates insufficient liquidity and may pose a risk of increased indebtedness in the future. This risk may further increase in the event of a slower economic recovery, as the servicing of higher debt will put additional pressure on the already decreased operating cash flows.

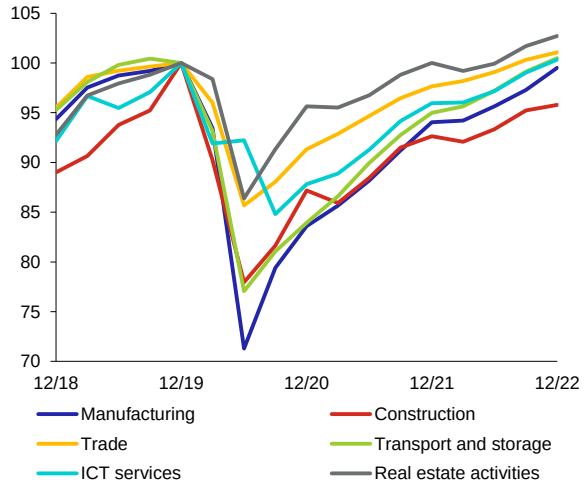
Chart II.30
Power system load in the Czech Republic
(average hourly daytime consumption in MWh)



Source: ČEPS, ASOS

Note: Data adjusted for temperature fluctuation effects on electricity consumption and further smoothed by the 7-day moving average. For more information on how the data are adjusted and interpreted, see the CNB blog article: *První odhad dopadů pandemie COVID-19 na ekonomiku ČR* (*First Estimate of the Impacts of the COVID-19 Pandemic on the Czech Economy*), A. Michl, T. Adam (in Czech only).

Chart II.31
Production in the largest sectors in the *Baseline Scenario*
(index; 2019 Q4 = 100)



Source: CNB, CZSO

Note: Production at constant prices.

…which the government is trying to mitigate with a set of support measures

The CNB responded to the deteriorating economic outlook by cutting monetary policy rates, and the Czech government, like its counterparts in other countries, introduced a series of stabilisation measures (see section II.1, Table II.1). For firms, these measures aim to maintain firms' operating cash flows and creditworthiness as much as possible and to lower their costs or spread them out over time. The measures targeted at firms include a loan moratorium, a waiver on social and health insurance advances, "liberation" packages, and loan and guarantee programmes (COVID I, II and III, and COVID Plus, together amounting to around CZK 850 billion). Other important measures include direct financial support for the self-employed (such as the "25" programme) and the Antivirus wage compensation programme.

Net cash flows may still be highly negative in some sectors

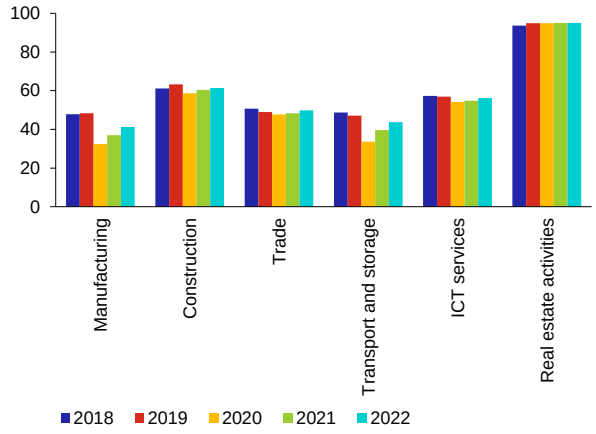
Despite the measures in place, operating cash flows may be highly negative in the worst affected segments of the economy. Firms in these sectors may need to draw additional liquidity in the form of operating loans. According to an estimate arising from the non-financial corporations stress test, the additional liquidity need for 2020 is in the range of CZK 300 billion in the *Baseline Scenario*.[34] The figure could be considerably higher if a more adverse scenario were to materialise. In this case, it would be possible to consider providing assistance to vulnerable firms in the form of a "funding for lending" programme, for example. Central banks in some countries use such programmes to offer banks longer-term liquidity at a preferential interest rate conditional on target lending criteria, and thereby to increase the supply of credit to struggling firms.

According to a macroeconomic simulation, the hardest hit sectors in the *Baseline Scenario* are manufacturing, transport, and hotels and restaurants …

The second quarter of 2020 saw a gradual easing of the anti-pandemic measures in the Czech Republic, but the production of domestic firms will not return to pre-crisis levels immediately. The *Baseline Scenario* assumes a sharp contraction in GDP in 2020 Q2 and a gradual economic recovery in the second half of 2020 (see Chart II.23A). All components except general government consumption contribute to the contraction in GDP. The biggest drops are recorded for exports, imports and investment (Inflation Report II/2020). According to the stress test of non-financial corporations, this has a particularly negative effect on sectors sensitive to these components of GDP. A significant drop in gross added value and total output in the *Baseline Scenario* is recorded in manufacturing, construction and transport (see Chart II.31) and especially in sectors such as hotels and restaurants and transport. On the aggregate level, the net profit rate decreases by about 5 pp at the peak of the coronavirus crisis, with the variability across sectors being very high (see Chart II.32). In 2020 Q4, the aggregate profit rate starts to return gradually to its original levels. In line with the *Baseline Scenario*, credit growth also declines. Due to a significant reduction in investment loans, it turns negative despite higher drawdown of operating loans to replenish liquidity (see Chart II.33).

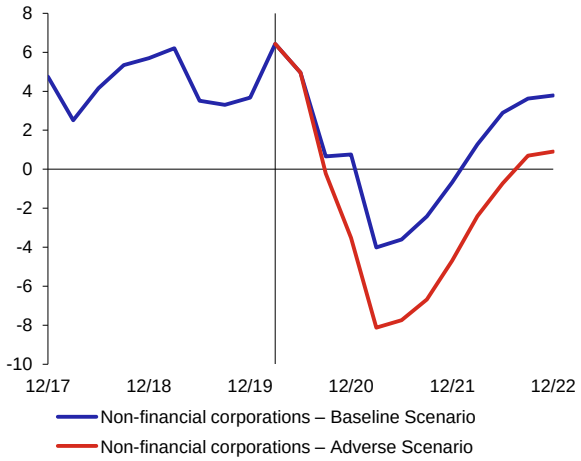
34 The estimate of specific liquidity needs is subject to significant uncertainty and the average of these estimates is around CZK 150 billion.

Chart II.32
Profit rates in the largest sectors in the *Baseline Scenario*
(%)



Source: CNB, CZSO
Note: The figures for 2019, 2020, 2021 and 2022 are estimates. The profit rate is the ratio of gross operating surplus to gross value added.

Chart II.33
Rate of growth of loans to non-financial corporations in the *Baseline* and *Adverse Scenarios*
(%)

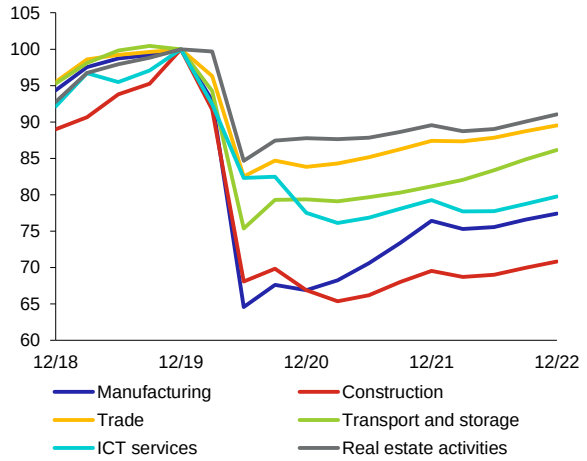


Source: CNB

…in the *Adverse Scenario* the problem would be greater for most of the economy

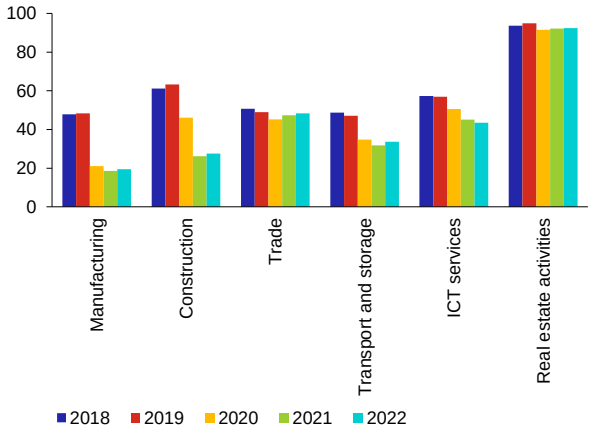
The *Adverse Scenario* predicts a very gradual fading of the first wave and the onset of a second wave accompanied by the reintroduction of quarantine measures. The materialisation of this scenario would lengthen the period of uncertainty, which in turn would be gradually reflected in a greater downturn in foreign trade and cross-border movement of people and capital. There would be a longer-lasting contraction in total output and a decrease in the net profit rate. The latter would fall by 12 pp on aggregate and would not return to its pre-crisis level at the scenario horizon (see Chart II.34 and Chart II.35). In terms of sectors, the downswing in foreign trade and travel would have the worst effect on manufacturing and transport. The lack of investment and the fall in property prices would also have a severe impact on the construction and real estate sectors. The lack of investment and the fall in property prices also have a severe impact on the construction and real estate sectors. The weak investment would lead to a significant decline in credit growth, which would remain negative until mid-2022 (see Chart II.33).

Chart II.34
Production in the largest sectors in the *Adverse Scenario*
(index; 2019 Q4 = 100)



Source: CNB, CZSO
Note: Production at constant prices.

Chart II.35
Profit rates in the largest sectors in the *Adverse Scenario*
(%)



Source: CNB, CZSO
Note: The figures for 2020, 2021 and 2022 are estimates. The profit rate is the ratio of gross operating surplus to gross value added.

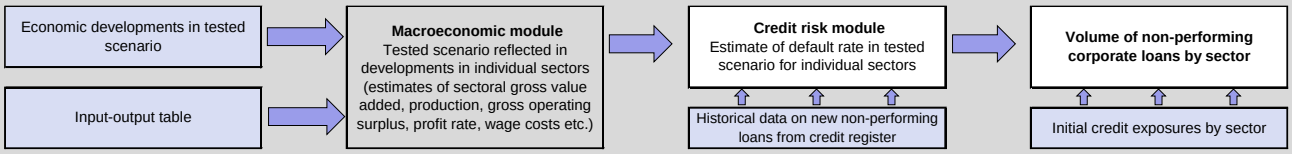
If the *Adverse Scenario* were to materialise, non-financial corporations would be exposed to shock similar to that of the first half of 2020

Firms would enter the potential second wave of the pandemic in substantially worse financial shape and with much lower financial reserves. Even more massive government support would probably be needed to maintain employment. Otherwise, there could be a significant increase in credit risk in the economy, which would affect banks and their willingness to lend even to viable companies. There would thus be a risk of a spiral, with the high default rate among non-financial corporations leading to a lower willingness of banks to provide liquidity, and a lack of liquidity leading to further defaults. The situation abroad remains a risk going forward. In the event of a slow global economic recovery and subdued investment, exporters will be exposed to long-term stress. This would mainly affect manufacturing and, within it, motor vehicle manufacturing, which is a significant net exporter.

BOX 2 Stress testing in the non-financial corporations sector

The CNB has created a new model for stress testing the non-financial corporations sector. The main macroeconomic module of this model was presented in Financial Stability Report 2018/2019. The module is based on the system of national accounts, the main national economic identities, and input-output tables. This module makes it possible to simulate developments in individual sectors when the conditions of the scenario under test are met, taking into account the existing supplier-customer relations between industries. These relations are a key channel for the transmission of the shock between sectors. Rising interconnectedness increases the strength of the shock. Based on the simulation of developments in individual sectors, performance and profitability indicators are obtained for each of them. The advantage of this approach is that it allows us to set different stress levels in different sectors (but always with regard to the initial scenario). This increases the scope for testing different economic scenarios with the same final impact on the main macroeconomic aggregates.

Figure 1 (BOX)
Stress testing of the non-financial corporations sector



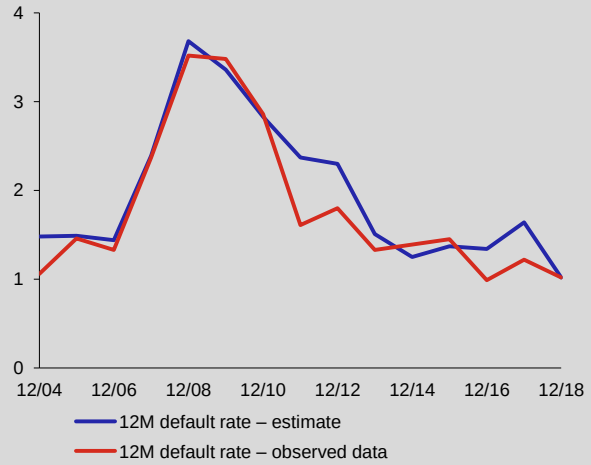
Source: CNB

To evaluate the impact of the baseline scenario on the stability of the financial or banking sector, in addition to monitoring sectoral national economic indicators, it is particularly important to track how they pass through to the creditworthiness of individual sectors and to subsequently estimate the total amount of non-performing bank loans to non-financial corporations. The relationships between the credit risk of individual sectors, the outputs from the macroeconomic module, and other relevant macroeconomic variables are illustrated in Figure 1.

The credit risk indicator for each sector is represented in the module by the 12-month default rate. This is defined as the ratio of new non-performing loans in individual sectors during the next 12 months to their total volume of performing loans.[35] Based on the historically observed paths of a large number of indicators of sector performance, profitability, costs and indebtedness, whose future evolution can be modelled in the macroeconomic module or in other CNB models, the algorithm selects indicators for each sector that can be used to obtain the optimal prediction of the 12-month default rate (see Chart 1). With knowledge of the default rates of individual sectors, the overall size of their loans (see Chart 2) and the estimated growth of those loans, the overall losses for the portfolio of loans provided to non-financial corporations are subsequently estimated in the test scenario.

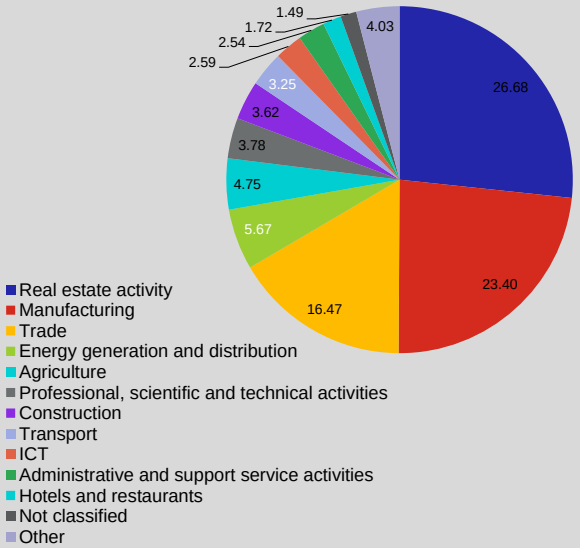
35 The 12-month default rate represents the materialisation of the one-year probability of default (1Y PD), which features in the relationship for the overall expected loss of the banking sector: EL = PD*LGD*EAD.

Chart 1 (BOX)
Actual and estimated aggregate 12M default rate
(%)



Source: CNB
Note: The estimate of the aggregate default rate was prepared as a weighted average of the estimates of the default rate based on the sizes of the exposures of individual sectors.

Chart 2 (BOX)
Breakdown of loans by sector in the initial year of the stress simulation
(% of total stock of loans to non-financial corporations)

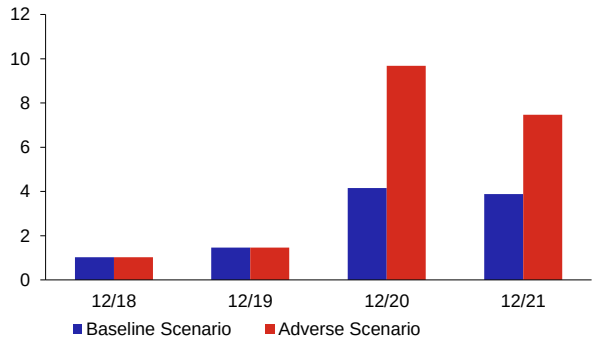


Source: CNB

The default rate rises significantly in both the *Baseline Scenario* and the *Adverse Scenario*

The current coronavirus crisis will be reflected in a substantial deterioration in credit quality in both scenarios due to reduced corporate profitability and weak overall economic performance. According to the *Baseline Scenario* non-performing loans will increase in 2020 and peak in mid-2021. As the economic situation improves, the default rate stabilises and gradually begins to decline, although it remains elevated at the horizon of the scenario (see Chart II.36). The cumulative volume of non-performing loans in the *Baseline Scenario* of the stress test of corporations is about 9.5% of the total stock of performing loans. If the *Adverse Scenario* were to materialise, the growth in non-performing loans would be even stronger. The 12-month default rate would rise continuously, and the volume of non-performing loans would exceed 7% in both 2021 and 2022. The total volume of non-performing loans would approach 19% of the total stock of performing loans.

Chart II.36
Aggregate default rate in the *Baseline* and *Adverse Scenarios*
(%)



Source: CNB, CZSO
Note: Observed data for 2018.

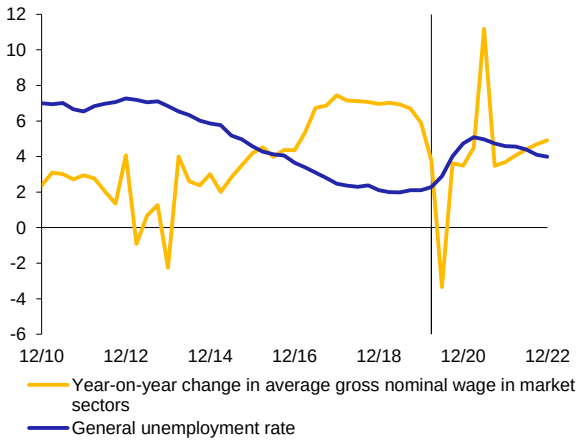
II.2.3 Households

2019 was a good year for households…

In 2019, the unemployment rate in the Czech Republic stayed at record low levels and even dipped below 2% for a short time. Wage growth remained robust, dropping only slightly from its previously high level (see Chart II.37). Favourable labour market developments from the point of view of households further encouraged optimistic expectations and helped maintain a brisk pace of consumption growth (see Chart II.38). This was one of the key factors of economic growth (see section II.1 and Inflation Report II/2020).

Chart II.37
Labour market indicators

(%)

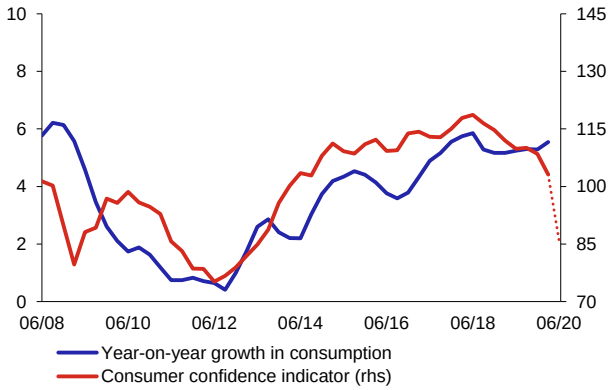


Source: CNB, CZSO

Note: The general unemployment rate is seasonally adjusted. The vertical line divides the observed values and the official macroeconomic forecasts published in the Inflation Report II/2020.

Chart II.38
Household consumption and confidence

(%; right-hand scale: base index relative to long-term average: 2003–2019)



Source: CZSO

Note: Growth rates are smoothed by the centred three-period average. The values of the consumer confidence indicator are given by the average of the values for the individual months of the quarter. The value of the indicator in 2020 Q2 is the average of the values for April and May (highlighted by the dotted line).

…but the onset of the coronavirus crisis brought about a change

The pandemic and associated anti-pandemic measures introduced in March 2020 also affected the household sector. Many workplaces were shut down, and services were subjected to restrictions. This had a particularly negative impact on the self-employed. Upon the declaration of a state of emergency, schools were also closed. This made life more difficult for families with children for whom a child-caring household member could no longer go to work.

The government tried to compensate households for their drop in income

The Czech government introduced a number of stabilising and support measures in response to households' loss of income (see section II.1, Table II.1). These include an employment support programme (Antivirus), increased attendance allowance for the period of school closures, and deferral of rent payments for households in financial difficulty. The government tried to compensate households containing a self-employed person for their loss of income by providing direct support of CZK 500 per day. This support could be combined with attendance allowance, which for self-employed persons was set at CZK 424 per day and increased to CZK 500 per day in April. The state also offered further assistance for the self-employed through a six-month waiver of mandatory minimum pension and health insurance payments. The government support measures for the self-employed include the COVID II and III programmes, through which they can obtain loans guaranteed by the Czech-Moravian Guarantee and Development Bank and an interest contribution of up to CZK 1 million. The possible postponement of rent for business premises from the declaration of a state of emergency until the end of June and the "COVID Rent" subsidy programme should also ease the difficult situation.

According to the CNB forecast, weakened household demand will persist until the end of 2020

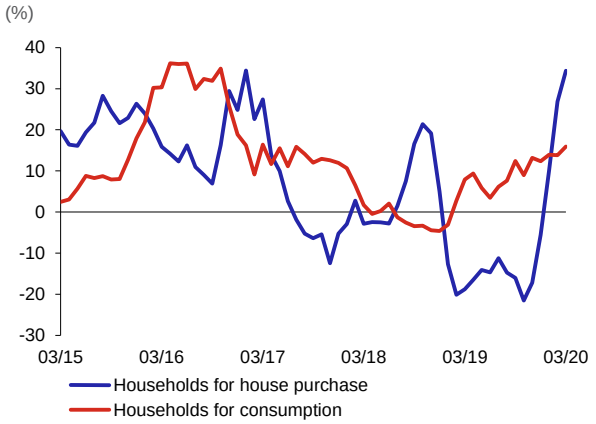
Despite all the measures adopted, consumer sentiment plummeted (see Chart II.38). In April 2020, labour offices began registering an increased number of job applicants (see Chart II.20 CB). This was reflected in a slight rise in the unemployment rate. Business shutdowns, partial loss of income and change in the structure of household consumption led to a significant decline in aggregate consumption, which is not expected to recover until next year according to the CNB forecast (Inflation Report II/2020). The weakened demand will foster gradual lay-offs by firms and further growth in the unemployment rate. According to the CNB's May macroeconomic forecast, the latter should peak at the start of next year (see section II.1.3, Chart II.23D). The most vulnerable group will be low-income households, which, in the event of

existing indebtedness or high rents, may find themselves in serious financial difficulties after the support measures end. An important factor for the economic recovery will be the support of aggregate demand, which will stimulate employment.

Credit growth is expected to decline due to the coronavirus crisis

Mortgage lending slowed in 2019. After several years of growth, this helped stabilise the debt ratio of Czech households just below 60% of gross disposable income (see Chart II.21 CB). At the start of 2020, however, interest in mortgage loans increased and new housing loans rose by more than 30% compared with the previous year (see Chart II.39). Interest in consumer credit continued to rise at the same time. After the onset of the coronavirus crisis, however, a decline in lending activity is expected. Under the *Baseline Scenario*, the pace of growth of new loans for house purchase will drop by 5 pp and that of new consumer credit by 9 pp (see Chart II.40). A much larger decrease would arise if the *Adverse Scenario* were to materialise.

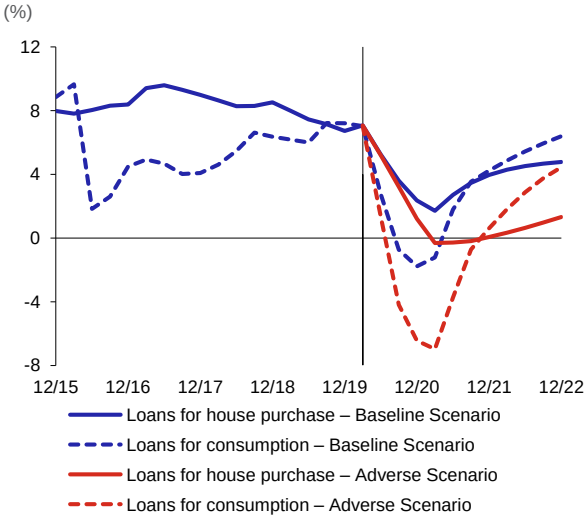
Chart II.39
Year-on-year growth in new koruna loans to households



Source: CNB

Note: The household sector also includes data for NPISHs. The year-on-year growth rates are smoothed by the three-month moving average.

Chart II.40
Year-on-year growth in new bank loans to households



Source: CNB

Indebted households are more likely to face financial difficulties…

Given the high level of uncertainty about future economic developments (see section II.1 and Inflation Report II/2020), the coronavirus crisis could cause some households significant loan repayment problems. Particularly at risk are the self-employed, who have a higher share of mortgage loans with an LSTI ratio of over 40% than the employed.[36] The loan moratorium of up to six months provides a short-term solution to debt repayment problems (see Table II.1). Information from the banking sector reveals that the total number of approved applications for deferral of instalments is more than twice as high for consumer credit than it is for mortgage loans (204,000 versus 83,000). In volume terms, the difference between applications for consumer credit and mortgage loans is slightly smaller. The total volume of loans with approved applications for deferral of instalments is 23% of the volume of consumer credit (CZK 54 billion) and 13% of the volume of mortgage loans (CZK 160 billion).[37]

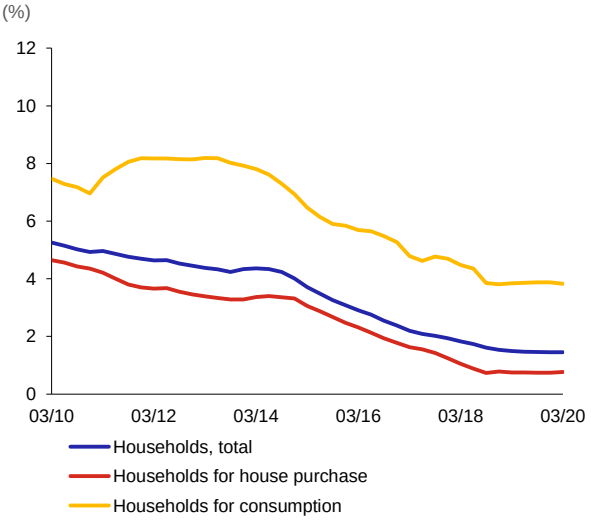
…loan repayment problems may be revealed in full after the moratorium ends

For households that run into long-term payment difficulties, deferral of payments is only a temporary solution and, after a long period of gradual decline, the default rate on household credit (see Chart II.41) is expected to rise at the end of 2020 for both consumer credit and loans for house purchase. The default rate is expected to peak in mid-2021. In the *Baseline Scenario*, the default rate will increase to 2% for house purchase loans and 5% for consumer credit (see Chart II.42). If the *Adverse Scenario* were to materialise, the default rate would increase sharply over the same period. Low-income borrowers and borrowers with high debt service would be hit particularly hard (see section IV.3).

36 Findings according to available data from the CNB survey on new loans secured by residential property for the period from 2016 to the end of 2019.

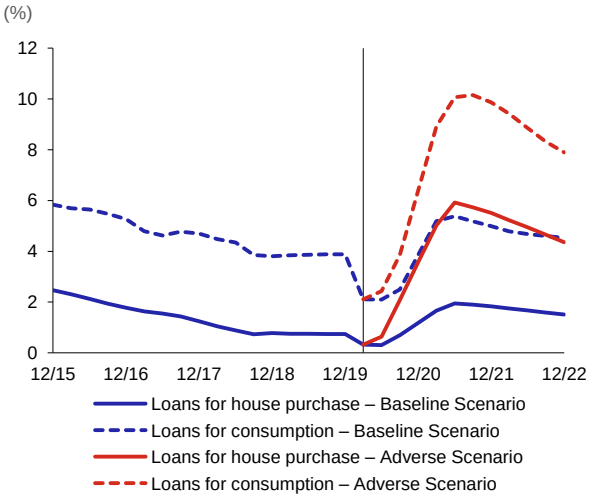
37 The individual figures are the numbers and volumes of loans with approved applications for deferral of instalments under the statutory moratorium and other deferrals provided by banks in connection with the COVID-19 pandemic. Data as of 12 June 2020.

Chart II.41
12M default rate on loans to households



Source: BRCI, CNB

Chart II.42
12M default rate on bank loans to households by scenario



Source: BRCI, CNB