

Risks to financial stability and their indicators

2020



Czech National Bank — Risks to financial stability and their indicators — 2020

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The mandate of the CNB

Maintaining financial stability is defined as one of the CNB's main objectives in Act No. 6/1993 Coll., on the Czech National Bank, as amended:

Article 2

(2) The Czech National Bank shall perform the following tasks:

...

e) set macroprudential policy by identifying, monitoring and assessing risks jeopardising the stability of the financial system and, in order to prevent or mitigate these risks, contribute by means of its powers to the resilience of the financial system and the maintenance of financial stability; where necessary, it shall cooperate with the relevant state authorities in setting macroprudential policy;

...

The CNB defines financial stability as a situation where the financial system operates with no serious failures or undesirable impacts on the present and future development of the economy as a whole, while showing a high degree of resilience to shocks. The CNB's definition is based on the fact that financial stability may be disturbed both by processes inside the financial sector that lead to the emergence of weak spots, and by strong shocks, which may arise from the external environment, domestic macroeconomic developments, large debtors and creditors, economic policies or changes in the institutional environment. Any interaction between weak spots and shocks can result in the collapse of systemically important financial institutions and in disruption of the financial intermediation and payment functions of the financial system.

The CNB's aim with regard to financial stability is to ensure a degree of resilience of the system that minimises the risk of financial instability. To fulfil this aim, the CNB as the central bank and supervisory authority uses the instruments made available to it by the Act on the CNB, the Act on Banks and other applicable laws. Cooperation with other national and international institutions is also very important in this area. In order to maintain financial stability, the CNB focuses on prevention and broad communication with the public regarding the potential risks and factors posing a threat to financial stability. This Financial Stability Report is an integral part of such communication.

The global financial crisis has led to a strengthening of the importance of the objective of financial stability in central banks. Macroprudential policy, which is intended to contribute to the maintenance of financial stability, was formally introduced in the Czech Republic in 2013 through an amendment of the Act on the CNB No. 227/2013 Coll. The main aim of macroprudential policy is to mitigate systemic risk, i.e. the risk of instability of the financial system as a whole. A debate about the tools of macroprudential regulation, i.e. the set of pre-emptive measures intended to prevent financial instability, is going on at international level. The European Systemic Risk Board (ESRB) has been operating at the European level since the start of 2011. Together with three pan-European sectoral supervisory authorities (EBA, ESMA and EIOPA) it makes up the European System of Financial Supervision (ESFS). If it identifies increased risks of a systemic nature, the ESRB issues warnings and recommendations to mitigate those risks. CNB representatives are involved directly in the ESRB's work; the CNB Governor and another board member are members of the General Board of the ESRB, and CNB experts participate in its working groups. Since 2011, the CNB has also been represented in the Regional Consultative Group of the Financial Stability Board established by the G20.

The CNB regularly monitors and closely analyses developments in all areas relevant to financial stability. The members of the CNB Bank Board meet with experts from key sections at regular meetings on financial stability issues. A wide range of information on developments of risks in the domestic financial system and abroad is presented at these meetings. The position of the Czech economy in the financial cycle is assessed and – if any risks to financial stability are identified – discussions are held regarding the use of regulatory, supervisory and other economic policy tools to suppress such risks or their potential effects.



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Foreword



Dear Readers,

Our main publication in the area of financial stability and macroprudential policy is the *Financial Stability Report*, which we have published usually in June since 2005. It is the key document for the regular spring Bank Board meeting on financial stability issues. For the regular autumn meeting, our experts draw up an update of the Financial Stability Report. The publication ***Risks to financial stability and their indicators*** is based on this update and has been published on the CNB website since 2017. The fourth issue, based on the November 2020 update of the Report, is now at your disposal.

As in the case of this year's *Financial Stability Report*, which was published in July, the key topic of this publication is the impacts of the coronavirus crisis on the domestic economy and its financial sector. In the present situation, we try to give a more detailed presentation of the risks to future developments associated with this crisis. We devote significant space to macroprudential capital buffers and instruments aimed at maintaining financial institutions' resilience to the impacts of the crisis. A macro stress test conducted at the three-year horizon is one of the instruments used to assess the resilience of the key sector – banks.

According to the Act on the CNB, maintaining financial stability is one of our key objectives. In accordance with the Act, the CNB identifies, monitors and assesses risks jeopardising the stability of the financial system and, in order to prevent or mitigate these risks, contributes by means of its powers to the resilience of the financial system and the maintenance of financial stability. It primarily employs macroprudential policy tools to do so.

The CNB defines financial stability as a situation where the financial system operates with no serious failures or undesirable impacts on the present and future development of the economy as a whole, while showing a high degree of resilience to shocks. The CNB's definition is based on the fact that financial stability may be disturbed both by processes inside the financial sector that lead to the emergence of weak spots, and by strong shocks, which may arise from the external environment, domestic macroeconomic developments, large debtors and creditors, economic policies or changes in the institutional environment. Any interaction between weak spots and shocks can result in the collapse of systemically important financial institutions and in disruption of the financial intermediation and payment functions of the financial system.

The CNB's aim with regard to financial stability is to ensure a degree of resilience of the system that minimises the risk of financial instability. To fulfil this aim, the CNB as an integrated authority for financial market supervision and monetary policy uses the instruments made available to it by the Act on the CNB, the Act on Banks and other applicable laws. Cooperation with other national and international authorities is also very important in this area. In order to maintain financial stability, the CNB focuses on prevention and broad communication with the public regarding the potential risks and factors posing a threat to financial stability.

The CNB regularly monitors and closely analyses developments in all areas relevant to financial stability. The members of the CNB Bank Board meet with experts from key sections at regular meetings on financial stability issues. A wide range of information on developments of risks in the domestic financial system and abroad is presented at these meetings. The position of the Czech economy in the financial cycle is assessed. If any risks to financial stability are identified, discussions are held regarding the possible use of regulatory, supervisory and other economic policy tools to suppress such risks or their potential effects.

The CNB is a member of the joint EU institution for the identification of systemic risks and macroprudential policy – the European Systemic Risk Board (ESRB). Together with three pan-European sectoral supervisory authorities (EBA, ESMA and EIOPA), the ESRB makes up the European System of Financial Supervision (ESFS). CNB representatives are involved directly in the ESRB's work; the CNB Governor and another board member are members of the General Board of the ESRB, and CNB experts participate in its working groups. In line with an ESRB recommendation, macroprudential policy focuses on the fulfilment of several intermediate objectives. These objectives

include (a) to mitigate and prevent excessive credit growth and leverage; (b) to mitigate and prevent excessive maturity mismatch and market illiquidity; (c) to limit direct and indirect exposure concentrations; (d) to limit the systemic impact of misaligned incentives with a view to reducing moral hazard; and (e) to strengthen the resilience of financial infrastructures. According to an ESRB assessment, the CNB is one of the most active authorities in the EU countries as regards the use of macroprudential policy at the national level.

The macroprudential policy instruments used by CNB include above all a set of prescribed capital buffers for credit institutions. The CNB sets a countercyclical capital buffer and a systemic risk buffer for systemically important banks at regular intervals. In previous years, the CNB dealt intensively with risks associated with property market developments and mortgage lending. To mitigate these risks, the CNB used a set of recommendations regarding the provision of mortgage loans. The CNB has also long been pushing for a legislative change in this area, aimed at effective prevention of the relevant risks. The situation on the housing market changed fundamentally with the onset of the crisis and the CNB relaxed the conditions for providing mortgages, in line with its previous communications.

The publication is divided into four sections. Following the opening *Summary*, the section titled *The real economy and financial markets* focuses on risks connected with the macroeconomic environment, developments in the sectors of non-financial corporations and households, and financial market trends. The section called *The financial sector* assesses developments in the banking sector and in the non-banking institutions sector. The closing section, *Macroprudential policy*, contains information on macroprudential instruments for mitigating risks identified. This section focuses mainly on the setting of the countercyclical capital buffer and the assessment of risks associated with mortgage lending. Appended to the publication is a *Chartbook* containing numerous charts showing indicators of developments and risks in the financial sector.

**On behalf of the Czech National
Bank**



Jiří Rusnok

Governor

I. SUMMARY

The Czech financial sector maintained high resilience to adverse shocks even during the coronavirus pandemic. The government's stabilisation and support programmes provided liquidity to the real economy and prevented a precipitous wave of credit defaults. The CNB's measures stabilised the debt service of the real sectors and supported the smooth operation of the financial markets. In view of the continuing pandemic, it must be expected that the income of many households and corporations will fall markedly. This may have a sizeable effect on their solvency and, in turn, the results of financial institutions. Together with a high degree of uncertainty regarding future developments, this will require that these institutions act very prudently in managing capital and in their dividend policies.

The capital position of the domestic banking sector remains robust thanks to capital buffers and capital surpluses in excess of the regulatory requirements. In response to the coronavirus crisis, the CNB lowered the countercyclical capital buffer (CCyB) rate, which supported banks' ability to lend to non-financial corporations and households without interruption. Following an assessment of financial cycle indicators, banking sector vulnerability and other factors affecting resilience, the CNB Bank Board decided at its meeting on 26 November 2020 to keep the CCyB rate unchanged at 0.5%. If a much more adverse scenario materialises, the CNB is ready to release the existing CCyB fully. Conversely, if the pandemic-related risks subside, economic activity recovers and risks continue to materialise to only a limited extent, it will be desirable to gradually increase the CCyB rate.

Continued strong growth in property prices in the Czech Republic has caused the affordability of housing to deteriorate and led to a rise in potential house price overvaluation. The CNB estimates that apartments in the Czech Republic are overvalued by 17% on average. In selected localities with a high share of investment apartments, the estimated overvaluation may be as much as 25%. The downturn in economic activity and gradually worsening labour market situation have yet to be reflected in the mortgage market. On the contrary, the volume of genuinely new housing loans and mortgage loans was at a record high in the first nine months of 2020. A sizeable increase in the average loan size is one of the factors behind the high amounts of new mortgage loans.

The Bank Board decided in the first half of the year to gradually ease or abolish the recommended LTV, DTI and DSTI limits. Mortgage lenders have mostly been complying with the recommended LTV limits. As regards the DTI and DSTI ratios, lenders have also more or less respected the CNB's Recommendation or its indication of highly risky ratio levels, but some have taken on increased credit risk, especially in 2020 Q2. The CNB assumes that lenders and their clients will be well aware of the increased risks in the current situation and will act prudently. The Bank Board therefore decided, despite the persisting house price overvaluation, to keep the LTV limit unchanged at 90%, with the option of applying a 5% volume exemption. At the same time, it does not deem it necessary to set DTI and DSTI limits or to tighten the other parameters of the current Recommendation. Based on the conclusions of its analyses and stress tests, the CNB continues to point out to lenders that mortgage loans can usually be regarded as very risky above certain thresholds (a DTI of eight times net income and a DSTI of 40% of net income). Lenders should therefore provide such loans only to applicants who are highly likely to repay without problems.

ASSESSMENT OF RISKS TO FINANCIAL STABILITY ASSOCIATED WITH THE REAL ECONOMY AND FINANCIAL MARKETS

The economic situation is being fundamentally affected this year by the coronavirus pandemic

The scenario of a deep economic downturn is materialising in the global economy this year following the onset of the second wave of the coronavirus pandemic and the re-introduction of anti-epidemic measures. A similar scenario is expected for the domestic economy. According to the CNB's forecast published in [Inflation Report IV/2020](#), GDP will fall by more than 7% overall. In most forecasts, fade-out of the negative impact of the coronavirus shock and relatively high economic growth are expected for 2021. Nevertheless, the downside risks to the forecasts remain high.

Monetary policies are easy and interest rates are expected to remain exceptionally low for a long time

Monetary policy rates have reached exceptionally low levels globally. Central banks' support measures are keeping even longer-term interest rates at exceptionally low levels. The communications of key central banks indicate that this situation is very likely to prevail for quite a long time. The "low-for-long" scenario, which was assessed to be likely even before the onset of the pandemic, is thus materialising. On the one hand, the exceptionally low interest rates are helping to reduce the risks stemming from the current economic contraction. On the other hand, they are creating an environment conducive to growth in risks to financial stability, consisting mainly in limited profitability of financial institutions, overvalued prices of market assets and rising private and public sector debt.

Governments' support measures are leading to a jump in government debt

Governments of EU countries responded to the negative impacts of the coronavirus pandemic by adopting many measures to postpone, reduce or distribute more evenly over time the amount of credit and liquidity risk in sectors of the real economy. These measures are leading to exceptionally high deficits and growth in government debt this year. Low real debt service costs are currently having a positive effect on debt sustainability. However, continued high primary deficits in the years ahead will put debt sustainability at risk, especially in countries with already high public debt levels. Czech government debt is also rising. In the context of the spring wave of the pandemic, the Czech general government debt ratio rose by more than 7 pp year on year to almost 40% of GDP. This was associated with a higher issue volume of Czech government bonds, which was partly purchased by domestic banks. They held around 40% of the Czech government debt in August, which increased their concentration risk in respect of the domestic government sector.

The low-yield environment and decreasing availability of high-quality assets are supporting search for yield

A shortage of high-quality, liquid assets with positive yields persists on financial markets, due in part to large-scale purchases of government bonds by central banks. This is motivating private investors to invest in riskier and higher-yielding assets. In 2020 Q2, this behaviour resulted in renewed compression of risk premia and growth in prices of corporate bonds and shares, often to new highs, amid increased uncertainty regarding the future course of the pandemic and the global geopolitical situation. The risk of a sudden, disorderly reassessment of risk, which would cause the financial sector to incur sizeable losses, thus persists.

The pandemic has already hit the domestic non-financial corporations sector hard...

The coronavirus pandemic and the introduction of anti-epidemic measures in the Czech Republic and its trading partner countries has had a strongly adverse impact on domestic production, value added and the profitability of non-financial corporations (NFCs), especially in the sectors most affected by the measures. The set of stabilisation measures has so far prevented increased default rates and risk materialisation in domestic banks' balance sheets. However, it can be expected that the financial soundness of non-financial corporations (especially small and medium-sized ones) will worsen further and some of the loans extended to them will be reclassified as non-performing loans after these measures have been phased out. The epidemic situation, and especially any further deterioration of the course of the second wave and a prolongation of the anti-epidemic restrictions in the Czech Republic and abroad, remains the main risk scenario for the NFC sector. Another risk is a possible weakening of foreign trade due to failure to reach a trade deal between the UK and the EU or due to strained relations between the USA and China and slow implementation of their trade agreement.

...while the impact of the coronavirus shock in the household sector can only be expected to get stronger

Thanks to the government's package of support measures, the first and second waves of the pandemic have so far affected the financial situation of Czech households only very slightly. The unemployment rate remains relatively low and the income situation of households has worsened significantly in only part of the Czech population. Higher growth in the unemployment rate and lower nominal wage growth are expected as the Czech government's fiscal measures are phased out next year. This will be reflected in lower borrowing by households, especially in the case of consumer credit. The worse income situation of households will simultaneously lead to the materialisation of previously accepted risks in the case of consumer credit and partly also house purchase loans. However, the growth in the default rate on loans to households should be limited and should not cause the banking sector major difficulties.

Credit risk materialisation in the private non-financial sector remains muted...

Default rates on bank loans in 2020 remain close to the historical lows observed at the peak of the financial cycle. The share of loans in Stage 3 remained at the end-2019 level in 2020 Q3 (2.2%). Compared with the end of 2019, the share of loans in Stage 2 increased by 4 pp to 10% in 2020 Q3. Provisions have risen only slightly since the outbreak of the epidemic (by CZK 9 billion). Despite the observed response of banks' modelling systems, which are predicting growth in credit risk in the worsening economic conditions, it can still be said that the government's stabilising measures and the flexibility in the accounting framework are reducing the materialisation of credit risks. Annual risk costs were thus almost 60% lower in August 2020 (38 bp) than they were in the similar phase of the Global Financial Crisis (90 bp). However, they can be expected to rise in the period ahead due to the termination of the statutory loan moratorium in October, the phasing out of stabilisation measures, and weaker economic activity in the Czech Republic and abroad.

...but a rise in non-performing loans can be expected in 2021

In the NFC sector, loans under moratorium amounted to CZK 211 billion, or 16% of this portfolio. In the household sector, loans of CZK 214 billion (15% of the portfolio) were under moratorium. Most of the applications involved house purchase loans, totalling CZK 180 billion (13% of this portfolio), while the figure for consumer credit was almost CZK 61 billion (23% of this portfolio). As of the end of September 2020, banks had notified the CNB that they expected 13% of loans to NFCs under moratorium (CZK 27 billion), 7% of house purchase loans under moratorium

(CZK 13 billion) and 15% of consumer credit under moratorium (CZK 9 billion) to become non-performing after the moratorium ends. The CNB assumes in the *Baseline Scenario* that the default rate (the proportion of loans likely to fall into default in the next 12 months) will be 6% for loans to NFCs, 1.9% for house purchase loans to households and 5.4% for consumer credit to households at the end of this year. In all, 8.7% of loans to NFCs (CZK 122 billion, up from CZK 60 billion in June 2020), 1.6% of house purchase loans (CZK 25 billion, up from CZK 12 billion in June 2020) and 6.8% of consumer credit (CZK 35 billion, up from CZK 19 billion in June 2020) would be in the non-performing category at the end of 2021.

The domestic banking sector is maintaining a robust capital and liquidity position, but its profitability is falling

The capitalisation of the domestic banking sector, which is largely dependent on capital surpluses (CZK 200 billion, around one-third of total capital as of June 2020), has remained strong during the coronavirus epidemic, thanks in part to the CNB's recommendation for restraint in profit distribution. This is creating the right conditions for absorption of any further credit losses and smooth lending to the real economy. Theoretically, the banking sector's current capitalisation would allow it to lend an additional more than CZK 2.5 trillion. The banking sector's after-tax profit fell by 40% year on year in the first eight months of 2020. This was due mainly to a gradual decrease in cyclically conditional sources of profit – risk costs are increasing, income on excess liquidity is declining and interest margins are decreasing. The sector's liquidity position remains favourable, as confirmed by the fact that no institution has so far used the CNB's liquidity-providing repo facility.

The domestic non-bank financial sector remains stable, with the persisting low-yield environment posing a risk for the years ahead

Favourable prices on financial markets were reflected in an inflow of new funds into investment and pension funds in 2020 Q2. The amount of Czech government bonds in their balance sheets also increased (to almost CZK 580 billion), due in part to a lower need to hold large amounts of bank deposits. The outbreak of the second wave of the coronavirus epidemic in September and October 2020 caused a renewed increase in the risk of elevated volatility in the prices of stocks and bonds held by domestic non-bank financial institutions. However, their capital and liquidity position remains stable. The short-term impacts of the change in Czech households' behaviour after the outbreak of the epidemic have so far had a positive effect on the insurance sector overall. This is due to a decline in claim settlement costs in motor insurance due to lower mobility during the spring wave of the epidemic, and to exclusions. The CNB will continue to monitor the risks to domestic non-bank financial institutions in the very low yield environment. Those risks include search-for-yield investment in riskier assets, increased sensitivity to financial market developments and a decline in interest in some financial products due to changing household preferences.

MACROPRUDENTIAL POLICY

The CNB responds to risks in the banking sector associated with the financial and business cycle by setting the CCyB

The countercyclical capital buffer (CCyB) is designed to increase the resilience of the banking sector to risks associated with the effect of the financial cycle. An appropriately set CCyB rate reduces the negative impacts of the manifestations of this cycle on the banking sector and enhances banks' ability to lend to the real economy even in the event of adverse shocks. In response to the coronavirus crisis, the CNB Bank Board decided to gradually lower the CCyB rate from 1.75% at the beginning of this year to 0.5% with effect from July 2020. The partial release of the CCyB supported banks' ability to lend to NFCs and households without interruption.

Maintaining the CCyB rate at 0.5% is consistent with the assessment of cyclical risks, the degree of vulnerability of the banking sector and the uncertainties connected with the coronavirus pandemic made at the Bank Board meeting in November...

The final decision on the CCyB rate is always a result of a comprehensive assessment of indicators of the financial cycle and the vulnerability of the banking sector and other factors affecting the sector's resilience. Following this assessment, the CNB Bank Board decided at its meeting on 26 November 2020 to keep the CCyB rate at 0.5%. Most banks continue to be compliant with the overall capital requirement, consisting of the minimum regulatory level in Pillar 1, the requirements based on the supervisory review of risks in Pillar 2, and capital buffers, and therefore have sufficient spare lending capacity. In this situation, there is no need to reduce the CCyB rate further.

...in setting the CCyB rate, the CNB will react flexibly to changes in the economic and financial conditions

In view of the high level of uncertainty regarding future economic developments, it is not possible to clearly indicate the likely evolution of the CCyB rate over the next two years. If a much more adverse scenario materialises, the CNB is

ready to release the existing buffer fully. Conversely, if the pandemic-related risks subside, economic activity recovers and risks continue to materialise to only a limited extent, it will be desirable to gradually increase the CCyB rate.

The domestic economy is probably in the recessionary phase of the financial cycle

The starting point for the Bank Board's decision on the CCyB rate was an assessment of the position of the domestic economy in the financial cycle. According to the aggregate financial cycle indicator, the domestic economy remained at the start of the recessionary phase of this cycle this year. Given the adverse economic developments seen in 2020 H2, the downward cyclical movement can be expected to continue in the quarters ahead. Newly accepted cyclical risks will thus most likely keep declining, despite rapid growth in house purchase loans and a steady increase in house prices.

The cyclical risks in banks' balance sheets remain elevated and are beginning to materialise

The total amount of cyclical risks accumulated in banks' balance sheets remains high. Their materialisation has been postponed and reduced by supportive economic policy measures. Banks have started to create provisions in anticipation of losses. However, loan impairment losses and the ratio of provisions to loans remain low for now. Implicit risk weights have decreased further but are likely to increase gradually in the coming years due to the expected rise in the default rate. In this regard, the lowering of the CCyB rate this year is a forward-looking response to the expected adverse economic developments and will create room for banks to absorb their impacts.

The banking sector remains resilient even in the *Adverse Scenario*, but it needs capital surpluses to maintain its resilience

The record-high capital ratio (23.2% in June 2020) – linked partly to compliance with the CNB recommendation not to distribute profits – provides a strong basis for absorbing the shocks assumed in the *Adverse Scenario* and also, in the current situation, in the *Baseline Scenario* of the macro stress tests of banks. The sector's aggregate capital ratio falls to 20% at the three-year test horizon in the *Baseline Scenario*, which also assumes some level of dividend payment. In the *Adverse Scenario*, it falls to 14.3%, mainly due to a significant rise in credit losses and risk weights related to the nature of the scenario. The resulting capital ratio is above the regulatory minimum of 8% in both scenarios. However, if banks had no capital surpluses above the regulatory requirements at the start of the test (in mid-2020 they had a surplus of 8.2 pp), the sector's capital ratio would drop below the regulatory minimum in the *Adverse Scenario*.

Banks must apply a very prudent approach to capital management

The results of the macro stress test of banks show that the capital surplus level can be very important in maintaining banking sector stability in highly adverse economic conditions. Together with the high degree of uncertainty associated with the future course of the coronavirus pandemic and its long-term impacts, this will require banks to continue to act very prudently in managing capital and in their dividend policies. Premature and excessive use of a large proportion of banks' capital surpluses could become a source of systemic risk.

The affordability of housing has deteriorated further in 2020 due to rapid growth in residential property prices

A renewed spiral between credit financing of residential property purchases and rapidly rising residential property prices is a significant source of systemic risk in the Czech economy. Transaction prices of residential property have recorded buoyant growth so far this year despite the coronavirus epidemic in the Czech Republic and many other countries. They are now more than 60% higher than they were at their lowest point at the end of 2013. The continued strong growth in property prices in the Czech Republic has caused the affordability of housing to deteriorate and the potential overvaluation of housing prices to rise to 17% on average. The CNB estimates that in selected localities with a high share of investment apartments, property may be overvalued by as much as 25%. A downturn in household income growth, a deterioration in consumer and investment sentiment and a slight decline in demand for new mortgage loans for owner-occupied housing can be expected due to the second wave of the pandemic. However, the year-on-year rate of growth of housing prices is likely to remain positive and affordability will not improve significantly. Given the adverse developments in the real economy, however, there is still some potential for property prices to decrease. The increase in uncertainty and the deterioration in the economic outlook have not been reflected in a decline in prices so far, even in the commercial property sector.

The volumes of genuinely new mortgage loans have been increasing in the course of this year

The downturn in economic activity and gradually worsening labour market situation have yet to be reflected in the mortgage market. On the contrary, the volume of genuinely new housing loans and mortgage loans (excluding refinanced and refixed loans) was at a record high in the first nine months of 2020. A sizeable increase in the average loan size is one of the factors behind the high amounts of new mortgage loans. This may be partly explained by the fact that mortgage loans were demanded to a greater extent by high-income households and loans were used increasingly to purchase new builds. Nonetheless, it can be expected that the impacts of the coronavirus pandemic will manifest themselves over a longer time scale and lending for house purchase will weaken.

Mortgage lenders have mostly been complying with the recommended LTV limits

Under the CNB's Recommendation, in 2020 Q1 mortgage lenders were supposed to comply with an individual LTV limit of 90%, to be exceeded in no cases, and with an aggregate limit defined as 15% of new loans for loans with LTVs of 80%–90%. In 2020 Q2, banks only had to comply with an individual LTV limit of 90%, with a 5% volume exemption. Lenders were broadly compliant with the Recommendation in both quarters. The share of loans with LTVs of over 80% was just under 15% in both quarters. In Q1 and Q2, the shares of loans with LTVs of over 90% were around 3% and 4% respectively. Banks continued to provide some loans with LTVs of over 100%. Their share in total loans was 2.2% in H1, a similar level as in previous years. Lenders took account of the level of risk undertaken when setting interest rates. The higher level of risk was reflected mainly in interest rates on loans with LTVs of over 80% where those loans simultaneously had a DTI ratio of over 9 or a DSTI ratio of over 45%. However, the natural tendency of lenders to value collateral on the basis of current market prices, without taking significant account of the potential risk of overvaluation of the pledged property, is a risk factor.

As regards the DTI and DSTI ratios, lenders have also more or less respected the CNB's Recommendation or its indication of highly risky ratio levels, but some have taken on increased risk, especially in 2020 Q2

The DSTI limit was 45% in 2020 Q1 and 50% in Q2, with a 5% volume exemption in both cases. Around 6% of the loans provided in 2020 Q1 and slightly over 3% of those in provided in Q2 were above the relevant limit. However, after the DSTI ratio was raised to 50%, there was a broad increase in the share of loans with a DSTI ratio of over 40% in Q2, with several banks also recording an increase in the share of loans with a DSTI ratio of 45%–50%. The DTI limit was set at 9 with a 5% volume exemption in 2020 Q1, but this was no longer recommended in Q2. As in the previous year, compliance with the DTI ratio did not present a problem to lenders in 2020 Q1 (the share of loans with a DTI of over 9 was around 3.5%). After the limit was abolished, this share increased in 2020 Q2, reaching 7% in June. To sum up, the DTI and DSTI developments varied considerably from lender to lender, especially in 2020 Q2. Following the abolition of the limit, some lenders are starting to provide greater numbers of loans with a DTI of over 9 or a DSTI of over 45%.

For the period ahead, the CNB confirms the LTV limit at 90% and is not setting upper DTI and DSTI limits; the other parameters of the Recommendation are unchanged

In view of the unfavourable and highly uncertain economic situation, the CNB assumes that lenders and their clients will be well aware of the increased risks and will act prudently. Therefore, despite the partial spiral between debt financing of property purchases and optimistic expectations regarding future property price growth, as well as the persisting overvaluation of housing prices, the Bank Board decided in the current situation to keep the LTV limit unchanged at 90%, with the option of applying a 5% volume exemption. At the same time, it does not deem it necessary to set DTI and DSTI limits or to tighten the other parameters of the existing Recommendation. Based on the conclusions of its analyses and stress tests, the CNB continues to point out to lenders that loans can usually be regarded as highly risky above certain thresholds (with a DTI of eight times net income and a DSTI of 40% of net income). Lenders should therefore provide such loans only to applicants who are highly likely to repay without problems. The CNB will respond to the reality that the share of new loans with highly risky DTI and DSTI ratios has increased markedly for some lenders using microprudential supervision instruments, such as an additional Pillar 2 capital requirement for risk management systems. Also, it cannot be ruled out that more prudent lenders will react to the potential risk of losing market share by relaxing their credit standards to the levels of their less conservative competitors. The CNB would have to react to this using its macroprudential policy tools.

The CNB will publish additional detailed analyses of risks to financial stability and information about the macroprudential policy settings in June 2021 in its *Financial Stability Report 2020/2021*, which will be an underlying document for the spring Bank Board meeting on financial stability issues.

II. THE REAL ECONOMY AND FINANCIAL MARKETS

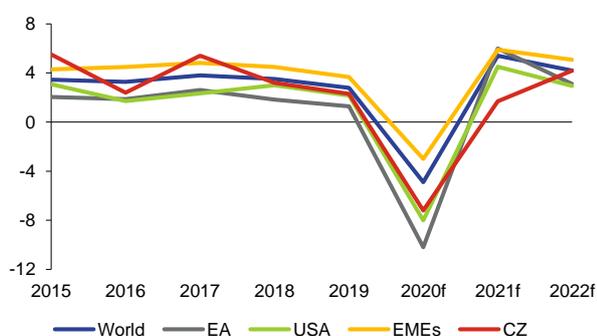
II.1 THE MACROECONOMIC AND FINANCIAL ENVIRONMENT

The coronavirus pandemic weighed on the global economy in the second half of 2020

The world's economies faced an unprecedented contraction in the first half of 2020 (see [Chart II.1](#)). Euro area GDP dropped by a full 14.7% year on year in 2020 Q2, with the pandemic having uneven impacts on the member economies¹ (see [Chart II.1 CB](#)). In Q3, economic agents' expectations improved on the back of favourable epidemic developments (see [Chart II.2](#)), and the original very pessimistic forecasts were revised.² Growth in leading indicators such as the PMI in manufacturing and growth in industrial orders heralded a relatively buoyant economic recovery. During October 2020, however, the epidemic situation worsened across countries, contributing to a renewed rise in financial market uncertainty (see [Chart II.2 CB](#) and [Chart II.3 CB](#)).³ The gradual start of the second wave of the pandemic in the autumn and the related re-introduction of restrictive government measures means materialisation of the scenario of a deep economic downturn this year. So far, most forecasts expect relatively strong growth in all economies in 2021. However, the course of the second wave of the pandemic, as well as the amount, strength and duration of the anti-pandemic measures gradually being adopted across countries, are significant risks to these forecasts.

Chart II.1
Economic growth in selected countries

(annual real GDP growth in %)

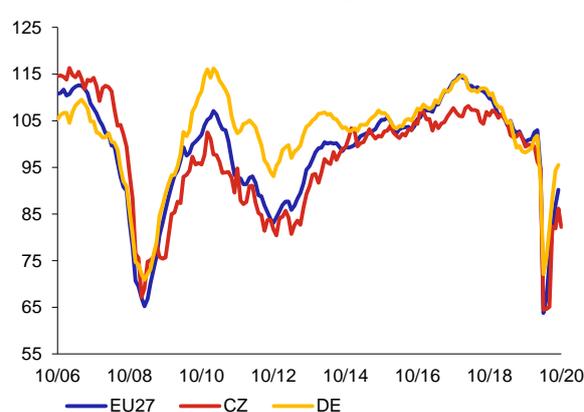


Source: IMF (World Economic Outlook, October 2020), CNB

Note: f = forecast. The forecast for the Czech Republic is based on the CNB forecast published in [Inflation Report IV/2020](#). The forecasts for the other countries are based on the IMF's October forecast published in World Economic Outlook, October 2020.

Chart II.2
Composite indicator of economic confidence

(base indices relative to 2007–2020 average)



Source: CZSO, CNB

Domestic economic activity will also drop sharply in 2020

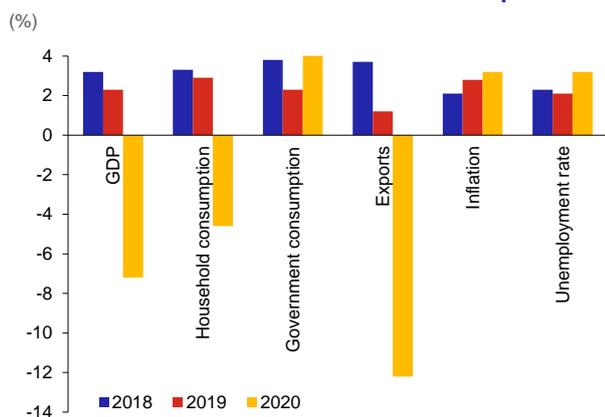
The Czech economy also saw a deep decline in 2020 Q2. GDP fell by 11% year on year, with all GDP components except government consumption contributing. As in other countries, the restrictive government measures were eased in the Czech Republic in Q3. Business and consumer sentiment improved rapidly and the year-on-year decline in consumption decreased significantly (see [Chart II.20 CB](#)). The domestic bond and foreign exchange markets also calmed (see [Chart II.4 CB](#)). In the autumn, however, the Czech Republic was hit by a second wave of the pandemic. Strict anti-epidemic measures were re-introduced, adversely affecting services and trade directly and other sectors indirectly via deferred household consumption (see [section II.2](#)). The confidence of economic agents started to worsen again (see [Chart II.5 CB](#)). There was a minor outflow of portfolio investment, reflected in a temporary weakening of the koruna and a slight rise in risk perceived by the market in terms of higher exchange rate volatility (see [Chart II.6 CB](#)). According to the CNB's forecast published in [Inflation Report IV/2020](#), Czech GDP will fall by more than 7% overall this year (see [Chart II.3](#)) and the negative economic impacts of the second wave of the pandemic will fade out during 2021 H1 (see [Chart II.1](#)). Even by the end of 2022, however, economic activity in the Czech Republic will not have returned to the pre-pandemic level. This will be reflected in lower GDP per capita (see [Chart II.4](#)). A markedly worse course and impact of the pandemic in the Czech Republic and abroad remains a risk to the forecast. This could significantly slow the return to economic recovery as a result of a longer period of weak demand backed by worse sentiment.

1 Finland recorded the smallest quarter-on-quarter GDP decline among all the EU Member States (-4.4%), while Spain saw the largest (-17.8%).

2 In its spring forecast, the IMF estimated that the GDP of the advanced economies would contract by 6.1% in 2020 and grow by 4.5% in 2021. The autumn IMF forecast was revised to a decrease in output of 5.8% in 2020 and growth of 3.9% in 2021. <https://www.imf.org/en/publications/weo>.

3 Perceived uncertainty regarding the situation in the months ahead is also suggested by persisting inversion of the futures curve for the VIX (an index measuring expected volatility). This indicates efforts by market participants to hedge their stock exposures mainly against short-term volatility, with a decline in volatility expected in the future.

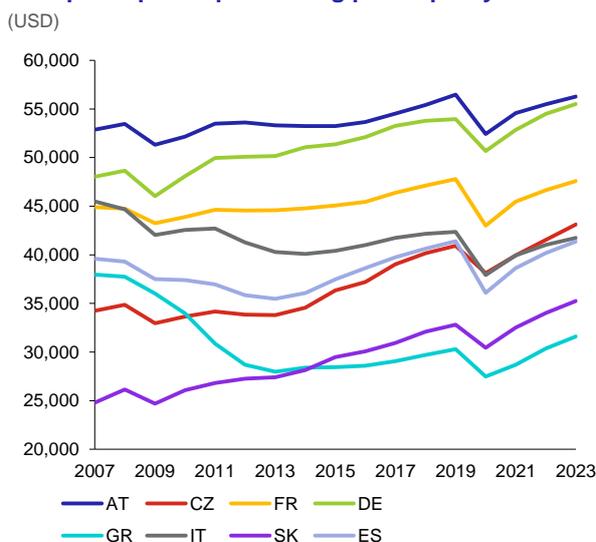
Chart II.3
Macroeconomic indicators in the Czech Republic



Source: CNB

Note: The data for 2020 are based on the CNB forecast published in [Inflation Report IV/2020](#). Seasonally adjusted year-on-year changes are given for GDP, final household consumption, final government consumption expenditure, and exports of goods and services. The inflation rate for 2020 is for September 2020. Unemployment is expressed in terms of the average general unemployment rate in the 15–64 age category according to the International Labour Organization.

Chart II.4
GDP per capita at purchasing power parity



Source: IMF

Small and medium-sized enterprises are most at risk due to the coronavirus shock

The financial soundness of economic agents will depend strongly on the speed and scale of the economic recovery. Small and medium-sized enterprises (SMEs), which are strongly represented in the economic sectors affected, remain most at risk.⁴ Financial problems in SMEs could have a major macroeconomic impact, as SMEs account for a large proportion of total employment (roughly two-thirds in the EU). The magnitude of the economic problems will also be affected by the degree to which credit and liquidity risks spread across each economy's financial system, especially if banking sectors cannot fully absorb higher impairment losses and substantially curb lending to non-financial sectors. The credit risk of non-financial corporations (NFCs) is now rising across EU countries. This led to rating downgrades during the first wave of the pandemic (see [Chart II.7 CB](#)), and a further deterioration of the pandemic situation in the second wave could start a similar trend.

Support measures have been adopted at national and EU level to mitigate the impacts of the coronavirus shock

Many government measures have been adopted to postpone, reduce or distribute more evenly over time the amount of credit and liquidity risk in sectors of the real economy. Some of them are meant to help households (loan moratoria, attendance allowances, one-off extraordinary benefits), while others are focused on helping NFCs (tax relief, various forms of aid to cover operating costs, loan moratoria etc.). Given the expected return to economic recovery in 2021, some of these schemes are also expected to be ended in most large EU economies in that year (see [Chart II.5](#)). Their simultaneous termination in multiple countries could give rise to the risk of a cliff effect, i.e. a sharp jump in the number of entities having debt-servicing problems. This risk could be partly mitigated by long-term measures adopted at the EU level, where EUR 540 billion⁵ has been approved to help prevent growth in unemployment, support SMEs and provide preferential loans to euro area countries. The European Commission has also unveiled a proposal for a Next Generation EU (NGEU) recovery instrument with EUR 750 billion in grants and preferential loans.⁶ The Commission will borrow the necessary funds in the financial markets and then lend them to Member States under the same terms.⁷

⁴ IMF (2020): [Global Financial Stability Report](#), October 2020, Chapter 3 "Corporate funding".

⁵ Of this amount, EUR 100 billion has been allocated to the SURE instrument to help prevent growth in unemployment through various forms of Kurzarbeit, EUR 200 billion to support for SMEs, and EUR 240 billion to an ESM credit line allowing euro area countries to access to preferential loans of up to 2% of their 2019 GDP until the end of 2022.

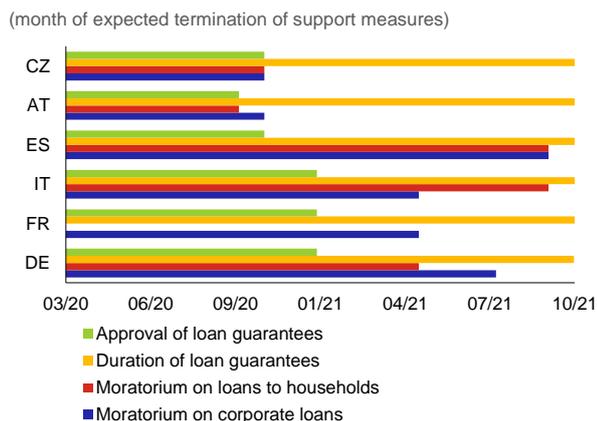
⁶ EUR 390 billion will be distributed in grants and EUR 360 billion in preferential loans. The funds are to be allocated through programmes falling under one of three pillars: (i) supporting the Member States to recover through investments and reforms, (ii) kickstarting the economy and mobilising private investment, (iii) learning the lessons of the crisis and addressing strategic challenges. The European Council discussed the proposed NGEU in July 2020.

⁷ By issuing these bonds maturing in 2058 at the latest, the EU will gradually become the fifth-largest bond issuer in the EU. The inaugural issue (rated AAA) took place on 20 October 2020. The EU underwrote EUR 10 billion with a 10-year maturity and a yield of -0.24% and EUR 7 billion with a 20-year maturity and a yield of 0.13%. Despite the low yields, demand (EUR 233 billion) exceeded the issue size.

The government support measures are fostering exceptional growth in the government debt of EU countries

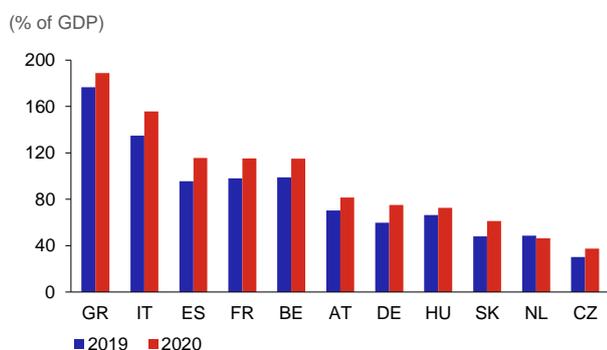
In many EU countries, the support measures to mitigate the impacts of the coronavirus shock will lead to exceptionally high budget deficits in 2020 (see [Chart II.6](#))⁸ and growth in government debt (see [Chart II.7](#)). The fiscal stabilisation room in the years ahead has shrunk considerably in some highly indebted countries. Besides a rising debt burden and a related risk to fiscal sustainability, governments' higher issuing activity is increasing the risk of concentration of government bonds in banks' balance sheets (see [Chart II.8](#)). In the euro area, this is partly suppressed by the ECB's ongoing bond purchase programmes.¹⁶ As of September 2020, the ECB held EUR 2.8 trillion in euro area government bonds.⁹ This is equivalent to roughly 23.5% of euro area GDP and 28% of the total government debt of the euro area countries (see [Chart II.8 CB](#)).¹⁰

Chart II.5
Effect of measures in selected EU countries



Source: EBA, national authorities

Chart II.7
Comparison of government debt in selected EU countries in 2019 and 2020



Source: European Commission (Spring 2020 forecast), Deutsche Bundesbank, CNB ([Inflation Report IV/2020](#))

Government debt is also rising in the Czech Republic

Government debt will also rise substantially in the Czech Republic in 2020 due to the pandemic. In mid-2020, in the context of the spring wave of the pandemic, the general government debt ratio rose by more than 7 pp year on year to almost 40% of GDP (see [Chart II.9](#)).¹¹ The government deficit will increase following the onset of the autumn wave, although the record-high approved deficit of CZK 500 billion will probably not be exceeded, as budgetary consumption was 55% in October. The CNB's forecast published in [Inflation Report IV/2020](#) expects the overall general government

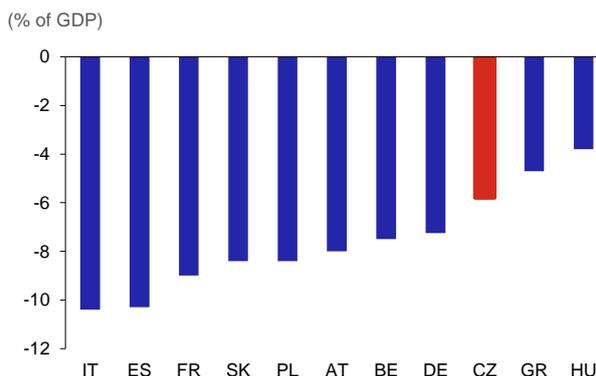
8 Austria and Germany have embarked on the largest fiscal expansions, with transfers to firms and households of almost 10% of GDP. Slovakia has adopted the smallest package of measures (less than 2% of GDP).

9 EMU central banks purchased 59.2% of the public debt issued in March–August 2020. Sirello, O. (2020): [Who Has Purchased Euro Area Debt Since the Start of the Health Crisis?](#) *Banque de France*, Blog Post No. 188.

10 In its November Financial Stability Review, the ECB pointed out that state guarantees made by governments to firms hit by the coronavirus pandemic could lead to an adverse sovereign-corporate-bank feedback loop.

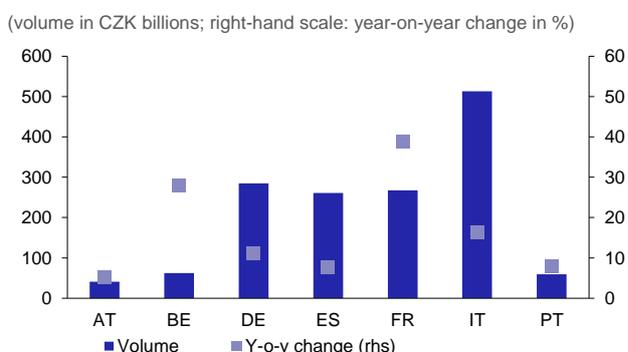
11 The end-2020 H1 debt figure is also affected by the fact that most government bond repayments will take place in 2020 H2, whereas government bonds are issued throughout the year. The CNB's forecast published in [Inflation Report IV/2020](#) expects the general government debt to reach 38.4% of GDP in 2020.

Chart II.6
Estimated general government balance in selected EU countries in 2020



Source: European Commission (Spring 2020 forecast), CNB ([Inflation Report IV/2020](#))

Chart II.8
Government bonds held by banks of selected euro area countries



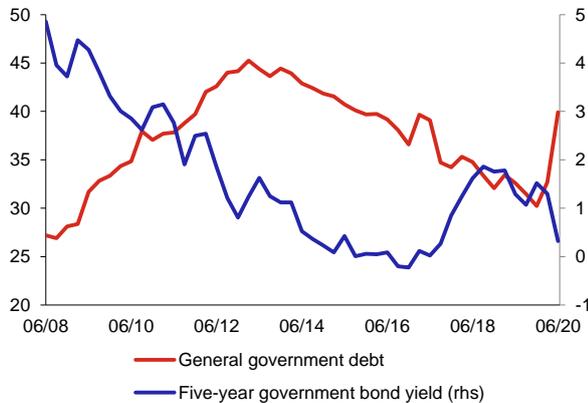
Source: ECB

Note: Data as of June 2020.

deficit to reach 6.3% of GDP, i.e. about CZK 355 billion. A high deficit is also expected next year,¹² and the statutory limit on the structural deficit of 4% of GDP¹³ might also be exceeded.

Chart II.9
Czech government debt and five-year government bond yield

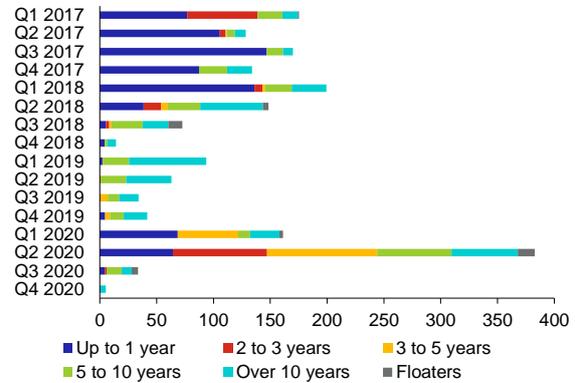
(% of GDP; right-hand scale: %)



Source: CZSO, Refinitiv

Chart II.10
New Czech government debt security issue volumes by maturity basket

(quarters; x-axis: CZK billions)



Source: CNB

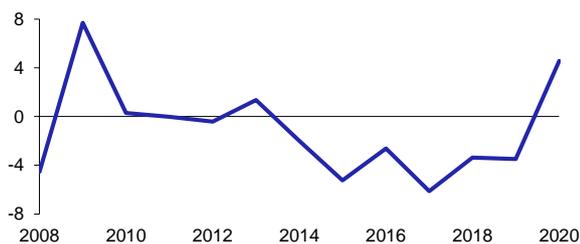
Note: Data as of 19 October 2020. Maturity interval closed from the right.

The Czech government’s increased borrowing requirement is covered by still satisfactory investor demand

In 2020 H1, the planned deficit led to significantly higher issuance activity by the Ministry of Finance (see Chart II.10), accompanied by high investor demand (see Chart II.9 CB). The strong demand reflected a lack of high-quality, liquid assets on global financial markets due to central banks’ ongoing government bond purchase programmes and the Czech government’s relatively good starting position. The latter is due to a currently still relatively low debt ratio, a safely distributed government debt maturity structure and a high government debt rating.¹⁴ Domestic banks showed particularly high demand for Czech government securities in 2020 H1. Their balance sheet concentration risk in respect of the domestic government sector increased due to a rise in government bond holdings of more than CZK 300 billion (see Chart II.10 CB). The market perception of the sovereign credit risk of the domestic government sector is still relatively low (see Chart II.11 CB). The gradually rising debt with no domestic government public finance consolidation strategy, the relatively high share of non-residents in debt holdings, and concerns about public finance sustainability¹⁵ could, in the medium term, increase the upward pressure on government debt costs. Together with real GDP growth, real interest costs are the crucial factors for medium-term sustainability of government debt relative to GDP (see Chart II.11).

Chart II.11
Difference between real yield and real GDP growth in the Czech Republic

(%)

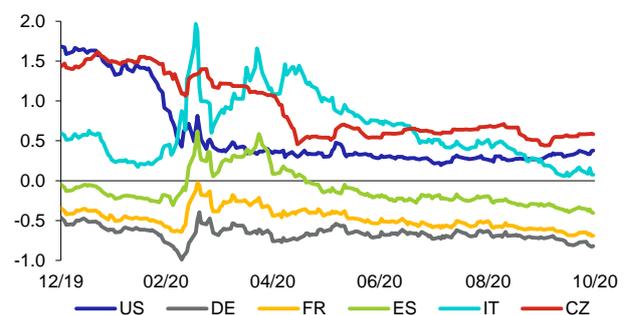


Source: CNB, Refinitiv

Note: Data for 2020 are based on the CNB forecast published in [Inflation Report IV/2020](#). Nominal yield proxied by the five-year Czech government bond yield as of 30 October 2020. Historical inflation is used to calculate the real yield.

Chart II.12
Five-year government bond yields for selected countries

(%)



Source: Refinitiv, MTS

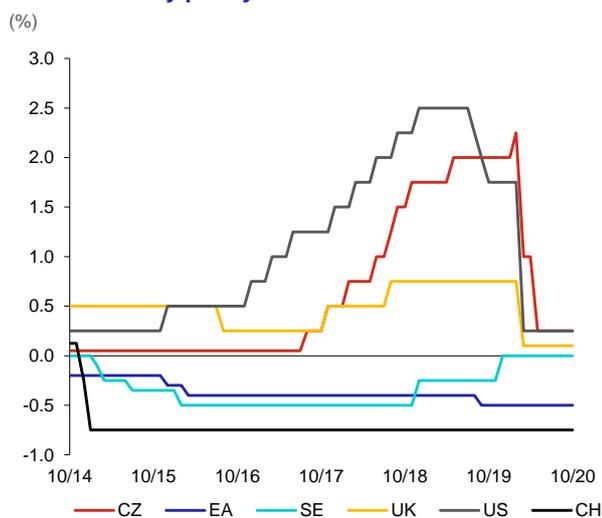
12 On 19 October 2020 the government approved the draft state budget with a deficit of CZK 320 billion. However, the deficit does not take into account the substantial decrease in tax revenues that can be expected on the adoption of the still unapproved tax package for 2021.
 13 Pursuant to Act No. 23/2017 Coll., on Budget Responsibility, the limit was changed from the original 1% to 4% of GDP for 2021. However, an amendment approved by the Chamber of Deputies on 19 November 2020 has abolished the 4% limit for 2021.
 14 The average residual maturity is currently 5.8 years, close to the Ministry of Finance’s target of (6 years). On 24 July 2020, Fitch Ratings confirmed the rating at AA- with a stable outlook.
 15 Czech Fiscal Council (2020): [Report on the Long-Term Sustainability of Public Finances](#).

Central bank policies are allowing all sectors to obtain funding under very favourable conditions

The funding costs of all sectors across financial markets are currently highly compressed (see [Chart II.12](#)). This is being supported by easy monetary policies of central banks, which are keeping their monetary policy rates very low. The US Fed is holding its main policy rate near zero, while the ECB is keeping its at zero; the ECB has additionally kept its deposit rate negative since 2014 and at -0.5% for more than a year (see [Chart II.13](#)). The ECB¹⁶ and other central banks have been using a number of other unconventional measures to further compress long-term yields in particular. The CNB has also lowered its key policy rate, setting it at 0.25% from 11 May 2020. In line with that, other koruna rates and yields have fallen to very low levels (see [Chart II.14](#)). Czech government bond yields at key maturities have been mostly positive below 1% (see [Chart II.12 CB](#)).

Chart II.13

Main monetary policy rates of selected central banks (%)

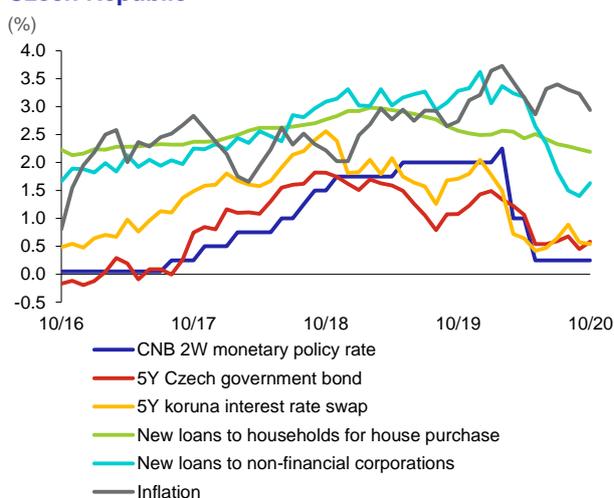


Source: Refinitiv

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

Chart II.14

Selected interest rates, yields and inflation in the Czech Republic (%)



Source: CNB

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

The cheap and easy funding is fostering a faster return to economic recovery, but also a rise in debt

The cheap and easy funding has supported smooth lending to the private non-financial sector in 2020 (see [Chart II.15](#)). On the one hand, this will allow for a faster economic recovery and partly prevent precipitous default waves. On the other hand, interest costs – which have long been too low – are fostering a further rise in debt. In the longer run, this may be a source of risk to economic activity and financial stability in the form of credit and resource misallocation linked with a decline in financial institutions' productivity, loan portfolio quality and profitability (see [Box 1](#)). Many European countries have already reached high private sector debt levels in relative terms, and in some of them those levels are rising further owing to a combination of growing debt and falling revenues (see [Chart II.16](#)). Relative debt levels are also rising in most EU countries with lower initial debt levels. In the household sector, three more countries (Belgium, France and Luxembourg) exceeded 60% of GDP¹⁷ in 2020 Q1 (see [Chart II.13 CB](#)). In most European countries, relative debt is also rising in NFCs. In addition, some NFCs funded with corporate bonds are issuing new debt to repay maturing bonds¹⁸ and thereby postponing potential liquidity problems.^{21,22} In the Czech Republic, the debt ratio of NFCs is 88% of GDP (see [Chart II.13 CB](#)). The debt ratio of the household sector is rising and currently stands at about 32% of GDP.

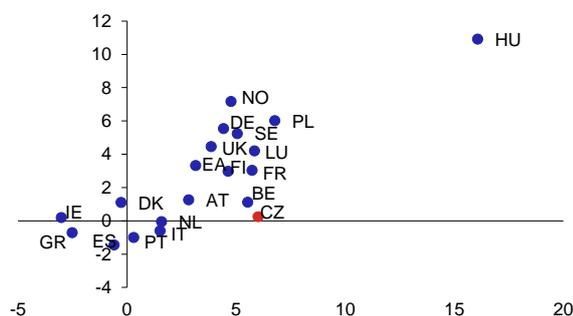
16 The ECB's [asset purchase programmes](#) cover assets such as government bonds and securities issued by European international institutions, corporate bonds, asset-backed securities and covered bonds, with a monthly purchase pace of EUR 20 billion. In March 2020, the ECB launched a [Pandemic Emergency Purchase Programme](#) (PEPP). The PEPP has a total envelope of EUR 1,350 billion and will be in place at least until June 2021. As of the end of September 2020, EUR 511 billion had been invested through it (with German securities accounting for the highest amount of around EUR 125 billion, followed by EUR 95 billion in Italian securities and EUR 84 billion in French securities).

17 In countries hit by the Global Financial Crisis, household sector debt ratios reached 60% of GDP.

18 Euro area NFCs raised EUR 122 billion between March and August 2020, nearly twice as much as in the comparable six month period during the European debt crisis in 2012. French NFCs raised the most (EUR 63 billion, 2.8% of GDP), followed by Dutch NFCs (EUR 17 billion, 2.2% of GDP) and German NFCs (EUR 32 billion, 0.9% of GDP). Euro area central banks purchased 63.1% purchased 63.1% of the private debt issued in the same period. Sirello, O. (2020): [Who has Purchased Euro Area Debt since the Start of the Health Crisis?](#) *Banque de France*, Blog Post No. 188.

Chart II.15
Credit growth in selected European countries
in 2020

(one-year year-on-year growth in %; x-axis: households; y-axis: NFCs)

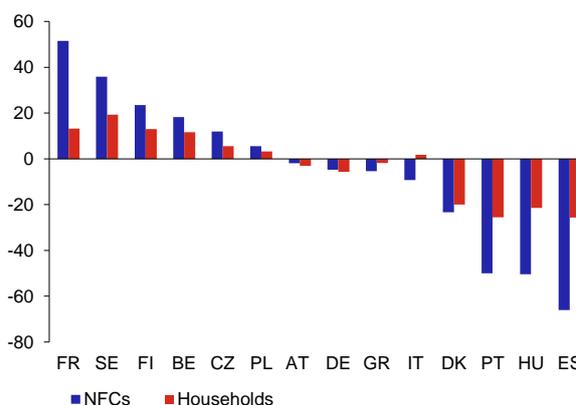


Source: BIS

Note: Credit comprises loans provided by credit institutions and is expressed in euros. For this reason, the data on credit growth in this chart may differ from those in other parts of this Report and those reported by other institutions. Data as of 31 March 2020.

Chart II.16
Change in private sector debt in selected EU countries

(change between 2009 and 2020, % of GDP)



Source: BIS

Note: Data as of 31 March 2020.

BOX 1 Risks of the low-for-long scenario

In response to the coronavirus pandemic, central banks lowered their monetary policy rates and many of them adopted or scaled up measures that keep even longer-term interest rates at exceptionally low levels. The communications of key central banks indicate that this situation is very likely to prevail for quite a long time. The “low-for-long” scenario, which was assessed to be very likely even before the onset of the pandemic, is thus materialising. On the one hand, the exceptionally low interest rates are helping to reduce the risks stemming from the potential economic contraction. On the other hand, they are creating an environment for an increase in risks to financial stability, primarily in the form of limits on financial institutions’ interest income, profitability and capital generation, overvalued prices of market assets, and increased risk-taking in the financial sector. These risks were described in detail in last year’s issue of this document.¹⁹

In addition to these risks, a long period of exceptionally low interest rates may also create risks which enter the financial sector indirectly from the real economy. One possible channel through which this type of risk arises is the “zombie credit channel”. Exceptionally low interest rates lead here to misallocation of loans and resources and subsequently to a decline in productivity with an adverse impact on the profitability of financial institutions and the quality of credit portfolios. “Zombie firms”²⁰ are generally defined as firms that have persistently low profits (insufficient to cover debt interest) and weak future growth potential (as indicated by low stock price valuation). A Bank of International Settlements study containing an empirical analysis of these firms in 14 advanced countries over the last 30 years finds that the share of such firms in all listed firms rose from 4% in mid-1980s to 15% in 2017.²¹ There are empirical observations²² that even chronically weak firms are able to obtain funds very cheaply from weakly capitalised banks. This may enable them to survive, but it results in creeping zombification and the emergence of a vicious circle – low rates lead to a rise in the share of weak banks, which have an increased incentive to support zombie firms. All this, however, leads to excess capacity, which puts downward pressure on mark-ups and product prices in otherwise sound firms. Low inflation thus requires retrospectively very accommodative monetary policy. Sustained use of exceptionally low interest rates may put policy makers in a situation of having to choose between very bad solutions. In the event of an adverse shock, as we are witnessing at the moment, there is little doubt that firms will fail on a larger scale without low interest rates. This will have a very adverse impact on employment and demand and hence on the quality of bank portfolios and bond portfolios.²³ However, it will simultaneously intensify the zombification process and its negative consequences.

19 [Risks to Financial Stability and Their Indicators – December 2019](#), Box 2.1: Risks of the low interest rate environment.

20 Banerjee, R., Hofmann, B. (2018): The Rise of Zombie Firms: Causes and Consequences. *BIS Quarterly Review*, September, pp. 67–78.

21 Banerjee, R., Hofmann, B. (2020): Corporate Zombies: Anatomy and Life Cycle. *BIS Working Paper*, No. 882.

22 Acharya, V., Crosignani, M., Eisert, T., Eufinger, C. (2020): Zombie Credit and (Dis)Inflation: Evidence from Europe. *NBER Working Paper*, No. 27158.

23 In addition, the authors ignore the question of whether the long-run decline in productivity due to the existence of zombie firms ultimately has inflationary impacts. This can be explained by the fact that they address the medium term, whereas the inflationary impacts tend to be a longer-term issue.

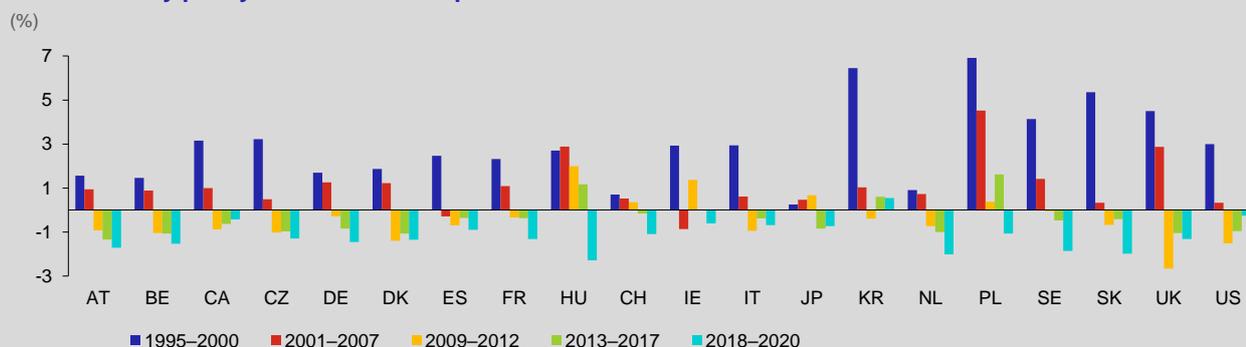
After the Global Financial Crisis, many economists warned against the potential disinflationary and deflationary effects of a long period of exceptionally low interest rates.²⁴ The scenario is that exceptionally low interest rates cause debt levels and the risk profile of investments to rise for some time. The rapid credit growth simultaneously fuels demand. If credit growth slows, demand will weaken and disinflationary pressures will arise. And if a strong recession or financial crisis occurs, the ensuing defaults may lead to a substantial decrease in the stock of loans. Since money is created primarily through lending, a money contraction occurs, creating potential for deflationary pressures. The central bank may avert the disinflationary or deflationary pressures by responding with more aggressive policy.²⁵ By doing so, however, it will perhaps merely shift the problem to the future and make it bigger. If the central bank simultaneously compresses long-term yields, wealth will also be redistributed to high-income and older households. Ultimately, the combination of income inequality, indebtedness of poorer households and low rates poses a risk to aggregate demand, as it then becomes “indebted”.²⁶

The very high – and in many cases increasing – private sector and government indebtedness amid very low inflation is one of the major drivers of the long period of the exceptionally low interest rates on loans, corporate bonds and government bonds. Measures taken on the basis of this driver are referred to as “financial repression” in the economic literature. These policies are used to gradually reduce relative indebtedness by redistributing income from those who save to those who are in debt. This occurs through the provision of very cheap loans to debtors or through negative real interest rates on savings. To assess the existence and scope of financial repression, it is important to monitor real interest rates.

Charts 1–3 below show three types of ex post real rates in selected advanced countries after 1995 (monetary policy rates) and 2003 (average rates on bank loans to the private sector and the 5-year government bond yield). Ex post real rates are obtained by subtracting CPI inflation from the relevant nominal rates in the given year.²⁷ The average real rate for several periods is then calculated for the given countries. Real monetary policy rates (see Chart 1) document how the interest rate environment has changed fundamentally over the last 25 years. In most countries, the real rate gradually declined, turning negative after the Global Financial Crisis.

Chart 1 (BOX)

Real monetary policy rates in different periods



Source: BIS

Note: The year 2008 is excluded from the observations due to high interest rate volatility before and during the Global Financial Crisis.

A similar trend can be observed for real government bonds yields (see Chart 2). Negative values generally prevail after 2018. As government bonds are an important asset in institutional investors’ portfolios, this has major implications for the entire financial market. At the same time, it shows that financial repression is no longer just an outdated theoretical term in the field of sovereign debt.

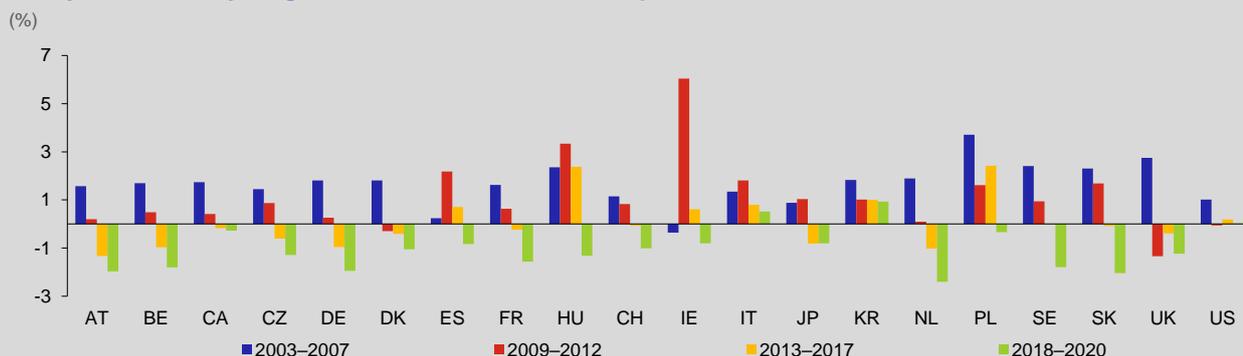
24 Maddaloni, A., Peydro, J.-L. (2013): Monetary Policy, Macroprudential Policy, and Banking Stability: Evidence from the Euro Area. *International Journal of Central Banking*, vol. 9(1), pp. 121–169, and Goodhart, C., Schulze, T., Tsomocos, D. (2020): Time Inconsistency in Recent Monetary Policy. *VoxEU*.

25 A parallel can be found here with the 1960s debate among US economists about the Philips curve. Friedman and Phelps argued that lower unemployment can be achieved only at the expense of accelerating inflation. In the case described here, demand can be maintained only at the expense of accelerating indebtedness amid lower and lower interest rates.

26 Indebted demand is defined as a situation where demand is systematically depressed by high indebtedness of poorer households (with a lower propensity to save), who repay the growing debt of richer households (with a higher propensity to save). This situation creates a vicious circle which fosters persistently low interest rates. Monetary policy that works by encouraging indebtedness in the present leads to lower demand in the future. See, for example, Mian, A., Straub, L., Sufi, A. (2020): Indebted Demand. *NBER Working Paper*, No. 26940.

27 Calculating different types of real interest rates by subtracting consumer price inflation is a great simplification. Given the use of long-term averages, however, it is not a major issue in terms of interpretation.

Chart 2 (BOX)
Real yields on five-year government bonds in different periods

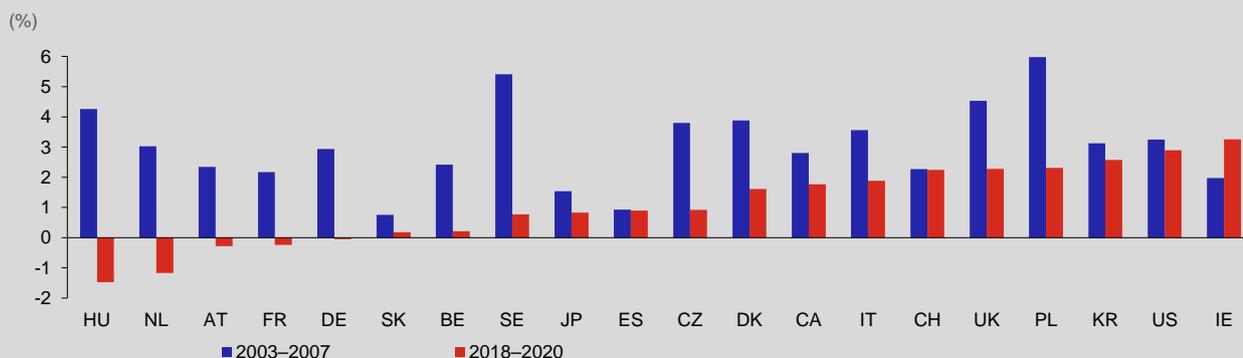


Source: Refinitiv, BIS

Note: The year 2008 is excluded from the observations due to high interest rate volatility before and during the Global Financial Crisis.

The pronounced decline in monetary policy rates and government bond yields is reflected in real interest rates on bank loans (see [Chart 3](#)). Only two periods are compared here. The first (2003–2007) was characterised in most countries by fairly quick economic growth and strong credit growth. In the second (2018–2020), economic growth differed substantially across countries and over time. Real loan rates decreased in almost all countries, although in some cases not as much as implied by the decline in nominal monetary policy rates and government bond yields (due primarily to very low inflation). Average interest rates stayed positive in most countries. It is highly likely, however, that if only real interest rates on mortgage loans were considered, many countries would show negative levels. To what extent the pronounced interest rate decline is reflected in the level of these risks will only become visible some time later.

Chart 3 (BOX)
Real interest rates on bank loans



Source: BIS, EIU

Note: The data cover bank loans provided to the private non-financial sector.

The very low yields and shortage of high-quality assets on markets are fuelling a search for yield...

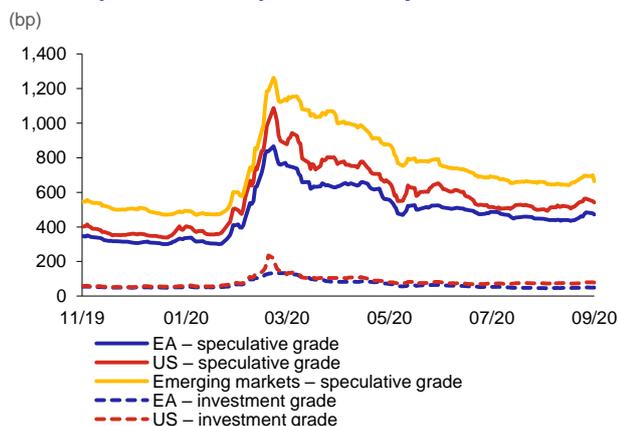
The large amounts of government bonds and other high-quality assets held in central banks' balance sheets are affecting the behaviour of other investors, which face a lower available volume of high-quality assets and very low – often even negative – yields. This is reducing their profitability and motivating them to invest in riskier assets. The consequence of this behaviour since 2020 Q2 has been renewed compression of risk premia and growth in prices of corporate bonds (see [Chart II.17](#)) and shares, often to new highs (see [Chart II.3 CB](#)). Property prices have also picked up quite broadly across countries (see [Chart II.18](#)). The high valuation of many assets, coupled with the adverse trend in household and corporate income, is increasing the potential for a sudden, disorderly reassessment of risk on global markets. Materialisation of this scenario would ultimately result in the financial sector incurring high losses.

...while risk premia remain elevated on the domestic non-financial corporate bond market

The decline in risk premia was not apparent on the Czech non-financial corporate bond market, as the yield spread over government bond yields remains elevated (see Chart II.14 CB). The amount of new bonds issued by domestic NFCs this year (CZK 8.2 billion as of the end of August) remains lower than last year (CZK 19 billion for the comparable period and CZK 48 billion for the whole year).²⁸ However, the volume of higher-yield, higher-risk non-financial corporate bonds offered to the public through unregulated entities is increasing (see Box 2).

Chart II.17

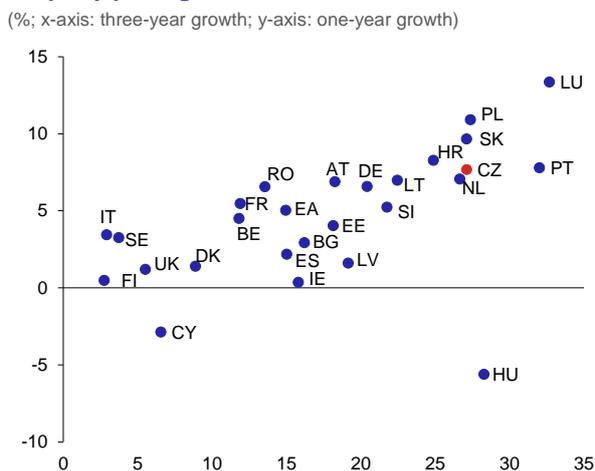
Credit spreads on corporate bond yields



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.18

Property price growth in selected EU countries in 2020



Note: Data as of 30 June 2020.

BOX 2 Bonds offered on internet marketplaces

Interest in issuing and purchasing riskier products – whose prospectuses are not usually approved by the CNB and which are offered through entities not supervised by the CNB (such as bond marketplaces) – is rising as the conditions for issuing corporate bonds ease. For firms, such issues may offer a way to speed up the funding process and significantly reduce the administrative burden associated with applying for a loan. For investors, on the other hand, the higher yields on such investments may be attractive in the low interest rate environment.

However, the higher yields on unregulated issues are associated with a high level of risk, which potential investors – especially retail investors – may not be able to assess. The CNB responded to this situation by issuing ten golden rules for retail investors and a supervisory benchmark.²⁹ Still, it is necessary to assess regularly whether developments in the area of risky corporate bonds are turning into systemic risk and posing a potential threat to financial stability. A problem with analysing the existing risks is the low availability of relevant data. While public issues exceeding EUR 1 million must have a prospectus approved by the CNB and there is statistical coverage of such issues, there is no prospectus approval requirement for smaller issues. Knowledge of the size of this market is therefore limited.

This box maps out the scale of risky corporate issues based on web scraping of information from selected bond marketplaces.³⁰ Although this method obviously does not cover all bonds offered outside the regulated market, the statistics obtained may give a broad idea of the total size and riskiness of the unregulated market.

As of 15 October 2020, a total of 198 issues had been offered for investment through the selected bond marketplaces. The bonds offered had been issued exclusively in Czech koruna. A CNB-approved prospectus had been attached to 11% of them (i.e. 65% of the total volume issued; it is reasonable to assume that this is the riskiest portion of the

28 These statistics are based on data from the [CSDB](#) database. Although these data cover most of the bond market, they do not include bonds that have not been assigned an ISIN. Also, the data for smaller issues that have been assigned an ISIN may not be complete.

29 See, for example, https://www.cnb.cz/cs/dohled-financni-trh/ochrana-spotrebitele/desatero_investor_podnik_dluhopisy/ (in Czech only) and https://www.cnb.cz/export/sites/cnb/cs/dohled-financni-trh/galleries/vykon_dohledu/dohledove_benchmarky/download/dohledovy_benchmark_2019_02.pdf (in Czech only).

30 dluhopisy.cz, topdluhpisy.cz, dluhopisomat.cz, ceskedluhopisy.cz, dluhopisy.net and dluhopisovyportal.cz.

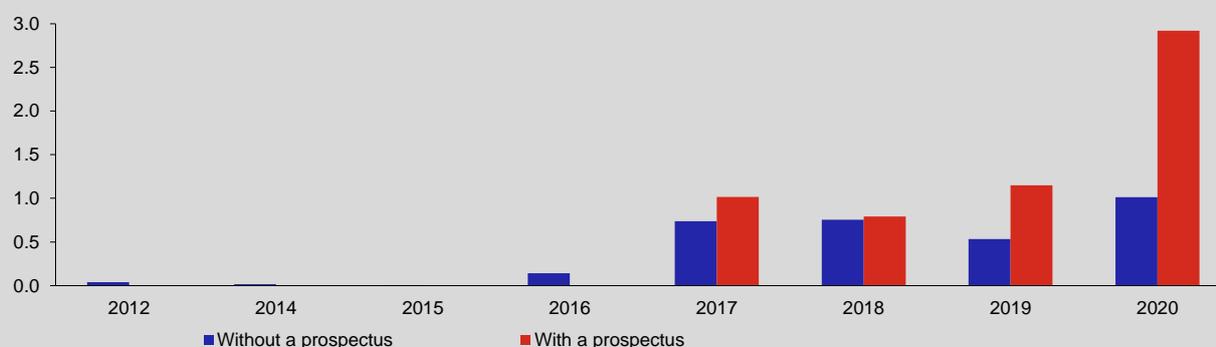
category of bonds with approved prospectuses). The total amount of risky bonds issued by small firms offered on the marketplaces has been rising in recent years (see [Chart 1](#)).³¹ However, the total size of this market does not seem very significant at the moment, amounting to a few billions or, at the most, low tens of billions of koruna. The average size of a bond issue without an approved prospectus was CZK 18.2 million and the average annual yield was 7.33% (yield weighted by issue size). Conversely, the average issue size and the weighted average annual yield on bonds offered with a prospectus were CZK 279.7 million and 6.62% respectively. This is evidence of the generally higher riskiness of bonds without an approved prospectus and suggests that smaller and less creditworthy firms which are unable to raise the necessary external funds on the regulated market or by borrowing from banks may take recourse to such financing.

Overall, the available information suggests that the total size of the market in highly risky issues of small firm bonds is currently marginal, with retail investors' exposures amounting to several thousands of koruna on average. From the financial stability perspective, the issue has not yet taken on systemic dimensions and the risks to the financial system as a whole are low. The observed risks can therefore currently be resolved mainly by means of consumer protection and financial education.

Chart 1 (BOX)

Volumes of bonds offered on marketplaces in the Czech Republic

(CZK billions)



Source: CNB

Note: Data obtained by analysing the following web portals: dluhopisy.cz, topdluhopisy.cz, dluhopisomat.cz, ceskedluhopisy.cz, dluhopisy.net and dluhopisovyportal.cz.

Property prices in the Czech Republic continued to show strong growth...

Despite the coronavirus, property transaction prices in the Czech Republic recorded buoyant growth in the first two quarters of 2020, rising by more than 60% compared with their end-2013 trough (see [Chart II.19](#)). The available unofficial³² data for 2020 Q3 suggest that the slight slowdown in growth seen in mid-2020 (of 7.7% year on year) was only temporary and the year-on-year growth might return closer to 10% in the rest of the year. A renewed pick-up in transaction prices may also be signalled by asking prices, growth of which increased in Q3 (see [Chart II.15 CB](#)). The observed price trend is due to a decline in interest rates on house purchase loans,³³ the abolition of property purchase tax, low yields on risk-free assets, a move of some investors away from financial assets, and the still limited impacts of the coronavirus epidemic on the labour market and household income. The property price growth is based mainly on rapid growth in prices of land and apartments (see [Chart II.16 CB](#)). Faster growth was observed for more affordable older apartments, especially in blocks of flats. Turning to the regional breakdown, prices (both transaction and asking) rose faster outside Prague. This may reflect the already very high price levels in the capital and the more limited room for them to rise further (see [Chart II.17 CB](#)).³⁴

31 The volume of issues for 2020 may not fully match the volume actually issued and may be the target volume of ongoing subscriptions. One example is the <https://www.topdluhopisy.cz/dluhopis-bicz-bond> issue with a planned volume of CZK 1.5 billion. The subscription ends in 2021 and the volume currently subscribed is not known.

32 See, for example, data from the HB index (Hypoteční banka) and Realtymix.cz.

33 Mortgage rates are a major determinant of property price growth, especially in a low interest rate environment. This holds for rate movements in either direction. For example, a sudden increase in interest rates of 1 pp from the current level of around 2% to 3% would imply a decrease in fundamental housing prices of around 10% given the application of a prudential approach (assuming an average mortgage loan repayment period of 25 years).

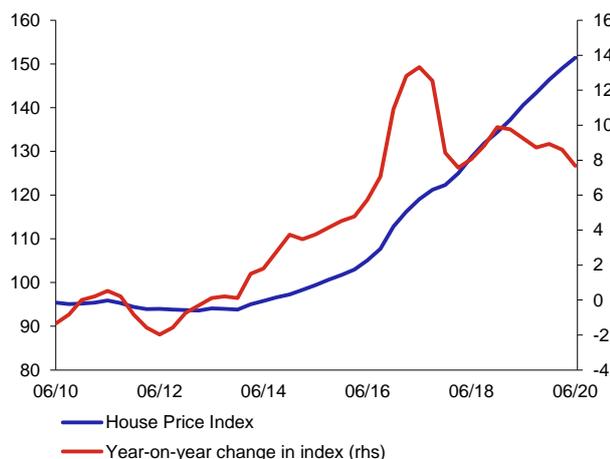
34 Prague has also the largest proportion of investment apartments, whose prices and rents (especially in the city centre) are generally falling and dampening the overall growth in transaction prices.

...fostering further growth in property price overvaluation and lower housing affordability

The continued strong property price growth in the Czech Republic led to an increase in the estimated overvaluation of apartment prices from the perspective of both the investment and prudential approaches applied by the CNB³⁵ (see Chart II.20). In selected localities with a high share of investment apartments, the overvaluation may be as much as 25%. From the prudential perspective, apartment prices are on average about 17% higher than the safely attainable level. According to all the indicators monitored, the growth in overvaluation was accompanied by a deterioration in the affordability of housing for the average Czech household (see Chart II.21). The *Baseline Scenario* based on the CNB's forecast published in [Inflation Report III/2020](#) assumes that price growth will start to slow distinctly at the end of 2020 and during 2021, but the year-on-year growth rate will remain positive and affordability will not improve significantly (see Chart II.18 CB).

Chart II.19
Transaction prices of residential property in the Czech Republic

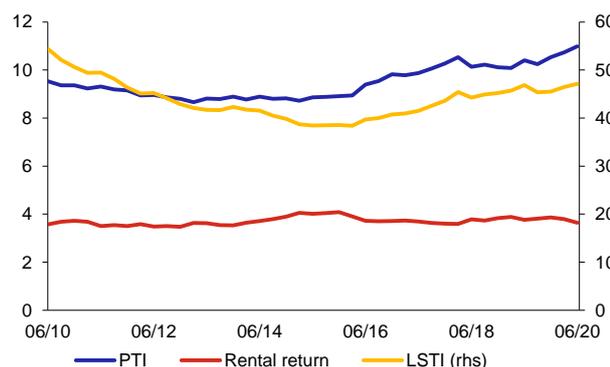
(2015 = 100; right-hand scale: in %)



Source: CZSO

Chart II.21
Selected apartment affordability indicators in the Czech Republic

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

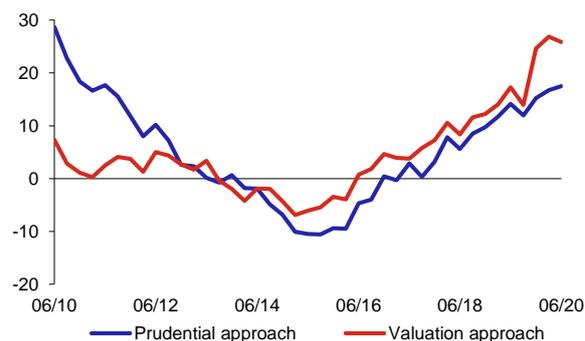


Source: CNB, CZSO, Institut pro regionální informace, s.r.o., Společnost pro cenové mapy ČR, s.r.o.

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 m² 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.20
Estimated overvaluation of apartment prices in the Czech Republic

(%)

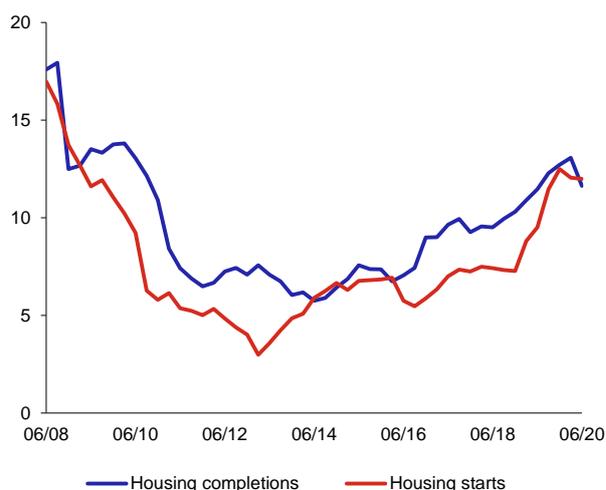


Source: CNB

Note: The methodology of the indicators is described in Plašil, M., Andrlé, M. (2019): *Assessing House Price Sustainability*, Thematic Article on Financial Stability 1/2019, CNB. Overvaluation is based on the CNB forecast published in [Inflation Report III/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 temporary decrease in rental income amid rising transaction prices.

Chart II.22
Numbers of housing completions and starts in the Czech Republic

(thousands of apartments; apartment blocks)



Source: CZSO

³⁵ The prudential approach gauges average transaction prices against the level achievable by means of a safely repayable loan for a median household, taking into account future expected interest rates and income. The investment approach identifies how high property prices are given expected future rental income and interest rates compared with alternative investments.

Slower construction due to the coronavirus epidemic may increase structural risks

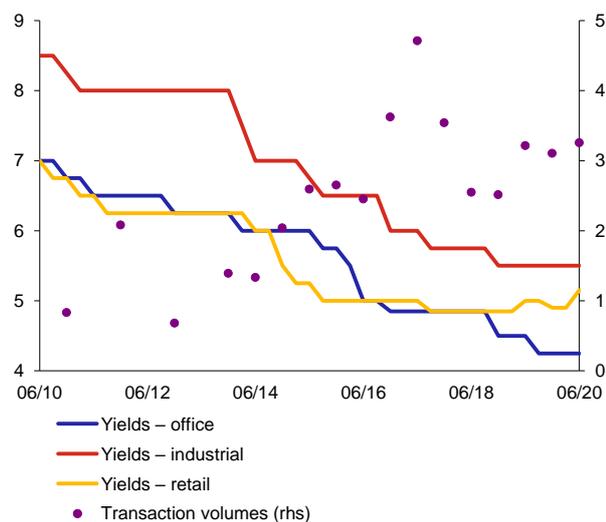
In the Czech Republic, the epidemic has fostered slower construction of residential property and a decline in the number of apartment completions, which bottomed out and gradually rose over the past few years (see [Chart II.22](#)). Given the high sensitivity of construction to an economic contraction and its traditionally slower recovery, the downturn in construction may be long-term in nature and may lead to a further increase in the structural mismatch between the supply of and demand for apartments. This factor would reduce the downward pressure on overvaluation, especially in an environment of sustained low interest rates, and may imply reduced affordability of housing or an increased propensity to take on higher credit risk for a large proportion of Czech households in the long term (see [section II.2.2](#)).

Yields on commercial property in the Czech Republic remain very low despite the market uncertainty

Investment in commercial property was generally flat in 2020 H1 due to the prevailing economic uncertainty, but prime yields remain relatively stable and very low in historical terms (see [Chart II.23](#)). The increase in uncertainty and the deterioration in the economic outlook have not been reflected in a decline in prices so far, and market participants' expectations regarding future developments on the Czech commercial property market are not pessimistic either. Vacancy rates in 2020 H1 remained relatively stable or showed only a slight upward tendency, primarily in the case of office premises (see [Chart II.24](#)). For this type of property, along with hotels and shopping centres, the risk of further growth in the vacancy rate is likely to go up in the coming quarters and may cause yields to increase.

Chart II.23
Yields on commercial property and transaction volumes

(%; right-hand scale: EUR billions)

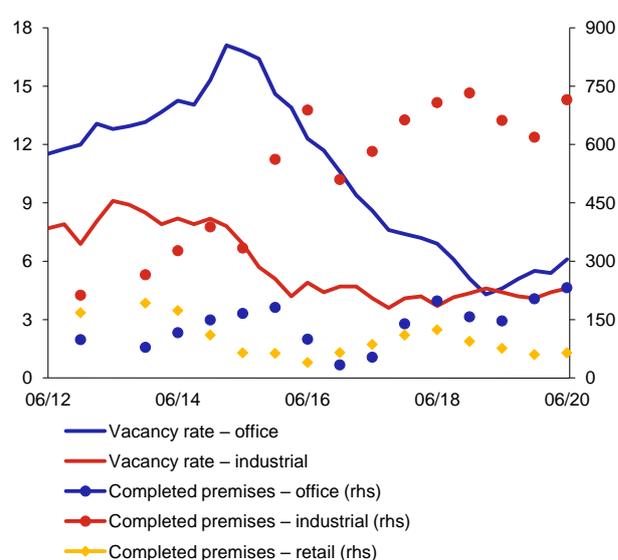


Source: Jones Lang LaSalle

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

Chart II.24
Vacancy rates and completed premises for commercial property

(vacancy rates in %; right-hand scale: space in thousands of m²)



Source: Jones Lang LaSalle

Note: Stocks of completed premises are reported at annual frequency until 2013 and as annual moving totals at semi-annual frequency from 2014 onwards.

II.2 THE PRIVATE NON-FINANCIAL SECTOR

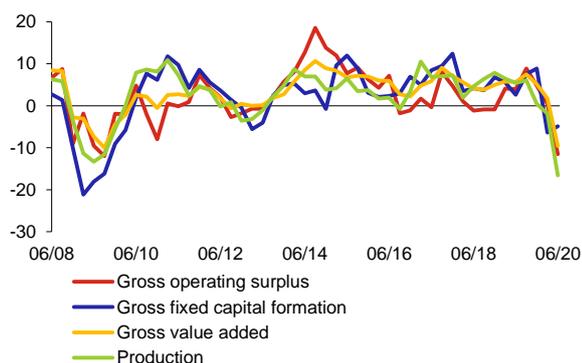
II.2.1 Non-financial corporations

The strong shock caused by the coronavirus pandemic has also hit the non-financial corporations sector

The global coronavirus pandemic caused domestic and external economic activity to decline sharply in 2020 Q2. The non-financial corporations (NFC) sector was strongly affected by this decline. However, the sector's situation differs to that seen during the crisis years of 2008–2010 (see [Chart II.25](#)). Demand for corporate investment has recorded a smaller decline, whereas a larger drop in output than in the crisis years points to the supply nature of the initial shock.

Chart II.25
Selected indicators of the NFC sector

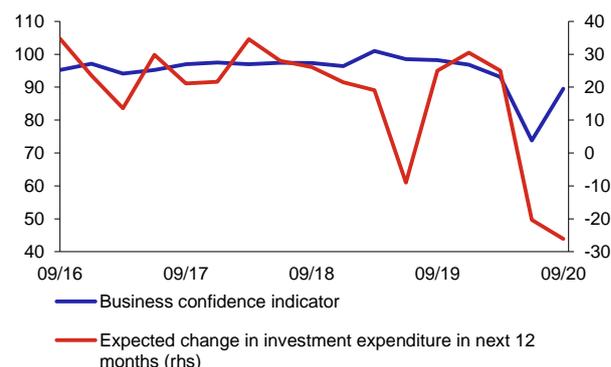
(annual percentage changes)



Source: CZSO

Chart II.26
Confidence and planned investment of NFCs

(seasonally adjusted balance in %; right-hand scale: in %)



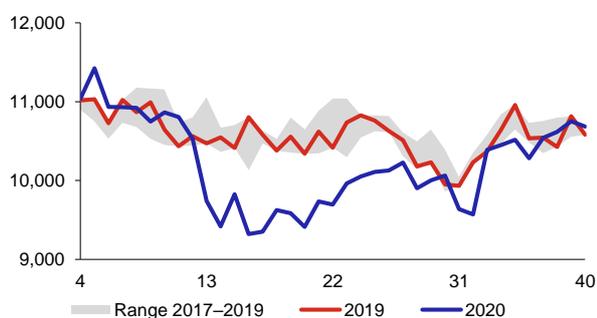
Source: CNB, CZSO, Confederation of Industry of the Czech Republic

Following a recovery in production in the summer, the risk of a partial reclosure of the economy materialised in the autumn

After most restrictions were eased following the first wave of the pandemic, the economy started to recover in summer 2020 and business confidence began to pick up (see [Chart II.26](#)). The recovery is also evidenced by leading indicators such as electricity consumption.³⁶ After declining by as much as 13.7%, it has gradually returned to the levels observed in previous years (see [Chart II.27](#)). However, the return of the NFC sector to its former output level will be slowed by the onset of the second wave of the coronavirus epidemic in the Czech Republic and Europe and by the re-introduction of government anti-pandemic measures, even though the impact – primarily in industry – has so far been lower than during the first wave. The mounting uncertainty about the duration of the coronavirus epidemic in the Czech Republic and abroad is becoming more evident in NFCs' decisions, including a large year-on-year reduction in planned investment over the next 12 months (see [Chart II.26](#)).

Chart II.27
Power system load in the Czech Republic

(average weekday consumption in given week in MWh)

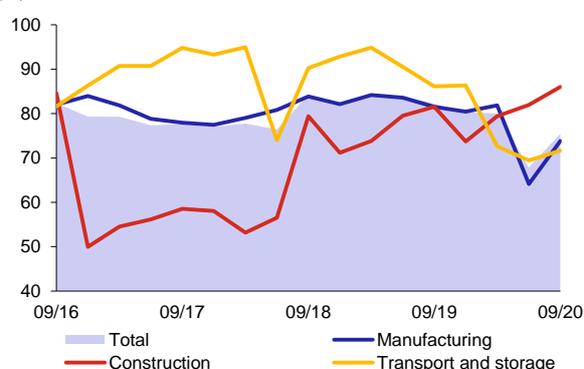


Source: ČEPS, ASOS

Note: The data show average weekday energy consumption in the given week of the year (weeks on the x-axis) adjusted for temperature fluctuation effects on electricity consumption.

Chart II.28
Capacity utilisation in selected segments of the NFC sector

(%)



Source: CNB, Confederation of Industry of the Czech Republic

³⁶ 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).

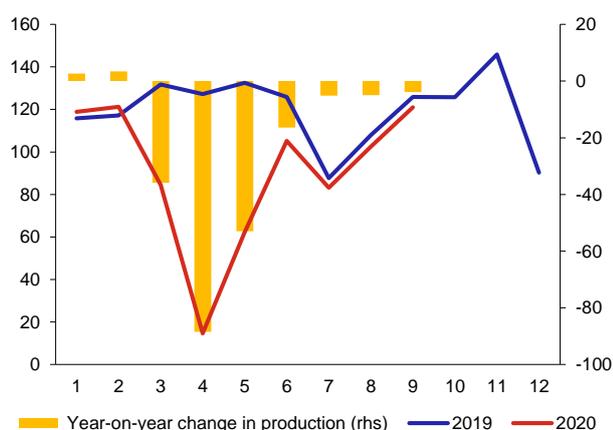
The impact of the coronavirus pandemic on non-financial corporations varies from sector to sector

The intensity and duration of the impacts of the coronavirus pandemic differ across sectors. Tourism and related sectors such as hotels, restaurants, transport and storage, remain badly hit. This is confirmed by the capacity utilisation rates in each sector (see [Chart II.28](#) and the survey conducted by the CNB and the Confederation of Industry). Cultural and sports services have been hit very hard. The pandemic has also had a noticeable impact on manufacturing – motor vehicle manufacture slumped by as much as 89% in April 2020 as a result of the lockdown (see [Chart II.29](#)), and production did not return to 2019 levels during the summer months either. The return of industrial activity to pre-pandemic levels will evidently depend on the duration of the restrictive measures associated with the second wave of the coronavirus epidemic in the Czech Republic and Europe, especially in export-oriented³⁷ sectors. By contrast, the impacts of the current economic downturn are being felt more slowly in the construction sector, as confirmed by capacity utilisation data.

Chart II.29

Production in the automotive industry

(thousands of cars manufactured in given month; right-hand scale: in %)

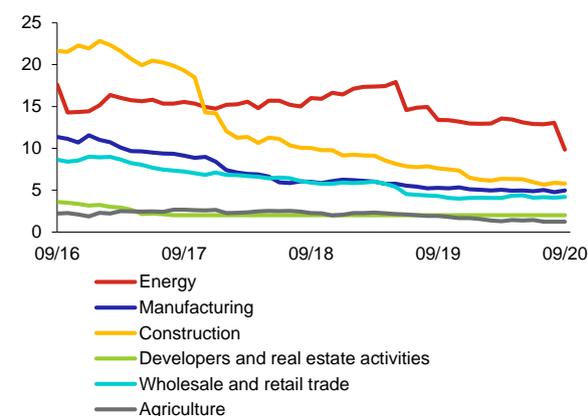


Source: Czech Automotive Industry Association

Chart II.30

NPL ratios in selected NFC sectors

(%)



Source: CNB

Note: The developers category is made up of NACE 411 (Development of building projects) and 68 (Real estate activities).

The support measures and partly also the adaptability of firms are limiting credit risk materialisation for now

The Czech government and the CNB introduced a series of stabilisation measures in response to the large revenue losses incurred by NFCs (see [section II.1 in FSR 2019/2020](#)). These actions are limiting the effects of the ongoing economic contraction on the financial soundness of firms and reducing the materialisation of credit risk in financial institutions' balance sheets for now (the NPL ratio is not changing much; see [Chart II.30](#)). Loan guarantee schemes, under which about CZK 34 billion had been drawn by the end of October 2020, are reducing the credit risk of corporations and – combined with low monetary policy rates – supporting non-investment lending, through which firms are addressing their liquidity shortfalls (see [Chart II.19 CB](#)). The changes in average monthly borrowing during the coronavirus pandemic vary across sectors (see [Chart II.31](#)). The introduction of a loan moratorium also fostered more moderate risk materialisation. The termination of the loan moratorium on 31 October 2020, which coincided with the re-introduction of anti-epidemic measures, will lead to part of the loans under moratorium being reclassified as NPLs. According to a CNB survey, the respondent banks expect the NPL ratio for domestic NFCs to increase by about 2.2 pp (CZK 25 billion) to 5.4% as a result of the end of the statutory moratorium. Data from CRIF³⁸ on the number of bankruptcy petitions filed by companies also indicates a gradual rise in the pressure on the NFC sector's solvency. These data show that following very low levels in May–August 2020 (40–50), the number of bankruptcy petitions surged above the average level observed in 2018 and 2019 (over 100) in October and is likely to increase further in the near future. Another important factor in mitigating the risks is the ability of firms themselves to adapt to the new circumstances. Although the financial position of firms was worsened by the first wave of the coronavirus epidemic, the larger ones in particular are operationally and procedurally better equipped to deal with the risks related to the second wave.³⁹

The *Baseline Scenario* assumes temporarily negative credit growth and an increased default rate

In line with the marked decrease in investment activity assumed in the *Baseline Scenario*, credit growth also turns negative (see [Chart II.32](#)). This will be accompanied by increased credit risk materialisation as measured by the 12M

³⁷ Foreign trade remains subdued – the trade surplus for January–August 2020 was down almost 37% from the same period a year earlier.

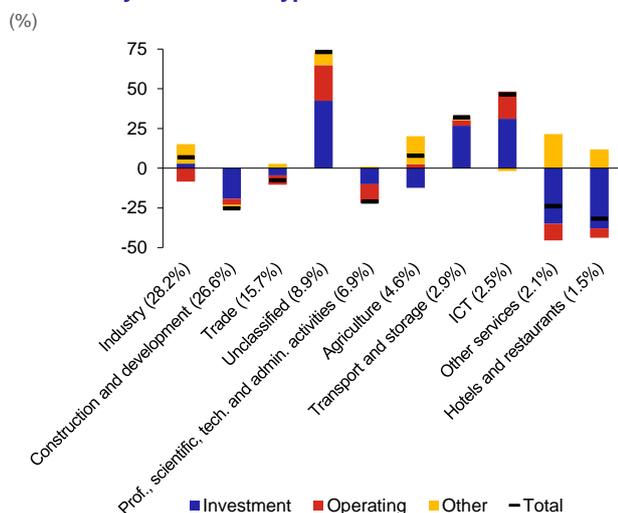
³⁸ The Czech Credit Bureau.

³⁹ This is indicated, for example, by an internal survey conducted by the Confederation of Employers' and Entrepreneurs' Associations.

default rate. It will fluctuate around 4% in the first two years of the *Baseline Scenario* and then start to gradually decline to pre-pandemic levels. Hotels and restaurants, transport and storage, and construction will be hit hardest by the materialisation of risks. Information and communication technology and agriculture will be less affected.

Chart II.31

Contributions of changes in the volume of new loans to NFCs by sector and type of loan

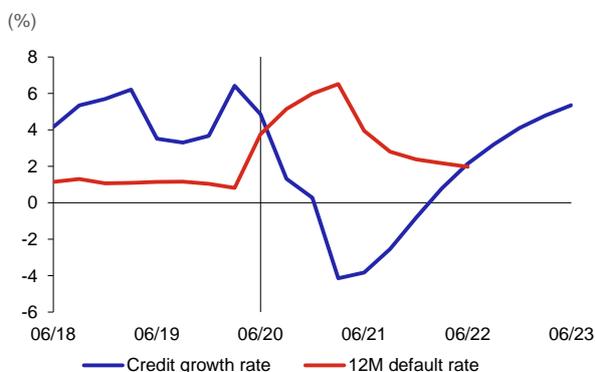


Source: CNB

Note: The chart shows the percentage change in the average monthly volume of loans drawn between the periods 12/2016–02/2020 and 03/2020–09/2020. Operating loans also include loans for current assets. Other loans also include bank overdrafts and loans for temporary shortages of funds. The number shown in brackets after the name of the sector is the ratio of loans in the sector to total loans.

Chart II.32

Credit growth rate and default rate of NFCs in the *Baseline Scenario*



Source: CNB

Note: The estimated 12M default rate and the rate of growth of loans to NFCs are based on the CNB's forecast published in [Inflation Report III/2020](#). The 12M default rate is defined as the ratio of the volume of non-performing loans in the next 12 months to the total volume of performing loans. The figure in the chart for 06/2022 expresses the NPL ratio during the third year of the scenario (i.e. 06/2022–06/2023; see section III.4).

The risks to the NFC sector remain very high

An extraordinary range of risks and uncertainties persist in the economy. The biggest risk to the NFC sector is a worse course of the second wave of the coronavirus epidemic in the Czech Republic and abroad (see [section II.1](#)). The financial soundness and funds of NFCs were badly hit in the first wave of the pandemic, and lengthier restrictions connected with the second wave would have a very significant impact on their solvency. In the case of the NFC sector, the previously identified sources of uncertainty and risk persist. The risk of no trade deal between the UK and the EU is increasing as the end of 2020 nears. This would have a negative impact on Czech foreign trade. Strained relations between the USA and China and slow implementation of the trade agreement between the two countries could also have a negative effect on global trade (other sources of risk are described in more detail in [Box 1](#) in [Inflation Report IV/2020](#)).

II.2.2 Households

The unemployment rate remains low but is expected to increase

The general unemployment rate remains relatively low (see [Chart II.33](#)). Fiscal employment support measures, which are preventing higher redundancy rates, are greatly helping to keep unemployment low. Despite this, employment and hours worked have dropped sharply in both services and manufacturing. Total hours worked fell in 2020 Q2 by 10% year on year to the lowest level since measurement started⁴⁰ (see [Chart II.34](#)). Wage growth showed the same trend – the average wage in market sectors fell by 1.5 pp year on year⁴¹ (see [Chart II.33](#)). The labour market situation will clearly worsen further due to the onset of the second wave of the coronavirus epidemic and the re-introduction of government measures to curb the spread of the infection. According to the *Baseline Scenario* based on the CNB's forecast published in [Inflation Report III/2020](#), the general unemployment rate will rise to 5% in mid-2021 (see [Chart II.33](#)). The income situation of households will also worsen, primarily due to mandatory quarantines.⁴² A longer-than-envisaged period of

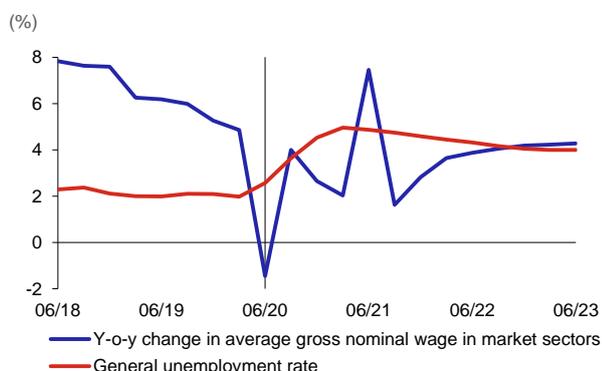
40 Year 1996.

41 The variability in gross nominal wage growth is due mainly to increased take-up of attendance allowance and wage compensation for quarantined individuals ([Inflation Report IV/2020](#)).

42 Wage compensation due to mandatory quarantine surged in October. The number of people in quarantine soared to 119,000 (the previous high, recorded in March 2020, was just under 36,000; see MLSA, [Statistika neschopenek a karantén \(Medical certificate and quarantine statistics\)](#), in Czech only).

restrictive measures owing to difficulties managing the second wave of the pandemic could have a more marked effect on the labour market and hence on households' income situation.

Chart II.33
Unemployment rate and gross nominal wages in the Baseline Scenario



Source: CNB, CZSO

Note: The general unemployment rate is seasonally adjusted. The vertical line divides the observed values (2020 Q2) and the CNB's forecast published in [Inflation Report II/2020](#).

Chart II.34
Average number of employees and number of hours worked



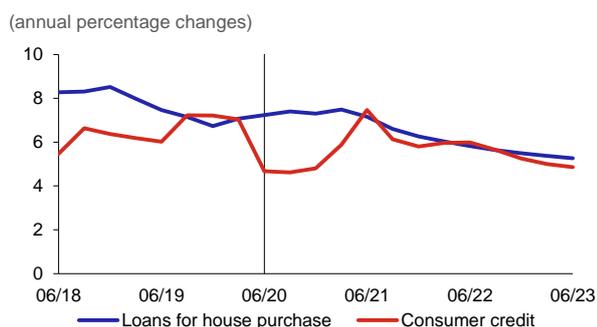
Source: CZSO

Note: The index of hours worked is based on seasonally adjusted data.

The rate of growth of consumer credit fell slightly, but that of loans for house purchase remained high

The uncertain income situation and increased caution of some Czech households, coupled with the simultaneous impossibility of making some purchases during the spring months, was reflected in an increased saving rate (see [Chart II.20 CB](#)) and in consumer credit growth, which started to fall⁴³ (see [Chart II.35](#)). However, in the *Baseline Scenario*, consumer credit growth returns to its pre-pandemic level in 2021. By contrast, the year-on-year rate of growth of house purchase loans has increased since the outbreak of the coronavirus epidemic, reaching 7.5% in September (see [Chart II.35](#)). This is mostly due to continued growth in house prices, reflecting rising interest in property investment and optimistic expectations regarding property prices (see [section II.1](#)).⁴⁴ The trend of recent years where the average mortgage loan amount and loan instalments (see [Table II.1](#)) have been adjusting to rapidly increasing property prices is thus continuing (see [Chart II.19](#)). In 2020 H1, the median price of a property purchased using a mortgage was CZK 2.85 million (a year-on-year rise of 14.2%), the median mortgage loan amount was CZK 2.16 million (a rise of 14.7%) and the median monthly instalment was CZK 9,500 (a rise of 14.9%). Given the expected trends in interest rates and property prices (see [section II.1](#)), relatively strong growth of house purchase loans can also be expected next year (see [Chart II.35](#)).

Chart II.35
Bank loans to households in the Baseline Scenario



Source: CNB

Note: The estimated year-on-year growth in new bank loans to households is based on the CNB's forecast published in [Inflation Report III/2020](#).

Table II.1
Medians of variables describing households with mortgage loans

	2018 H1	2018 H2	2019 H1	2019 H2	2020 H1
Net monthly income (CZK thousands)	37.9	39.4	41.7	43.3	45.1
Year-on-year change (%)	6.5	8.3	10.1	9.9	8.2
Property purchase price (CZK thousands)	2,390	2,357	2,495	2,580	2,849
Year-on-year change (%)	11.4	4.8	4.4	9.5	14.2
Loan size (CZK thousands)	1,720	1,920	1,885	2,000	2,162
Year-on-year change (%)	7.5	17.8	9.6	4.2	14.7
Mortgage loan instalment (CZK thousands)	7.3	7.7	8.3	8.3	9.5
Year-on-year change (%)	9.1	4.0	12.8	6.7	14.9

Source: CNB

Note: The figures are from the database of genuinely new mortgages and relate to the date on which the loan agreement was concluded. Net monthly income is the net income declared in the loan application and comprises the income of all persons listed in the loan agreement.

43 The year-on-year rate of growth of consumer credit fell to 2.7% in Q3.

44 [Bank Lending Survey IV/2020](#).

Despite the rapid growth in loans for house purchase, the total household debt ratio remains relatively low

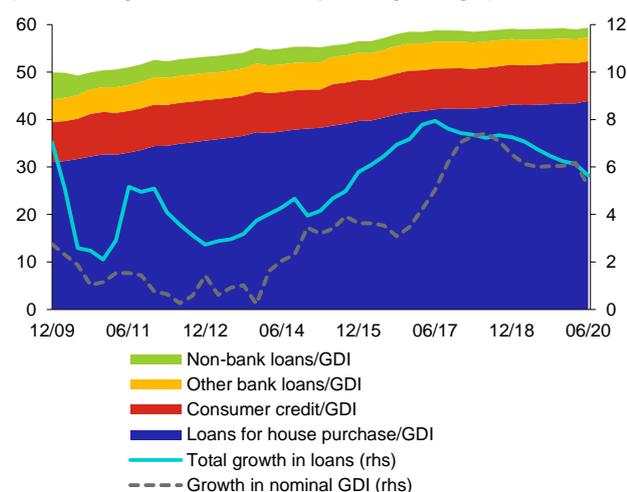
Total household debt remains below 60% of gross disposable income (see [Chart II.36](#)). The bulk of household debt is made up of house purchase loans, which are mostly taken out by high- and upper-middle income households (up to 85% of households with house purchase loans), for whom debt repayment is generally not a major burden at the moment. By contrast, low-income households, which are more vulnerable to adverse developments on the labour market, account for only about 5% of mortgage loan holders. Low-income households are more likely to take out small loans for consumption (mostly of up to CZK 100,000).⁴⁵ However, debt repayment represents a relatively large financial burden for every second low-income household, and any increase in interest rates could put these households at risk. Given the low levels of debt involved, however, their potential default does not represent a significant systemic risk to the domestic banking sector.

The default rate on loans to households is unchanged so far but is expected to rise

Both the package of fiscal measures aimed at boosting employment and the loan moratorium helped keep default rates on consumer credit and mortgage loans (see [Chart II.37](#)) relatively low in 2020 Q2.⁴⁶ The number of loan moratorium applications provides an indication of the scale of potential problem loans. Loans under moratorium accounted for almost 15% (i.e. CZK 253.3 billion) of households' total loan portfolio as of 31 October 2020;⁴⁷ nearly three-quarters of them are mortgage loans. The households that applied for a loan moratorium mostly had a higher DSTI ratio and higher total debt.⁴⁸ Other characteristics that loan moratorium applicants had in common were education, locality and sector of employment.⁴⁹ Following the end of the loan moratorium in October, the volume of NPLs is expected to increase gradually.⁵⁰ In the *Baseline Scenario*, the 12M default rate on loans for house purchase rises to 2.2% and that on consumer credit to 6.1% in mid-2021 (see [Chart II.37](#)).

Chart II.36
Household indebtedness and income indicators

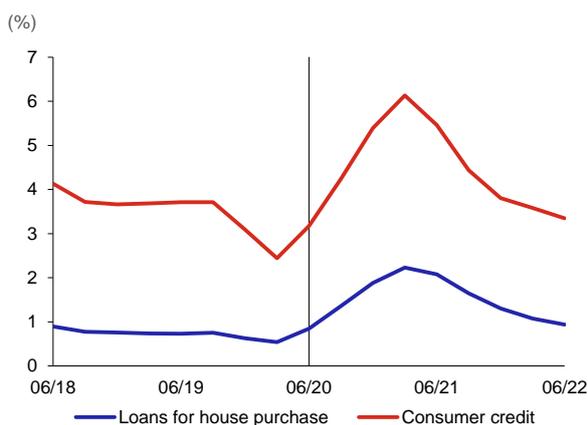
(ratios in %; right-hand scale: annual percentage changes)



Source: CNB, CZSO

Note: Non-bank loans are loans provided by other financial institutions. GDI stands for gross disposable income. The household sector also includes data for NPISHs.

Chart II.37
Default rate on loans to households in the *Baseline Scenario*



Source: BRCI, CNB

Note: The estimated 12M default rate on bank loans to households is based on the CNB's forecast published in [Inflation Report III/2020](#). The 12M default rate is defined as the ratio of the volume of non-performing loans in the next 12 months to the total volume of performing loans. The figure in the chart for 06/2022 expresses the NPL ratio during the third year of the scenario (i.e. 06/2022–06/2023; see section III.4).

⁴⁵ Czech Statistical Office – Survey of Income and Living Conditions (EU-SILC).

⁴⁶ The loan moratorium comprises both a legislative (statutory) one and a non-legislative one.

⁴⁷ CNB – *Statistika odkladů splátek a úvěrů v programech COVID* (Statistics on postponements of instalments and loans in COVID programmes, available in Czech only).

⁴⁸ In September 2020, the CNB conducted a questionnaire survey to assess risks to financial stability connected with the COVID-19 pandemic. Banking institutions accounting for the bulk of the Czech credit market participated in the survey.

⁴⁹ According to the responses of the banks questioned in the CNB's September survey, the loan moratorium was used mostly by households whose members are not university graduates, households in Prague and in the Central Bohemia and Karlovy Vary regions, and households with a member working in accommodation and food services, culture, tourism or the automotive industry.

⁵⁰ Following the end of the loan moratorium on 31 October 2020, banks are ready to address any financial problems their clients might have on a case-by-case basis and in a customer-friendly manner. If necessary, however, the Czech Ministry of Finance is ready to implement relevant measures (see the [press release of the Ministry of Finance of the Czech Republic](#), in Czech only).

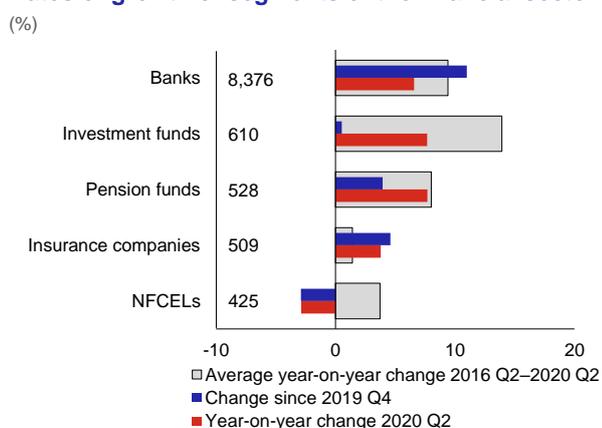
III. THE FINANCIAL SECTOR

III.1 DEVELOPMENTS IN THE FINANCIAL SECTOR

The total assets of all segments except non-bank financial corporations engaged in lending increased, but the growth of investment funds slowed

The total assets of all segments of the financial sector except financial corporations engaged in lending increased in the first two quarters of 2020 (see Chart III.1). The total assets of the financial sector grew by 9% year on year to CZK 10.4 trillion (184% of GDP). The banking sector, which accounts for almost 80% of the financial sector's assets, recorded the largest growth in both absolute and relative terms (CZK 829 billion, or 11%, compared with the end of 2019). The insurance sector returned to a rising trend (growing by CZK 22 billion, or 4.6%, compared with the end of 2019). Asset growth slowed relative to the long-term average in the case of pension funds (growth of CZK 20 billion, or 3.9%, compared with the end of 2019) and investment funds (growth of CZK 3 billion, or 0.5%, compared with the end of 2019). This slowdown was linked with the impacts of the first wave of the coronavirus pandemic on financial markets.

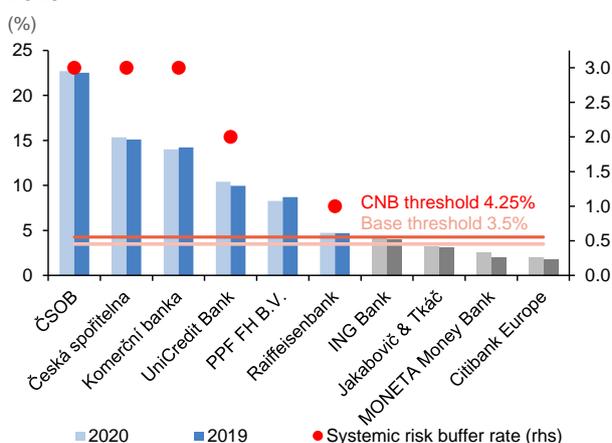
Chart III.1
Rates of growth of segments of the financial sector (%)



Source: CNB

Note: NFCELS = non-bank financial corporations engaged in lending. Figures in CZK billions as of mid-2020. The banking sector also includes credit unions.

Chart III.2
Comparison of O-SIIs' scores as of mid-2019 and mid-2020



Source: CNB

Note: Grey denotes institutions not included in the list of other systemically important institutions for 2021.

The list of systemically important institutions is unchanged

According to the CNB's evaluation, the Czech financial sector still has six other systemically important institutions (O-SIIs), so the list of O-SIIs for 2021 is unchanged (see Chart III.2). The CNB, like several other national macroprudential authorities in the EU, currently applies a systemic risk buffer (SRB) to mitigate risks associated with the systemic importance of institutions. After CRD V has been transposed into Czech law,⁵¹ the CNB will have to start applying the O-SII buffer for these purposes. It will calibrate the O-SII buffer using a methodology based on the bucketing approach with supervisory assessments,⁵² which uses systemic importance scores calculated on a consolidated basis according to EBA guidelines.⁵³

⁵¹ This is expected to happen during 2021.

⁵² The calculated systemic importance score will classify institutions into score buckets, with a specific O-SII buffer rate assigned to each bucket. The highest O-SII buffer rate will be 3%. In the case of domestic institutions that are subsidiaries of foreign institutions identified by their domestic regulators as nationally or globally systemically important (O-SIIs or G-SIIs), the CNB will be able to set the upper limit on the O-SII buffer no more than 1 pp above the foreign parent institution's O-SII or G-SII buffer rate as set by its domestic regulator.

⁵³ For more details on the calculation of systemic importance scores, see EBA/GL/2014/10: <https://eba.europa.eu/eba-publishes-criteria-to-assess-other-systemically-important-institutions-o-siis->

III.2 BANKING INSTITUTIONS⁵⁴

III.2.1 Capital

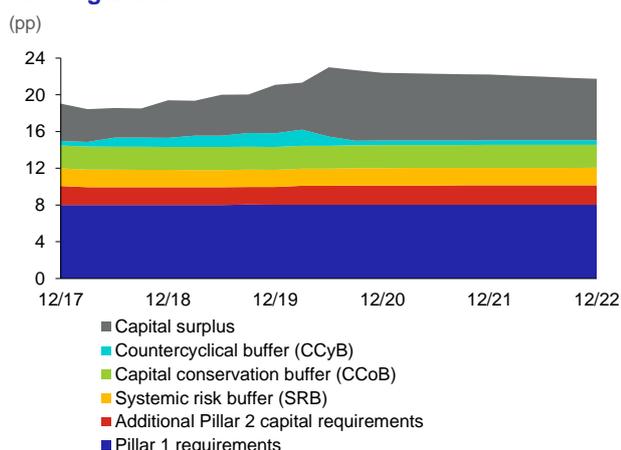
The capitalisation of the domestic banking sector during the coronavirus crisis remains robust

The domestic banking sector entered the coronavirus crisis well-capitalised. From the macroprudential perspective, the favourable starting position was due to the maintenance of a stable capital surplus in excess of the regulatory requirement by institutions and the creation of a countercyclical capital buffer (CCyB) at the CNB's decision. As of the middle of 2020, the total regulatory eligible capital in the domestic banking sector was CZK 62 billion higher than at the end of 2019, at CZK 590 billion. The overall capital ratio was up by 1.9 pp to 23% (see Chart III.3) and the Tier 1 capital ratio also by 1.9 pp to 22.4%.⁵⁵ The capital ratio was affected mainly by an increase in capital from profit (+2.4 pp of the capital ratio) and a decline in aggregate risk weights (+1.4 pp), which outweighed the growth in client loans and other assets (-1.9 pp).

The capital surplus of domestic institutions was supported by a decrease in the CCyB rate and by a profit distribution recommendation issued by the CNB...

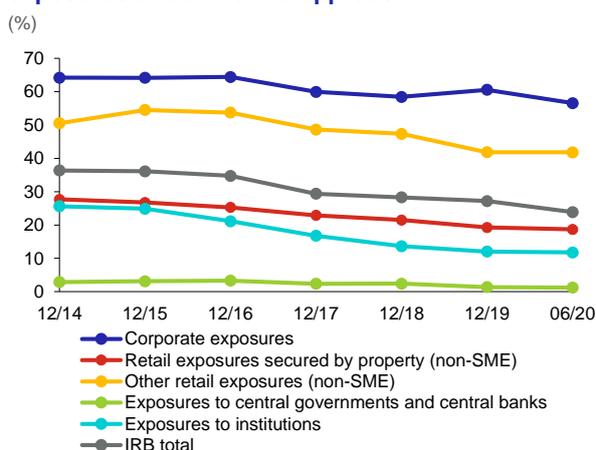
Capitalisation is largely dependent on capital surpluses (see Chart III.3). Those are at historical highs in both relative and absolute terms, aided by the release of CZK 33 billion of regulatory capital due to a decrease in the CCyB rate to 0.5% with effect from 1 July 2020. The surplus was also bolstered by a CNB recommendation calling on institutions to temporarily restrict dividend payments and other actions that might jeopardise their resilience until the acute and longer-running consequences of the coronavirus crisis recede.⁵⁶

Chart III.3
Structure of capital requirements in the domestic banking sector



Source: CNB

Chart III.4
Average risk weights of the main categories of exposures under the IRB approach



Source: CNB

...which is also contributing to prospective compliance with the MREL

The CNB set a minimum requirement for own funds and eligible liabilities (MREL) for institutions in 2020.⁵⁷ The MREL is designed to ensure that institutions have sufficient capacity for the absorption of losses and subsequent recapitalisation in the event of resolution. The CNB set the MREL for all institutions for which potential failure cannot be credibly resolved through liquidation or insolvency, and set 31 December 2023 as the binding deadline for institutions to comply with it.⁵⁸ The MREL can be met using eligible liabilities or capital, or a combination thereof. The CNB had communicated earlier that partial compliance with the MREL using capital surpluses could affect institutions' ability to respond to changing

54 The Czech Export Bank and the Czech-Moravian Guarantee and Development Bank are excluded from the analysis of the capital of the banking sector as a whole in the entire section III.2. This is because these banks are wholly owned by the Czech state (providing implicit state guarantees for their liabilities) and have different business models and volatile credit portfolios.

55 Most banks meet the overall capital requirement, consisting of the minimum level of regulatory capital in Pillar 1 (8%), a requirement based on the supervisory review and evaluation process in Pillar 2 (an average of 2.1% for the sector) and capital buffers (an average of 4.9% for the sector), by a sufficient margin. The capital surplus amounted to CZK 194 billion as of 30 June 2020, of which that of systemically important banks to CZK 127 billion and that of other banks to CZK 67 billion.

56 Similar recommendations were issued in numerous other EU countries, and the coordination of these activities at the EU level resulted in the ESRB issuing a *Recommendation on restriction of distributions* – see <https://www.esrb.europa.eu/home/html/index.en.html>.

57 For more details on the MREL, see the thematic article Kahoun, T. (2019): *Minimum Requirement for Own Funds and Eligible Liabilities (MREL): General Approach of the Czech National Bank*.

58 See <https://www.cnb.cz/en/cnb-news/news/The-CNB-has-set-the-minimum-requirement-for-capital-and-eligible-liabilities-for-banks/>.

economic conditions and limit the use of capital surpluses as a potential source to cover losses. The CNB will analyse institutions' approaches to complying with the MREL on an ongoing basis. It will examine, among other things, the risks associated with the impacts of the MREL, as expressed in total exposures, on the usability of capital buffers.

Overall, the CNB's actions after the outbreak of the coronavirus crisis supported the banking sector's capacity to absorb losses and lend to the real economy...

The reduction of the CCyB rate has led to a decrease in the capital intensity of new loans. Assuming constant risk weights, institutions can theoretically lend an additional more than CZK 2.5 trillion from the current capital surplus. The CNB has also communicated to institutions that it considers it natural that, following the potential release of the CCyB, banks will also use the capital conservation buffer and, where necessary, the systemic risk buffer in order to be able to continue providing services to their clients in the event of strongly adverse developments. The subsequent renewal of these buffers may be gradual.

...but the economic consequences of the coronavirus crisis may put pressure on the capital position of domestic institutions

According to institutions' current capital plans, the capital ratio will decrease slightly in the years ahead due to expected growth in loan portfolios and a moderate increase in risk weights (see [Chart III.3](#)).⁵⁹ This signals that the sector expects no systemic loss and envisages realistic dividend policy. On the other hand, a lengthening period of restricted economic activity due to the current course of the coronavirus crisis can be expected to increase the pressure on institutions' capital position, as the results of a macro stress test suggest (see [section III.4](#)). The current situation thus requires institutions to exercise a high level of prudence in managing capital.

Risk weights have not yet responded to the coronavirus crisis in 2020...

The decline in risk weights for exposures of institutions that use internal models to set those weights (the IRB approach) seen in previous years continued in 2020 (see [Chart III.4](#)).⁶⁰ The largest drop can be observed for risk weights for corporate exposures, which have decreased by 4 pp to 56.6% since the end of 2019, due mainly to a regulatory amendment of CRR (see [section IV.1](#)). The decrease was also fostered by institutions' higher collateral requirements and the introduction of state guarantees, as both these factors reduce LGD. Risk weights for retail exposures recorded a smaller decline. However, whereas the decline for other retail exposures (especially consumer credit and other unsecured products) was minimal, the aggregate risk weight for exposures secured by property fell by 0.6 pp to 18.7%. The expectations of a change in trend in risk weights due to the observed change in the phase of the financial cycle are thus not materialising as yet. This can currently be explained by the limited increase in credit risk materialisation following the onset of the coronavirus crisis due to the existence of stabilising measures of a monetary policy, prudential and fiscal character (see [section III.2.2](#)).

...but the expected change in trend in risk weights may have a downward effect on the capital ratio

The CNB expects that the potential increase in risk weights will be due most of all to the longer-term consequences of the coronavirus crisis on both the domestic and global scale, and may therefore not be strong at first. At the end of September 2020, institutions using the IRB approach were expecting risk weights to rise in all categories of the main credit portfolios in 2021 – on aggregate by 3.9 pp for corporate exposures, 2.8 pp for loans for house purchase and 4.6 pp for unsecured retail loans compared with the end of 2019.⁶¹ Institutions mentioned a deterioration in loan portfolio quality (connected with growth in PD and LGD) due to the impacts of the coronavirus crisis on Czech economic output as the main cause of this trend, while state guarantee schemes (connected with a drop in LGD) represent a partial offset in the case of corporate exposures. Other things being equal, growth in risk weights generally increases the capital requirements in absolute terms and reduces the capital ratio. The effect of increasing risk weights on the capital position thus may be magnified if combined with major credit losses (see [section III.4](#)).

The leverage ratio requirement is to become binding soon...

The leverage ratio of the banking sector has declined by 0.1 pp to 6.9% since the end of 2019 (see [Chart III.5](#)). Only one institution is below the 3% level applicable upon the entry into force of CRR II on 28 June 2021.⁶² From this date onwards, there will be two binding capital requirements – a capital (risk-weighted) ratio one and a leverage (non-risk-

59 In September 2020, the CNB conducted a questionnaire survey to assess risks to financial stability connected with the COVID-19 pandemic. Institutions accounting for the bulk of the total loans provided to non-financial corporations and households in the Czech Republic participated in the survey.

60 The analysis of risk weights uses data on implicit risk weights. These are calculated as the weighted value of the exposure divided by the original value of the exposure under the European COREP reporting framework. Exposures whose risk weights are set using the IRB approach amount to CZK 6.1 trillion (see [Chart III.1 CB](#)), which corresponds to 72.7% of the exposures of the domestic banking sector.

61 However, there is substantial heterogeneity among institutions as regards the intensity of the expected growth. This may be due to different planned changes to their modelling systems.

62 Until this date, institutions are only obliged to report and publish their leverage ratio.

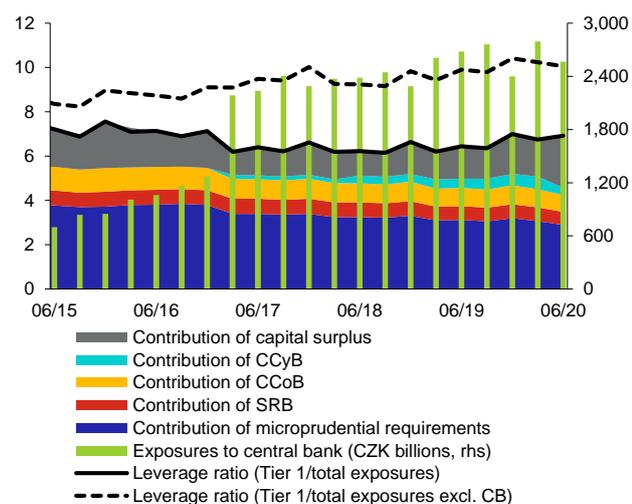
weighted) ratio one. Banks will have to maintain their capital based on the one that requires a higher absolute level of capital. Which of the two requirements will be more limiting depends mainly on the aggregate risk weight of the institution's exposures, which is also significantly affected by its business model.⁶³

...and its limiting effect is amplified by the high share of banks' exposures to the CNB

In the domestic banking sector, the leverage ratio is significantly affected by high risk-free exposures to the CNB (2.9 pp; see Chart III.5). The leverage ratio adjusted for exposures to the central bank has dropped by 1.5 pp to 9.8% since the start of the year. Significant exposures to the central bank may lead not only to a need to top up capital due to non-compliance with the leverage ratio requirement, but also to limited usability of capital buffers for absorbing losses. In light of this risk, the CNB during the discussion of CRR II in early 2018 initiated a debate in European structures on changing the approach to institutions' exposures to the central bank in the calculation of the leverage ratio.

Chart III.5
Structure of the leverage ratio by capital source

(%; right-hand scale: CZK billions)



Source: CNB

Note: Due to unavailability of data in a longer time series, the denominator of the leverage ratio up to 2016 Q3 contains total assets instead of total exposures. The contribution of the capital surplus consists of total capital (not just Tier 1 capital).

Chart III.6
Loan structure by portfolio

(%)



Source: CNB

Note: The loan breakdown for 2017 corresponds to the classification into standard, watch and loss loans under the former IAS 39 standard. Under the new IFRS 9 accounting standard (in effect since 1 January 2018), non-performing loans (NPLs) correspond to loans classified in Stage 3 – impaired loans.

The CNB considers it desirable to exclude banks' exposures to the CNB from the leverage ratio calculation

CRR II, as approved in May 2019, did not reflect the CNB's objections. It only allowed institutions to exclude exposures to central banks from the denominator of the leverage ratio for up to one year in exceptional situations. However, institutions exercising this option would simultaneously have to maintain the changed leverage ratio higher than the basic leverage ratio to offset the exclusion of exposures to central banks. Because of this offsetting mechanism, it would make virtually no sense for institutions to exclude the exposures. However, as the exposures of euro area institutions to the Eurosystem are expected to increase due to the extensive asset purchases made by the ECB as part of monetary policy measures introduced in response to the pandemic (see section II.1), an amendment of the rules (a "quick fix"⁶⁴) was initiated this year. The amendment stipulates that, following the declaration of an exceptional situation⁶⁵ by the supervisory authority, institutions may exclude exposures they had in their balance sheets immediately before the declaration from the calculation of the revised leverage ratio. This prevents the revised leverage ratio requirement from being tightened when monetary policy is implemented after the declaration of an exceptional situation. However, this amendment does not address the situation of individual institutions with high levels of such exposures before the declaration of an exceptional situation. In addition, CRR II still contains the provision under which institutions may apply such discretion for up to one year, although there are interpretations that the relevant period may be regularly extended if the exceptional circumstances persist. The CNB considers the amended rules to be insufficient and will therefore continue to support the debate on changing the regulatory approach in this area in EU bodies.

63 See Pfeifer, L., Hodula, M., Holub, L., Pikhart, Z. (2018): *The Leverage Ratio and Its Impact on Capital Regulation*. CNB WP 15/18.

64 See <https://eur-lex.europa.eu/eli/reg/2020/873/oj>

65 The ECB declared an exceptional situation in September 2020. See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2020.305.01.0030.01.ENG&toc=OJ%3AL%3A2020%3A305%3ATOC

III.2.2 Credit risk

Provisioning after the onset of the coronavirus crisis has been subdued so far

The provisions of the domestic banking sector have increased by CZK 8.8 billion to CZK 69.1 billion since the end of March 2020 (see [Table III.1 CB](#)). This growth was due mainly to provisioning in Stage 2, in which exposures with an increased level of risk are reported. To a lesser extent, provisions were also created in Stage 1, especially for corporate loans; unlike in the household sector, however, greater release of provisions in Stage 3 can be seen for these loans (see [Table III.1 CB](#)).⁶⁶ The continuous increase in the share of client exposures in Stage 2 since the start of the coronavirus crisis signals that institutions perceive gradual growth in credit risk, which, however, is not yet directly associated with loan defaults (see [Chart III.6](#)).⁶⁷ In the area of credit risk, the crucial factor from the macroprudential perspective is currently whether expected credit losses are being underestimated at the banking sector level (see [Box 3](#)).

BOX 3 Provisioning after the outbreak of the coronavirus crisis and its macroprudential dimension

The coronavirus crisis has so far led to a significant decline in economic activity (see [section II](#)) accompanied by limited materialisation of credit risk in domestic banks' balance sheets (see [section III.2.2](#)). The traditional indicator of credit risk materialisation is asset impairment losses, called risk costs in the sector.⁶⁸ Under IFRS 9, they should, among other things, capture the change in expected credit losses, taking into account long-term portfolio risk and expected macroeconomic developments. The risk costs indicator for the banking sector as a whole recorded growth in 2020 Q1 and Q2, but saw a slight correction in Q3 (see [Chart III.8](#)). As regards risks to financial stability, it is relevant to assess whether the level of this indicator is signalling, at both the single-institution and whole-sector levels, a risk of underestimation of the expected credit losses which might occur in the future (the "cliff effect"; see [Box 3.2](#) in [FSR 2018/2019](#)). Such a situation could have a significant impact on the profitability and possibly also the capital positions of institutions at the individual and potentially also sector level, with a possible adverse effect on lending to the real economy.

The relevance of the risk of current underestimation of expected whole-sector credit losses can be assessed in several ways. In terms of domestic historical comparison, a comparison with risk costs after the outbreak of the global financial crisis can be used. The initial risk costs when the coronavirus crisis broke out were around two-thirds lower than at the start of the global financial crisis (see [Chart 1](#)). This has led to the relative growth in risk costs being higher for now in the case of the current crisis. Furthermore, the cumulative risks costs for the first two years of the global financial crisis in September 2008–September 2010 (the blue dashed line; see [Chart 1](#)) can be compared with the currently observed risk costs (the red dashed line; see [Chart 1](#)).⁶⁹ It is evident that the risk costs in the current crisis are significantly lower. According to the IFRS 9 principle, i.e. to create provisions in a timely fashion and to a sufficient extent, the current impairment losses should take into account lifetime provisioning (Stages 2 and 3), not just the 12-month horizon (Stage 1), for a part of the portfolio. However, the risk costs associated with the coronavirus crisis are much lower even if one accumulates the current impairment losses over a two-year horizon (the orange dashed line; see [Chart 1](#)). In general, these findings signal that credit losses may increase significantly after the effects of the economic stabilisation measures fade. However, the possible higher quality of the current loan portfolios may also play a role.

As regards current international comparison, information can be obtained from the current risk costs of banks in other EU countries. The risks costs in the domestic banking sector are below the EU average (see [Chart 2](#)). As the intensity of the economic stabilisation measures in EU countries is similar, this is probably explained solely by higher quality of domestic credit portfolios compared with other EU countries.

The relevance of the risk of underestimation of the credit losses of individual banks in the domestic banking sector is also indicated by the degree of difference in their risk costs (see [Chart 3](#)). The dispersion of risk costs is significant for all groups of relatively similar banks and suggests that this risk may be considerable, even when one takes into account one medium-sized bank which has created the most provisions this year by whole-sector comparison.

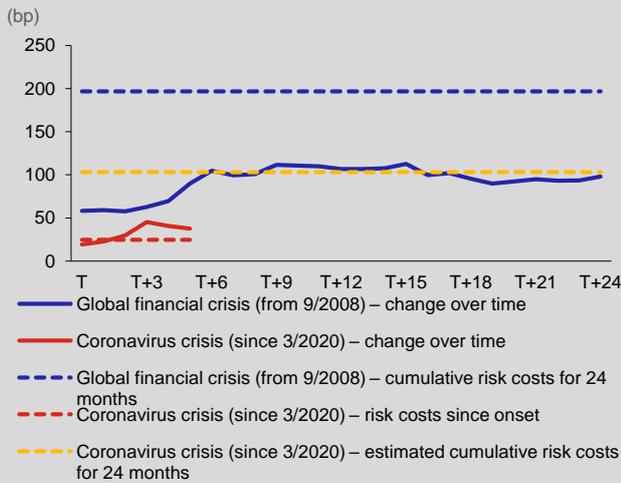
⁶⁶ The coronavirus crisis has caused the cyclically conditional decline in the coverage ratio seen in the previous period of growth in the financial cycle to halt (see [Chart III.2 CB](#)). The coverage ratios for exposures in Stages 1 and 2 have increased slightly since the onset of the coronavirus crisis, but their current levels have not significantly affected the profitability of the banking sector (see [section III.2.3](#)). The NPL coverage ratio for households and non-financial corporations fell slightly in 2020, but its current level of around 56% can still be assessed as sufficient from the macroprudential perspective.

⁶⁷ The ratio of non-performing loans (NPLs) to total loans, which is essentially identical to the share of impaired exposures (Stage 3), was broadly flat at a historical low of around 2.2% (see [Chart III.6](#)).

⁶⁸ Calculated as annualised impairment losses in an institution's balance sheet divided by average loans in the previous 12 months.

⁶⁹ The analysis is based on the assumption that IFRS 9 should enable the lifetime credit losses for loans whose credit risk has increased since they originated to be captured (Stages 2 and 3). The accumulation of losses during the global financial crisis to some extent simulates the approach to capturing expected credit losses under IFRS 9.

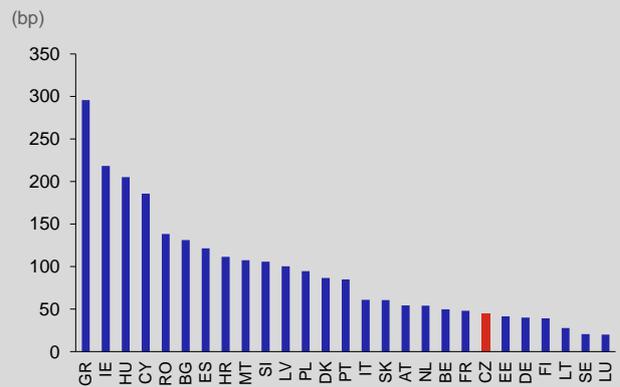
Chart 1 (BOX)
Comparison of risk costs in the Czech Republic after the onset of the global financial crisis and the coronavirus crisis



Source: CNB

Note: The unit for T is one month.

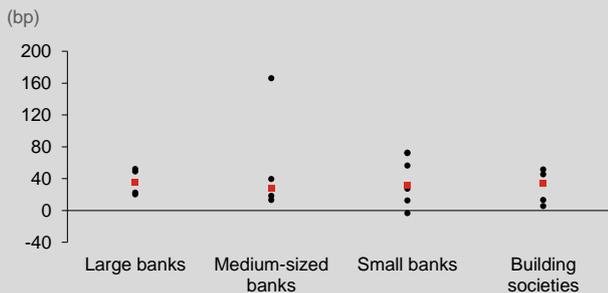
Chart 2 (BOX)
Comparison of risk costs in the EU as of 30 June 2020



Source: EBA

The observed differences in provisioning across institutions are also not sufficiently explained by differences in macroeconomic expectations, linked to the incorporation of macroeconomic forecasts into models, or by differences in credit risk perceptions, connected mainly with migrations of exposures to Stages 2 and 3, which signal an increase in credit risk (see [Chart 4](#)). The characteristics and specificities of individual institutions' modelling frameworks, including their level of implicit conservatism, thus probably play a role. In the current situation, the heterogeneity of provisioning may also be due to exogenous factors associated with changes in the external environment after the outbreak of the coronavirus pandemic, which modify the common operational characteristics of IFRS 9. This mainly involves the use of stabilisation measures by institutions' clients; the flexibility in the regulatory and accounting frameworks (see [Box 3 in FSR 2019/2020](#)) enables an institution not to transfer an exposure to Stage 2 if it expects the client under moratorium to return to solvency. However, it seems from institutions' data that there is a positive relationship between the amount of risk costs and the proportion of an institution's loans under moratorium. This may be linked with prudent assessment of such exposures by institutions despite the existence of flexibility in the regulatory framework (see [Chart 4](#)).

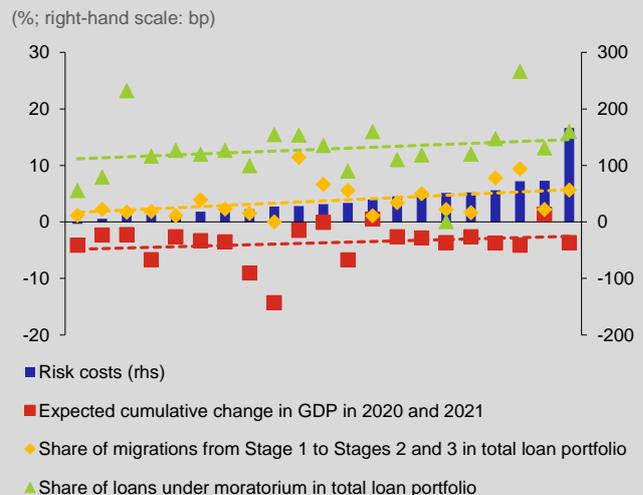
Chart 3 (BOX)
Heterogeneity of risk costs as of 31 August 2020



Source: CNB

Note: Red dots denote the median for the given group of institutions.

Chart 4 (BOX)
Components of provisioning and risk costs of individual institutions as of 31 August 2020



Source: CNB

Note: Dashed lines denote the "linear trend".

Last but not least, the risk of underestimation of expected credit losses can also be assessed using the results of the *Baseline Scenario* of the model-neutral and conservative solvency macro-stress test (see [section III.4](#)). Its results signal the average annual risk costs for 2020–2021 at 123 bp, well above the currently observed level (see [Chart 1](#)).

The comparison of current risk costs in the banking sector with the historical 2008–2010 crisis episode, the international comparison, the considerable heterogeneity among domestic banks, the results of the CNB's solvency macro-stress test of the banking sector and the high uncertainty about future economic developments indicate that the risk of underestimation of expected credit losses, which would lead to more favourable bank financial results, is not insignificant. From the macroprudential policy perspective, it signals a need to maintain strong capital positions to absorb any further credit losses, which the IFRS 9 model framework may not be able to capture in good time and to a sufficient extent in the current situation. This need is magnified by the banking sector's decreasing profitability, which limits its ability to top up capital through natural accumulation of profit. From the microprudential perspective, the analysis indicates a need for prudent risk management in the IFRS 9 model framework in a situation characterised by high uncertainty about future developments in an environment of strong but temporary government economic stabilisation measures.

The latency of credit risks remains elevated, partly due to households' and non-financial corporations' considerable interest in deferring instalments...

Despite some response of institutions' modelling systems to the change in economic conditions, it still holds that credit losses may temporarily turn latent due to stabilisation measures and related flexibility in the accounting framework (see [section III in FSR 2019/2020](#)). More than 365,000 applicants (firms and households), with loans totalling CZK 470 billion,⁷⁰ had made use of the moratorium as of the end of September 2020. Loans under moratorium were essentially unchanged in 2020 Q3. The private non-financial sector's overall demand can nonetheless be considered significant, although institutions mostly assess it as expected, contrary to original assumptions. However, data available to the CNB show that institutions made only limited use of the flexibility in the accounting framework when calculating the expected credit losses on loans under moratorium.⁷¹

...the end of which may boost demand for loans with state guarantees, according to institutions' expectations

The COVID state support schemes – and in particular the COVID III scheme – are another stabilisation measure affecting institutions' credit risk. Under COVID III, institutions' clients may apply for operational financing, with 30% of the scheme's loan portfolio covered by a state portfolio guarantee. According to CNB data, loans totalling around CZK 28 billion had been provided to the economy under the COVID programmes as of the end of September 2020. This represents around 16% of the new loans provided to non-financial corporations since the coronavirus crisis started. Institutions assess the demand for loans under the COVID schemes as generally lower than they originally expected, but they expect it to rise after the statutory moratorium ends. Interest in guarantee schemes may also be boosted by the government's October 2020 proposal to extend the COVID III scheme to the middle of 2021. The inclusion of investment financing of firms in the scheme is also being discussed. In institutions' view, this may further increase the effectiveness of the measure.

Increased materialisation of credit risk can be expected in 2021...

Based on the information known at the end of September 2020, institutions expect around 13% of loans to non-financial corporations under moratorium (CZK 27 billion), 7% of housing loans (CZK 13 billion) and 15% of consumer credit (CZK 9 billion) to become NPLs after the moratorium ends. In 2021, institutions expect total provisioning to amount to around CZK 30 billion. In terms of financial stability, this would signal a prudent approach of institutions to risk management in the previous expansionary phase of the financial cycle, and also a favourable effect of macroprudential policy instruments in the area of housing loans. However, clearer conclusions regarding credit risk materialisation cannot be drawn until the end of next year, given the evolution of the pandemic and economic situation on both the domestic and international scale.

...which macroprudential policy must take into account especially in the area of capital buffers

The CNB generally regards the spreading of credit losses over time caused by the current measures as desirable, as it creates the right conditions for mitigating the economic consequences of the coronavirus crisis and strengthens institutions' role in dealing with them. From the macroprudential policy perspective, however, this situation requires a balanced approach to setting capital buffers and communication of their purpose, of expectations regarding the approach

70 In the non-financial corporations sector, loans with deferred instalments amounted to CZK 211 billion, or 16% of this portfolio. Most of the applications in the household sector involved mortgage loans, totalling CZK 180 billion (around 13% of this portfolio). Deferral applications amounting to almost CZK 61 billion concerned consumer credit (23% of this portfolio).

71 However, the approaches differed across the banking sector – while some institutions transferred all exposures under moratorium to Stage 2 and others, by contrast, did not develop specific rules going beyond the usual assessment of clients' financial situation, most institutions transferred part of their risk exposures under moratorium (particularly in the segments hardest hit by the pandemic) to Stage 2 based on their own models (such as stress tests).

to their use by institutions, and of recommendations on institutions' dividend policies, as it is difficult to assess to what extent the latency of credit risks and the lag in their pass-through to institutions' finances actually increases the risk of a cliff effect. Under certain conditions, the cliff effect could give rise to the creation of a large amount of provisions in a short period of time. This in turn might represent a strong adverse shock to institutions' finances, with a potential spillover to the capital position (see [Box 3](#)).

III.2.3 Profitability and liquidity

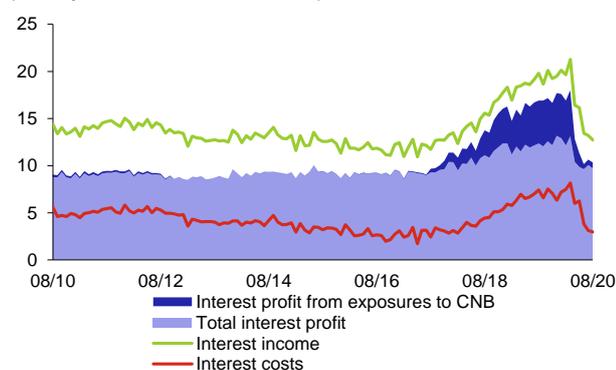
Profitability is falling due to the fading out of cyclically conditional sources of profit...

The banking sector's after-tax profit fell by 40% year on year to CZK 35.8 billion in the first eight months of 2020 (see [Chart III.7](#)), while return on assets dropped by 0.5 pp to 0.6% (see [Chart III.3 CB](#)). In past years, the CNB repeatedly pointed to the cyclically conditional nature of some sources of the banking sector's profitability. They included very low impairment losses and interest income on excess liquidity. These sources are fading away gradually due to the coronavirus crisis. Impairment losses totalled CZK 16.6 billion in the first eight months of 2020, as against CZK 1.3 billion in the same period of 2019 (see [Chart III.8](#)). Interest profit on excess liquidity fell by 40% year on year to CZK 20 billion. Most of the income on these exposures was generated in 2020 Q1 before monetary policy was eased. The banking sector's profitability was favourably affected by a 6% year-on-year drop in administrative expenses to CZK 48 billion.

Chart III.7

Decomposition of interest profit

(monthly contributions in CZK billions)

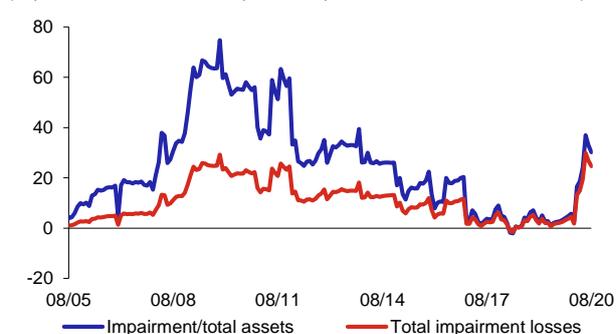


Source: CNB

Chart III.8

Asset impairment losses

(impairment/total assets in bp; total impairment losses in CZK billions)



Source: CNB

Note: Impairment losses are annualised.

...and future profitability will depend mainly on maintaining interest profit

According to information available at the end of September 2020, institutions do not expect to sustain net losses with a negative impact on their capital position. However, this will depend on them maintaining a favourable level of interest profit, which will be affected by margins in addition to lending activity. Interest profit on client loans decreased by 1% year on year to CZK 59 billion in the first eight months of 2020. As of 2020 Q3, institutions were expecting future growth in client loans, except for consumer credit, to be in line with the trend seen in previous years (see [section II](#)). Nevertheless, the total interest rate margin has continued to follow a downward trend since the start of the year (of 0.5 pp to 2.8%; see [Chart III.4 CB](#)), due mainly to a drop in margins on loans to non-financial corporations (of 1.5 pp to 2.1%), while margins on housing loans and consumer credit remain broadly stable.⁷² Interest profit will adversely affect institutions' very limited manoeuvring space for deposit rates (a decrease of 0.2 pp to 0.1%).

The banking sector remains in a good liquidity position

The banking sector's resilience to a short-term liquidity shock is assessed using the liquidity coverage ratio (LCR). The aggregate LCR increased by 23 pp year on year to 189% as of the middle of 2020 and all credit institutions were compliant with the regulatory limit of 100%. Sufficient available stable funding is monitored using the net stable funding ratio (NSFR). The aggregate NSFR rose by 8 pp year on year to 146% as of the middle of 2020. In the first eight months of 2020, the ratio of deposits to loans increased by 22 pp to 160%, the highest level in the period observed. According to information available at the end of September 2020, institutions expect no substantial changes in their liquidity position at the one-year horizon. Nevertheless, the CNB will continue to regularly assess the banking sector's liquidity situation. Institutions' good liquidity position is confirmed by the fact that none of them has so far used the CNB's liquidity-providing repo facility.

⁷² According to institutions' perceptions, the current interest rates on loans for house purchase have not yet led to massive take-up of the option of early repayment (refinancing).

III.3 NON-BANK FINANCIAL INSTITUTIONS

Favourable prices on financial markets were reflected in an inflow of new funds into investment and pension funds

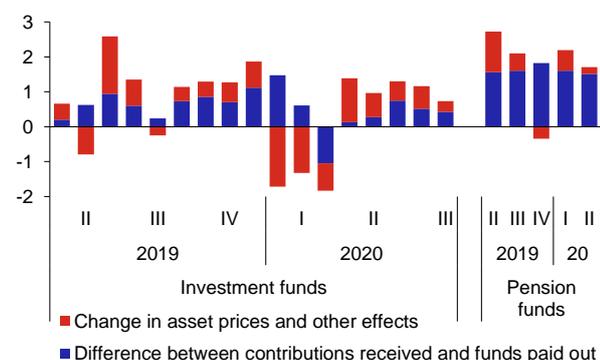
The fall in prices on financial markets recorded in 2020 Q1 was replaced by growth in Q2 (see section II.1). This led to renewed interest in investing via domestic investment funds, which have recorded an aggregate net inflow since April 2020 (see Chart III.9). This was mainly related to equity funds, mixed funds and funds for qualified investors (see Chart III.5 CB). By contrast, bond funds faced a net outflow of several billions of koruna a month in both Q2 and Q3. A stable inflow of funds went into pension funds, which were not significantly affected by benefit payouts in Q1 (see Chart III.9).

The amount of Czech government bonds held in non-bank financial institutions' portfolios increased

Czech government bonds held in domestic non-bank financial institutions' balance sheets increased from CZK 521 billion as of 31 March 2020 to CZK 578 billion as of 30 June 2020 (see Chart III.10). This was due both to a rise in government bond prices in April and May and to new purchases. The greater interest of non-banking financial institutions in government bonds was fostered by a lower need to hold large amounts of bank deposits (see section II.1).⁷³ In the case of investment funds, the relatively even growth in the value of asset classes in 2020 Q2 was also due to a rise in prices on financial markets. Investment funds' investment portfolios had thus returned virtually to the end-2019 level by 30 June 2020.

Chart III.9
Decomposition of the change in the value of investment and pension funds' assets

(% of assets as of end of previous period)

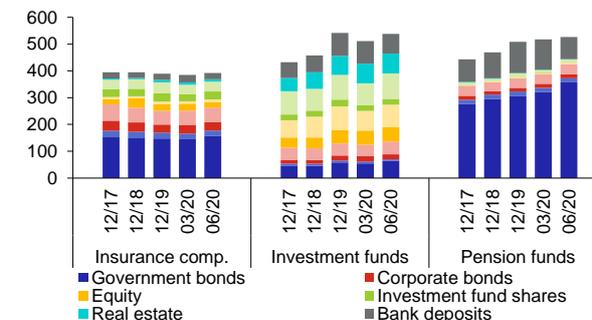


Source: CNB

Note: Monthly data for investment funds and quarterly data for pension funds.

Chart III.10
Components of domestic non-bank institutional investors' assets

(CZK billions)



Source: CNB

Note: The light-coloured areas of columns show the values for foreign assets and the dark-coloured areas show domestic assets, with the exception of real estate and deposits, where domestic and foreign assets are not differentiated.

The risk of elevated volatility in the value of financial assets re-intensified

The outbreak of the second wave of the coronavirus pandemic in September and October 2020 caused renewed financial market uncertainty (see section II.1). The risk of elevated price volatility in the prices of stocks and bonds held by domestic non-bank financial institutions thus increased again. However, the adverse effect of the market developments has not yet passed through to institutions' balance sheets. This continues to be aided by the CNB's still applicable extended power to purchase Czech government bonds on the secondary market. After having increased in the spring, the bid-ask spreads on those bonds decreased again and are holding at pre-crisis levels (see section II.1). Retention of dividends⁷⁴ and persisting prudence in asset allocation (see Chart III.10) and liquidity risk management also helped stabilise the capital and liquidity position of domestic non-bank financial institutions (see Chart III.11, Chart III.12 and Chart III.13) in 2020 Q2.

The short-term impacts of the change in households' behaviour due to the coronavirus epidemic have so far had a positive effect on insurance companies overall...

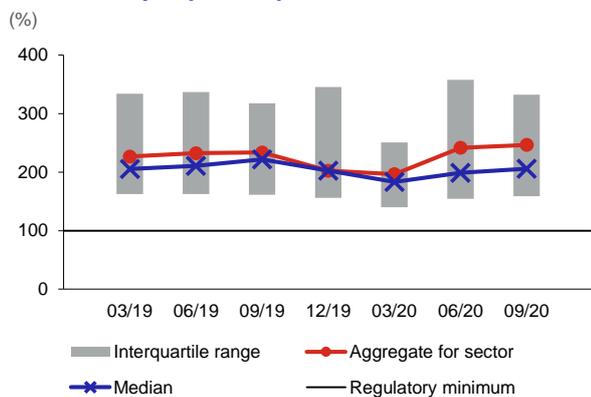
The coronavirus shock had a generally favourable effect on aggregate developments in key insurance variables in 2020 H1 (see Chart III.14). Gross premiums written in non-life insurance recorded growth across all major insurance classes (motor, property and liability insurance). This exceeded the decline in premiums in health insurance, which includes a large proportion of travel insurance products (see Chart III.6 CB). By contrast, gross claim settlement costs in

⁷³ The interest in partially replacing bank deposits with Czech government bonds in balance sheets reflected, in addition to previous and expected future movements in Czech government bond prices, lower liquidity pressure caused by terminations of investment products by investors and the need to top up margins in derivatives transactions. An increase in the perceived liquidity of Czech government bonds due to the measures taken by the CNB to bolster liquidity may also have been an important factor (see FSR 2019/2020).

⁷⁴ For details see the *Measures for other financial institutions* section at https://www.cnb.cz/en/about_cnb/cnb-versus-coronavirus/.

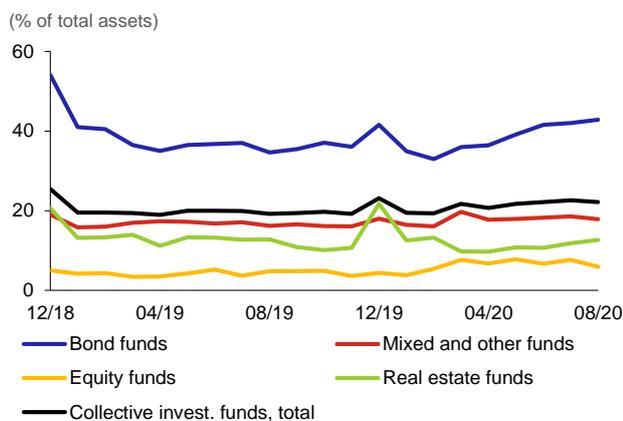
non-life insurance were flat in the first half of the year, with growth in claim settlement costs in credit and guarantee insurance and financial loss insurance, which includes business interruption insurance, being offset by a decline in claim settlement costs in motor insurance due to lower mobility during the spring wave of the epidemic. The insignificant impact of the pandemic on claim settlement costs overall was largely due to exclusion clauses. However, the coronavirus shock and related restrictive measures adversely affected some smaller insurance companies specialising in pandemic-hit segments (such as travel insurance).

Chart III.11
Ratio of insurance companies' eligible own funds to the solvency capital requirement



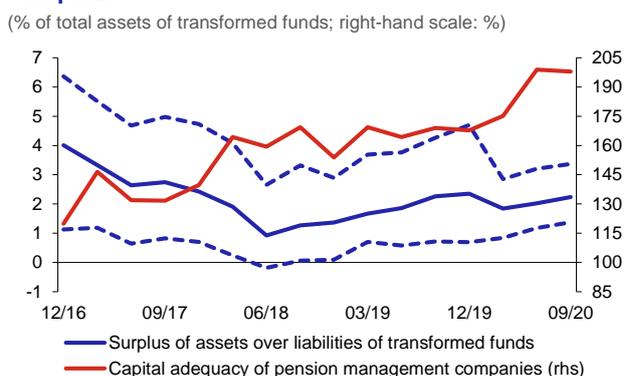
Note: Branches of foreign insurance companies and the Export Guarantee and Insurance Corporation are excluded from the calculation.

Chart III.13
Quick assets on the balance sheets of collective investment funds



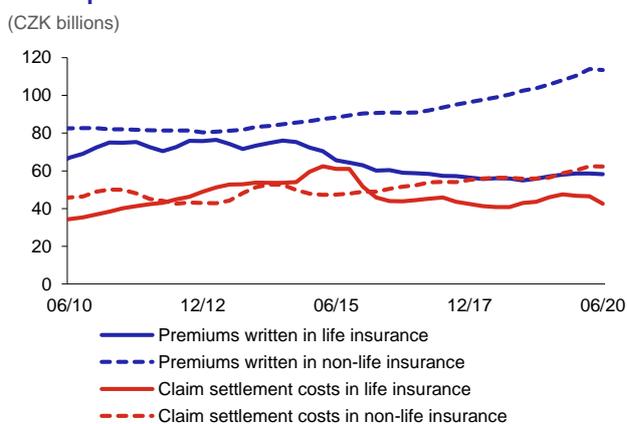
Note: Quick assets comprise cash, debt securities issued by general government, and bank deposits and other claims payable on demand.

Chart III.12
Surplus of assets over liabilities of transformed funds and capital adequacy of pension management companies



Note: Dashed lines denote the minimum and maximum values of the surplus of assets over liabilities across TFs.

Chart III.14
Developments in the insurance sector



Note: The Export Guarantee and Insurance Corporation is excluded from the calculation. The chart shows the moving sum of the values for four quarters in gross terms, i.e. unadjusted for reinsurers' share.

...while domestic non-bank financial institutions may face long-term adverse effects from very low yields

A return to an environment of sustained low yields (see section II.1) may motivate domestic non-bank financial institutions to search for yield in the years ahead by increasing the share of risky assets (especially corporate bonds or illiquid assets) in their balance sheets. This would make households more sensitive to financial market developments. A very low yield environment, coupled with perceived overvaluation of financial assets, may likewise foster a decline in households' interest in "safe" investment products (especially investment funds and funds managed by pension management companies mostly holding government bonds) in favour of riskier investments (funds with riskier portfolio structures). It would also make households more sensitive to financial market developments and exacerbate the risk of mass terminations of investment products if asset prices fall significantly. The impact of the epidemic on bond issuers may take several quarters to materialise, with consequences taking the form of rating downgrades and a decline in prices of corporate (and potentially also government) bonds. A prolonged economic decline with an impact on households' incomes and liquidity reserves would also give rise to a risk of a general decline in demand for some non-bank financial products and a related decline in the profitability of insurance companies and funds.

III.4 MACRO STRESS TEST OF THE BANKING SECTOR

Given the increased uncertainty surrounding future economic growth, the CNB conducted a stress test of the banking sector at the usual three-year horizon in two scenarios – a *Baseline Scenario* based on the macroeconomic forecast published in [Inflation Report III/2020](#)⁷⁵ and an *Adverse Scenario* involving hypothetical adverse economic developments, which are used to test the resilience of the domestic banking sector.⁷⁶

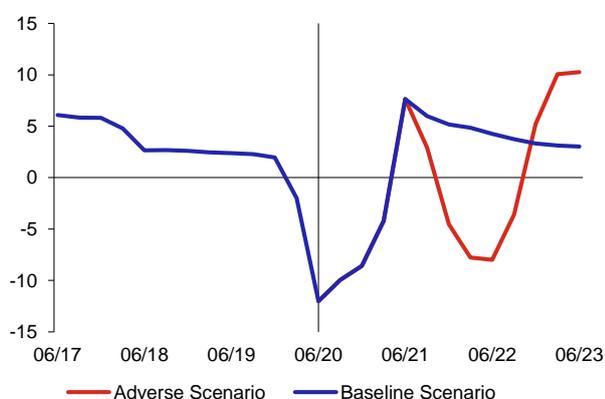
There is increased credit risk materialisation especially in the first year of the *Baseline Scenario*, with the economy recovering after the anti-epidemic measures are ended

The situation in 2020 is affected by government anti-epidemic measures. Subsequently, loan defaults rise due to the termination of the statutory moratorium⁷⁷ (the option of postponing loan instalments) and to a rise in unemployment and a persisting decline in economic activity. The effects of government measures dampening economic activity and the increased default rates gradually subside, and the economic situation gradually improves from mid-2021 onwards. The 2019 level of real GDP is reached in 2023 Q1.

Chart III.15

Alternative scenarios: real GDP growth

(year on year in %)



Source: CNB

Table III.1

Key variables

(averages for given periods in %)

	Actual value	Baseline Scenario			Adverse Scenario					
		2019	2020	2021	2022	6/2023	2020	2021	2022	6/2023
Macroeconomic variables (y-o-y)										
GDP	2.3	-8.1	3.7	4.0	3.1	-8.1	0.5	-3.5	10.2	
Inflation	2.8	3.4	2.4	2.2	1.9	3.4	2.4	2.0	1.9	
Unemployment	2.0	3.2	4.8	4.2	4.0	3.2	5.2	6.2	4.0	
Nominal wage growth	5.9	2.5	3.5	3.9	4.3	2.5	1.9	0.0	3.7	
Effective GDP growth in EMU	1.2	-6.4	6.6	2.7	1.9	-6.4	2.9	-3.3	5.4	
Credit growth										
Non-financial corporations	4.2	3.2	-2.8	2.6	5.1	2.9	-5.9	-3.9	-1.6	
Loans for house purchase	7.3	7.3	6.9	5.7	5.3	7.3	7.3	4.2	2.2	
Consumer credit	5.0	4.3	6.3	5.7	4.9	4.1	4.8	-3.1	-0.2	
Probability of default (PD)*										
Non-financial corporations	1.0	6.0	2.4	1.8	1.9	6.7	8.3	3.3	2.5	
Loans for house purchase	0.6	1.9	1.3	0.9	0.9	2.4	3.9	2.6	2.2	
Consumer credit	3.1	5.4	3.8	3.2	3.3	5.7	6.9	5.6	5.2	
Loss given default (LGD)										
Non-financial corporations	32	32	38	40	38	32	44	53	50	
Loans for house purchase	15	15	21	24	23	15	24	35	33	
Consumer credit	42	42	50	50	48	42	55	65	62	
Asset markets										
3M PRIBOR	2.1	0.8	0.4	1.1	1.2	0.8	-0.3	-1.1	0.3	
5Y GB yield	1.5	0.7	0.7	1.2	1.2	0.7	0.5	0.5	0.9	
3M EURIBOR	-0.4	-0.4	-0.5	-0.5	-0.5	-0.4	-0.5	-0.5	-0.5	
5Y EUR GB yield	-0.6	-0.6	-0.2	-0.3	-0.3	-0.6	-0.2	-0.3	-0.3	
Residential property prices	9.2	8.2	2.6	1.4	2.3	8.3	-0.8	-7.7	0.1	

Source: CNB, CCR, BRCI

Note: The figures for 2023 are only up to Q2. Actual values make up half of 2020. * 12-month unaveraged forward-looking indicator of the probability of default at the end of the given period.

75 The time series of the variables for the third year of the *Baseline Scenario* and all three years of the *Adverse Scenario* were created solely for stress testing purposes. For this reason, neither the *Baseline Scenario* beyond the forecast horizon, nor the *Adverse Scenario* is the CNB's official forecast.

76 Compared with the *Adverse Scenarios* previously used by the CNB, the one employed here has a stronger contextual linkage with the potential consequences of the current coronavirus crisis, were it to go on for an extended period of time. The modelling system is unchanged from [FSR 2019/2020](#), and the modelling of credit losses is still based, among other things, on an assumption of perfect foresight regarding the future evolution of the key credit risk parameters, which allows for the necessary level of conservatism.

77 Given the termination of the statutory moratorium on 31 October 2020, neither scenario assumes its renewal.

The *Adverse Scenario* assumes a renewed drop in economic activity starting in 2021 H2

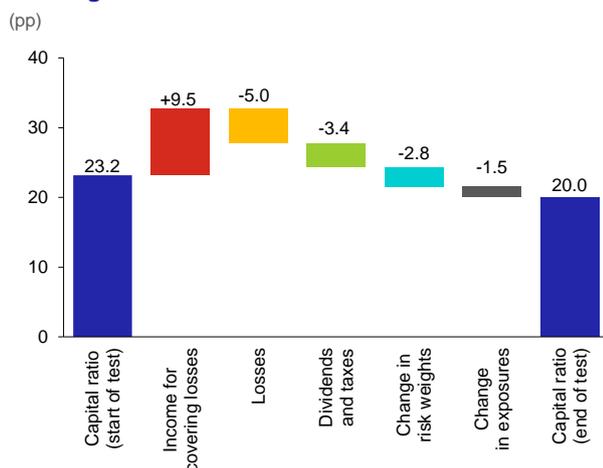
In the first four quarters, the scenario follows the CNB's forecast.⁷⁸ Economic activity records a hypothetical further drop in 2021 H2 (see [Chart III.15](#)), which leads to increased credit losses. The CNB responds to the hypothetical drop in economic activity and the increased credit losses by continuing to ease monetary policy and releasing the countercyclical capital buffer. The economic situation starts to improve in 2022 H2. The GDP level reaches 95% of the end-2019 level at the test horizon. Banks' profitability is hit by a rise in credit losses caused by growth in the probability of default (PD) and loss given default (LGD) and a decrease in interest margins due to persisting low interest rates. The loan volume remains unchanged at the test horizon, but structurally there is a decline in loans to NFCs, which, however, is offset by growth in mortgage loans, caused, among other things, by low interest rates and the attractiveness of property investment as a substitute for investment in financial assets (see [Table III.1](#)).

In the *Baseline Scenario*, the capital ratio declines to 20%

The banking sector enters the stress test with its highest-ever capital ratio, which was positively affected by compliance with the recommendation not to pay dividends.⁷⁹ The capital ratio decreases to 20% at the test horizon (see [Chart III.16](#)). Income for covering losses (+9.5 pp) is sufficient to cover the credit losses (-5.0 pp), the increase in risk weights (-2.8 pp) and the growth in exposures (-1.5 pp). The total fall in the capital ratio is thus due basically to dividends (CZK 65.7 billion) and taxes (-3.4 pp in total). Although the banking sector remains profitable throughout the test (see [Table III.2](#)), the increased loan losses are felt most strongly in 2021,⁸⁰ when pre-tax profit declines to CZK 21.2 billion.

Chart III.16

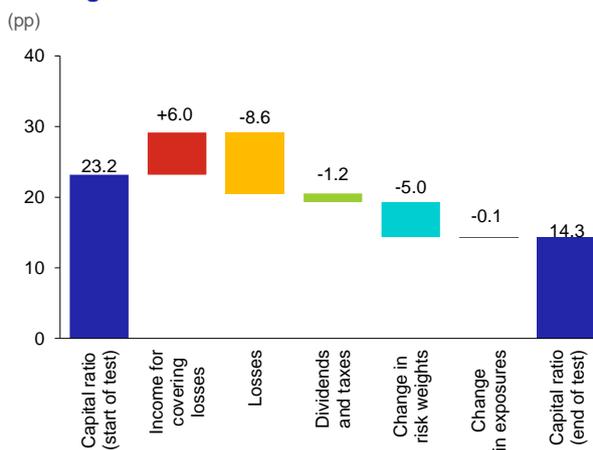
Decomposition of the change in the capital ratio of the banking sector in the *Baseline Scenario*



Source: CNB

Chart III.17

Decomposition of the change in the capital ratio of the banking sector in the *Adverse Scenario*



Source: CNB

In the *Adverse Scenario*, income is not sufficient to cover the credit losses, but the capital ratio does not fall below the regulatory minimum

Unlike in the *Baseline Scenario*, the banking sector is exposed to a second decline in economic activity. The total capital ratio decreases to 14.3% at the test horizon (see [Chart III.17](#)), with credit losses (-8.6 pp) and an increase in risk weights (-5.0 pp) having the strongest adverse impacts. Income for covering losses (+6.0 pp) is not sufficient to cover the credit losses, as it is seriously weakened by the low interest rate environment in the scenario. Dividend payouts are lower than in the *Baseline Scenario* (CZK 27.0 billion), as banks expect further growth in the credit default rate from the start of the test and create relevant provisions. Dividends combined with taxes reduce the capital ratio at the test horizon by 1.2 pp. The effect of the volume of exposures on capital is minimal in the *Adverse Scenario* (-0.1 pp). The banking sector records a profit only in 2020 in the period under review (see [Table III.2](#)). In the other years it makes a loss. The loss in the last half-year of the scenario is very low, as provisioning decreases, the credit market recovers and interest rates increase.

⁷⁸ The changes to the macroeconomic developments in the current [Inflation Report IV/2020](#) compared with in [Inflation Report III/2020](#) have no major impact on aggregate credit losses.

⁷⁹ For details, see <https://www.cnb.cz/en/financial-stability/macprudential-policy/the-countercyclical-capital-buffer/provision-of-a-general-nature-ib-2020/>. Although this recommendation is not expected to be extended in either scenario, banks pay dividends only at a level which prevents their capital ratios from falling below the end-2019 levels.

⁸⁰ The classification of loans under IFRS 9 is given in [Table III.2 CB](#) for both the *Baseline Scenario* and the *Adverse Scenario*.

The maintenance of a capital surplus enables compliance with the regulatory capital minimum in the *Adverse Scenario*

The resulting capital ratio is above the regulatory minimum of 8% in both scenarios. However, if banks had no capital surpluses above the regulatory requirements at the start of the test (in mid-2020 they had a surplus of 8.2 pp), the capital ratio would drop below the regulatory minimum in the *Adverse Scenario* (see [Chart III.18](#)). This shows that the capital surplus is an important element of the resilience of the banking sector. In the *Baseline Scenario*, if the capital surplus were hypothetically paid out, the volume of capital would be above the total supervisory review and evaluation process capital requirement (TSCR, the sum of the Pillar 1 and Pillar 2 requirements), but the capital conservation buffer and part of the systemic risk buffer would be used up.

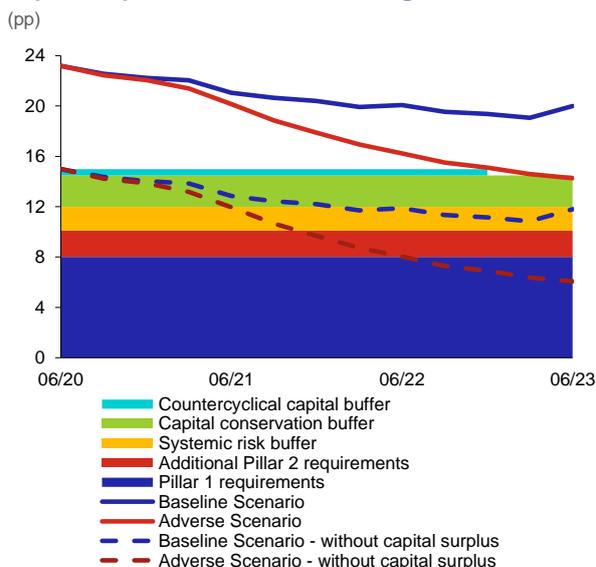
Table III.2
Impact of the alternative scenarios on the banking sector

	Actual value		Baseline Scenario				Adverse Scenario			
	2019	2020	2021	2022	6/2023	2020	2021	2022	6/2023	
Provisions for non-performing loans (credit losses)										
CZK billions	9.4	-5.5	-51.5	-33.0	-12.2	-5.5	-62.4	-119.6	-36.9	
Provisions for performing loans										
CZK billions	0.0	-14.8	6.5	6.4	-0.2	-40.2	-54.9	49.1	15.7	
Provisions total										
CZK billions	9.4	-20.4	-45.0	-26.6	-12.4	-45.7	-117.3	-70.5	-21.1	
% of assets	0.1	-0.2	-0.5	-0.3	-0.1	-0.5	-1.4	-0.8	-0.3	
Profit/loss from market risks										
CZK billions	6.4	3.5	-1.6	-1.8	0.7	3.5	0.3	-0.3	-2.5	
Earnings for covering losses (adjusted operating profit)										
CZK billions	104.6	74.0	67.8	88.5	49.8	73.7	52.7	41.3	21.9	
Pre-tax profit/loss										
CZK billions	108.8	57.1	21.2	60.1	38.1	31.4	-64.4	-29.7	-1.9	
% of assets	1.4	0.7	0.2	0.7	0.4	0.4	-0.8	-0.4	0.0	
Capital ratio at end of period in %										
Total	21.3	22.2	20.4	19.4	20.0	22.1	17.9	15.1	14.3	
Tier 1	20.7	21.6	19.8	18.8	19.4	21.4	17.3	14.6	13.8	
Capital injections										
CZK billions				0.0					2.8	
% of GDP				0.0					0.0	
No. of banks below 8% capital ratio										
				0					5	

Source: CNB

Note: Losses and provisions are presented with a negative sign. Actual values make up half of 2020. The last column of the forecast corresponds to the results for 2023 H1.

Chart III.18
Impact of the scenarios and interactions with the capital requirements of the banking sector



Source: CNB

Note: The illustration depicts the macroprudential policy response represented by a reduction or release of the countercyclical capital buffer in the *Adverse Scenario* and the impact of the *Adverse Scenario* in the absence of a voluntary capital surplus.

IV. MACROPRUDENTIAL POLICY

Pursuant to Article 2 of the Act on the CNB, the CNB maintains financial stability and sees to the sound operation of the financial system in the Czech Republic. To achieve these objectives, it conducts macroprudential policy. To this end, it uses a set of macroprudential instruments focused mainly on the banking sector, which is the largest sector in the domestic financial system. This section evaluates the current position of the Czech economy in the financial cycle, the resilience of the domestic financial sector to the risks identified, and the tasks and recommendations arising from analyses for the settings of the CNB's macroprudential policy instruments.

IV.1 THE CNB'S MACROPRUDENTIAL POLICY OBJECTIVES AND INSTRUMENTS

The CNB sets macroprudential policy instruments on the basis of an assessment of the intensity of systemic risks. In conformity with an ESRB recommendation, it focuses on the fulfilment of intermediate objectives (see [Table IV.1](#)) reflecting the existence of several sources of systemic risk and their own transmission mechanisms.

Table IV.1

Summary of intermediate objectives and macroprudential instruments and evolution of specific risks

Intermediate objectives	Specific risk	Existence of specific risk in CZ	Key instruments	Applied in CZ	Detailed information
Mitigate excessive credit growth and leverage	Strong credit recovery accompanied by easing of lending standards	Yes	Countercyclical capital buffer	Yes, lowered to 1.0% from 1 April 2020 and to 0.5% from 1 July 2020	IV.2
	Rising leverage, rising off-balance sheet risk	Potential	Macroprudential leverage ratio	No	-
	Low risk weights of significant credit portfolios	Potential	Macroprudential tool to mitigate systemic risk at Member State level (Article 458 CRR)	No	-
	Elevated growth in loans and risks in specific sector	Potential	Sectoral capital requirements (in particular real estate exposure)	Not as yet, CNB reacts to property exposure risks with other instruments	-
	Risk of spiral between property prices and property financing loans	Yes	LTV caps	Yes, eased on 1 April 2020	IV.3
	Risk of excessive household indebtedness and debt service	Yes	LTI, DTI, LSTI, DSTI caps	No, DTI abolished from 1 April 2020, DSTI abolished from 1 July 2020	IV.3
Mitigate excessive maturity mismatch and illiquidity	Long-term liquidity risk	Potential	Macroprudential NSFR	Microprudential general requirement since 2016	III.2
	Short-term liquidity risk	No	Macroprudential LCR	Microprudential minimum standard since 2015	III.2
Limit exposure concentrations	Property exposure concentration	Potential	Systemic risk buffer	Not as yet, CNB reacts to property exposure risks with other instruments	-
	Sovereign exposure concentration	Yes	Public finance stress test	Yes, option of additional capital requirements in event of elevated sovereign risk, since 2015	-
Limit misaligned incentives	Potential impacts of problems in SIFIs on financial market stability and real economy	Yes	SIFI capital surcharges (G-SII and O-SII buffer)	No, O-SIIs identified, different instrument applied	IV.1
		Yes	Systemic risk buffer	Yes, since 2017 for five banks	IV.1
Strengthen resilience of financial infrastructures	Counterparty default risk, interconnectedness of financial infrastructures	No	Margin and haircut requirements on CCP clearing	No	-
			Increased disclosure	No	-
			Systemic risk buffer	No	-

Source: CNB

Note: The main goal of these instruments is to strengthen the resilience of the banking sector, not to mitigate systemic risk. The classification of intermediate objectives and instruments is based on Recommendation of the ESRB of 4 April 2013 on intermediate objectives and instruments of macroprudential policy (ESRB/2013/1).

Among the most important macroprudential instruments in the current regulatory framework defined in CRD IV/CRR are capital buffers, which are applied on top of the 8% minimum capital requirement, and the Pillar 2 requirements (see [section III.2.1](#)). The CNB currently applies three capital buffers to increase the resilience of the banking sector (see [Table IV.2](#)). The buffer rates reflect the cyclical and structural characteristics of the Czech banking sector.

The capital conservation buffer (CCoB) and the countercyclical capital buffer (CCyB) are used to absorb losses with the aim of mitigating the negative impacts of shocks on the functioning of the banking sector. The CCoB has applied to all institutions in the Czech Republic since 2014 at a rate of 2.5%. The CCyB is created when cyclical risk are accumulating in institutions' balance sheets and released when those risks are decreasing. A rate of 0.5% has been applied since 1 July 2020 (see [section IV.2](#)). The systemic risk buffer (SRB) can be used to suppress various sources of structural risks to banking sector stability. The CNB currently uses it to mitigate the risks associated with the existence of systemically important institutions. Since 2017, five systemically important institutions have been required to maintain a non-zero buffer, with rates ranging between 1% and 3%. After the transposition of CRD V, however, it will only be possible to use the capital buffer for other systemically important institutions (the O-SII buffer) to mitigate risks associated with the systemic importance of institutions.

At the time of publication of this document, the sum of the capital buffers – the combined capital buffer – ranges between 3.0% and 6.0% for individual institutions depending on their systemic importance. The CNB considers it natural that, following the potential release of the CCyB, institutions would temporarily not maintain the combined capital buffer in full and would use the CCoB and the SRB in order to cover losses or prevent a credit crunch in the event of strongly adverse developments like the economy is currently experiencing.

Table IV.2
Summary of capital buffers in the Czech Republic

(%)

Capital buffer	Rate	Date of effect
Capital conservation buffer (CCoB)	2.50	2014
Countercyclical capital buffer (CCyB)	0.50	1 July 2020
Systemic risk buffer (SRB)	1.00–3.00	2014
Buffer for other systemically important institutions (O-SIIs)	-	-

Source: CNB

Since 2015, the CNB has been applying instruments taking the form of recommended credit ratio limits in order to mitigate risks associated with the provision of retail loans secured by residential property. [Section IV.3](#) provides a more detailed description of the risks associated with the residential property market and mortgage lending and of the reasons for easing the instruments used to mitigate these risks.

IV.2 THE COUNTERCYCLICAL CAPITAL BUFFER

The CNB has been setting the countercyclical capital buffer (CCyB) since 2014 with the aim of eliminating the negative impacts of the financial cycle on the banking sector and thus preventing the transmission of negative shocks to the real economy. Given the wide range of manifestations of the financial cycle in the real economy and the financial sector, the CNB estimates the appropriate CCyB rate on the basis of a comprehensive assessment of a set of macrofinancial and bank-specific indicators. The CNB regards as appropriate a CCyB rate that is sufficient to cover the potential losses stemming from the materialisation of cyclical risks while maintaining banks' capital capacity for lending at a sufficient level.⁸¹

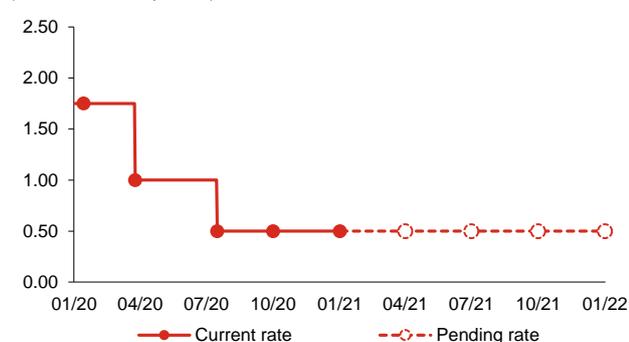
The CCyB rate was lowered to 0.5% in response to the coronavirus pandemic

In the first half of 2020, the CNB responded to the emerging economic downturn and markedly worse economic outlook caused by the coronavirus pandemic by adopting a set of stabilisation and support measures (see section II.1). One such measure was a gradual reduction of the CCyB rate from 1.75% to 0.5%.⁸² This was intended to send out a signal that banks had sufficient room to cover the expected growth in the business sector's operational funding needs despite the expected worsening of credit portfolio quality. At the same time, the CNB recommended that banks defer dividend payouts and any other action that might jeopardise their resilience until both the acute and longer-term impacts of the pandemic disappear.

Chart IV.1

Current and pending CCyB rate in the Czech Republic

(% of total risk exposure)

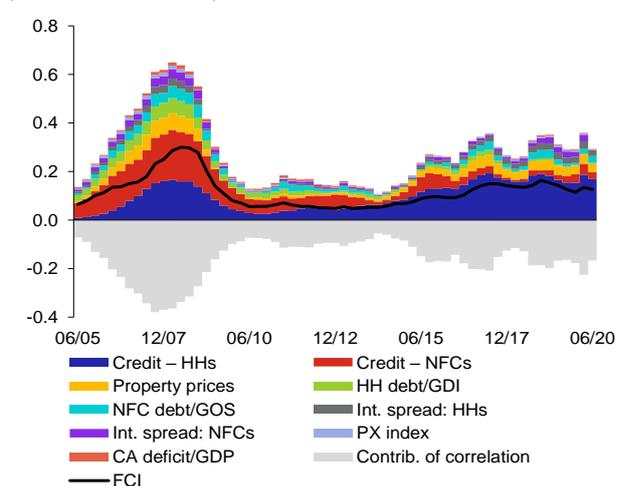


Source: CNB

Chart IV.2

Financial cycle indicator

(0 minimum, 1 maximum)



Source: CNB, CZSO

Note: GDI denotes gross disposable income of households, GOS stands for gross operating surplus of non-financial corporations. The interest spread is the difference between the client rate on new loans and the 3M PRIBOR. The negative contribution of the cross-correlation structure to the FCI value (the loss due to imperfect correlation of the subindicators) is due to the difference between the current FCI value and the upper bound, which assumes perfect correlation between all indicators. Weak correlation between the subindicators is reflected in growth in the negative contribution to the overall FCI value. The method for constructing the FCI is described in Plašil, M., Seidler, J., Hlaváč, P. (2016): *A New Measure of the Financial Cycle: Application to the Czech Republic*, *Eastern European Economics*, 54(4).

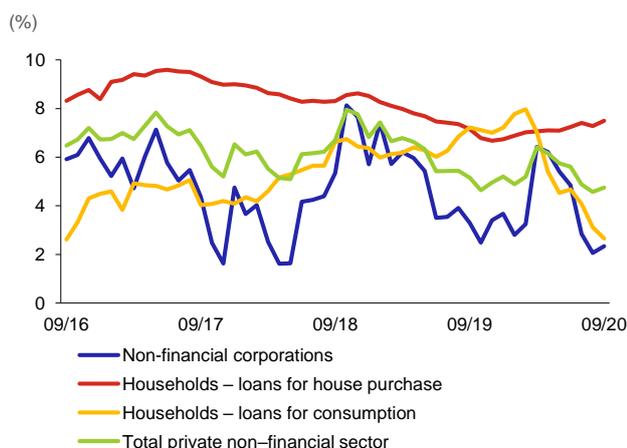
The value of the financial cycle indicator decreased but remained above average

The aggregate financial cycle indicator (FCI) serves as a starting point for assessing the position of the domestic economy in the financial cycle and the scale of newly accepted cyclical risks in banks' balance sheets. Its value decreased in 2020 Q2 in both year-on-year and quarter-on-quarter terms, but remained above average by historical comparison (see Chart IV.2). This was due mainly to still relatively strong credit growth in the household sector (see Chart IV.3). However, the aggregate FCI can be expected to decline further in the quarters ahead due to the economic deterioration (see section II.1).

⁸¹ For more details on the setting of the CCyB rate see the methodological document *The CNB's approach to setting the countercyclical capital buffer*, which can be found on the CNB website, and Hájek, J., Frait, J., Plašil, M. (2017): *The Countercyclical Capital Buffer in the Czech Republic*, thematic article, FSR 2016/2017.

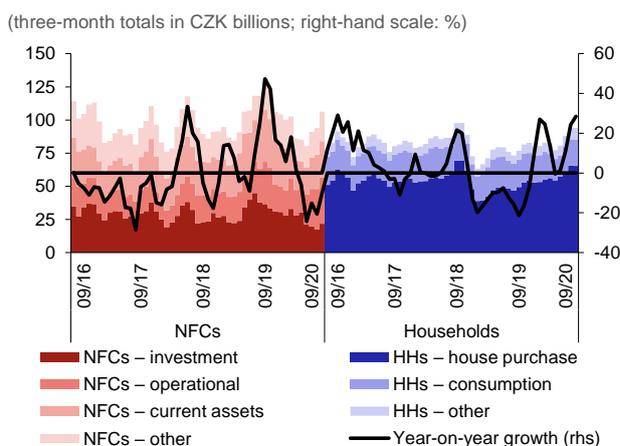
⁸² The history of CCyB rate decisions is available at: <https://www.cnb.cz/en/financial-stability/macroprudential-policy/the-countercyclical-capital-buffer/>.

Chart IV.3
Year-on-year growth in bank loans to the private non-financial sector



Source: CNB

Chart IV.4
Amounts of genuinely new bank loans to the private non-financial sector



Source: CNB

Note: Genuinely new loans comprise increases in existing loans and are adjusted for refinanced and refixed loans. The growth rate is calculated using three-month totals.

Credit growth in the private non-financial sector has weakened, but the trends differ across segments

The growth rate of loans to the private non-financial sector decreased in Q2 and Q3 (see [Chart IV.3](#)). This decline was due mainly to lower demand for investment loans in the non-financial corporations (NFC) sector and for consumer credit in the household sector. By contrast, growth in loans to households for house purchase strengthened. This is confirmed by growth in genuinely new loans (see [Chart IV.4](#)). They increased by a full 28.5% year on year in September 2020 in the case of loans to households. By contrast, genuinely new loans to NFCs dropped by 10.1% year on year in September 2020, due mainly to low new investment borrowing (see [section II.2](#)), which fell by more than 40%.⁸³

The cyclical risks in the banking sector's balance sheet have not decreased as yet, so banks are preparing for growth in losses

Despite the decreasing magnitude of newly accepted cyclical risks (the falling FCI and weakening credit growth), the total amount of cyclical risks accumulated in banks' balance sheets remains high. However, their materialisation has been postponed and reduced by supportive economic policy measures. In anticipation of rising losses and worsening loan portfolio quality, banks have tightened their credit standards in all segments of the credit market (see [Chart IV.1 CB](#)) and increased provisioning (see [Chart IV.5](#)). From the long-term perspective, though, loan impairment losses are not excessive and the ratio of provisions to loans remains low for now (see [section III.2](#)). More prudent behaviour of banks is also evidenced by one of the banking sector vulnerability indicators – the ratio of the interest margin to provisions per unit of credit⁸⁴ – which has fallen significantly compared with the end of 2019, due mainly to higher provisioning (see [Chart IV.6](#)).

A continued decline in risk weights may foster greater vulnerability of the banking sector

Risk weights on loan portfolios under the IRB approach are an important indicator for assessing the banking sector's vulnerability over the financial cycle.⁸⁵ In recent years, the risk weights on IRB loan portfolios have fallen due to favourable cyclical developments, leading to lower total risk-weighted assets and hence a lower capital requirement. When setting the CCyB rate to cover the increased vulnerability of banks caused by renewed growth in cyclically reduced risk weights, the CNB takes into account the difference between the actual and the hypothetical capital requirement.⁸⁶ For regulatory and methodological reasons, risk weights respond to economic developments with a lag, so the sudden slowdown in the domestic economy has not been reflected in their growth yet (see [Chart IV.7](#)). On the contrary, the risk weights in the three main segments have declined further, particularly in the case of loans to NFCs.⁸⁷ At the end of

⁸³ The credit growth rates are smoothed by the three-month moving average.

⁸⁴ The indicator's construction, properties and relevance to CCyB rate decisions are discussed in Pfeifer, L., Hodula, M. (2018): *A Profit-to-Provisioning Approach to Setting the Countercyclical Capital Buffer: The Czech Example*, CNB Working Paper 5/2018, Czech National Bank.

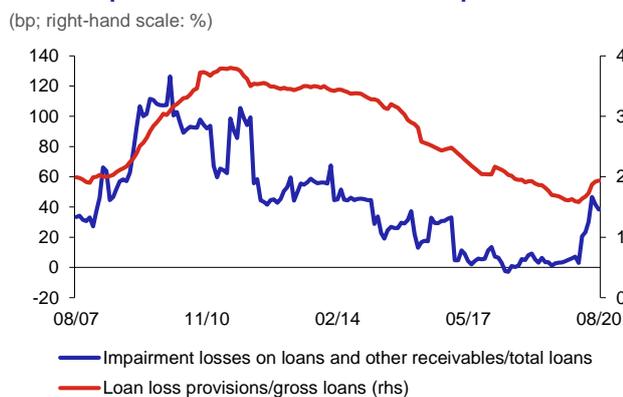
⁸⁵ The IRB (internal ratings based) approach is a Basel II approach to determining the capital adequacy of banks.

⁸⁶ Specifically, the CNB monitors the difference between the combined capital requirement with risk weights fixed at the levels observed at the start of the strongly expansionary phase of the financial cycle, and the combined capital requirement in the current period.

⁸⁷ This sharp drop reflects a change to the CRR broadening the set of NFCs to which banks may apply the SME supporting factor, and the effect of state guarantees and banks' higher collateral requirements, which together reduce the LGD risk factor.

2020 Q2, the actual capital requirement for the largest IRB loan portfolios was CZK 201 billion, while the hypothetical capital requirement based on the application of the risk weights observed at the start of the expansionary phase of the financial cycle (2015 Q4) was CZK 243.5 billion (see [Chart IV.6](#)). The difference between the two requirements is around CZK 42.5 billion, or 1.64% of the total risk-weighted exposure.⁸⁸ The current economic deterioration will probably be accompanied by a drop in credit portfolio quality and growth in the default rate and lead to a gradual rise in risk weights in the quarters ahead.

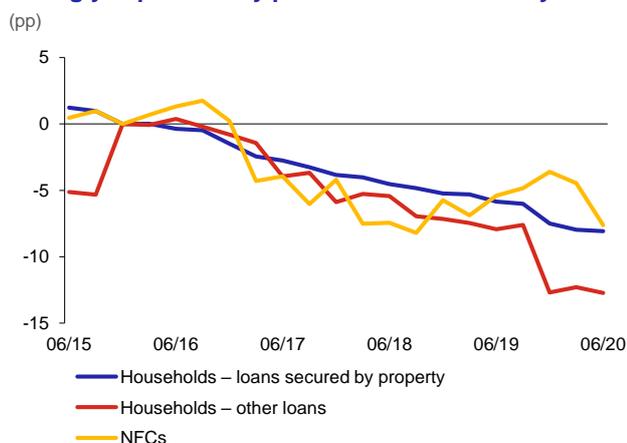
Chart IV.5
Asset impairment losses and loan loss provisions



Source: CNB

Note: Impairment losses are the ratio of growth in net impaired loans to total bank loans. Data adjusted for exposures to the Czech Export Bank and the Czech-Moravian Guarantee and Development Bank.

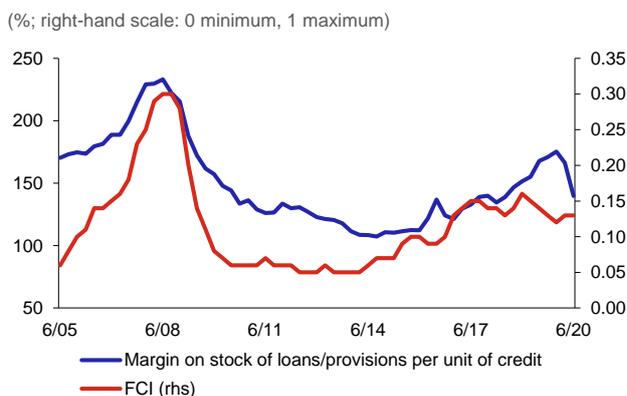
Chart IV.7
Change in risk weights compared with the start of the strongly expansionary phase of the financial cycle



Source: CNB

Note: According to the CNB's analyses, the strongly expansionary phase of the financial cycle started in 2015 Q4.

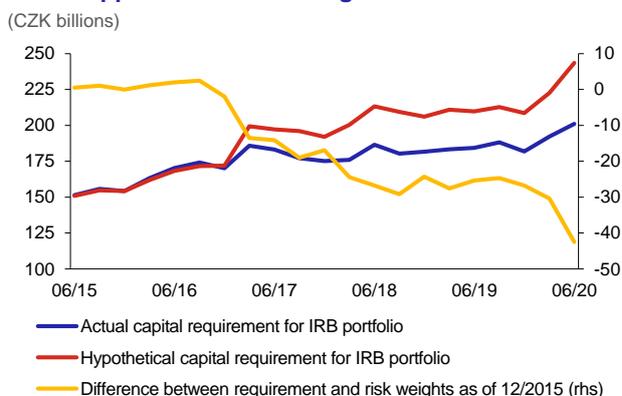
Chart IV.6
Ratio of the interest margin to provisions per unit of credit and the FCI



Source: CNB

Note: The margin on the stock of loans is the difference between the client lending rate and the client deposit rate.

Chart IV.8
Actual and hypothetical capital requirements based on the application of risk weights from 12/2015



Source: CNB

Note: Capital requirement for the following IRB portfolios reported in the given period: retail exposures – non-SME exposures secured by property, and retail exposures – other non-SME and corporate exposures. The actual capital requirement is based on the actually observed risk weights and exposures. The hypothetical capital requirement is calculated on the basis of the risk weights as of the beginning of the expansionary phase of the financial cycle (12/2015) and the actually observed exposures.

The CCyB rate should cover the monitored effects of the cyclical risks in the banking sector's balance sheets

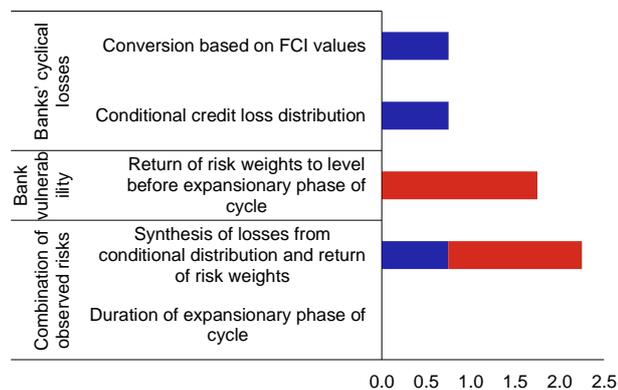
An indicative conversion of the FCI value (0.127) into the CCyB rate implies a rate of 0.75% (see [Chart IV.9](#), line *Conversion based on FCI values*, and [Table IV.1 CB](#)). This rate is confirmed by another estimation method that compares the prudential estimate of unexpected losses with total risk-weighted assets (see [Chart IV.9](#), line *Conditional credit loss distribution*). These approaches primarily provide information about the possible size of unexpected credit losses associated with the effect of the financial cycle. In order to comprehensively evaluate the optimum CCyB rate, it is

⁸⁸ Risk weights may decrease because of other factors, such as regulatory ones, in addition to cyclical factors. The figure of CZK 42 billion should thus be seen as the upper bound on the estimated cyclical effect of risk weights.

also desirable – especially in the buffer creation phase – to take into account the cyclically low risk weights on IRB loan portfolios and the impacts of their potential return to higher levels on growth in the capital requirement. The simple sum of the potential unexpected losses (CZK 16 billion) and the potential growth in risk weights to the level observed at the start of the strongly expansionary phase of the financial cycle adjusted⁸⁹ for NPLs (CZK 41.9 billion) implies a capital need of CZK 57.9 billion. This amount of capital represents 2.23% of risk-weighted assets as of June 2020 (CZK 2,537 billion), implying a CCyB rate of 2.25% (see [Chart IV.9](#)).

Chart IV.9
CCyB rate covering financial cycle effects monitored

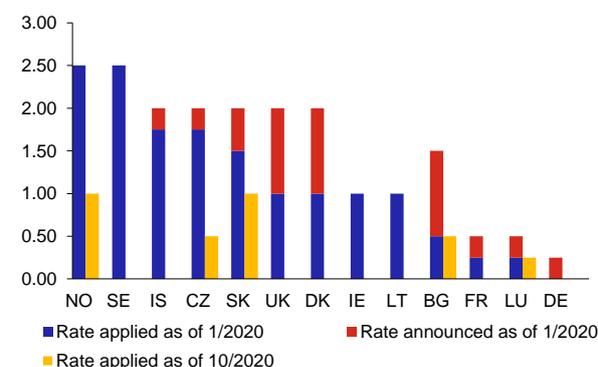
(% of total risk exposure)



Source: CNB

Chart IV.10
CCyB rates in European countries

(% of total risk exposure)



Source: ESRB, data as of 2 November 2020

Note: Luxembourg has not lowered its CCyB rate. The rate will increase to 0.5% on 1 January 2021.

The CNB has left the CCyB rate unchanged at 0.5% but remains ready to zero it immediately if necessary

The above quantitative approaches imply a need to set the CCyB rate at 2.25%. However, the CNB – in line with its forward-looking approach – lowered the CCyB rate to 0.5% this year in reaction to a marked rise in financial market tensions, a significant worsening of the outlook for the domestic economy and a higher probability of credit losses in the quarters ahead. In doing so, it took into account the capital surplus in the banking sector, which it currently considers sufficient to absorb the losses implied by the *Baseline Scenario* (see [section III.4](#)) and maintain smooth lending. This allows it to keep the CCyB rate at 0.5% at the moment. If a much more adverse scenario materialises, the CNB is ready to release the existing buffer fully. Conversely, if the pandemic-related risks subside, economic activity recovers and risks continue to materialise to only a limited extent, it will be desirable to gradually increase the CCyB rate. In line with the CNB's previous communications, it can be expected that, as economic activity stabilises, the CCyB rate will be moved relatively soon to the level covering the usual cyclical risks, which the CNB puts at 1%.

Other European countries also lowered their CCyB rates in 2020

In an effort to ease conditions and maintain a sufficient supply of credit, other European countries also lowered their CCyB rates (see [Chart IV.10](#)). All countries (except Luxembourg) cancelled the CCyB rate increases they had planned for the start of 2020. Most of the countries also fully released their applicable CCyBs, albeit from lower rates than in the Czech Republic or with generally lower capital surpluses in their banking sectors.

Deviations of the credit-to-GDP ratio from its trend do not provide a suitable guide to increasing or releasing the CCyB for the Czech Republic

In accordance with an ESRB recommendation,⁹⁰ the CNB should take into account the credit-to-GDP ratio and its deviation from the long-term trend when determining the position in the financial cycle and deciding on the CCyB rate. In 2020 Q2, the ratio was 90.1% and the relevant gap -2.0 pp, implying a zero CCyB rate. The CNB has long maintained that this approach is not suitable for assessing cyclical risks in the Czech economy and is subject to a range of shortcomings which reduce its reliability.⁹¹ The additional gap (the expansionary credit gap), which uses an alternative approach to determining the long-term trend and partially eliminates the problems associated with the recommended methodology, was 2.2 pp, which equates to a rate of 0.25% (see [Chart IV.2 CB](#)). However, this indicator must also be viewed as only a very rough way of assessing the position in the financial cycle, with limited direct usefulness as regards deciding on the CCyB rate.

⁸⁹ Around CZK 0.6 billion.

⁹⁰ European Systemic Risk Board (ESRB, 2014): Recommendation (ESRB/2014/1) on guidance for setting countercyclical buffer rates.

⁹¹ A critique of this approach is presented in *The CNB's Approach to Setting the Countercyclical Capital Buffer* (Appendix 1) and in Geršl, A. and Seidler, J: *Excessive Credit Growth as an Indicator of Financial (In)Stability and its Use in Macroprudential Policy*, thematic article, FSR 2010/2011.

IV.3 RISKS ASSOCIATED WITH PROPERTY MARKETS

IV.3.1 Risks associated with residential property markets

The CNB evaluates risks associated with the residential property market on an ongoing basis and responds to them where necessary by applying its tools

Rising house prices and the related growth in loans for house purchase remain a source of systemic risks. The CNB responds to these risks by applying instruments of macroprudential policy and microprudential supervision. The assessment of the risks is based on the set of rules contained in the Official Information *Recommendation on the management of risks associated with the provision of retail loans secured by residential property* (the “Recommendation”).⁹² Besides conducting a detailed assessment of newly accepted risks, the CNB carefully analyses the impacts of the current economic situation on the materialisation of previously accepted credit risks in financial institutions’ balance sheets (see [sections II and III](#)).

In connection with the coronavirus pandemic, the CNB eased or abolished the recommended limits for borrower-based measures...

Based on expectations of a significant change in market conditions, the CNB Bank Board at its meeting on 1 April 2020 eased the LTV and DSTI limits and abolished the DTI limit. On 18 June 2020, the CNB Bank Board also decided to abolish the DSTI limit. Only the recommended LTV limit of 90% remained in place (with a 5% exemption for mortgage loans with an LTV above 90%).

...on the assumption that the easing or abolition of the recommended limits does not result in imprudent provision mortgage lending

The CNB also warned mortgage lenders that its analyses indicate that loans with a DSTI ratio of over 40% or a DTI ratio of over eight times net income are associated with significantly increased credit risk. Owing to the expected economic developments and the increased risk of a long-term partial loss of income, even loans with a DSTI ratio of below 40% or a DTI ratio of below eight times net income may show increased risks in certain categories of households. Despite the easing of the recommended limits, the CNB expects lenders to continue carefully assessing the risks associated with loans secured by residential property and proceed very prudently when assessing loan applications.

Despite the onset of the second wave of the pandemic, new loans for house purchase remained high...

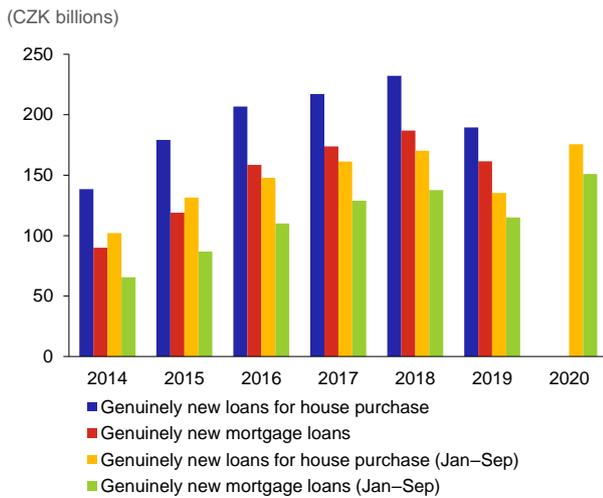
The deteriorating economic outlook and gradually worsening labour market situation have yet to be reflected in the mortgage market. The volume of genuinely new housing loans and mortgage loans (excluding refinanced and refixed loans) was at a record high in the first nine months of 2020 (see [Chart IV.11](#)). Following a temporary decline in 2019 H1, the mortgage market thus continued to follow a strong upward trend despite the pandemic (see [Chart IV.12](#)).⁹³ The volume of new mortgage loans, which market participants monitor mainly by means of Fincentrum Hypoindex data, has started to be positively influenced by a slight upward trend in mortgage refinancing, probably linked with the decline in interest rates. However, it can be expected that the impacts of the coronavirus pandemic will manifest themselves in the longer term and lending for house purchase will decrease (see [section II.2](#)). The introduction of the loan moratorium led to a significant increase (of around CZK 130 billion) in other renegotiations⁹⁴ of contractual terms between lenders and clients in 2020 Q2 and Q3 (see [Chart IV.12](#), line: *Other renegotiated loans*).

92 The main source of information for analyses in this field is the semi-annual *Survey of loans secured by residential property* (the “Survey”). It contains detailed information on individual loans and enables the CNB to check compliance with the recommended limits across the banking sector.

93 This is due most of all to increased demand for residential property as an asset in an environment of exceptionally low nominal and real interest rates and uncertainty regarding the long-term returns on risky financial assets (see [section II.1](#)).

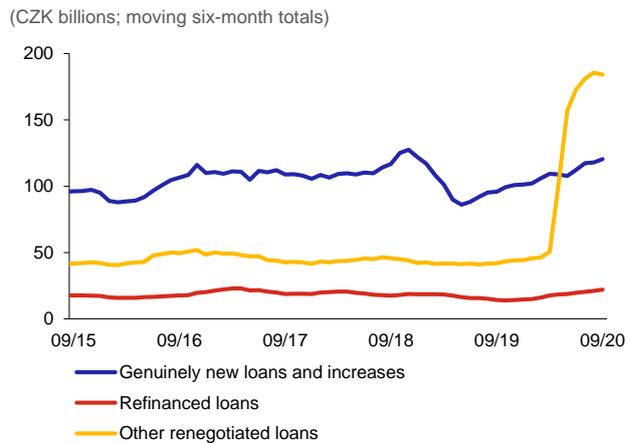
94 This category mainly includes refixations for existing contracts under normal circumstances.

Chart IV.11
Bank loans for house purchase and mortgage loans



Source: CNB
Note: All series include loan increases.

Chart IV.12
Six-month totals of components of new bank loans for house purchase

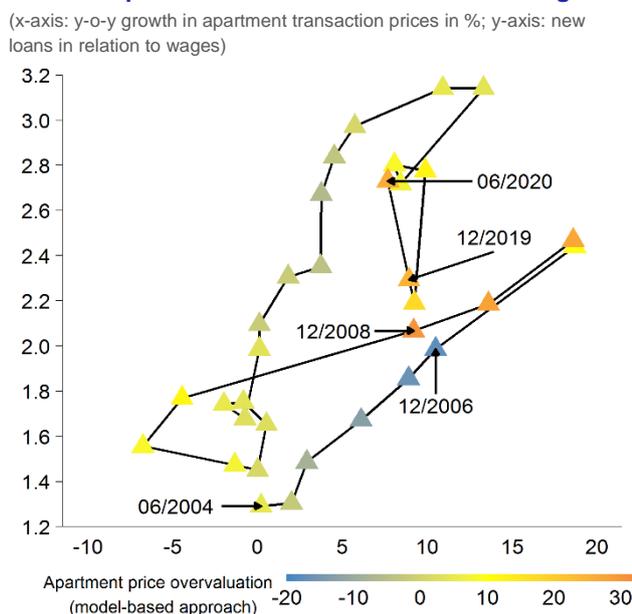


Source: CNB

The spiral between loans for house purchase and property prices has started to intensify again, though probably only temporarily

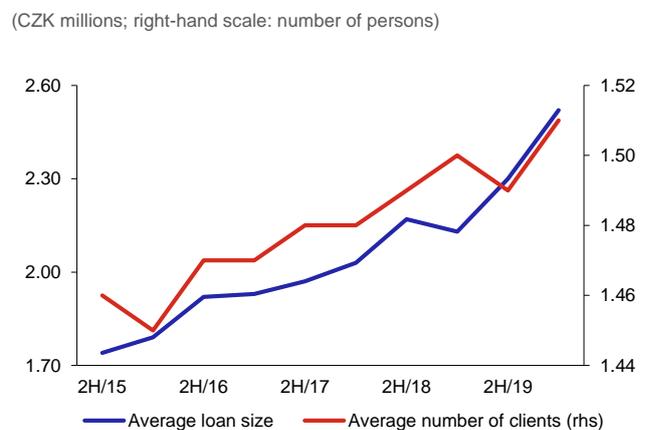
In 2020, there was renewed movement up the spiral between debt funding of property and optimistic expectations regarding future property price growth (see Chart IV.13). A downturn in household income growth, a deterioration in consumer and investment sentiment and a decline in demand for new mortgage loans for owner-occupied housing can be expected due to the second wave of the pandemic. Overall, this should slow or halt the spiral.

Chart IV.13
Spiral between apartment price growth and new loans for house purchase in relation to the level of wages



Source: CNB
Note: The spiral is derived on the basis of apartment price growth and the amount of new loans for house purchase in relation to the level of wages. Given the loan moratorium, the value of new loans for house purchase in relation to the level of wages as of June 2020 is only an estimate.

Chart IV.14
Average mortgage loan size and number of declared incomes



Source: CNB
Note: Survey data.

The average loan size rose significantly in line with the growth in property prices in 2020

In 2020 H1, growth in the average loan size outpaced growth in residential property prices (see [section II.1](#)), reaching about 18% year on year (see [Chart IV.14](#)). One explanation is that demand for mortgage loans came to a greater extent from high-income households, and these loans were increasingly used to purchase newly built, more expensive properties. A proportion of applicants could also obtain larger loans because their income was calculated on the basis of the previous 3–12 months, including part of 2019, which was a good year. The increase in the DSTI ratio and growth in the number of people who can jointly apply for a loan had a smaller impact as well.

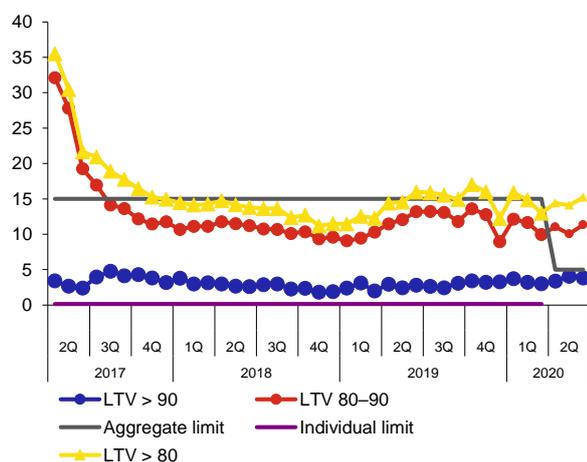
Compliance with the recommended LTV limits remained satisfactory overall...

Under the CNB's Recommendation, in 2020 Q1 mortgage lenders were supposed to comply with an individual LTV limit of 90%, to be exceeded in no cases, and with an aggregate limit defined as 15% of new loans for loans with LTVs of 80%–90%. In 2020 Q2, banks only had to comply with an individual LTV limit of 90%, with a 5% volume exemption. Overall, lenders were broadly compliant with the Recommendation as regards the aggregate and individual limits in 2020 H1. The share of loans with LTVs of over 90% was below the aggregate limit of 5% in 2020 Q2. The sector as a whole was also compliant with the Recommendation in 2020 Q1 (see [Chart IV.15](#)). Some banks continued to provide loans with LTVs of over 100%. The share of these loans in total loans amounted to 2.2% of new loans in 2020 H1 and has remained relatively constant in recent years. Overall, despite the coronavirus pandemic, the LTV distribution of new loans was little changed from the previous monitored years (see [Chart IV.16](#)).

Chart IV.15

Fulfilment of the recommended LTV limits

(share of loans in volume provided in %)



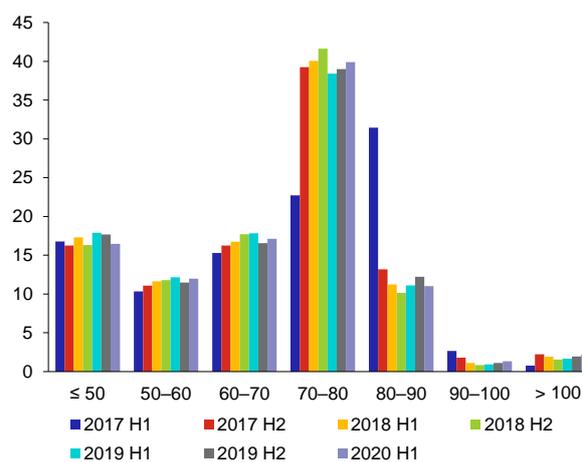
Source: CNB

Note: An aggregate LTV limit of 90% with a 5% volume exemption for new loans has applied since 1 April 2020. The values for the LTV 80–90 and LTV > 80 series for 2020 Q2 are for information only. An individual limit applied until the end of 2020 Q1. It recommended that no loans for house purchase with LTVs of over 90% be provided.

Chart IV.16

LTV distribution of loans

(x-axis: LTV in %, y-axis: share of loans in volume in %)



Source: CNB

Note: Interval closed from the right.

...but the CNB will continue to monitor some risky tendencies

Although most mortgage lenders are compliant with the recommended LTV limits, some adverse tendencies may persist. One of these is the natural tendency of lenders to value collateral on the basis of current market prices, without taking significant account of the potential risk of overvaluation of collateral (see [section II.1](#)). According to the CNB's analyses, the ratio of the estimated value to the purchase price of collateral has long been around one, and this was also the case in 2020 H1 (see [Chart IV.3 CB](#)). In other words, property price growth leads to growth in the value of collateral (V) and as a result, applicants can obtain acceptable LTV values even in the event of a significant increase in the size of the loan sought (L). The CNB will continue to monitor the prudential collateral valuation process.⁹⁵

As regards the DTI and DSTI ratios, lenders also mostly abided by the CNB's Recommendation or its indication of highly risky ratio levels, but some accepted increased risk, especially in 2020 Q2

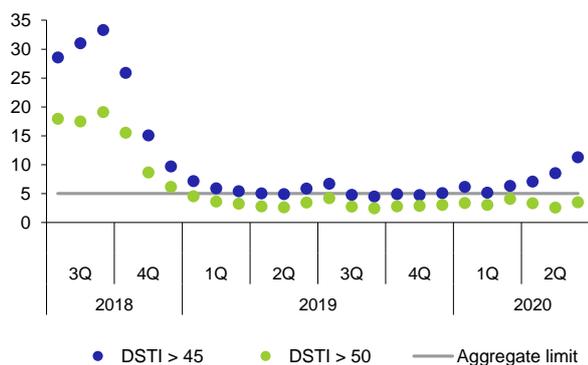
The DSTI limit was 45% in 2020 Q1 and 50% in Q2, with a 5% volume exemption in both cases. The DTI limit was set at 9 with a 5% volume exemption in 2020 Q1, but this was abolished in Q2. The risk profile of new mortgage loans

⁹⁵ A potential risk to financial stability would arise if institutions did not take consistent and systematic account of cyclical developments in the property market when valuing collateral.

worsened slightly in terms of both ratios in 2020 H1. The average shares of loans with a DSTI ratio of over 45% and a DTI ratio of over nine times net annual income were 5.4% and 2.9% respectively in 2019 but increased to 7.4% and 4.3% in 2020 H1, mostly due to developments in Q2 after the limits were relaxed or abolished (see [Chart IV.17](#) and [Chart IV.19](#)). After the DSTI limit was raised to 50%, there was a broad increase in the share of loans with a DSTI ratio of over 40% in 2020 Q2, with several banks also recording an increase in the share of loans with a DSTI ratio of 45%–50% (see [Chart IV.18](#)). This may have been due to a combination of growth in the prices of property acquired and a slowdown in growth in income. As in the previous year, compliance with the DTI ratio did not present a problem to lenders in 2020 Q1 (the share of loans with a DTI of over 9 was around 3.5%). After the limit was abolished, this share increased in 2020 Q2, reaching 7% in June. To sum up, the DTI and DSTI developments varied considerably from lender to lender, especially in 2020 Q2. Following the abolition of the limit, some lenders are starting to provide greater numbers of loans with a DTI of over 9 or a DSTI of over 45% (see [Chart IV.20](#) and [Chart IV.21](#)).

Chart IV.17
Fulfilment of the recommended DSTI limits

(share of loans in volume provided in %)

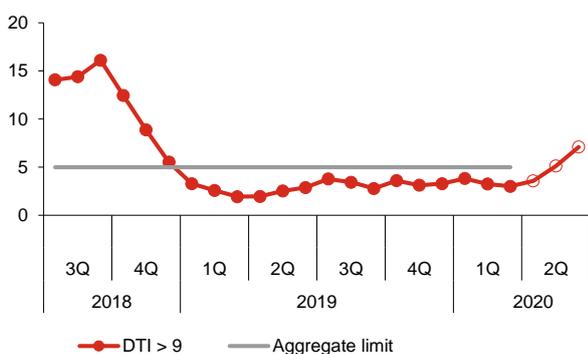


Source: CNB

Note: Volume provided means the reference volume in the Recommendation applicable at the time. A DSTI limit of 50% was set in 2020 Q2.

Chart IV.19
Fulfilment of the recommended DTI limits

(share of loans in volume provided in %)

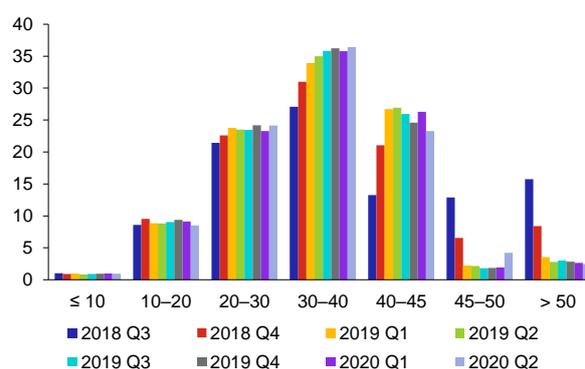


Source: CNB

Note: Volume provided means the reference volume in the Recommendation applicable at the time. No DTI limit has applied since 2020 Q2.

Chart IV.18
DSTI distribution of new loans

(x-axis: DSTI in %, y-axis: share of loans in volume in %)

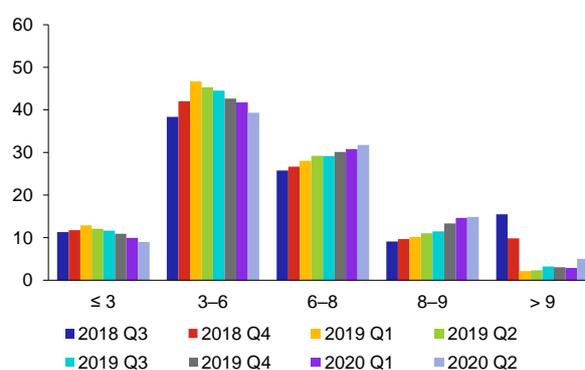


Source: CNB

Note: Interval closed from the right.

Chart IV.20
DTI distribution of new loans

(x-axis: DTI in years; y-axis: share of loans in volume in %)



Source: CNB

Note: Interval closed from the right.

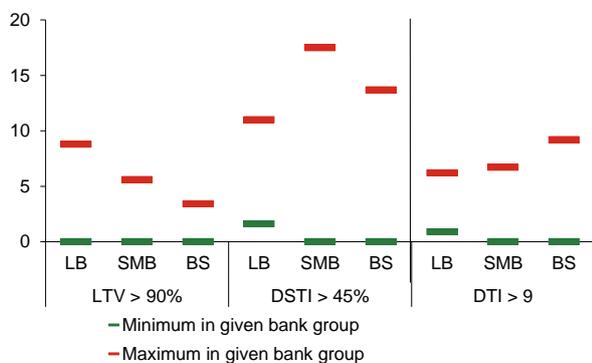
Lenders took appropriate account of the level of risk undertaken when setting interest rates

Interest rates on mortgage loans provided in 2020 H1 mostly fell on average year on year. There was a clear effort by banks to differentiate loan rates based on the LTV ratio in 2020 H1. The level of risk was incorporated above all into rates on loans with LTVs of over 80% (see [Chart IV.22](#)). In addition to elevated loan riskiness, the higher interest rates in this category may reflect clients' high demand for this type of loan and the limited supply thereof by lenders. Banks applied an additional interest mark-up in the category of loans with LTVs of 80%–90% where the loan also had a DTI of over 9 or a DSTI of over 45%. This again reflects an attempt to incorporate higher credit risk into the level of interest

rates. The completely opposite trend was recorded for loans with LTVs of over 100% and high DTI and DSTI ratios. However, such loans are not common and may include specific loan cases.

Chart IV.21
Shares of loans exceeding risky LTV, DSTI and DTI levels by bank group

(% of portfolio of loans for house purchase of given institution; 2020 Q2)

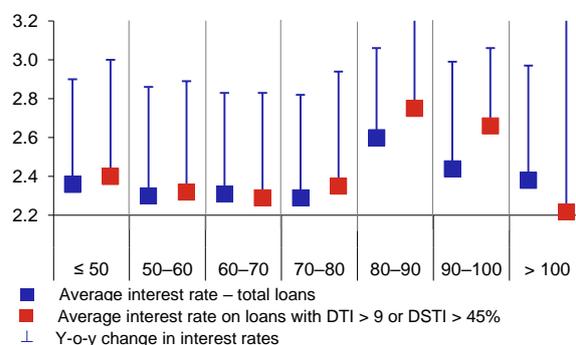


Source: CNB

Note: SMB: small and medium-sized banks, LB: large banks, BS: building societies.

Chart IV.22
Average interest rates by loan characteristics

(x-axis: LTV in %, y-axis: average interest rate in %)



Source: CNB

Note: Data for 2020 H1. Weighted average interest rates with the sizes of individual loans as weights. Interval closed from the right.

Immediate growth in credit risk materialisation was postponed by the introduction of the loan moratorium; some loans are likely to become non-performing after it ends

Around 55,000 house purchase loans provided to households were under the statutory⁹⁶ moratorium as of the end of 2020 H1⁹⁷ (the figure had risen to about 61,000 loans by the time the statutory moratorium ended at the end of October). This represents roughly 6% of all existing loans of this type and 7% of total loans. These percentages differ little across loan cohorts by date of provision for loans granted in the last five years (see [Chart IV.23](#)). The cohort of older loans (a more detailed breakdown of this cohort is not available) records a significantly lower proportion of loans under the statutory moratorium (about 4% in terms of both number and volume). It is reasonable to assume that the CNB Recommendations applied in the expansionary phase of the financial cycle over the last five years favourably affected the share of loans under moratorium, although it is very difficult to quantify their impact. The relatively high share of loans under the statutory moratorium provided in 2020 H1 may signal underestimation of specific risks by some lenders. Loans under the statutory moratorium can be considered riskier on average than loans that are not. At the same time, however, it cannot be assumed that they are as risky as loans that were non-performing prior to the introduction of the statutory loan moratorium. This is confirmed by statistics on the estimated probability of default according to banks' internal models at the time the loan was provided⁹⁸ (see [Chart IV.24](#)), i.e. in most cases prior to the onset of the pandemic. Some proportion of loans under the statutory moratorium are likely to become non-performing after it ends, which means that existing risks will materialise. Besides having a higher probability of default, loans under the statutory moratorium are characterised by higher LTVs (at the time of provision), as the median value of loans not under moratorium is 70%, as compared to 76% for loans under the statutory moratorium. In the case of borrowers with two (or more) mortgages, the second or subsequent loan is also more likely to be under the statutory moratorium. By contrast, these loans do not differ substantially across income groups, nor do they involve a significantly higher proportion of self-employed persons as of the given date (taking into account the frequency of each loan/borrower category in the portfolio of loans not under the statutory moratorium).

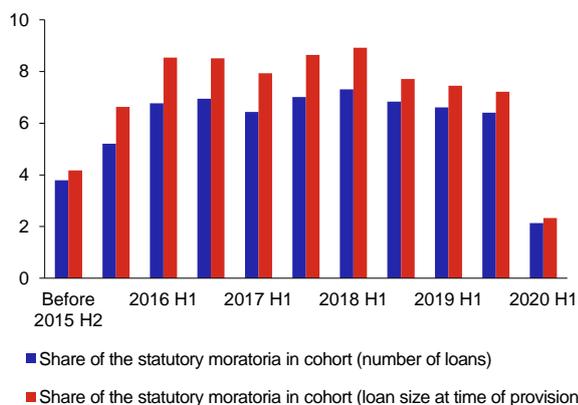
⁹⁶ The data are taken from the Survey, which only contains information on the statutory moratorium. The data do not cover the non-statutory (voluntary) moratorium.

⁹⁷ This refers solely to the statutory moratorium on loans to households secured by residential property, not to consumer credit or other loans.

⁹⁸ The only exception is small banks, whose models, however, often suffer from a lack of data and other issues. At the same time, in a questionnaire survey conducted by the CNB, small banks most often complained about possible opportunism on the part of borrowers postponing instalments under the moratorium. This is understandable given that these banks estimated the lowest probability of default for loans that ended up under moratorium.

Chart IV.23
Loans for house purchase under the statutory moratorium by period of provision

(share of loans in number/volume provided in %)

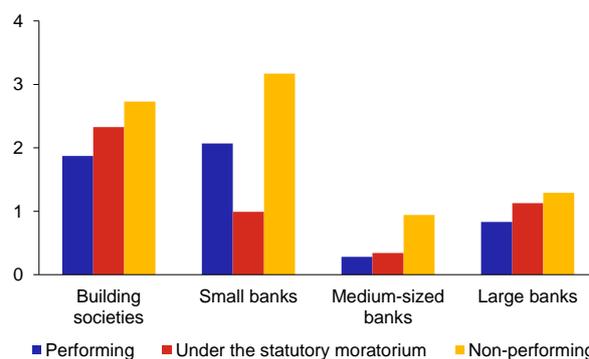


Source: CNB

Note: As of 30 June 2020. The values for the cohort before 2015 H2 are estimates only; the cohort consists of loans provided over a long period of time and may therefore be highly heterogeneous internally.

Chart IV.24
Probabilities of default on loans for house purchase

(% at time of provision)



Source: CNB

Note: Non-performing loans and performing loans as of 30 June 2020 according to the statutory moratorium status. Loans granted from 1 July 2015 onwards. Borrower's probability of default based on the lending institution's internal model at the time of provision. The probabilities of default have various time horizons and are based on different types of models and therefore may not be fully comparable, especially for smaller institutions.

Borrowers who are university graduates are less risky, as reflected in their share in the moratoria

The CNB recently ascertained the level of education of the principal borrower for mortgage loans granted in 2020 Q1. The analyses conducted by the CNB revealed that this characteristic is a relatively strong indicator of the reported risk characteristics of loans provided. This finding is corroborated by different frequencies of the various education categories for new loans under the statutory moratorium and those not under moratorium (see Table IV.3). The probability of default determined by banks is particularly different for university-educated clients. The shares of refinanced loans and buy-to-let loans and the share of borrowers with a second loan for house purchase also show considerable differences. By contrast, the DSTI, DTI and LTV ratios (at the time the loan was provided) show almost no differences across the different education categories (around 19% for all education categories). The same is true for the share of self-employed persons.

Table IV.3
Characteristics of loans for house purchase by principal borrower's level of education

(data for 2020 H1)

Education	With no school leaving exam	With a school leaving exam	University graduate	Total
Share in new loans (%)	12.3	50.6	37.1	100.0
Share in statutory moratoria (%)	17.2	54.4	28.4	100.0
Share of refinanced loans (%)	33.5	30.5	23.5	28.3
PD (median, %)	0.40	0.36	0.17	0.29
Buy-to-let loans (%)	2.50	4.00	5.00	4.19
Borrowers with second loan for house purchase (%)	33.5	37.5	42.0	38.7
Loan size (median, CZK millions)	1.61	1.96	2.57	2.14
Principal borrower's net income (median, CZK thous./month)	28.7	31.7	42.2	35.2

Source: CNB

Note: The number of principal borrowers with basic education is negligible, so they are not included in the table. The university graduates category includes borrowers with a Bachelor's degree, whereas borrowers with a higher vocational school diploma are included in the school-leaving-exam category.

For the period ahead, the CNB confirms the LTV limit at 90% and is not setting upper DTI and DSTI limits; the other parameters of the Recommendation are also unchanged

In view of the unfavourable and highly uncertain economic situation (see section II.1), it can be assumed that lenders and their clients will be well aware of the increased risks and will be largely prudent. Therefore, despite the spiral between debt financing of property purchases and optimistic expectations regarding future property price growth, as well as the persisting overvaluation of housing prices, the Bank Board decided in the current situation to keep the LTV limit

unchanged at 90%, with the option of applying a 5% exemption. At the same time, it does not deem it necessary to set DTI and DSTI limits or to tighten the other parameters of the current Recommendation. Based on the conclusions of its analyses and stress tests, the CNB continues to point out to lenders that mortgage loans can usually be regarded as very risky above certain thresholds (a DTI of eight times net income and a DSTI of 40% of net income). Lenders should therefore provide such loans only to applicants who are highly likely to repay without problems. The CNB will respond to the reality that the share of new loans with high DTI and DSTI ratios has increased markedly for some lenders using microprudential supervision instruments, such as an additional Pillar 2 capital requirement for risk management systems. Also, it cannot be ruled out that more conservative lenders will react to the potential risk of losing market share by relaxing their credit standards to the levels of their less conservative competitors. The CNB would have to react to this using its macroprudential policy tools.

IV.3.2 Risks associated with commercial property markets

The amount of new banking loans secured by commercial property declined...

New loans secured by commercial property amounted to CZK 28 billion in 2020 H1, which represents a decline compared with previous half-years and is the lowest level ever recorded in the Survey.⁹⁹ Generally, loans for investment and construction declined for all types of commercial property (see [Chart IV.25](#)). This decline is accompanied by heightened uncertainty in the market during the coronavirus pandemic and a slight decline in the construction of new commercial space in recent years (see [section II.1](#)).

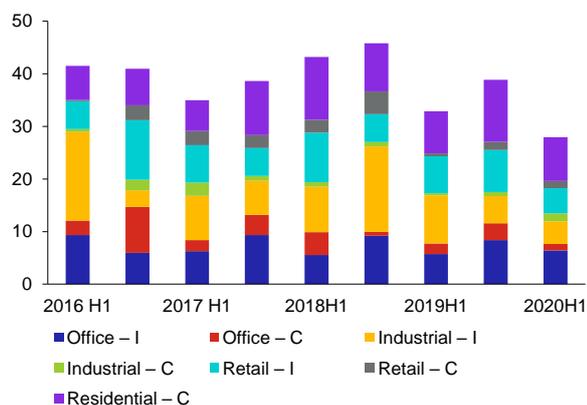
...and the risks associated with commercial property markets continue to be largely exported

Owing to the limited share of exposures secured by commercial property in the balance sheets of Czech banks, developments in this market should not pose an immediate risk to financial stability even in the event of major impacts caused by the second wave of the epidemic. A large proportion of commercial property is financed by foreign capital and any materialisation of risks would primarily affect the financial systems in investor countries. A potential threat to domestic financial stability could arise in the future from the growing investments of Czech households and other domestic investors in real estate funds, whose performance is directly or indirectly linked with developments in the commercial property market. However, the importance of these investments remains marginal from the financial stability perspective.

Chart IV.25

Amount of new loans secured by commercial property

(CZK billions)



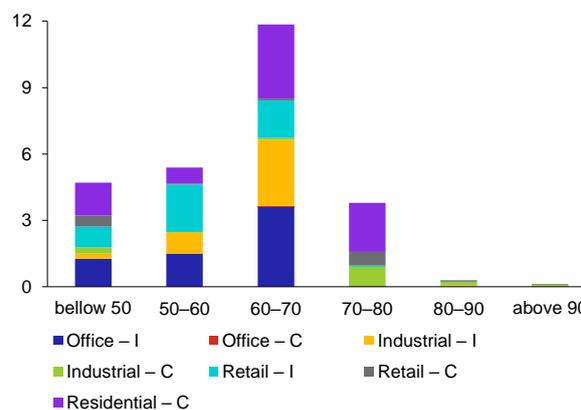
Source: CNB

Note: I: investment in existing property, C: construction.

Chart IV.26

LTV distribution of new loans in 2020 H1

(x-axis: LTV in %, y-axis: CZK billions)



Source: CNB

Note: I: investment in existing property, C: construction. Interval closed from the right.

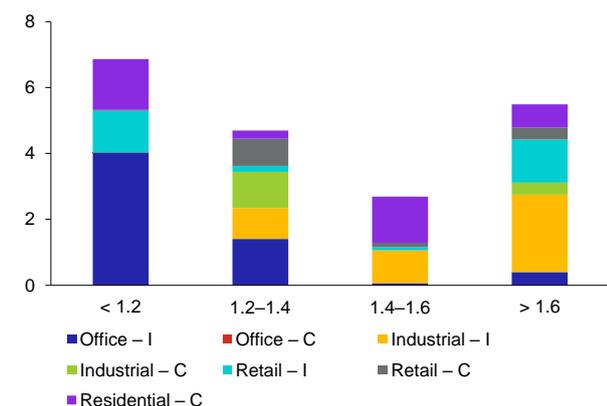
⁹⁹ The results are based on a semi-annual survey of loans secured by commercial property among eight banks covering around 70% of the market.

The risk characteristics of new loans improved slightly overall in 2020 H1

Most of the new loans provided in 2020 H1 had LTVs of 60%–70% (see [Chart IV.26](#)). A tendency to provide loans with a DSCR of over 1.6 was also observed in 2020 Q1. This represents something of a change from the previous period (see [Chart IV.27](#)). However, the observed DSCR levels do not necessarily imply a decline in credit risks. On the contrary, they may signal over-optimistic estimates of future property income. However, a reduction in the extent of credit risks undertaken may be suggested by a persistently low volume of loans with simultaneously riskier levels of collateral (an LTV of over 70%) and a low ability to generate income to cover debt (a DSCR of below 1.2). These loans amounted to around CZK 1.4 billion in 2020 H1 (see [Chart IV.28](#)). However, given the low volumes of loans secured by commercial property, the results may reflect ad hoc factors and the risk characteristics of a very limited number of loans.

Chart IV.27
DSCR distribution of new loans in 2020 H1

(x-axis: DSCR; y-axis: CZK billions)

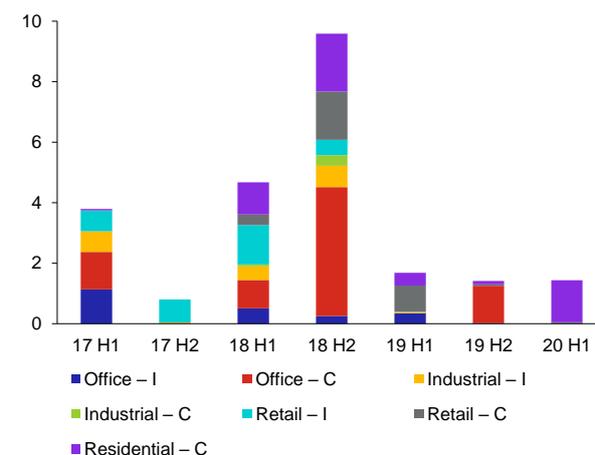


Source: CNB

Note: I: investment in existing property, C: construction.

Chart IV.28
Amount of new loans with an LTV of more than 70% and a DSCR of less than 1.2

(CZK billions)



Source: CNB

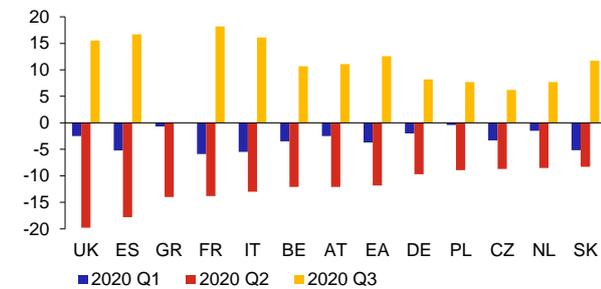
Note: I: investment in existing property, C: construction.

V. CHARTBOOK

SECTION II

Chart II.1 CB
Economic growth in selected European countries

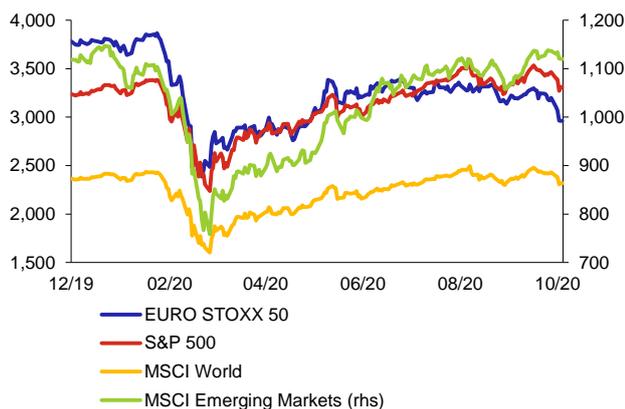
(quarterly real GDP growth in %)



Source: Eurostat, NBS, CNB, statistical offices of relevant countries
Note: The data for 2020 Q3 are the first estimates published at the end of October by the statistical office of the relevant country.

Chart II.3 CB
Key global stock indices

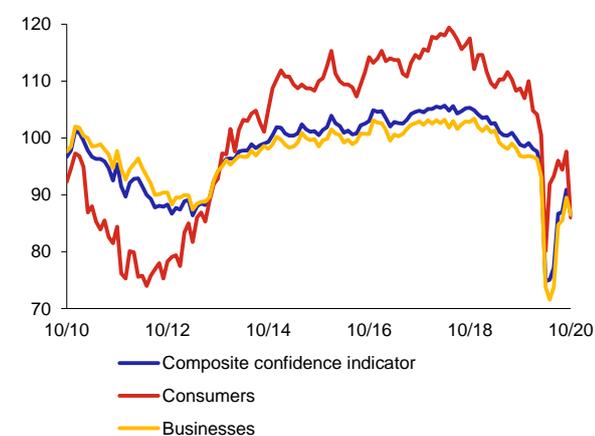
(points)



Source: Refinitiv

Chart II.5 CB
Indicators of the confidence of economic agents in the Czech Republic

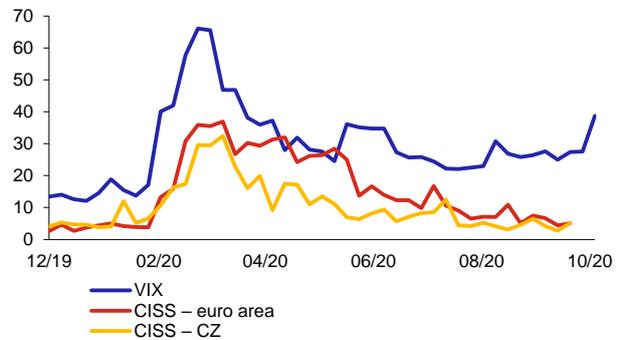
(base indices relative to 2003–2019 average)



Source: CZSO

Chart II.2 CB
VIX and CISS indices

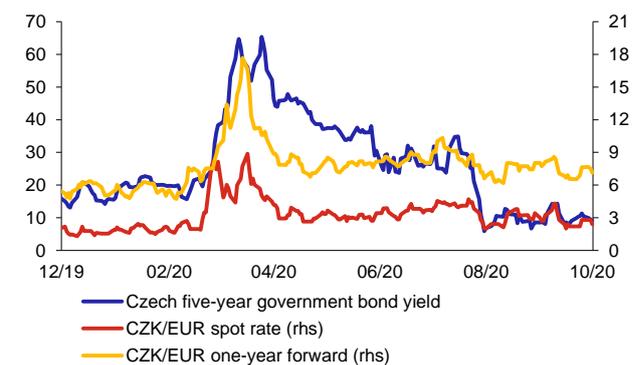
(points)



Source: Bloomberg, CNB

Chart II.4 CB
Bid-ask spreads on selected financial instruments

(bp; right-hand scale: hellers)

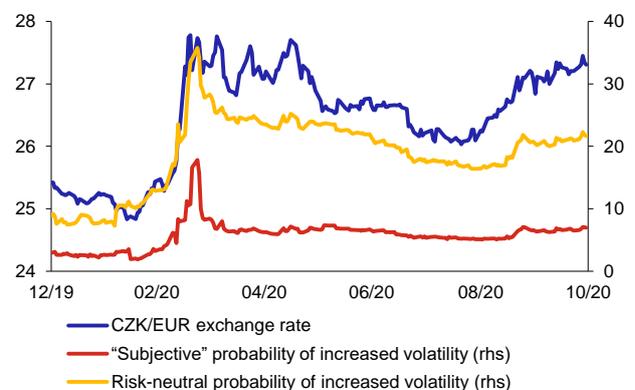


Source: Refinitiv

Note: For the sake of clarity, the figures were smoothed using the five-day moving average.

Chart II.6 CB
Exchange rate and the risk of increased volatility

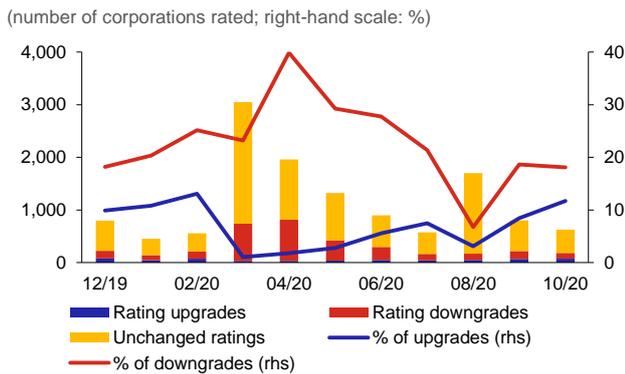
(CZK/EUR exchange rate; right-hand scale: %)



Source: Refinitiv, CNB

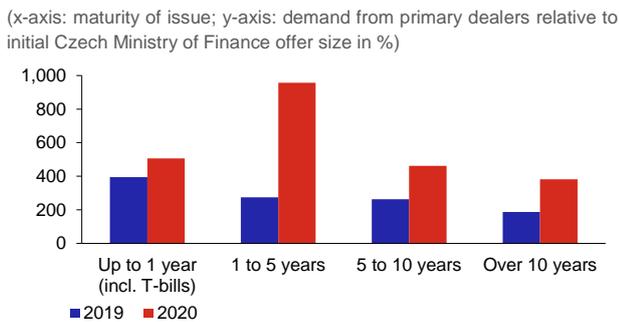
Note: The probability of increased volatility expresses whether the exchange rate will move by more than 10% (in either direction). It is derived from an estimate of the probability distribution of exchange rate movements.

Chart II.7 CB
Changes in ratings of corporate bond issuers



Source: Refinitiv
 Note: The chart shows the monthly global number of changes in long-term credit ratings of corporate bond issuers by S&P, Fitch and Moody's.

Chart II.9 CB
Excess demand in auctions of Czech government debt securities



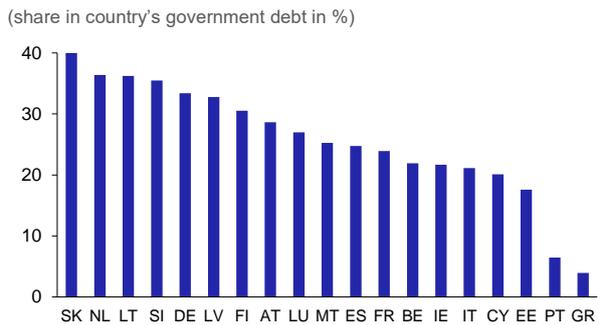
Source: CNB
 Note: Weighted by the initial Czech Ministry of Finance offer size. The initial offer is the middle of the indicative band of the size of the issue offered for auction by the Czech Ministry of Finance. Maturity interval closed from the right. Data as of 19 October 2020.

Chart II.11 CB
Five-year CDS spread for the Czech Republic



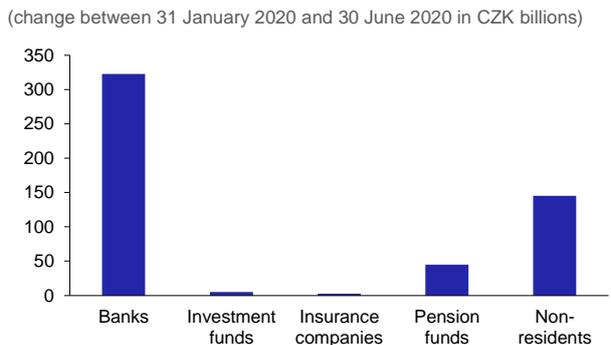
Source: Refinitiv

Chart II.8 CB
Government bonds of euro area countries held by the ECB



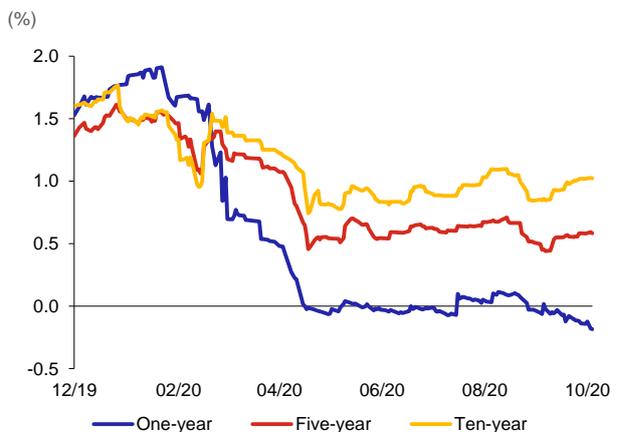
Source: ECB, Eurostat, CNB
 Note: Government bonds held by the ECB comprise government bonds acquired under the PSPP (data as of 10/2020) and all securities acquired under the PEPP (data as of 9/2020). In September 2020, government bonds accounted for 90%, covered bonds for 0.5%, corporate bonds for 3.6% and commercial paper for 5.7% of the assets purchased under the PEPP. The data on government debt are for 2019.

Chart II.10 CB
Change in the volume of Czech government debt holdings



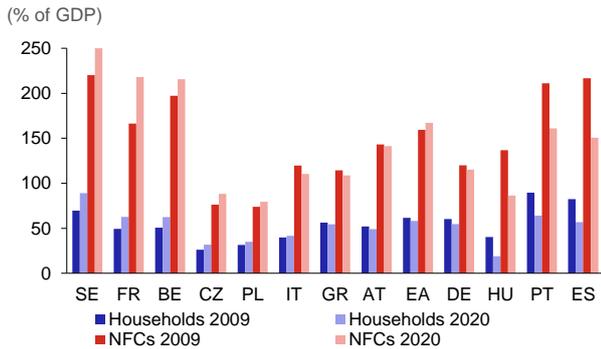
Source: CNB

Chart II.12 CB
Czech government bond yields



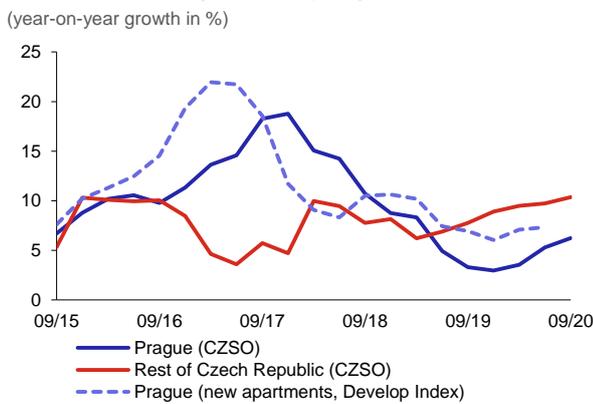
Source: MTS, CNB
 Note: Yields on bonds issued in Czech koruna.

Chart II.13 CB
Private non-financial sector debt in selected European countries



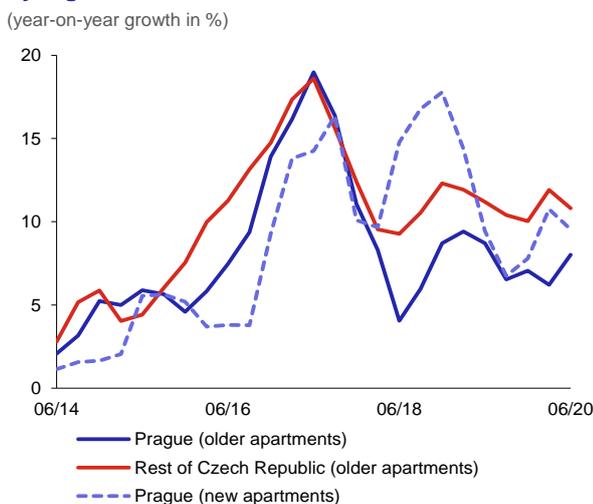
Source: BIS
Note: Data as of 31 March 2020.

Chart II.15 CB
Apartment asking prices by region



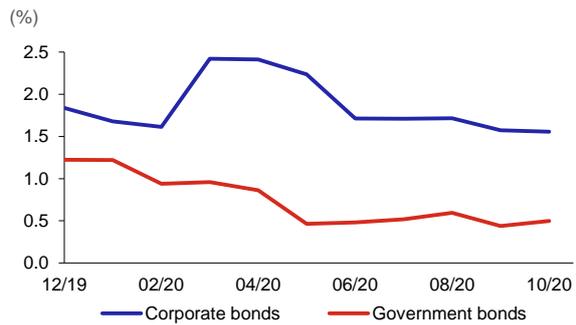
Source: CZSO, Společnost pro cenové mapy ČR s.r.o.
Note: As the Develop Index is published every two months, the figures for March and September were obtained as the average of the year-on-year growth rates in February and April and in August and October respectively.

Chart II.17 CB
Apartment transaction prices in the Czech Republic by region



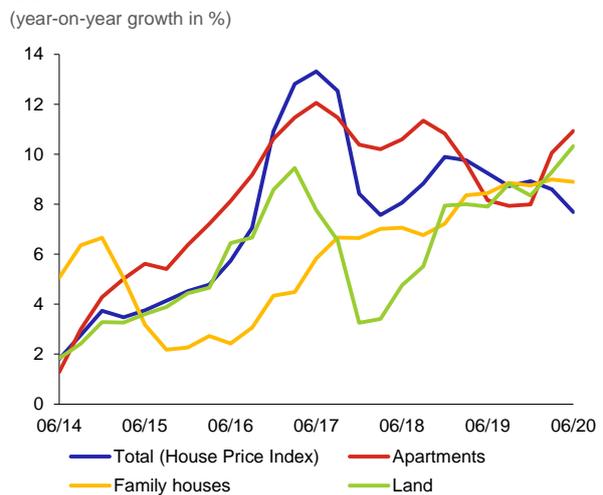
Source: CZSO

Chart II.14 CB
Index of Czech bond yields



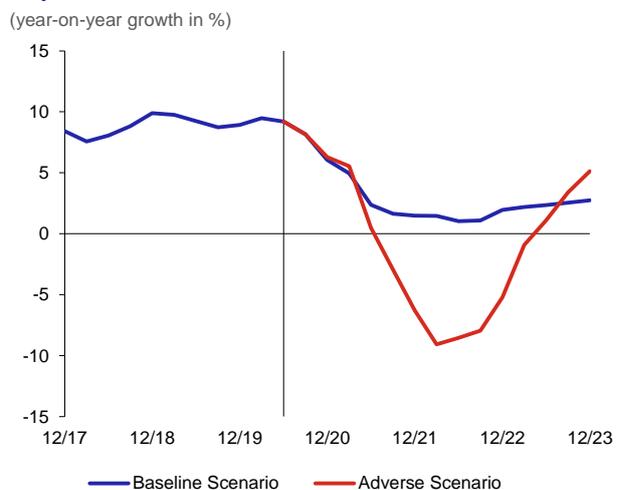
Source: CNB
Note: The yield index is calculated as a weighted average of yields on bonds issued by an entity operating in the Czech Republic (regardless of the currency of the issue) and actively traded or listed. The face value of the issue is used as the weight.

Chart II.16 CB
Property transaction prices in the Czech Republic by type



Source: CZSO, HB Index

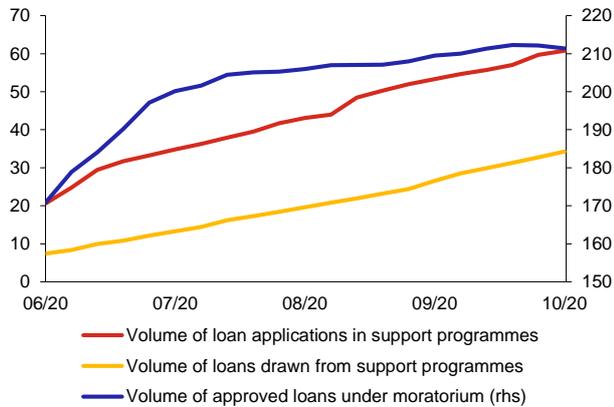
Chart II.18 CB
Alternative scenario: property prices in the Czech Republic



Source: CNB

Chart II.19 CB
NFC loans in support programmes and under moratorium in the Czech Republic

(CZK billions)

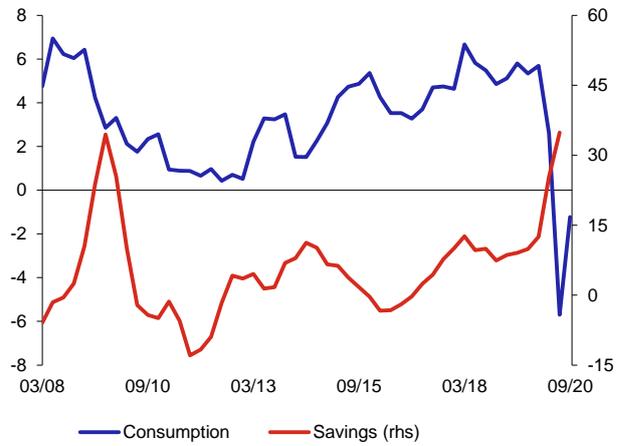


Source: CNB

Note: Support programmes comprise COVID II, COVID III, COVID Praha and COVID EGAP.

Chart II.20 CB
Household consumption and savings in the Czech Republic

(annual percentage changes)



Source: CZSO

Note: The year-on-year change in gross savings is smoothed by the centred three-period average

PART III

Table III.1 CB

Exposures, provisions and coverage ratios by risk stage and portfolio

Client		Exposures		Provisions		Coverage ratio	
Stage	Date	Volume (CZK billions)	Change (%)	Volume (CZK billions)	Change (%)	Ratio (%)	Change (pp)
Total	03/20	3,528		60		1.71	
	08/20	3,505	-0.7	69	14.6	1.97	0.26
S1	03/20	3,249		7		0.22	
	08/20	3,145	-3.2	8	14.0	0.26	0.04
S2	03/20	272		9		3.27	
	08/20	352	29.2	18	99.2	5.04	1.77
S3	03/20	77		44		57.19	
	08/20	77	-0.4	43	-2.3	56.08	-1.11

Households		Exposures		Provisions		Coverage ratio	
Stage	Date	Volume (CZK billions)	Change (%)	Volume (CZK billions)	Change (%)	Ratio (%)	Change (pp)
Total	03/20	1,871		27		1.45	
	08/20	1,919	2.6	31	12.4	1.59	0.14
S1	03/20	1,718		3		0.19	
	08/20	1,752	2.0	4	6.3	0.20	0.01
S2	03/20	121		5		4.19	
	08/20	135	12.3	8	62.7	6.08	1.88
S3	03/20	32		19		59.02	
	08/20	32	-0.3	19	0.0	59.17	0.14

NFCs		Exposures		Provisions		Coverage ratio	
Stage	Date	Volume (CZK billions)	Change (%)	Volume (CZK billions)	Change (%)	Ratio (%)	Change (pp)
Total	03/20	1,420		33		2.33	
	08/20	1,395	-1.8	38	16.3	2.75	0.43
S1	03/20	1,229		4		0.32	
	08/20	1,138	-7.4	5	20.8	0.41	0.10
S2	03/20	146		4		2.59	
	08/20	212	44.7	9	148.9	4.46	1.87
S3	03/20	45		25		55.93	
	08/20	45	-0.5	25	-4.2	53.85	-2.08

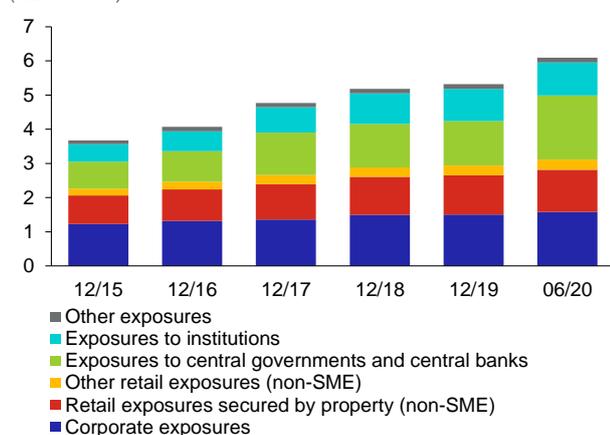
Source: CNB

Note: S1 and S2 comprise performing loans; S3 can be considered identical to non-performing loans.

Chart III.1 CB

Size of the main categories of exposures under the IRB approach

(CZK trillions)

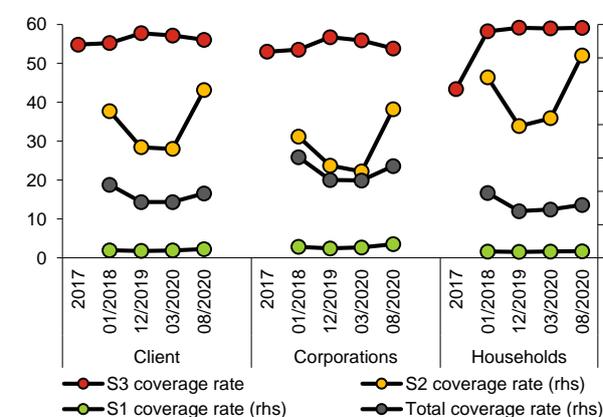


Source: CNB

Chart III.2 CB

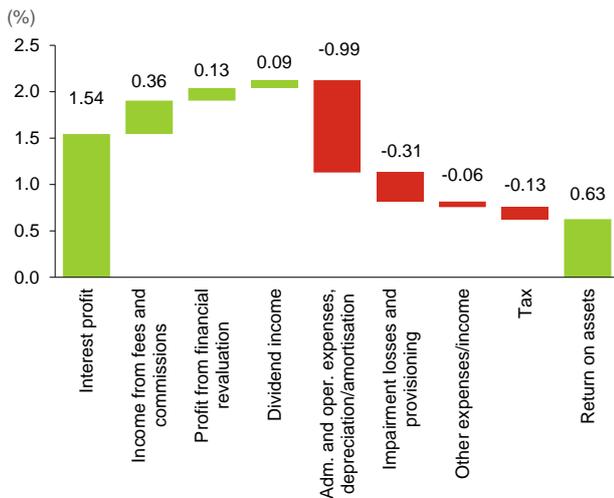
Loan coverage by portfolio

(%)



Source: CNB

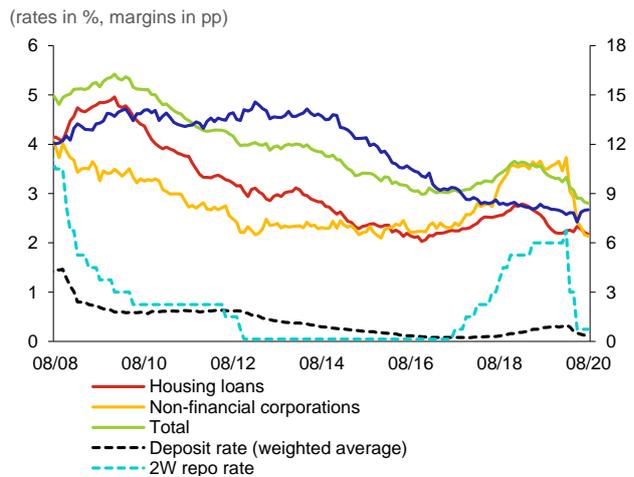
Chart III.3 CB
Decomposition of return on assets



Source: CNB

Note: The given value is the ratio of the given type of income/expense to the level of assets.

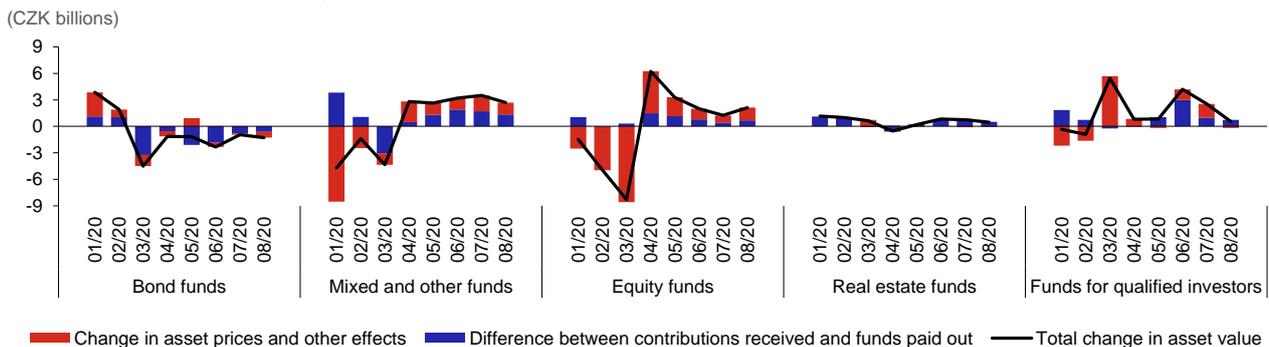
Chart III.4 CB
Interest margins on new loans



Source: CNB

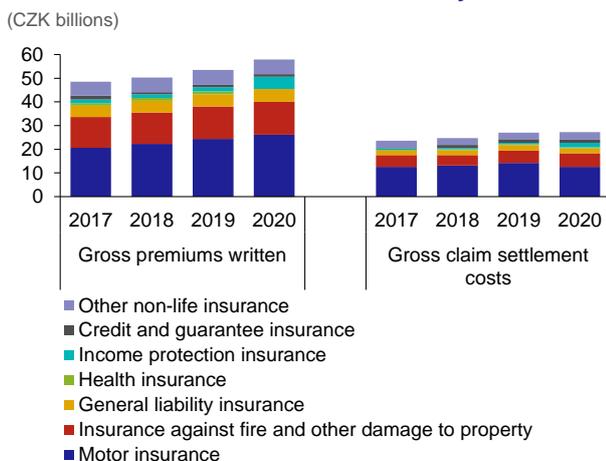
Note: Margins are calculated as loan rates for the given sector minus the average deposit rate. The non-financial corporations item excludes revolving loans and credit cards.

Chart III.5 CB
Decomposition of the change in the value of investment funds' assets by investment area



Source: CNB

Chart III.6 CB
Premiums and claim settlement costs in non-life insurance in the first six months of the year



Source: CNB

Note: The chart depicts total premiums and claim settlement costs in the first six months of each year shown. The change in income protection insurance between 2019 and 2020 was due mainly to a minor change in reporting methodology.

Table III.2 CB
Credit loans and advances portfolios by stage

(% as of end of period)

	Actual value	Baseline Scenario			Adverse Scenario					
		2019	2020	2021	2022	6/2023	2020	2021	2022	6/2023
Non-financial corporations										
Loan volume in CZK billions	1,394	1,411	1,400	1,457	1,503	1,397	1,325	1,286	1,286	
S1	87.4	79.6	70.4	68.4	68.7	79.4	68.2	58.5	59.0	
S2	8.3	16.1	20.9	22.1	21.9	16.2	22.1	26.1	26.6	
S3	4.3	4.4	8.7	9.4	9.3	4.4	9.7	15.4	14.5	
Loans for house purchase										
Loan volume in CZK billions	1,366	1,485	1,578	1,664	1,707	1,488	1,586	1,629	1,647	
S1	93.2	94.0	90.8	91.4	92.4	93.9	89.5	84.9	84.9	
S2	5.8	5.2	7.6	7.1	6.4	5.3	8.5	11.5	11.5	
S3	0.9	0.8	1.6	1.5	1.3	0.8	2.0	3.6	3.6	
Consumer credit										
Loan volume in CZK billions	479	485	513	540	557	481	495	473	488	
S1	90.6	90.2	87.9	88.4	89.0	90.1	87.1	84.0	84.5	
S2	5.6	5.6	5.2	4.8	4.5	5.6	5.5	5.8	5.4	
S3	3.9	4.2	6.8	6.8	6.5	4.3	7.4	10.2	10.0	

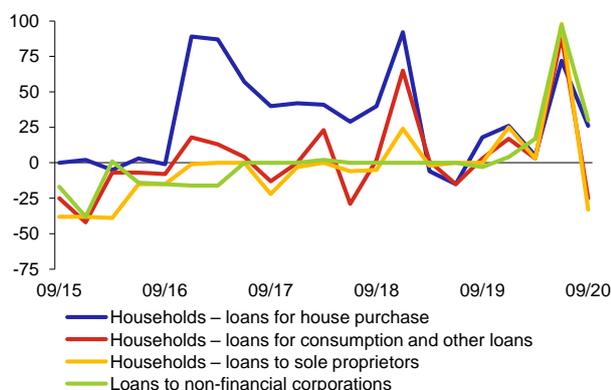
Source: CNB

Note: The figures for 2023 are only up to Q2. Actual values make up half of 2020. The loan volume pertains to the end of the given period.

SECTION IV

Chart IV.1 CB
Credit standards in the Czech Republic

(net percentages)

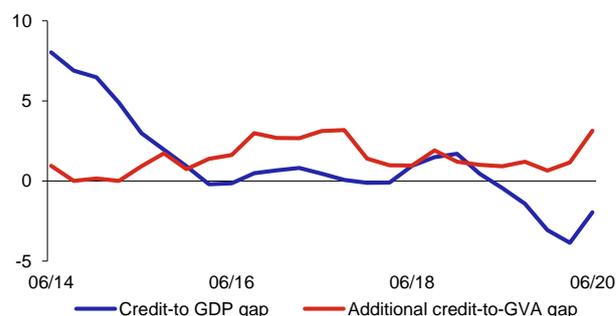


Source: Bank Lending Survey, CNB

Note: The data represent the difference between the market share of banks that reported a tightening of lending standards and banks that reported an easing of lending standards in the past three months. More information on the indicator methodology can be found on the CNB website.

Chart IV.2 CB
Standardised credit-to-GDP gap and additional gap

Note:



Source: CNB

Note: The trend in the standardised gap is estimated using the HP filter (lambda = 400,000) over the entire time series. The additional gap – the expansionary credit gap – is calculated as the difference between the ratio of bank loans to the gross value added (GVA) of the private sector and the minimum level of this ratio over the past eight quarters.

Table IV.1 CB
Conversion of FCI values into the countercyclical capital buffer rate

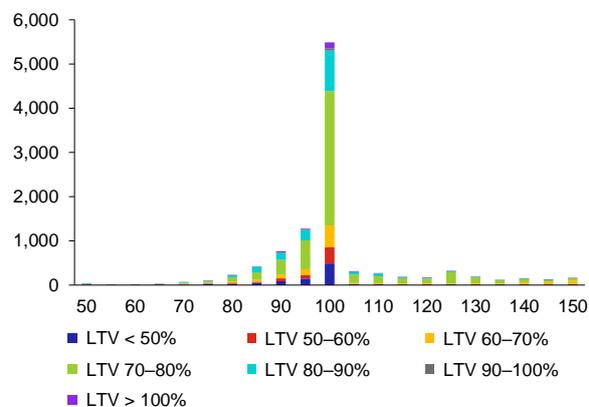
Range of FCI values		CCyB rate
from	to	
0.00	0.09	0.00%
0.09	0.10	0.25%
0.10	0.12	0.50%
0.12	0.14	0.75%
0.14	0.16	1.00%
0.16	0.18	1.25%
0.18	0.21	1.50%
0.21	0.24	1.75%
0.24	0.27	2.00%
0.27	0.30	2.25%
0.30	1.00	2.50%

Source: CNB

Note: The interval containing the current FCI value is indicated in red.

Chart IV.3 CB
Distribution of loans for house purchase by ratio of estimated value to purchase price

(x-axis: ratio of estimated value to purchase price of property in %; y-axis: number of loans)



Source: CNB

Note: Data for 2020 H1. Loans with a ratio of the estimated value to the purchase price below 50% and above 150% are not included, but they are very low in number.

Selected indicators

FINANCIAL STABILITY INDICATORS – PART 1

	2014	2015	2016	2017	2018	2019	2020		
							Jan.	Feb.	Mar.
Macroeconomic environment									
ME.1 Real GDP growth (year on year, %)	2.7	5.5	2.4	5.4	3.2	2.3	-1.9	-10.9	-7.4
ME.2 Consumer price inflation (average annual index growth, %)	0.4	0.3	0.7	2.5	2.1	2.8	3.6	3.1	3.3
ME.3 General government balance / GDP (%)	-2.1	-0.6	0.7	1.5	0.9	0.3			
ME.4 General government debt / GDP (%)	41.9	39.7	36.6	34.2	32.1	30.2			
ME.5 Trade balance / GDP (%)	5.1	4.1	5.4	5.1	3.7	4.1	5.0	2.4	
ME.6 External debt in % of banking sector external assets	152.7	133.7	120.2	114.0	113.7	112.2	102.4	102.7	
ME.7 Balance of payments current account / GDP (%)	0.2	0.4	1.8	1.5	0.4	-0.3	5.9	0.6	
ME.8 Monetary policy 2W repo rate (end of period, %)	0.05	0.05	0.05	0.50	1.75	2.00	1.00	0.25	0.25
Non-financial corporations									
NC.1 Return on equity (%)	10.5	11.9	11.4	11.6	10.6	10.8			
NC.2 Debt (% of total liabilities)	49.9	49.1	50.2	49.3	49.3	48.5	47.7	47.9	
NC.3 Credit indebtedness (% of GDP)	51.7	48.8	50.0	50.3	53.1	50.1	49.6	51.1	
NC.4 – loans from Czech banks (% of GDP)	20.1	19.9	20.3	20.0	20.0	19.5	20.2	20.4	
NC.5 – loans from Czech non-bank financial corporations (% of GDP)	3.9	4.1	4.4	4.5	4.5	4.4	4.4	4.4	
NC.6 – other (including financing from abroad, % of GDP)	27.6	24.7	25.3	25.8	28.6	26.3	25.0	26.3	
NC.7 Interest coverage (pre-tax profit + interest paid / interest paid, %)	13.9	16.3	22.1	26.8	24.1	17.3	17.3	17.4	
NC.8 12M default rate (%)	1.5	1.4	1.1	1.2	1.2	1.3	1.6	1.2	
Households (including sole traders)									
H.1 Total debt / gross disposable income (%)	55.5	56.7	58.7	58.9	59.3	59.3	59.0	59.2	
H.2 Total debt / financial assets (%)	25.4	25.2	25.4	25.8	24.3	23.7	23.5	23.1	
H.3 Net financial assets (total financial assets – total liabilities, % of GDP)	83.3	83.9	86.0	82.7	92.3	95.0	96.5	102.1	
H.4 Debt / GDP (%)	30.2	30.0	31.0	31.3	31.7	31.6	31.8	32.7	
H.5 – loans from Czech banks to households (% of GDP)	26.3	26.7	27.7	28.1	28.7	28.7	28.9	29.9	30.6
H.6 – loans from Czech non-bank fin. corporations to households (% of GDP)	1.8	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1
H.7 – loans from Czech banks to sole traders (% of GDP)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
H.8 – loans from Czech non-bank fin. corporations to sole traders (% of GDP)	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2
H.9 – other (including financing from abroad, % of GDP)	1.2	1.1	1.1	1.0	0.9	0.8	0.8	0.8	
H.10 Net interest expenses / gross disposable income (%)	3.1	2.6	2.4	2.3	2.4	2.5	2.5	2.3	
H.11 12M default rate (% excluding sole traders)	4.0	3.1	2.4	1.9	1.5	1.4	1.4	1.4	1.1
Financial markets									
FM.1 3M PRIBOR (average for period, %)	0.4	0.3	0.3	0.4	1.3	2.1	2.2	0.6	0.3
FM.2 1Y PRIBOR (average for period, %)	0.5	0.5	0.5	0.6	1.5	2.2	2.2	0.6	0.4
FM.3 10Y government bond yield (average for period, %)	1.6	0.6	0.4	1.0	2.0	1.5	1.5	1.0	0.9
FM.4 CZK / EUR exchange rate (average for period, %)	27.5	27.3	27.0	26.3	25.6	25.7	25.6	27.1	26.5
FM.5 Change in PX stock index (% year on year, end of period)	-4.3	1.0	-3.6	17.0	-8.5	13.1	-24.3	-14.6	-16.6
Property market									
PM.1 Total change in residential property prices (transaction prices, % year on year)	3.7	4.5	10.9	8.4	9.9	8.9	8.6	7.7	
PM.2 Change in apartment prices (asking prices according to CZSO, % year on year)	2.1	4.3	15.1	11.6	6.5	10.8	13.0	10.4	
PM.3 Apartment price / average annual wage	8.8	8.9	9.8	10.3	10.2	10.5	10.7	11.0	
PM.4 Apartment price / annual rent (according to IRI)	25.7	24.5	26.9	27.8	26.1	25.9	26.4	27.5	

Note: Owing to data revisions, some historical values of the indicators may not be comparable to those published in previous FSRs. Also, owing to the later date of table update, the values of the indicators may not be the same as those referred in the text of the document *Risks to financial stability and their indicators*. Missing values were unavailable at the time of preparation of the table.

FINANCIAL STABILITY INDICATORS – PART 2

	2014	2015	2016	2017	2018	2019	2020		
							Jan.	Feb.	Mar.
Financial sector									
FS.1	Financial sector assets / GDP (%)	157.2	152.6	160.3	175.4	173.0	181.5	182.5	183.5
FS.2	Shares of individual segments in financial sector assets (%)								
FS.3	banks	77.7	77.4	77.4	78.7	78.7	78.4	80.1	79.8
FS.4	credit unions	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
FS.5	insurance companies	7.1	6.8	6.4	5.7	5.6	5.1	4.8	4.9
FS.6	pension management companies and funds	5.0	5.3	5.2	5.0	5.1	5.3	4.9	5.0
FS.7	investment funds*	4.3	4.8	5.3	5.4	5.5	6.3	5.6	5.8
FS.8	non-bank financial corporations engaged in lending	5.2	5.0	5.0	4.6	4.6	4.6	4.1	4.1
FS.9	investment firms	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.1
Banking sector									
BS.1	Bank assets / GDP (%)	121.2	117.2	124.1	137.0	134.6	131.3	146.2	147.8
BS.2	Assets structure (% , end of period)								
BS.3	loans to central bank	12.9	15.7	21.5	32.8	31.6	31.9	33.3	31.4
BS.4	interbank loans	6.3	4.4	3.6	3.5	3.3	2.9	3.9	3.3
BS.5	client loans	50.8	52.1	50.9	45.3	46.8	47.2	43.9	44.1
BS.6	bond holdings	22.9	21.1	18.3	13.5	13.6	12.9	12.6	15.1
BS.7	– government bonds	16.4	14.2	11.4	7.9	8.1	7.5	7.6	10.7
BS.8	– Czech government bonds	14.9	12.6	10.0	7.0	7.3	6.9	7.0	10.1
BS.9	other	7.1	6.7	5.8	4.8	4.7	5.1	6.3	6.2
BS.10	Liabilities structure (% , end of period)								
BS.11	liabilities to central bank	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.6
BS.12	interbank deposits	10.4	7.4	10.2	16.2	15.1	12.7	13.4	11.8
BS.13	client deposits	66.9	66.5	65.3	61.2	62.8	64.5	64.6	66.3
BS.14	bonds issued	8.7	12.0	11.5	11.1	10.9	11.3	9.8	9.2
BS.15	other	14.0	13.9	12.8	11.2	10.9	11.4	12.2	12.1
BS.16	Client loans / client deposits (%)	76.0	78.4	77.9	74.0	74.4	73.1	68.0	66.5
BS.17	Sectoral breakdown of total loans (%)								
BS.18	non-financial corporations	33.2	33.1	33.1	33.1	32.7	32.5	32.5	32.3
BS.19	households	43.3	44.4	45.1	46.6	46.9	47.8	46.6	47.4
BS.20	sole traders	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.3
BS.21	others (including non-residents)	22.1	21.3	20.6	19.0	19.1	18.4	19.7	19.0
BS.22	Growth in loans (% , end of period, year on year):								
BS.23	total	4.8	5.6	6.0	4.6	7.2	4.4	6.9	5.4
BS.24	non-financial corporations	0.9	5.3	5.9	4.8	5.7	3.7	6.4	4.9
BS.25	– real estate activity (NACE L)	3.6	5.6	12.1	-1.7	5.2	7.5	10.3	12.3
BS.26	households	4.5	8.2	7.7	8.0	7.9	6.4	6.6	6.4
BS.27	– loans for house purchase	5.6	8.0	8.4	9.0	8.5	6.7	7.1	7.2
BS.28	– loans for consumption	-0.6	8.9	4.5	4.1	6.4	7.2	7.0	4.7
BS.29	sole traders	-4.0	0.0	4.4	10.1	5.6	8.1	7.2	2.9
BS.30	Non-performing loans / total loans (%):								
BS.31	total	6.1	5.8	4.8	4.0	3.3	2.5	2.4	2.4
BS.32	non-financial corporations	6.7	5.7	5.2	4.2	3.6	3.2	3.1	3.2
BS.33	households	4.7	4.0	3.2	2.5	2.1	1.6	1.6	1.6
BS.34	– loans for house purchase	3.1	2.6	2.0	1.8	1.5	1.2	1.1	1.1
BS.35	– loans for consumption	12.0	11.1	8.9	6.0	5.1	4.0	4.1	4.3
BS.36	sole traders	12.6	11.0	8.6	6.7	5.0	4.3	4.6	5.0
BS.37	Coverage of non-performing loans by provisions (%)	55.9	54.9	57.2	54.8	58.2	57.8	57.2	56.0
BS.38	Capital ratio (%)	18.0	18.4	18.4	19.3	19.6	21.3	21.5	23.2
BS.39	Tier 1 capital ratio (%)	17.5	17.9	17.9	18.7	19.1	20.8	20.9	22.5
BS.40	Leverage (assets as a multiple of Tier 1)	13.7	13.3	13.9	15.3	15.2	14.3	14.9	14.3
BS.41	Leverage ratio (Tier 1 capital / total exposures)	n.a.	n.a.	7.1	6.6	6.6	7.0	6.8	6.9
BS.42	Return on assets (%)	0.9	1.2	1.3	0.5	1.1	1.2	1.0	0.8
BS.43	Return on Tier 1 (%)	16.8	16.8	17.8	16.9	17.5	18.1	10.6	9.5
BS.44	Quick assets / total assets (%)	29.8	31.8	34.4	42.0	41.2	40.7		
BS.45	Quick assets / client deposits (%)	44.1	47.1	52.1	68.0	65.1	62.8		
BS.46	Net external position of banking sector (% of GDP)	0.6	-2.2	-7.8	-21.4	-20.2	-18.2	-18.3	
BS.47	Banking sector external debt / banking sector total assets (%)	15.1	16.4	19.1	26.1	25.0	23.3	27.5	26.7

Note: Owing to data revisions, some historical values of the indicators may not be comparable to those published in previous FSRs. Also, owing to the later date of table update, the values of the indicators may not be the same as those referred in the text of the document *Risks to financial stability and their indicators*. Missing values were unavailable at the time of preparation of the table.

FINANCIAL STABILITY INDICATORS – PART 3

	2014	2015	2016	2017	2018	2019	2020		
							Jan.	Feb.	Mar.
Non-bank financial corporations									
NI.1	Share in financial sector assets (%)	21.7	22.0	22.0	20.9	20.9	21.3	19.6	19.8
Insurance companies									
NI.2	Premiums written / GDP (%)	3.6	3.3	3.1	3.0	2.9	3.0	3.0	3.0
NI.3	Ratio of eligible own funds to the solvency capital requirement (in %)	n.a.	n.a.	238.1	230.0	243.6	202.4	196.6	241.7
NI.4	Change in financial investment of insurance companies (%; year on year)	2.2	-1.6	0.9	4.2	1.4	-6.7	-2.1	2.1
NI.5	Return on equity of insurance companies (%)	16.4	17.0	15.7	14.7	15.8	24.1	23.9	13.6
NI.6	Claim settlement costs / net technical provisions (life, %)	20.0	17.8	15.1	14.4	15.3	16.6	17.2	15.3
NI.7	Claim settlement costs / net technical provisions (non-life, %)	51.5	55.6	58.1	59.4	57.8	62.7	63.4	61.0
Pension management companies (PMCs) and PMC funds									
NI.8	Change in assets of funds managed by PMCs (%)	14.1	10.0	7.8	10.8	5.6	8.0	2.2	1.7
NI.9	Nominal change in value of assets of PMC funds	3.3	1.0	0.3	3.6	-1.7	0.9	0.6	-1.4
Investment funds									
NI.10	Growth in net assets (= equity; year on year, %)	19.6	18.5	17.7	20.9	6.3	21.0	6.6	8.2
Non-bank financial corporations engaged in lending									
NI.11	Growth in loans from non-bank financial corporations engaged in lending (%):								
NI.12	total	3.3	0.8	8.9	8.2	4.7	4.3	2.6	-1.4
NI.13	households	5.0	-26.4	7.0	0.7	-1.6	-1.2	-2.7	-5.2
NI.14	non-financial corporations	3.7	11.4	10.1	10.0	6.3	2.6	3.5	0.0

Note: Owing to data revisions, some historical values of the indicators may not be comparable to those published in previous FSRs. Also, owing to data revisions and the later date of table update, values of the indicators may not be the same as those referred in the text of this document.

ADDITIONAL INFORMATION ON THE INDICATORS

ME.6	Total external debt in % of external assets held by MFIs and the CNB.
PM.1	Property prices based on the House Price Index, source: CZSO
PM.2	Apartment prices based on data from Společnost pro cenové mapy, s.r.o., apartment size 68 m ² .
FS.7	Act No. 240/2013 Coll., on Management Companies and Pension funds, was adopted in 2013, introducing the term "investment funds". Investment funds comprise collective investment funds and funds for qualified investors.
BS.25	Real estate activities (NACE L) comprise above all the activities of lessors, agents or brokers in the area of selling or purchasing property, renting property and the provision of other services related to property.
BS.37	Loans provided by the Czech Export Bank and the Czech-Moravian Guarantee and Development Bank were excluded from the calculation.
BS.44 – BS.45	Assets readily available to cover liabilities. They comprise cash and claims on central banks, claims on credit institutions and other clients payable on demand and bonds issued by central banks and general government.
NI.2 – NI.7	These indicators comprise domestic insurance companies (excluding the EGAP) and branches of foreign insurance companies.
NI.2	Premiums written include total gross premiums written for 12 months by domestic insurance companies including branches of foreign insurance companies (excluding EGAP).
NI.9	Change in the assets of pension funds adjusted for contributions and benefits.
NI.13	The change in the amount of loans provided to households by non-bank financial corporations engaged in lending in 2015 was due to the conversion of one of these lenders into a foreign bank branch.

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