

Risks to financial stability and their indicators

2021



Czech National Bank — Risks to financial stability and their indicators — 2021

The publication *Risks to financial stability and their indicators* was discussed by the CNB Bank Board at its regular meeting on financial stability issues on 25 November 2021 and published on 10 December 2021. With a few exceptions, it contains information available as of 30 September 2021. It is available in electronic form on the [CNB website](#), where the underlying data for the tables and charts used in this publication are also published. The publication uses the same [abbreviations](#) and [terms](#) as this year's Financial Stability Report.

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 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. In line with the [CNB's Strategy](#), 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 2018. The fifth issue, based on the November 2021 update of the Report, is now at your disposal.

Last year, the key topic of our financial stability publications was the impacts of the coronavirus pandemic on the financial sector. We continue to pay attention to the consequences and implications of the pandemic in this publication. However, we also now look primarily at the risks our financial sector may face in the post-pandemic period. A macro stress test conducted at the five-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. To do so, it primarily employs macroprudential policy tools, which it implements on the basis of its published [Strategy](#).

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 risks in the domestic financial system and abroad is presented at these meetings and 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 at regular intervals. For many years, it also set a systemic risk buffer for systemically important banks. This year, it started to set a capital buffer for other systemically important institutions for these banks following changes in EU legislation. 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. Its approach in this area has changed significantly following an amendment of the Act on the CNB. The CNB now sets legally binding upper limits on the LTV, DTI and DSTI credit ratios by means of provisions of a general nature. Some quantitative and qualitative mortgage loan parameters, such as the maximum term of a mortgage loan or other consumer credit and the methods for repaying the principal of a mortgage loan, continue to be set in the form of recommendations.

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. DECISIONS AND ASSESSMENT OF RISKS TO FINANCIAL STABILITY

The CNB Bank Board decided at its meeting on financial stability issues on 25 November 2021 to enhance the resilience of the banking sector by increasing the countercyclical capital buffer rate by 0.5 pp to 2.0% with effect from 1 January 2023. In accordance with the CNB's new legal mandate, it also decided to set upper limits on the LTV, DTI and DSTI credit ratios. It lowered the basic LTV limit to 80% and set upper limits on the DTI and DSTI ratios of, respectively, 8.5 times the applicant's net annual income and 45% of the applicant's net monthly income with effect from 1 April 2022. Higher limits – an LTV of 90%, a DTI of 9.5 and a DSTI of 50% – will apply to applicants under 36 years of age.

The Czech financial sector maintained high resilience to adverse shocks in 2021. The capital position of its key segment – the banking sector – remains robust, thanks in part to capital buffers and capital surpluses in excess of the regulatory requirements. A partial economic recovery, the CNB's accommodative monetary policy and the government's stabilisation and support programmes prevented a wave of credit defaults and a significant deterioration in the quality of assets in financial institutions' balance sheets. Virtually all segments of the financial sector – the banking sector in particular – saw year-on-year growth in their assets and profitability. However, the level of uncertainty about the future course of the pandemic and the economy remains high. It requires financial institutions to act very prudently in the management of balance sheets, risks and capital, and in dividend policies.

The global economy remains exposed to a range of risks to economic activity and price and financial stability.

Supply chain disruptions and adverse shocks to energy prices have led to global growth in inflation to levels last recorded before the outbreak of the global financial crisis. For years now, the environment of exceptionally low short- and long-term rates related to the monetary policies of major central banks has been reflected in increased risk-taking in investment on financial markets and in growth in prices of assets, especially property. If the sharply increased inflation were to translate into higher inflation expectations, perceived real interest rates would drop further into negative territory. This would support the current risk trends while creating conditions for a future sharp increase in asset price volatility on financial markets. As government debt in advanced countries has reached its highest levels since World War II, a disorderly adjustment of the strongly compressed government bond risk premia could lead to high volatility in many markets. This could have strongly adverse impacts on the real economy. In this situation, the CNB has started to normalise its key policies in an effort to limit the sources and potential consequences of the above risks.

The CNB has responded to credit risks in the banking sector associated with the financial and business cycle by changing the countercyclical capital buffer (CCyB) rate last year and this year. In response to the onset of the pandemic, the CNB Bank Board decided last year to gradually lower the CCyB rate from 1.75% to 0.5%. Following an assessment of financial cycle indicators, banking sector vulnerability and other factors affecting resilience, the Bank Board decided in May this year to increase the CCyB rate to 1%, the rate covering the usual level of risks according to the CNB's analyses, with effect from 1 July 2022. In August 2021, it decided to increase the rate to 1.5% with effect from 1 October 2022.

The CNB Bank Board decided at its November meeting to increase the CCyB rate to 2% with effect from 1 January 2023. The decision was based on the finding that the taking on of new risks against the backdrop of growing economic activity had intensified and that the previously accepted aggregate cyclical risks in the banking sector's balance sheet remained elevated. At the same time, risk weights on credit portfolios under the IRB approach, which are a decisive factor for the amount of capital created, were at historical lows. The Bank Board also took into account the current macroeconomic uncertainties, which may lead to higher risk materialisation. Given the current strong capitalisation of the domestic banking sector, increasing the CCyB rate will not have a negative effect on lending to the real economy.

In 2021, the CNB changed its approach to mitigating risks associated with the systemic importance of institutions due to the transposition of the CRD V directive into Czech law. Since 1 October 2021, the CNB has been mitigating these risks using the capital buffer for other systemically important institutions (the O-SII buffer) instead of the systemic risk buffer (SRB). To calibrate the O-SII buffer, the CNB is required to apply a methodology based on the bucketing approach with supervisory assessments, which uses systemic importance scores calculated at the consolidated level according to EBA guidelines. Five institutions are required to maintain an O-SII buffer of 0.5%–2.5%. The list of O-SIIs for 2022 will remain the same as in 2021.

The affordability of housing has deteriorated further due to rapid growth in residential property prices, and the estimated overvaluation of apartment prices has also increased. A renewed vicious loop between credit financing of residential property purchases and rapidly rising residential property prices is a significant source of systemic risk in the Czech economy. Average year-on-year property price growth has exceeded 10% over the last five years, significantly exceeding growth in households' average income in the same period (around 7%). This has led to growth in the average size of new mortgage loans, which has increased by 60% over the last five years. The rapid price growth is also reflected in the estimated degree of apartment price overvaluation for the median household, which reached almost 25% in 2021 Q2. The degree of overvaluation of investment apartments may be in excess of 30% assuming constant rental yields.

The volumes of genuinely new mortgage loans have increased. Despite initial expectations, activity on the mortgage and property markets has not weakened during the pandemic. On the contrary, it has tended to strengthen since the second half of last year. In 2021 Q2 and Q3, the mortgage market showed significant signs of overheating, with the amount of new loans provided between January and September markedly exceeding the full-year volumes provided in previous years. The strong growth was driven not just by the increasing average mortgage loan size, but also by a growing number of new loan contracts.

Credit standards in mortgage lending have generally eased. As regards the LTV ratio, the CNB recommended that lenders comply with an LTV limit of 90%, to be exceeded only by loans representing a maximum of 5% of the reference volume. All lenders complied with this volume exemption. However, the share of loans with LTVs of 80%–90% remained relatively high. The CNB has applied no upper limits on the DTI and DSTI ratios since mid-2020. However, based on the conclusions of its analyses and stress tests, the CNB still usually regards mortgage loans with a DSTI of over 40% of net monthly income and a DTI of over 8 times net annual income as very risky. The said regulatory relaxation started to be gradually reflected in less tight credit standards, and this trend intensified further in 2021. The amount of significantly risky loans provided since the start of 2021 continued to increase. In 2021 Q2, banks provided over 48% of the relevant reference amount of loans with a DSTI of over 40%, 26% of loans with a DSTI of over 45%, and 10% of loans with a DSTI of over 50%. Similar tendencies could be seen for the DTI ratio. Loans with a DTI of over 8 accounted for almost 40% and loans with a DTI of over 9 for almost 22% of the reference volume of loans in 2021 Q2. These trends intensified further in July and August 2021. There were significant differences across lenders. This is creating a risk of more conservative lenders reacting to a potential loss of market share by easing their standards to the levels of their less conservative competitors. Mutually enforced relaxing of credit standards would be reflected in more rapid accumulation of systemic risks.

The CNB is responding to the growth in systemic risks associated with mortgage lending and housing market developments by means of newly acquired legal powers. In 2021, the Czech Parliament approved an amendment to the Act on the CNB allowing the CNB to set binding upper limits on the LTV, DTI and DSTI ratios for all mortgage lenders where systemic risks related to mortgage lending have been identified. The CNB sets the specific upper limits on credit ratios in a provision of a general nature. The limits take effect no earlier than four months after the Bank Board decides on them and the provision is published. If the CNB sets an upper limit on one or more credit ratios through the provision, lenders may not provide loans exceeding that limit. However, an exemption not exceeding 5% of the total amount of loans provided in the previous quarter may be applied by specific lenders to specific cases in the current calendar quarter. Two levels of the relevant limit will apply for each ratio. The first can be regarded as the basic one and the second – designed for applicants under 36 years for purchases of owner-occupied housing – as less strict (LTV 10 pp higher, DSTI 5 pp higher and DTI one multiple of net annual income higher than the basic limit). The less strict limits will not be applied automatically. Lenders will apply a case-by-case approach to applicants under 36 years and assess how large a loan they will be able to repay given their income prospects.

The CNB is lowering the basic LTV limit to 80% and setting upper limits on the DTI and DSTI ratios of, respectively, 8.5 times the applicant's net annual income and 45% of the applicant's net monthly income with effect from 1 April 2022. In view of the fade-out of the acute pandemic-induced economic problems, the rising estimated overvaluation of apartment prices and the significant share of new loans with a combination of high DTI and DSTI levels, the CNB considers it necessary to return to the basic LTV limit of 80% (90% for applicants under 36 years) and to reintroduce upper limits on the income ratios. The limit on the DTI ratio is set at 8.5 times the applicant's net annual income and that on the DSTI ratio at 45% of the applicant's net monthly income (9.5 times and 50% respectively for applicants under 36 years). The CNB calls on lenders not to use the four-month time interval between the setting of the DTI and DSTI caps and their date of effect to rush into providing loans with DTIs and DSTIs exceeding these caps. The CNB expects lenders to start applying the new limits themselves as soon as possible.

The upper limits on credit ratios will prevent the vulnerability of the banking sector from rising. Credit ratios are macroeconomic instruments aimed at ensuring that the banking sector is sufficiently resilient to adverse shocks. Capping them will prevent excessive growth in the share of loans with highly risky characteristics in banks' balance sheets, which could lead to failures in the domestic banking sector in the event of highly adverse economic developments. Together with the ongoing monetary policy normalisation, the upper limits should reduce the risk of a continued spiral between apartment price growth and growth in loans with excessively risky characteristics for financing apartment purchases. A positive side effect of introducing the caps is that they will reduce the vulnerability of recipients of new mortgage loans. Another positive side effect is that they may limit the conditions for further significant growth in apartment prices and their potential overvaluation.

The upper limits on credit ratios will represent a constraint on only a small proportion of mortgage loans, specifically those with potentially the riskiest parameters. Given the credit ratio structure of the loans provided to date, the less strict limits for applicants under 36 years and the 5% volume exemption calculated from both genuinely new and refinanced loans, the new regulation will have no major quantitative impact on either lenders or loan applicants. Data on loans provided in January–August 2021 reveal that, taking the applicants' age structure and the 5% exemption into account, around 13% of loans would have failed to meet the new conditions. However, experience with the application of the previously recommended credit ratio limits shows that applicants are able to adjust to new conditions without the volume of loans provided falling significantly in the given macroeconomic conditions. The potential effect of the measures on the volume of new loans, which, by the CNB's estimation, will not exceed one-tenth of the amount of loans that would hypothetically be provided if the measures did not exist, will be offset by a more conservative risk profile of new loans.

The CNB recommends that mortgage lenders also comply with other conditions. The CNB will continue to use the *Recommendation on the management of risks associated with the provision of consumer loans secured by residential property* to set certain conditions which are not governed by the Act on the CNB and specified in the aforementioned provision of a general nature. The new version of the *Recommendation* contains a set of quantitative and qualitative parameters for prudent mortgage lending. The quantitative ones include an LTV of no more than 100% for any loan, a mortgage loan term not exceeding the horizon of economic activity of the client or the lifetime of the property (as a rule, a maximum of 30 years) and an unsecured consumer credit term not exceeding eight years. The CNB also recommends that the LTV, DTI and DSTI ratios for new mortgage loans for the purchase of buy-to-let residential property and the purchase of additional residential property not exceed the upper limits set in the provision of a general nature effective when these loans are provided. Moreover, when refinancing mortgage loans whose credit ratio levels they are not required by law to assess, lenders should not extend the final maturity of the loan beyond that agreed with the original provider. The qualitative parameters include a recommendation that lenders should stress test the applicant's ability to repay a loan in the event of an increase in interest rates and under worse economic conditions, and conversely should not provide loans with a non-standard repayment schedule shifting the applicant's commitments to a later period. The CNB will assess compliance with these recommendations in spring 2022 and inform the public of its findings in the *Financial Stability Report*.

II. THE REAL ECONOMY AND FINANCIAL MARKETS

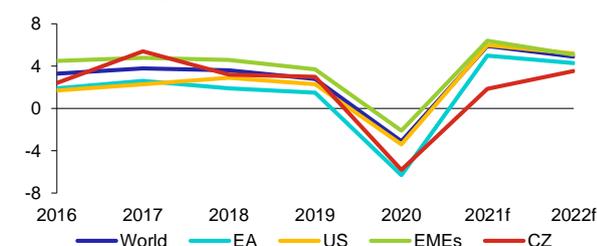
II.1 THE MACROECONOMIC AND FINANCIAL ENVIRONMENT

The global and domestic economies are at risk mainly from factors causing inflation to rise

The world economy continued to recover in 2021 Q3 (see [Chart II.1](#)). However, it is being adversely affected by delays in production and supply chains, which are causing the supply side to respond insufficiently to renewed demand (see [Chart II.2](#)) and are leading to growth in prices. The global inflation pressures are also being fostered by higher prices of transport, energy and other commodities, and food, and in some countries by persisting government stimuli. These factors may cause the anchoring of inflation expectations to weaken and the high global inflation pressures to last longer. In addition, there is still uncertainty regarding economic activity in China,¹ governments' approaches to the resurgence of new coronavirus cases, and consumers' reaction to the higher expenses caused by the rapidly rising prices. The sentiment of economic agents in the EU is generally positive (see [Chart II.1 CB](#)), although falling PMIs indicate worsening expectations in industry. The economic situation in the Czech Republic reflects the above external negative factors (see [Chart II.2 CB](#)) and extra inflation pressures from an overheated labour market. According to the CNB's autumn forecast,² the Czech economy will grow by around 2% overall in 2021 and by 3.5% in the next two years in real terms. A risk to the forecast is lengthier disruptions to global supply chains, which could generate additional inflation pressures in the global and domestic economies, with a weaker koruna having an additional inflationary effect in the local economy.

Chart II.1
Economic growth in selected areas

(annual real GDP growth in %)

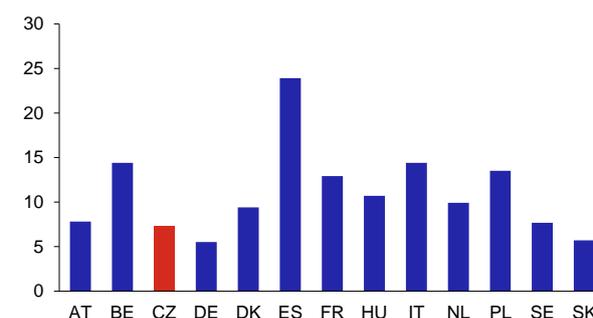


Source: IMF, CNB

Note: f = forecast. The forecast for the Czech Republic is based on the CNB's autumn forecast ([MPR – Autumn 2021](#)). The forecasts for the other economies are based on the IMF's October forecast published in [World Economic Outlook, October 2021](#).

Chart II.2
Household consumption growth in selected EU countries

(%)



Source: Eurostat

Note: Year-on-year growth as of 2021 Q2.

Market expectations regarding the pace of monetary policy normalisation in advanced economies intensified

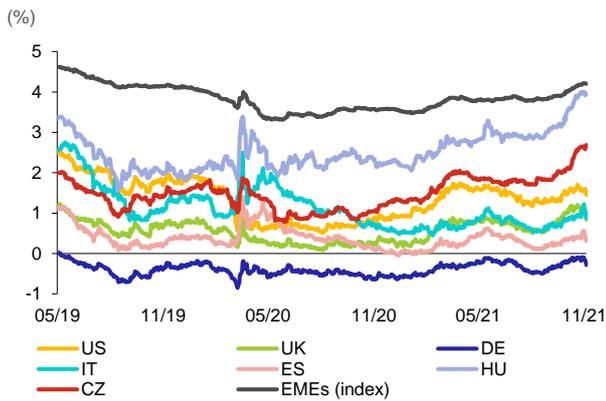
The global economic recovery and rising inflation helped to initiate monetary policy normalisation in some advanced economies in October and November 2021. The Fed started to taper its asset purchases and expects them to end in June 2022. The Bank of Canada limited its asset purchase programme to reinvestment of maturing principal payments and announced an earlier-than-expected rate increase. Under pressure from increasing yields, the Reserve Bank of Australia abandoned its plan to hold the three-year government bond yield at 0.1%. The tapering of asset purchases, expectations of monetary policy rate hikes in major advanced economies in 2022, and the perceived risk of sustained higher inflation resulted in growth in government bond yields (see [Chart II.3](#)). The monetary policy developments and growth in yields had yet to be reflected in the global stock market situation (see [Chart II.3 CB](#)), which mostly continued to hit historical highs, aided by favourable global macroeconomic conditions and profits of listed companies.³ Global stock and corporate bond markets still view the risks as very low (see [Chart II.5 CB](#) and [Chart II.6 CB](#)). This may be due partly to the fact that markets see the monetary policy tightening in the coming years primarily as a response to the current inflation pressures, which they regard as temporary rather than as the start of a broad and sustained exit from the low-yield environment. This also evidenced by the relatively flat shape of some yield curves (see [Chart II.7 CB](#)).

1 The risks to financial stability in China are described by the IMF in the [Global Financial Stability Report, October 2021](#).

2 [MPR – Autumn 2021](#)

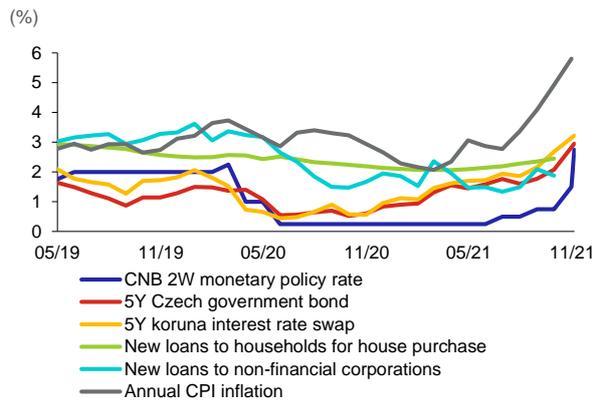
3 The growth in the profitability of listed companies was reflected in a decline in the P/E ratio, which thus receded from its record highs (see [Chart II.4 CB](#)). This can be interpreted as a reduction in the risk of a sudden correction of prices on stock markets, as the dynamic growth in stock prices from mid-2020 onwards was accompanied by robust renewal of profitability, so the arguments for interpreting this growth as being driven by fundamentals and not by speculative motives strengthened.

Chart II.3
Government bond yields for selected countries



Source: Refinitiv, Bank of America Merrill Lynch, Bloomberg
Note: The chart shows the 10Y bond yield, except for EMEs, for which the government bond yield index is shown. The latest value shown is for 5 November 2021.

Chart II.4
Selected interest rates, yields and inflation in the Czech Republic

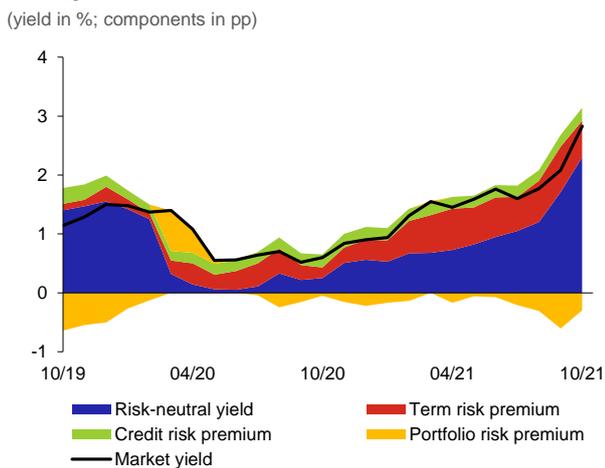


Source: CNB, Refinitiv
Note: Month-end values, except for the latest value shown, which is for 5 November 2021. In the case of client rates, monthly averages are used and the latest value shown is for September 2021.

The increase in the CNB’s monetary policy rate was reflected in a tightening of domestic financial conditions

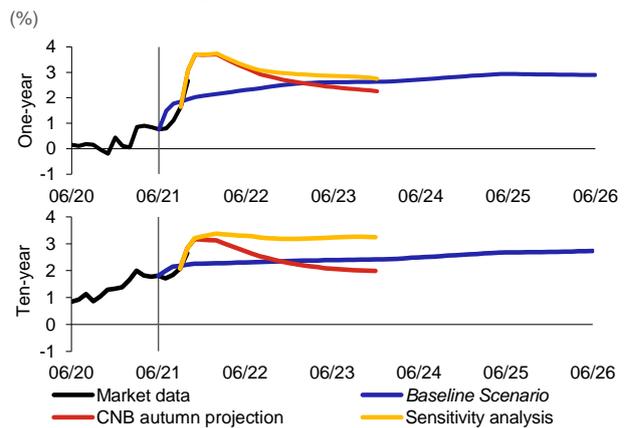
In response to the rising inflation, the CNB raised its key monetary policy rate by a total of 2.5 pp to 2.75% between June and November 2021 (see Chart II.4). This increase was accompanied by buoyant growth in koruna interest rate swap rates and Czech government bond yields. Client interest rates also began to trend up (see Chart II.4). The growth in yields and swap rates was driven mainly by the risk-free component of the yield (see Chart II.5). For this reason, interest rates and yields with short residual maturities rose the fastest, and yield curves inverted as well as moving upwards (see Chart II.7 CB). Any further increase in monetary policy rates will be reflected mainly in client interest rates and the shorter end of the yield curves, while growth in longer yields could slow if the curve inversion persists (see Chart II.6).⁴ The size of the effect of the increase in monetary policy rates on the shape of koruna yield curves will be determined largely by market agents’ expectations regarding the level of monetary policy rates in the medium term (see Chart II.6, sensitivity analysis series) and by foreign monetary policy developments and their impacts.

Chart II.5
Decomposition of the five-year Czech government bond yield



Source: Refinitiv, CNB

Chart II.6
Five-year Czech government bond yield scenarios



Source: Refinitiv, CNB
Note: The first two years of the *Baseline Scenario* are consistent with the CNB’s summer forecast (MPR – Summer 2021). The autumn projection and the sensitivity analysis are consistent with the CNB’s autumn forecast (MPR – Autumn 2021). Unlike the autumn projection, the sensitivity analysis includes additional factors which would foster a larger increase in longer yields: (1) faster monetary policy normalisation in other countries and (2) stronger expectations among market agents of the CNB’s monetary policy rates staying higher for longer.

⁴ The first two years of the *Baseline Scenario* are based on the CNB’s summer forecast presented in MPR – Summer 2021. The projection for the next three years was created solely for the purposes of stress testing banks (see section III.4).

Faster monetary policy normalisation and increasing concerns of long-lasting stagflation could cause a step change in risk premia and a correction of asset prices

As inflation reaches significantly higher levels, the scenario of a relatively rapid increase in the monetary policy rates of key central banks and growth in yields on advanced countries' bonds could materialise. This could lead to gradual changes in global investment portfolios, associated with a decline in the incentive to search for yield and with increased demand for safe assets. A sudden acceleration of monetary policy normalisation in advanced countries could, through an outflow of investment, affect less developed economies and also significantly impair the deficit funding of highly indebted governments, including in advanced countries. The relevance of this risk has been highlighted by the upward trend in yields that started in 2021 (see [Chart II.3](#)). Similarly, concerns about slowing global economic growth amid elevated inflation and a renewed worsening of the pandemic situation could result in a sharp increase in global risk aversion on financial markets and a correction of prices of assets seen as risky, with potential adverse consequences for the stability of financial sectors, primarily in the form of impaired availability of funding.

The fiscal policy of governments of EU countries remains accommodative

Fiscal policy in EU countries remains expansionary (see [Chart II.8 CB](#)), supported by an environment of low interest rates (see [Chart II.9 CB](#)), high investor demand and, in euro area countries, by the ECB's still ongoing asset purchase programmes (see [Chart II.7](#)). Countries are gradually switching from one-off and transitory pandemic-related spending to investment-related, productivity-boosting expenditure and to low-carbon transformation of their economies (see [Box 1](#))

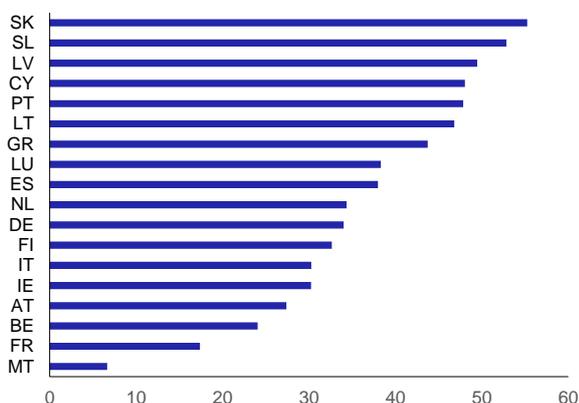
The public finance imbalance in the Czech Republic increased

The domestic general government debt ratio rose by 3.2 pp year on year to 42.7% of GDP as of June 2021 (see [Chart II.11 CB](#)) The CNB's autumn forecast expects a general government deficit of 6.9% of GDP in 2021. The decline in the deficit in subsequent years currently seems very gradual. The draft state budget for 2022 envisages a deficit of CZK 376.6 billion.⁵ The outlook for a structural deficit of 5.3% of GDP and a debt ratio of 54.6% of GDP in 2024 according to the Czech Republic's Convergence Programme points to a lack of a public finance consolidation strategy. The slow rate of consolidation compared to other EU states⁶ (see [Chart II.8](#)) is largely due to relaxation of fiscal rules⁷ and changes in tax and spending policies. In this situation, investors may exert upward pressure on Czech government bond yields on top of the effect of monetary policy tightening.

Chart II.7

Share of government securities purchased by the Eurosystem in new issues

(%)



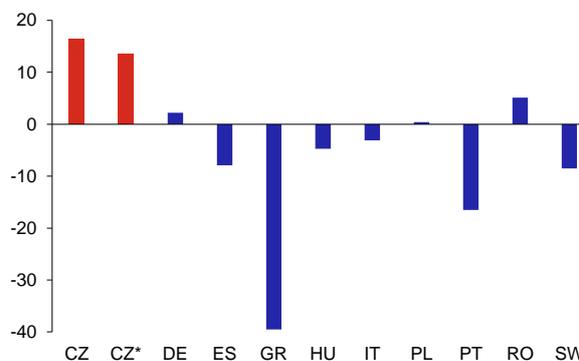
Source: ECB

Note: The chart shows the share of the Eurosystem's net PSPP and PEPP purchases in new general government securities issues between March 2020 and September 2021.

Chart II.8

Increase in the debt-to-GDP ratio based on the programmes of selected EU countries

(difference between 2024 and 2020 in pp)



Source: Convergence and stabilisation programmes (April 2021), Ministry of Finance of the Czech Republic

Note: The chart shows general government debt. CZ* is an updated estimate based on the November [Fiscal Outlook of the Ministry of Finance of the Czech Republic](#).

⁵ The new government is expected to operate very probably with a provisional budget for part of 2022.

⁶ For details see also <https://unrr.cz/studie-srovnani-tempa-planovane-fiskalni-konsolidace-v-zemich-eu/> (in Czech only).

⁷ An amendment to Act No. 23/2017 Coll., on Budget Responsibility, of 22 December 2020 relaxed the admissible structural deficits and moved the timing of the return to a structural deficit of 1% of GDP to 2031, with the consequence of higher debt and earlier convergence to the "debt brake" of 55% of GDP.

BOX 1 Green bonds

The low-carbon transformation of economies necessary to meet the objectives laid down in the European Green Deal⁸ will require considerable investment. Green bonds have been created to increase the allocation of investment to activities that are environmentally friendly or related to the transition to a climate-neutral economy. These bonds may provide their issuers with an opportunity to raise funds for such activities and widen their investor base.

A specific information asymmetry – “greenwashing”, i.e. issuers making misleading claims about the environmental impact of their projects – may arise between investors who prefer green bonds and issuers of green assets. Standardisation of green bonds should prevent such misleading environmental advertising. The foundations of standardisation were laid in 2014 when a group of international banks introduced guidelines called the “Green Bond Principles” (GBP).⁹ These voluntary process principles may be applied very differently to different issues. For a bond to be recognised as green under the principles, not only must a “use of proceeds” condition be met, but the issuer must provide sufficient information about the project and its environmental impact, the project implementation process itself and the use of the proceeds. These principles form the basis for green bond standards, which use taxonomies to define sustainable projects in detail.¹⁰ The transparency of the use of funds from bonds labelled by a standard as green is usually supplemented by an independent review by an external auditor or another third party such as a rating agency.

In order to improve the transparency, efficiency, accountability and credibility of green bonds, the European Commission has proposed a single European green bond standard (EUGBS).¹¹ It provides issuers from all over the world with an opportunity to label a bond issued in accordance with the rules a European green bond, or EUGB. The standard specifies in detail the term “sustainable project” in alignment with the EU taxonomy.¹² It also standardises the issuer’s duty to disclose the use of proceeds and the environmental impact of the bonds, and, last but not least, orders a mandatory review by an external reviewer. Under the Commission’s proposal, external reviewers would be accredited and supervised by the European Securities and Markets Authority (ESMA).

Green bonds have so far been characterised by low market liquidity. This reflects the rather conservative composition of the investor base (dominated by institutional investors holding these instruments to maturity) and the low amounts of green bonds issued so far. In 2020, green bond issuance in the EU represented only 2.6% of total EU bond issuance.¹³ Europe is meanwhile the largest global issuer of green bonds (see [Chart 1](#)). However, green bond issuance has been rising significantly in recent years. The proceeds are used mostly for energy, housing and transport-related investment (see [Chart II.10 CB](#)).¹⁴ The upward trend is expected to continue in the years ahead (see [Chart 2](#)). For example, for the purposes of NextGenerationEU (NGEU)¹⁵ the European Commission is planning a green bond programme of up to EUR 250 billion (30% of the total NGEU framework) by the end of 2026.¹⁶ As of 30 June 2021, domestic institutions held CZK 4 billion of GBP-compliant bonds, 53% of which were held by investment funds, 23% by insurance companies, 19% by pension funds and 5% by banks.

Despite the interest in the rapidly developing green bond market, investors should not underestimate the related potential financial risks. Labelling a bond as green involves assessing its environmental impact only. The risk premium for green bonds may thus theoretically be lower than that for conventional bonds, specifically in the component covering the climate change risk stemming from the low-carbon transformation of economies.¹⁷

8 [Communication from the Commission: The European Green Deal](#)

9 [Green Bond Principles](#) are currently being developed by the International Capital Market Association (ICMA).

10 For example, the Climate Bonds Standard of the non-profit Climate Bonds Initiative.

11 [Proposal for a Regulation of the European Parliament and of the Council on European green bonds.](#)

12 The EU taxonomy defines the conditions under which an economic activity qualifies as contributing substantially to mitigating climate change and not significantly harming any of the environmental objectives set out in Article 9 of [Regulation \(EU\) of the European Parliament and of the Council on the establishment of a framework to facilitate sustainable investment](#). These conditions are specified in detail for each economic activity in [Commission Delegated Regulation of 4 June 2021](#). The Commission has published an [EU Taxonomy Compass](#).

13 [European Commission data](#). The total issue includes both corporate and government bonds.

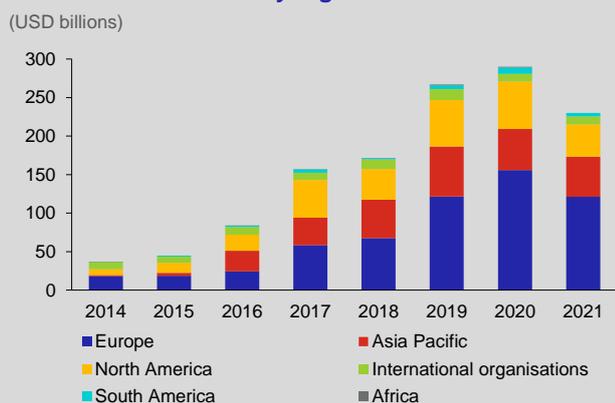
14 In 2020, 35% of total green bond issuance was invested in energy, 26% in housing and 23% in transport.

15 [Recovery plan for Europe](#).

16 The European Commission issued its first-ever green bond in October 2021, raising a total of EUR 12 billion for NGEU. Investors’ demand was enormous, amounting to eleven times the amount offered.

17 [Finanční stabilita vs. finanční rizika ze změny klimatu](#) (*Financial stability versus financial risks from climate change*, available in Czech only).

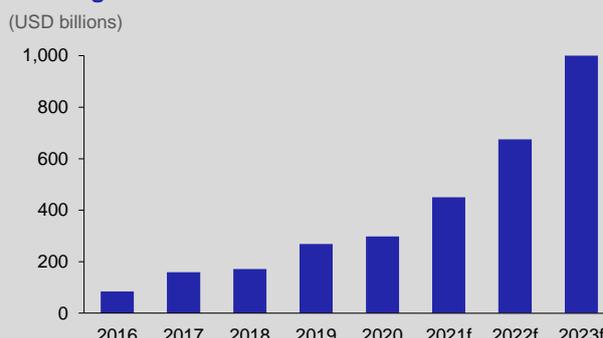
Chart 1 (BOX 1)
Green bond issuance by region



Source: Climate Bonds Initiative

Note: The 2021 data are for the first half of the year only.

Chart 2 (BOX 1)
Global green bond issuance



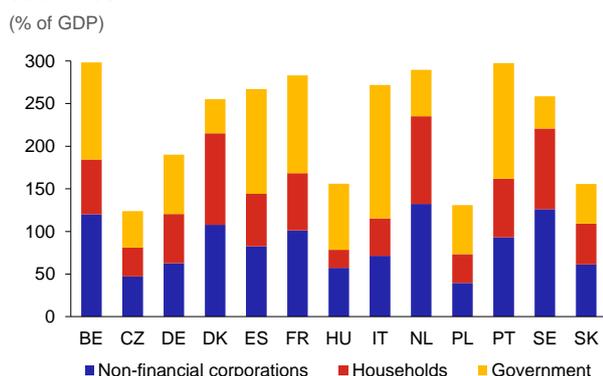
Source: Climate Bonds Initiative

Note: f = forecast. A total of USD 227.8 billion of green bonds were issued in the first half of 2021.

Growth in prices of inputs and housing and a potential increase in debt service costs are risk factors for the EU private non-financial sector

Corporate profitability in the EU is showing an upward trend in large firms. Liquidity and solvency risks remain elevated mainly in small firms in pandemic-hit sectors (see [Chart II.12 CB](#)). A further increase in the debt ratio of firms, due mainly to shortages and rising prices of production inputs, seems to be a risk factor in many countries (see [Chart II.13 CB](#)). Growth in debt servicing costs might be an additional adverse effect if the ECB and other central banks in EU countries start to normalise monetary policy more quickly in response to sustained inflation. Higher debt servicing costs are also a potential risk to households, whose demand for credit-financed residential property has increased due to still low interest rates and relaxed credit standards. This has been reflected in a rise in the sector’s debt ratio (see [Chart II.9](#)). The limited supply of residential property, combined with increased demand for it, is leading to an imbalance on the housing market and to substantial property overvaluation across EU countries (see [Chart II.14 CB](#)). Besides higher interest costs, the risks to households in EU countries include a deterioration in the labour market situation and a related loss of income, higher expenses reflecting growth in prices of goods and energy, and rising debt amid continued growth in house prices (see [Chart II.10](#)). The private non-financial sector in the Czech Republic faces some similar risks (see [section II.2](#)).

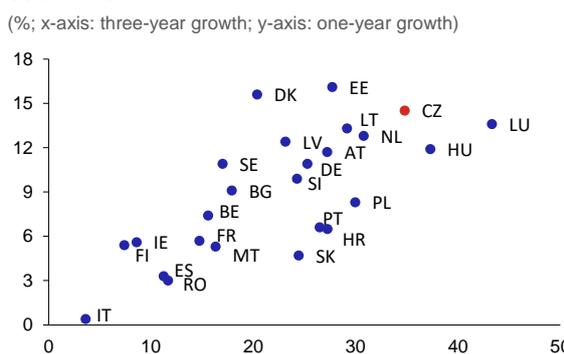
Chart II.9
Debt ratio of economic agents in selected EU countries



Source: ECB

Note: Data as of 30 June 2021.

Chart II.10
Residential property price growth in selected EU countries



Source: Eurostat

Note: Data as of 30 June 2021.

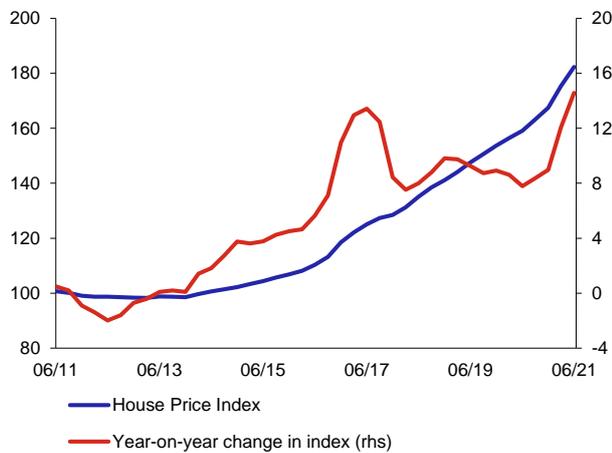
Property price growth in the Czech Republic rose to 15% in the first half of 2021

The buoyant growth in residential property transaction prices strengthened further in the first half of 2021 (see [Chart II.11](#)). The year-on-year growth rate was 14.6% in Q2. Available market data suggest that it did not slow in the subsequent months either. The price level has risen by 85% since the last trough in 2013 and by 65% over the last five years. The rise in prices has been broad-based across all types of property, although growth in land prices has picked up significantly in recent quarters, exceeding the otherwise long dominant growth in apartment prices (see [Chart II.15 CB](#)). From the regional

perspective, the trend in recent years of somewhat faster growth in property prices outside the capital continued (see [Chart II.16 CB](#)). The rapid price growth in the Central Bohemia and Liberec regions may reflect the high level of prices in Prague and efforts by some households to find more affordable housing in places with easy access to the capital.

Chart II.11
Transaction prices of residential property

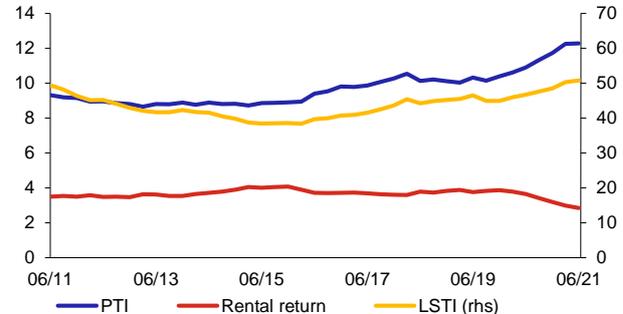
(2010 average = 100; right-hand scale: %)



Source: CZSO

Chart II.12
Selected apartment affordability indicators

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



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

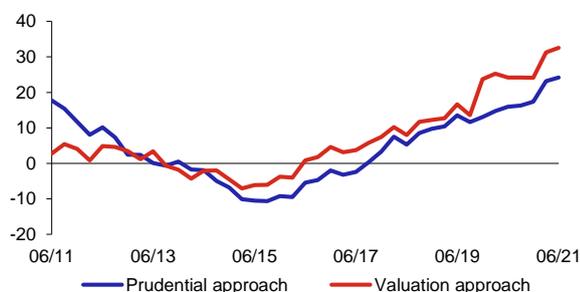
Note: PTI is the price-to-income ratio and LSTI the loan service-to-income ratio. The apartment price is defined as the average price of a 68 m² apartment. Income is defined as the annual moving total of the average gross wage. A loan with an LTV of 80% and a repayment period of 25 years was considered for the LSTI calculation.

The growth in prices has made housing less affordable and is fostering growth in risks to financial stability

According to all the indicators monitored, the rapid growth in property prices has made housing less affordable for most Czech households (see [Chart II.12](#)). Average apartment prices are currently safely affordable for only around 15% of households. Consistent with this is the rising overvaluation of apartment prices for the median household, which reached almost 25% in 2021 Q2 (see [Chart II.13](#)). The degree of overvaluation of investment apartments may be in excess of 30% assuming constant rental yields. The observed trend reflects optimistic expectations of future growth in the value of property in an environment of insufficient supply (see [Chart II.17 CB](#)), increased motivation of some households to maintain the purchasing power of their financial reserves amid rising inflation and low returns on alternative assets, and still relatively favourable debt financing conditions. Increasing activity of institutional investors on the domestic property market might also have had a partial effect on the accelerating price growth. The high overvaluation of investment apartments and increasing activity of institutional investors are in turn increasing the risk of property price volatility at times of elevated financial stress in the economy. In the extreme case, the resilience of the banking sector may be jeopardised due to a combination of a wave of credit defaults and a marked decline in collateral value. Although the *Baseline Scenario* and the autumn property price projection both expect further, albeit gradually slowing, growth in property prices, the risk of them falling in the event of a strongly adverse shock has increased (see [Chart II.14](#)).

Chart II.13
Estimated overvaluation of apartment prices

(%)

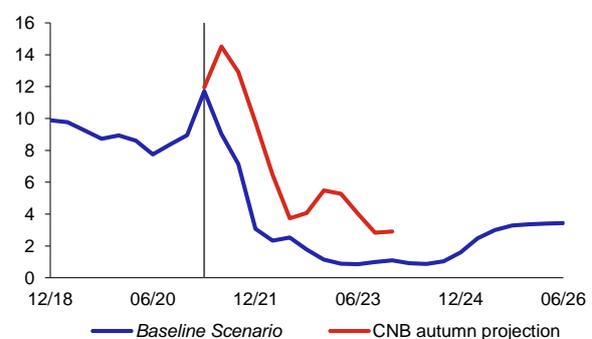


Source: CNB

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. The level of overvaluation is in line with developments consistent with the CNB's official forecast published in [MPR – Summer 2021](#).

Chart II.14
Property price scenarios

(year-on-year growth in %)



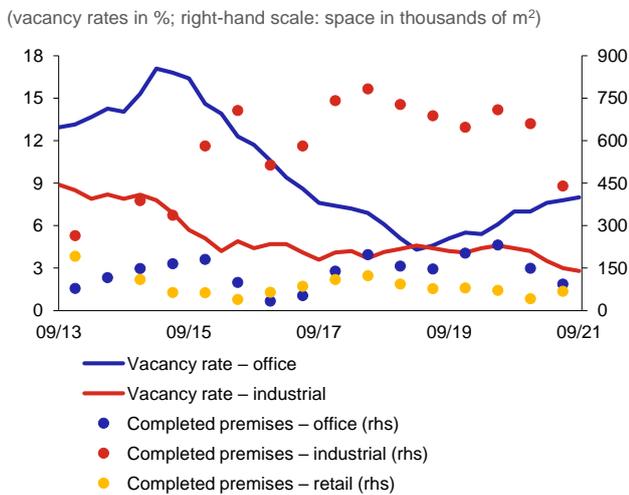
Source: CNB

Note: The first two years of the *Baseline Scenario* are consistent with the CNB's summer forecast ([MPR – Summer 2021](#)). The autumn property price projection is consistent with the CNB's autumn forecast ([MPR – Autumn 2021](#)).

The differences on the markets for individual types of commercial property have widened due to the pandemic

Overall, the commercial property segment has so far made it through the pandemic without experiencing major shocks, although the differences in the attractiveness of the individual types of property have widened. Demand for industrial property rose further in the first two quarters of 2021. This was reflected in a record-low vacancy rate, upward pressure on rents in this segment and a further decline in prime yields (see [Chart II.15](#) and [Chart II.16](#)). By contrast, due to work from home and continued uncertainty about the future situation in this area, there has been a gradual rise in the office vacancy rate, and along with it, property developers' caution about constructing more office space. This notwithstanding, the prime yields on this type of property have not changed so far. Shopping centres and other retail property have been broadly stable in terms of vacancy rates and yields over the last three quarters due to renewed sales. Overall investment activity on the commercial property market is well below pre-pandemic levels even though investor sentiment is gradually improving and the amounts investors are willing to invest are increasing. The low activity thus mainly reflects a lack of suitable investment opportunities due to limited supply and property developers' more cautious approach to constructing new property. Excess demand for commercial property will thus probably help keep yields relatively low despite the elevated uncertainty in some market segments.

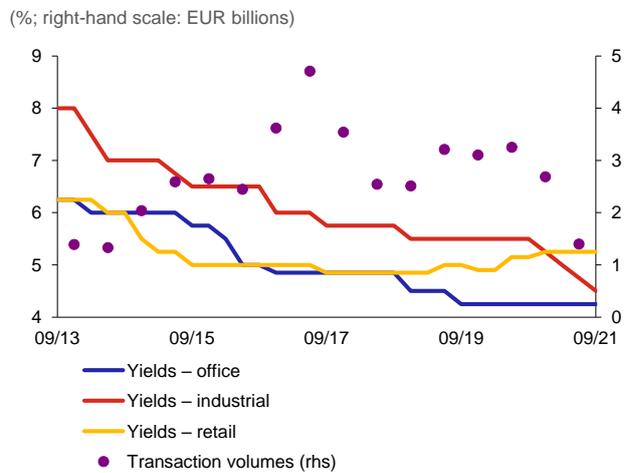
Chart II.15
Vacancy rates and completed premises for commercial property



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.

Chart II.16
Yields on commercial property and transaction volumes



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.

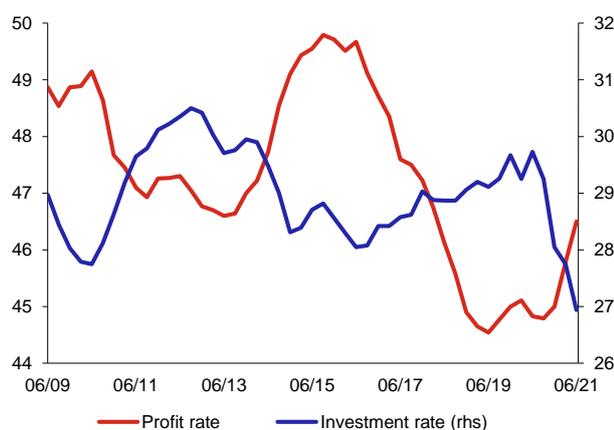
II.2 THE PRIVATE NON-FINANCIAL SECTOR

Conditions in the private non-financial sector improved in 2021 as the economy reopened

The profit rate in the non-financial corporations sector (see [Chart II.17](#)) rebounded as economic activity and consumer demand recovered in the spring months of 2021 (see [section II.1](#)). The investment rate conversely declined further, although according to a statistical survey conducted by the CNB the firms surveyed were expecting it to increase in the next 12 months.¹⁸ Labour market conditions remained very favourable for the household sector (see [Chart II.18](#)). In the *Baseline Scenario*,¹⁹ the unemployment rate continues to fall slightly in 2022 and stabilises below 3% in subsequent years. Wage growth will also stabilise at the end of 2022, at 5%. The CNB's autumn forecast²⁰ implies an even lower unemployment rate and smoother wage growth over the forecast horizon.

Chart II.17**Profit rate and investment rate in the non-financial corporations sector**

(% of gross value added)

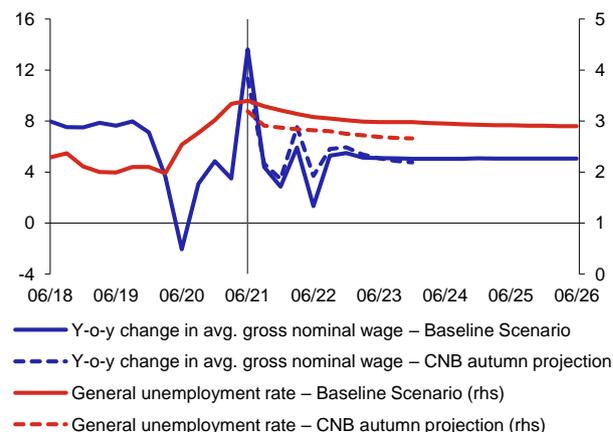


Source: CZSO

Note: Profit is expressed by the annual moving total of gross operating surplus and investment by the annual moving total of gross fixed capital formation.

Chart II.18**Unemployment rate and gross nominal wage growth scenarios**

(%)



Source: CNB, CZSO

Note: The first two years of the *Baseline Scenario* are consistent with the CNB's summer forecast ([MPR – Summer 2021](#)). The CNB's autumn forecast published in [MPR – Autumn 2021](#).

Despite record-high volumes of new loans, the debt ratio in the household sector rose only slightly

A record-high amount of new loans was provided to households in the first three quarters of 2021, and the newly accepted cyclical risks in banks' balance sheets grew accordingly (see [section IV.3](#)). In line with the dynamic property market developments (see [section II.1](#)), the median instalment and the median size of new mortgage loans increased significantly (see [Table II.1 CB](#)). This notwithstanding, the debt ratio in the household sector rose relatively slowly and remains below 60% of gross disposable income (see [Chart II.19](#)). The *Baseline Scenario* implies that the rate of growth of loans to households for house purchase will peak during 2022 and then gradually descend to 5.4% at the scenario horizon. If the CNB's autumn forecast materialises, the growth rate of loans will be stronger due to expected higher transaction activity and a higher average loan size (see [Chart II.20](#)). In the *Baseline Scenario*, growth in consumer credit to households follows a similar path, stabilising at 4.9% at the scenario horizon.²¹

18 The statistical survey of firms was conducted in 2021 Q3. The growth in investment is expected to be driven mainly by manufacturing and energy generation and distribution.

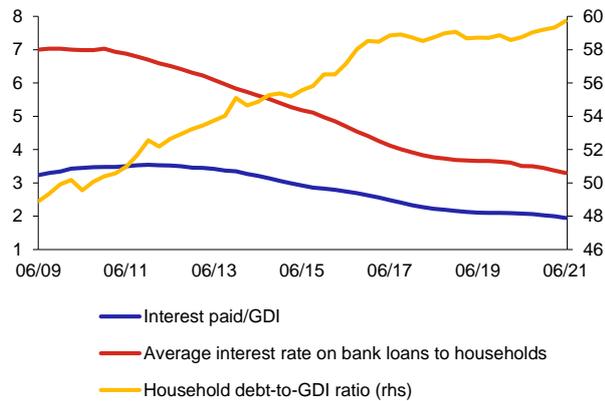
19 The first two years of the *Baseline Scenario* are based on the CNB's summer forecast presented in [MPR – Summer 2021](#). The projection for the next three years was created solely for the purposes of stress testing banks (see [section III.4](#)).

20 [MPR – Autumn 2021](#)

21 Projections of consumer credit provided to households are not included in the standard set of projections and were therefore not modelled for the CNB's autumn forecast.

Chart II.19
Debt ratio and interest paid by households

(%; right-hand scale: share in GDI in %)

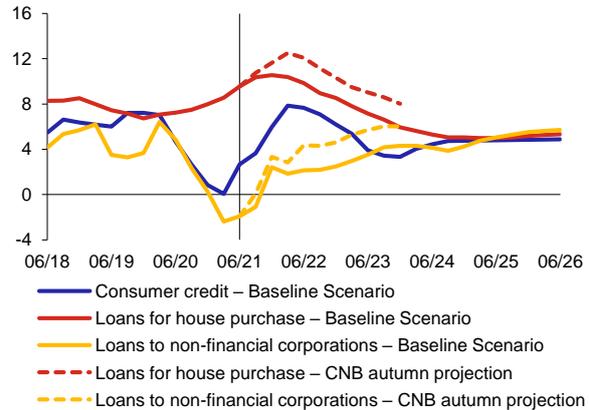


Source: CNB, CZSO

Note: GDI stands for gross disposable income. The household sector also includes data for NPISHs. The interest rate is calculated as the average interest rate on the stock of bank loans to households.

Chart II.20
Private non-financial sector bank loan scenarios

(year-on-year growth in %)



Source: CNB

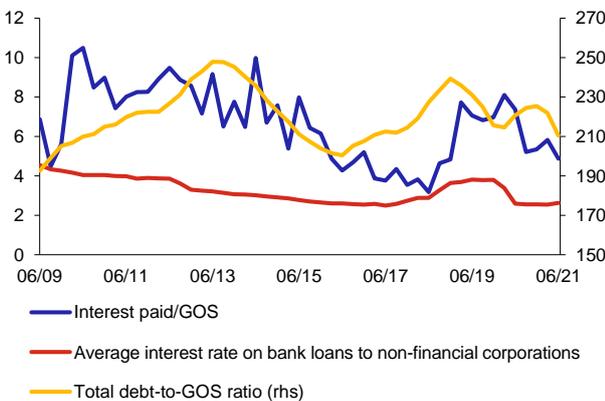
Note: The first two years of the *Baseline Scenario* are consistent with the CNB's summer forecast ([MPR – Summer 2021](#)). The autumn projection is consistent with the CNB's autumn forecast ([MPR – Autumn 2021](#)).

The weaker credit growth and rising profitability led to a decline in debt in the non-financial corporations sector

The debt ratio in the non-financial corporations sector declined significantly in the first half of 2021 (see [Chart II.21](#)). In addition to growth in profitability, this was due to temporarily negative credit growth (see [Chart II.20](#)). The latter is now positive again, and the expected recovery in investment activity should increase the growth rate of loans in the non-financial corporations sector to 5.4% at the horizon of the *Baseline Scenario*. As in the case of loans for house purchase, a higher growth rate is also expected for corporate loans at the projection horizon if the CNB's autumn projection materialises.

Chart II.21
Debt ratio and interest paid by non-financial corporations

(%; right-hand scale: share in GOS in %)

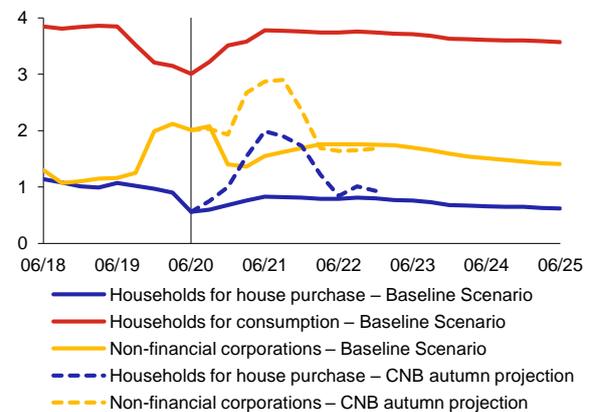


Source: CNB, CZSO

Note: GOS stands for gross operating surplus. The interest rate is calculated as the average interest rate on the stock of bank loans to non-financial corporations.

Chart II.22
12M default rate on bank loans to the private non-financial sector

(%)



Source: BRCI, CNB

Note: The first two years of the *Baseline Scenario* are consistent with the CNB's summer forecast ([MPR – Summer 2021](#)). The autumn projection is consistent with the CNB's autumn forecast ([MPR – Autumn 2021](#)).

Only in the non-financial corporations sector did credit risk increase modestly as a result of the pandemic...

Despite the deep economic decline caused by the Covid-19 pandemic, credit risk in the private non-financial sector, as measured by the 12-month default rate, rose only for non-financial corporations (see [Chart II.22](#)), since most of the potential materialisation of risks was absorbed by supportive economic policies. The default rate rose well above its long-term averages only in the sectors hit the hardest by the pandemic: hotels and restaurants, transport, and administrative and support services. The higher default rate in the non-financial corporations sector was also reflected in a higher ratio of NPLs to total loans. This indicator of historical risk materialisation rose by around 1 pp in late 2020 and early 2021 (see [Chart III.1 CB](#)). The 12-month default rate on loans to households for consumption and house purchase dropped sharply

when the pandemic started and supportive economic measures were implemented (see [Chart II.22](#)).²² In the *Baseline Scenario*, the aggregate default rate in the non-financial corporations sector is very low at 1%–2% over the entire scenario horizon. The *Baseline Scenario* also expects a moderate default rate in the household sector. The default rate on consumer credit should not exceed 4%, while that on housing loans fluctuates below 1%.

...but the CNB's autumn projection implies a rise in credit risk for both non-financial corporations and households

Future economic developments underwent quite a major change in the CNB's autumn forecast. According to this forecast, adverse supply factors will persist on the global market, subsiding only in the second half of next year (see [section II.1](#)). Credit risk in the household and non-financial corporations sectors will thus be negatively affected to a large extent by factors such as transport complications, surging prices of energy and other commodities, and shortages of semiconductor devices, which are affecting the automotive industry most of all²³ (see [Chart II.20 CB](#)). Added to the supply factors are the effects of higher interest rates and, for non-financial corporations, upward pressures on wages. Taking into account the CNB's autumn forecast, the 12-month default rate for loans to non-financial corporations has been revised. It will peak close to 3%. Turning to individual sectors, the increased costs and shortages of input components will mainly affect manufacturing, where the 12-month default rate will rise to 5% in late 2021 and early 2022. Credit risk will also increase for loans to households for house purchase, the default rate on which will reach 2%. The default rates in both credit segments will peak during 2022 and quickly return to low levels after the adverse supply-side factors fade out.

Persisting inflation pressures are major factors for the future default rates of the two sectors

A longer period of elevated energy prices, gradually affecting a growing number of households and firms, and further escalation of the issues on the supply side of the economy are major risks to the real non-financial sector going forward. The cost pressures and component shortages will affect the performance and solvency of this sector already in the medium term. For the Czech Republic, these risks are joined by a tight labour market and potentially by continued demand-pull inflation pressures, which would result in further growth in interest rates and higher interest costs (see [section II.1](#)).²⁴ The private non-financial sector would thus see a gradual increase not only in debt service expenditure, but also in total expenditure, as prices in the economy would grow in general. This could result in a higher-than-expected default rate, especially among highly indebted firms. Similar risks are the subject of stress testing of banks (see [section III.4](#)).

22 There has been a discrepancy between the default rate and the NPL volume in the segment of consumer credit to households in recent months. This is due to differences in the data sources used.

23 Output in this industry has slumped and is likely to remain subdued at least until the end of 2021. According to a Czech Automotive Industry Association estimate, this will lead to an aggregate drop in the sales of car manufacturers and their suppliers of as much as CZK 200 billion.

24 An insufficient response by the central bank to the growing inflation pressures, which contain a significant demand component, would spill over into higher inflation expectations of households and into demands for faster growth in wages, which are a more cost-significant item. Although growth in interest rates will increase firms' interest costs, this negative effect on total costs will be largely eliminated by anchored inflation expectations and a decrease in the inflation rate, and also indirectly by lower wage growth demands.

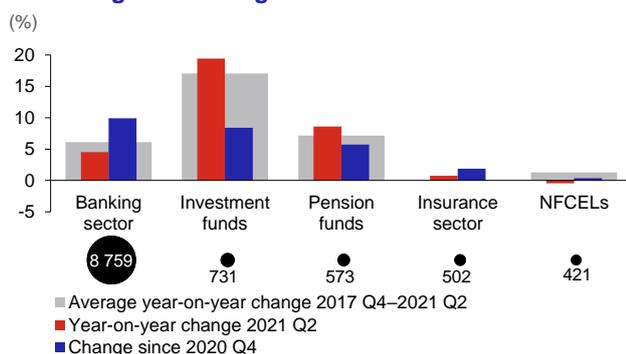
III. THE FINANCIAL SECTOR

III.1 DEVELOPMENTS IN THE FINANCIAL SECTOR

The total assets of all segments of the financial sector have increased since the end of 2020

The total assets of all segments of the financial sector increased in the first two quarters of 2021 (see [Chart III.1](#)). The total assets of the financial sector grew by 8.9% to CZK 11 trillion (188% of GDP; 690% in the euro area at the end of 2020). The banking sector, which accounts for almost 80% of the domestic financial sector's assets, recorded the largest growth in both absolute and relative terms (CZK 791 billion, or 9.9%, compared with the end of 2020). The investment fund and pension fund sectors are continuing to show dynamic growth (of CZK 56.7 billion, or 8.4%, and CZK 30.9 billion, or 5.7%, respectively). The sustained low rates of growth of insurance companies and non-bank financial corporations engaged in lending (year-on-year growth of CZK 9.4 billion, or 1.9%, and CZK 1.6 billion, or 0.4%, respectively) are signalling stagnation of these sectors.

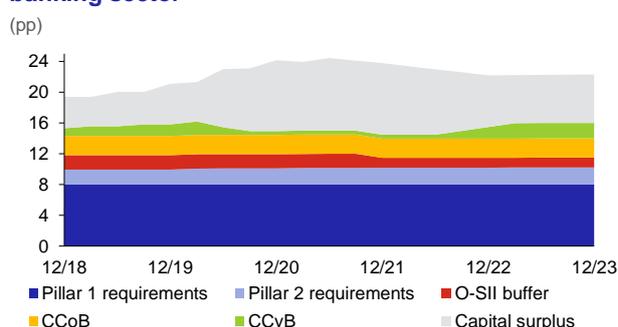
Chart III.1
Rates of growth of segments of the financial sector



Source: CNB

Note: NFCLEs = non-bank financial corporations engaged in lending. The circles show the value of the segments' assets in CZK billions as of 2021 Q2. The banking sector also includes credit unions.

Chart III.2
Structure of capital requirements in the domestic banking sector



Source: CNB

Note: The capital prediction assumes constant risk weights. Risky exposures are calculated on the basis of banks' assumptions about future loans, which banks report in the statement "Bank financing plans" (FPSIFE10).

III.2 BANKS²⁵

III.2.1 Capital

The capitalisation of the domestic banking sector is at record-high levels...

The domestic banking sector strengthened its robust capital adequacy further in 2021. The capital in the Czech banking sector rose by CZK 19.5 billion in the first half of 2021, to CZK 638.5 billion. The combined capital buffer is CZK 127 billion and the surplus of capital on top of the regulatory requirements (the capital surplus) is CZK 247 billion. The overall capital ratio increased by 0.3 pp to 24.4% (see [Chart III.2](#)) and the Tier 1 capital ratio by 0.2 pp to 23.8%.²⁶ The capital ratio was affected by an increase in capital from profit (+0.8 pp of the capital ratio) and a decline in aggregate risk weights (+3.7 pp), which outweighed the effect of growth in client loans and other assets (-4.2 pp).

...partly due to a record capital surplus linked with the measures taken by the CNB in response to the pandemic

Capitalisation is strongly dependent on capital surpluses (see [Chart III.2](#)). These are at historical highs in both relative and absolute terms, aided by the release of CZK 33 billion of regulatory capital due to a reduction in the CCyB rate to 0.5% with effect from 1 July 2020 (see [section IV.3](#)). The surplus was also bolstered by a CNB recommendation calling on banks to temporarily restrict dividend payments and other actions that might jeopardise their capital resilience until the consequences of the coronavirus pandemic recede.

Banks should continue to manage their capital positions prudently after the profit distribution restrictions end

As the EU institutions' relevant recommendation has expired, the CNB will no longer restrict dividends across the board. Bank dividend policy will be assessed at the individual level in the standard supervisory process. The CNB has recommended that banks hold off with further dividend payouts until their audited financial results for 2021 become

²⁵ The Czech Export Bank and the National 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.

²⁶ 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.

available. The CNB expects banks to maintain a conservative approach to profit distribution owing to persisting uncertainty about the epidemic situation and current uncertainty regarding future economic developments at home and abroad (see section II). Banks' medium-term capital management strategies should also pay due regard to approved or planned regulatory changes, especially the phase-in of the output floor as from 1 January 2023.²⁷

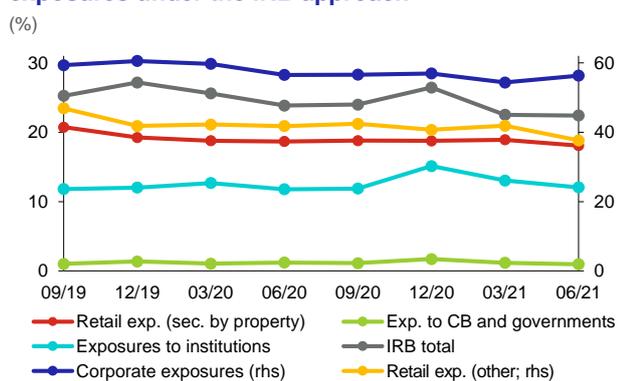
The activation of the MREL will increase the stability of the banking sector

The CNB has been setting a minimum requirement for own funds and eligible liabilities (MREL) for banks in its area of competence on an annual basis since 2020. The MREL must be fully met by 1 January 2024.²⁸ In February 2021, following an amendment of the framework for the recovery and resolution of credit institutions and investment firms, the CNB communicated that it had revised and supplemented its General Approach to MREL, which, among other things, deals with the implementation of the MREL in relation to the leverage ratio. The CNB further specified that in order to ensure a steady increase in own funds and eligible liabilities to the required level, it was also setting a binding intermediate target in accordance with the revised framework. Institutions are obliged to meet this intermediate target by 1 January 2022. The MREL increases the banking sector's resilience to exceptionally strong economic shocks that would give rise to a significant breach of the regulatory capital requirements.²⁹ However, IMF analyses indicate that the usability of the capital surplus and capital buffers for lending to the economy and absorbing losses may be limited by the MREL in certain circumstances (see section IV.1).³⁰

The risk weights for the main portfolios of banks using the IRB approach have decreased further...

The risk weights for credit exposures set using banks' internal models (the IRB approach) continue on a downward trend despite the recent generally adverse economic developments. Their aggregate level fell by 4 pp to 22.4% in the first half of 2021 (see Chart III.3). Retail exposures secured by residential property declined by 0.7 pp to 18.1% and other retail exposures by 3.1 pp to 37.7% compared with the end of 2020. The risk weights for corporate exposures decreased by 0.6 pp to 56.3% over the same period.

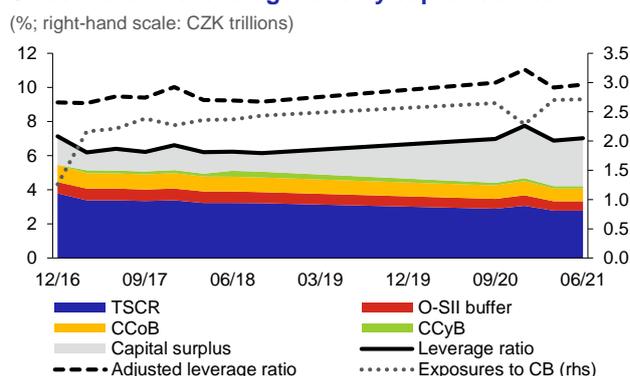
Chart III.3
Average risk weights of the main categories of exposures under the IRB approach



Source: CNB

Note: Retail exposures do not include exposures to SMEs.

Chart III.4
Structure of the leverage ratio by capital source



Source: CNB

Note: TSCR = sum of Pillar 1 and Pillar 2 requirements. Adjusted leverage ratio = Tier 1/total exposures excluding CB.

...so the potential risks to the banking sector's capital resilience may gradually increase

The expectations of a change in trend in IRB banks' risk weights due to the impacts of the pandemic on the economy are not materialising yet, thanks in part to fiscal, monetary policy and prudential stabilisation measures. A decrease in risk weights leads to an increase in the capital ratio given a constant level of capital, or allows the capital ratio to stay unchanged even when capital falls in absolute terms. A decline in risk weights not accompanied by a corresponding decline in underlying credit risks may lead to a decrease in the banking sector's resilience (see section IV.3). Relatively low risk weights may potentially reduce the effectiveness of the capital buffers, whose absolute level is derived from the risk exposure amount and is limited by maximum buffer rates (see section IV.1).³¹ Some macroprudential authorities in other

27 For details see <https://www.bis.org/bcbs/publ/d424.htm> and <https://www.bis.org/press/p200327.htm>.

28 As of mid-2021 the MREL amounted to CZK 506 billion (loss absorption amount: CZK 264 billion; recapitalisation amount: CZK 242 billion).

29 The MREL is designed to ensure that banks have sufficient capacity for the absorption of losses and subsequent recapitalisation in the event of resolution. For more details on the MREL see <https://www.cnb.cz/en/cnb-news/news/The-CNB-has-set-the-minimum-requirement-for-capital-and-eligible-liabilities-for-banks/>, <https://www.cnb.cz/en/cnb-news/news/CNB-revises-and-supplements-General-Approach-to-MREL/>, and Kahoun, T. (2019): Minimum Requirement for Own Funds and Eligible Liabilities (MREL): General Approach of the Czech National Bank, Thematic Article on Financial Stability 4/2019.

30 For details see Chapter 1 of International Monetary Fund (2021): Global Financial Stability Report, April 2021: Preempting a Legacy of Vulnerabilities.

31 For details on the risk of procyclicality of risk weights under the IRB approach, see also Malovaná, S. (2021): The Pro-cyclicality of Risk Weights for Credit Exposures: Driven by the Retail Segment, Economic Systems, Elsevier, vol. 45(1) and Brož, V. and Pfeifer, L. (2021): Are the Risk Weights of Banks in the Czech Republic Procyclical? Evidence from Wavelet Analysis, Journal of Central Banking Theory and Practice, vol. 10(1).

countries are responding to the risks related to this trend in mortgage lending by activating macroprudential measures under Article 458 of the CRR, which sets minimum risk weights for mortgage loans (BE, FI, SE, NO).³²

A leverage ratio requirement is binding

A leverage ratio requirement has been binding in the EU since June 2021 and is thus ready to act as a prudential backstop against the risk of excessive leverage in institutions with relatively low aggregate risk weights.³³ The leverage ratio of the banking sector has fallen by 0.7 pp to 7.0% since the end of 2020 (see Chart III.4) and is well above the 3% minimum on aggregate. In the domestic banking sector, the leverage ratio is significantly affected by high risk-free exposures to the CNB (3.3 pp; see Chart III.4). The leverage ratio adjusted for exposures to the central bank has also dropped by 0.7 pp to 10.3% since the start of the year.

III.2.2 Credit risk

The share of exposures with increased credit risk declined in 2021...

The share of unimpaired client loans with increased risk (Stage 2) fell by 2.9% to 9.2% of total loans between the end of 2020 and August 2021. The ratio of non-performing loans (NPLs) to total loans, which is essentially identical to the share of impaired exposures (Stage 3), fell by 0.2 pp to 2.5% in the same period, mostly due to developments in the housing loan portfolio (see Chart III.1 CB). In addition to the economic recovery, the favourable credit risk trend continues to be fostered by stabilisation measures, especially fiscal ones. However, exposures with elevated risk remain high relative to the pre-pandemic period (see Chart III.5).

...and this was accompanied by the gradual release of provisions...

The coronavirus pandemic led to growth in expected losses in 2020, followed in 2021 by a significant decrease in the credit risk perceived by banks. Impairment losses totalled CZK 2.9 billion in the first eight months of 2021 (thus approaching the pre-pandemic low), as against CZK 16.6 billion in the same period of 2020. Part of the previously created provisions were therefore released, and their amount dropped by 3.3% to CZK 74.6 billion.

...which affected the coverage of exposures by provisions

The total coverage of exposures by provisions decreased by 0.2 pp to 2%, mainly due to a drop in the coverage ratio in Stage 2 of 0.5 pp to 5.1% (non-financial corporations by 0.3 pp to 4.6%, households by 0.6 pp to 6.1%; see Table III.1 CB). However, it still exceeds the end-2019 level of 1.71% relatively significantly and thus reflects persisting higher risks, in particular for unimpaired loans (see Table III.1). The coverage ratio in Stage 3 has risen moderately since the end of 2020 (by 0.7 pp to 52.4%), but is still below its pre-pandemic levels (57.7% as of December 2019). This may signal possible risks as regards the coverage of losses on impaired loans.

State guarantee schemes are reducing the credit risks of the SME segment

Loans drawn under Covid guarantee schemes,³⁴ provided mainly to small and medium-sized enterprises (SMEs), totalled CZK 69 billion, or 13.7% of total loans provided to SMEs, at the end of August 2021. These guaranteed loans are reducing the credit risks of the more vulnerable SME segment and enhancing banks' resilience.

Chart III.5
Loan structure by portfolio



Source: CNB

Table III.1
Exposures, provisions and coverage ratios by risk stage and portfolio

Stage	Date	Client exposures		Provisions		Coverage ratio	
		Volume (CZK bn)	Change (%)	Volume (CZK bn)	Change (%)	Ratio (%)	Change (pp)
Total	12/2019	3,371		58.00		1.71	
	12/2020	3,514		77.20		2.25	
	08/2021	3,796	8.0	74.63	-3.3	2.01	-0.24
S1	12/2019	3,150		7.45		0.21	
	12/2020	3,070	9.6	9.42	0.1	0.31	
	08/2021	3,364		9.43		0.28	-0.03
S2	12/2019	215		7.85		3.32	
	12/2020	351	-2.9	19.57	-11.5	5.58	-0.50
	08/2021	341		17.32		5.09	
S3	12/2019	76		44.17		57.72	
	12/2020	93		48.21		51.69	
	08/2021	91	-2.0	47.88	-0.7	52.37	0.68

Source: CNB

Note: Client exposures are exposures to the private sector.

³² For notifications on Article 458 in the countries mentioned see: https://www.esrb.europa.eu/national_policy/other/html/index.en.html.

³³ See Pfeifer, L., Hodula, M., Holub, L., Pikhart, Z. (2018): The Leverage Ratio and Its Impact on Capital Regulation. CNB WP 15/2018.

³⁴ COVID II, COVID III, COVID Praha, COVID EGAP and other similar support programmes, including foreign ones.

Relief granted by banks does not represent potential for systemic materialisation of credit losses

Since the statutory moratorium ended, banks have been providing relief to borrowers to enable them to overcome the effects of the pandemic. As of the end of August 2021, relief had been granted on CZK 34.5 billion, or 2.5%, of total loans provided to non-financial corporations (CZK 19.3 billion on performing loans and CZK 15.2 billion on non-performing loans), for which provisions of CZK 3.6 billion had been created (23.8% of the relief on NPLs). Relief had been granted on CZK 7.6 billion, or 0.5%, of the housing loan portfolio (CZK 3.0 billion on performing loans and CZK 4.6 billion on non-performing loans), with provisions totalling CZK 0.8 billion (18% of the relief). In the case of loans to households for consumption, loans with relief account for CZK 5.3 billion, or 1.3%, of the portfolio (CZK 1.8 billion on performing loans and CZK 3.5 billion on non-performing loans), with CZK 1.8 billion in provisions (53% of the relief). As the relief provided concerns only a very small proportion of the loans to non-financial corporations and loans to households portfolios, it does not represent significant potential for the materialisation of credit risk.

III.2.3 Profitability and liquidity

Profitability is being favourably affected by low impairment losses...

The banking sector's after-tax profit rose by 19.9% year on year to CZK 42.8 billion in the first eight months of 2021, while return on assets increased by 0.06 pp to 0.6%. Cyclically conditional sources of profit, among which the CNB includes impairment losses and interest income on excess liquidity, gradually weakened during the coronavirus pandemic. However, these sources are starting to foster profitability again in 2021. The economic recovery and optimistic expectations about future economic developments are having a positive effect on impairment losses, which totalled CZK 2.9 billion in the first eight months of 2021 (as against CZK 16.6 billion in the same period of 2020) and are thus at pre-pandemic levels (see [Chart III.6](#)). Interest profit on excess liquidity (CZK 6.2 billion) is CZK 13.7 billion lower year on year, but the substantial growth in monetary policy rates in the second half of 2021 will cause it to go up (see [Chart III.7](#)).

...together with growth in interest profit

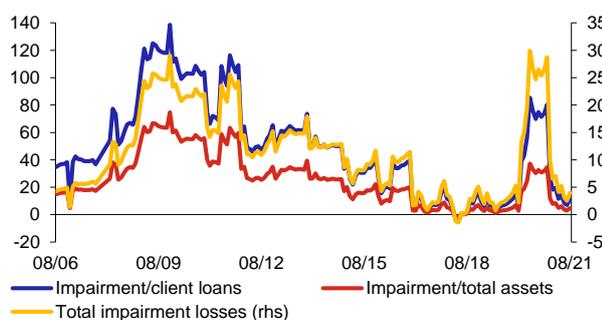
Interest profit on client loans rose by 3.5% year on year to CZK 60.6 billion in August 2021, but interest profit on the portfolio of loans to non-financial corporations declined by 6.8% year on year to CZK 21.7 billion. Interest profit is affected by margins as well as lending activity. The total interest rate margin rose a little year on year (by 0.1 pp to 2.9%; see [Chart III.2 CB](#)).³⁵ Margins on housing loans went up slightly (by 0.1 pp to 2.3%), margins on loans to non-financial corporations rose more sharply (by 0.4 pp to 2.6%), while margins on consumer credit fell (by 0.4 pp to 7.6%). The increase in monetary policy rates will probably lead to growth in margins owing to slower transmission of monetary policy rates to deposit rates than to loan rates, due mainly to the persisting surplus liquidity in the domestic banking sector. The growth in margins may reduce competition in the market, which may, however, undergo changes linked with the ongoing consolidation process in the domestic banking sector.

The banking sector remains in a very 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 39 pp year on year to 228% as of the middle of 2021 and all credit institutions were compliant with the regulatory limit of 100%. Of the liquid assets, debt securities issued by general government recorded the fastest year-on-year growth (of 20% to CZK 1.1 trillion). This is leading to growth in the risk of concentration of sovereign exposures in domestic banks' balance sheets. Sufficient available stable funding is monitored using the net stable funding ratio (NSFR). The aggregate NSFR rose by 25 pp year on year to 171% as of the middle of 2021. The deposit-to-loan ratio increased by 9.8 pp year on year to 161% in the same period, an all-time high for this ratio.

Chart III.6
Impairment losses

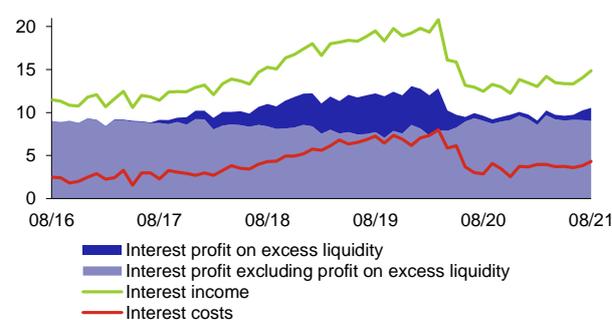
(annualised; bp; right-hand scale: CZK billions)



Source: CNB

Chart III.7
Decomposition of interest profit

(monthly contributions in CZK billions)



Source: CNB

³⁵ Margins are calculated as loan rates for the given sector minus the average deposit rate.

III.3 NON-BANK FINANCIAL INSTITUTIONS

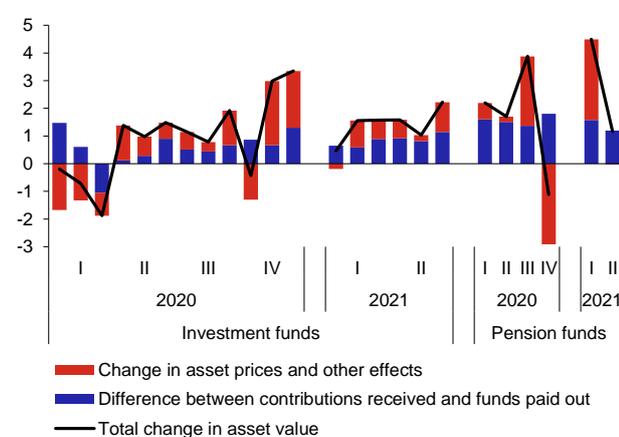
Assets managed by investment funds and pension management companies continued to grow rapidly

Domestic investment and pension funds continued to record buoyant growth in asset value in the first half of 2021 (of CZK 57 billion, or 8.4%, to CZK 731 billion and of CZK 30.9 billion, or 5.7%, to CZK 573 billion respectively compared to the end of 2020; see [Chart III.1](#)). This growth reflected both rising asset value due to favourable trends on global financial markets and inflows of new funds (see [Chart III.8](#)).³⁶ In the case of investment funds, investment inflows were recorded by mixed funds and funds for qualified investors (see [Chart III.3 CB](#)). By contrast, the total assets of bond funds fell due to a decline in prices on global bond markets in 2021 Q1 and a stagnation in new investment inflows. The total assets of the domestic insurance sector rose by 1.9% to CZK 502 billion in the first half of 2021 (see [Chart III.1](#)). They thus continue to fluctuate around CZK 500 billion, where they have been for the past six years. The structure of domestic institutional investors' investment portfolios remained little changed in the first half of 2021 (see [Chart III.9](#)). Investment funds saw continued growth in equity portfolios, while in pension funds the amount of government bonds kept rising.

Chart III.8

Decomposition of the change in the value of investment and pension funds' assets

(% of assets as of end of previous period)



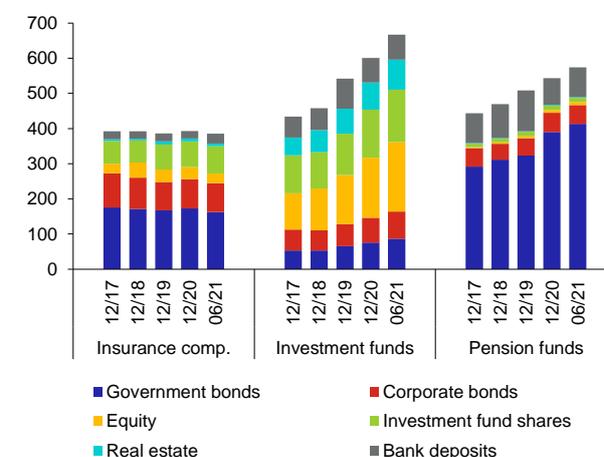
Source: CNB

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

Chart III.9

Main components of domestic institutional investors' investment assets

(CZK billions)



Source: CNB

Note: The difference between total and investment assets is material mainly for insurance companies, whose non-investment assets include, for example, insurance claims and reinsurance recoverables.

The resilience of investment funds and insurance companies to potential adverse shocks remains sufficient at the aggregate level...

The most significant risk for domestic institutional investors continues to be a correction of prices on global financial markets caused by continuing inflation pressures and monetary policy normalisation (see [section II.1](#)). A drop in the value of investments could lead to an outflow of investors from investment funds, which would have to draw on their liquidity buffers and, if those were inadequate, sell their assets in potentially adverse market conditions. The share of liquid assets on domestic investment funds' balance sheets remains largely stable for collective investment funds (see [Chart III.10](#)). The decrease in this share in real estate funds does not pose a significant risk due to the regulatory restrictions in place for redeeming shares in this segment. Likewise, in terms of the leverage ratio, the majority of investment funds remain conservative, and the sector as a whole is not taking on excessive risk from a systemic point of view. The insurance sector remained sufficiently capitalised in the first half of 2021, as confirmed by the results of this year's supervisory stress tests of selected insurance companies.³⁷ At close to 240%, insurance companies' aggregate ratio of eligible own funds to the solvency capital requirement continued to exceed both the regulatory minimum and the pre-pandemic level (see [Chart III.11](#)). The resilience of insurance companies strengthened further on the back of favourable premiums and claim settlement costs in non-life insurance, the profitability of which still represents a significant source for absorbing losses associated with potential adverse developments (see [Chart III.4 CB](#)).

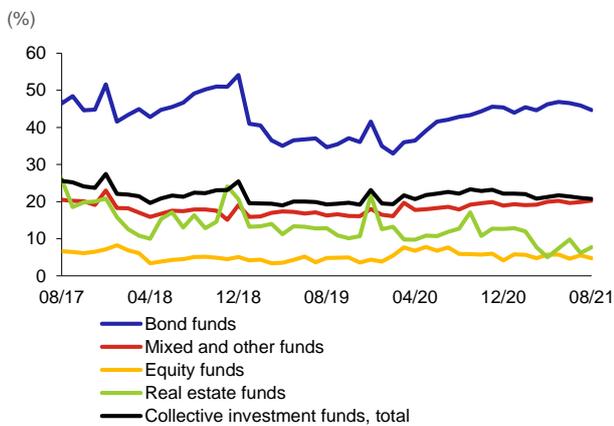
³⁶ The heightened volatility of pension funds' total assets between 2020 Q3 and 2021 Q1 (see [Chart III.8](#)) was due largely to changes in pension funds' use of synthetic hedging.

³⁷ https://www.cnb.cz/export/sites/cnb/en/financial-stability/galleries/stress_testing/2021/zatezove_testy_pojistovny_2021_10_en.pdf

...and pension management companies and transformed funds remain sensitive to movements in Czech government bond prices

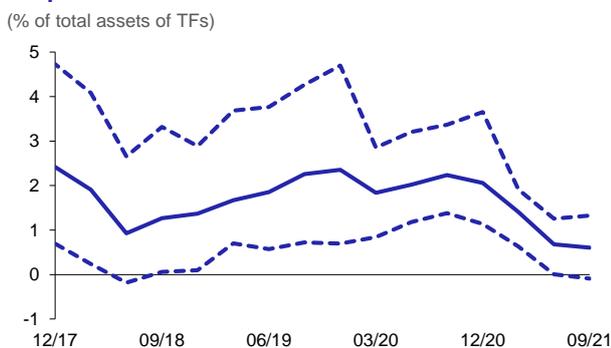
A rise in government bond yields in the first three quarters of 2021 (see section II.1) caused the surplus of assets over liabilities of transformed funds (TFs) to fall substantially (see Chart III.12). Liabilities exceeded assets in two TFs as of 30 September 2021. The need to top up the assets of TFs did not jeopardise the capital stability of any of the pension management companies (PMCs) managing them, as PMCs currently have sufficient capital to top up their assets if necessary (see Chart III.13). Moreover, the sensitivity of TFs to movements in Czech government bond yields is falling gradually as the share of bond portfolios at amortised cost rises in some TFs (see Chart III.5 CB). The stability of the pension fund sector is therefore not directly threatened by risks associated with movements in Czech government bond prices. However, a further increase in inflation pressures or an abrupt change in sentiment on global financial markets (see section II.1) associated with a sudden decrease in, or increased volatility of, Czech government bond prices could temporarily disrupt the capitalisation of some PMCs. The CNB will closely monitor developments in the pension fund sector, especially as regards adequate prudential capital planning by PMCs with respect to the possible further evolution of Czech government bond prices. If yields remain high, the gradual replacement of maturing government bonds with new issues with higher yields would have a favourable effect on the rates of return on TFs' portfolios in the longer run.

Chart III.10
Quick assets on the balance sheets of collective investment funds



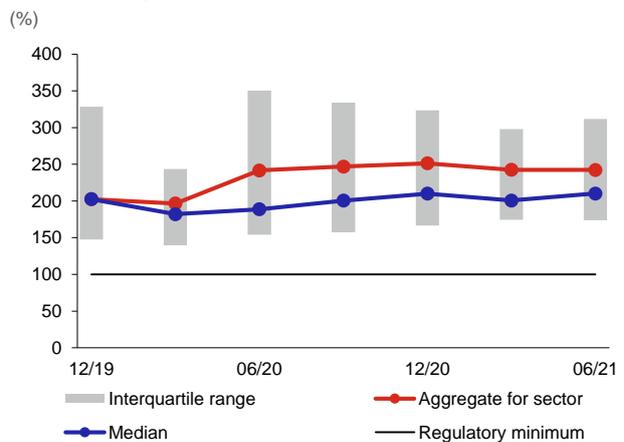
Source: CNB
Note: Quick assets comprise cash, debt securities issued by general government, and bank deposits and other claims payable on demand. The collective investment funds sector excludes funds for qualified investors. The share of liquid assets is not shown for the latter because this segment is highly heterogeneous and changes in the aggregate indicator are therefore difficult to interpret.

Chart III.12
Surplus of assets over liabilities of transformed funds



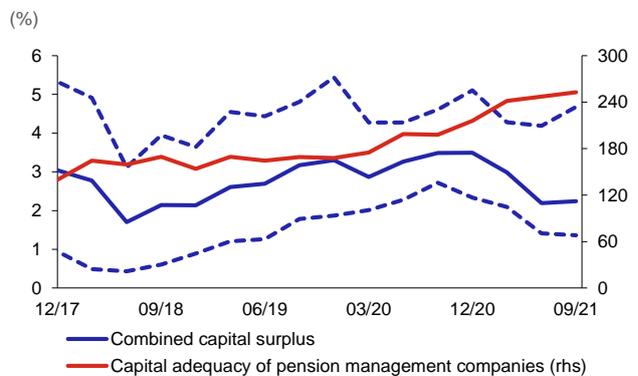
Source: CNB
Note: Dashed lines denote the minimum and maximum values across TFs.

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



Source: CNB

Chart III.13
Combined capital surplus and capital adequacy of the pension fund sector



Source: CNB
Note: Dashed lines denote the minimum and maximum values of the combined capital surplus across TFs. The combined capital surplus is the ratio of the sum of the capital surplus of pension management companies to the difference between the assets and liabilities of TFs.

III.4 MACRO STRESS TEST OF THE BANKING SECTOR

Given the risk of the pandemic having longer-lasting adverse consequences for the economy, scenarios with a five-year horizon were used in the macro stress test. The *Baseline Scenario* is based on the macroeconomic forecast published in Monetary Policy Report – Summer 2021.³⁸ The *Adverse Scenario* involves hypothetical adverse economic developments aimed at testing the resilience of the banking sector³⁹ to a prolonged unfavourable economic situation.

The methodology has been developed to refine the results in the area of market risks

The securities-repricing methodology has been extended to include all portfolios, even those not previously tested. The method used to capture movements in the value of securities on the basis of yield curve projections has been refined, so the repricing now responds more sensitively to changes in risk aversion on global financial markets. The impact of market risks has been broken down into a component affecting capital through the profit and loss statement and a component affecting capital through other comprehensive income (OCI).

The stress test takes into account current fiscal policy...

The scenarios take into account the current fiscal policy support for the economy, which is being financed through issues of government bonds. This is reflected in an increase in the proportion of government bonds in banks' balance sheets in both the *Baseline Scenario* and the *Adverse Scenario*, which additionally includes fiscal consolidation. The increase in the share of government bonds in banks' balance sheets could, under certain assumptions, positively affect their profits. However, the growth in concentration could also increase the risks associated with the link between banks and the state.

...and, in the short term, the CNB's profit distribution recommendation

In the context of the CNB's⁴⁰ recommendation for restraint in profit distribution by banks, the scenarios assume limited dividend payments in 2021. However, the test's general modelling framework for dividends also assumes that banks can, with a high probability, pay dividends during the test such that their overall capital ratio does not fall below the overall capital requirement (the OCR⁴¹) plus 1 pp⁴² (the dividend modelling framework).

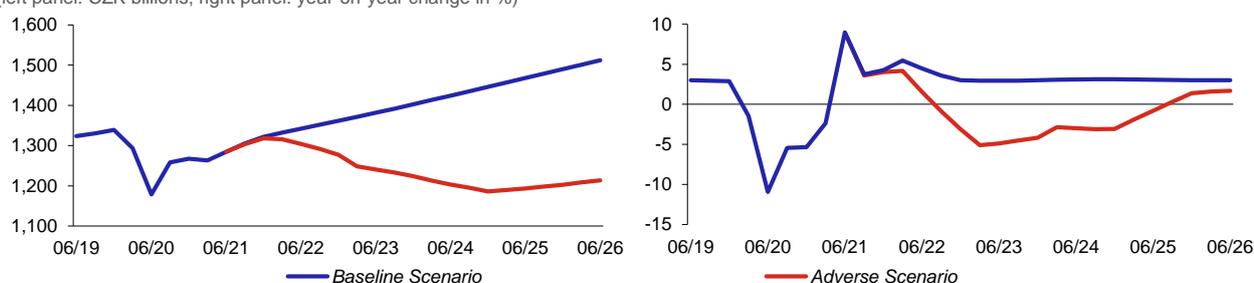
The *Baseline Scenario* assumes a return to the pre-pandemic situation, with faster growth in the initial years

GDP growth attains stable levels of around 3% year on year. The default rates of non-financial corporations and households stay at low levels over the entire scenario horizon, aided by low unemployment (see Table III.2) and nominal wage growth (see section II.2).

Chart III.14

Alternative scenarios: real GDP

(left panel: CZK billions; right panel: year-on-year change in %)



Source: CNB

The *Adverse Scenario* assumes a recession and domestic fiscal consolidation in response to rising global risk aversion...

The *Adverse Scenario* is characterised by a sharp decline in external economic activity abroad linked with a rise in global risk aversion. This is reflected in a fall in domestic GDP (see Chart III.14), due mainly to investment and foreign trade. In response, the CNB reduces interest rates, and the government – concerned that the Czech Republic's rating might be

38 The time series of the variables for the last three year of the *Baseline Scenario* and all the 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.

39 Banks subject to CNB supervision (with the exception of the NDB and the CEB) representing 93% of the domestic banking sector's assets were stress tested.

40 Information of the CNB on profit distribution by credit institutions in 2019 and 2020: <https://www.cnb.cz/en/cnb-news/press-releases/Information-of-the-CNB-on-the-distribution-of-profits-for-2019-and-2020-by-credit-institutions/> and the press release on banks' dividend payout plans of 10 September 2021: <https://www.cnb.cz/en/cnb-news/press-releases/CNB-comments-on-banks-dividend-payout-plans/>

41 For the purposes of calculating dividends, the OCR consists of the requirements ensuing from Pillar 1, Pillar 2, the CCoB, the O-SII buffer and the CCyB (at the pending rate of 1.5% effective from 1 October 2022).

42 Banks' capital management policy documents usually work with this capital surplus level.

downgraded – embarks on fiscal consolidation, consisting in spending cuts and an increase in direct and indirect tax revenues with impacts on household consumption. Unemployment rises and then flattens out at an elevated level until the end of the scenario, slowing wage growth considerably. In the second half of the scenario, the effect of the external shock subsides and net exports improve. The public finance consolidation boosts confidence in Czech bonds, and long-term rates fall. However, the negative fiscal impulse helps to keep the economy below its potential output level. At the end of the scenario, GDP is below its initial, mid-2021 level. Inflation drops to low levels in the second half of the scenario due to negative demand shocks.

...and credit risk parameters deteriorate

The adverse economic developments are reflected in worsening credit risk parameters both for non-financial corporations and for households. Default rates increase due to the hypothetical economic contraction and rising unemployment. The default rate of non-financial corporations peaks in the second year of the scenario. The growth in the default rates of households is gradual in the first four years of the scenario and then flattens out at elevated levels. Loss given default rises gradually both for non-financial corporations and for households, peaking between the third and fourth years of the scenario. Reduced corporate investment activity is reflected in falling growth in loans to non-financial corporations, which turns negative in the second half of the scenario. Worse consumer sentiment is reflected in lower growth in consumer credit and loans for house purchase.⁴³

Table III.2
Key variables

(averages for given periods in %)

	Actual value	Baseline Scenario						Adverse Scenario					
	2020	2021	2022	2023	2024	2025	6/2026	2021	2022	2023	2024	2025	6/2026
Macroeconomic variables (y-o-y)													
GDP	-5.8	3.7	4.1	3.0	3.1	3.1	3.0	3.5	0.4	-4.7	-3.0	-0.3	1.6
Inflation	3.2	3.0	2.8	2.1	2.0	2.0	2.0	3.0	2.9	1.8	0.8	0.3	0.4
Unemployment*	2.6	3.3	3.1	3.0	2.9	2.9	2.9	3.4	5.3	8.5	9.5	9.4	9.0
Nominal wage growth	2.4	6.1	4.5	5.1	5.0	5.1	5.1	6.1	4.5	4.5	3.2	1.7	0.9
Effective GDP in EMU	-5.1	4.9	4.7	2.2	1.7	1.6	1.6	4.9	2.4	-3.0	-0.9	-0.5	0.7
Credit growth													
Non-financial corporations	3.5	-0.7	2.2	3.7	4.1	5.2	5.7	-0.8	1.6	2.4	-0.7	-3.1	-2.3
Loans for house purchase	7.4	9.8	9.4	6.9	5.3	5.0	5.3	9.6	8.4	5.0	3.5	2.8	2.9
Consumer credit	3.8	3.1	7.2	4.0	4.5	4.8	4.9	3.1	7.2	2.8	-2.9	-0.3	2.2
Default rate (PD)**													
Non-financial corporations	1.4	1.7	1.8	1.6	1.4	1.4	1.4	2.6	3.4	3.1	2.6	2.4	2.4
Loans for house purchase	0.7	0.8	0.8	0.7	0.7	0.6	0.6	1.5	2.5	3.0	3.2	3.1	2.9
Consumer credit	3.5	3.8	3.7	3.6	3.6	3.6	3.6	4.4	5.5	5.9	6.1	6.0	5.8
Loss given default (LGD)													
Non-financial corporations	32	33	34	35	34	33	32	33	41	49	47	44	42
Loans for house purchase	15	16	18	18	17	17	17	16	20	26	29	27	25
Consumer credit	42	42	43	44	43	43	43	42	50	62	64	63	62
Asset markets													
3M PRIBOR	0.9	0.9	1.9	2.2	2.3	2.5	2.5	0.9	0.8	0.0	0.0	0.0	0.0
5Y GB yield	0.7	1.6	2.1	2.3	2.4	2.5	2.6	1.9	2.0	1.2	1.0	0.9	0.9
3M EURIBOR	-0.4	-0.5	-0.5	-0.4	-0.3	-0.2	-0.1	-0.5	-0.5	-0.4	-0.3	-0.2	-0.1
5Y EUR GB yield	-0.7	-0.6	-0.5	-0.4	-0.2	0.1	0.3	-0.6	-0.6	-0.7	-0.7	-0.6	-0.5
Residential property	8.4	10.0	2.4	1.0	1.0	2.6	3.4	8.7	-1.2	-7.3	-6.9	-1.4	1.9
Equities	-2.0	1.8	0.0	-4.4	0.6	1.2	-1.4	1.8	0.0	-17.9	3.1	2.3	-2.7

Source: CNB, CCR, BRCl, Refinitiv Eikon, CZSO

Note: Actual values make up half of 2021. The figures for 2026 are only up to Q2. * Ratio of the number of unemployed persons to the labour force under ILO methodology. ** 12-month unaveraged forward-looking indicator of the probability of default at the end of the given period.

In the *Baseline Scenario* banks are highly profitable, creating a strong basis to cover losses

Growth in loan portfolio volumes, low losses from credit risks (less than CZK 20 billion a year) and market risks, and high income on excess liquidity guarantee high profitability of the banking sector in the *Baseline Scenario* (see [Chart III.15](#)). Profitability, as measured by return on assets (RoA), gradually rises throughout the scenario to 1.2% (see [Table III.3](#)), with pre-tax profit going up from CZK 87.5 billion in 2021 to CZK 113.2 billion in 2025. Profit to cover losses strengthens capital, contributing to growth in the capital ratio of 21.2 pp (see [Chart III.15](#)). It thus fully covers credit losses (-3.0 pp) and the negligible losses arising from market risks and taxes paid (-4.6 pp). It also covers growth in the capital requirement due to growth in risk exposures (-2.1 pp), while the unchanged risk weights of the individual asset classes overall⁴⁴ have a neutral effect (+0.0 pp). The capital ratio excluding dividend payments rises from 24.1% to 35.6%.

43 A breakdown of non-financial sector loans for the individual stages and years of the scenario is given in [Table III.2 CB](#).

44 The decline in mortgage risk weights is offset by growth in the risk weights for non-financial corporations.

Dividends significantly determine the final capital ratio

In the dividend modelling framework, banks would be able to pay dividends of almost CZK 512 billion over the five years of the test, and the capital ratio would then be 17.2% at the end of the test. The actual amount of dividend payments is determined by a range of factors, including banks' internal capital management policies and external factors associated with bank owners' capital strategies and with developments in the regulatory environment in the area of own funds and the MREL. However, the approach chosen in the model framework allows us to assess banks' longer-term resilience in a situation in which banks maintain a relatively small capital surplus on top of the regulatory requirements compared with the current situation.

Table III.3
Impact of the alternative scenarios on the banking sector

	Actual value 2020	Baseline Scenario						Adverse Scenario						
		2021	2022	2023	2024	2025	6/2026	2021	2022	2023	2024	2025	6/2026	
Profit to cover losses*														
CZK billions	74.4	83.6	103.7	110.7	119.0	130.9	69.8	84.2	87.7	77.5	81.0	82.2	42.1	
Credit losses (impairment losses)**														
CZK billions	-27.2	-1.7	-19.3	-18.7	-17.6	-17.6	-9.2	-19.3	-53.3	-60.6	-54.6	-47.5	-21.6	
% of assets	-0.4	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.6	-0.7	-0.6	-0.5	-0.5	
of which credit losses on performing loans														
CZK billions	-13.8	5.2	-2.0	0.5	0.7	-0.3	-0.7	-12.3	-24.3	-8.8	2.7	5.9	3.7	
of which credit losses on non-performing loans														
CZK billions	-13.4	-6.9	-17.3	-19.2	-18.2	-17.2	-8.5	-7.0	-29.0	-51.8	-57.3	-53.4	-25.3	
Profit/loss from market risks in P/L														
CZK billions	10.5	5.1	-0.2	-0.6	-0.3	-0.2	0.1	4.3	1.0	-0.7	-0.3	0.1	0.1	
Profit/loss from market risks in OCI														
CZK billions	4.6	-7.3	1.0	-1.4	-0.5	2.6	2.2	-16.6	3.3	-15.6	-1.4	1.5	0.2	
Pre-tax profit/loss														
CZK billions	58.3	87.5	84.2	91.4	101.2	113.2	60.7	69.8	35.4	16.3	26.2	34.7	20.6	
% of assets	0.8	1.1	1.0	1.0	1.1	1.2	1.3	0.8	0.4	0.2	0.3	0.4	0.4	
Capital ratio at end of period in %														
Total	24.5	24.1	17.7	17.6	17.5	17.4	17.2	23.5	17.4	16.1	15.8	15.7	15.6	
CET 1	22.8	22.4	16.1	16.0	15.9	15.8	15.7	21.8	15.8	14.6	14.3	14.3	14.3	

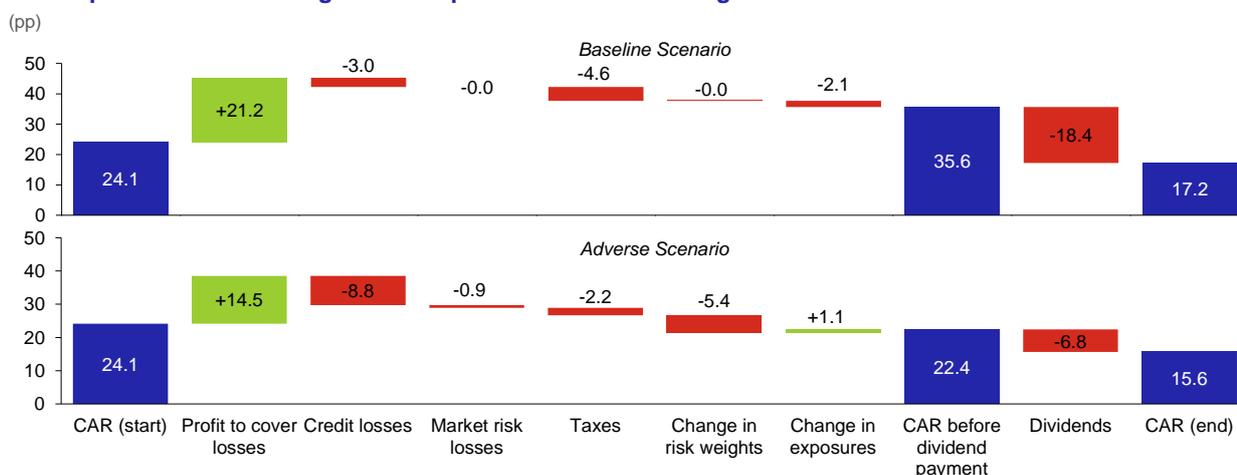
Source: CNB

Note: Actual values make up the first half of 2021, while the second half of 2021 is a forecast. The last column of the forecast shows the results for 2026 H1 (values in % are annualised). * Profit to cover losses represents pre-tax profit/loss adjusted for credit losses and losses from market risk. ** Credit losses (with a minus sign) represent provisioning for loans due to increased credit risk. If provisions are released, the figure is shown with a plus sign.

Even in the Adverse Scenario, the banking sector remains profitable overall and the capital ratio declines only slightly...

In the *Adverse Scenario*, the banking sector's profitability declines. RoA falls sharply from its initial level of 0.8% to a low of 0.2% in the third year of the test. However, it stays positive in each year (minimum: CZK 16.3 billion) owing to sufficient profit to cover losses (see [Chart III.15](#)). This profit increases the capital ratio by 14.5 pp and is sufficient to cover credit losses (-8.8 pp), losses from market risk (-0.9 pp) and taxes (-2.2 pp) as well as the effect of the increase in risk weights (-5.4 pp). The drop in exposures (+1.1 pp) caused by the response of banks and clients to the adverse economic developments partly offsets the growth in risk weights. Excluding dividend payments, the capital ratio would fall only slightly (by 1.7 pp, from 24.1% to 22.4%).

Chart III.15
Decomposition of the change in the capital ratio of the banking sector in the alternative scenarios



Source: CNB

Note: CAR = overall capital ratio. Items increasing the capital ratio are shown in green and items reducing it are shown in red.

...despite the possible payment of dividends

In the dividend modelling framework, it would be possible to pay dividends of CZK 240 billion over the five years of the test. The payments would be concentrated mainly in the first years of the scenario, when profitability is still relatively good. The capital ratio would thus fall by 6.8 pp and would be 15.6% at the end of the test.

The banking sector also shows resilience in the hypothetical situation of a long decline in economic activity...

The resulting capital ratio confirms that the Czech banking sector has sufficient capital to absorb shocks in the event of longer-lasting adverse economic developments. In the *Baseline Scenario*, the capital ratio would fall below the minimum capital requirement of 8% in just one bank,⁴⁵ and the necessary capital injection would be only CZK 0.2 billion (see [Table III.4](#)). In the *Adverse Scenario*, the capital ratio would fall below this threshold in three banks, and the necessary capital injection would be CZK 3.2 billion. In the *Baseline Scenario*, the capital ratio falls below the TSCR in three banks and the capital injection needed to meet the requirement is CZK 5.1 billion. In the *Adverse Scenario*, five banks would not meet the TSCR, and the necessary capital injection would be just CZK 5.9 billion. It would be no need to reduce or fully release the countercyclical capital buffer in either scenario.

...but caution should be exercised when interpreting the results in terms of macroprudential policy

Many of the model components in the areas of interest profit, credit losses (IFRS 9) and risk weights are based on observed levels and trends. However, these are currently being influenced by the highly atypical behaviour of the economy during the pandemic shock as a consequence of stabilisation measures. This increases the likelihood that the intensity of transmission of the shocks in the *Adverse Scenario* to the performance of banks and the riskiness of their loan and market portfolios will not take full account of the traditional response of a market economy in the *Adverse Scenario*. Therefore, conservatism is crucial when applying macroprudential policy tools, in order to ensure a high degree of resilience of the banking sector in a situation of great uncertainty as regards further economic developments and the government's ability to respond to that uncertainty with support measures.

Besides dividends, asset volumes are having an effect on the leverage ratio

Since June 2021, a minimum 3% leverage ratio has been acting as a prudential backstop against the risk of excessive growth in leverage. As of 30 June 2021, the leverage ratio in the domestic banking sector was 7.0%. In the *Baseline Scenario*, the leverage ratio declines to 4.8% at the test horizon owing to a drop in Tier 1 capital of 22.3% (impact on the leverage ratio: -1.5 pp) and growth in exposures of 13.0% (-0.7 pp). In the *Adverse Scenario*, the resulting leverage ratio is 5.7% (see [Chart III.16](#)). The decline in the banking sector's exposures of 2.8% (+0.2 pp) over the test horizon is partly offset by a drop in Tier 1 capital of 20.1% (-1.5 pp).

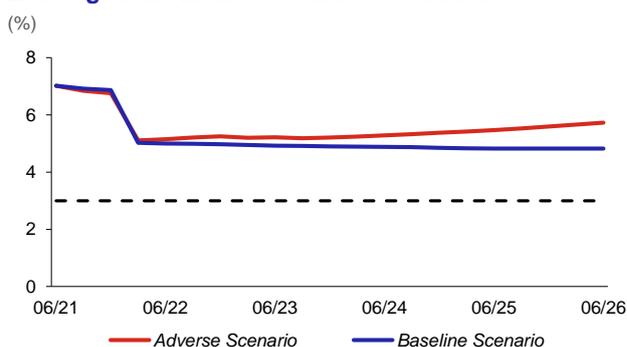
Table III.4
Results of the stress tests for different minimum capital settings

Minimum settings	<i>Baseline Scenario</i>		<i>Adverse Scenario</i>	
	Capital injections in CZK bn	Banks below minimum	Capital injections in CZK bn	Banks below minimum
Pillar 1 (8%)	0.2	1	3.2	3
TSCR	5.1	3	5.9	5
TSCR + O-SII buffer	5.1	3	5.9	5

Source: CNB

Note: Constant Pillar 2 and O-SII buffer requirements are assumed for the calculation of capital injections.

Chart III.16
Leverage ratio in the alternative scenarios



Source: CNB

45 This decline is caused by methodological assumptions which mainly take sectoral growth into account. These methodological assumptions may therefore underestimate the resulting capital ratio for some banks with specific business models and risk profiles.

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 IV](#) 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

Macroprudential policy responds to changes in systemic risk on an ongoing basis...

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. Among the most important macroprudential instruments in the current regulatory framework are capital buffers, which are applied on top of the 8% minimum capital requirement (Pillar 1) and the Pillar 2 requirements (see [section III.2.1](#)). The CNB currently applies three capital buffers to strengthen the resilience of the banking sector (see [Table V.2](#)). The buffer rates reflect the current and expected cyclical and structural characteristics of the Czech banking sector. The exception is the capital conservation buffer, whose rate is unchanged over time.

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	Stronger credit recovery accompanied by easing of lending standards	Partly persists in housing loan area	Countercyclical capital buffer	Yes, 0.5% from 1 July 2020; increased to 1.0% from 1 July 2022, 1.5% from 1 October 2022 and 2.0% from 1 January 2023	IV.3
	Rising leverage, rising off-balance-sheet risk	No	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	IV.2
	Elevated growth in loans and risks in specific sector	Potential	Sectoral capital requirements (in particular real estate exposures)	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, tightened on 1 April 2022	IV.4
	Risk of excessive household indebtedness and debt service	Potential	LTI, DTI, LSTI, DSTI caps	Yes, DTI and DSTI introduced on 1 April 2022	IV.4
Mitigate excessive maturity mismatch and illiquidity	Long-term liquidity risk	No	Macroprudential NSFR	No	III.2.3
	Short-term liquidity risk	No	Macroprudential LCR	No	III.2.3
Limit exposure concentrations	Property exposure concentration	Yes	Systemic risk buffer	Not as yet, CNB reacts to property exposure risks with other instruments	IV.2
	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)	Yes, O-SII buffer between 0.5% and 2.5%	IV.2
			Systemic risk buffer	No	IV.2
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 macro-prudential policy (ESRB/2013/1).

The CNB created sufficient macroprudential space before the onset of the pandemic...

In line with its macroprudential policy strategy,⁴⁶ the CNB created considerable macroprudential space in the expansionary phase of the financial cycle (2015–2019) to respond to an adverse economic situation like the one which arose as a result of the pandemic. At the end of 2019, the CCyB rate in the domestic banking sector was 1.75% (0.2% on average in the euro area), while other capital buffers stood at 4.4% of the entire sector's risk-weighted exposures (3.4% on average in the euro area).⁴⁷

...to which it responded by partially releasing the capital buffers, but the previously accumulated risks did not materialise due to support measures...

The pandemic presented a strong shock to the economy associated with a significant level of economic uncertainty going forward. The CNB therefore lowered the CCyB rate to 0.5% with effect from 1 July 2020. This led to an increase in the capital surplus of banks, a decrease in the capital intensity of new loans and a greater capacity of banks to lend to the economy,⁴⁸ even in the event of rising credit losses. The effect of the lower CCyB rate was enhanced by a CNB recommendation calling on banks to temporarily restrict dividend payments and other actions that might jeopardise their resilience. However, due to many support measures (especially fiscal ones), credit risk did not materialise significantly in the domestic banking sector due to the pandemic.

...and the CNB was able to renew the pre-pandemic countercyclical capital buffer rate

Given the expected macroeconomic developments and the outlook for systemic risks in 2021, the CNB increased the CCyB rate to 1% with effect from 1 July 2022, to 1.5% with effect from 1 October 2022 and to 2.0% with effect from 1 January 2023. At the same time, it decided that dividend policy would no longer be restricted across the board and would be subject to standard supervisory assessment at the individual level.

The CNB changed its approach to mitigating risks associated with the systemic importance of institutions

The buffer mitigating risks associated with the systemic importance of institutions was changed on 1 October 2021 due to the transposition of the CRD V directive into Czech law. The CNB now mitigates these risks using the capital buffer for other systemically important institutions (the O-SII buffer) instead of the systemic risk buffer (SRB). Five institutions are required to maintain an O-SII buffer, with rates ranging between 0.5% and 2.5% (see [section IV.2](#)). The CCoB has applied to all banks in the Czech Republic since 2014 at a rate of 2.5%. The sum of the capital buffers – the combined capital buffer – currently ranges between 3% and 5.5% for individual banks depending on their systemic importance.

Table IV.2

Summary of macroprudential 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 2020–30 June 2022
	1.50	1 October 2022
	2.00	1 January 2023
Systemic risk buffer (SRB)	-	-
Buffer for other systemically important institutions (O-SIIs)	1.00–2.50	1 October 2021

Source: CNB

The risk weights of IRB banks have long been decreasing...

The downward trend in risk weights set using the IRB approach continued despite the exogenous pandemic shock. Over the last five years, the risk weights of the IRB portfolio of non-financial corporations have declined by 9.1 pp to 56.3%, the risk weights for retail exposures secured by residential property by 8.3 pp to 18.1% and the risk weights for other retail exposures by 17.2 pp to 37.7% (see [Chart IV.1 CB](#)). Exposures whose risk weights are set using the IRB approach amount to CZK 6.5 trillion, which corresponds to 71.7% of the exposures of the domestic banking sector as of mid-2021.

...which may be reducing the resilience of the banking sector

The downward trend in risk weights is having a major impact on the absolute capital requirement and may signal systemic risks to the banking sector's resilience. [Chart IV.1](#) depicts the capital requirements for the current IRB portfolios given by the relevant risk weights (22.4% on aggregate) and their levels five years ago (35.6% on aggregate). It shows that given the current IRB portfolio structure and the mid-2016 risk weights, the capital buffers would be CZK 23.6 billion higher and the Pillar I and Pillar II requirement a full CZK 49.7 billion higher (i.e. 16% of the total capital requirement, or 3.3% of risk-weighted exposures) than they are now.

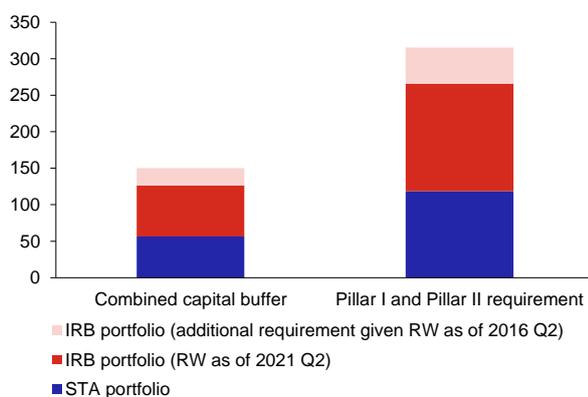
46 For details see https://www.cnb.cz/export/sites/cnb/en/financial-stability/galleries/macroprudential_policy/cnb_macroprudential_policy_strategy.pdf.

47 For details see <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210301~207a2ecf7e.en.html>.

48 The available lending capacity created by partially releasing the CCyB was CZK 460 billion.

Chart IV.1
Capital requirements given the IRB portfolio risk weights as of 2016 Q2 and 2021 Q2

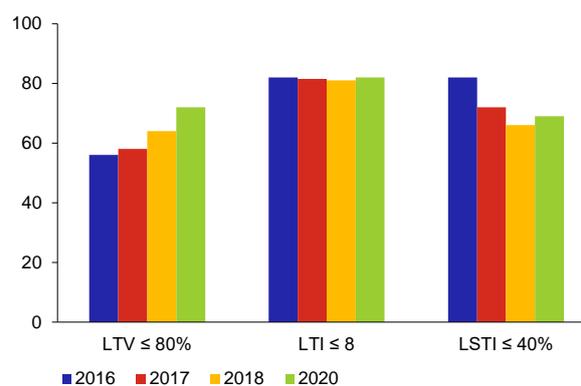
(CZK billions)



Source: CNB

Chart IV.2
Share of the mortgage portfolio with prudent credit ratio levels (levels at the time of loan provision)

(%)



Source: CNB

The usability of part of the capital buffers may be limited by overlaps with the leverage ratio requirement...

The current regulation allows multiple use of capital to meet individual requirements, including capital buffers. Banks that are supposed to maintain a higher level of capital under the leverage ratio requirement compared to the Pillar 1 and Pillar 2 capital requirements may use capital ensuring compliance with the capital buffers to meet the leverage ratio requirement as well. However, these banks may only use the part of capital buffers which is not subject to the leverage ratio requirement to absorb losses and lend to the economy. The above situation pertains to a relatively small proportion of the total capital buffers in the domestic banking sector and is thus not currently systemic (19.5% of the combined capital buffer).⁴⁹

...and in the future also by overlaps with the minimum requirement for own funds and eligible liabilities (MREL), which creates a new level of resilience of the banking sector

The MREL can be met using own funds or a combination of own funds and eligible capital. Generally, a high share of own funds used as an MREL coverage source may give rise to overlaps between the capital requirements and reduce the usability of regulatory and voluntary buffers for macroprudential policy purposes.⁵⁰ Large banks, for which the part of the MREL corresponding to the recapitalisation amount of the requirement is expected to be met mainly by eligible liabilities, have started to issue debt instruments in response to the interim MREL objective. In smaller banks, capital instruments may dominate as a means of complying with the requirement. This may in turn be linked with creation of the above-mentioned overlaps with the parallel capital requirements. However, this limitation should not undermine the effectiveness of the capital buffer framework in the current conditions of the domestic banking sector (for details see section V.1 of FSR 2020/2021). The CNB will analyse banks' approaches to compliance with the MREL on an ongoing basis and assess the possible risks of the effect of the MREL compliance structure on the effectiveness of the capital buffers.

The CNB has been recommending credit ratio caps for housing loans since 2015...

The CNB started to apply an LTV cap at the beginning of the expansionary phase of the financial cycle in mid-2015. It gradually lowered this cap to 80% with effect from 1 October 2018. The amount of new mortgage loans in the LTV range of 80%–90% was not allowed to exceed 15%. As of the same date, it set a DTI cap of 9 and a DSTI cap of 45%, in both cases giving banks the option of providing 5% of the total amount of loans with higher ratios in the current calendar quarter. In setting these caps, the CNB reacted in the growth phase of the financial cycle to risks to the banking sector stemming from a spiral of rising amounts of mortgages and property prices related to relaxed credit standards and over-optimistic expectations of economic agents.

49 For details on overlaps of the leverage ratio requirement and capital buffers see Pfeifer, L. (2020): Usability of Capital Buffers under a Binding Leverage Ratio Requirement. Thematic Article on Financial Stability 6/20, CNB.

50 For details see Chapter 1 of International Monetary Fund (2021): Global Financial Stability Report, April 2021: Preempting a Legacy of Vulnerabilities.

...which has positively affected the risk profile of domestic banks' mortgage portfolios

An improvement in the risk profile of mortgage portfolios in terms of credit ratios has been seen in response to the introduction of limits on new mortgage loans (see Chart IV.2). The structure of the mortgage portfolio based on LTV_{hist} (the value of the collateral at the time the loan was provided) has seen a downward trend in the share of loans with values above 80% (from 46% of mortgage loans in 2016 to 28% in 2020). This has had a positive effect on loss given default, which has thus been decreasing in recent years and is also being reflected in low expected credit losses. The structure of the mortgage portfolio based on LTI_{hist} has shown stability of the portfolio with an LTI of up to 8 just above 80%, even after the introduction of the DTI cap. The activation of the DSTI in October 2018 caused the share of risky LSTI_{hist} of over 40% to stop rising. However, this might also have been fostered by growth in the maturity of loans (the average contractual loan term has increased by around four years) and, until the second half of 2021, by low interest rates.

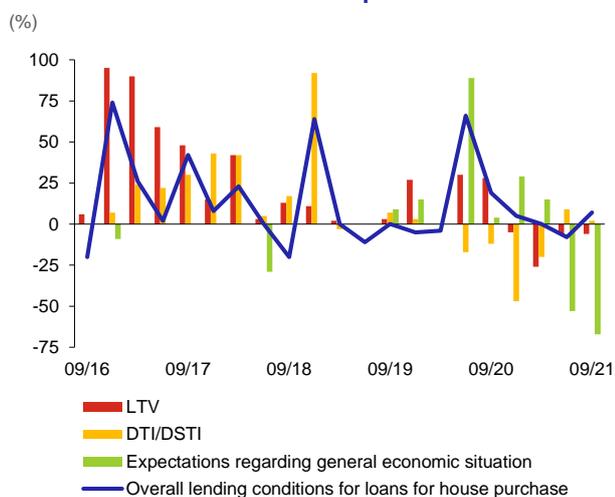
The CNB eased its credit ratio caps mitigating mortgage market risks during the pandemic...

In response to the pandemic, the LTV cap was lowered to 90% and the DTI cap abolished on 1 April 2020. Subsequently, on 1 July 2020, the DSTI cap was also cancelled, mainly as a result of expectations of more cautious behaviour by clients and mortgage lenders and more conservative expectations by them about future economic developments. In response to the pandemic, banks did indeed tighten their credit standards due to the uncertainty regarding future economic developments (see Chart IV.3). In 2021, however, optimistic expectations about the economy prevailed and credit standards for housing loans were eased again.

...and is tightening the credit ratio caps in response to the subsequent accumulation of risks

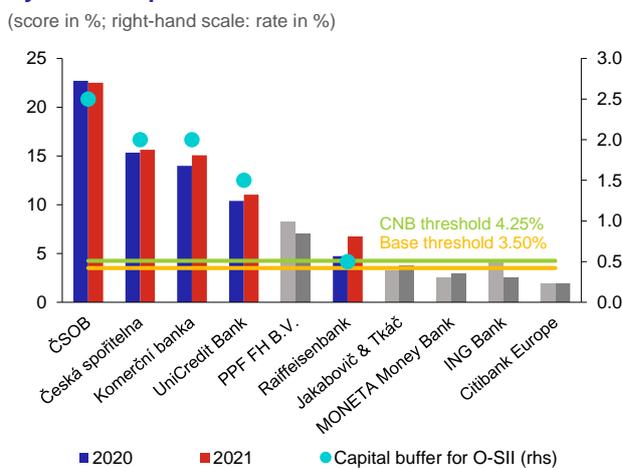
Act No. 219/2021 Coll., on the Czech National Bank took effect on 1 August 2021. Among other things, the amendment to the Act gave the CNB the power to set legally binding LTV, DSTI and DTI caps if systemic risks to financial stability are identified. In 2021, the risk parameters of new mortgage loans reached levels typical of the period before the DTI and DSTI caps were set in 2018. The CNB is responding to this situation by tightening the LTV cap and reintroducing DTI and DSTI caps with effect from 1 April 2022. Section IV.4 provides a more detailed description of the risks associated with the residential property market and mortgage lending and of the reasons for setting instruments to mitigate these risks.

Chart IV.3
Changes in overall credit standards and lending conditions for loans for house purchase



Source: CNB
Note: Changes during the period under review compared with the previous three months.

Chart IV.4
Systemic importance scores and O-SII buffers



Source: CNB
Note: Grey denotes institutions not included in the list of other systemically important institutions for 2022.

IV.2 STRUCTURAL CAPITAL BUFFERS

The CNB now applies the O-SII buffer to mitigate risks associated with the systemic importance of institutions...

According to the CNB's evaluation, the Czech financial sector has five other systemically important institutions (O-SIIs), so the list of O-SIIs for 2022 is unchanged (see [Chart IV.4](#)).⁵¹ On 1 October 2021, the CNB changed the buffer mitigating risks associated with the systemic importance of institutions from the systemic risk buffer (SRB) to the O-SII buffer due to the transposition of the CRD V directive into Czech law.⁵²

...which is set using the bucketing approach and takes into account the regulatory cap for subsidiaries

To calibrate the O-SII buffer, the CNB applies a methodology based on the bucketing approach with supervisory assessments, which uses systemic importance scores calculated at the consolidated level according to EBA guidelines.⁵³ The CNB set an O-SII buffer rate ranging between 0.5% and 2.5% for five institutions depending on their degree of systemic importance. Supervisory assessments did not affect the rate levels. Owing to the subsidiary cap, the O-SII buffer rate for one institution was lowered by 0.5 pp compared with the rate set under the bucketing approach.⁵⁴

The CNB now has at its disposal a sectoral systemic risk buffer to mitigate structural risks

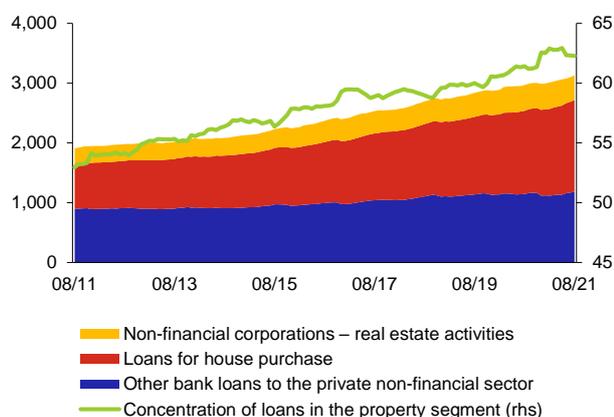
In addition to the broad-based SRB, the CNB may from October 2021 apply a sectoral SRB to mitigate structural risks. The sectoral SRB can be applied to identify systemic risks for relatively flexibly defined categories of exposures and, where appropriate, only to banks with similar risk profiles. The cap on the sum of the structural buffers (the O-SII buffer and the SRB) is 5%.⁵⁵ In the domestic banking sector, this limits the SRB or its sectoral variants to 2.5% of risk-weighted exposures.⁵⁶ The CNB considers the risk associated with the concentration of property exposures as the most significant current structural risk that could be mitigated using the sectoral SRB.

The structural risks associated with the concentration of property exposures are growing

The concentration of property financing loans has long been growing in the domestic banking sector. Their share in loans to the private non-financial sector stood at 62.3% at the end of August 2021 and has risen by 4.2 pp over the past five years (see [Chart IV.5](#)). The share of housing loans in loans to the private non-financial sector was 49%, having increased by 5.9 pp in the same period. The impact of adverse property market developments on the banking sector may be exacerbated by the increasing overvaluation of property prices in addition to concentration (see [section II.1](#)).

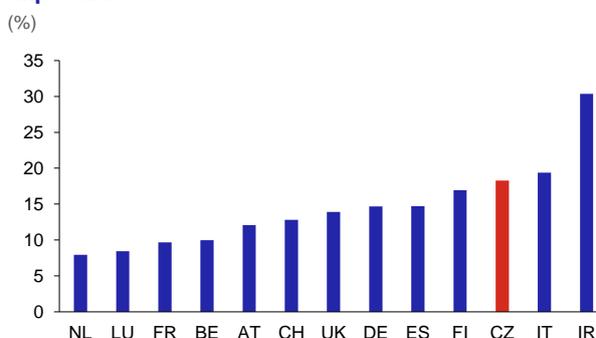
Chart IV.5
Concentration of bank loans in the property segment

(CZK billions; right-hand scale: %)



Source: CNB

Chart IV.6
International comparison of risk weights for property exposures



Source: ECB

51 As of 28 June 2021, PPF Financial Holdings B.V. (relevant entity: PPF banka) was excluded from the O-SIIs list for a transitional period owing to the changes to the regulatory framework for O-SIIs in CRR II.

52 Like several other national macroprudential authorities in Europe, the CNB previously applied the SRB to mitigate risks associated with the systemic importance of institutions, due mainly to the insufficiently low cap on the G-SII buffer rate under CRD IV compared with the level of risks associated with the systemic importance of domestic institutions.

53 This involves a switch from setting SRB buffer rates based on evaluating the systemic importance of individual banks (Skořepa and Seidler, 2013) to assessing systemic importance at the highest level of regulatory consolidation of the institution at the domestic level.

54 For details see Pfeifer, L. (2021): *The CNB's Approach to Setting the Capital Buffer for Other Systemically Important Institutions: Past and Present*. Thematic Article on Financial Stability 2/2021, Czech National Bank.

55 If this cap is exceeded, the calibration of the rate must be approved by the European Commission.

56 Taking into account the O-SII buffer rate, which is set at 0.5%–2.5%.

The drop in risk weights for property exposures may not fully reflect the associated risks to financial stability

The long-running downward trend in risk weights for housing loans granted by IRB banks may potentially have a negative impact on financial stability, as the weights may not fully reflect the increasing systemic risk associated with this portfolio. The existence of this risk is also evidenced by the steps taken by countries (BE, FI, SE, NO) that have applied Article 458 of the CRR to set minimum risk weights for the housing loan portfolio. The risk weights for housing loans in these countries have gradually declined to very low levels owing to the long absence of a property market crisis and to the specific conditions of this credit market, amid a parallel increase in systemic risk (growth in debt, overvaluation of property prices, concentration of these exposures, etc.). The risk weights on the housing loan portfolios of IRB banks have dropped by 8.3 pp to 18.1% over the past five years but remain above-average in international comparison (see [Chart IV.6](#)).

The results of the *Adverse Scenario* do not indicate unexpected losses on the housing loan portfolio...

To assess the degree of risk in the banking sector's housing loan portfolio, the impact of the potential materialisation of that risk on profitability and capital stability is analysed. The results of the *Adverse Scenario* of the solvency macro stress test (see [section III.4](#)) are used for this purpose. The scenario works with similar levels of key risk variables as the risk analyses of countries that have provided notification of the application of Article 458 of the CRR (SE and FI, for example) in order to mitigate banks' structural risks on the housing loan market (see [Box 3.1](#) in FSR 2018/2019).⁵⁷ Average quarterly provisioning at the sector level totals around CZK 4.7 billion in the *Adverse Scenario*. Conversely, the net interest margin on housing loans is around CZK 6.2 billion. Therefore, during the test, the total provisions do not exceed the income on this portfolio, nor do they result in a loss which could weaken the sector's capital position. This indicates that the potential risk of unexpected portfolio losses in the *Adverse Scenario* does not require a macroprudential response in the area of capital buffers at the portfolio level.

...and the banking sector's ability to absorb unexpected losses is enhanced by capital buffers

The combined capital buffer was CZK 127 billion in mid-2021. Risk-weighted exposures for the housing loan portfolio formed around 10% of total risk-weighted exposures.⁵⁸ The capital buffers for this portfolio thus amounted to around CZK 13 billion, significantly enhancing the banking sector's ability to absorb potential losses on these exposures. The pending increase in the CCyB rate (see [section IV.3](#)) from 0.5% to 2.0% on 1 January 2023⁵⁹ will further enhance the sector's ability to absorb unexpected losses.

Macroprudential and monetary policy tightening should limit the further accumulation of risks associated with new housing loans

The tightening of the LTV cap and the reintroduction of DTI and DSTI caps (see [section IV.4](#)) should limit the accumulation of risks and lead (as it has done in the past; see [section IV.1](#)) to a positive shift in the risk profile of domestic banks' housing loan portfolio. Gradual monetary policy normalisation, which could affect the pace of credit growth due to a gradual rise in the interest rate on housing loans, should also slow the risk accumulation trend. End-August data indicate growth in the average rate on housing loans (of 0.25 pp to 2.35% since the start of the year). However, these data do not yet reflect the 2.0 pp overall increase in the monetary policy rate (the most recent hike having occurred on 4 November 2021).

The CNB will assess the potential use of the SRB and other macroprudential tools mitigating risks in the housing loan portfolio in the light of future developments

The CNB is ready to apply the SRB or its sectoral variant if the vulnerability of the housing loan portfolio grows despite the macroprudential and monetary policy tightening. If systemic risks increase due to the trend in mortgage risk weights set using the IRB approach,⁶⁰ the CNB could also respond by applying Article 458 of the CRR (i.e. by setting minimum risk weights for IRB banks' housing loan portfolios).⁶¹ This tool would allow it to fix the absolute capital requirement, including capital buffers, at a certain minimum level regardless of the potentially continuing downward trend in risk weights.⁶²

57 In the scenario, the 12-month PD of the housing loan portfolio rises as high as 3.3% from an initial level of 1.0% in mid-2021. LGD goes up from 15% in mid-2021 to 29.4%, and the cumulative drop in residential property prices at the test horizon is 16.1%.

58 Non-risk-weighted exposures for the housing loan portfolio made up 17% of total exposures.

59 This indicates an additional buffer of around CZK 39 billion assuming that the amount of risk-weighted exposures stays the same as in mid-2021.

60 The *Baseline Scenario* of the stress tests indicates a drop in loan risk weights of as much as 2.4 pp.

61 The associated risks are now accounted for when setting the CCyB rate, as the methodology works, among other things, with coverage of unexpected credit losses arising from the possible model risk of underestimating the true risk weights. For details see https://www.cnb.cz/export/sites/cnb/en/financial-stability/galleries/macroprudential_policy/countercyclical_capital_buffer/ccyb_methodology.pdf.

62 Activation of Article 458 of the CRR is administratively and procedurally demanding. This gives rise to certain operational limitations and delays the effect of the tool, which may only become applicable one year after the date of the decision to introduce it. Its applicability is simultaneously limited to two years (with the option to extend it).

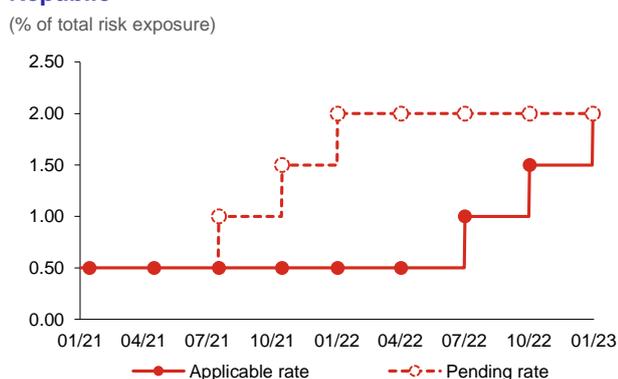
IV.3 THE COUNTERCYCLICAL CAPITAL BUFFER

The CNB has been setting the countercyclical capital buffer (CCyB) since 2014 with the aim of limiting 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 sets the appropriate CCyB rate on the basis of a comprehensive assessment of a set of macrofinancial and banking sector-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.⁶³

The CNB increased the CCyB rate to 2% with effect from 1 January 2023

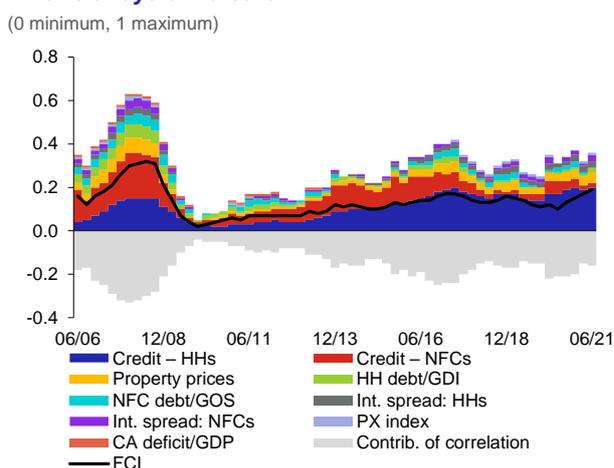
The CNB Bank Board decided at its meeting on 25 November 2021 to increase the CCyB rate to 2% (see [Chart IV.7](#)). In taking this decision, it took into account the indicators and analyses presented below assessing the position of the Czech economy in the financial cycle and the degree of vulnerability of the banking sector. These analyses showed that the taking on of new risks against the backdrop of growing economic activity had increased, due mainly to developments in the household sector. At the same time, risk weights on credit portfolios under the IRB approach, which are a decisive factor for the amount of capital created for risk exposures, were relatively low. Given the low materialisation recorded so far, the previously accepted aggregate cyclical risks in the banking sector's balance sheet remained elevated. The Bank Board agreed that it was desirable to respond to this by increasing the CCyB rate to 2%, as this would enable the banking sector to maintain its resilience to the potential materialisation of these risks.

Chart IV.7
Applicable and pending CCyB rate in the Czech Republic



Source: CNB

Chart IV.8
Financial cycle indicator



Source: CNB, CZSO

Note: 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 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. Due to distortions in the new loans statistics, data from the Central Credit Register were used to calculate the FCI. For details see [Chart IV.2 CB](#).

Debt financing of property purchases resulted in a gradual increase in the financial cycle indicator

The financial cycle indicator (FCI) serves as a starting point for assessing the position of the economy in the financial cycle. It stood at 0.186 in 2021 Q2 (see [Chart IV.8](#)), which represents a pronounced year-on-year increase (a local minimum of 0.1 had been recorded in 2020 Q2). The value of the FCI mainly reflected developments in the household sector, especially strong growth in housing loans and a related rise in residential property prices. The interest rate spread on loans to non-financial corporations also made a substantial positive contribution. By contrast, growth in new loans to non-financial corporations remains muted for now.

Growth in bank loans strengthened markedly in 2021

Year-on-year credit growth rebounded sharply in 2021 Q1. The rate of growth rose in all the main credit segments (see [Chart IV.9](#)). Growth in housing loans is well above its historical average, implying a major inflow of new risks into banks'

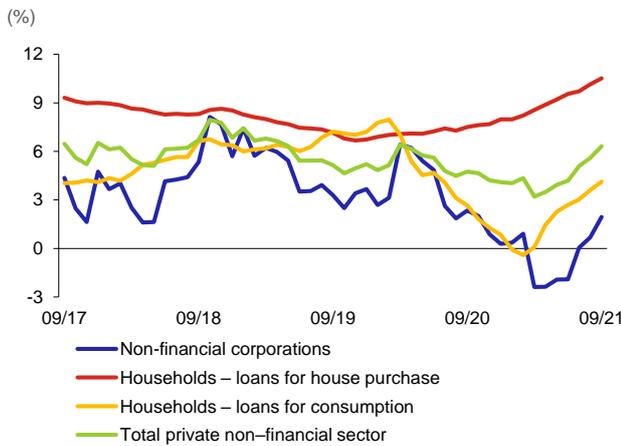
⁶³ For more details on the setting of the CCyB rate see the methodological document [The CNB's approach to setting the countercyclical capital buffer](#).

balance sheets (see Chart IV.10). Growth in genuinely new loans to households, which peaked around mid-2021 at a year-on-year rate of around 85% (see Chart IV.11), was also in line with the stock of loans. Despite having fallen since then, the year-on-year growth rate was still high at about 47% in September 2021. Growth in genuinely new loans to non-financial corporations was also elevated in 2021 Q3, although the strong growth in this sector was due mainly to base effects.

The taking on of risks in banks' balance sheets increased in 2021

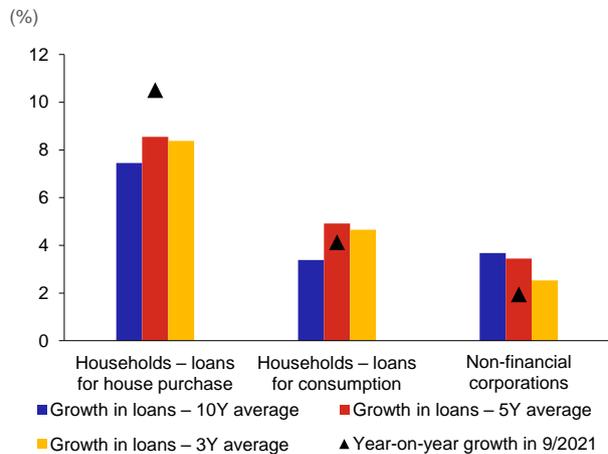
Potentially significant risks entered banks' balance sheets during 2021, primarily through new loans for house purchase. The credit characteristics of mortgage holders (see section IV.4) and credit standards (see Chart IV.12) suggest that such loans are more risky. At the same time, banks' balance sheets still contain risks taken on in previous years which might have materialised already had it not been for the economic policies adopted during the pandemic. Growth in interest and other costs (such as the sharp rise in energy prices) in the private non-financial sector (see section II) has increased the likelihood of these risks materialising in the near future. The probability of greater risk materialisation may be amplified by the risks to the CNB's autumn forecast, which are inflationary and fostering even stronger growth in costs and hence higher default rates (see section II.2). The prudential estimate of the potential losses on banks' credit portfolios beyond the expectations in the *Baseline Scenario* is currently around CZK 19.5 billion.

Chart IV.9
Year-on-year growth in bank loans to the private non-financial sector



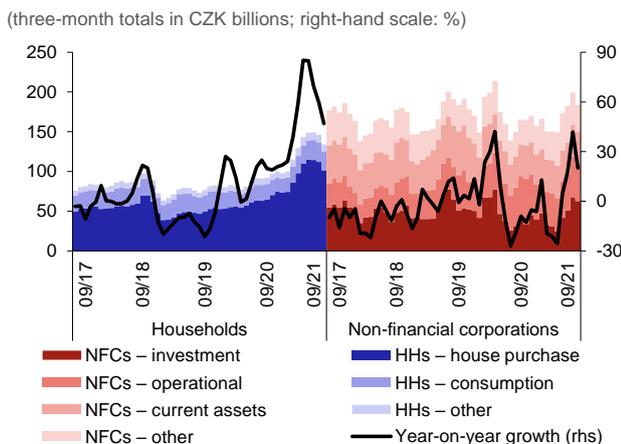
Source: CNB

Chart IV.10
Average and current growth in bank loans to the private non-financial sector



Source: CNB

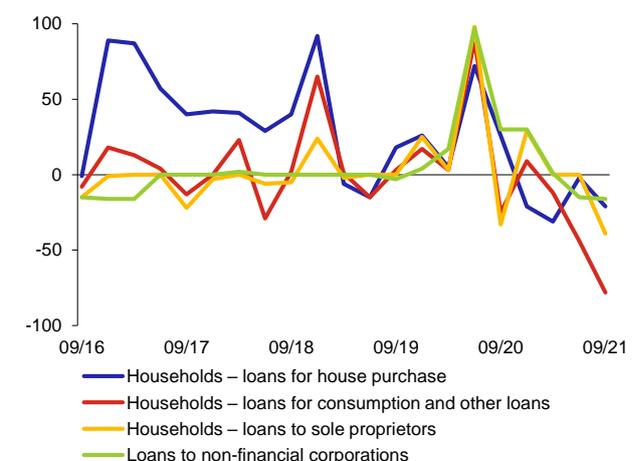
Chart IV.11
Genuinely new bank loans to the private non-financial sector



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. Due to distortions in the new loans statistics, data from the Central Credit Register were used to calculate the FCI. For details see Chart IV.2 CB.

Chart IV.12
Credit standards in the Czech Republic



Source: Bank Lending Survey, CNB

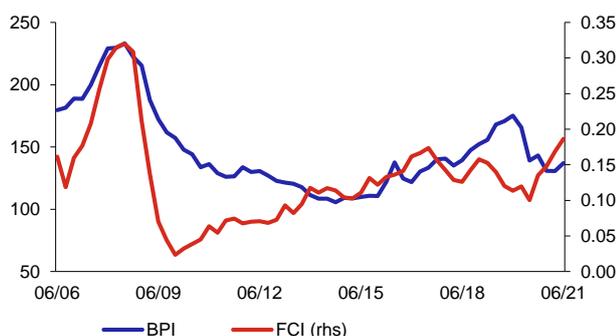
Note: The data represent the difference between the market share of banks that reported a tightening of lending standards and banks that reported an easing of lending standards in the past three months. More information on the indicator methodology can be found on the CNB website.

Provisioning returned to very low levels after a temporary rise

Expecting higher credit losses, banks started to increase their loan provisioning in a forward-looking manner in March 2020. However, owing to the absence of actual credit losses, they then reduced it back to the very low levels seen before the pandemic (see [Chart III.6](#)). In line with this, the ratio of provisions created for loans to gross loans started to fall again after an increase in 2020 (see [section III.2.2](#)). By contrast, the BPI, which expresses the ratio of the margin on the stock of loans to provisions per unit of credit, suggests a higher degree of prudence. The BPI was close to local minima in 2021 (see [Chart IV.13](#)).

Chart IV.13
BPI and FCI

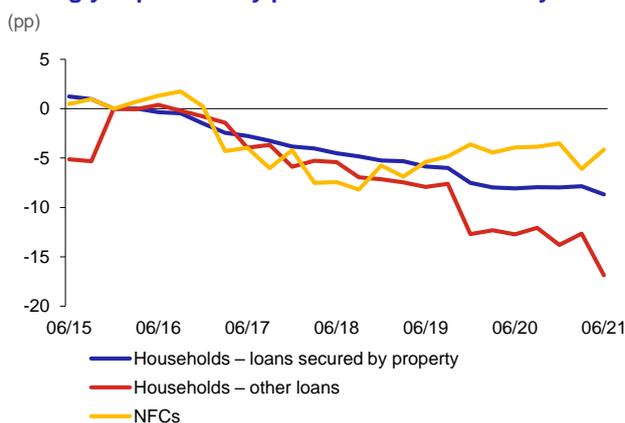
(%; right-hand scale: 0 minimum, 1 maximum)



Source: CNB

Note: The BPI expresses the ratio of the margin on the stock of loans to provisions per unit of credit. The margin on the stock of loans is the difference between the client lending rate and the client deposit rate. Due to distortions in the new loans statistics, data from the Central Credit Register were used to calculate the FCI. For details see [Chart IV.2 CB](#).

Chart IV.14
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.

Risk weights on credit portfolios under the IRB approach decreased further for loans to households

Risk weights on credit portfolios under the IRB approach ("risk weights") are a key indicator of the banking sector's vulnerability over the financial cycle. The risk weights for loans to households for house purchase and other loans to households decreased significantly in 2021 Q3 (see [Chart IV.14](#)). The CNB derives the CCyB rate necessary to cover the banking sector's increased vulnerability caused by the cyclicity of risk weights from the difference between the actual and the hypothetical capital requirement.⁶⁴ The current difference between the actual and the hypothetical capital requirement assuming fixation of the risk weights as of the start of the latest strongly expansionary phase of the financial cycle⁶⁵ is CZK 37 billion (see [Chart IV.15](#)). Risks weights are also affected by non-cyclical factors, so the given estimate of growth in risk weights due to the economic cycle may be overestimated.⁶⁶

Given the evolution of cyclical risks in the banking sector and the assessment of the sector's vulnerability, the CNB decided to increase the CCyB rate by 0.5 pp...

The prudential estimate of unexpected losses⁶⁷ (see [Chart IV.16](#), line: *Conditional credit loss distribution*) of around CZK 19.5 billion would be covered by a CCyB rate of 0.75%. The FCI-based approach indicates a rate of 1.25% (see [Chart IV.16](#) and [Table IV.1 CB](#)). The additional capital needed to cover both the potential unexpected losses and the potential increase in the capital requirement due to the return of risk weights to the levels observed before the start of the strongly expansionary phase of the financial cycle thus amounts to CZK 56.0 billion⁶⁸ and implies a CCyB rate of 2.25% (see [Chart IV.16](#)). In setting the CCyB rate, the Bank Board took into account the potential overestimation of cyclical growth in risk weights and the current macroeconomic uncertainties (see [section II](#)), which may lead to higher risk materialisation. Given the current strong capitalisation of the domestic banking sector, increasing the CCyB rate by 0.50 pp will not have a negative effect on lending to the real economy (spare lending capacity amounted to around CZK 3.4 trillion of additional loans in mid-2021). This change in the rate will increase the absolute capital requirement by approximately CZK 13 billion.

64 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.

65 According to CNB analyses, the Czech economy entered the latest strongly expansionary phase of the financial cycle in the second half of 2015.

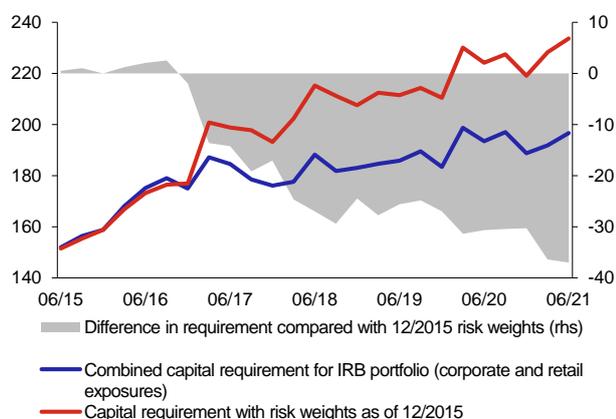
66 Risk weights are also affected by regulatory changes, improved risk models and change in collateral quality, for example. The CNB is currently developing a method to better capture the cyclicity of movements in risk weights. The results will be presented for the first time in the *Financial Stability Report* in June 2022.

67 The CNB estimates potential unexpected losses using the conditional probability distribution of credit losses. This is one of the quantitative approaches used by the CNB as a guide to setting the CCyB rate. More detailed information about the construction can be found in Appendix 3 of *The CNB's approach to setting the countercyclical capital buffer*.

68 The simple sum of the potential losses implied by the conditional distribution and additional capital created as a result of the increase in risk weights is adjusted for newly defaulted exposures, which are already included in the losses and whose risk weights will not return to their original levels.

Chart IV.15
Actual and hypothetical capital requirements based on the application of the risk weights as of 12/2015

(CZK billions)

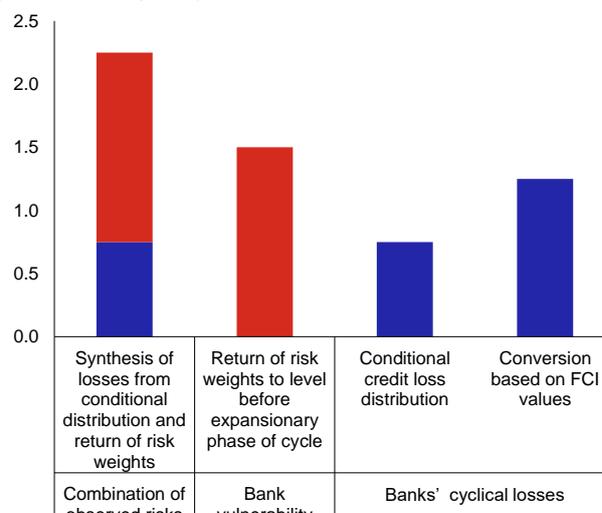


Source: CNB

Note: The chart shows the 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.

Chart IV.16
CCyB rate covering financial cycle effects monitored

(% of total risk exposure)



Source: CNB

...and remains ready to react flexibly to changes in economic conditions

The CNB will closely monitor key economic and financial variables and the extent of credit risk materialisation in the banking sector. In the event of a further acceleration of credit growth in the private non-financial sector, increased taking on of risks in the banking sector's balance sheet, and rising vulnerability of the banking sector, the Bank Board is ready to increase this rate further. By contrast, should the economic situation worsen substantially and risks materialise, it is ready to gradually lower the CCyB rate or release the buffer fully to support banks' ability to lend to non-financial corporations and households without interruption.

Other European countries have also increased their CCyB rates

Other European countries have also responded to growth in cyclical risks by applying the CCyB rate (see [Chart IV.3 CB](#)). The same rate as in the Czech Republic was previously announced by Iceland, which raised its rate by 200 basis points in one step. The other Nordic economies have also increased their rates, responding as usual more quickly to manifestations of the expansionary phase of the financial cycle.

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,⁶⁹ 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 2021 Q2, the ratio was 88.2% and the relevant gap -4.0 pp. The CNB has long maintained that this approach is not a suitable tool for assessing cyclical risks in the Czech economy and is subject to a range of shortcomings which reduce its reliability.⁷⁰ 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 4.4 pp in Q2 and implies a rate of 1% (see [Chart IV.4 CB](#)). However, this indicator must also be viewed as only a simplified way of assessing the position in the financial cycle, with limited direct usefulness as regards deciding on the CCyB rate.

69 European Systemic Risk Board (ESRB, 2014): [Recommendation \(ESRB/2014/1\) on guidance for setting countercyclical buffer rates](#).

70 [The CNB's Approach to Setting the Countercyclical Capital Buffer](#) (Appendix 1).

IV.4 RISKS ASSOCIATED WITH PROPERTY MARKETS

IV.4.1 Risks associated with residential property markets

The CNB thoroughly evaluates risks associated with the residential property market

Despite initial expectations, activity on the mortgage and property markets has not weakened during the pandemic. On the contrary, it has tended to strengthen since the second half of last year. The CNB has long been monitoring and regularly assessing the risks arising in both markets. The main source of information for its aggregate analyses in this field is the semi-annual *Survey of loans secured by residential property* (the “Survey”). The evaluation of risks associated with new housing loans is based, among other things, on regular stress testing of households. The test results, along with other detailed analyses, are reflected in the caps on credit ratios.

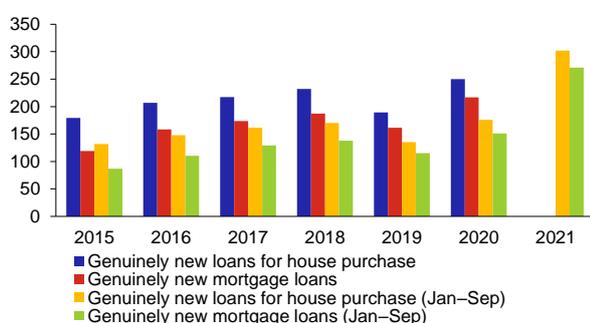
New loans for house purchase increased significantly in the second and third quarters of 2021

The mortgage market showed significant signs of overheating in 2021 Q2 and Q3. At the end of September, new loans provided during 2021 markedly exceeded the full-year volumes provided in previous years (see [Chart IV.17](#)). The strong growth was driven by brisk growth in residential property prices (see [section II.1](#)), which was reflected in an increasing average mortgage loan size and a growing number of new loan contracts (see [Chart IV.18](#)). The efforts of some households to maintain the value of their financial reserves amid increasing inflation probably contributed to the rise in the number of loans provided (see [section II.1](#)). In addition to growth in genuinely new loans, there was increased interest in refinancing existing loans (see [Chart IV.19](#)). By contrast, following a temporary rise in other renegotiated loans due to the introduction of a loan moratorium in 2020, this type of new loan contract fell markedly again, although it remained marginally above its pre-pandemic level. Despite the record-high volumes of new loans being provided, a relatively large proportion of residential properties are being purchased using buyers’ own financial reserves. In the case of family houses, the share of transfers exclusively involving buyers’ own reserves currently stands at only about 30%. For apartment transactions, however, the figure is around 45% (see [Box 2](#)). If investors not using debt financing to purchase property fundamentally affect market property prices, there is pressure on other households to adapt to market conditions by taking out larger loans with riskier characteristics. This can contribute to a further easing of credit standards.

Chart IV.17

Bank loans for house purchase and mortgage loans

(CZK billions)



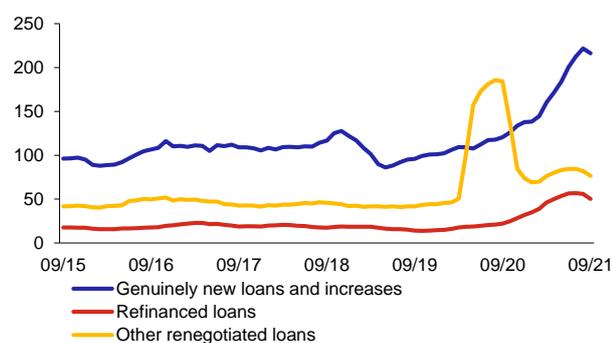
Source: CNB

Note: All series include increases in existing loans.

Chart IV.18

Six-month totals of components of new loans for house purchase

(CZK billions; moving six-month totals)

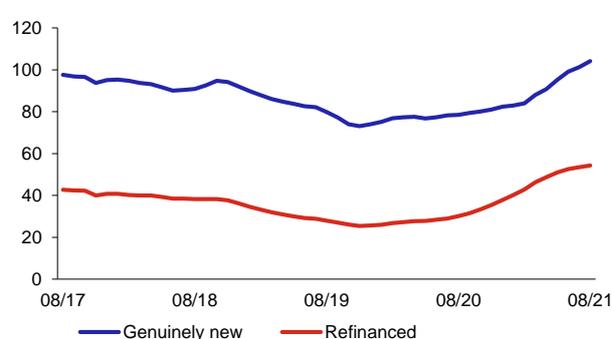


Source: CNB

Chart IV.18

New loans secured by residential property

(annual moving totals in thousands of loans)

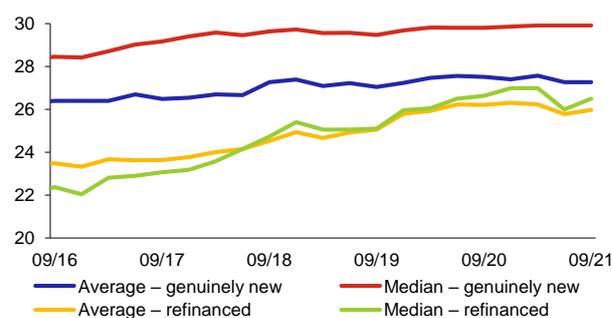


Source: CNB

Chart IV.20

Repayment term of loans secured by residential property

(years; averages weighted by loan amount)



Source: CNB

Note: The figure for 2021 Q3 is based only on the data for July and August.

BOX 2 Estimated share of mortgage-funded apartments in the Czech Republic

Knowledge of the share of apartments purchased using a mortgage is required for analysing property market-related risks and can help in assessing the effectiveness of prudential instruments in reining in the boom in this area. Transaction data from the cadastre were used to estimate this share.⁷¹ The data include information on whether the property was subject to a third-party lien, which can be used as a rough approximation of whether or not the purchase was mortgage-funded.⁷² The data cover the time period from 2014 Q1 to 2021 Q3 and comprise around 500,000 housing transfers.

The share of mortgage-funded property purchases in the full data sample is 55% and has been fluctuating between 50% and 60% from year to year without showing any clear trend.⁷³ However, there are systematic differences across regions (see [Chart 1](#)). Low shares of mortgage-funded properties can be seen mainly in the border districts of the Ústí nad Labem, Karlovy Vary and Plzeň regions. By contrast, large shares are typical of the environs of Prague and in and around regional capitals such as Brno, České Budějovice and Pardubice. Prague differs from its neighbouring districts in having a lower share of mortgage transactions. According to anecdotal evidence, this may reflect a high proportion of foreign and institutional property investors, who seldom use mortgages to fund transactions.⁷⁴ The CNB's macroprudential policy as regards LTV, DSTI and DTI caps can be considered potentially less effective in areas with low shares of mortgage transactions, as property market developments in such areas are affected mainly by cash buyers. With the exception of Prague, though, these are areas where apartments can be considered more affordable under the prudential approach.

Besides the share of apartments purchased using mortgages, the effects of factors determining whether a transaction is mortgage-funded were also examined. Logistic regression was used for this purpose. The potential factors included the total transaction value,⁷⁵ which was rescaled into one of five quintiles for each year in which the transactions took place.⁷⁶ This transformation made it possible to eliminate the effect of the upward trend in apartment prices and capture the real effect of the transaction value at the time. The effect of time would then be treated as a separate factor. The other explanatory factors included variables for (1) district outside Prague; (2) co-ownership by two acquirers (natural persons); (3) transfer/acquisition by municipal/regional administration and (4) details of apartment known for transaction.⁷⁷

[Table 1](#) shows the estimated effect of each factor on the share of mortgage-funded transactions⁷⁸ in the form of marginal effects indicating the factor's isolated contribution to the increase/decrease in this share (in pp) relative to the reference transaction.⁷⁹ The latter was defined as a transaction in Prague in 2021 at a price lying in the third quintile⁸⁰ where neither the transferor nor the acquirer was a regional administration, the acquirer was not two natural persons acquiring co-ownership, and the details of the transferred housing were unknown. The share of mortgages for such a transaction was estimated at 61.2%. For example, according to [Table 1](#), the share of the transactions which had the same characteristics as the reference transaction except that they fell into the first quintile is 21.9% (61.2% minus 39.3 pp). A similar procedure can be used to determine the shares in the other categories. The transaction price had the biggest effect, with a low transaction price indicating a greatly reduced probability that a mortgage was used to buy the property. This is based on the simple principle either that people who had enough financial reserves of their own to buy a property did not take out a mortgage to fund the purchase (more likely for low-price transactions) or, reversing the causality, that banks provide mortgages to a lesser extent to people in low-income areas, who thus have no other option but to fund transactions themselves. All other things being equal, it was also demonstrated that property transfers in Prague were less likely to be mortgage-funded, as were potential non-market transactions with municipal/regional administrations (probably apartment privatisations and the like). By contrast, in cases where two natural persons acquired co-ownership of an apartment

71 The data contain information on the place, time and price of each transaction recorded by the Czech Office for Surveying, Mapping and Cadastre (COSMC).

72 Besides mortgage loans, such purchases can be funded by, for example, a secured bridging loan provided by a building society. In this box, however, we refer to all these loans as mortgages. Of course, there are cases where a lien attached to a property after a transaction does not necessarily mean that the property was acquired on a mortgage. These include, for example, instances where the mortgaged property is not the same as the property used as collateral. Such cases are relatively rare, but it is important to bear in mind that the conclusions of the analysis are thus only approximate.

73 If we calculate this share using transaction amount-based weighting it works out at about 67.1%, as the average value of a mortgage-funded transfer is higher than in the opposite case.

74 We can only estimate this share, because the transaction data we use are anonymised. The share of mortgage transactions in Prague is roughly 54%, while that in the Prague-West and Prague-East districts, which can be regarded as very comparable to Prague, is around 75%. It can thus be assumed that a large part of this difference (i.e. 21 pp) could be due to foreign and institutional property investors.

75 This may unfortunately include other transactions, such as transactions in garages and adjacent sites. Some distortion should therefore be taken into account when interpreting the results.

76 This generated five dummy variables indicating whether, for example, the transaction was among the one-fifth of transactions with the lowest price in the given year in the case of the first quintile, among the one-fifth of transactions with a higher price in the given year in the case of the second quintile, etc.

77 This probably involves older apartments on average than in the opposite case. The share of these transactions in the overall sample is around 50%.

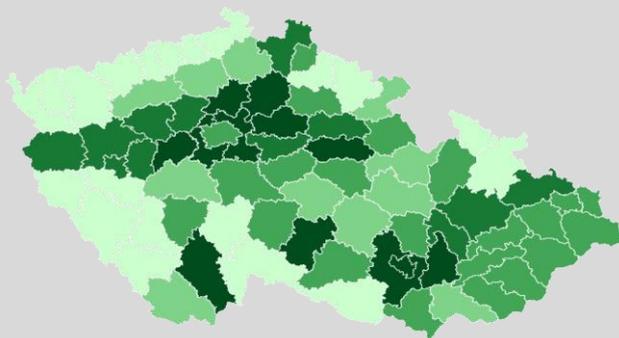
78 In the logit model, this share can be understood as the probability that a transaction is mortgage-funded based on the values of the explanatory variables.

79 All the marginal effects (and the regression coefficients from which the marginal effects are calculated) are statistically significant at the 99.9% confidence level; the McFadden's R² of the model is 12.75% and the cross-validated Gini coefficient is 43.6%. The model can thus be assessed as medium-strength.

80 In 2021, the third quintile is defined as transaction prices in the range of CZK 2.4–3.4 million.

(probably mostly young people), the share of mortgage-funded transactions increased (*ceteris paribus*). The other variables had fairly small, albeit statistically significant, effects.

Chart 1 (BOX 2)
Share of mortgage-funded apartment transfers in the Czech Republic by district



Source: COSMC, CNB

Note: The intervals of the categories are defined from the lightest shade to the darkest one as follows: 24–46%, 46–52%, 52–58%, 58–62% and 62–76%. The intervals are open from the left and closed from the right.

Table 1 (BOX)
Effect of explanatory factors on the share of mortgage-funded apartment transfers

(pp)

Explanatory variable	Marginal effect
1st price quintile	-39.3
2nd price quintile	-12.9
4th price quintile	7.9
5th price quintile	14.1
Outside Prague	11.1
2014	-7.7
2015	-4.3
2016	-2.1
2017	-2.6
2018	-2.2
2019	-5.8
2020	-1.3
Co-ownership by two acquirers (natural persons)	17.7
Acquired by municipal/regional administration	-19.0
Transferred by municipal/regional administration	-14.8
Details of apartment known for transaction	-4.3

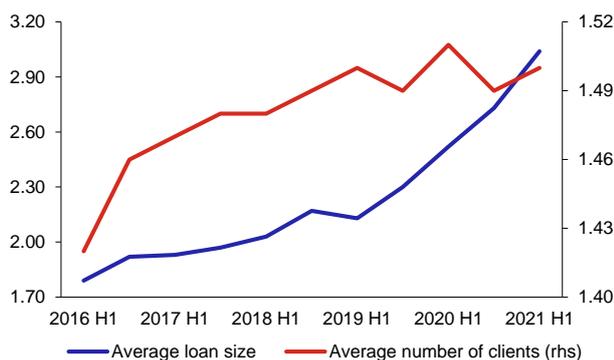
Source: COSMC, CNB

Households adjusted to the rising property prices mainly through growth in debt

Growth in the average housing loan size (21% year on year) exceeded both income growth and property transaction price growth in the first half of this year. Unlike in previous years, households are no longer adjusting very much to the increasing loan size through growth in the repayment term, which leads to lower monthly instalments (see [Chart IV.20](#)). This behaviour has evidently peaked – the median repayment term of genuinely new mortgages has been almost 30 years for the last two years. The second channel active in the past – more frequent loan applications by a higher number of clients – is hardly used any more either (see [Chart IV.21](#)). Some households thus continued to adjust mainly through growth in total debt after the cancellation of the recommended DSTI and DTI limits.

Chart IV.21
Average mortgage loan size and number of declared incomes

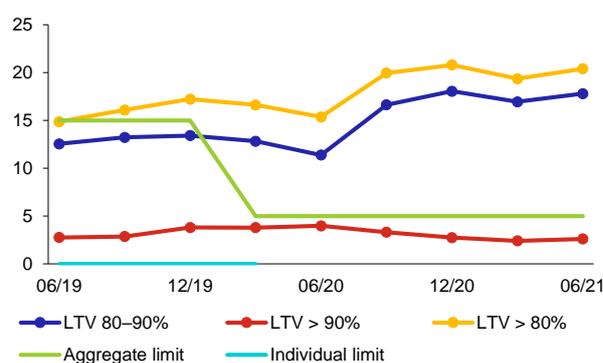
(CZK millions; right-hand scale: number of persons)



Source: CNB

Chart IV.22
Fulfilment of the recommended LTV limits

(share of loans in reference volume in %)



Source: CNB

Note: An LTV limit of 90% with a volume exemption of 5% of the reference volume has applied since 1 April 2020. The values for the LTV 80–90% and LTV > 80% series are for information only as from the same date. An individual limit applied until the end of 2020 Q1. Until then, it was recommended that no loans for house purchase with LTVs of over 90% be provided. Reference volume means that applicable in the given quarter.

Banks met the recommended LTV limit...

Under the CNB’s Recommendation, in the first half of 2021 mortgage lenders were supposed to comply with an LTV limit of 90%, to be exceeded only by loans representing a maximum of 5% of the reference volume (the average for the previous two quarters). All the financial institutions concerned complied with this volume exemption, and loans with LTVs of over 90% made up less than 3% of the reference volume overall (see [Chart IV.22](#)). However, the share of loans with LTVs of

80%–90% remained relatively high at around 18% in 2021 Q2. In the first eight months of 2021, loans with such LTVs were provided mainly by larger institutions. Despite the fading effect of the pandemic, however, the LTV distribution remains relatively stable (see [Chart IV.5 CB](#)). The relative LTV stability is contributing to the resilience of the Czech banking system, although mainly through limited losses given default (low LGD), because the positive correlation between the LTV ratio and probability of default (PD) is proving to be fairly weak in the Survey.

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

Although mortgage lenders are compliant with the recommended LTV limits, some adverse tendencies may persist. They include a natural tendency of lenders to value collateral on the basis of current market prices without taking much account of the potential risk of collateral overvaluation. According to the CNB's analyses, the ratio of the estimated value to the purchase price of collateral has long been concentrated around one, and this was also the case in 2021 Q1 onwards (see [Chart IV.6 CB](#)). The CNB will continue to monitor the prudential collateral valuation process.⁸¹

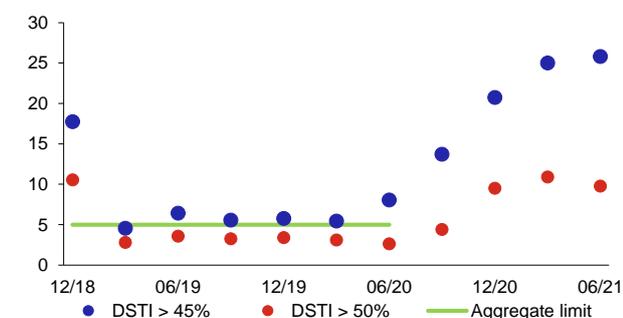
Most lenders have continued to take on increased risks since the DSTI and DTI limits were cancelled...

No DSTI and DTI limits have applied since mid-2020. This relaxation of regulation started to be gradually reflected in less tight credit standards, and this trend intensified further in 2021. Based on the conclusions of its analyses and stress tests, the CNB usually regards mortgage loans with a DSTI of over 40% of net income as very risky. The share of such loans has continued to increase since the start of 2021, and in 2021 Q2 banks provided over 48% of the reference amount of loans with a DSTI of over 40%, 26% of loans with a DSTI of over 45%, and 10% of loans with a DSTI of over 50%. The volume exemptions for the previous limits would thus have been markedly exceeded (see [Chart IV.23](#)). This trend intensified further in July and August 2021 (see [Chart IV.7 CB](#)). This was particularly true of second and subsequent mortgage loans, whose share in genuinely new loans is stable at around one-third (see [Chart IV.8 CB](#)). Similar tendencies could be seen for the DTI ratio (see [Chart IV.24](#) and [Chart IV.9 CB](#)). Here, the CNB considers a DTI of eight times net annual income as the threshold of increased riskiness. In 2021 Q2, loans with DTIs of over 8 accounted for almost 40% and loans with DTIs of over 9 for almost 22% of the reference volume of loans. The aforementioned risks connected with the elevated provision of mortgage loans with high DSTIs might be partially offset by the fact that such loans are more likely to be provided to high-income households (see [Chart IV.25](#)). Even with high DSTI ratios, such households still have a larger proportion of their income left after paying their mortgage repayments to cover other expenses than ordinary or low-income households (all other things being equal).

Chart IV.23

Loans with DSTIs above the previously recommended limits

(share of loans in reference volume in %)



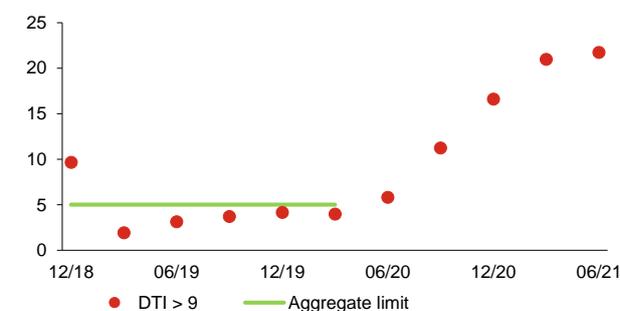
Source: CNB

Note: Reference volume means that applicable in the given quarter.

Chart IV.24

Loans with DTIs above the previously recommended limit

(share of loans in reference volume in %)



Source: CNB

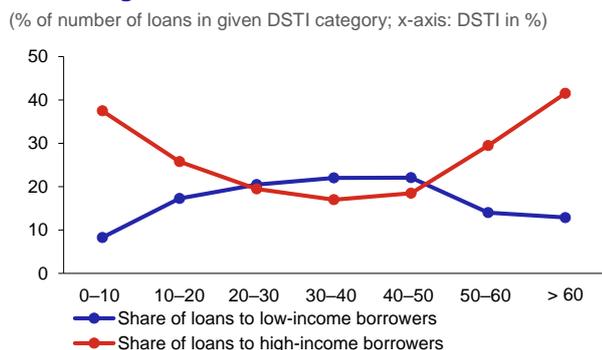
Note: Reference volume means that applicable in the given quarter.

...due to continued strong growth in property prices outpacing growth in the income of mortgage applicants

In terms of credit standards expressed as DTI and DSTI ratios, the banking sector has in recent months exceeded the conditions which prevailed in the second half of 2018, when caps on these ratios were first introduced (see [Chart IV.26](#)). There were significant differences across lenders. Unlike with LTV, some smaller banks and building societies also contributed significantly to the increase in the share of loans with high DSTIs and DTIs (see [Chart IV.27](#)). This is creating a risk of more conservative lenders reacting to a potential loss of market share by relaxing their standards to the levels of their less conservative competitors. Mutually enforced relaxing of credit standards would be reflected in the accumulation of systemic risks.

⁸¹ 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.

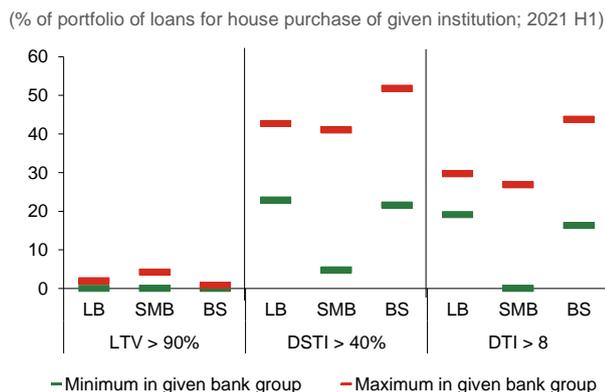
Chart IV.25
Shares of low- and high-income borrowers in different DSTI categories



Source: CNB

Note: Data on newly provided mortgage loans from March to August 2021 were used. Income is defined as the net monthly income of all persons taken into account in the loan application. If income is lower than CZK 33,000, the borrower is a low-income borrower; if income is higher than CZK 75,000, the borrower is a high-income borrower. Low- and high-income borrowers comprise approximately the lower and upper quintile, respectively, of the distribution of all loans included.

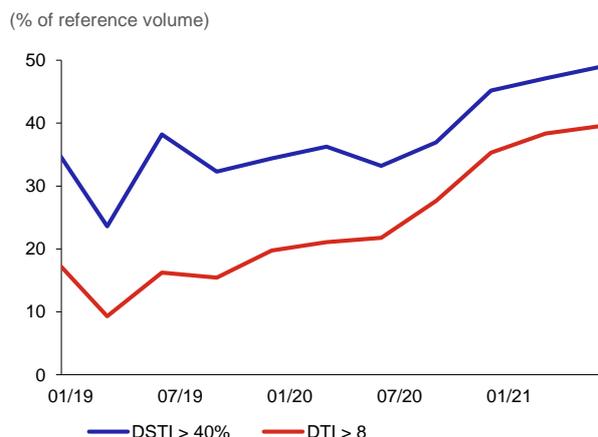
Chart IV.27
Shares of loans exceeding risky LTV, DSTI and DTI levels by bank group



Source: CNB

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

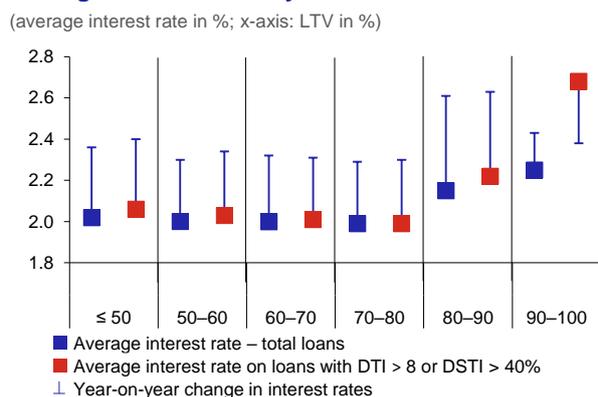
Chart IV.26
Loans secured by residential property with a high DSTI or DTI



Source: CNB

Note: Reference volume means that applicable in the given quarter.

Chart IV.28
Average interest rates by loan characteristics



Source: CNB

Note: Data for 2021 H1. Weighted average interest rates with the sizes of individual loans as weights. Interval closed from the right. No loans with LTVs of over 100% were provided in 2021 H1.

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

Interest rates on mortgage loans provided in the first half of 2021 mostly fell on average year on year. There was a clear effort by banks to differentiate loan rates based on the LTV ratio in this period. The level of risk was reflected above all in rates on loans with LTVs of over 80% (see Chart IV.28). In addition to elevated loan riskiness, the higher interest rates in this category may reflect clients' high demand for this type of loan and limited supply thereof by lenders. Banks applied an additional interest mark-up in the category of loans with LTVs of 80%–90% regardless of whether the loan also had a DTI of over 8 or a DSTI of over 40%. By contrast, they enforced riskier DSTIs or DTIs for loans with LTVs of over 90% in their interest mark-ups all the more significantly (no loans with an LTV of over 100% were provided in the first half of 2021). This again indicates efforts to reflect higher credit risk in the level of interest rates.

The regulation of mortgage lending has changed...

Since 2015, the CNB has been mitigating the systemic risks associated with mortgage lending and property market developments on the basis of the aforementioned macroprudential analyses and information obtained in the course of supervising the financial market. To this end, the CNB has gradually introduced and modified the LTV, LTI, DTI and DSTI caps. Up to now, it has specified these requirements in its *Recommendation on the management of risks associated with the provision of retail loans secured by residential property* (the "Recommendation"). Besides limits on credit ratios, the Recommendation has included a set of additional rules of prudent conduct in mortgage lending.

...following an amendment of the Act on the CNB

In 2021, the Czech Parliament approved an amendment to Act No. 6/1993 Coll., on the Czech National Bank, as amended by Act No. 219/2021 Coll. (the “Act on the CNB”). It contains Article 45b, which allows the CNB to set binding upper limits on the LTV, DTI and DSTI ratios for all mortgage lenders where systemic risks related to mortgage lending have been identified. The Act on the CNB defines the numerator and the denominator of these ratios only approximately. Therefore, the CNB specified the details in Decree No. 399/2021 Coll., on credit ratios, which sets out the manner of, and rules for, calculating LTV, DTI and DSTI and contains definitions of the items included in the calculation.

Limits on credit ratios will from now on be set in a provision of a general nature...

The CNB sets the specific upper limits on credit ratios in a provision of a general nature (the “Provision”), which is issued without a procedure on a proposal of a provision of a general nature. The limits take effect no earlier than four months after the Bank Board decides on them and the provision is published.⁸² The CNB will review the reasons for the issuance of the Provision at least once every six months and will assess them with respect to the existence and expected further evolution of the factors giving rise to systemic risks. If the CNB sets an upper limit on one or more credit ratios through the Provision, lenders may not provide loans exceeding that limit. The Act on the CNB respects the fact that a small proportion of loan cases have specific characteristics and that strict insistence on the application of the caps could lead to excessive regulatory hardship. Therefore, an exemption not exceeding 5% of the total amount of loans provided in the previous quarter may be applied by specific lenders to specific cases in the current calendar quarter.

...while some other conditions will continue to be set in the Recommendation

The CNB will continue to use the Recommendation to set certain conditions related to mortgage lending which are not governed by the Act on the CNB and specified in the Provision. They pertain to some quantitative and qualitative parameters, such as the maximum term of a mortgage loan or other consumer credit, the methods for repaying the principal of a mortgage loan, and increases in the principal of an existing mortgage loan. The CNB will regularly monitor lenders’ procedures with regard to the Recommendation and take the results of that monitoring into account when conducting macroprudential policy and supervising lenders.

The CNB considers it necessary to adjust the mortgage-lending conditions

In view of continued easing of credit standards for mortgage loans this year, the Bank Board decided at its meeting on 25 November 2021 to change the limits on the LTV, DTI and DSTI ratios in accordance with the new legally binding rules. Two levels of the relevant limit will apply for each ratio. The first can be regarded as the basic or standard one and the second – designed for applicants under 36 years for purchases of owner-occupied housing – as less strict. The new legal rules are based on the fact that young applicants⁸³ are a specific category that is at an early stage of its economic activity and therefore has lower savings and income. In subsequent years, however, its income usually grows faster than that of other age categories of applicants. For young applicants, therefore, the LTV cap will be 10 pp higher, the DSTI cap 5 pp higher and the DTI cap a one-year multiple of net income higher. However, the less strict limits will not be applied automatically and mortgage lenders will still be required to properly examine the creditworthiness of each applicant. Lenders will thus apply a case-by-case approach to applicants under 36 years and assess how large a loan they will be able to repay given their income prospects.

The CNB is lowering the basic LTV limit to 80%

At the start of the pandemic, the CNB increased the basic recommended LTV cap from 80% to 90% and changed the construction of the cap to bring it into conformity with the amendment to the Act on the CNB under discussion at the time.⁸⁴ Analyses of the mortgage market revealed that the 90% limit was no major constraint. At the same time, banks did not regard the provision of loans with an LTV above 90% as prudent and therefore did not make full use of the 5% exemption for loans with LTVs exceeding 90%. In view of the fade-out of the acute pandemic-induced economic problems, the rising estimated overvaluation of apartment prices and the significant share of new loans with a combination of high DTI and DSTI levels, the CNB considers it necessary to return to the basic LTV limit of 80% (90% for applicants under 36 years).

The potential risks in the area of borrowers’ vulnerability necessitate the reintroduction of DTI and DSTI limits

The persistent lead of growth in housing prices over growth in households’ disposable income is being reflected in an increase in the loan amounts needed to buy a house and, in turn, in the relative debt of households with loans. The numbers of vulnerable borrowers in lenders’ balance sheets are therefore growing. Combined with adverse shocks from the real economy (such as a sharp rise in energy prices), this is causing macrofinancial risks to increase. The CNB thus considers

⁸² If the CNB increases or cancels the upper limit on a credit ratio in the Provision, this change takes effect the day after the date of publication unless the Provision provides for a later date of effect.

⁸³ Pursuant to Article 45b of the Act on the CNB, these are applicants who are under the age of 36 at the time the loan is granted, or applicants living in a marriage or registered partnership, at least one of whom is not yet 36 at the time the loan is granted.

⁸⁴ The Recommendation contained an individual LTV cap of 80% and an aggregate 15% volume exemption for loans with LTVs of between 80% and 90%, whereas the amendment only contains an LTV cap and a 5% volume exemption.

it necessary to reactivate tools focused on the risks to which lenders as a whole are indirectly exposed through borrowers' balance sheets. The CNB Bank Board has therefore decided to reintroduce DTI and DSTI caps. The DTI ratio is designed primarily to mitigate risks associated with excessive household debt, while the DSTI ratio is targeted at risks connected with excessive debt service. The finding that a rising percentage of newly provided loans have highly risky characteristics (a DTI above 8 and a DSTI above 40%) is a significant argument for reintroducing both limits. In particular, the fact that the share of loans with high DSTIs is growing despite a gradual increase in the repayment terms of new loans towards the limit of 30 years is a warning signal. In this situation, it seems very likely, given continued high demand, that the share of highly risky loans would continue to rise if credit ratio limits were not set, due to competition between lenders.

Upper limits have been set on the DTI and DSTI ratios at, respectively, 8.5 times the applicant's net annual income and 45% of the applicant's net monthly income with effect from 1 April 2022

According to CNB analyses conducted using DTI and DSTI data, many of the clients granted loans over the last few years may not have sufficient financial reserves. Such reserves are important for maintaining clients' ability to service their loans in the event of adverse changes in their income situation or in the level of interest rates. To mitigate these risks while not significantly substantially reducing the availability of credit, upper limits have been set on the DTI and DSTI ratios at, respectively, 8.5 times the applicant's net annual income and 45% of the applicant's net monthly income (9.5 times and 50% respectively for applicants under 36 years). However, applications for loans with DTIs of 8 and DSTIs of 40% should still be assessed with an increased degree of prudence. In countries which apply DTI and/or DSTI caps, the relevant limits are set at similar or stricter levels (see [ESRB review of macroprudential policy in the EU, Annex 2](#)). The CNB calls on lenders not to use the four-month time interval between the setting of the DTI and DSTI caps and their date of effect to rush into providing loans with DTIs and DSTIs exceeding these caps.

The upper limits on credit ratios will represent a constraint on only a small proportion of mortgage loans, specifically those with potentially the riskiest parameters

Given the structure of new loans in terms of LTV (see [Chart IV.5 CB](#)), DTI (see [Chart IV.9 CB](#)) and DSTI (see [Chart IV.7 CB](#)), the less strict limits for applicants under 36 years and the 5% volume exemption calculated from both genuinely new and refinanced loans, the new regulation will have no major quantitative impact on either lenders or loan applicants. Data on loans provided in January–August 2021 reveal that, taking the applicants' age structure and the 5% exemption into account, around 13% of the volume of loans provided at the time would have failed to meet the new conditions. However, experience with the application of the previously recommended credit ratio limits shows that applicants are able to adjust to new conditions without the volume of loans provided falling significantly in the given macroeconomic conditions. The potential effect of the measures on the volume of new loans, which, by the CNB's estimation, will not exceed one-tenth of the amount of loans that would hypothetically be provided if the measures did not exist, will be offset by a more conservative risk profile of new loans.

The upper limits on credit ratios will prevent the vulnerability of the banking sector from rising

Credit ratios are macroprudential instruments aimed at ensuring that the banking sector is sufficiently resilient to adverse shocks. Capping them will prevent excessive growth in the share of loans with highly risky characteristics in banks' balance sheets, which could lead to failures in the domestic banking sector in the event of highly adverse economic developments. Together with the ongoing monetary policy normalisation, the upper limits should reduce the risk of a continued spiral between apartment price growth and growth in loans for financing apartment purchases. A positive side effect of introducing the caps is that they will reduce the vulnerability of recipients of new mortgage loans to adverse shocks. According to CNB analyses conducted using DTI and DSTI data, many of the clients granted a loan recently spend a very large proportion of their income on servicing their debt and do not have sufficient financial reserves. An adverse shock to their income situation or living costs, or a marked increase in interest rates upon refixation, may jeopardise their ability to repay the loan or cause them to cut back significantly on other spending, which may have an adverse effect on domestic demand. Another positive side effect of the caps is that they may limit the conditions for further significant growth in apartment prices and their potential overvaluation.

The CNB recommends that mortgage lenders also comply with other conditions

The new Recommendation stipulates an LTV of no more than 100% for any loan, a mortgage loan term not exceeding the horizon of economic activity of the client or the lifetime of the property (as a rule, a maximum of 30 years) and an unsecured consumer credit term not exceeding eight years. The CNB also recommends that the LTV, DTI and DSTI ratios for new mortgage loans for the purchase of buy-to-let residential property and the purchase of additional residential property not exceed the upper limits set in the provision of a general nature effective when these loans are provided. Moreover, when refinancing consumer credit secured by residential property whose credit ratio levels they are not required by law to assess, lenders should not extend the final maturity of the loan beyond that agreed with the original provider. The qualitative parameters specified in the Recommendation include a recommendation that lenders should stress test the applicant's ability to repay a loan in the event of an increase in interest rates and under worse economic conditions, and conversely should not provide loans with a non-standard repayment schedule shifting the applicant's commitments to a later period.

IV.4.2 Risks associated with commercial property markets

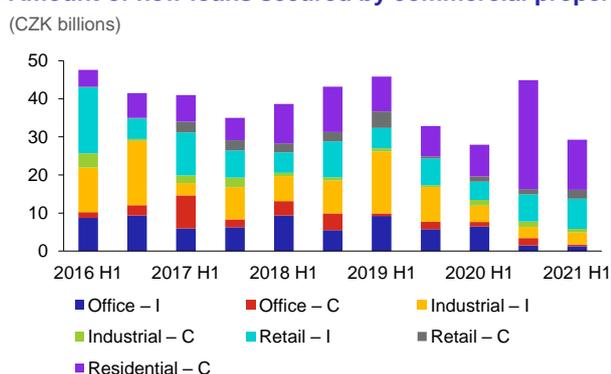
New bank loans secured by commercial property fell below their long-term levels in the first half of 2021...

New loans secured by commercial property amounted to CZK 29.3 billion in the first half of 2021 (see Chart IV.29). This suggests an overall downturn in commercial property funding by the domestic banking sector and is consistent with lower supply of suitable investment opportunities and a more cautious approach of property developers to construction at a time of uncertainty connected with the (post-)pandemic situation (see section II.1). Residential property construction is the only segment where lending activity has risen in recent quarters. However, the size of exposures secured by commercial property in the banking sector as a whole remains relatively low by comparison with the growing mortgage portfolios. Most of the existing risks have thus been transferred to foreign financial institutions, which provide funding to foreign investors accounting for the bulk of the domestic market.

Banks were mostly prudent in financing commercial property

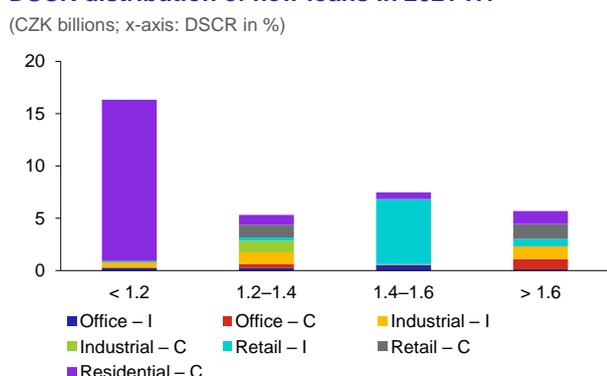
Lenders are currently aware of the greater degree of uncertainty on the commercial property market and have therefore maintained high collateral requirements when financing this segment. Despite a minor increase in loans with LTVs of between 70% and 80%, a large proportion of loans were provided with LTVs indicating lower risk, as in the second half of 2020 (see Chart IV.30). In particular, funding of residential construction falls into the higher-LTV categories. In the case of loans for residential construction, the growth in residential property prices and the reassessment of future rental income was also reflected in their significant representation in the lower-DSCR category (see Chart IV.31, values below 1.2). However, funding with low loan collateral and simultaneously low DSCR levels remains very small in scale and in no way departs from the trend observed in recent quarters (see Chart IV.32).

Chart IV.29
Amount of new loans secured by commercial property



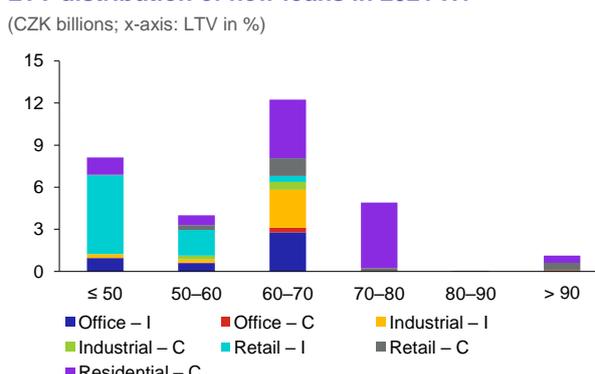
Source: CNB
Note: I: investment in existing commercial property, C: construction of commercial property.

Chart IV.31
DSCR distribution of new loans in 2021 H1



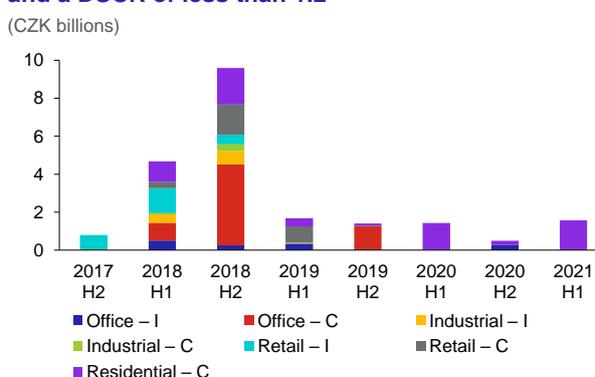
Source: CNB
Note: I: investment in existing commercial property, C: construction of commercial property. Interval closed from the right.

Chart IV.30
LTV distribution of new loans in 2021 H1



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

Chart IV.32
Amount of new loans with an LTV of more than 70% and a DSCR of less than 1.2



Source: CNB
Note: I: investment in existing commercial property, C: construction of commercial property.

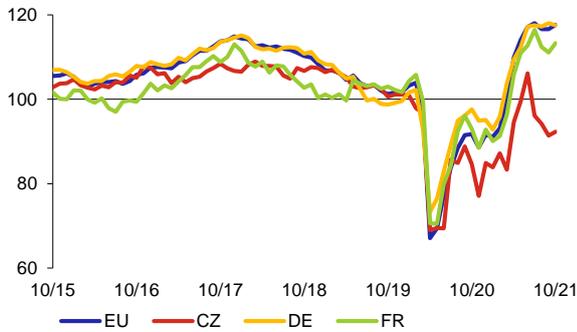
V. CHARTBOOK

SECTION II

Chart II.1 CB

Economic sentiment indicator

(base index relative to long-term average)

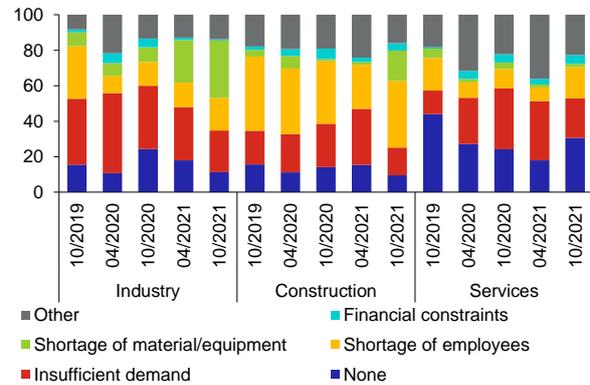


Source: Eurostat

Chart II.2 CB

Barriers to growth in production by sector in the Czech Republic

(%)

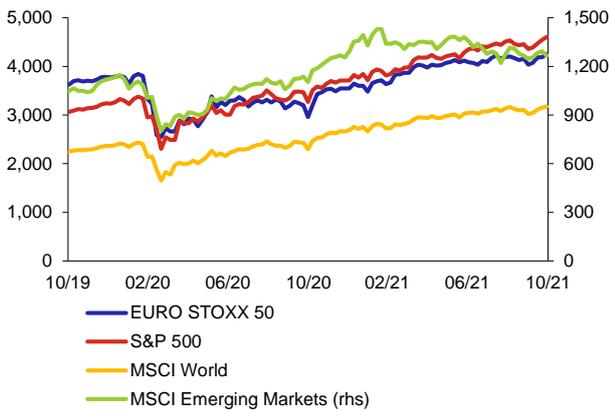


Source: CZSO

Chart II.3 CB

Key global stock indices

(points)

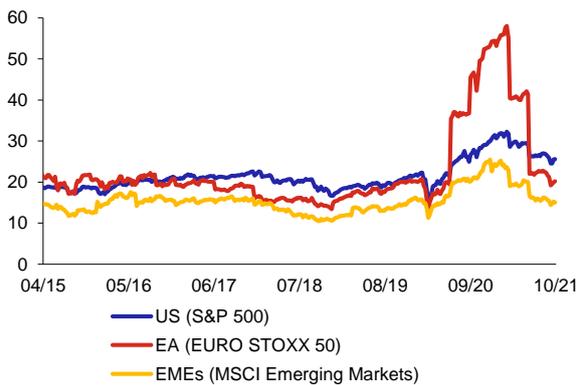


Source: Refinitiv

Chart II.4 CB

Price-to-earnings ratios

(index value as multiple of annual earnings)

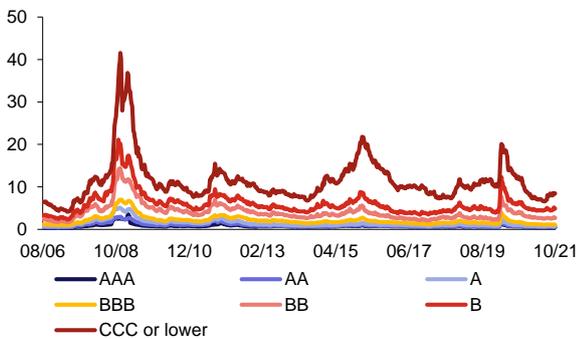


Source: Bloomberg

Chart II.5 CB

Global corporate and sovereign bond yield spreads

(pp)



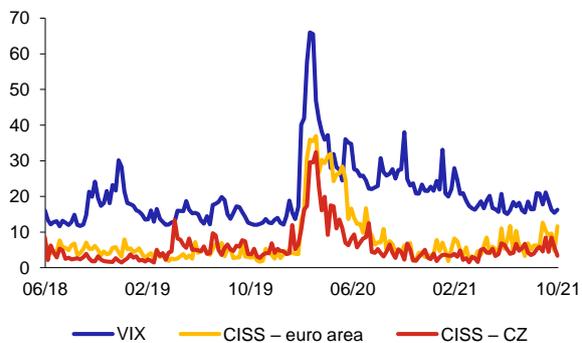
Source: Bank of America Merrill Lynch

Note: The spread is measured as the difference between yields on corporate bonds in the given rating grade and yields on the relevant sovereign bonds. The value is adjusted for any options.

Chart II.6 CB

VIX and CISS indices

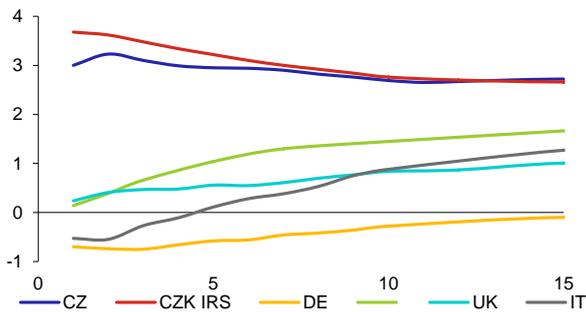
(points)



Source: Refinitiv, Bloomberg, CNB

Chart II.7 CB
Yield curves in selected countries

(%; x-axis: residual maturity in years)

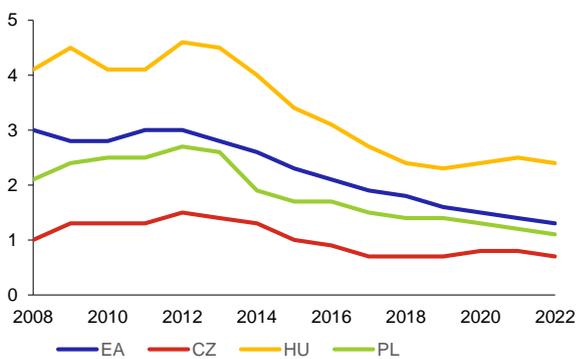


Source: Refinitiv, CNB

Note: As of 5 November 2021. Yield curves for the government bonds of the given countries, except for the CZK IRS curve, which shows koruna interest rate swap rates.

Chart II.9 CB
General government interest expenditure relative to GDP

(% of GDP)



Source: Eurostat

Chart II.11 CB
General government debt in the Czech Republic

(% of GDP)

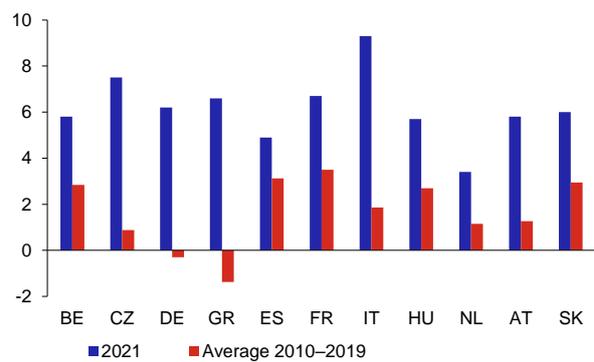


Source: CZSO

Note: Quarterly data as of 2021 Q2.

Chart II.8 CB
Comparison of structural deficits in selected EU countries

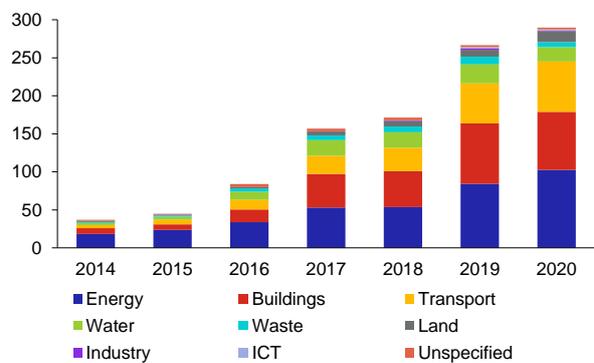
(% of GDP)



Source: European Commission (Spring 2021 forecast)

Chart II.10 CB
Use of funds from global issuance of green bonds

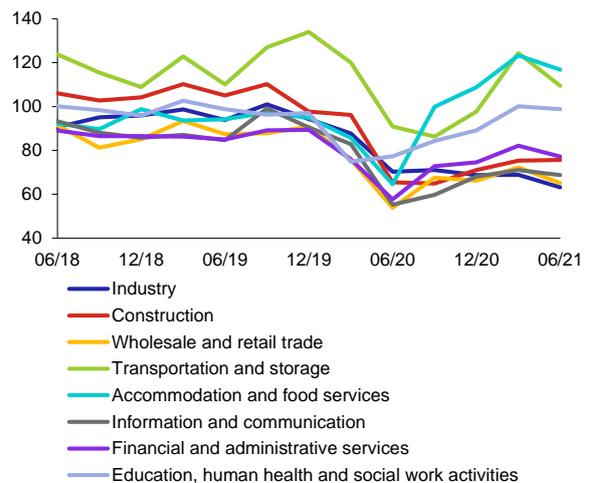
(USD billions)



Source: Climate Bonds Initiative

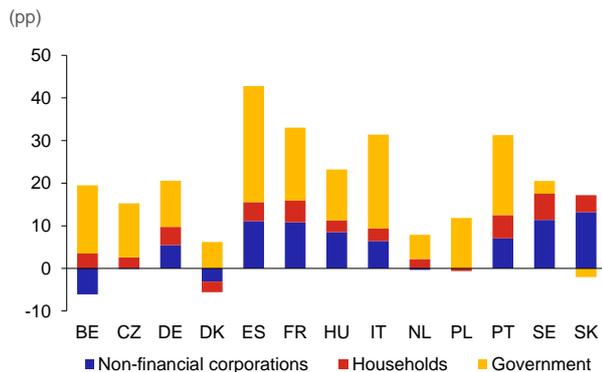
Chart II.12 CB
Corporate bankruptcies in the EU by sector

(base index; 2015 = 100)



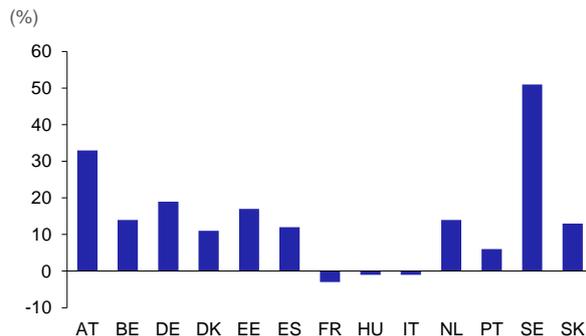
Source: Eurostat

Chart II.13 CB
Change in the debt ratio of economic agents in selected EU countries



Source: ECB
 Note: Data as of 30 June 2021. Change from 31 December 2019. Debt is expressed relative to GDP.

Chart II.14 CB
Overvaluation of residential property in selected EU countries



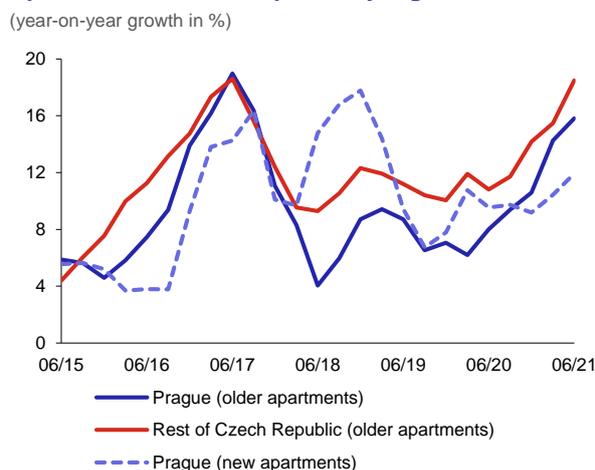
Source: ECB
 Note: Data as of 31 March 2021.

Chart II.15 CB
Transaction prices by type of property



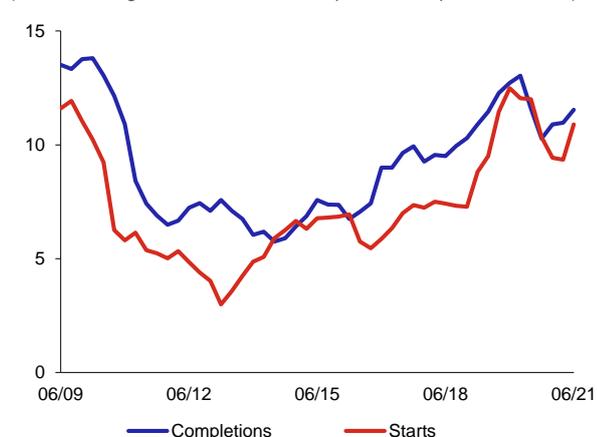
Source: CZSO, HB Index

Chart II.16 CB
Apartment transaction prices by region



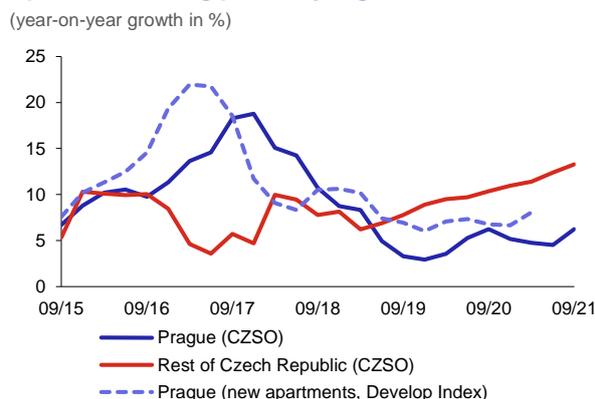
Source: CZSO

Chart II.17 CB
Numbers of housing starts and completions



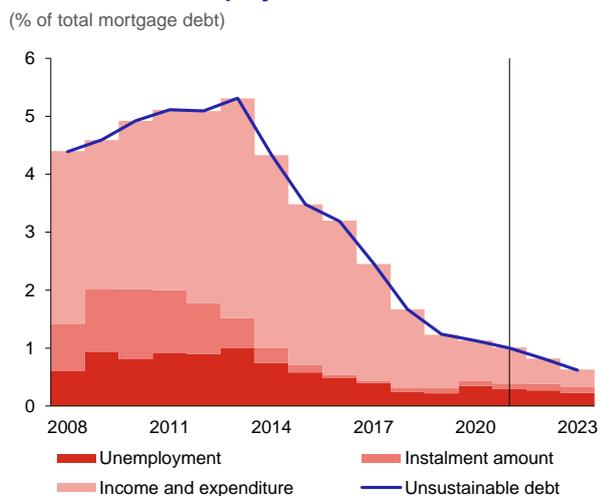
Source: CZSO

Chart II.18 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.

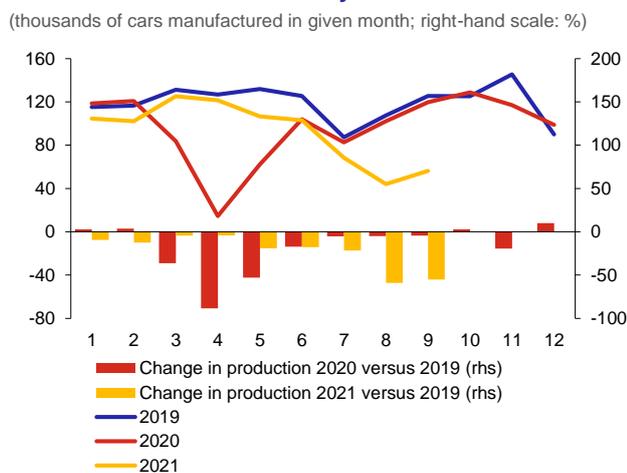
Chart II.19 CB
Share of unsustainable mortgage debt according to the CNB's autumn projection



Source: CNB

Note: The share of unsustainable debt refers to the portion of loans in the portfolio for which repayment problems can potentially be expected. A breakdown into individual factors shows what the predominant factor was in loans becoming unsustainable. Instalment amount and unemployment reflect the business cycle, and their effect is thus largely natural. By contrast, the income and expenditure factor reflects an unrealistic assessment of the income and expenditure sides of the household's budget when taking out a mortgage. The influence of this factor should be minimal for growth in debt to be sustainable over the long term.

Chart II.20 CB
Production in the car industry



Source: Czech Automotive Industry Association

Table II.1 CB
Medians of variables describing the characteristics of households when taking out a mortgage loan

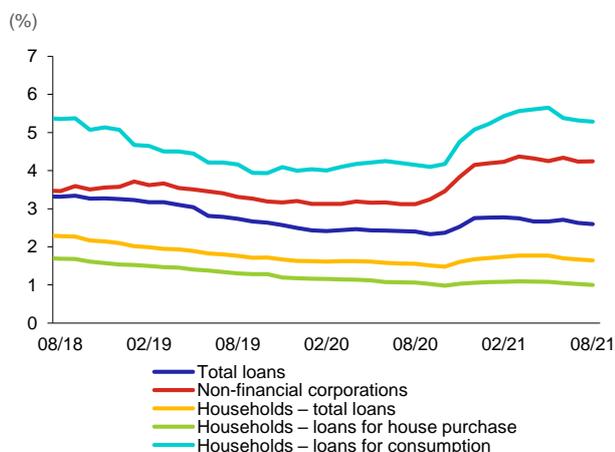
	2019 H1	2019 H2	2020 H1	2020 H2	2021 H1*
Net monthly income (CZK thousands)	42.6	44.2	45.9	46.8	49.1
Year-on-year change (%)	8.8	9.1	8.0	6.0	6.8
Property purchase price (CZK thousands)	2,500	2,600	2,900	3,200	3,340
Year-on-year change (%)	4.6	9.2	16.0	23.1	15.2
Loan size (CZK thousands)	1,936	2,000	2,200	2,400	2,528
Year-on-year change (%)	7.6	2.0	13.6	20.0	14.9
Mortgage loan instalment (CZK thousands)	8.2	8.2	9.5	9.9	10.5
Year-on-year change (%)	14.7	6.7	15.0	21.4	10.3
Client's other debt (CZK thousands)	57.0	60.0	50.0	30.0	30.0
Year-on-year change (%)	90.0	78.0	-12.3	-50.0	-40.0

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. The last half-year, indicated by *, contains data for January and February 2021 only.

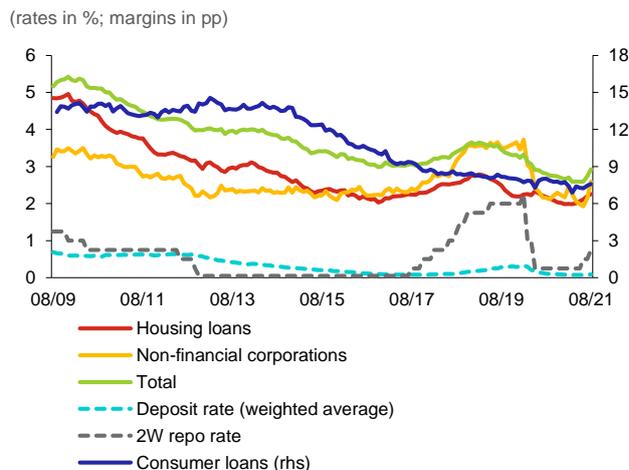
SECTION III

Chart III.1 CB
NPL ratio for bank loans to the private non-financial sector



Source: CNB

Chart III.2 CB
Interest margins on new loans



Source: CNB

Table III.1 CB
Client exposures, provisions and coverage ratios by risk stage

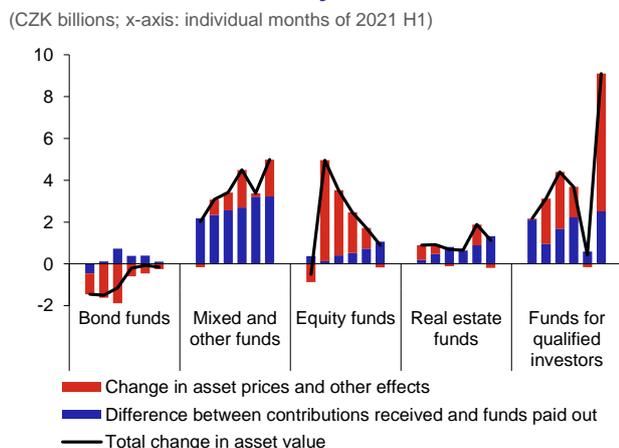
Stage	Date	Exposures to households		Provisions		Coverage ratio	
		Volume CZK bn	Change %	Volume CZK bn	Change %	Ratio %	Change pp
Total	12/2019	1,845		26		1.40	
	12/2020	1,926	8.4	32	-1.5	1.68	-0.15
	08/2021	2,089		32		1.53	
S1	12/2019	1,708		3		0.18	
	12/2020	1,752	9.7	4	0.2	0.24	-0.02
	08/2021	1,922		4		0.22	
S2	12/2019	106		4		3.96	
	12/2020	139	-6.5	9	-14.4	6.61	-0.56
	08/2021	130		8		6.05	
S3	12/2019	31		19		59.19	
	12/2020	35	5.3	19	4.3	54.58	-0.49
	08/2021	37		20		54.09	

Source: CNB

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

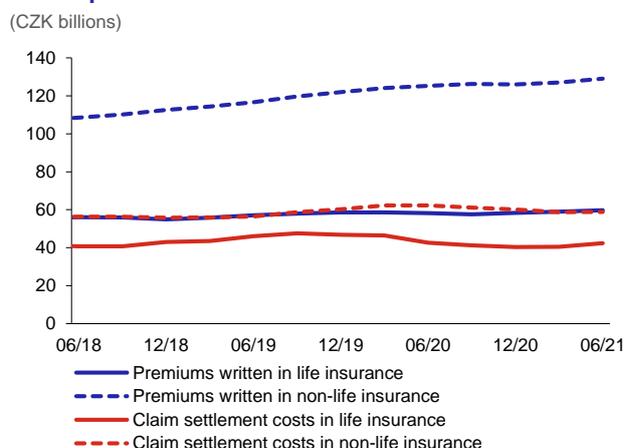
Stage	Date	Exposures to NFCs		Provisions		Coverage ratio	
		Volume CZK bn	Change %	Volume CZK bn	Change %	Ratio %	Change pp
Total	12/2019	1,358		32		2.34	
	12/2020	1,345	1.6	45	-4.7	3.32	-0.20
	08/2021	1,366		43		3.11	
S1	12/2019	1,207		3		0.29	
	12/2020	1,080	2.7	5	0.2	0.47	-0.01
	08/2021	1,109		5		0.46	
S2	12/2019	106		3		2.77	
	12/2020	208	-2.7	10	-9.4	4.96	-0.34
	08/2021	202		9		4.62	
S3	12/2019	45		25		56.69	
	12/2020	57	-4.0	29	-3.9	51.25	0.09
	08/2021	55		28		51.34	

Chart III.3 CB
Decomposition of the change in the value of investment funds' assets by investment orientation



Source: CNB

Chart III.4 CB
Developments in the insurance sector



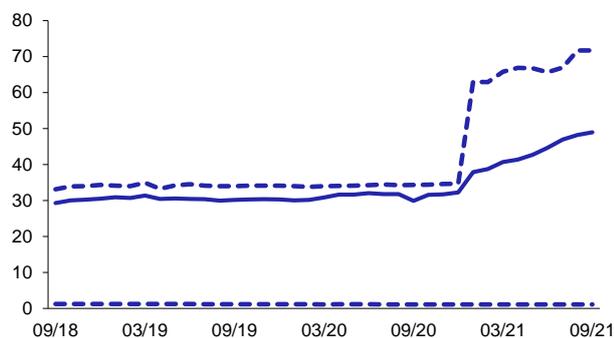
Source: CNB

Note: The chart shows the moving sum of the values for four quarters in gross terms, i.e. unadjusted for reinsurers' share.

Chart III.5 CB

Share of transformed funds' portfolio at amortised cost

(% of TFs' total assets)



Source: CNB

Note: Assets classified as held to maturity before 2021. Dashed lines denote the minimum and maximum values across TFs.

Table III.2 CB

Credit portfolios by stage

(% as of end of period)

	Actual value	Baseline Scenario						Adverse Scenario					
	2020	2021	2022	2023	2024	2025	2026/6	2021	2022	2023	2024	2025	2026/6
Non-financial corporations													
Loan volume (CZK bn)	1,243	1,257	1,288	1,343	1,400	1,477	1,515	1,255	1,279	1,306	1,269	1,233	1,220
S1	80.0	79.0	76.7	75.3	75.4	76.4	76.8	79.0	74.1	69.7	65.3	62.8	62.0
S2	15.6	16.4	17.9	18.5	17.8	16.7	16.3	16.4	19.6	21.6	23.4	24.1	24.2
S3	4.4	4.6	5.4	6.2	6.7	6.8	6.9	4.6	6.3	8.7	11.3	13.1	13.8
Loans for house purchase													
Loan volume (CZK bn)	1,429	1,622	1,760	1,865	1,960	2,061	2,109	1,615	1,729	1,800	1,856	1,908	1,931
S1	93.4	94.2	93.6	93.3	93.5	93.7	93.8	94.2	92.0	89.1	87.3	86.3	85.9
S2	5.6	4.9	5.5	5.8	5.6	5.5	5.4	4.9	6.6	8.3	9.3	9.8	9.9
S3	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.9	1.4	2.5	3.4	3.9	4.1
Consumer credit													
Loan volume (CZK bn)	445	471	500	517	541	567	581	471	500	498	486	491	495
S1	83.5	84.5	84.7	84.4	84.6	84.6	84.7	84.5	83.8	81.2	79.6	79.2	79.0
S2	12.2	10.4	9.7	9.6	9.5	9.4	9.4	10.4	10.1	10.9	11.1	10.9	10.8
S3	4.3	5.0	5.6	6.0	6.0	6.0	5.9	5.0	6.1	7.8	9.3	10.0	10.2

Source: CNB

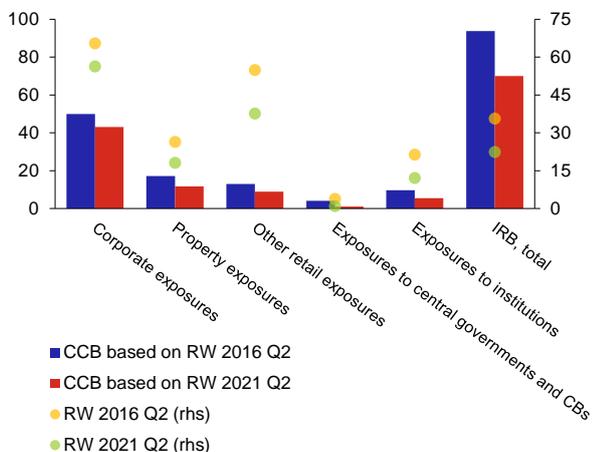
Note: The loan volume pertains to the end of the given period for the banks tested.

SECTION IV

Chart IV.1 CB

Combined capital buffer for the IRB portfolio given the risk weights of 2016 Q2 and 2021 Q2

(CZK billions; right-hand scale: %)



Source: CNB

Note: CCB = combined capital buffer, RW = risk weights.

Table IV.1 CB

Conversion of FCI values into the countercyclical capital buffer rate

Range of FCI values from	to	CCyB rate
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	0.17	1.00%
0.17	0.19	1.25%
0.19	0.22	1.50%
0.22	0.25	1.75%
0.25	0.28	2.00%
0.28	0.32	2.25%
0.32	1.00	2.50%

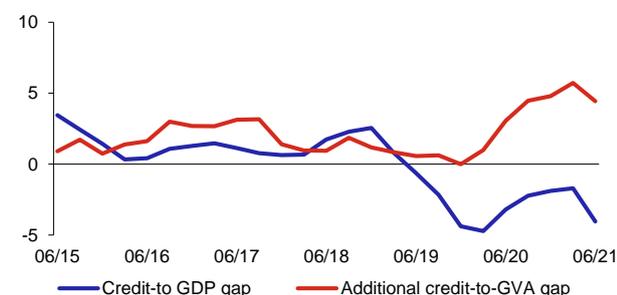
Source: CNB

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

Chart IV.4 CB

Standardised credit-to-GDP gap and additional gap

(pp)



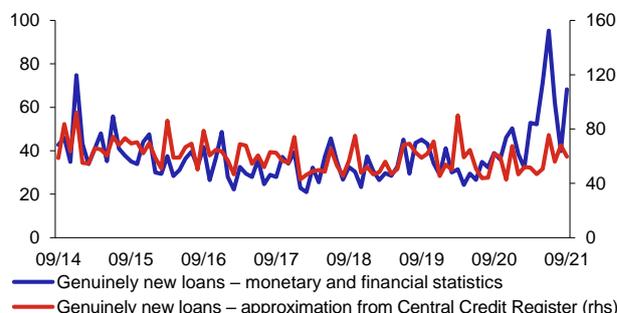
Source: CNB, CZSO

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.

Chart IV.2 CB

Comparison of the change in genuinely new loans to non-financial corporations from different data sources

(CZK billions)



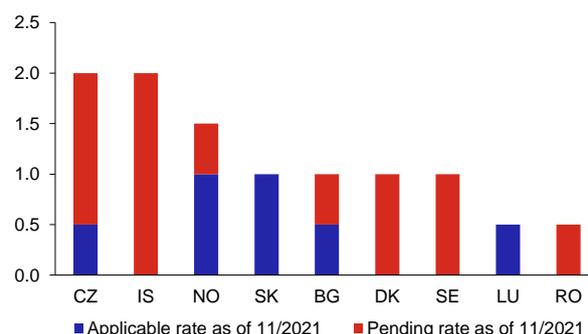
Source: CNB

Note: Genuinely new bank loans to non-financial corporations have risen significantly according to the monetary and financial statistics. This is due to new short-term credit products which are of a revolving or rollover nature but cannot be excluded from the statistics. Alternative data on new loans to non-financial corporations from the Central Credit Register do not confirm this strong growth. Similarly, the dynamics of the total stock of loans do not suggest such strong lending activity.

Chart IV.3 CB

CCyB rates in selected European countries

(% of total risk exposure)

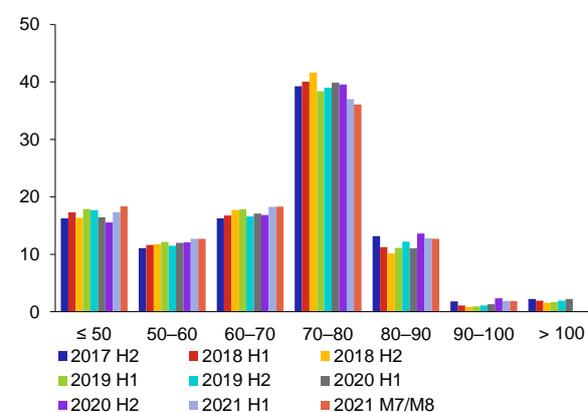


Source: ESRB, data as of 2 November 2021.

Chart IV.5 CB

LTV distribution of new loans

(share of loans in volume provided in %; x-axis: LTV in %)

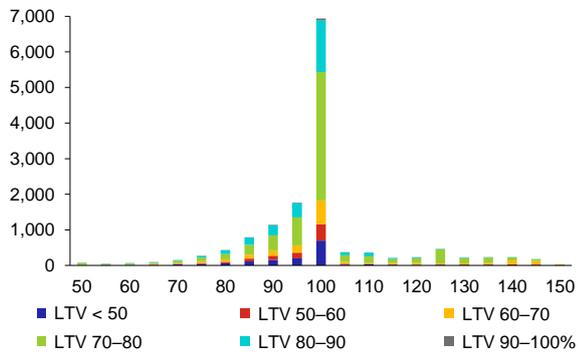


Source: CNB

Note: Interval closed from the right.

Chart IV.6 CB
Distribution of loans for house purchase by ratio of estimated value to purchase price

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

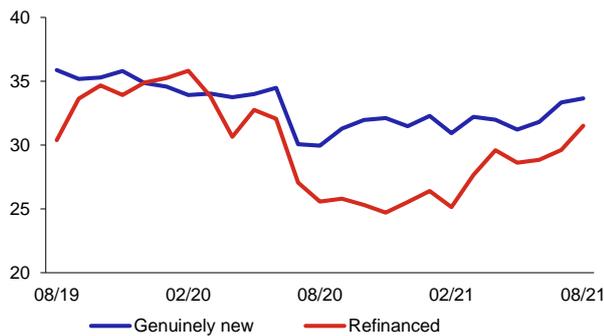


Source: CNB

Note: Data for 1 March 2021–31 August 2021. 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.

Chart IV.8 CB
Share of second and subsequent mortgage loans

(% of monthly volume)

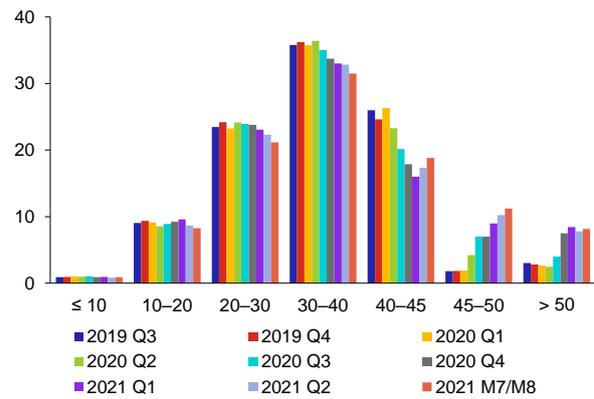


Source: CNB

Note: Estimate based on the value of the total additional debt.

Chart IV.7 CB
DSTI distribution of new loans

(share of loans in volume provided in %; x-axis: DSTI in %)

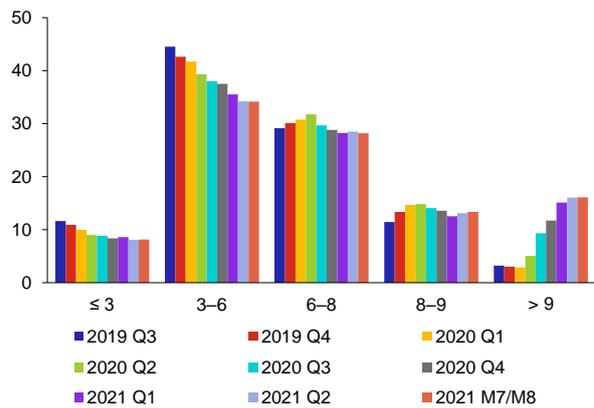


Source: CNB

Note: Interval closed from the right.

Chart IV.9 CB
DTI distribution of new loans

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



Source: CNB

Note: Interval closed from the right.

Selected indicators

FINANCIAL STABILITY INDICATORS – PART 1

	2015	2016	2017	2018	2019	2020	2021			
							I	II	III	
Macroeconomic environment										
ME.1	Real GDP growth (year on year, %)	5.5	2.4	5.4	3.2	3.0	-5.8	-2.5	8.1	
ME.2	Consumer price inflation (average annual index growth, %)	0.3	0.7	2.5	2.1	2.8	3.2	2.2	2.9	4.1
ME.3	General government balance / GDP (%)	-0.6	0.7	1.5	0.9	0.3	-5.6			
ME.4	General government debt / GDP (%)	39.7	36.6	34.2	32.1	30.0	37.7			
ME.5	Trade balance / GDP (%)	4.1	5.4	5.1	3.7	4.1	5.0	6.4	3.0	
ME.6	External debt in % of banking sector external assets	133.7	120.2	114.0	113.7	108.7	102.7	99.9	99.8	
ME.7	Balance of payments current account / GDP (%)	0.4	1.8	1.5	0.4	0.3	3.6	4.8	1.8	
ME.8	Monetary policy 2W repo rate (end of period, %)	0.05	0.05	0.50	1.75	2.00	0.25	0.25	0.50	0.75
Non-financial corporations										
NC.1	Return on equity (%)	11.9	11.3	11.0	10.16	9.9	7.6			
NC.2	Debt (% of total liabilities)	49.1	50.2	49.3	49.26	48.4	47.1	45.8	44.2	
NC.3	Credit indebtedness (% of GDP)	49.1	50.3	50.9	54	49.3	51.5	50.1	50.2	
NC.4	– loans from Czech banks (% of GDP)	20.0	20.5	20.2	20.3	19.8	20.4	20.0	19.9	
NC.5	– loans from Czech non-bank financial corporations (% of GDP)	4.1	4.4	4.6	4.6	4.4	4.6	4.4	4.5	
NC.6	– other (including financing from abroad. % of GDP)	24.9	25.4	26.1	29.1	25.0	26.6	25.7	25.9	
NC.7	Interest coverage (pre-tax profit + interest paid / interest paid, %)	16.3	22.1	26.8	25.23	15.0	16.5	18.0	19.8	
NC.8	12M default rate (%)	1.4	1.1	1.2	0.976	1.7	1.7	1.4	1.3	
Households (including sole traders)										
H.1	Total debt / gross disposable income (%)	56.6	58.6	58.8	59.08	58.8	59.1	59.3	59.6	
H.2	Total debt / financial assets (%)	25.7	25.9	26.3	24.62	24.2	23.1	22.8	22.9	
H.3	Net financial assets (total financial assets – total liabilities, % of GDP)	83.9	86.0	82.7	92.26	93.6	106.7	110.0	108.8	
H.4	Debt / GDP (%)	29.9	30.9	31.2	31.59	31.3	33.7	34.1	33.9	
H.5	t	26.7	27.7	28.1	28.7	28.5	31.0	31.4	31.3	
H.6	– loans from Czech non-bank fin. corporations to households (% of GDP)	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.0	
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	
H.8	– loans from Czech non-bank fin. corporations to sole traders (% of GDP)	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)	1.1	1.1	1.0	0.9	0.8	0.8	0.8	0.8	
H.10	Net interest expenses / gross disposable income (%)	2.8	2.6	2.3	2.2	2.1	2.0	2.0	2.0	
H.11	12M default rate (% excluding sole traders)	2.9	2.2	1.8	1.5	1.3	1.0	0.9		
Financial markets										
FM.1	3M PRIBOR (average for period, %)	0.3	0.3	0.4	1.3	2.1	0.9	0.4	0.4	0.9
FM.2	1Y PRIBOR (average for period, %)	0.5	0.5	0.6	1.5	2.2	0.9	0.5	0.7	1.3
FM.3	10Y government bond yield (average for period, %)	0.6	0.4	1.0	2.0	1.5	1.1	1.5	1.8	1.8
FM.4	CZK / EUR exchange rate (average for period, %)	27.3	27.0	26.3	25.6	25.7	26.5	26.1	25.6	25.5
FM.5	Change in PX stock index (% year on year, end of period)	1.0	-3.6	17.0	-8.5	13.1	-7.9	38.1	25.6	52.6
Property market										
PM.1	Total change in residential property prices (transaction prices, % year on year)	4.5	11.0	8.4	9.8	8.9	9.0	12.1	14.6	
PM.2	Change in apartment prices (asking prices according to CZSO, % year on year)	4.3	15.1	11.6	6.5	10.8	16.4	19.0	19.6	
PM.3	Apartment price / average annual wage	8.9	9.8	10.3	10.1	10.5	11.7	12.3	12.3	
PM.4	Apartment price / annual rent (according to IRI)	24.5	26.9	27.8	26.1	25.9	31.3	33.4	35.0	
Financial sector										
FS.1	Financial sector assets / GDP (%)	152.6	160.3	175.4	173.0	181.5	178.6	190.9	186.5	
FS.2	Shares of individual segments in financial sector assets (%)									
FS.3	banks	77.4	77.4	78.7	78.7	78.4	78.6	79.6	79.4	
FS.4	credit unions	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
FS.5	insurance companies	6.8	6.4	5.7	5.6	5.1	4.9	4.6	4.6	
FS.6	pension management companies and funds	5.3	5.2	5.0	5.1	5.3	5.4	5.2	5.2	
FS.7	investment funds*	4.8	5.3	5.4	5.5	6.3	6.7	6.4	6.6	
FS.8	non-bank financial corporations engaged in lending	5.0	5.0	4.6	4.6	4.6	4.1	3.8	3.8	
FS.9	investment firms	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.1	
Non-bank financial corporations										
NI.1	Share in financial sector assets (%)	22.0	22.0	20.9	20.9	21.3	21.1			
Insurance companies										
NI.2	Premiums written / GDP (%)	3.3	3.1	3.0	2.9	2.9	3.0	3.0	2.9	
NI.3	Ratio of eligible own funds to the solvency capital requirement (in %)	n.a.	238.1	230.0	243.6	202.4	251.4	242.5	242.3	
NI.4	Change in financial investment of insurance companies (% year on year)	-1.6	0.9	4.2	1.4	-6.7	0.6	2.8	-1.1	
NI.5	Return on equity of insurance companies (%)	17.0	15.7	14.7	15.8	24.1	18.4	19.9	31.9	
NI.6	Claim settlement costs / net technical provisions (life, %)	17.8	15.1	14.4	15.3	16.6	14.2	14.1	14.7	
NI.7	Claim settlement costs / net technical provisions (non-life, %)	55.6	58.1	59.4	57.8	62.7	58.4	56.5	54.3	
Pension management companies (PMCs) and PMC funds										
NI.8	Change in assets of funds managed by PMCs (%)	10.0	7.8	10.8	5.6	8.0	6.8	11.6	1.2	
NI.9	Nominal change in value of assets of PMC funds	1.0	0.3	3.6	-1.7	0.9	0.1	9.9	-1.5	
Investment funds										
NI.10	Growth in net assets (= equity; year on year, %)	18.5	17.7	20.9	6.4	21.5	10.6	20.2	18.9	
Non-bank financial corporations engaged in lending										
NI.11	Growth in loans from non-bank financial corporations engaged in lending (%):									
NI.12	total	0.8	8.9	8.2	4.7	4.3	-2.3	-3.3	-0.2	
NI.13	households	-26.4	7.0	0.7	-1.6	-1.2	-9.1	-8.2	-7.4	
NI.14	non-financial corporations	11.4	10.1	10.0	6.3	2.6	0.0	-2.1	1.7	

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FINANCIAL STABILITY INDICATORS – PART 2

	2015	2016	2017	2018	2019	2020	2021			
							I	II	III	
Banking sector										
BS.1	Bank assets / GDP (%)	116.1	123.0	135.7	133.5	129.6	139.0	152.4	148.7	150.0
BS.2	Assets structure (% end of period)									
BS.3	loans to central bank	15.7	21.5	32.8	31.8	32.0	29.0	31.2	31.2	31.7
BS.4	interbank loans	4.4	3.7	3.6	3.4	2.9	2.8	3.2	3.3	3.3
BS.5	client loans	51.9	50.6	45.2	46.5	46.8	46.1	44.5	43.6	43.6
BS.6	bond holdings	21.3	18.4	13.7	13.7	13.0	16.1	16.2	17.0	16.4
BS.7	– government bonds	14.3	11.5	7.9	8.2	7.6	11.0	10.7	11.4	11.0
BS.8	– Czech government bonds	12.7	10.0	7.0	7.4	6.9	10.3	10.7	11.4	11.0
BS.9	other	6.7	5.8	4.8	4.7	5.4	5.9	4.9	4.9	4.9
BS.10	Liabilities structure (% end of period)									
BS.11	liabilities to central bank	0.2	0.2	0.3	0.2	0.1	0.5	0.5	0.8	0.5
BS.12	interbank deposits	7.2	10.1	16.0	15.0	12.7	8.0	8.6	8.9	10.0
BS.13	client deposits	66.6	65.4	61.5	63.0	64.5	66.7	69.6	68.6	68.3
BS.14	bonds issued	12.0	11.4	11.0	10.7	11.2	12.5	10.3	10.4	9.9
BS.15	other	13.9	12.9	11.2	11.0	11.6	12.4	11.0	11.2	11.4
BS.16	Client loans / client deposits (%)	77.8	77.3	73.5	73.8	72.5	69.2	63.9	63.5	63.8
BS.17	Sectoral breakdown of total loans (%)									
BS.18	non-financial corporations	33.1	33.1	33.1	32.7	32.5	30.2	30.2	30.6	
BS.19	households	44.4	45.1	46.6	46.9	47.8	47.7	47.7	49.8	
BS.20	sole traders	1.3	1.2	1.3	1.3	1.3	1.2	1.2	1.3	
BS.21	others (including non-residents)	21.3	20.6	19.0	19.1	18.4	20.9	20.9	18.4	
BS.22	Growth in loans (% end of period, year on year):									
BS.23	total	5.6	6.0	4.6	7.2	4.4	4.2	4.8	3.4	
BS.24	non-financial corporations	5.3	5.9	4.8	5.7	3.7	0.3	-2.4	-1.9	
BS.25	– real estate activity (NACE L)	5.6	12.1	-1.7	5.2	7.5	4.8	1.4	-6.1	
BS.26	households	8.2	7.7	8.0	7.9	6.4	6.9	7.2	8.5	
BS.27	– loans for house purchase	8.0	8.4	9.0	8.5	6.7	8.0	8.6	9.5	
BS.28	– loans for consumption	8.9	4.5	4.1	6.4	7.2	0.8	0.1	2.7	
BS.29	sole traders	0.0	4.4	10.1	5.6	8.1	2.2	1.7	2.3	
BS.30	Non-performing loans / total loans (%):									
BS.31	total	5.8	4.8	4.0	3.3	2.5	2.7	2.8	2.7	
BS.32	non-financial corporations	5.7	5.2	4.2	3.6	3.2	4.2	4.4	4.3	
BS.33	households	4.0	3.2	2.5	2.1	1.6	1.7	1.8	1.7	
BS.34	– loans for house purchase	2.6	2.0	1.8	1.5	1.2	1.1	1.1	1.0	
BS.35	– loans for consumption	11.1	8.9	6.0	5.1	4.0	5.1	5.6	5.4	
BS.36	sole traders	11.0	8.6	6.7	5.0	4.3	6.1	6.9	6.8	
BS.37	Coverage of non-performing loans by provisions (%)	54.9	57.2	54.8	58.2	57.8	52.0	50.0	51.1	
BS.38	Capital ratio (%)	18.4	18.5	19.3	19.7	21.3	24.4	24.1	24.6	
BS.39	Tier 1 capital ratio (%)	18.0	17.9	18.7	19.1	20.8	23.7	23.4	23.9	
BS.40	Leverage (assets as a multiple of Tier 1)	13.2	13.9	15.3	15.1	14.3	13.0	14.2	13.9	
BS.41	Leverage ratio (Tier 1 capital / total exposures)	n.a.	7.1	6.6	6.6	7.0	7.7	6.9	7.0	
BS.42	Return on assets (%)	1.2	1.3	1.1	1.1	1.2	0.6	0.5	0.6	0.7
BS.43	Return on Tier 1 (%)	16.8	17.8	17.0	17.5	18.2	8.2	7.1	10.1	14.7
BS.44	Quick assets / total assets (%)	31.8	34.4	42.0	41.2	40.7	41.2	43.7	44.3	
BS.45	Quick assets / client deposits (%)	47.1	52.1	68.0	65.1	62.8	61.5	62.6	64.4	
BS.46	Net external position of banking sector (% of GDP)	-2.2	-7.8	-21.4	-20.2	-18.2	-15.8	-15.3	-15.0	
BS.47	Banking sector external debt / banking sector total assets (%)	16.4	19.1	26.1	25.0	23.3	20.6	18.5	18.3	

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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 to 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.

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