

V. MACROPRUDENTIAL POLICY

Pursuant to Article 2 of the Act on the CNB, the CNB maintains financial stability and sees to the sound operation of the financial system in the Czech Republic. To achieve these objectives, it conducts macroprudential policy. To this end, it uses a set of macroprudential instruments focused mainly on the banking sector, which is the largest sector in the domestic financial system. This section evaluates the current position of the Czech economy in the financial cycle, the resilience of the domestic financial sector to the risks identified, and the tasks and recommendations arising from analyses for the settings of the CNB's macroprudential policy instruments. It introduces the intermediate objectives of macroprudential policy and the instruments available for fulfilling those objectives. It then evaluates the settings of the capital buffers used to enhance the resilience of the Czech banking sector. It goes on to provide detailed information about risks relating to property exposures. It describes the ESRB's activities during the coronavirus crisis and the regulatory approach in the area of sustainable finance. To conclude, it discusses operational risk, which may also become systemic in certain conditions.

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

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

Table V.1

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

Intermediate objectives	Specific risk	Existence of specific risk in CZ	Key instruments	Applied in CZ	Detailed information
Mitigate excessive credit growth and leverage	Strong credit recovery accompanied by easing of lending standards	Yes	Countercyclical capital buffer	Yes, lowered to 1.0% from 1 April 2020 and to 0.5% from 1 July 2020	V.3
	Rising leverage, rising off-balance sheet risk	Potential	Macroprudential leverage ratio	No	-
	Low risk weights of significant credit portfolios	Potential	Macroprudential tool to mitigate systemic risk at Member State level (Article 458 CRR)	No	-
	Elevated growth in loans and risks in specific sector	Potential	Sectoral capital requirements (in particular real estate exposure)	Not as yet, CNB reacts to property exposure risks with other instruments	-
	Risk of spiral between property prices and property financing loans	Yes	LTV caps	Yes, eased on 1 April 2020	V.4
	Risk of excessive household indebtedness and debt service	Yes	LTI, DTI, LSTI, DSTI caps	No, DTI abolished from 1 April 2020, DSTI abolished from 1 July 2020	V.4
Mitigate excessive maturity mismatch and illiquidity	Long-term liquidity risk	Potential	Macroprudential NSFR	Microprudential general requirement since 2016	III.2.3
	Short-term liquidity risk	No	Macroprudential LCR	Microprudential minimum standard since 2015	III.2.3
Limit exposure concentrations	Property exposure concentration	Potential	Systemic risk buffer	Not as yet, CNB reacts to property exposure risks with other instruments	-
	Sovereign exposure concentration	Yes	Public finance stress test	Yes, option of additional capital requirements in event of elevated sovereign risk, since 2015	IV.4
Limit misaligned incentives	Potential impacts of problems in SIFIs on financial market stability and real economy	Yes	SIFI capital surcharges (G-SII and O-SII buffer)	No, O-SIIs identified, different instrument applied	V.2
		Yes	Systemic risk buffer	Yes, since 2017 for five banks	V.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 macroprudential policy (ESRB/2013/1).

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

The capital conservation buffer (CCoB) and the countercyclical capital buffer (CCyB) are used to absorb losses with the aim of mitigating the negative impacts of shocks on the functioning of the banking sector. The CCoB has applied to all banks in the Czech Republic since 2014 at the maximum rate of 2.5%. Although the required CCoB rate should not change over time, a temporary breach can be expected in times of stress, in line with its purpose. The CNB expects that the CCoB may be breached by some institutions during the coronavirus crisis in order to cover losses or prevent a credit crunch, and will tolerate such breaches. The CCyB is created when cyclical risk are accumulating in institutions' balance sheets and released when those risks are decreasing (see [section V.3](#)).

The systemic risk buffer (SRB) can be used to suppress various sources of structural risks to banking sector stability. The CNB currently uses it to mitigate the risks associated with the existence of systemically important banks. Since 2017, five systemically important banks have been required to maintain a non-zero buffer, with rates ranging between 1% and 3%. After the transposition of CRD V/CRR II, however, it will only be possible to use the capital buffer for other systemically important institutions (the O-SII buffer) to mitigate risks connected with the systemic importance of institutions (see [section V.2](#)). The buffer mitigating the risks associated with systemically important institutions should be used only as the last-resort capital buffer so that the functioning of the banking sector is not disrupted in very adverse economic situations. At the time of publication of this Report, the sum of the capital buffers – the combined capital buffer – ranges between 3.0% and 6.0% for individual banks depending on their systemic importance.

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

(%)

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

Source: CNB

Since 2015, the CNB has been applying instruments taking the form of recommended credit ratio limits in order to mitigate risks associated with the provision of retail loans secured by residential property. [Section V.4](#) provides a more detailed description of the risks associated with the residential property market and mortgage lending and of the reasons for easing the instruments used to mitigate these risks.

V.2 STRUCTURAL CAPITAL BUFFERS

Robust capital buffers are the basis for maintaining banks' stability...

The main task of microprudential and macroprudential policy in the current situation is to ensure that the banking sector is sufficiently resilient to the impacts of the coronavirus crisis – both those that have already been felt, and the long-term ones. The capitalisation of the Czech banking sector is still robust. Besides the combined capital buffer (the sum of the CCoB, the CCyB, the SRB and the O-SII buffer), the capital buffer in excess of the regulatory minimum consists of a capital surplus on top of the regulatory requirements (see [section III.2.1](#)).

...and the CNB regards the combined capital buffer as a loss absorption instrument

In the current situation, the CNB views the capital buffer mainly as an instrument enabling the banking sector to absorb potential systemic losses.¹¹⁷ If such losses were to occur, the CNB expects that it would first completely release the CCyB (see [section IV.1](#)). It also expects that, where necessary, institutions will use the CCoB to absorb potential losses, i.e. maintain their capital ratios at least at a level corresponding to the sum of Pillar 1, Pillar 2 and, where relevant, the current SRB. The CNB also does not rule out the use of the SRB by systemically important institutions where necessary to maintain the smooth flow of credit to the real economy in very adverse economic situations. Overall, the CNB therefore considers it natural that, following the potential release of the CCyB, banks would temporarily not maintain the combined capital buffer in full and would use the CCoB and the SRB in order to be able to continue providing services to their clients in the event of strongly adverse developments like the economy is currently experiencing.

The current buffers may not fully cover the increased risks and uncertainties associated with the present situation

The potential level of the banking sector's systemic losses depends on the future evolution of non-performing loans and the expected credit losses arising from them.¹¹⁸ The current trend of low provisioning despite evident growth in credit risk, coupled with the high probability of materialisation of significant credit losses in the quarters ahead (see [section III.2.2](#)) and the high level of uncertainty regarding future developments, signals a need for a high degree of prudence. Another factor is legislative changes that will take effect in 2021. Besides the impact of macroeconomic risks on capital, the banking sector's resilience will be affected by previously approved and planned changes to EU regulations. One change scheduled to take effect in 2021 will lead to a decrease in the capital buffers of domestic systemically important institutions.

No later than after the transposition of CRD V/CRR II into Czech law, the CNB will start to apply the O-SII buffer to mitigate the risks of systemically important institutions...

The CNB, like several other national macroprudential authorities in Europe, currently applies the SRB to mitigate risks associated with systemically important institutions. After the transposition of CRD V/CRR II, it will only be possible to use the capital buffer for other systemically important institutions (the O-SII buffer) for these purposes. The highest O-SII buffer rate will be 3%.¹¹⁹ In the case of domestic institutions that are subsidiaries of foreign institutions identified by their domestic regulators as nationally or globally systemically important (O-SIIs or G-SIIs), the CNB will be able to set the upper limit on the O-SII buffer no more than 1% above the foreign parent institution's O-SII or G-SII buffer rate as set by its domestic regulator. The transposition will also allow the CNB to set the sum of the structural buffers (the O-SII buffer and the SRB) at a maximum level of 5% without consulting the European Commission (the EC).¹²⁰

...the CNB will apply the bucketing approach to calibrate the O-SII buffer...

The CNB will calibrate the O-SII buffer using a methodology based on the bucketing approach with supervisory assessments,¹²¹ which uses systemic importance scores calculated according to the EBA Guidelines.¹²² The calculated systemic importance score will classify institutions into score buckets, with a specific O-SII buffer rate assigned to each bucket. This approach seems appropriate mainly because of its transparency and use as best practice by EU Member States on the basis of the ECB's methodological guidelines. This facilitates communication with the relevant authorities in this area. The highest rate for the calibration of the buffer rate in the highest-score bucket will correspond to the

117 Systemic losses are losses where the banking sector as a whole records a loss.

118 However, factors of future interest profit are also highly relevant.

119 This is an increase of 1 pp compared with the current regulation, which caps the O-SII buffer rate at 2% or the parent's O-SII/G-SII buffer rate.

120 It will be possible to apply a higher rate after consulting the EC and obtaining its approval.

121 The decision also takes into account information obtained in the course of supervising the relevant institutions.

122 EBA (EBA/GL/2014/10: <https://eba.europa.eu/eba-publishes-criteria-to-assess-other-systemically-important-institutions-o-siis>).

legislative O-SII buffer rate limit of 3%. It will thus be equal to the highest SRB rate the CNB is currently using to mitigate systemic importance risks.¹²³

...using the systemic importance score calculated at the consolidated level

The systemic importance score used to calibrate the O-SII buffer will be calculated at the consolidated level. The same method is also used to identify O-SIIs. This is because the complexity of intra-group links may create or increase systemic risk for the institution. Calibrating the O-SII based on the score calculated at the consolidated level eliminates this risk and ensures that a symmetrical approach is applied to institutions.¹²⁴

The future O-SII buffer rate for institutions with a currently non-zero SRB rate will be lower than the current one

The CNB will be able to set the upper limit on the O-SII buffer rate no more than 1% above the O-SII or G-SII buffer rate of the foreign parent institution as set by its domestic regulator. Based on the aforementioned O-SII buffer rate calibration method and the said cap equal to the foreign parent institution's O-SII or G-SII buffer rate, the total capital buffers of some domestic systemically important institution will in all probability decline.

It will still be possible to use the SRB to cover structural risks

Under the current legislation, the SRB can only be applied universally to all exposures or all domestic exposures of the banking sector or one or more parts thereof. By contrast, CRD V/CRR II also allows the SRB to be applied to a sectoral subset of exposures, which can be defined using three main dimensions¹²⁵ and three sub-dimensions (see Table V.3). The application of the sectoral SRB is conditional on the systemic risk level of the subset of exposures, which should be assessed using three criteria: the size of the exposures concerned, their riskiness, and their interconnectedness with other types of exposures.

Table V.3

Main dimensions and sub-dimensions for defining the subsets of exposures to which the SRB can be applied

Main dimension	Sub-dimension
Debtor or counterparty sector	Economic activity
Type of exposure	Risk profile
Type of collateral	Location of collateral

Source: CNB

Banks must apply a very prudent approach to capital management

Given the unfavourable economic outlook and the high degree of uncertainty about future developments, it is vital that banks apply a highly prudential approach to capital management. If the probability of macroeconomic developments following the *Adverse Scenario* were to increase, the capital buffers might not be sufficient to absorb the losses and the current capital surpluses might have to be used. In such a situation, premature use of a large proportion of banks' capital surplus could become a source of systemic risk. Banks should thus refrain from making dividend payouts and taking any other action that might jeopardise their resilience until both the acute and longer-term impacts of the coronavirus crisis disappear. The CNB stands ready to use all its regulatory instruments to mitigate the risk of a decrease in the banking sector's resilience and its ability to lend to the real economy.

¹²³ The CNB's current and previous analyses show that the upper O-SII limit should be at least 3% to cover the risks associated with systemic significance; see the thematic article *An Additional Capital Requirement Based on the Domestic Systemic Importance of a Bank* by Skořepa and Seidler in FSR 2012/2013.

¹²⁴ Any specificities not reflected in the score at the consolidated level can be accounted for on the basis of the subsequent supervisory assessment.

¹²⁵ As a result, the subset of exposures should never be broader than the four specific sectoral exposures defined in CRD V. They comprise exposures to natural persons secured by residential property, other exposures to natural persons, exposures to legal entities secured by commercial property and other exposures to legal entities.

V.3 THE COUNTERCYCLICAL CAPITAL BUFFER

The CNB has been setting the countercyclical capital buffer (CCyB) since 2014 with the aim of eliminating the negative impacts of the financial cycle on the banking sector and thus preventing the transmission of negative shocks to the real economy. Given the wide range of manifestations of the financial cycle in the real economy and the financial sector, the CNB estimates the appropriate CCyB rate on the basis of a comprehensive assessment of a set of macrofinancial indicators specific to the banking sector. The CNB regards as appropriate a CCyB rate that is sufficient to cover the potential losses stemming from cyclical risks while maintaining banks' capital capacity for lending at a sufficient level.¹²⁶

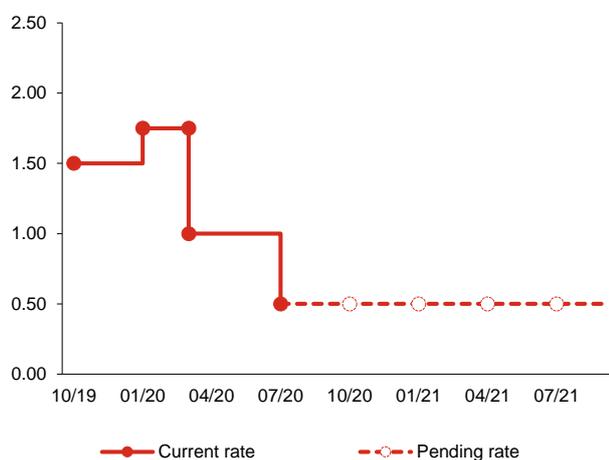
The CNB lowered the CCyB rate to 1% with effect from April this year in direct response to the coronavirus pandemic

In March 2020, the CNB responded to the emerging economic downturn and markedly worse economic outlook caused by the global coronavirus pandemic by adopting a set of stabilisation and support measures (see [section II.1.2](#) and [Table II.1](#)). One measure was a reduction of the CCyB rate from 1.75% to 1%.¹²⁷ This was intended to send out a signal that banks had sufficient room to cover the expected growth in the business sector's operational funding needs despite the expected worsening of credit portfolio quality (see [Chart V.1](#)). The reduction in the CCyB of around CZK 20 billion will allow banks to absorb part of the credit losses that will in all probability occur in the coming quarters.

Chart V.1

Current and pending CCyB rate in the Czech Republic

(% of total risk exposure)

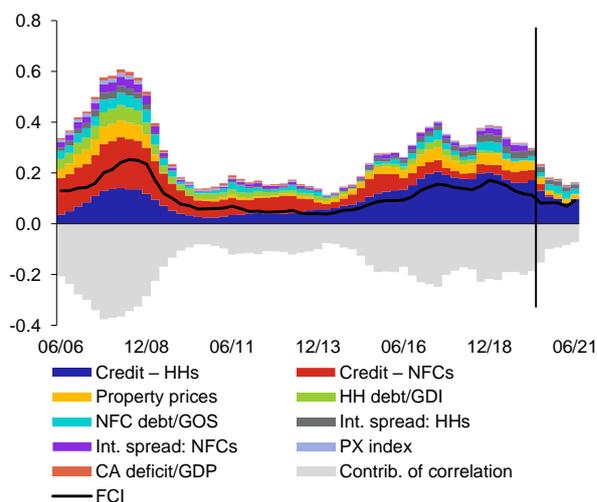


Source: CNB

Chart V.2

Financial cycle indicator and its estimate in the Baseline Scenario

(0 minimum, 1 maximum)



Source: CNB

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

The financial cycle indicator points to a drop in newly accepted cyclical risks in the next 12 months

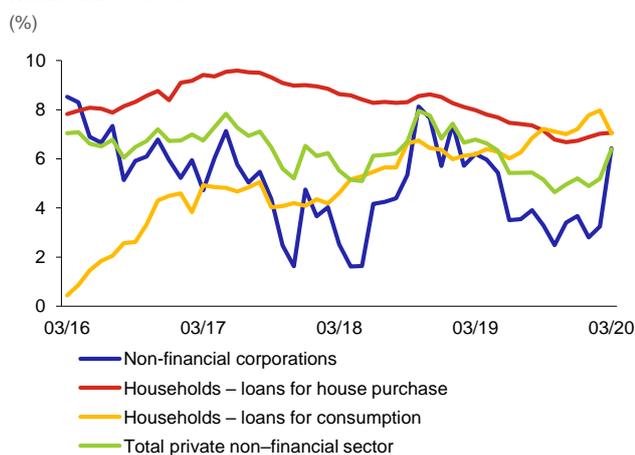
The aggregate financial cycle indicator (FCI) serves as a starting point for assessing shifts of the domestic economy in the financial cycle (see [Chart V.2](#)). The path of the indicator observed in 2019 points to a gradual decrease in newly

¹²⁶ For more details on the setting of the CCyB rate see the methodological document *The CNB's approach to setting the countercyclical capital buffer*, which can be found on the CNB website, and Hájek, J., Frait, J., Plašil, M. (2017): *The Countercyclical Capital Buffer in the Czech Republic*, thematic article, FSR 2016/2017, or Holub, L., Konečný, T., Pfeifer, L., Brož, V. (2020): *The CNB's Approach to Releasing the Countercyclical Capital Buffer*, Thematic Article on Financial Stability 3/2020.

¹²⁷ The history of CCyB rate decisions is available at: <https://www.cnb.cz/en/financial-stability/macroprudential-policy/the-countercyclical-capital-buffer/>.

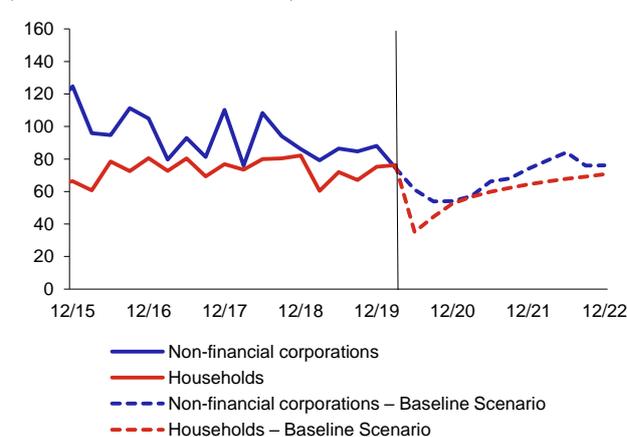
accepted cyclical risks in banks' balance sheets, mainly due to weakening credit growth (see [Chart V.3](#) and [Chart V.4](#)). If the economic situation were to worsen markedly (see [section II.1.2](#)), the domestic economy would very likely enter a recessionary phase of the financial cycle this year. The *Baseline Scenario* assumes a continuing downward trend in the FCI at least until the start of 2021. Newly accepted cyclical risks will thus decrease further if the *Baseline Scenario* materialises in the quarters ahead.

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



Source: CNB

Chart V.4
Genuinely new loans to the private non-financial sector
(three-month totals in CZK billions)



Source: CNB

Credit activity weakened during 2019 and can be expected to fall further

Year-on-year growth in loans to the private non-financial sector slowed steadily during 2019. Increased borrowing by non-financial corporations was seen in March 2020 owing to the negative impacts of the anti-pandemic measures on their operating cash flows (see [Chart V.3](#) and [section II.2.2](#)). However, drawdown of new loans slowed markedly in April. New loans may rise temporarily in the months ahead in line with the roll-out of the COVID III and COVID Plus credit and guarantee programmes. Despite the state support schemes, the *Baseline Scenario* (see [Table II.1](#)) assumes a significant drop in credit activity in 2020 and 2021 and, in the case of non-financial corporations, a temporary drop to negative levels (see [Chart II.33](#) and [Chart II.40](#)). Consistent with this is a sharp fall in drawdown of genuinely new loans (see [Chart V.4](#)).

The cyclical risks in banks' balance sheets remain elevated and expected credit losses are growing

The cyclical risks in banks' balance sheets increased in the previous expansionary phase. Despite the sharp economic deterioration, these risks are not materialising at the systemic level yet. This is due mainly to the stabilisation and support measures adopted by the government (see [Table II.1](#)). However, loan impairment losses surged in March and April 2020 (see [Chart V.5](#)), indicating an upward revision of banks' expectations regarding credit losses (see [section III.2.2](#)). The growing expected losses and greater prudence of banks are reflected not only in an increase in the costs of risk, but also in indications provided by banks themselves in the Bank Lending Survey (see [Chart V.1 CB](#) and [Chart V.3 CB](#)).

Risks weights remain low and the banking sector's vulnerability is still elevated

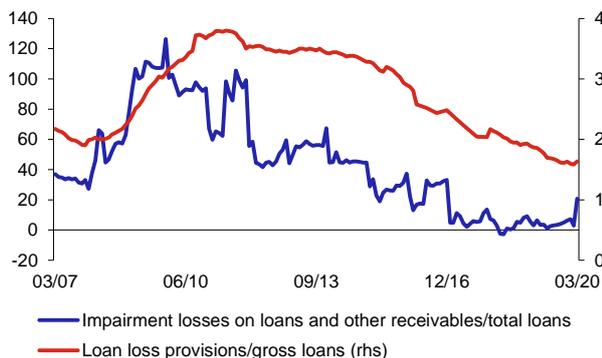
Risk weights on loan portfolios under the IRB approach are an important indicator for assessing the banking sector's vulnerability over the financial cycle. The CNB derives the necessary countercyclical buffer for covering banks' vulnerability caused by the cyclical nature of implicit risk weights from the difference between the actual and the hypothetical capital requirement.¹²⁸ For regulatory and methodological reasons, risk weights respond with a lag, so the sudden slowdown in the domestic economy has not been reflected in their growth yet (see [Chart V.6](#)). A drop in risk weights for loans to households was even seen in late 2019 and early 2020. At the end of 2019 Q4, the actual capital requirement was CZK 182 billion, while the hypothetical capital requirement with the risk weights observed at the start of the expansionary phase of the financial cycle (2015 Q4) was CZK 209 billion (see [Chart V.7](#)). The difference between the two requirements is around CZK 27 billion. The economic deterioration, accompanied in all probability by a drop in credit portfolio quality and growth in the default rate, is likely to lead to a gradual rise in risk weights in the years ahead. The banking sector's increased vulnerability is confirmed by an alternative vulnerability indicator – the ratio of the margin on the stock of loans to provisions per unit of credit¹²⁹ – which, unlike the FCI, rose further in 2019 (see [Chart V.8](#)).

¹²⁸ 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.

¹²⁹ The indicator's construction, properties and relevance to CCyB rate decisions are discussed in Pfeifer, L., Hodula, M. (2018): *A Profit-to-Provisioning Approach to Setting the Countercyclical Capital Buffer: The Czech Example*, CNB Working Paper 5/2018, Czech National Bank.

Chart V.5
Loan impairment losses and loan loss provisions

(bp; right-hand scale: %)

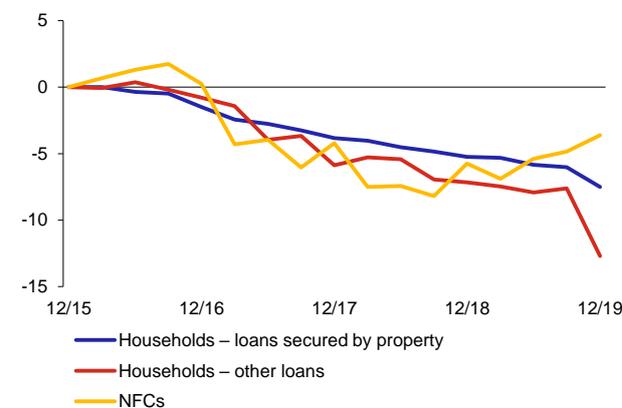


Source: CNB

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

Chart V.6
Change in risk weights compared with the start of the strongly expansionary phase of the financial cycle

(pp)

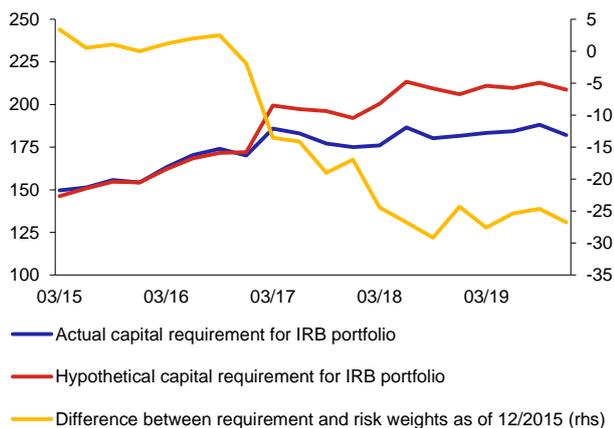


Source: CNB

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

Chart V.7
Actual and hypothetical capital requirements based on the application of risk weights from 12/2015

(CZK billions)

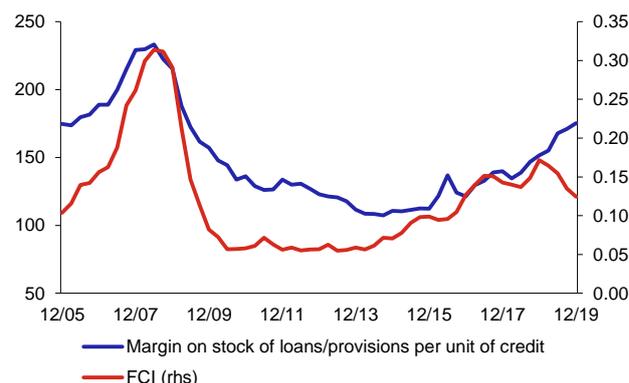


Source: CNB

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

Chart V.8
Ratio of the interest rate margin to provisions and the FCI

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



Source: CNB

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

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

The prudential estimate of unexpected losses¹³⁰ (see [Chart V.9](#), line: *Conditional distribution of credit losses*) is around CZK 14.8 billion. This indicates a need to set the CCyB rate at 0.75% in the current phase of the cycle.¹³¹ The same CCyB rate is indicated by the conversion based on the FCI (see [Table V.1 CB](#); the last known FCI value is 0.124).¹³² These approaches primarily provide information about the absolute size of unexpected credit losses associated with the developments in real economy. In order to comprehensively evaluate the optimum CCyB rate, it is also desirable to take

¹³⁰ 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*.

¹³¹ The estimate of potential unexpected losses of around CZK 14.8 billion implies 0.58% of risk-weighted assets.

¹³² Both estimates are close to the threshold between the 0.5% and 0.75% rates.

into account the coverage of the banking sector's vulnerability caused by cyclically lowered risk weights on IRB loan portfolios. At the current relative levels of the capital requirements (excluding the CCyB), a return of risk weights to the level observed at the start of the expansionary phase of the financial cycle would imply an absolute increase in the capital requirements of CZK 27 billion (1.06% of risk-weighted assets). The simple sum¹³³ of the potential unexpected losses (CZK 14.8 billion) and the expected shift of risk weights to a higher level (CZK 27 billion) implies a capital need of CZK 41.2 billion. This amount of capital represents 1.62% of risk-weighted assets as of the end of 2019 (CZK 2,537 billion), implying a CCyB rate of 1.75% (see [Chart V.9](#)).

The CNB lowered the CCyB rate further to 0.5%...

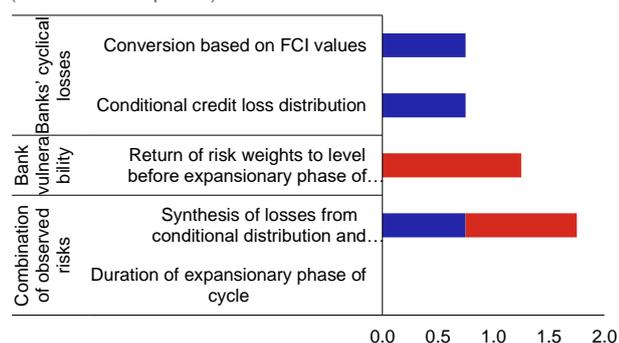
The above quantitative approaches imply a CCyB rate of 1.75%. The lowering of the CCyB rate to 1% at the start of April was a forward-looking response to a significant increase in tensions in financial markets (see [Chart II.15](#)), a marked deterioration of the outlook for the domestic economy, and an increased probability of growth in potential credit losses. Given the high likelihood of adverse developments in the domestic economy, the Bank Board decided to lower the CCyB rate further to 0.5% with effect from 1 July 2020. The banking sector's current capital surplus should be sufficient to absorb the expected losses, so there is no need to reduce the CCyB rate to 0% at the moment. Keeping the rate at a non-zero level will simultaneously provide some room to soften the capital requirement further in the event of significant rise in risk weights or credit losses and a decline in spare capacity to lend to the economy.

...and stands ready to fully release the CCyB

The CNB remains ready to release the CCyB fully. The direct signal for such a step will be the materialisation of cyclical risks accepted earlier as credit losses and an increase in risk weights.

Chart V.9
CCyB rate covering financial cycle effects monitored

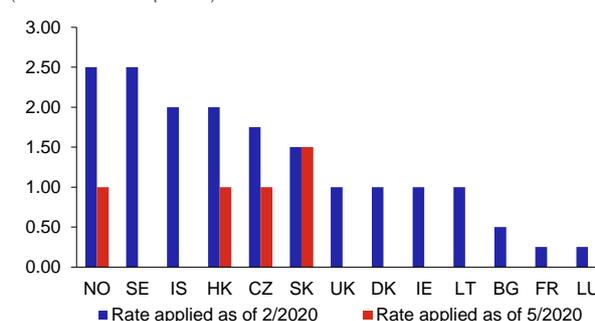
(% of total risk exposure)



Source: CNB

Chart V.10
Countries with non-zero CCyB rates

(% of total risk exposure)



Source: ESRB, BCBS

Note: Data as of 29 May 2019. The Czech Republic will lower the CCyB rate to 0.5% with effect from 1 July 2020.

Other European countries responded to the coronavirus pandemic by releasing the CCyB rate

In an effort to ease conditions sufficiently and maintain the supply of credit, other European countries also lowered the CCyB rate (see [Chart V.10](#)). Most of these countries fully released their CCyBs, albeit from lower rates than in the Czech Republic or with generally lower capital surpluses in their banking sectors. As for non-European countries, Hong Kong has a non-zero CCyB rate. It lowered its CCyB rate from 2% to 1% in March 2020.

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,¹³⁴ 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 2019 Q4, the ratio was 88% and the relevant gap -4.4 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.¹³⁵ 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 0 pp (see [Chart V.2 CB](#)). However, this indicator must be also viewed as only a very rough way of assessing the position in the financial cycle, with limited direct usefulness as regards deciding on the CCyB rate.

¹³³ The sum has to be adjusted for defaulted exposures from the conditional credit distribution, for which the effect of change in risk weights is not considered (i.e. CZK 0.6 billion, or 0.02%).

¹³⁴ European Systemic Risk Board (ESRB, 2014): *Recommendation (ESRB/2014/1) on guidance for setting countercyclical buffer rates*.

¹³⁵ A critique of this approach is presented in *The CNB's approach to setting the countercyclical capital buffer* (Appendix 1) and in Geršl, A. and Seidler, J.: *Excessive Credit Growth as an Indicator of Financial (In)Stability and its Use in Macroprudential Policy*, thematic article, FSR 2010/2011.

V.4 RISKS ASSOCIATED WITH PROPERTY MARKETS

V.4.1 Risks associated with residential property markets

The CNB has paid increased attention to risks associated with the residential property market in recent years

A spiral between rising property prices and increasing debt financing of property purchases has been a major source of systemic risks in recent years. The CNB responds to these risks by applying instruments of macroprudential policy and microprudential supervision. The assessment of the risks is based on the set of rules contained in the Official Information *Recommendation on the management of risks associated with the provision of retail loans secured by residential property* (the “Recommendation”). The main source of information for aggregate analyses in this field is the semi-annual *Survey of loans secured by residential property* (the “Survey”). It contains detailed information on individual loans and enables the CNB to check compliance with the recommended limits across the banking sector. Besides conducting a detailed assessment of newly accepted risks, the CNB carefully analyses the impacts of the current economic situation on the materialisation of previously accepted credit risks in financial institutions’ balance sheets (see [section IV.3](#)).

The recommended limits on credit ratios were eased because of the coronavirus pandemic...

Based on expectations of a significant change in market conditions, the CNB Bank Board at its meeting on 1 April 2020 eased the credit ratio limits applying to mortgage lending. The limit on the loan-to value (LTV) ratio for new mortgage loans was increased from 80% to 90%. Lenders may apply a 5% exemption to mortgages with higher LTVs. The recommended limit on the debt service-to-income (DSTI) ratio was raised from 45% to 50%, with the option of applying a 5% exemption to loans provided in the quarter. The cap on the debt-to-income (DTI) ratio was simultaneously removed from the Recommendation.

...the softening or abolition of the recommended limits should not result in imprudent assessment of the risks associated with the provision of loans secured by residential property

The CNB’s analyses have long indicated that loans with a DSTI ratio of over 40% or a DTI ratio of over 8 may be associated with significantly increased credit risk and should only be provided in justified cases (see [section IV.3](#)). Owing to the expected economic developments and the increased risk of a temporary partial loss of income, even loans with a DSTI ratio below 40% may show increased risks in certain categories of households (see [section IV.3](#)). The CNB expects lenders in this situation to carefully assess the risks associated with loans secured by residential property and proceed very prudently when assessing loan applications.

The volume of new loans remained high until April despite the outbreak of the pandemic...

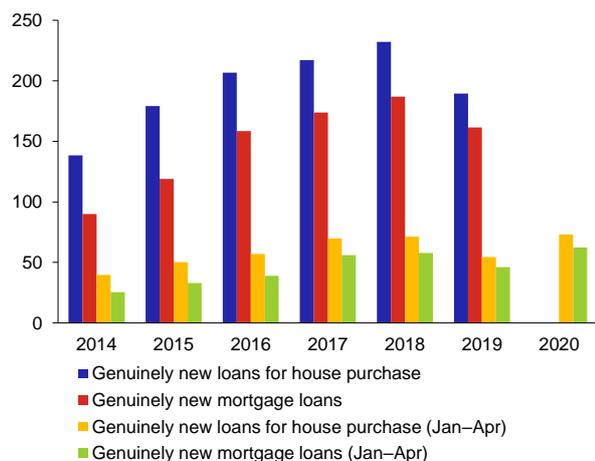
The reduction in household incomes caused by the measures associated with the coronavirus pandemic was not reflected in mortgage market activity in the first four months of this year. The volume of genuinely new housing loans and mortgage loans (excluding refinanced and refixed loans) was at a record high in the first four months of 2020 compared with the same period in previous years (see [Chart V.11](#)). Market participants’ earlier statements that the introduction of DSTI and DTI limits in October 2018 would have a strongly negative impact on lending in the long term, were thus not confirmed. Although the credit market saw a partial correction in 2019 H1 (due, among other things, to frontloading before the new limits on credit indicators took effect), the volumes of house purchase loans later returned to growth¹³⁶ and remained high by historical comparison until April 2020 (see [Chart V.12](#)). However, it can be expected that the impacts of the coronavirus crisis will manifest themselves in the months ahead and lending for house purchase will decrease, despite the easing of the recommended limits in April. The introduction of the loan moratorium led to a significant increase (of around CZK 50 billion) in other renegotiations¹³⁷ of contractual terms between lenders and clients in April.

¹³⁶ This reflects an increase in the average loan size and a renewed rise in the number of loans provided.

¹³⁷ This category mainly includes refixations for existing contracts under normal circumstances.

Chart V.11
Housing loans and mortgage loans

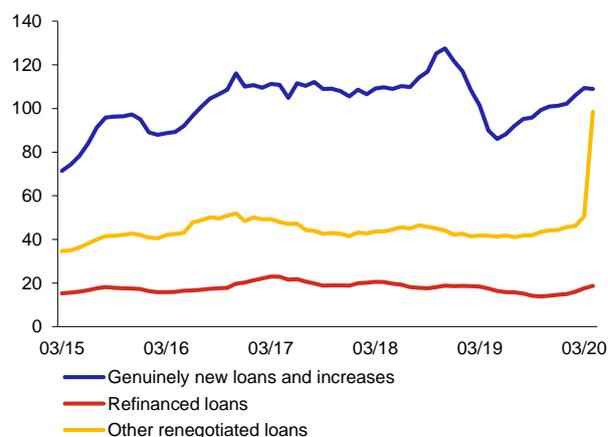
(CZK billions)



Source: CNB

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

(CZK billions; moving six-month totals)



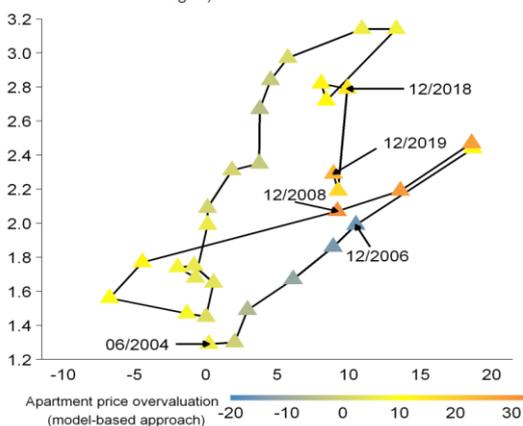
Source: CNB

The economic slowdown will break the spiral between loans for house purchase and property prices

The spiral between debt funding of property purchases and optimistic expectations regarding future property price growth weakened during 2019 (see Chart V.13). The conditions for purchasing property nonetheless remained favourable. A downturn in household income growth, a deterioration in consumer and investment sentiment and a decline in demand for new mortgage loans can be expected following the onset of the economic slowdown. Overall, this should halt the spiral.

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

(x-axis: y-o-y growth in apartment transaction prices in %; y-axis: new loans in relation to wages)

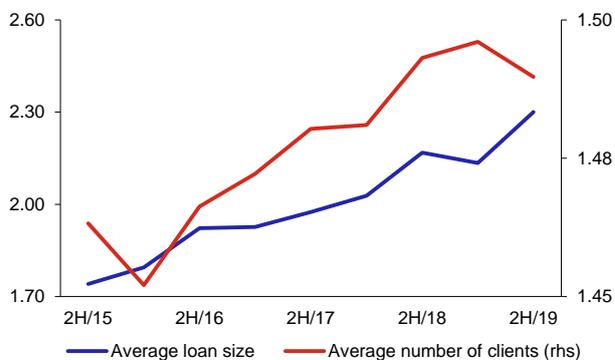


Source: CNB

Note: The spiral is derived on the basis of apartment price growth and the amount of new loans for house purchase in relation to the level of wages.

Chart V.14
Average mortgage loan size and number of declared incomes according to the Survey

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



Source: CNB

According to the Survey, the average loan size also rose in line with the growth in property prices in 2019

Growth in residential property prices (see section II.1.2) slightly exceeded growth in the average housing loan size, which amounted to around 6% last year (see Chart V.14). The median total debt per loan applicant was around CZK 2.4 million in 2019 H2 (see Chart V.4 CB and Chart V.5 CB).¹³⁸ Clients with the median debt included households with both high and relatively low incomes. Around half of the applicants declared a net monthly income of below CZK 35,000 (see Chart V.4 CB). The average number of declared incomes per loan application decreased slightly after around three years of growth and to some extent ceased to act as the main adjustment channel of compliance with the limits on income credit ratios.

¹³⁸ The client's average total debt was CZK 3.05 million and the most frequent amount (mode) after rounding the debt to the nearest one hundred korunas was CZK 2 million. In addition to the mortgage loan itself, the total debt takes consumer credit, mortgage loans taken out earlier and any other revolving loans and credit lines into account.

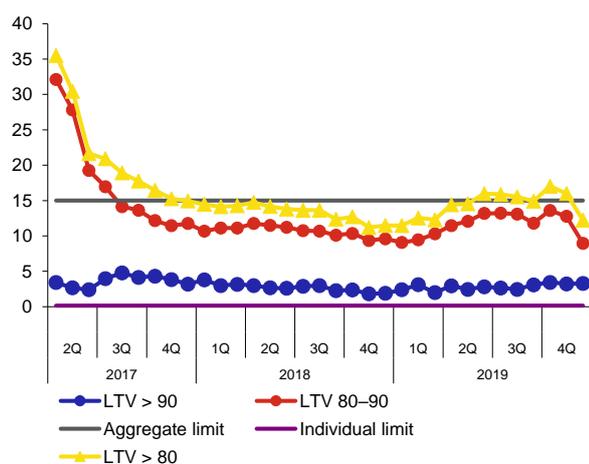
Compliance with the recommended LTV limits remained satisfactory overall...

Data from the Survey for 2019 H2 indicate that banks were broadly compliant with the Recommendation as regards LTV limits. The share of loans with LTVs of 80%–90%, which was subject to a recommended limit of 15% of new loans, was below that limit throughout 2019 (see [Chart V.15](#)). The annual average was 11.6%. However, banks continued to provide some loans with an individual LTV of over 90%, the level above which no loans should be provided under the Recommendation. The share of these loans in total loans averaged 2.8% of new loans last year, remaining relatively constant over time. When these loans are added to loans with LTVs of 80%–90%,¹³⁹ the 15% exemption was exceeded temporarily, but the share of loans with LTVs of over 80% was down significantly at the end of 2019, and compliance with the Recommendation for the sector as a whole remained satisfactory (see [Chart V.15](#)). The LTV distribution of new loans remains fairly constant over time (see [Chart V.16](#)).

Chart V.15

Fulfilment of the recommended LTV limits

(share of loans in volume provided in %)

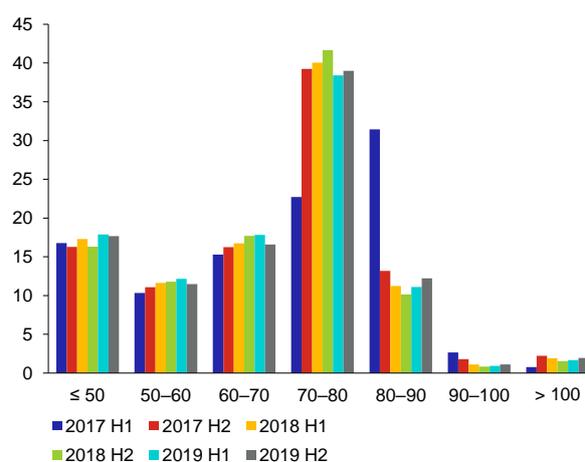


Source: CNB

Chart V.16

LTV distribution of loans

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



Source: CNB

Note: Interval closed from the right.

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

Although most credit institutions are compliant with the recommended LTV limits, some tendencies identified on the basis of the data from the Survey indicate that in good times lenders' have a natural tendency to value collateral on the basis of current market prices, regardless of the fact that those prices may become overvalued in an upward phase of the cycle (see [section II.2.1](#)). The Survey also revealed that almost 16.5% of loans had an LTV ratio exactly equal to the aggregate 80% limit and 5.3% of loans had an LTV ratio exactly equal to the individual 90% limit in 2019 (see [Chart V.6 CB](#)). In the LTV bands of 79%–80% and 89%–90%,¹⁴⁰ which can also be viewed as thresholds, the figures are 6.4% and 1.9% of loans respectively (see [Chart V.17](#)). Altogether, the said shares are thus as high as 22.9% and 7.2% respectively. These results may indicate partial optimisation of collateral value (adjustment of the denominator of the LTV ratio). In the case of the most frequently granted loan of CZK 2 million, the collateral value has to be valued only CZK 32,000 and CZK 25,000 higher respectively in order to reduce the LTV ratio from just above 80% to 79% and from just above 90% to 89% respectively.¹⁴¹ The CNB will continue to monitor the prudential collateral valuation process,¹⁴² but it currently assumes that banks are inclining to a more conservative approach in the current situation. The CNB also monitors concurrent provision of unsecured loans and mortgage loans aimed at circumventing the LTV limit. According to the available data, however, this practice is not going on to an increased extent (see [Chart V.7 CB](#)).

Lenders were mostly compliant with the recommended DTI and DSTI limits...

The process of adjustment to the limits had been far from complete in 2018, whereas the share of loans with a DSTI ratio of over 45% and a DTI ratio of over 9 dropped to 5.4% and 2.9% respectively in 2019 (see [Chart V.18](#) and [Chart V.19](#)). Banks overall were therefore compliant with these limits or, in the case of the DSTI ratio, were only very slightly above the recommended limits. A reduction in the supply of loans to clients with higher additional debt and ensuing debt service

¹³⁹ The spirit of the Recommendation says that new loans with LTVs of over 80% should account for no more than 15% of new loans, as the provision of loans with LTVs of over 90% is not recommended at all.

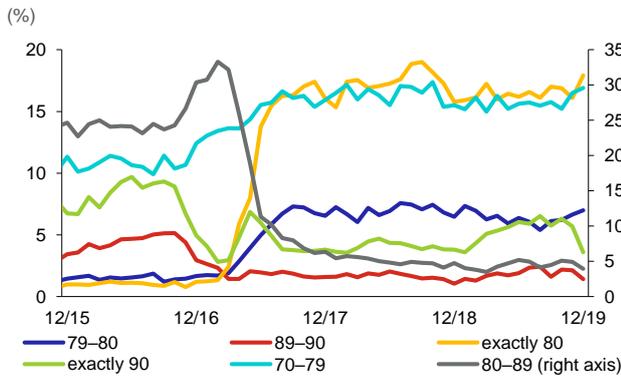
¹⁴⁰ Intervals open from both sides.

¹⁴¹ This is just 1.3% and 1.1% respectively of the actual collateral value considered.

¹⁴² 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.

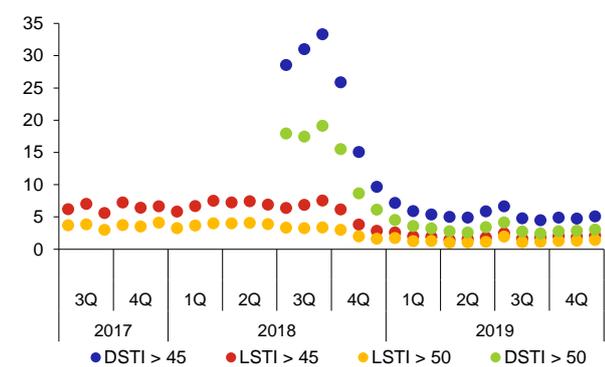
can be regarded as the main channel of adjustment to the recommended limits for both ratios. This is clear from the distribution of loans according to risky LTI and LSTI levels, which remain relatively stable across the Surveys (see Chart IV.8 CB and Chart IV.9 CB). Loans with a DSTI ratio of over 50% stood at 3.2% last year. The DSTI and DTI distributions remain relatively unchanged after the initial phase of adjustment to the recommended limits (see Chart V.20 and Chart V.21).

Chart V.17
Shares of loans secured by residential property with a threshold LTV ratio



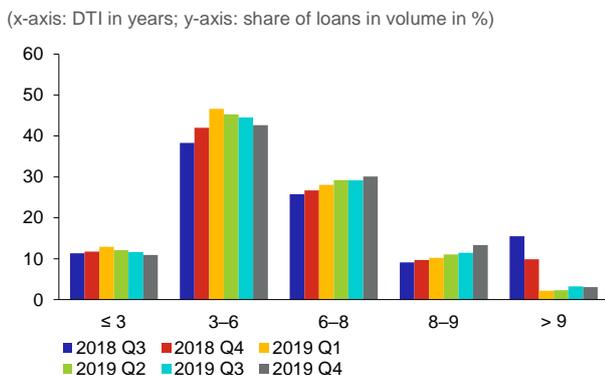
Source: CNB
Note: Weighted by individual loan size. Intervals 70-79 and 80-89 closed from the right. Intervals 79-79 and 89-90 unclosed.

Chart V.19
Fulfilment of the recommended DSTI limits



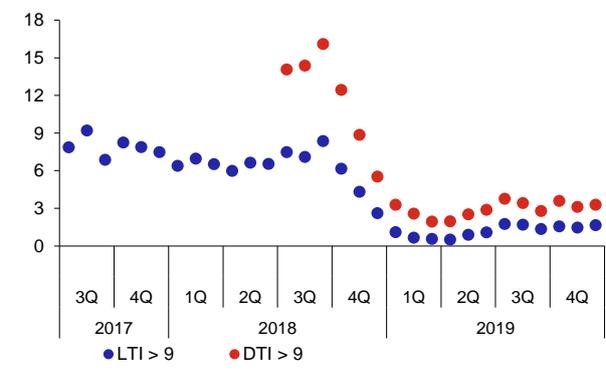
Source: CNB
Note: Volume provided means the reference volume in the Recommendation applicable at the time.

Chart V.21
DTI distribution of new loans



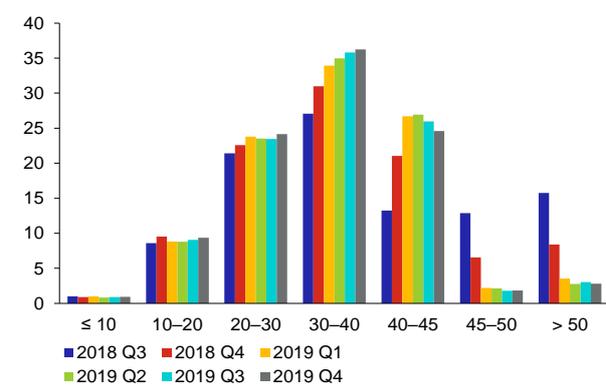
Source: CNB
Note: Interval closed from the right.

Chart V.18
Fulfilment of the recommended DTI limits



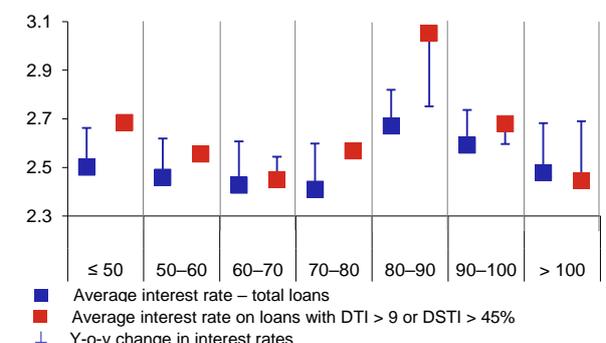
Source: CNB
Note: Volume provided means the reference volume in the Recommendation applicable at the time.

Chart V.20
DSTI distribution of new loans



Source: CNB
Note: Interval closed from the right.

Chart V.22
Average interest rates by loan characteristics



Source: CNB
Note: Data for 2019 H2. Weighted average interest rates with the sizes of individual loans as weights. Interval closed from the right.

In 2019 H2, lenders took greater account of the level of risk undertaken when setting interest rates

Interest rates on mortgage loans mostly fell on average year on year. However, there was a clear effort by banks to differentiate loan rates based on the LTV ratio in 2019 H2. The level of risk undertaken was incorporated above all into rates on loans with LTVs of over 80% (see [Chart V.22](#)). In addition to elevated loan riskiness, the higher interest rates in this category may reflect clients' high demand for this type of loan and the limited supply thereof by lenders. Interest rates increased significantly further in the category of loans with LTVs of 80%–90% where the loan also exhibited a DTI of over 9 or a DSTI of over 45%. This again reflects a tendency to incorporate higher credit risk into the level of interest rates. The completely opposite trend was recorded for loans with LTVs of 90%–100% and high DTI and DSTI ratios. However, such loans are not common and may include specific loan cases.

The CNB does not deem it necessary to set DTI and DSTI limits in the current situation; the other parameters of the Recommendation are unchanged

The CNB Bank Board's decision to relax the LTV, DTI and DSTI limits was based on expectations of a significantly adverse change in market conditions. Given the materialisation of these expectations, the Bank Board decided at its meeting on financial stability issues in June to abolish the recommended upper limit on the DSTI ratio with effect from July this year (the DTI limit had been abolished in April). At the same time, the Bank Board decided that it is not desirable at the moment to change the current recommended LTV limit of 90% (with the option of applying a 5% exemption) given the persisting overvaluation of house prices. The CNB assumes, given the expected economic impacts of the coronavirus pandemic, that lenders and their clients will be well aware of the risks and will act in a very conservative way. Nevertheless, based on the conclusions of its analyses and stress tests, the CNB continues to point out to lenders that loans can usually be regarded as very risky above certain thresholds (a DTI of 8 and a DSTI of 40%). Lenders should therefore provide such loans with great caution and only to applicants who are highly likely to repay without problems.

The CNB is still seeking the statutory power to set upper limits on the LTV, DTI and DSTI ratios for mortgage loans

The CNB and the Czech Ministry of Finance have submitted into the legislative process an amendment to the Act on the CNB that would empower the CNB to set upper LTV, DTI and DSTI limits in a legally binding manner through provisions of a general nature. The limits on all three ratios are currently regulated by the Recommendation. A switch to setting these indicators in a legally binding manner will have no major impact on current bank providers of secured loans or on consumers. However, the limits must be legally binding in order to ensure a level playing field on the market and to prevent unfair competition between lenders in the future. In this respect, entry of new (especially non-bank¹⁴³ and foreign) providers into this market segment would be problematic, as enforcement of the rules set out in the Recommendation would not be as effective for them as it is for domestic banks. The relevant legislative amendment is currently being discussed in the Czech Parliament.

V.4.2 Risks associated with commercial property markets

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

New loans secured by commercial property amounted to CZK 33 billion in 2019 H2, which represents a decline compared with previous half-years and the lowest level ever recorded in the Survey.¹⁴⁴ Generally, loans for investment and construction declined for all types of commercial property (see [Chart V.23](#)). This decline is accompanying a fall in construction of new commercial space in recent years (see [section II.2.1](#)).

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

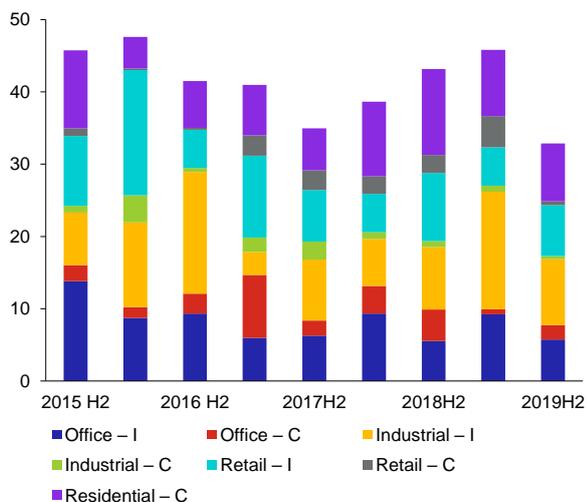
Owing to the limited share of exposures secured by commercial property in the balance sheets of Czech banks, developments in this market should not pose an immediate risk to financial stability even in the event of major impacts caused by the coronavirus crisis. A large proportion of commercial property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

143 In European countries, most mortgage loans are provided by banks. In some of them, however, the share of non-bank lenders has risen sharply in recent years. In the Netherlands, non-banks currently account for around one-quarter of the market. Outside Europe, for example in the USA, non-bank firms have provided (or raised) around half of all mortgage loans in recent years. This represents a significant rise compared with the pre-crisis years. It is due in part to the fact that banks have partially withdrawn from the market after their negative experience during the crisis and are concentrating mainly on high-quality mortgages, and in part to the fact that non-bank lenders enjoy laxer regulation.

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

Chart V.23
Amount of new loans secured by commercial property

(CZK billions)

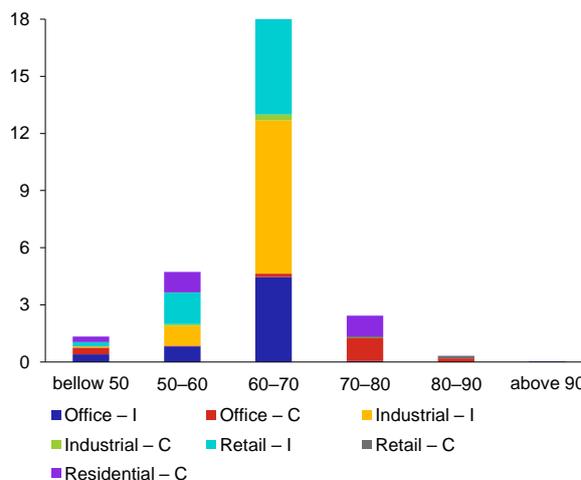


Source: CNB

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

Chart V.24
LTV distribution of new loans in 2019 H2

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



Source: CNB

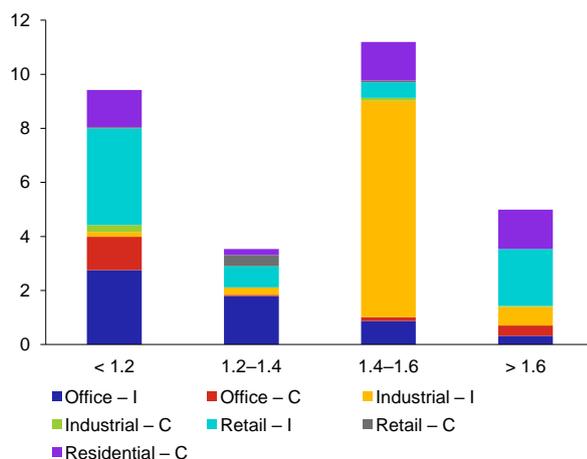
Note: I: investment in existing property, C: construction. Interval closed from the right.

The risk characteristics of new loans improved slightly overall in 2019 H2

Most of the new loans provided in 2019 H2 had LTVs of 60%–70% (see Chart IV.24). A tendency to provide loans with a DSCR of over 1.4 was also observed in 2019. This represents something of a change from the previous period (see Chart V.25). However, the observed DSCR levels do not necessarily imply a decline in credit risks. On the contrary, they may signal over-optimistic estimates of future property income in the favourable phase of the business cycle. A reduction in the extent of credit risks undertaken may be suggested by a decrease in loans with simultaneously riskier levels of collateral (an LTV of over 70%) and a low ability to generate income to cover debt (a DSCR of below 1.2). These loans amounted to around CZK 1.4 billion in 2019 H2, down more than 85% from 2018 H2 (see Chart V.26). However, given the low volumes of loans secured by commercial property, the results may reflect ad hoc factors and the risk characteristics of a very limited number of loans.

Chart V.25
DSCR distribution of new loans in 2019 H2

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

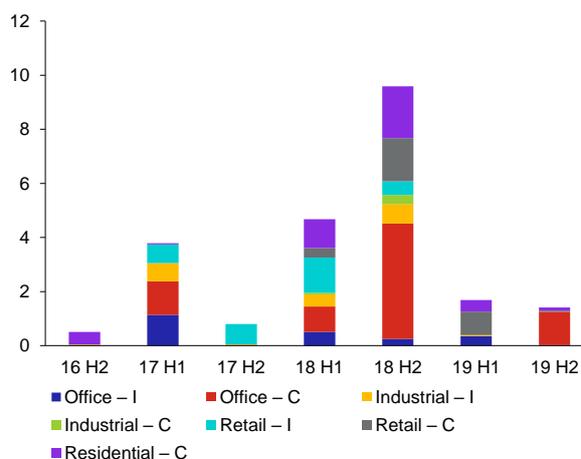


Source: CNB

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

Chart V.26
Amount of new loans with an LTV of more than 70% and a DSCR of less than 1.2

(CZK billions)



Source: CNB

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

V.5 THE ESRB'S ACTIVITIES SINCE THE ONSET OF THE CORONAVIRUS CRISIS

Analyses of the current situation by the ESRB resulted in the identification of five priority areas from the financial stability perspective. These areas are:

- (i) monitoring the financial stability implications of the fiscal measures taken,
- (ii) safeguarding the resilience of the financial sector using a coordinated approach to restraints on profit distribution,
- (iii) assessing the impact of large-scale downgrades of non-financial corporations' credit ratings on financial sector balance sheets,
- (iv) liquidity risks of investment funds,
- (v) liquidity risks of central counterparties.

While the documents were being prepared, the CNB followed developments in all the above areas and actively commented on the wording of the recommendation coordinating the approach to restraints on profit distribution and share buybacks of banks, insurance companies, reinsurance companies and central counterparties (area ii). The final wording of the Recommendation incorporated several of the CNB's proposals. The final recommendation states that restrictions may be applied in justified cases at a sub-consolidated or individual level at least until the end of 2020. The CNB supported the amended text of the recommendation. At this time of unprecedented levels of uncertainty, temporary restriction of profit distributions at a sub-consolidated or individual level enhances the resilience of the Member States' financial markets and, in turn, the functioning of the single market.

The ESRB is also monitoring the financial stability implications of national fiscal measures introduced to contain the coronavirus crisis (area i). It recommends closer cooperation between national fiscal authorities and national macroprudential authorities on collecting data and using it to analyse the implications of the fiscal measures for financial stability in Member States and potential cross-border implications. However, the CNB does not currently see any fundamental obstacles in this area. It is in favour of sharing and assessing experience with the measures and their implications for financial stability in the European context. From the CNB's perspective, the impact of government measures on credit risk materialisation (see [section III.2.2](#)) is particularly important.

The potential direct impact of large-scale downgrades of non-financial corporations' credit ratings (area iii) on individual parts of the Czech financial sector is relatively limited given the structure of financial institutions' asset portfolios. Fire sales due to rating downgrades are affecting financial institutions via several channels, namely a shock to all bond yields, a stronger shock to yields on downgraded bonds, and the price impact of fire sales from portfolios. According to the ESRB's analysis, these shocks have resulted in losses of EUR 200–300 billion in the European financial sector, with fire sales accounting for 20%–30% of the total.

A structurally higher share of investment funds in the financial sector's assets in some EU countries compared with the Czech Republic (see [section III.3](#)) has led the ESRB to examine in more depth the issue of asset and liability maturity mismatches in open-ended investment funds (especially money market funds, corporate bond funds and real estate funds (area iv) and the related liquidity risks. At times of market uncertainty, requests by investors to exit funds and redeem their shares may rise substantially. If funds are unable to satisfy these requests from their liquidity buffers, they must sell less liquid assets. This is usually accompanied by a fall in the prices of those assets. This may exacerbate the price declines on financial markets and lead to an adverse spiral between investor exits and fire sales. Funds may face this risk using liquidity management tools enabling them to temporarily halt or otherwise regulate share payouts.

Systemically important central counterparties are an important infrastructure component of the financial system, and maintaining their business continuity is essential for the functioning of financial markets. The ESRB is therefore also assessing liquidity risks arising from the margin calls and collateral requirements of central counterparties and other institutions in derivatives transactions and secured transactions (area v). This is because these requirements may suddenly be increased markedly during a period of market uncertainty, causing liquidity problems for holders of derivatives and recipients of secured funding. Central counterparties should therefore use methods of calculation of margins and collateral requirements that do not lead to a sharp rise in requirements, and at the same time should offer flexible conditions for accepting margins and collateral. The CNB welcomes the effort to limit excessive increases in requirements, as it enables stabilisation of a financial market infrastructure component that is also indirectly used by domestic financial institutions in some types of transactions.

The CNB expects that the priority areas may be gradually reassessed as the coronavirus crisis progresses and its impacts are dealt with. It remains ready to actively promote positions supporting the long-term effectiveness of macroprudential policy and its instruments.

V.6 SUSTAINABLE FINANCES AND THE RISKS ASSOCIATED WITH CLIMATE CHANGE

The issue of sustainable finance, which reflects, among other things, the impact of climate change on the financial sector, is one of the most discussed financial market topics, and will remain so in the coming years. This is evidenced by the development of many international initiatives addressing this issue and the increased interest of many institutions, including central banks.

Climate change has the potential for major negative social and economic impacts, including adverse effects on the stability of the financial system. The international community is seeking to respond to climate change through a global climate policy, the objectives of which are defined by commitments under international climate agreements, in particular the Paris Agreement and the UN 2030 Agenda for Sustainable Development. Though the fulfilment of these commitments is primarily the responsibility of the signatory governments, the impacts of climate change on the economy and the financial sector, including the effects of climate change mitigation and adaptation policies, are topics to which central banks are also paying due attention.

Central banks are currently exploring ways to respond to the wide range of climate change challenges. As climate change represents a relevant source of financial risks, central banks (including the CNB) are seeking to identify these risks as accurately as possible and subsequently develop effective tools that could help mitigate them. However, other key issues are also being discussed, such as the possibility of adjusting central banks' asset portfolios so that central banks can contribute actively to the response to climate change, and the possibility of adapting the prudential framework for assets that have a positive impact on sustainability.

The CNB is currently focusing on monitoring the approaches of international organisations and other countries to analysing the impact of climate change and climate change policies on the stability of financial institutions and systems. In parallel, CNB is preparing models for stress testing the impacts of climate change on financial markets.

V.6.1 Definition of climate change risks

Sustainability risks¹⁴⁵ are becoming increasingly significant. In assessing these risks, emphasis is placed on climate risks that represent the potential negative impact of climate change-related events and changes on the fair value of financial assets.¹⁴⁶ Two main categories of climate risks are distinguished: physical risks and transition risks.¹⁴⁷

Physical risks represent the potential negative impact on the value of assets due to economic costs stemming from the increasing severity and frequency of extreme climate change-related weather events (such as heatwaves, landslides and floods) and from longer-term progressive climate change (e.g. changes in rainfall frequency and volume, extreme weather volatility and changes in average temperatures).

Risk factors in this respect include both the current more frequent manifestations of extreme weather, and gradual climate change. Manifestations of extreme weather have a negative impact on health, damage infrastructure, and reduce the value of wealth and productivity. They can disrupt economic activity and trade, have the potential to significantly exacerbate resource scarcity, and reallocate capital from more productive use to the reconstruction and renewal of damaged property. Uncertainty regarding future losses may also foster higher preventive saving and lower investment. In the longer term, climate change is also associated with growth in the risks of food and water scarcity and rising sea levels. This increases the likelihood of other negative phenomena with significant financial impacts.

Transition risks are connected with the transition to a low-carbon economy, which will involve a process of reducing emissions in order to meet EU environmental policy objectives.¹⁴⁸ This transformation will lead to significant structural changes in the economy and will have effects, among other things, on business financing and the value of assets in relation to specific economic activities.

¹⁴⁵ Sustainability risks mean environmental, social or governance events or conditions that, if they occur, could cause an actual or a potential material negative impact on the value of the investment, in the broader sense of a financial asset.

¹⁴⁶ In the context of financial market risks, climate risks are often confused with environmental risks. Environmental risks relate to financial market participants' exposures linked to activities that may be adversely affected by environmental degradation, which may or may not be caused by climate change (such as air and water pollution, scarcity of freshwater resources and soil contamination).

¹⁴⁷ In addition to these main climate risk categories, reference is made to liability risks, which relate to compensation claims that would be made as a result of the negative effects of climate change (for example, someone suing a company in which they have invested and which is making losses due to climate change, assuming that they were not informed about the risks).

¹⁴⁸ At the European Council in December 2019, EU leaders, with the exception of Poland, endorsed the objective of achieving a climate-neutral EU by 2050, in line with the objectives of the Paris Agreement. The Paris Agreement obliges nations to set national reduction contributions to achieve the long-term goal of climate protection, i.e. to contribute to holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. The agreement was adopted in December 2015. This agreement was ratified by all EU member states. The Czech Republic became a signatory on 4 November 2017.

The main factors are regulatory changes, technological change, and changes in consumer behaviour. Promoting sustainability policy objectives through regulation, for example in the areas of carbon pricing, support for low-emission energy sources and more efficient use of water resources, is a key factor influencing the level of transition risks. That level, in turn, is closely related to the speed, timing, transparency and nature of regulatory changes, because transition risks increase in the event of sudden and quickly implemented large-scale changes. Technological change also has a major impact on transition risks. Besides its positive impact on savings and efficiency, it brings uncertainty, especially when the replacement of existing technologies with new ones disrupts parts of the current economic system. In addition, the transformation of the economy could be accompanied by substantial changes on the demand side, reflecting evolving preferences and changes in the behaviour of consumers, who are becoming more sensitive to environmental issues.

The relationship between physical and transition risks tends to be seen as substitutive: while a zero or insufficient response of the economy to climate change entails higher physical risks and lower transition risks, transformation of the economy associated with greater resilience to physical risks carries increased transition risks. The substitutive nature of the relationship is often used as one of the starting points in the methodology of scenario analysis.

BOX 7 Overview of selected sustainable finance regulations

The EU aspires to become a global leader of sustainable finance initiatives.¹⁴⁹ This is reflected in a marked rise in EU regulation in this area. In March 2018, the Commission adopted an *Action Plan on Financing Sustainable Growth* with three main objectives: (i) re-orient capital flows towards sustainable investment in order to achieve sustainable and inclusive growth, (ii) manage financial risks stemming from climate change, resource depletion, environmental degradation and social issues, and (iii) foster transparency and long-termism in financial and economic activity.

Based on the action plan, three regulations were published in May 2018 which form a regulatory package whose declared objective is to integrate sustainability factors (“ESG factors”¹⁵⁰) into the financial system. Two of these directives legally binding on all EU Member States and directly applicable have already entered into force:

The Sustainability Finance Disclosure Regulation (SFDR)¹⁵¹ introduces disclosure obligations for how financial market participants integrate ESG factors into their risk management processes, how they provide information on financial products promoted as “sustainable”, and the principal adverse impacts of investment activities on the environment. The Regulation empowers the Joint Committee of the European Supervisory Authorities (ESAs) to develop six technical standards on the content and form of the information disclosed. Five of them, concerning environment-related disclosure obligations, should be drafted by the end of 2020, and the remaining one, on disclosure in relation to adverse social and employment impacts, should be finalised a year later.

The Sustainable Finance Benchmarks Regulation (SFBR)¹⁵² establishes two new categories of (climate) benchmarks:

- (1) EU Climate Transition Benchmarks for investment portfolios containing the underlying assets of companies that will be on a decarbonisation trajectory, i.e. companies that will gradually lower their carbon footprint by 2022. The benchmarks so labelled should offer a low-carbon alternative to the commonly used benchmarks;
- (2) EU Paris-aligned Benchmarks for investment portfolios whose resulting carbon footprint is aligned with the long-term objectives of the Paris Agreement in the area of global warming. The benchmarks so labelled should only include companies that can demonstrate adherence to a Paris-aligned decarbonisation trajectory.¹⁵³

The Regulation also introduces a general obligation for benchmark administrators (applied to all benchmarks except interest rate and foreign exchange benchmarks) to explain how key elements of their benchmark methodology take the ESG factors into account.

149 Sustainable finance generally refers to the process of taking due account of environmental, social and governance (ESG) considerations in investment decision-making, leading to increased investment in longer-term and sustainable activities.

150 Environmental (E), social (S) and governance (G) factors. Sustainability factors in the environmental field include implementing measures to combat climate change, reducing carbon footprints, ensuring the protection of water resources, and applying responsible waste management policies.

151 Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector.

152 Regulation (EU) 2019/2089 of the European Parliament and of the Council of 27 November 2019 amending Regulation (EU) 2016/1011 as regards EU Climate Transition Benchmarks, EU Paris-aligned Benchmarks and sustainability-related disclosures for benchmarks.

153 In the case of the EU Paris-aligned Benchmarks, the relevant regulation (BMR) states that the underlying assets are *selected, weighted or excluded in such a manner that the resulting benchmark portfolio's carbon emissions are aligned with the objectives of the Paris Agreement*. It meanwhile holds that the objectives of the Paris Agreement were set on the basis of the 1.5°C scenario of the Intergovernmental Panel on Climate Change (IPCC). The IPCC constantly updates this scenario on the basis of new scientific knowledge. Under the current scenario, it would be necessary to achieve carbon neutrality by 2050 in order to meet this objective. This means that the EU Paris-aligned benchmark portfolios should be carbon neutral by 2050 and that all efforts should be geared towards that goal.

The Regulation also empowers the Commission to adopt delegated acts laying down minimum methodology standards and mandatory disclosure obligations for both types of climate benchmarks, as well as mandatory disclosure obligations for how the ESG factors are taken into account in the methodology for all types of benchmarks. All the delegated acts are expected to be adopted in 2020.

The final part of the legislative package on sustainable finance – the “Taxonomy Regulation” – could enter into force in summer 2020:

The Regulation of the European Parliament and of the Council on the establishment of a framework to facilitate sustainable investment (the “Taxonomy Regulation”) sets out the conditions and framework for the creation of a common classification system (“taxonomy”) for distinguishing between economic activities contributing to the achievement of environmental objectives, and the rest.

The Regulation sets out general requirements for criteria for assessing economic activity in relation to six environmental objectives (climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems). In connection with these requirements, the Regulation empowers the Commission to issue a delegated act for each of these objectives defining technical screening criteria for assessing whether an economic activity contributes to the achievement of the objective(s), i.e. whether it qualifies as environmentally sustainable according to the taxonomy. The delegated acts for the first two objectives should be issued by the end of 2020 with effect from the end of 2021, and those for the other objectives by the end of 2021 with effect from the end of 2022.

The Regulation also stipulates an obligation to use the taxonomy in relation to sustainable financial products of an investment nature in the pre-contractual transparency framework, on websites and in periodic reporting. In this context, it empowers the ESAs (through their Joint Committee) to develop draft technical standards on the content and presentation of information disclosed pursuant to the Taxonomy Regulation. In addition, under the Regulation, companies that are required to disclose non-financial information pursuant to the directive on annual financial statements¹⁵⁴ are obliged to state in their (consolidated) non-financial statement information on how and to what extent the company’s activities are linked to activities that qualify as environmentally sustainable according to the taxonomy (the Commission will adopt a delegated act clarifying these requirements by 1 June 2021).

The creation of a taxonomy of sustainable economic activities opens up room for more EU regulation. The taxonomy will be used, among other things, in the EU Green Bond Standard and in ecolabels for financial products.

The new disclosure requirements in the legislative package should be complementary to the existing reporting requirements for non-financial information under the Non-Financial Reporting Directive (NFRD),¹⁵⁵ which applies to large undertakings which are public-interest entities and have over 500 employees. In June 2019, the Commission published a Supplement on Reporting Climate Related Information to this Directive, which complements the Non-Binding Guidelines on Non-Financial Reporting under the NFRD.

Besides the above legislative package for sustainable finance, the Commission has initiated other legislative activities aimed at integrating sustainability factors into the sectoral legislation regulating financial markets. Among other things, it has prepared delegated acts issued under MiFID II¹⁵⁶ and IDD¹⁵⁷ concerning assessment of the suitability of financial products for clients, the aim of which is to include ESG considerations into the advice that investment firms and insurance distributors offer to clients. The Commission, in close cooperation with the ESAs, also intends to integrate sustainability risks and possibly other sustainability factors in the areas of organisational requirements, operating conditions, risk management and review of the target market, either by amending existing (sectoral) legislation¹⁵⁸ or by

¹⁵⁴ Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC.

¹⁵⁵ Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups.

¹⁵⁶ Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.

¹⁵⁷ Directive 2016/97/EC of the European Parliament and of the Council of 20 January 2016 on insurance distribution.

¹⁵⁸ In this context, this refers specifically to UCITS (Directive 2009/65/EC of the European Parliament and of the Council on the coordination of laws, regulations and administrative provisions relating to enterprises for collective investment in transferable securities), AIFMD (Directive 2011/61/EU on Alternative Investment Fund Managers), MiFID II (Directive 2014/65/EU of the European Parliament and of the Council on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU), Solvency II (Directive 2009/138/EC of the European Parliament and of the Council, on the taking-up and pursuit of the business of insurance and reinsurance) and IDD (Directive 2016/97/EC on insurance distribution).

adopting new delegated acts. Another measure being considered in the longer run as regards the integration of sustainability risks into the prudential framework is the option of adjusting the capital requirements.

Specifically for the banking sector, EBA is empowered to assess the possibility of special prudential treatment of assets linked to the achievement of environmental and social objectives, which would subsequently be reflected in the Pillar 1 capital requirements.¹⁵⁹ The possible inclusion of the ESG factors in assessing the riskiness of credit institutions under the SREP is also being explored. The introduction of a special approach for assets that are linked with economic activities that have negative impacts on sustainability is being considered at the level of general discussions.

The possibility of taking sustainability risks into account in the Pillar 1 capital requirements (under Solvency II) is also being considered for insurance companies. EIOPA believes that the medium to long-term effects of climate change cannot be fully captured in the capital requirements, which are designed to mitigate the risks to which insurance companies are exposed over a one-year horizon. However, instead of changing the time horizon in the design of Pillar 1, EIOPA considers it more appropriate to integrate stress testing and analysis of (long-term) scenarios into risk management, insurance company governance and the ORSA.

It is clear from current developments that the EU's activities in the area of sustainable finance regulation will continue. According to the European Green Deal, a communication issued by the European Commission in December 2019, the Commission will present a renewed sustainable finance strategy in the third quarter of 2020 that will focus on further embedding sustainability into the corporate governance framework, providing increased opportunities to invest in sustainable financial products, and better integrating climate and environmental risks into the financial system.

V.6.2 Climate risks and their impacts on financial stability

The most significant potential impacts of climate risks on financial stability are associated with the categories of physical and transition risks.

The financial impacts of *physical risks* can be significant regardless of whether or not the potential impairment losses are insured. If they are insured, more frequent and more serious cases of, for example, extreme weather affect insurance companies directly through higher claims and their customers indirectly through higher premiums. If the losses are uninsured, the burden falls on the budgets of households, firms and, ultimately, governments. Physical risks also have the potential to adversely affect borrowers' ability to service their debts or reduce the value of collateral. This may increase the credit risks for banks and other creditors.

In relation to financial stability, the indirect effects of physical risks stemming from the interconnectedness of the financial system and the real economy are also significant, as this interconnectedness can amplify the losses caused by their materialisation (for example, a decrease in the value of assets used as collateral due to extreme weather can cause banks significant losses, leading them to restrict lending in certain regions). These losses simultaneously reduce the wealth of economic agents and lead to a decline in aggregate demand, productivity and output.

Transition risks also have the potential to affect financial stability through various channels. The transition to a low-emission economy is associated with extensive structural effects and reinvestment activities, which can lead to asset impairment losses and substantial asset revaluation. Specifically, the transition may be accompanied by the emergence of "stranded assets", which cease to be used before the end of their life as they are incompatible with the achievement of sustainability targets (e.g. fossil fuels and cars with internal combustion engines). The increase in energy prices resulting from the growing share of (currently more expensive) alternative energy sources in the energy mix may also be of considerable importance. Moreover, transition risks also involve indirect effects on the financial sector, as their materialisation can lead to a reduction in aggregate expenditure and output, which in turn further worsens the conditions on financial markets.

The above-mentioned categories of climate risks are characterised by specific features, in particular non-linear impacts and delayed materialisation. For this reason, the most suitable tools for integrating them into the macroprudential policy framework appear to be stress tests and scenario analyses based on a forward-looking approach.

¹⁵⁹ The EBA's assessment report will probably not be published until 2025.

V.7 RECENT DEVELOPMENTS IN THE AREA OF OPERATIONAL RISKS

Failures of people, processes and systems, and external events are considered to be the main sources of operational risk (OR). While failures of people and processes are likely to affect only the institution concerned, system failures and external events can be expected to have a negative impact on a significant proportion of market participants under certain conditions. This may have repercussions for financial stability. The dominant ORs stemming from system failures are currently risks connected with institutions' resilience to cyber threats and risks arising from dependence on third parties (for example, in connection with the use of cloud computing).¹⁶⁰

The map of vulnerabilities and hence of potential cyber threats is changing as a result of the ongoing digitalisation and rising openness of the financial sector. Their materialisation may cause a loss of availability of financial services to clients, damage to the reputation of the bank and other affected institutions, and a financial loss to part of – or, in the extreme case – the entire, financial sector.

Other important ORs include the risk of concentration of key services in a single provider of IT/IS services (outsourcing). This risk started to increase with the growing use of cloud computing services. In its supervisory activities, the CNB monitors this risk in on-site examinations and off-site surveillance, while banks are required to notify the CNB of significant shares of outsourced services. Cloud computing risks are currently low from the supervisory point of view, but the CNB will continue to monitor developments in this area closely.

Structural changes leading to fundamental technical innovations, the creation of new products, services and processes, and therefore to a new form of financial markets and market infrastructure can be expected to continue in the future. This process will probably be accelerated by the reaction of institutions and the real economy to the coronavirus crisis. In addition, it will always be affected to some extent by the business cycle. Prolonged periods of economic growth generate optimistic expectations, making institutions and their clients more willing to assume higher ORs, for example in the area of investment in modern IT services and distribution channels. In an economic growth phase, these are subject to increased competition, which, during economic booms, motivates institutions to change their business and IT strategies and accelerate the development of information and financial technology (new products and services), often to an extent that may increase the level and probability of materialisation of these ORs.

When assessing the effects of the potential materialisation of OR on financial stability, difficult systemic quantification is a major practical problem. The processes and methods for quantifying OR (except for the Pillar 1 capital requirements) applied by individual institutions are not standardised and may differ significantly. This makes determining the potential level of exposure to operational risk at the macro level even more difficult. There are basically two options: use the Pillar 1 capital requirements, or use the historical data on losses arising from operational risk events. The latter approach was applied in the preparation of the supervisory stress tests in the area of operational risk. However, it does not take sufficient account of the large and infrequent losses that are linked with cyber risks and services concentration risks. Therefore, the Pillar 1 capital requirements are used to quantify potential losses arising from operational risk at the macro level.¹⁶¹ They amount to approximately CZK 30 billion for the domestic banking sector on a consolidated basis. The CNB will continue to analyse whether this level sufficiently covers the risks arising from new technological trends. At the same time, it will carefully assess banks' resilience to cyber risks to mitigate the risk of major disruptions to the provision of financial services to the real economy.

¹⁶⁰ See, for example, the ESRB report: https://www.esrb.europa.eu/pub/pdf/reports/esrb.report200219_systemiccyberrisk~101a09685e.en.pdf.

¹⁶¹ In line with the BCBS, the methods for setting capital requirements for operational risk were calibrated using a confidence interval of 99.9%.