

# Thematic article on financial stability ——— 3/2020

## The CNB's approach to releasing the countercyclical capital buffer

Libor Holub, Tomáš Konečný, Lukáš Pfeifer, Václav Brož



Czech National Bank ——— Thematic article on financial stability ——— 1/2020

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# THE CNB'S APPROACH TO RELEASING THE COUNTERCYCLICAL CAPITAL BUFFER

Libor Holub, Tomáš Konečný, Lukáš Pfeifer, Václav Brož<sup>1,2</sup>

*This article describes the CNB's approach to releasing the countercyclical capital buffer (CCyB). The CCyB will be released in the recessionary phase of the financial cycle, which is characterised by declining cyclical risks in institutions' balance sheets. Where a severe recession or financial crisis gives rise to systemic credit losses, a decrease in banks' capitalisation and a subsequent fall in the available capital capacity for lending, the CNB is likely to lower the CCyB rate, potentially all the way to zero, depending on the losses. The CNB will also consider releasing the buffer in cases where systemic losses have not yet occurred but are highly likely to do so in the near future. In a shallow recession or an economic slowdown, when cyclical risks are for the most part disappearing naturally from institutions' balance sheets, the CNB will consider gradually lowering the CCyB rate to its standard level of 1%. This article illustrates these approaches using the decision-making process for releasing the CCyB in two alternative scenarios of declining cyclical risks. It also presents an estimate of the effect on the economy of the potential credit impulse associated with the release of the CCyB.*

## I. INTRODUCTION

The countercyclical capital buffer (CCyB)<sup>3</sup> is a macroprudential capital buffer. It was enacted in response to the global financial crisis of 2007–2009, which in many countries led to a situation where banks ran short of capital and restricted the supply of credit. This, in turn, had a negative impact on the real economy (see, for example, Iyer et al., 2014). The aim of the CCyB is to preserve the banking sector's resilience to the negative impacts of potential impairment losses on loans provided in the growth phase of the financial cycle and thereby avoid disruptions to lending to the real economy in the event of shocks. The macroprudential authority raises the CCyB rate when the cyclical component of systemic risk is rising and lowers it when it is falling. The European Systemic Risk Board (ESRB, 2014) has issued guidance on raising the CCyB rate, and the macroprudential authorities of EU countries have developed their own approaches reflecting national specificities.<sup>4</sup> In the case of the CNB, the decision-making process connected with raising the CCyB rate is described in a general methodology on setting the CCyB (CNB, 2020, especially section 5.1).

This article focuses on the CNB's methodological approach to releasing the CCyB. It is therefore based on the CNB's general methodology on setting the CCyB and the section thereof on reducing the CCyB rate (CNB, 2020, section 5.2) and describes this relatively new issue in more detail. The CCyB is released in the recessionary phase of the financial cycle, which is usually accompanied by a decline in the cyclical risks – mainly credit risks<sup>5</sup> – in institutions' balance sheets. The release of the CCyB in this period allows it to be used to cover systemic losses and reduces the risk of disruptions to smooth lending to the real economy. The CNB will also consider releasing the CCyB in cases where cyclical risks have not yet declined but are highly likely to do so in the near future. The macroprudential authority may release the buffer either partially or fully and may do so with immediate effect (Article 136(6) of CRD IV). The decline in cyclical risks may have a different profile depending on the length and intensity of the recessionary phase of the cycle, and the CNB's approach to releasing the CCyB takes this into account.

The first section describes how the decline in cyclical risks occurs and then presents the starting considerations for decision-making on the extent and timing of the release of the CCyB. The second section describes the sequence and timing of the decline in cyclical risks, concentrating on their impact on the banking sector's capital position and available capital capacity for lending to the real economy. The third section describes the decision-making process for releasing the CCyB and discusses variants of this process in two alternative scenarios – a severe and mild decline in cyclical risks.

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1 Libor Holub (Libor.Holub@cnb.cz), CNB, Financial Stability Department,

Tomáš Konečný (Tomas.Konecny@cnb.cz), CNB, Financial Stability Department,

Lukáš Pfeifer (Lukas.Pfeifer@cnb.cz), CNB, Financial Stability Department; University of Economics in Prague, Faculty of Finance and Accounting, Václav Brož (Vaclav.Broz@cnb.cz), CNB, Financial Stability Department; Charles University, Faculty of Social Sciences, Institute of Economic Studies.

2 The team of authors thanks Jan Frait, Zlataše Komárková, Miroslav Plašil and Vojtěch Siuda for valuable comments and suggestions.

3 The countercyclical capital buffer is defined as a percentage share determined by the relevant rate on the banking sector's risk-weighted assets (RWAs; Article 130(1) of CRD IV). The rate is set by the competent macroprudential authority. See <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32013L0036&from=EN#d1e7902-338-1>.

4 These approaches differ from country to country (BIS, 2017), but on a general level they are aimed at determining the potential scale of the gradual build-up of the cyclical component of systemic risk during the expansionary phase of the financial cycle.

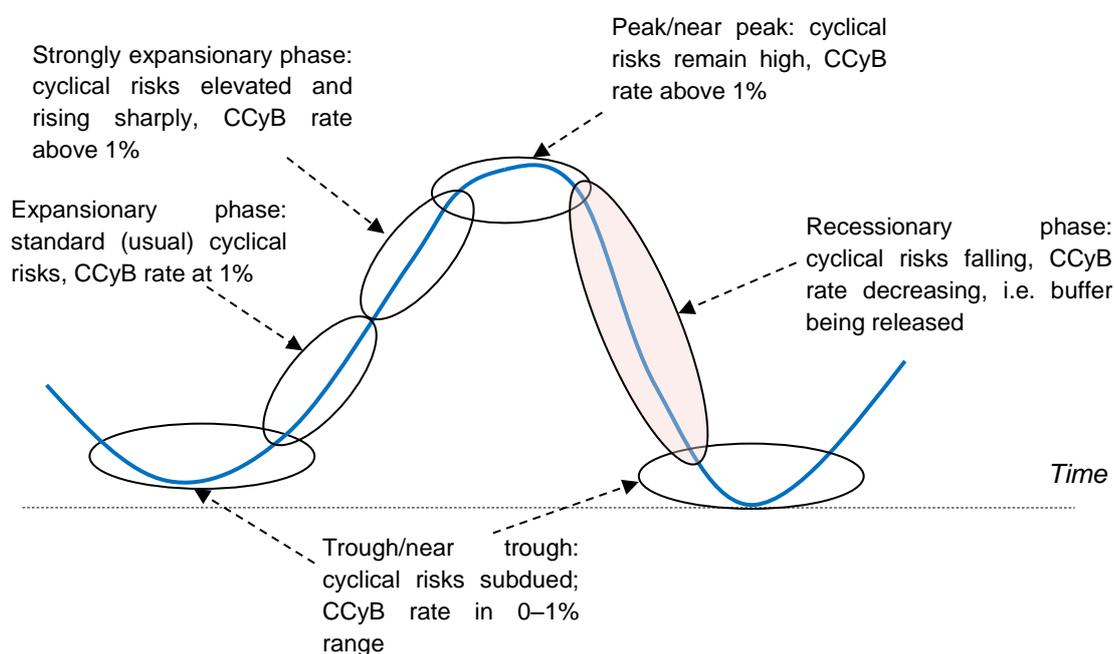
5 Credit risk is the key risk in the Czech banking sector.

On the macroeconomic level, it also outlines the effect on the real economy of the potential credit impulse of the released buffer. The final section concludes.

## II. THE CYCLICAL CONDITIONALITY OF THE PROCESS OF RELEASING THE COUNTERCYCLICAL CAPITAL BUFFER

The lowering of the CCyB rate – and hence the release of the buffer – will take place in the **recessionary phase of the financial cycle** (see Chart 1), or in a situation where the cycle is highly likely to transition to that phase in the near future. Prices of financial assets and property tend to stagnate or fall, financial conditions become tighter, investors are pessimistic about the level of risk, and credit growth slows. Cyclical risk materialisation and loan defaults gradually increase and institutions consequently incur losses. Risk weights of exposures and the cost of capital stop falling sharply and – given the growing probability of a recession – may start to increase.

**Chart 1 Illustrative evolution of cyclical risks over the financial cycle**



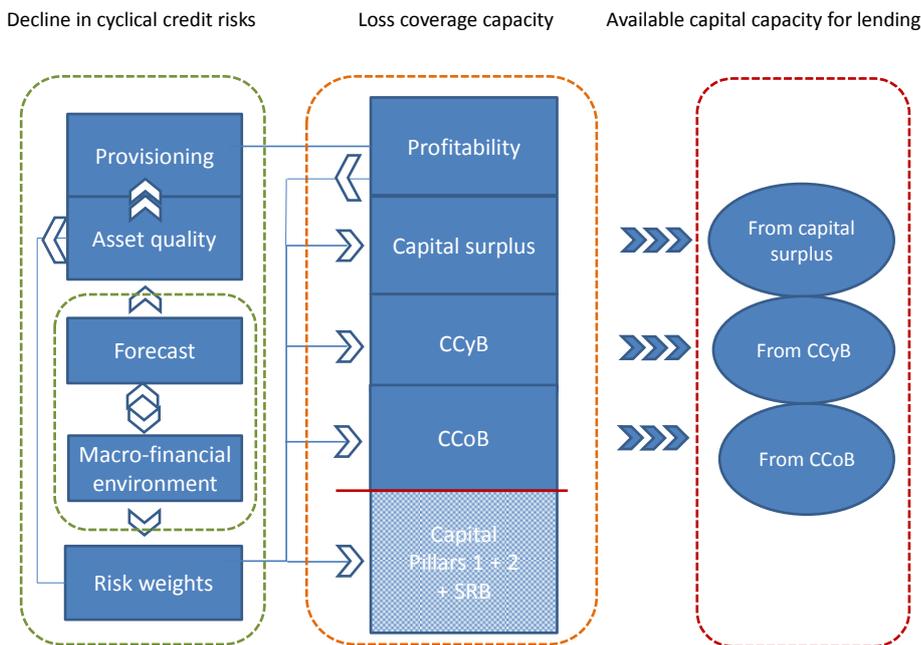
**A situation where the Czech economy is manifestly in the recessionary phase of the cycle, or is expected to be so in the near future, is a necessary but not sufficient condition** for commencing the process of lowering the CCyB rate. The lowering of the rate is additionally based directly on **the extent and form (nature) of the decline in cyclical risks (mainly credit risks)** in institutions' balance sheets. Those risks may decrease as a result of

- (i) **natural disappearance** during a shallow recession or an economic slowdown, when loan defaults are not on a scale that leads to systemic losses and the risks diminish mainly through loan repayment and the application of more stringent credit standards to refinancing and new lending, and/or
- (ii) **materialisation** during a severe recession (or even a financial crisis), when loan defaults caused by the highly adverse economic developments are on a scale that leads to systemic losses.

These forms of decline in cyclical risks can overlap and their relative significance will differ depending on the intensity and length of the recessionary phase of the cycle.<sup>6</sup> Evaluating the extent of the decline consists in assessing institutions' (i) **capitalisation and credit loss absorption ability** and (ii) **available capital capacity for lending** (see Scheme 1).

<sup>6</sup> Section III discusses the approach to reducing the CCyB rate in two alternative scenarios reflecting different intensities and lengths of the recessionary phase. The *Severe Recession* scenario assumes intensive materialisation of cyclical risks, while the *Mild Recession* scenario assumes mostly natural disappearance of cyclical risks from institutions' balance sheets.

**Scheme 1 Framework for assessing the extent of the decline in cyclical (credit) risks**



Source: CNB

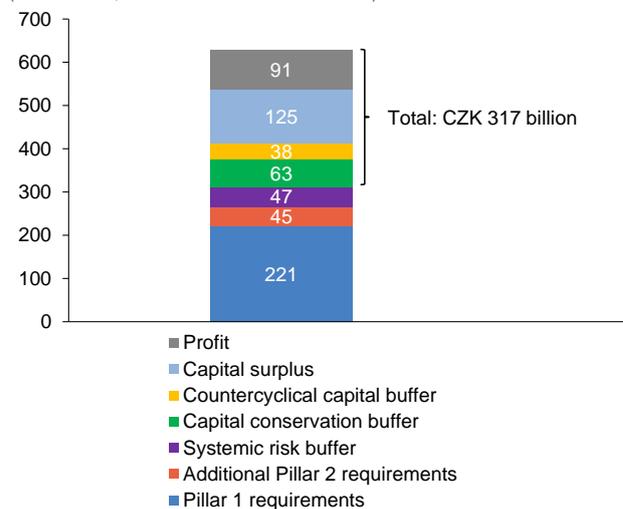
At the beginning of the recessionary phase of the financial cycle, the start of the process of **decline in cyclical (credit) risks** may be signalled by **developments in the macro-financial environment** or **asset quality and impairment** (credit losses). The dynamics of the macro-financial environment are indicated by business and financial cycle indicators.<sup>7</sup> The likely nature of the decline in cyclical risks can also be indicated by macroeconomic forecasts.

Asset quality and credit losses then react to the expected and subsequent real deterioration in macroeconomic conditions in the recessionary phase of the cycle, which, under IFRS 9, are reflected in institutions' internal expected loss models.<sup>8</sup> The materialisation of credit losses passes through with various intensities and time lags to institutions' **loss coverage capacity**. Sources of loss coverage include profit and some components of capital (see [Chart 2](#)).

The banking sector's credit losses (expected and unexpected) can be gradually covered from any profits or voluntary capital surplus<sup>9</sup> in excess of the regulatory requirements ("capital surplus") and by the release

**Chart 2 Loss coverage capacity of the banking sector**

(CZK billions; data as of 31 December 2019)



Source: CNB, authors' calculations.

7 The evolution of the business and financial cycles is illustrated by GDP indicators and the FCI, among others (for more details, see Plašil et al., 2014). Indicators of systemic financial stress are summarised in Appendix 4 of the CNB's approach to setting the CCyB (CNB, 2020). The vulnerability of the banking sector is illustrated by the banking prudence indicator (BPI) in addition to individual variables (Pfeifer and Hodula, 2018).

8 For more details, see Box 3.2: *The impact of banks' expectations on timely and sufficient provisioning under IFRS 9* (CNB, 2019a).

9 The long-term availability of a capital surplus to cover losses is conditional on the idiosyncratic decision-making mechanisms of institutions' owners, which can change over time. They can be strongly dependent on the cycle outside the Czech Republic and on how (a)synchronous it is with the cycle in the Czech Republic, and also on the stability of ownership structures.

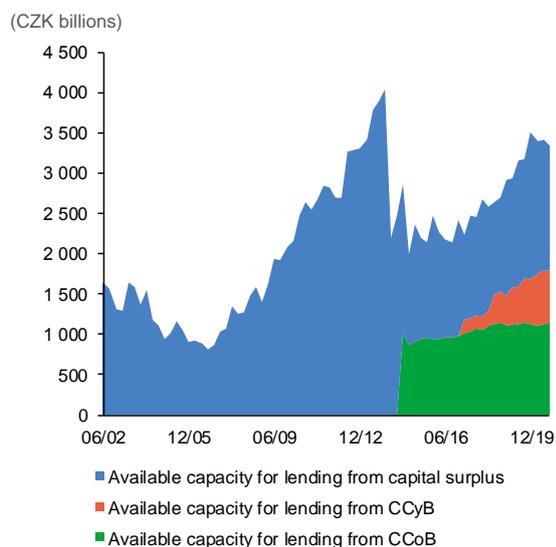
(CCyB<sup>10</sup>) or use (CCoB<sup>11</sup>) of capital buffers designed to cover cyclically conditional credit losses (jointly the “loss coverage capacity”). The loss coverage capacity of the Czech banking sector exceeded CZK 300 billion as of 31 December 2019 (see Chart 2). It directly determines **the available capital capacity for lending**. The latter provides information on the banking sector's lending potential and the possible role of capital constraints in the supply of credit. It represents the additional amount of credit that institutions can provide from capital in excess of Pillar 1, Pillar 2 and the systemic risk buffer<sup>12</sup> and is defined<sup>13</sup> as:

$$\begin{aligned} \text{Available capacity from capital surplus} &= \\ &= \frac{\text{Absolute capital surplus}}{(\text{Pillar 1 abs.} + \text{Pillar 2 abs.} + \text{SRB abs.} + \text{CCoB abs.} + \text{CCyB abs.})} * \frac{1}{RW_{\text{CREDIT RISK}}}. \end{aligned} \quad (1)$$

$$RWA_{\text{TOTAL}}$$

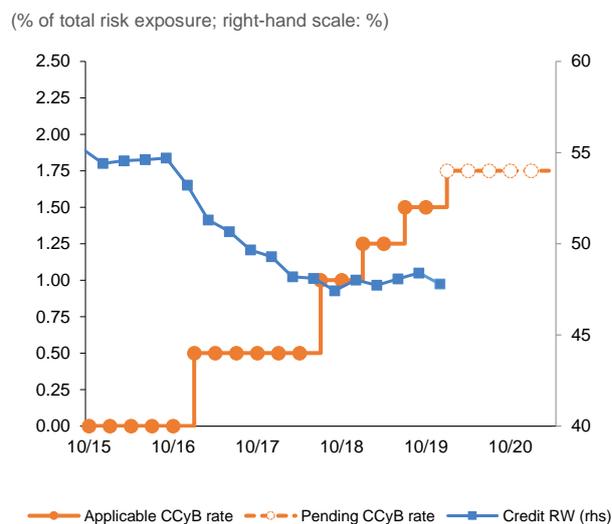
The available capacity of the Czech banking sector is plotted in Chart 3. It has risen in recent years on the back of increasing capitalisation and a cyclically conditional decline in the risk weights of IRB banks (see Chart 4).<sup>14</sup> From the CNB's perspective, the lending capacity is sufficient if it covers annual growth in the stock of credit of around 4% of GDP (the “threshold”; roughly CZK 200 billion as of 31 December 2019).<sup>15</sup> At the end of 2019, it stood at around CZK 1,779 billion and was therefore well above the threshold.

**Chart 3 Available capital capacity for lending in the Czech banking sector**



Source: CNB, authors' calculations.

**Chart 4 Applicable and pending CCyB rates in the Czech Republic and credit risk weights**



Source: CNB, authors' calculations.

In the case of the CCyB, the available capacity for lending has been built up by continually raising the rate since 2017. A rate of 1.75% (applicable as of the end of 2019) implies an available capacity for lending of CZK 548 billion. All other things being equal, this is the maximum amount of credit the banking sector can provide after the buffer is released.

The evolution of credit losses, the related loss coverage capacity and the available capital capacity for lending are key inputs to the decision-making process for releasing the CCyB.

10 The macroprudential authority decides on the release of the CCyB.

11 The CCoB is not released; the institution concerned decides on its use.

12 In the Czech Republic, the systemic risk buffer is used to cover risks associated with the systemic importance of institutions.

13 The available capacity is calculated from the ratio of the capital surplus to total risk-weighted exposures. It is therefore assumed that the entire surplus can be used to cover credit risks. It thus abstracts from the materialisation of market and operational risk and its effect on the capital surplus, because according to the CNB's macro stress tests that effect is relatively limited.

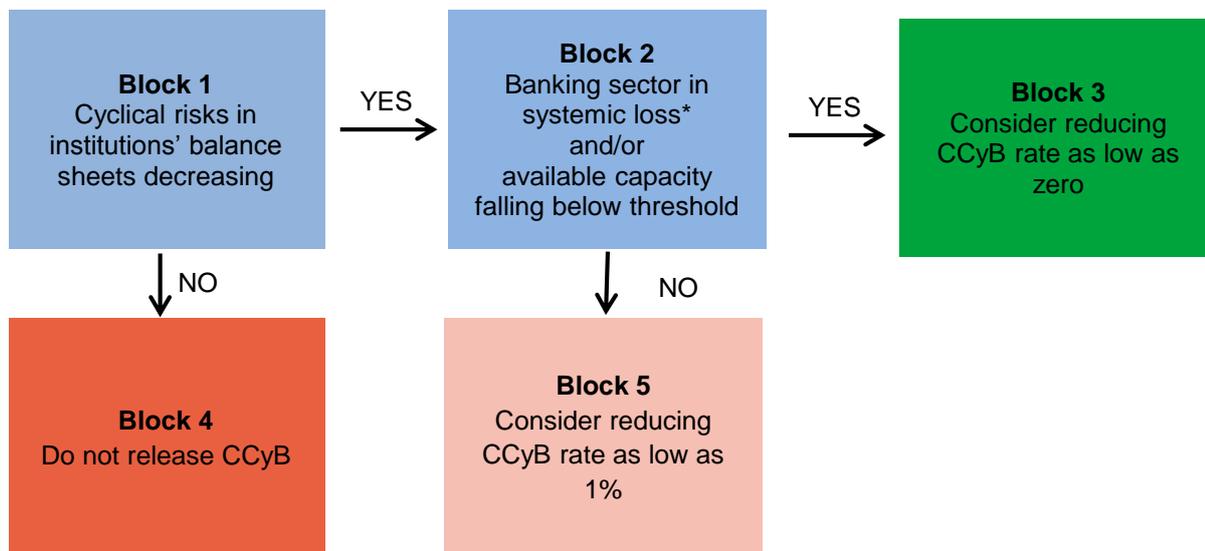
14 The risk weights of IRB banks tend to fall in the expansionary phase of the cycle (Brož et al., 2017; Malovaná, 2018). This leads to a decline in the absolute capital requirement.

15 Annual growth in the stock of credit of around 4% of nominal GDP was the level at which the output gap in the Czech economy was closing in the past (for more details, see Plašil, 2019).

### III. THE DECISION-MAKING PROCESS FOR RELEASING THE COUNTERCYCLICAL CAPITAL BUFFER

The decision-making process for releasing the CCyB consists of an assessment of whether (i) the cyclical risks in institutions' balance sheets are decreasing (Scheme 2, block 1), (ii) credit losses are at systemic levels, and/or (iii) there is sufficient available capital capacity for lending (Scheme 2, block 2).

**Scheme 2 The decision-making process for releasing the CCyB**



\* Also where there is a high probability of systemic losses arising in the near future, provided that capitalisation is maintained.

Source: CNB.

If the decline in, or materialisation of, cyclical risks reaches levels at which **the banking sector is in a systemic loss** (Scheme 2, block 1, yes) and its capital adequacy and loss coverage capacity decrease,<sup>16</sup> **the CCyB rate can be reduced as low as zero** (Scheme 2, block 3) so that the buffer can be used to cover the systemic losses.<sup>17</sup> The CNB will also consider releasing the buffer in cases where systemic losses have not occurred but are highly likely to do so in the near future. This approach reflects the experience in other countries where macroprudential authorities faced with a high probability of a future economic contraction released the buffer partially or fully before systemic losses actually arose, and also the experience of the coronavirus crisis in 2020. In such a situation, the risk of the released CCyB not being used to cover losses and lending is reflected in supervisory guidance temporarily restricting profit distribution (Borio and Restroy, 2020).

Another criterion for releasing the CCyB is **a decline in the available capital capacity for lending below the threshold** (block 2, yes). A decline in capital, or the capital ratio, reduces the available capital capacity for lending to the real economy. In the recessionary phase of the cycle, this is not desirable from an economic policy point of view, as it can restrict the supply of credit to viable projects. So, if the CNB evaluates the capacity as insufficient, it is prepared to release the CCyB (Scheme 2, block 3).

The CNB will also consider lowering the CCyB rate in cases where **cyclical risks are disappearing naturally** from institutions' balance sheets and systemic losses are not occurring and/or the available lending capacity is not falling below the threshold (Scheme 2, block 2, no). This situation may arise during a shallow recession or an economic slowdown, when the cyclical risks are for the most part disappearing naturally and the observed macro-financial situation is indicating a significant decrease in the probability of another sudden and significant contraction. The CNB does not expect the CCyB rate-reducing process to be dramatic and rapid in cases where cyclical risks are disappearing naturally

<sup>16</sup> In addition to a decrease in the absolute level of capital, a decrease in the capital ratio is interpreted as a decrease in capitalisation.

<sup>17</sup> In the situation at the end of 2019, credit risk materialisation of CZK 90 billion would have led to systemic losses. The absolute size of the CCyB was approximately CZK 38 billion on 31 December 2019.

from institutions' balance sheets. It also does not expect the CCyB buffer to be released in full (Scheme 2, block 5). The CCyB rate is likely to be lowered gradually to its standard level of 1% (Plašil, 2019).

It is clear that the course of the downward phase of the cycle, i.e. the nature of the decline in cyclical risks, itself plays a significant role in the process of releasing the CCyB. To provide a practical illustration of the decision-making process in various economic situations, in the next section we model<sup>18</sup> what happens in the hypothetical scenarios of a mild and severe recession and show the macroprudential authority's likely CCyB rate response.

### III.1 MODEL SCENARIOS OF A DECLINE IN CYCLICAL RISKS AND THE RELEASE OF THE COUNTERCYCLICAL CAPITAL BUFFER

The **Severe Recession** scenario is based on the adverse scenario used in the CNB's banking sector macro stress tests (CNB, 2019b). The decline in cyclical risks is accompanied by strong materialisation of those risks, reflected in systemic losses in the banking sector. Credit losses rise, profitability falls and, with a lag, risk weights grow. This growth in risk weights increases the capital requirement in absolute terms and therefore – all other things being equal – reduces the capital requirement and, with it, the available capacity for lending to the economy. The capital ratio falls below the regulatory requirement, and the available capacity for lending from the capital surplus gradually falls below the threshold.

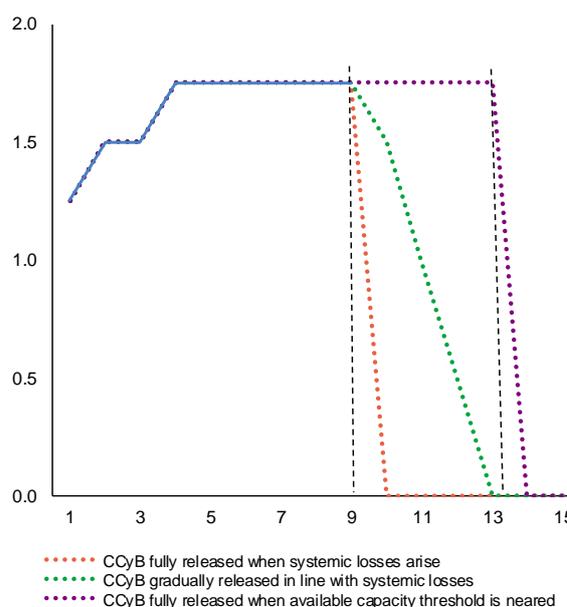
In this model scenario, the CCyB rate is highly likely to be lowered all the way to zero (Scheme 2, block 3). However, the level of credit loss materialisation may be such that even full release of the buffer will not be enough to ensure complete coverage of the systemic losses and sufficient available capacity for lending. Chart 5 presents three CCyB release options:

- **full release** when the banking sector's systemic losses arise (Chart 5, red);
- **gradual release** in line with the course of the banking sector's systemic losses (Chart 5, green);
- **full release** if the systemic losses cause the threshold for available capital capacity for lending to be neared (Chart 5, purple).

The options differ with regard to the risk of misdirected use of the released buffer. **Full release** of the buffer when the systemic losses arise produces the biggest increase in available lending capacity in the first few quarters after the losses occur. However, it generates a one-off and potentially – depending on the size of the buffer – relatively large capital surplus in excess of the regulatory requirement at the start of the recessionary phase of the cycle (see Chart 6). This surplus may not be used in full for the intended purpose of the release of the buffer. The option of **gradual release** based on a forward-looking estimate of the evolution of systemic losses therefore seems more appropriate. The full or gradual release in the first two options fosters smooth lending to the economy and favourable expectations regarding the banking sector's credit supply potential. The third option involves responding by **fully releasing** the buffer when the available lending capacity falls below the threshold. The release of the CCyB at a later stage of the cyclical decline on the one hand reduces the risk of institutions using the additional capital surplus for something other than the intended purpose, but on the other hand may adversely affect credit supply expectations.

Chart 5 CCyB release options

(%; x-axis: number of quarters)



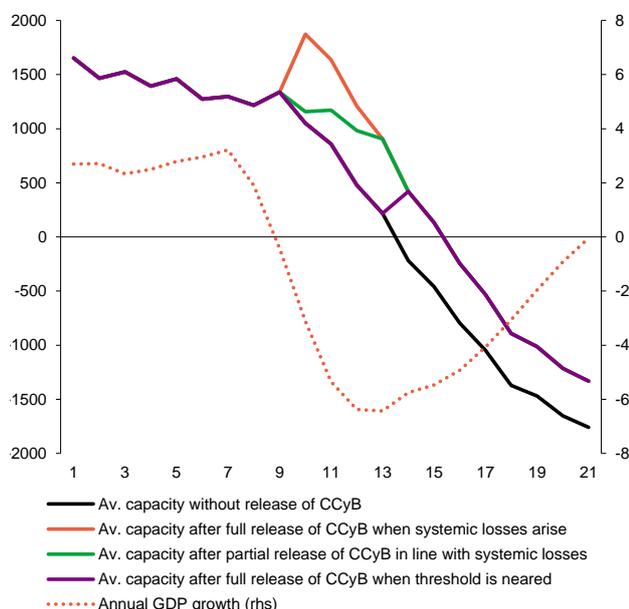
Source: CNB, authors' calculations.

<sup>18</sup> Using the modelling system developed for the macroprudential test of the solvency of the banking sector.

The **Mild Recession**<sup>19</sup> scenario describes the situation where the cyclical risks in institutions' balance sheets are for the most part disappearing naturally, systemic losses are not occurring and/or the available lending capacity is sufficient. Chart 7 illustrates the impact of the scenario on the capital surplus and available lending capacity. In the absence of a clear signal to lower the CCyB rate, it will be necessary to proceed cautiously and consider wider assessments and analyses, including the economic forecast, macro stress test results and conditional estimates of unexpected losses. **The release of the buffer will not be drastic and rapid.** It will probably be spread over time into several phases in which the CCyB rate may be lowered gradually (not necessarily regularly) – paying due regard to the relevant factors – probably as low as 1% (Scheme 2, block 5). This is the “standard” CCyB rate assumed by the CNB for the period after the cyclical risks have disappeared naturally.<sup>20</sup> This approach leaves space in case any remaining cyclical credit risks materialise or another sudden and sizeable economic shock occurs unexpectedly. It also potentially reduces the need to build up the CCyB in the next expansionary phase of the cycle and thus avoids fluctuations in institutions' required capital. In this situation, the release of the buffer helps to form favourable expectations about the credit supply potential among market

**Chart 6 Available capacity from the capital surplus and release of the CCyB in the Severe Recession scenario**

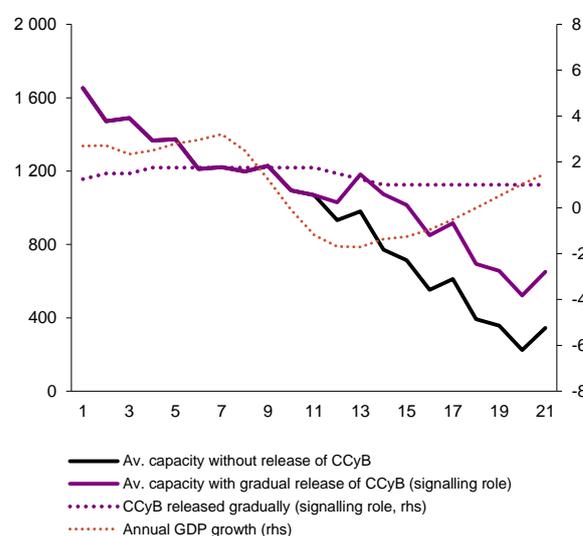
(CZK billions; right-hand scale in %; x-axis: number of quarters)



Source: CNB, authors' calculations.

**Chart 7 Available capacity from the capital surplus and release of the CCyB in the Mild Recession scenario**

(CZK billions; right-hand scale in %; x-axis: number of quarters)



Source: CNB, authors' calculations.

participants and to reduce uncertainty regarding the direction of macroprudential policy.

The release of the CCyB and its use for lending to the real economy (the credit impulse) may subsequently have a favourable effect on GDP growth. The potential of the credit impulse is of course also conditional on demand factors, but by releasing the CCyB, macroprudential policy creates conditions that can favourably influence the real economy.

### III.2 THE MACROECONOMIC POTENTIAL OF THE CREDIT IMPULSE ASSOCIATED WITH THE RELEASE OF THE COUNTERCYCLICAL CAPITAL BUFFER

The practical experience with assessing the relationship between the release of the CCyB, the amount of new loans provided, and GDP growth is very limited. The relationship between capitalisation and credit or GDP growth has been investigated primarily in the context of the (negative) effect of increasing the required capital or capital ratios of

<sup>19</sup> This scenario was chosen as the average of the baseline and adverse scenarios of the CNB's macro stress tests (CNB, 2019b).

<sup>20</sup> The standard CCyB rate is used to ensure that the buffer is created in sufficient time and to avoid the need to make a sizeable sharp adjustment to the rate when the cyclical risks have manifested themselves (see Plašil, 2019).

institutions.<sup>21</sup> Few studies have examined the impact of reducing the capital requirements during the downward phase of the cycle. Imbierowicz et al. (2018) state that when the capital requirements are reduced, institutions lend more to the economy and their capital ratio simultaneously decreases. Jiménez et al. (2017) describe another experience relating to the use of buffers in the context of the dynamic provisioning concept formerly applied in Spain. Institutions that increased their buffers during the expansionary phase of the cycle and were thus able to draw on them during an economic contraction reduced the supply of credit less.

The effect of the release of the CCyB on the amount of credit provided and in turn on the real economy in terms of GDP growth depends to a large extent on the actual use of the available capital capacity generated in this way for lending. The utilisation rate depends on the specific situation of the banking sector and the real economy. Increased risk aversion among institutions, insufficient credit demand and banking sector losses can potentially limit or eliminate the favourable effect on the supply of credit. In the ideal case, then, estimates of the impact of the release of the CCyB on the amount of credit provided and on GDP growth should be based on a model and data that take those factors into account. However, historical data that would make such modelling possible are not available.

As an alternative indication, we therefore chose an estimate obtained using a macro-financial model (Ehrenbergerová and Malovaná 2019) that provides a framework for forecasting selected macro-financial variables in the Czech economy. For the estimate, we assumed a muted link between credit growth and house prices during the recessionary phase of the cycle. Other factors that may limit the transmission of the released CCyB to the amount of credit provided and GDP growth were taken into account by assuming only partial use of the released buffer (25% and 50% of the total amount of capital released). Under these assumptions, full and immediate release of the CCyB from a rate of 1.75% to 0% and its subsequent use for lending over two years would lead to a cumulative increase in GDP of 0.3 pp and 0.7 pp respectively five years on from the time of release. The estimates therefore indicate that the use of available lending capacity connected with the release of the CCyB is associated in the longer run with a broader response in the domestic economy which helps to smooth the cyclical contraction. The positive effect of the release of the CCyB on GDP growth might also indirectly have a favourable effect on the capitalisation of institutions.

#### IV. CONCLUSION

This article described the CNB's approach to releasing the countercyclical capital buffer. In its decision-making, the CNB assesses whether and in what form the cyclical risks (mainly credit risks) in institutions' balance sheets are declining, or will decline in the near future, and how that decline will affect institutions' loss coverage capacity and available capital capacity for lending to the real economy. In a severe recession, it can be assumed with high probability that the CCyB rate will be lowered as far as zero, mainly to enable banks to absorb systemic losses without their ability to lend to the real economy being significantly disrupted. The speed of release may depend on the time profile and size of the banking sector's losses. The CNB is also prepared to release the CCyB in cases where systemic losses have not yet occurred but are highly likely to do so in the near future or if the available capital of banks for lending to the economy nears the threshold and is considered insufficient.

In a mild recession or an economic slowdown, the cyclical risks may disappear naturally without the banking sector simultaneously incurring systemic losses, and the available capital capacity for lending may remain sufficient. In such a situation, the CCyB rate will probably be gradually lowered to 1%. This leaves the CNB sufficient operating space for a macroprudential policy response if another shock occurs unexpectedly, and also avoids fluctuations in institutions' required capital.

The results of our macro-financial model indicate that the release of the CCyB can support the economy. However, the intensity of that support depends on numerous factors on the side of banks and their customers. These factors determine the actual utilisation of the credit potential of the released buffer.

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<sup>21</sup> See, for example, De Nicro (2015), de Ramon et al. (2016) and Fraisse et al. (2017). However, the relevance of these studies may be reduced by the significantly higher capital surplus of Czech banks compared with the banking systems of other countries.

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Contact:  
COMMUNICATIONS DIVISION  
GENERAL SECRETARIAT  
Tel.: 224 413 112  
Fax: 224 412 179  
[www.cnb.cz](http://www.cnb.cz)