Capital Requirements for European Banks in 2025

An Economic Analysis Based on Academic Literature

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The current regulatory and economic conditions legitimate a reduction in capital requirements for banks in France and Europe.

Academic literature is fairly unanimous in estimating that a decrease in banks' capital ratios in a period of deteriorating economic conditions - such as in 2025 - has significant favourable effects on the economic activity.

The best available scientific studies allow us to consider robustly that, in the current economic context, a 1% decrease in banks' capital requirements would rapidly increase credit supply by approximately 10%.

Academic literature suggests that regulatory requirements regarding minimum levels of capital for banks are effective in strengthening their soundness (cf. Malherbe, 2020 or Behn *et al.*, 2016).[1]

However, the setting of the obligation level and, even more so, its management over time are currently the subject of debate.

The so-called Basel III Accords provide for the possibility of varying the capital requirements of commercial banks according to the economic situation. In periods of vigorous credit growth and accumulation of systemic risk, banks are for example required to constitute an additional buffer of capital (up to 2.5% of risk-weighted assets) in the form of Common Equity Tier 1 (cf. Table 1). Symmetrically, this buffer must be released during a slowdown in economic activity to prevent capital regulation from becoming procyclical at the wrong time.

In Europe, the regulatory management of bank capital according to the economic situation is recent: the principle was introduced in 2016 and the first easing was decided during the Covid crisis. But in many countries, bank capital requirements have been increased in recent quarters.

In the United States, Basel III was largely implemented by the 2010 Dodd-Frank Act, which also provides for the possibility of a system of flexible capital up to 2.5% of risk-weighted assets. However, it has not been activated (and has therefore been maintained at 0% until now) because the Federal Reserve has decided not to strengthen bank capital requirements even when the economic situation was vigorous.[2]

The difference in capital requirements between European and American banks has thus increased in the recent past, even as the European economic situation became less and less dynamic relative to that of the United States.

1. The current regulatory and economic conditions legitimate a reduction in capital requirements for banks in France and Europe.

The aim here is to briefly recall two sets of well-known facts that have been widely analyzed elsewhere.

Applicable in the European Union on January 1, 2025, the final transposition of the Basel III Accords (known as "Basel IV") will again strengthen the capital requirements of banks. This

[1] Malherbe F. (2020), "Optimal Capital Requirements over the Business and Financial Cycles", *American Economic Journal: Macroeconomics*, v.12(3), pp.139–174.

Behn M., R.Haselmann and P.Wachtel (2016), "Procyclical Capital Regulation and Lending", *Journal of Finance*, v.71(2), pp.919-955.

[2] Cf. Corbae D. and P. d'Erasmo (2021), "Capital Buffers in a Quantitative Model of Banking Industry Dynamics", *Econometrica*, v.89(6), pp. 2975-3023.

transposition may hinder the financing of unrated companies, specialized financing (particularly for low-carbon transition projects), mortgage loans to individuals, and the use of internal risk assessment models by banks (thus increasing the cost of credit for economic actors). As a reminder, the capital of European banks has been trending upwards for 15 years and financing remains largely intermediated in Europe: the issue of bank capital requirements therefore has a macroeconomic dimension.

Furthermore, the Basel III regulation suggests the relevance of the credit-to-GDP gap as a leading indicator of systemic risk (Drehmann and Tsatsaronis, 2014)[3]. It is calculated as the difference between the ratio (credit to the private sector / GDP) and its long-term trend. The Bank for International Settlements has long analyzed this indicator. It was one of the few institutions, on this basis, to warn against the credit boom before the 2007 crisis. Graph 1 shows the BIS's credit-to-GDP gap for France over the long term. This indicator, in very negative territory for several quarters, does not suggest a situation of overheating with regard to the current credit supply in France. Certainly, the indicator is not without some statistical flaws[4], which explains why regulators usually base their decisions on other statistics - but most of these are also poorly oriented in 2025.[5]

In the deteriorating economic context of 2025, bank capital regulation could thus become globally procyclical in France and Europe as well. The countercyclical buffer rate was raised in France from 0.5% to 1% at the beginning of 2024. GDP fell in Germany and France at the end of 2024 and business climate indicators (PMI, ZEW, Insee...) have been significantly below their long-term levels for months, particularly in the manufacturing sector. Putting aside the specific Covid episode, it is necessary to go back to the beginning of the 2010s to find business climate indicators as poorly oriented (cf. Graph 2).

In this context, an easing of capital requirements would offer a possibility for action to support the economy and limit the under-accumulation of capital in France for several years. It would complement the monetary easing of the ECB initiated in mid-2024.

2. Academic literature suggests that a 1% decrease in banks' capital requirements, in the current context, would increase credit supply by approximately 10%.

While academic literature is abundant on the effects on bank lending of increases in capital ratios, studies on the influence of a decrease in these ratios are rare. This is partly explained by the fact that episodes of withdrawal of countercyclical capital buffers are recent. The main case is that of the year 2020 on the occasion of the Covid pandemic[6]. However, two earlier studies relate to conceptually similar regulations, in Slovenia and Spain at the turn of the 2010s.

2.1. Two old episodes: the Slovenian buffer and the Spanish dynamic provisioning

The Slovenian case (2008-2009)

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[3] Drehmann M. et K.Tsatsaronis (2014), "The credit-to-GDP gap and countercyclical capital buffers: questions and answers", *BIS Quarterly Review*, pp.55-73.

[4] In particular, the use of a Hodrick-Prescott filter, with the usual problems of border effects. Cf. Alessandri P., P.Bologna and M.Galardo (2022), "Financial Crises, Macroprudential Policy and the Reliability of Credit-to-GDP Gaps", *IMF Economic Review*, v.70, pp.625–667.

[5] Herz and Keller (2023) take the econometric view that regulatory decisions on countercyclical cushions are based less on the credit-to-GDP gap than on the dynamics of real estate prices and bad debts.

Cf. Herz B. and J.Keller (2023), "How Do Regulators Set the Countercyclical Capital Buffer?", *International Journal of Central Banking*, v.19(3), pp.99-137.

[6] Budnik et al (2021) report that in the European Union, the combination of supervisory and macroprudential policy measures has then freed up Tier 1 capital equivalent to around 2% of risk-weighted assets (RWA).

Cf. Budnik, K., I.Dimitrov, J.Groß, M.Jancokova, M.Lampe, B.Sorvillo, A.Stular and M.Volk (2021), « Policies in support of lending following the coronavirus (COVID-19) pandemic", *EBC Occasional Paper Series n°257*.

In 2006, the Slovenian central bank had created a capital buffer of 0.8% of risk-weighted assets for commercial banks. This mechanism had been withdrawn at the beginning of the financial crisis in 2008. The episode is similar to the release of a countercyclical capital buffer.

Sivec and Volk (2023)[7] study the effects of this natural experiment using an econometric model. They estimate that after the withdrawal of the capital buffer, the growth of credit available to a company is 11% higher with a bank previously subject to a buffer of 1% than with a bank not subject to the mechanism. Consequently, the withdrawal of the mechanism during the financial crisis of 2008-2009 effectively increased bank lending and supported activity.

One of the methodological interests of this study is that it focuses on an immediate and unanticipated easing of capital, unlike studies on adjustments of progressive and anticipated capital ratios, such as the Spanish dynamic provisioning mechanism.

The Spanish case (2008-2009)

Dynamic provisioning, introduced in Spain as early as 2000, offers a first example of a countercyclical capital mechanism in Europe. Two rate reductions had been decided during the financial crisis, in the 4th quarter of 2008 and then in the 4th quarter of 2009 (leading, in the latter, case to a zero rate).[8]

The study by Jiménez *et al.* (2017), published in the renowned Journal of Political Economy, suggests on the basis of this episode that a 1% decrease in capital requirements allowed Spanish companies to obtain a volume of credit from banks that were able to reduce their capital needs that was **9%** higher than the volumes of credit obtained in banks that did not benefit from the mechanism.[9]

The developments that follow suggest that this order of magnitude (between 9% and 11%) of the effects on credit of a decrease in capital requirements, in a period of deteriorating economic conditions, seems robust.

2.2. The effects of the decrease in capital requirements during the Covid crisis in Europe

The economic implications of the Covid crisis led European and national regulators to ease bank capital requirements in mid-2020. In the 2nd quarter of 2020, 13 countries of the European Union withdrew countercyclical buffers and only 5 countries retained a positive buffer (cf. Table 2). The average buffer rate in the European Union thus fell from 0.91% to 0.23% between the first and second quarters of 2020 (cf. Dursun-de Neef *et al.*, 2023)[10]. The releases were effective immediately after the decisions of the national authorities. They thus constituted an unanticipated and exogenous shock for the financial sector. These releases accompanied other measures of capital release and massive monetary and fiscal easing: consequently, methodologically cautious and careful analyses are required to isolate the effects linked exclusively to the withdrawal of the buffers.

Dursun-de Neef *et al.* (2023) examine how European banks adjusted their lending after the release of countercyclical mechanisms during the Covid pandemic. They estimate that a 1% reduction in capital requirements stimulated bank lending by approximately 5.6% of their total assets - an effect on the volume of loans of the order of 9%.[11]

This same study emphasizes that *the choice of the timing of the authorities' decision is important: it suggests that public decision-makers should not withdraw the buffers too late.* The significant braking effects of recent, past

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[7] Sivec V. and M.Volk (2023), "Empirical Evidence on the Effectiveness of Capital Buffer Release", *International Journal of Central Banking*, v.19(3), pp.139 173.

[8] Jiménez G., S.Ongena, J.-L.Peydro and J.Saurina (2017), "Macroprudential Policy, Countercyclical Bank Capital Buffers, and Credit Supply: Evidence from the Spanish Dynamic Provisioning Experiments", *Journal of Political Economy*, v.125(6), pp.2126-2177.

[9] The estimated effect on Spanish employment is +6%.

[10] Dursun-de Neef H.O., A.Schandlbauer and C.Wittig, "Countercyclical capital buffers and credit supply: Evidence from the COVID-19 crisis", *Journal of Banking and Finance*, v.154, 106930.

[11] Based on a stock of commercial bank loans in the eurozone in 2020 of around €15,000bn for total assets of around €25,000bn. Cf. Balance sheet composition and profitability | ECB Data Portal.

increases in capital ratios in the acceleration phase of the cycle persist over time, and *the decrease in capital requirements must therefore be rapid as soon as an economic slowdown is observed.*

Within the economists of the European Central Bank, Lang and Menno (2023)[12] estimate on the basis of a calibrated analytical model that a 1% reduction in capital requirements leads to a 10% increase in loans.

These authors emphasize *the asymmetry of the effects of a variation in capital requirements depending on whether the economic situation is favourable or not*. In the trough of the cycle, the low level of bank profits makes it more difficult to meet capital requirements by simply reserving profits, and the decrease in allocated credit may become necessary. An illustrative example may be useful here. Take the case of a bank whose capital requirement is 10%, which does not have a voluntary capital buffer and whose current profits are zero because the economic situation is deteriorating. For this bank, if the capital requirement is increased by 1 pp to reach 11%, the only way to meet this requirement is to reduce loans by **9.1%.**[13]

The study by Lang and Menno (2023) carried out within the ECB teams therefore confirms that a 1% decrease in capital requirements in a period of deteriorating economic conditions would have significantly favourable effects on credit supply (of the order of 10%) and economic activity.

2.3. Other useful studies to confirm the analysis

In the literature, the question is open as to whether banks react symmetrically to variations in capital requirements[14], *i.e.*, whether they increase their loans after a decrease in requirements (as in the event of the withdrawal of a countercyclical buffer) as much as they decrease them in the event of strengthened requirements.

The above developments relating to the removal of countercyclical buffers have suggested that the effect on credit supply of a variation in capital requirements is greater in the event of a decrease than in the event of an increase. In this context, it is interesting to mention the literature relating to the effects on loan supply of increases in capital requirements, such as those that have been decided by several countries in Europe in recent quarters (cf. Table 2).

On German data, Behn *et al.* (2016)[15] examine - in the renowned Journal of Finance - the evolution of bank loans following the bankruptcy of Lehman Brothers in 2008 and the adjustment of banks' internal estimates of their risks. At the time, German banks could already choose between internal risk ratings or a standard approach with fixed risk weightings. In response to the exogenous increase in credit risk at the end of 2008, German banks increased their capital charges for loans by around 0.5% according to the authors. The study estimates the associated decrease in the volume of loans to be between 2 and 4%, i.e. between 4 and 9% for 1% increase in capital charges. This effect is an average because the influence on the volume of loans is greater for companies with a turnover of more than €50 million than for SMEs and mid-caps.

On American data, Corbae and d'Erasmo (2021)[16] study, in the prestigious journal Econometrica, the effects of provisions of the 2010 Dodd-Frank Act, and in particular an increase in capital requirements

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[12] Lang J.H. and D. Menno (2023), "The state-dependent impact of changes in bank capital requirements", *European Central Bank Working Paper Series*, n°2828.

[13] Example in the opposite direction (i.e., at the top of the cycle) for a bank generating sufficient profits to allocate them to additional equity capital and comply with prudential ratios: on the basis of a cost of equity capital of 8%, a cost of debt of 2% and a loan reloading rate of 50%, then the marginal cost of financing a new loan is 50%*(8%-2%)=3 bp. Since the elasticity of loan demand to its rate is around 3, a 1% increase in capital requirements will ultimately weigh on loan volume at the high end of the cycle by just 0.10%.

[14] Dursun-de Neef H.O., A.Schandlbauer and C.Wittig, "Countercyclical capital buffers and credit supply: Evidence from the COVID-19 crisis", *Journal of Banking and Finance*, v.154, 106930.

[15] Behn M., R.Haselmann and P.Wachtel (2016), "Procyclical Capital Regulation and Lending", *Journal of Finance*, v.71(2), pp.919-955.

[16] Corbae D. and P. d'Erasmo (2021), "Capital Buffers in a Quantitative Model of Banking Industry Dynamics", *Econometrica*, v.89(6), pp.2975-3023.

linked to the transition from Basel II to Basel III. Redistributive effects occur between large banks and small banks, and in total the net effect is a decrease in total bank loans of nearly 9% in the long term for 1% increase in capital requirements.

Finally, Fraisse *et al.* (2019)[17] suggest, in the prestigious Management Science, that a 1% increase in capital requirements would reduce loans by 2.3% to 4.5% depending on the situation. At the ECB, Cozzi *et al.* (2020)[18] suggest that a 1% increase in the capital ratio weighs on loan supply by 3.5%.

In total, studies relating to the effects on loan supply of a 1% increase in capital requirements suggest an order of magnitude of between 2% and 9%. This order of magnitude is quite compatible with that of 10% in the event of a decrease in a buffer obtained in the studies presented in section 2.2. above. As indicated in section 2.2., the academic literature estimates that the effect on credit supply of a variation in capital requirements is greater in the event of a decrease than in the event of an increase.

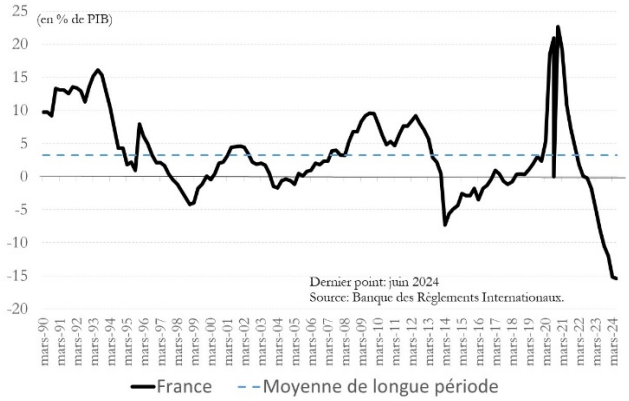
The best available scientific studies allow us to consider robustly that, in the current economic context, a 1% decrease in banks' capital requirements would rapidly increase credit supply by approximately 10%.

[17] Fraisse H., M.Lé and D.Thesmar (2019), « The real effects of bank capital requirements", *Management Science*, v.66(1), pp.5–23.

[18] Cozzi G., M. Darracq-Pariè, P.Karadi, J.Korner, C.Kok, F.Mazelis, K.Nikolov, E.Rancoita, A.Van der Ghote and J.Weber (2020), "Macroprudential policy measures: macroeconomic impact and interaction with monetary policy", *ECB Working Paper Series n°2376*, pp.1–65.

APPENDIX

Graph 1: France's Credit-to-gap Ratio over the long term



Graph 2: Business climate indicator (manufacturing sector) in France over the long term

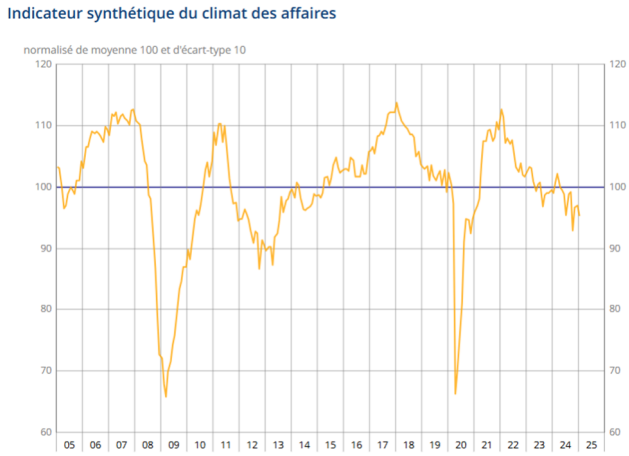


Table 1: Reminder of regulatory capital requirements for banks[19]

Table 1. Basel I, Basel II, and Basel III Capital Requirements
(Percent of risk-weighted assets)

	Basel I	Basel II	Basel III 1/
Quantity of Capital			
Minimum Total Capital	8.0	8.0	8.0
Capital Conservation Buffer 2/	n/a 3/	n/a	2.5
Minimum Total Capital Plus Conservation Buffer	n/a	n/a	10.5
Countercyclical Buffer 2/	n/a	n/a	0–2.5
Global Systemically Important Banks (G-SIB) Surcharge 2/	n/a	n/a	1–2.5
Minimum Total Capital Plus Conservation Buffer, Countercyclical Buffer, and G-SIB Charge	8.0	8.0	11.5–15.5
Leverage Ratio 4/	n/a	n/a	3.0
Quality of Capital			
Minimum Common Equity Capital 5/	n/a	n/a	4.5
Minimum Tier 1 Capital	4.0	4.0	6.0
Hybrid Capital Instruments with Incentive to Redeem 6/	Eligible	Eligible	Not eligible

Sources: BIS 2011 and 2013.
Note:
1/ Effective as of 2019. In the interim, several phase-in arrangements are in force.
2/ Consisting of tangible common equity.
3/ Not applicable.
4/ Ratio of Tier 1 capital to total assets.
5/ Goodwill and deferred tax assets are to be deducted in the calculation of common equity Tier 1 capital.
6/ Hybrid capital instruments with an incentive to redeem through features such as step-up clauses, which, under Basel II counted toward Tier 2 capital and up to 15 percent of the Tier 1 capital base, will no longer be eligible as capital. Under Basel III only dated subordinated debt will be deemed Tier 2 capital.

[19] Dagher J., G.Dell'Ariccia, L.Laeven, L.Ratnovski and H.Tong (2016), "Benefits and Costs of Bank Capital", *IMF Staff Discussion Note*.

Table 2 : Countercyclical capital buffer rates in European countries (in % of capital)

Table 1
Applicable CCyB rates in 2014Q1-2024Q1.

	2014Q1	2014Q2	2014Q3	2014Q4	2015Q1	2015Q2	2015Q3	2015Q4	2016Q1	2016Q2	2016Q3	2016Q4	2017Q1	2017Q2	2017Q3	2017Q4	2018Q1	2018Q2	2018Q3	2018Q4	2019Q1	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3	2021Q4	2022Q1	2022Q2	2022Q3	2022Q4	2023Q1	2023Q2	2023Q3	2023Q4	2024Q1
AT				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AU									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
BE								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	0,5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BG								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	1	1,5	1,5	1,5	2	2
CY									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5
CZ								0	0	0	0	0	0,5	0,5	0,5	0,5	0,5	0,5	1	1	1,25	1,25	1,5	1,5	1,75	1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	1	1,5	2	2,5	2,25	2	2
DE				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,25	0,25	0,25	0	0	0	0	0	0	0	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75
DK				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	1	1	0	0	0	0	0	0	0	0	0	0	0	1	2	2,5	2,5	2,5	2,5
EE									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1,5	1,5
ES									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FI					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FR					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,25	0,25	0,25	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	0,5	1
GR									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HR									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	0,5	1	1
HU									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IE									0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	1	1
IS										0	0	0	1	1	1	1,25	1,25	1,25	1,25	1,25	1,25	1,75	1,75	1,75	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2,5
IT									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LT						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
LU									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,25	0,25	0,25	0,25	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
LV									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MT									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NL									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
NO						1	1	1	1	1,5	1,5	1,5	1,5	1,5	1,5	2	2	2	2	2	2	2	2	2,5	1	1	1	1	1	1	1	1	1	1,5	1,5	2	2,5	2,5	2,5	2,5	2,5
PL									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PT									0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RO									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	0,5	0,5	0,5	1	1
SE							1	1	1	1,5	1,5	1,5	2	2	2	2	2	2	2	2	2	2	2,5	2,5	0	0	0	0	0	0	0	0	0	1	1	1	2	2	2	2
SI									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5
SK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	0,5	0,5	1,25	1,25	1,25	1,25	1,5	1,5	1,5	1,5	1	1	1	1	1	1	1	1	1	1	1,5	1,5	1,5
UK					0	0	0	0	0	0	0	0	0	0	0	0	0	0,5	0,5	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	2

Note: empty cell indicates that the CCyB rate was not formally set and 0 means that it was set at 0%.
Source: own work based on websites of national authorities and data from the ESRB, BIS