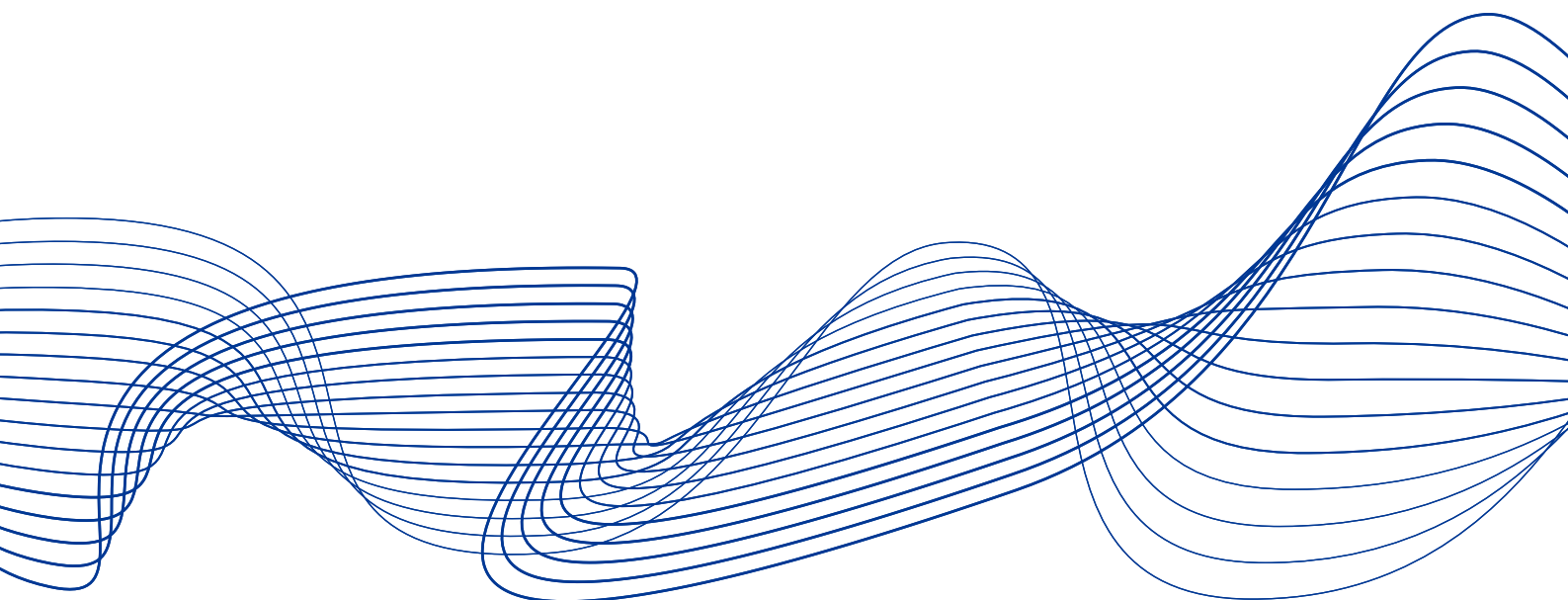


A Review of Macroprudential Policy in the EU in 2019

April 2020



ESRB
European Systemic Risk Board
European System of Financial Supervision

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Executive summary

In 2019 macroprudential policymakers continued to operate in an environment of elevated financial stability risks. Generally, the macro conditions remained a source of concern: first, the medium-term outlook for global economic growth remained weak amid elevated (geo)political and policy uncertainties; second, asset prices continued to be subject to the threat of a sudden reassessment of risk premia; third, slowing growth momentum and rising risk premia could further test debt sustainability in the public and private sectors across the European Union (EU); and fourth, over time, the macroeconomic environment might pose fundamental challenges to traditional business models of EU banks, insurers and pension schemes. Furthermore, these vulnerabilities might be exacerbated by the implications of the current low or even negative yield curve. Finally, risks to financial stability might result from climate change, cyber incidents and disruptions in critical financial infrastructures.¹

Against this backdrop of elevated risks, macroprudential policymakers used the tools at their disposal to target risks in the banking sector and beyond. Most macroprudential measures were taken to address arising or prevailing cyclical risks in the banking sector. However, the growing importance of the non-bank financial system has resulted in an increased focus on assessing and tackling risks and vulnerabilities beyond the banking sector. This Review provides an overview of developments in the macroprudential policy framework and of the macroprudential measures for both banks and non-banks that were adopted or were in place in 2019. The Review also provides a light-touch update on the release of the countercyclical capital buffers and the recalibration/removal of other capital buffers for banks in the light of the COVID-19 pandemic which had been announced by 31 March 2020. The Review covers actions of EU institutions, EU Member States or Member States of the European Economic Area (EEA), i.e. EU Member States plus Iceland, Liechtenstein and Norway, if information is available to the ESRB.²

Macroprudential measures for the banking sector

Macroprudential policy for the banking sector was used predominantly against cyclical risks, but seemed to plateau, as the number of newly adopted measures decreased compared with the previous year. With more structural and cyclical measures in place, 17 out of 31 EEA Member States adopted in total fewer new domestic macroprudential measures (excluding reciprocating actions) than in 2018. Against the backdrop of the prevailing low interest rate environment, most actions in 2019 were of a tightening nature to address cyclical risks. These actions include first-time introductions of and increases in countercyclical capital buffer (CCyB) rates, as well as borrower-based measures (BBMs) such as caps on debt service-to-income (DSTI) ratios, loan-to-value (LTV) ratios and loan maturities.

¹ The COVID-19 pandemic led to the crystallisation of several of these risks, and the fallout was still unfolding at the time of publication. However, this Review does not cover the consequences of the pandemic for financial stability and macroprudential policy, as the period covered precedes the pandemic.

² Any reference to "Member State(s)" includes Iceland, Liechtenstein and Norway, unless otherwise indicated or implied by the context. Any reference to the Capital Requirements Directive IV (CRD IV) or the Capital Requirements Regulation (CRR) in the context of the European Economic Area (EEA) European Free Trade Association (EFTA) States (i.e. Iceland, Liechtenstein and Norway) is a reference to their national regimes.



Measures targeting predominantly cyclical risks in banks

In 2019 several Member States tightened their CCyBs, in line with the broader trend of macroprudential tightening to address cyclical risks.

In four Member States (BG, DK, FR, IE), strictly positive CCyB rates came into effect for the first time in 2019, and three additional Member States (BE, DE, LU) announced newly strictly positive CCyB rates for 2020. In addition, increases to already strictly positive CCyB rates came into effect in six Member States (CZ, IS, LT, NO, SE, SK) throughout the year. However, there are differences between Member States, where countries with similar credit developments either did or did not activate the CCyB. These differences might reflect different macroeconomic conditions, different preferences regarding the timing of CCyB activations and differences between the national frameworks for setting the CCyB. By 31 March 2020, out of the 13 EEA Member States plus the UK with a strictly positive CCyB rate at the end of 2019, 12 had released and/or cancelled upcoming increases in their CCyB rates either fully (BE, DE, DK, FR, IE, IS, LT, SE, UK) or partially (BG, CZ, NO) in response to the COVID-19 pandemic.

Most Member States that accumulated vulnerabilities in the residential real estate (RRE) sector activated macroprudential measures to address these vulnerabilities.

As identified in the recent ESRB analysis on vulnerabilities in the residential real estate sectors of EEA Member States, the key vulnerabilities relate to house price developments, household indebtedness and lending standards and dynamics.³ In this context, the ESRB issued country-specific recommendations to Belgium, Denmark, Luxembourg, the Netherlands, Finland and Sweden, as well as warnings to the Czech Republic, Germany, France, Iceland and Norway, due to vulnerabilities in their RRE sectors. To mitigate RRE risks, 12 Member States adopted or recalibrated primarily borrower-based measures in 2019.

Regarding capital-based measures, booming real estate markets coupled with declining risk weights in several Member States prompted national authorities to take action targeting credit institutions' risk weights.

Current measures under Article 124 of the Capital Requirements Regulation (CRR) targeting risk weights of banks using the standardised approach (SA) were mostly used to keep stricter requirements when the Capital Requirements Directive IV (CRD IV) came into effect. As Article 164 of the CRR targeting risk weights of banks using the internal ratings-based (IRB) approach was deemed inadequate, the four Member States which wanted to take action used risk-weight floors or add-ons. In 2019 Estonia joined Belgium, Finland and Sweden as the fourth country having used a national flexibility measure under Article 458 of the CRR for that purpose.⁴

Only a few Member States took measures targeting the financial stability risks in the commercial real estate (CRE) sector.

Data availability and quality are poor regarding EU CRE markets. In those Member States for which data on CRE prices are available, developments point to a build-up of vulnerabilities resulting from investors' search-for-yield behaviour in the low interest rate environment. Macroprudential policies addressing CRE-related financial stability risks have to date been rarely applied, and, in 2019, only Hungary implemented a new preventive CRE measure.

³ **Vulnerabilities in the residential real estate sectors of the EEA countries**, ESRB, September 2019.

⁴ On 17 December 2019 De Nederlandsche Bank (DNB) decided to impose a risk-weight floor on real estate exposures. The floor increases with the LTV ratio of the underlying mortgage loans. Following the authorisation procedures by EU authorities, the measure was intended to be adopted by the end of March 2020. However, on 17 March, **in response to the COVID-19 pandemic, the DNB decided to postpone its adoption.**



Given the level of systemic risk identified and the few macroprudential measures taken to address it, further policy action should be considered by affected Member States.

Similarly to real estate lending, consumer lending in several Member States deserved monitoring. In 2019 credit for consumption was the fastest-growing segment of bank lending in the EU. Although banks' exposure to this segment of lending is generally still small, consumer credit bears a higher risk profile than most other types of loans. In a prolonged low interest rate environment, there is the risk that banks shift their portfolios towards this segment to increase the return on their assets, as already observed in central and eastern European (CEE) countries. Banks may also be inclined to relax credit standards due to market pressure. However, following an extended period of easing, banks in several countries have tightened credit standards for consumer lending in recent quarters. Going forward, developments in consumer lending should therefore be closely monitored in several Member States.

Risks related to banks' lending to non-financial corporations (NFCs) remain high, while only a few macroprudential tools to address such risks are available. In 2019 positive growth and the low interest rate environment led to further declines in NFCs' debt service-to-income ratios and their debt-to-gross domestic product (GDP) ratios across most Member States. Yet NFC indebtedness remains high in many countries, and when the next recession strikes the more fragile companies might face distress. Risks are higher in Member States with shallow financial markets and traditional financial intermediation, as in these countries loans to the NFC sector usually make up a significant share of banks' total exposures to the real economy. National authorities have limited macroprudential tools at their disposal to target NFC risk. In this context, France limited the exposure of systemic banks to large, highly indebted corporates by means of a national flexibility measure under Article 458 of the CRR. Borrower-based measures for NFCs have yet to be developed in most Member States.

Measures targeting predominantly structural risks in banks

In light of structural vulnerabilities, macroprudential policymakers took measures in the form of systemic risk buffers. Seventeen EEA Member States had a systemic risk buffer (SyRB) in place in 2019, targeting in particular (i) risks stemming from economic openness, but also (ii) high levels of non-performing loans (NPLs) and, in an overlapping manner with buffers for systemically important institutions (SIIs), (iii) high concentration in and a large size of the banking sector. The revised CRD abolishes the use of the SyRB for SII risks, and some Member States will therefore have to revise their capital buffer policies by the end of 2020 when the revised CRD enters into force. When using the other systemically important institution (OSII) buffer, some host authorities, especially in central and south-eastern Europe, could be constrained by the O-SII buffer cap for subsidiaries. By 31 March 2020, six Member States had removed (FI), suspended (HU) or lowered either partially (DK for the Faroe Islands, NL) or fully (EE, PL) their SyRBs in response to



the COVID-19 pandemic.⁵ In addition, Ireland had decided to defer the introduction of the SyRB, and Hungary had decided to temporarily suspend revisions to the 0% SyRB currently in place.⁶

In addition, macroprudential policymakers undertook the annual revision of their policies for SIIIs, which vary widely across countries. In particular, calibration methods used by Member States to determine the O-SII buffer levels vary widely, leading to differences in institutions covered and especially in buffer levels. The heterogeneity of buffer levels is not explained by institutions' systemic nature, assets in relation to GDP or Member States' position in the financial cycle. In this respect, it would be important to understand the reasons for variability in the O-SII buffer-setting practices of some Member States. By 31 March 2020 Finland⁷ and the Netherlands⁸ had reduced the level of the O-SII buffer for one bank in their respective jurisdictions in response to the COVID-19 pandemic.⁹

Low profitability as well as other structural vulnerabilities are difficult to address directly with macroprudential tools. To address low profitability concerns, other actions might be warranted, including continued efforts to improve operational efficiency, the restructuring of business models, mergers and the orderly exit of unviable institutions. Resolution authorities, together with competent authorities, should continue guaranteeing the timely application of the provisions of the Bank Recovery and Resolution Directive (BRRD). This would ensure the orderly exit of institutions with non-viable business models.

Measures targeting liquidity risks in banks

In the current environment of ample liquidity supported by accommodative monetary policy in most EU countries, liquidity and funding risks appear to be subdued, although some concerns remain with respect to funding in foreign currencies. Measured by the liquidity coverage ratio (LCR), the European banking sector has, on average, an ample short-term liquidity position. However, currency mismatches between liquid assets and short-term liabilities and/or over-reliance on market-based financing and/or central bank financing could be a cause for concern in some countries if markets were to dry up or if long-term monetary policy operations were to be scaled down. As regards funding in foreign currencies, as shown by recent analyses by the European Central Bank (ECB)¹⁰ and the European Banking Authority (EBA)¹¹, a potential cause for concern is that a significant number of banks did not meet LCRs in US dollars (USD) or pounds

⁵ **Finland** removed its SyRB; **Estonia** reduced its SyRB from 1% to 0%, **Poland** reduced its SyRB from 3% to 0%; **the Netherlands** lowered its SyRB, from its current 3% of global risk-weighted exposures to 2.5% for ING, 2% for Rabobank and 1.5% for ABN Amro, and **Denmark** temporarily reduced the SyRB in the Faroe Islands from 3% to 2%.

⁶ **Ireland** deferred the introduction of the SyRB, **Hungary** suspended the application of the SyRB.

⁷ After removing the SyRB, the O-SII buffer became the binding buffer for the three Finnish O-SIIs. After the reduction of the O-SII for OP Financial Group from 2% to 1%, the additional capital buffer requirements amount to 2% for Nordea, 1% for OP Financial Group, 0.5% for Municipal Finance Plc and 0% for all other Finnish banks; see **"Macroprudential decision: FIN-FSA Board lowers credit institutions' capital requirements"**, FIN-FSA, press release, 17 March 2020.

⁸ After reducing the SyRB for ABN Amro to 1.5%, the O-SII buffer of 2% would have become binding. In order to avoid this and provide a release of capital De Nederlandsche Bank also reduced the O-SII buffer to 1.5%; see **"DNB temporarily lowers bank buffer requirements to support lending"**, DNB, DNBulletin, 23 March 2020.

⁹ On 1 April **Hungary** decided to release O-SII buffer requirements from 1 July 2020. The institutions affected must gradually in three years from 2022 onwards rebuild their capital buffer initially prescribed for 2020

¹⁰ **ECB Banking Supervision 2019 Liquidity Stress Test (LiSt 2019).**

¹¹ **Update on the EBA report on liquidity measures under Article 509 (1) of the CRR**, EBA, 20 March 2019.



sterling (GBP), which might exacerbate market pressures if the sources of foreign exchange funding were to become more expensive or diminish.

Cross-border banking, reciprocity and the use of the CCyB for third-country exposures

In 2019 the ESRB issued a recommendation to reciprocate the Swedish national flexibility measure. The European banking sector is intertwined, with non-domestic banks playing important roles in a significant number of Member States. To avoid regulatory arbitrage, the ESRB's reciprocation framework was used in 2019 when the Swedish national flexibility measure on risk weights was recommended for reciprocation by other EEA Member States. By the end of 2019, seven EEA Member States, including the two with the biggest exposures (DK, FI), had reciprocated the Swedish measure.

Setting a CCyB for third countries at a rate that is different from the one prescribed by the third-country authority has not been unilaterally recommended by the ESRB. The list of third countries found to be material for the EU banking sector did not change in 2019 and therefore contains China, Hong Kong, Russia, Singapore, Switzerland, Turkey and the United States. The monitoring of the material third countries did not warrant setting a CCyB rate different from the rate prescribed by the third-country authority in 2019.

Macroprudential measures beyond banks

The low interest rate environment is one of the main systemic risks identified for the insurance sector, and a few countries have taken measures to increase resilience or have intensified monitoring. The low interest rate environment reduced (re)insurers' solvency over 2019 and, in certain cases, profitability as well. Life insurers that have provided guaranteed returns to policyholders are particularly affected, as they find it increasingly difficult to invest in assets that produce a sufficient spread over the interest rates that they have guaranteed. Belgian authorities have taken new measures to increase the resilience of insurers to the low interest rate environment, while Austrian, French and Italian authorities have enhanced their monitoring of the effects it is having on their markets.

Similarly, institutions for occupational retirement provision (IORPs) face a challenging landscape and would be affected by a reassessment of risk premia, while EU law does not provide competent authorities with any macroprudential tools. In a context of low interest rates, heightened market volatility and demographic and labour market changes, the 2019 IORP stress test conducted by the European Insurance and Occupational Pensions Authority (EIOPA) assessed the resilience of IORPs to a sudden reassessment of risk premia. The adverse scenario resulted in an aggregate shortfall between total assets and total liabilities of around 2% of the 2018 GDP of the participating countries. Currently, an EU-wide macroprudential framework for the IORP sector does not exist. However, the IORP II Directive aims to improve the regulatory framework for and the functioning of the IORP sector, but has yet to be fully transposed by 17 Member States.



The development of a macroprudential framework in the EU for investment funds continues in line with the ESRB's Recommendation on liquidity and leverage risks in investment funds.¹²

Large redemptions from investment funds could result in abrupt asset price movements, partially due to liquidity mismatches and leverage, with spillover effects owing to the sector's interconnectedness. In 2019 the European Securities and Markets Authority (ESMA) published guidelines on liquidity stress testing in undertakings for collective investment in transferable securities (UCITS) and alternative investment funds (AIFs). Fund managers will need to apply a comprehensive set of guidelines when designing the scenarios, policies and frequency of liquidity stress tests for the funds they manage. As demonstrated in several cases in 2019, the use of liquidity management tools can allow fund managers to avoid fire sales and effectively manage unexpectedly high fund redemptions.

Brexit negotiations have highlighted the risks to financial stability stemming from the potential loss of access to financial market infrastructures (FMIs).

In the course of the year both the financial industry and policymakers were repeatedly faced with the possible crystallisation of the risk of a no-deal withdrawal of the United Kingdom (UK) from the EU. Among other things, contingency plans to mitigate the disruption of such an event highlighted the critical function that central counterparties (CCPs), trade repositories and centralised securities depositories (CSDs) play in enabling the smooth functioning of capital markets, the high levels of cross-border activity displayed by many financial service segments, and the potential magnitude of the impact of disruptions to the provision of these services. Authorities at both the EU and the national levels have reacted to these risks by putting policies in place to prevent the cliff-edge effect and ensure continued access to these infrastructures, with the objective of giving the industry sufficient time to implement suitable contingency plans.

¹² [Recommendation ESRB/2017/6](#).



1 Introduction

In 2019 macroprudential policymakers continued to operate in an environment of elevated financial stability risks. Generally, the macro conditions remained a source of concern: first, the medium-term outlook for global economic growth remained weak amid elevated (geo)political and policy uncertainties, including international trade disputes and decreasing international cooperation; second, asset prices continued to be subject to the threat of a sudden reassessment of risk premia, possibly leading to sharp corrections, with potential disruptions to market functioning and a possible weakening of economic conditions; third, slowing growth momentum and rising risk premia could further test debt sustainability in the public and private sectors across the EU; and fourth, over time, the macroeconomic environment might pose fundamental challenges to traditional business models in the financial sector, also magnifying existing vulnerabilities in EU banks, insurers and pension schemes. Furthermore, these vulnerabilities might be affected by the implications of the current low or even negative yield curve. Finally, risks to financial stability might result from climate change, cyber incidents and disruptions in critical financial infrastructures.¹³

Against this backdrop of elevated risks, macroprudential policymakers used the tools at their disposal. Most macroprudential measures were taken to address arising or prevailing cyclical risks in the banking sector. However, the growing importance of the non-bank financial system has resulted in an increased focus on assessing risks and vulnerabilities beyond the banking sector. For instance, a few countries used their national toolkit to increase the resilience or to intensify the monitoring and supervision of the insurance sector, which has been particularly affected by the low interest rate environment. Another example is the development of a macroprudential framework in the EU for investment funds, which continued in line with the ESRB's Recommendation on liquidity and leverage risks in investment funds.¹⁴ EU legislators are taking steps to establish recovery and resolution frameworks beyond the banking sector, in particular for insurers and critical financial market infrastructures such as central counterparties.

This Review provides an overview of developments in the macroprudential policy framework and of the macroprudential measures adopted in 2019 by EU and, where available, EEA Member States. The Review is an update and a further development of the reports that the ESRB has been publishing since 2015.¹⁵ These reports draw on the notifications sent to the ESRB by the national authorities and more widely on input from ESRB members.¹⁶

¹³ The COVID-19 pandemic led to the crystallisation of several of these risks, and the fallout was still unfolding at the time of publication. However, this Review does not cover the consequences of the pandemic for financial stability and macroprudential policy, as the period covered precedes it.

¹⁴ [Recommendation ESRB/2017/6](#).

¹⁵ [A Review of Macroprudential Policy in the EU in 2018](#), ESRB, April 2019; [A Review of Macroprudential Policy in the EU in 2017](#), ESRB, April 2018; [A Review of Macroprudential Policy in the EU in 2016](#), ESRB, April 2017; [A Review of Macroprudential Policy in the EU in 2015](#), ESRB, May 2016; and [A review of macroprudential policy in the EU one year after the introduction of the CRD/CRR](#), ESRB, June 2015.

¹⁶ The CRR/CRD IV and the various ESRB Recommendations require the national authorities to notify macroprudential measures to the ESRB (see Recital 9 of [Recommendation ESRB/2011/3](#), Recommendation C.3 of [Recommendation ESRB/2013/1](#) and Recommendation B.1 of [Recommendation ESRB/2015/2](#)).



The Review is structured in four parts. The first part describes the changes in policy frameworks at both the EU and the national levels. The second part outlines the national macroprudential measures to target risks in banking that were adopted in 2019. It first reviews certain trends seen across different instruments and then turns to specific instruments. The third part covers risks beyond banks and related policies. The fourth part consists of four special features, published in a second document: Special Feature A describes the new role that the ESRB has been given by the CRD V and CRR II with respect to coordinating macroprudential policies and acting as a notification hub; Special Feature B sets out the framework for monitoring material third countries for the purpose of potentially setting a countercyclical capital buffer for exposures of EU banks to such countries; Special Feature C describes the analytical framework for assessing cross-border effects of macroprudential policy as developed by the ECB; and Special Feature D considers the intricate relationship between real estate taxation and macroprudential policy. Annexes, published in a third document, provide further information.

In addition to this Review, the ESRB provides information on macroprudential measures on its website. An overview of macroprudential measures is published on a quarterly basis.¹⁷ A separate overview with currently active capital buffers that apply to domestic banks in each Member State is updated also on a quarterly basis.¹⁸ The CRD IV requires designated authorities to notify each quarter certain information related to the setting of the CCyB to the ESRB, which is also published.¹⁹ Furthermore, the website contains information on the reciprocation of national macroprudential measures.²⁰ Finally, the ESRB publishes a list of all the macroprudential authorities and designated authorities in the Member States.²¹ In response to the COVID-19 pandemic, the ESRB started to collect information on national measures targeting the negative effects on financial stability. The new database provides information on the policy measures taken by ESRB Member States, EU institutions and national authorities in response to the COVID-19 pandemic and is published on the ESRB website.²²

¹⁷ **Overview of national macroprudential measures.**

¹⁸ **Overview of national capital-based measures.**

¹⁹ **Countercyclical capital buffer.**

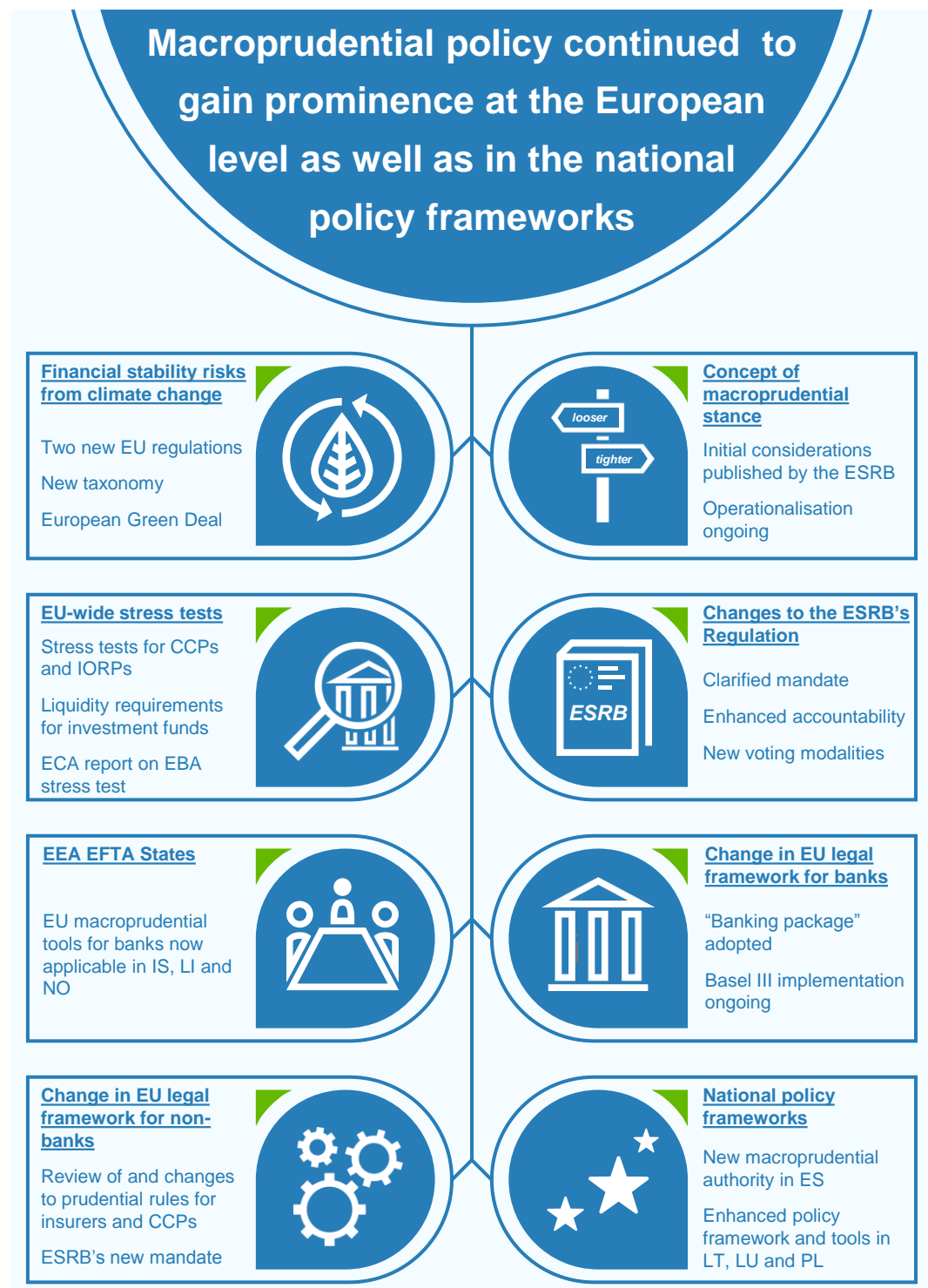
²⁰ **Reciprocation of measures.**

²¹ **Macroprudential authorities and designated authorities.**

²² The information provided in the database is not limited to macroprudential measures, but also encompasses a broader category of measures, such as microprudential, fiscal, market-based and monetary policy measures. The database is updated on a regular basis and published on the ESRB website under the new section "**Policy measures in response to the COVID-19 pandemic**".



2 Developments in the macroprudential policy framework



This section describes the main developments in the macroprudential policy framework. It shows that macroprudential policy continued to gain prominence at the European level as well as in the national policy frameworks. This includes a number of important developments beyond the use of the macroprudential tools available to ESRB member institutions. In particular, ESRB members are further developing the policy framework by operationalising the concept of “macroprudential stance” and are exploring ways to better account for risks to financial stability that have been less prominent in the past, notably those associated with climate change and cybersecurity. There have also been a number of important legislative developments at the EU and national levels affecting macroprudential policy for the banking sector and beyond, as well as changes to the governance of macroprudential policy.

2.1 Developments at the European level

2.1.1 Identifying risks to financial stability from climate change

Climate change has been identified as a risk to financial stability and measures are being taken to address this. Already in 2015, the Bank of England's then Governor, Mark Carney highlighted in a speech the financial stability implications of climate change and, in particular, the fact that the traditional time horizons of policymakers are shorter than the horizon over which the effects of climate change will be mostly felt.²³ Climate change is seen as a source of financial instability via two channels. The first channel is the increase in the frequency and intensity of climate-related hazards, or physical risks. The second channel is the change in asset prices that could result from a rapid transition towards a low-carbon economy, or transition risks. A recent publication by the Bank for International Settlements (BIS) provides a comprehensive overview of climate change and financial stability.²⁴

In 2019 the Disclosure Regulation²⁵ and the Low Carbon Benchmarks Regulation²⁶ entered into force. These two regulations aim, respectively, to improve transparency for financial market participants and financial advisers with regard to the integration of sustainability risks into their processes, and to provide methodologies for EU climate benchmarks. In addition, the European Commission also published guidelines²⁷ to improve corporate disclosure of climate-related information.

The European Parliament and the EU Council agreed, in December 2019, on the creation of a classification system (taxonomy) for environmentally sustainable economic activities. This agreement sets out a general framework for what can be classified as an “environmentally sustainable economic activity”. Such activities will need to provide a “substantial contribution” to at

²³ Carney, M., “**Breaking the tragedy of the horizon – climate change and financial stability**”, speech at Lloyd's of London, 29 September 2015.

²⁴ **The green swan – Central banking and financial stability in the age of climate change**, BIS, January 2020.

²⁵ **Regulation (EU) 2019/2088**.

²⁶ **Regulation (EU) 2019/2089**.

²⁷ **Guidelines on non-financial reporting (methodology for reporting non-financial information) (2017/C 215/01)**, European Commission, July 2017.



least one of the six following environmental objectives: (i) climate change mitigation; (ii) climate change adaptation; (iii) sustainable use and protection of water and marine resources; (iv) transition to a circular economy; (v) pollution prevention and control; and (vi) protection and restoration of biodiversity and ecosystems. In addition, such activities will need to avoid doing “significant harm” to any of the environmental objectives. The list of sustainable economic activities will be assessed in 2020 based on the report from the European Commission Technical Expert Group on Sustainable Finance, which published in 2019 a technical report with an overview of all the proposed activities.²⁸

In December 2019 the European Commission presented a “European Green Deal”, which defines a new growth strategy to make the EU climate-neutral by 2050. This communication presented a new growth strategy and included an initial roadmap of the key policies and measures needed to achieve the European Green Deal.

EIOPA issued an opinion noting that the prudential rules governing the insurance sector (Solvency II) are already well equipped to reflect climate-related risks and urged (re)insurers to act. The EIOPA opinion²⁹, which was issued in response to a call for opinion by the European Commission, sets out how the (re)insurance sector can be affected by climate change both on its assets side and its liabilities side (see Section 4.1). It concluded that Solvency II is already well equipped to reflect sustainability risk factors and urged (re)insurers to implement measures addressing climate change-related risks. The opinion highlighted that EIOPA found no current evidence to support distinguishing between “green” and “brown” assets in the calibration of capital requirements. Risks to financial stability from climate change are also being explored through stress testing (see Section 2.1.3) and insurance authorities in France, Ireland, Italy and the Netherlands included the effect of climate change in their risk assessment frameworks (see Section 4.1).

ESMA recommended amending requirements for EU investment funds to integrate sustainability risks in their internal processes and controls. In the area of risk management in particular, fund managers should now assess the exposure of UCITS or AIFs they manage to market, liquidity, sustainability and counterparty risks, as ESMA recommended in its technical advice to the European Commission.³⁰ In parallel, ESMA has started monitoring and assessing sustainable finance-related market trends and risks, and will include environmental-related systemic risk in its stress-testing framework.

The EBA published an action plan on sustainable finance³¹, outlining its approach and timeline for delivering on its mandates related to environmental, social and governance (ESG) factors and encouraging banks to act proactively. The action plan highlights the EBA’s high-level policy direction and expectations about how banks should manage ESG risks. The EBA’s approach is sequential: (i) strategy and risk management; (ii) key metrics and disclosure; (iii) stress testing and scenario analysis; and (iv) prudential treatment. Institutions are encouraged to take

²⁸ **Financing a sustainable European economy – Taxonomy Technical Report**, EU Technical Expert Group on Sustainable Finance, June 2019.

²⁹ **Opinion on Sustainability within Solvency II**, EIOPA, September 2019.

³⁰ **ESMA’s technical advice to the European Commission on integrating sustainability risks and factors in the UCITS Directive and AIFMD**, ESMA, April 2019.

³¹ **EBA action plan on sustainable finance**, December 2019.



action in the first three areas now, before the EU legal framework is updated. An EBA survey conducted in May-June 2019 revealed that banks are in the early stages of incorporating ESG considerations into their strategies, governance and risk management.

In addition to these measures, the European Supervisory Authorities (ESAs) also published an action plan setting out their medium-term programme of work to address risks related to climate change.³²

2.1.2 Operationalising the concept of macroprudential stance

The ESRB published initial considerations on a macroprudential stance, with the aim to develop a conceptual framework to guide the discussion on macroprudential policy.³³ The key concept of the stance is to assess whether policy actions are appropriate and effective to meet their objectives. The ESRB regulation³⁴ and the ESRB handbook define the objective of macroprudential policy as a contribution to financial stability by strengthening the resilience of the financial system and by decreasing the build-up of systemic risks. With this objective in mind, in its initial considerations the ESRB is conceptualising the macroprudential policy stance based on a “risk-resilience framework”. That means the level of risks the financial system faces is compared with the level of resilience available in the financial system to withstand risks. Macroprudential policies can promote financial stability by reducing the level of risk, by increasing the level of resilience, or by a combination of both.

The macroprudential stance will establish a link between macroprudential policy and the objective of financial stability, which will be of benefit to Member States and the ESRB in their policymaking and assessments. The ESRB’s initial considerations were a first step towards a common framework and assessed the balance between systemic risk and resilience relative to financial stability objectives, given implemented macroprudential policies. The macroprudential stance will notably be useful in the light of the ESRB’s enhanced responsibilities under the new banking regulation to assess the sufficiency of policies implemented by national authorities.³⁵ Work in this area continued throughout 2019 and, while fully developing and operationalising the macroprudential stance will take time, this Review already benefits from the ongoing work and incorporates its vocabulary.

2.1.3 Assessing the resilience of financial institutions and markets through EU-wide stress tests

Stress tests are a key analytical and policy tool and the ESAs conduct regular stress tests in their areas of competence in cooperation with the ESRB. Stress tests are designed to assess the resilience of financial institutions or market participants to adverse developments. Reflecting

³² **EBA action plan on sustainable finance**, December 2019; **EIOPA action plan on sustainable finance**, 2019; **ESMA strategy on sustainable finance**, February 2020.

³³ **Features of a macroprudential stance: initial considerations**, ESRB, April 2019.

³⁴ **Regulation (EU) No 1092/2010**, in particular Recital 10 and Article 3(1).

³⁵ Recital 25 of the CRD V.



this, the EBA, EIOPA and ESMA are requested by legislation to initiate EU-wide stress tests in their areas of competence in cooperation with the ESRB. As part of this cooperation, the ESRB designs scenarios of adverse economic and financial market developments for these stress tests. During the period under review, ESMA conducted a stress test of both central counterparties and money market funds, developed a novel framework for “stress simulation for investment funds” and strengthened liquidity stress-testing requirements for investment funds. EIOPA conducted a stress test of institutions for occupational retirement provision, including an analysis of climate change-related risks. The adverse scenarios provided by the ESRB for these exercises were tailored to capture the relevant vulnerabilities of these segments of the financial system and to reflect the main risks identified by the ESRB General Board. During the review period, the European Court of Auditors (ECA) issued a report on the EU-wide stress test for the banking sector conducted by the EBA.³⁶

ESMA developed a framework for stress simulations and strengthened liquidity stress-testing requirements for investment funds. Stress simulations can help to assess the effects that a collective liquidation of assets by investment funds and other investors may have on the resilience of financial markets and the financial system more generally.³⁷ ESMA’s framework³⁸ can be applied across different types of investment funds and covers (i) the calibration of redemption shocks, (ii) the methodology to assess the resilience of funds to shocks, (iii) the measurement of the impact of fund managers’ liquidation strategies on financial markets, and (iv) possible second-round effects. A case study to assess the impact of a severe redemption shock on bond funds suggested that most bond funds hold enough liquid assets to meet redemptions. However, for asset classes that are less liquid, such as high-yield bonds and emerging market bonds, fund sales could have a material impact and generate second-round effects. In response to the ESRB’s Recommendation on liquidity and leverage risks in investment funds, ESMA also published guidance regarding liquidity stress tests conducted by investment fund managers.³⁹ Managers of investment funds in the EU need to regularly test the resilience of their funds to different types of risk, including liquidity risk. The ESMA guidelines aim to promote convergence in the way national competent authorities (NCAs) supervise funds’ liquidity stress testing across the EU, by setting out some principle-based criteria to be followed by fund managers.

ESMA also conducted the third EU-wide stress test of CCPs. The exercise was designed to test the resilience of European CCPs by exposing them to different stress scenarios composed of “extreme but plausible market conditions”. ESMA’s third CCP stress test improved and expanded on the previous two, and included a broad range of potential stress factors. In particular, it included: (i) credit stress to assess the sufficiency of CCPs’ resources to absorb losses under a combination of market price shocks and member default scenarios; (ii) liquidity stress to assess the sufficiency of CCPs’ liquid resources under a combination of market price shocks; (iii) member/liquidity provider default scenarios and additional liquidity stress assumptions; (iv) concentration risk to assess the impact of liquidation costs derived from concentrated positions; and (v) reverse credit

³⁶ **EU-wide stress tests for banks: unparalleled amount of information on banks provided but greater coordination and focus on risks needed**, ECA, July 2019.

³⁷ **Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities**, Financial Stability Board, January 2017, Recommendation 9.

³⁸ **Stress simulation for investment funds**, ESMA, September 2019.

³⁹ **Recommendation ESRB/2017/6 and Final Report: Guidelines on liquidity stress testing in UCITS and AIFs**, ESMA, September 2019.



stress, simulated by increasing the number of defaulting entities and the level of shocks to identify at which point resources are exhausted. The exercise covered all sixteen CCPs authorised in the EU. The publication of the final report and results is scheduled to take place in the second quarter of 2020.

EIOPA conducted a stress test of IORPs. The adverse market scenario for EIOPA's stress test was characterised by a sudden reassessment of risk premia and shocks to interest rates at short maturities, resulting in increased bond yields and a widening of credit spreads. The scenario was applied to the end-2018 balance sheets of a representative sample of EEA IORPs. Under the baseline scenario, which is a forecast of the most likely expected future economic developments, those IORPs were underfunded by €41 billion on aggregate, which translates into 4% of their liabilities, according to the common methodology defined by EIOPA. In the adverse stress scenario, the projections yielded an aggregate shortfall of €180 billion according to national methodologies and €216 billion following the stress test's common methodology, which is based on mark-to-market valuation and defined by EIOPA. Under the assumptions of the common methodology, the shortfall under the adverse scenario would have triggered aggregate benefit reductions of €173 billion and sponsoring undertakings would have to provide financial support of €49 billion. This is described in more detail in Section 5.2.

EIOPA's stress test also analysed IORPs' exposures to climate risk and some ESRB members are exploring the incorporation of climate risks into national stress tests. Analysis by EIOPA that complements its IORP stress test showed that IORPs had significant exposures to business sectors prone to high greenhouse gas emissions. This was particularly the case in Slovakia and Slovenia, reflecting large investments in the energy sector. At the national level, De Nederlandsche Bank published a working paper which illustrates how transition risks can be incorporated into climate stress testing.⁴⁰ Part of this methodology was applied in the central bank's first climate stress test in 2018.⁴¹ The Bank of England published a discussion paper setting out its proposal for how the 2021 biennial exploratory scenario could cover climate risks in the Bank's stress test.⁴² Beyond the banking system, climate change considerations are of particular importance for long-term investors. For instance, Norway's Government Pension Fund Global published a note to broadly set out how, as a financial investor, it expects companies to approach the risks and opportunities associated with climate change.⁴³

The ECA issued a report, including recommendations, based on its audit of the 2018 EU-wide stress test for the banking sector conducted by the EBA.⁴⁴ The ECA deemed that the 2018 EBA stress test should have been more demanding in testing banks' resilience to systemic risks across the EU. To address this and other features of the stress test which it considered to be shortcomings, the ECA's report included a number of recommendations. In particular, the ECA recommended that the European Commission review and strengthen the EBA's governance

⁴⁰ **The Heat is on: A framework measuring financial stress under disruptive energy transition scenarios**, De Nederlandsche Bank, February 2019.

⁴¹ **An energy transition risk stress test for the financial system of the Netherlands**, De Nederlandsche Bank, 2018.

⁴² **Bank of England consults on its proposals for stress testing the financial stability implications of climate change**, Bank of England, December 2019.

⁴³ **Expectations towards Companies – Climate Change Strategy**, Norges Bank Investment Management, 2019.

⁴⁴ **EU-wide stress tests for banks: unparalleled amount of information on banks provided but greater coordination and focus on risks needed**, ECA, July 2019.



arrangements and increase its resources. The ECA also recommended that the EBA should increase the geographical spread of its tests and, in addition to size, select banks participating in the stress test also based on the systemic risks they pose. Moreover, the report suggested that minimum stress levels for the EU as a whole should be defined and observed that there was a large variation in the size of the shocks applied to different countries. The report also suggested that the EBA enhance its control over the test design and that for future stress tests in 2022 and beyond the use of several scenarios should be considered. A considerable number of these recommendations have already been incorporated into the design of the scenario for the 2020 EBA stress test by the EBA and the ESRB.⁴⁵

2.1.4 Changing the European System of Financial Supervision

There have also been a number of changes to the European System of Financial Supervision that are relevant from a macroprudential perspective. The changes to the existing system include the elaboration of a strategic supervisory plan at the EU level and the reinforcement of existing mechanisms such as peer reviews and consultations. The changes: (i) reinforce the role and powers of a management board within the ESAs' governance structure, which is accountable to the European Parliament and the EU Council; (ii) give ESMA supervisory powers over critical benchmarks and consolidated tape providers; and (iii) strengthen the role and powers of the EBA as regards anti-money laundering supervision for financial institutions.⁴⁶

The changes to the ESRB Regulation make certain aspects of the ESRB's mandate more explicit. The ESRB has considered a broad range of vulnerabilities and risks since its creation, reflecting its mandate of oversight of the EU financial system. These have included diverse topics such as the low interest rate environment⁴⁷ and cybersecurity (see Box 1) which affect the EU as a whole, as well as country-specific risks and vulnerabilities such as those related to residential real estate⁴⁸. The revised ESRB Regulation makes some aspects of the ESRB's broad mandate more explicit. For example, it sets out that the ESRB is expected to identify and discuss risks regardless of their origin. This includes risks and vulnerabilities resulting from technological change or from environmental or social factors and – while fully respecting the independence of central banks – the implications that monetary conditions may have on financial stability. The revision also makes it more explicit that the ESRB's mandate of macroprudential oversight not only applies to systemic risks to the EU as a whole, but also covers systemic risks to one or more of its Member States and extends to developments outside the banking sector.

⁴⁵ The scenario for the 2020 EBA stress test was designed in the course of 2019 and transmitted to the EBA in January 2020.

⁴⁶ The package of changes consists of two regulations (the Omnibus Regulation and the Regulation amending the ESRB Regulation) and a directive (the Omnibus Directive). The regulations and the directive were published in the Official Journal of the European Union in December 2019 (OJ L 334, 27.12.2019, pp. 1-145, pp. 146-154 and pp. 155-163). Whilst the majority of the provisions started to apply in December 2019, some provisions will only apply from January 2022.

⁴⁷ **Macroprudential policy issues arising from low interest rates and structural changes in the EU financial system**, ESRB, November 2016.

⁴⁸ **Vulnerabilities in the residential real estate sectors of the EEA countries**, ESRB, September 2019.



Box 1 Systemic cyber risk⁴⁹

Cyber risk is characterised by three key features that, when combined, fundamentally differentiate it from other sources of operational risk: the speed and scale of its propagation as well as the potential intent of threat actors. The interconnectedness of various information systems enables cyber incidents to spread quickly and widely. Some recent incidents have demonstrated actors' ability to penetrate the networks of large organisations and incapacitate them quickly. Cyber incidents can also spread widely across sectors and beyond geographical borders, including to entities which are not the primary target or source of disruption. Malicious cyber incidents are becoming more persistent and prevalent, illustrating the high level of sophistication and coordination that threat actors are able to achieve.

Cyber risk can be a source of systemic risk to the financial system, which may have the potential for serious negative consequences for the real economy.⁵⁰ A cyber incident can evolve into a systemic crisis when trust in the financial system is eroded. A critical point in assessing whether a cyber incident will thus progress to become a systemic financial crisis lies in the differentiation of whether or not the incident escalates from an operational level into financial and confidence realms. Such a transition can happen when the disruption to critical functions supporting the real economy or when the generated (or anticipated) financial losses from the cyber incident are sufficiently severe. Once this threshold is passed, a cyber crisis essentially transforms into a "traditional" liquidity or financial crisis. The ESRB's analysis illustrates how a cyber incident could, under certain circumstances, rapidly escalate from an operational outage to such a systemic crisis.

Looking ahead, mitigating policies against this risk need to be developed, with a particular focus on the coordination and communication issues that arise around systemic cyber risk.

The revision of the ESRB Regulation also enhances the ESRB's accountability mechanisms and includes other changes, for example to voting modalities and to its internal governance.

The ESRB has discharged its accountability through regular hearings of its Chair at the European Parliament, press releases following the deliberations of its General Board and the publication of its Annual Report. The revised Regulation points to a number of further avenues through which the ESRB can enhance its accountability. These include publishing an account of the deliberations of its General Board, holding press conferences and undertaking public consultations with stakeholders, for instance at an early stage when preparing recommendations. The revised Regulation also contains other changes, including to voting modalities and to its internal governance.

⁴⁹ Prepared by Eric Schaanning (ESRB Secretariat). For more information, see [Systemic cyber risk](#), ESRB, February 2020.

⁵⁰ In contrast to real estate or banking crises, there are thus far no historical precedents of systemic cyber crises. The ESRB has therefore developed a conceptual framework to analyse systemic cyber risk via historical and hypothetical scenario analysis.



2.1.5 Extending the macroprudential framework to the EEA EFTA States

The macroprudential tools of the CRD IV and the CRR became applicable in Iceland, Liechtenstein and Norway as of 1 January 2020. On 29 March 2019 the EEA Joint Committee decided to amend Annex IX (Financial Services) to the EEA Agreement to incorporate the CRD IV package.⁵¹ In accordance with the terms of the EEA Agreement, this amendment came into force after all EEA European Free Trade Association (EFTA) States (Iceland, Liechtenstein and Norway) had fulfilled certain national constitutional requirements.

2.1.6 Changing EU legislation with an impact of macroprudential measures for the banking sector

The adoption of the “banking package”⁵² at the European level brought specific changes to the macroprudential framework for banks.⁵³ The revisions provide for a clearer delineation between micro- and macroprudential instruments, separating the use of supervisory measures from the use of macroprudential capital buffers. In particular, the use of Pillar 2 requirements for macroprudential purposes is no longer permitted. In order to counterbalance this loss in the macroprudential toolbox, the flexibility in using the SyRB has been increased. The SyRB will in future notably be able to target sector-specific exposures. Moreover, the ESRB has been given an enhanced role in the revised macroprudential framework. As highlighted in Special Feature A, the ESRB will become a “notification hub”. It will also have an enhanced role in monitoring the sufficiency and consistency of Member States’ macroprudential policies, including by monitoring whether tools are used in a consistent and non-overlapping manner.⁵⁴

Work on the implementation of the Basel III reforms in EU law continued throughout 2019.

Importantly, the EBA published its advice on the implementation of Basel III in the EU, responding to the Commission’s call for advice⁵⁵, including policy recommendations in six specific areas: (i) credit risk; (ii) securities financing transactions; (iii) operational risk; (iv) the output floor (the floor requirement that is applied to risk-weighted assets); (v) market risk; and (vi) credit valuation adjustment (CVA) risk. Since the publication, additional analysis has been requested by the Commission on the output floor, equity, specialised lending, the total loss-absorbing capacity (TLAC) and the minimum requirements for own funds and eligible liabilities (MREL).

An important element of the Basel framework is the “output floor” for risk-weighted assets.

This output floor sets a limit on the regulatory capital benefits that a bank using internal models can derive relative to the standardised approach, by setting a floor for the aggregated risk-weighted assets. The Basel III reforms tighten the output floor, ensuring that the risk-weighted assets calculated using internal models amount to, in aggregate, at least 72.5% of the risk-weighted

⁵¹ **Decision of the EEA Joint Committee No 79/2019.**

⁵² Changes have been made to the **CRD V**, the **CRR II**, the **BRRD II** and the **Single Resolution Mechanism Regulation II**.

⁵³ **A Review of Macroprudential Policy in the EU in 2018**, ESRB, April 2019, Special Feature C.

⁵⁴ Recital 25 of the CRD V.

⁵⁵ **“EBA advises the European Commission on the implementation of the final Basel III framework”**, EBA, 5 August 2019 and **“EBA updates the estimates of the impact of the implementation of Basel III and provides an assessment of its effect on the EU economy”**, 4 December 2019.



assets which would result from the standardised approach being applied to the same bank. The use of a risk-based backstop such as the output floor can have important implications from a macroprudential perspective.

Macroprudential concerns regarding the average level of risk weights for real estate exposures have been at the origin of a number of macroprudential measures recently activated by Member States.⁵⁶ In particular for real estate markets, for a limited number of Member States a potential mismatch between increasing systemic risks and decreasing risk weights was observed. This has resulted in Member States acting in a pre-emptive way by introducing risk-weight measures. These so-called national flexibility measures, in the form of risk-weight floors and add-ons, have been taken using Article 458 of the CRR.

Risk-weight levels are particularly relevant from a macroprudential perspective, given that they form the basis for capital requirements, including buffers. Capital buffers such as the SyRB, the O-SII buffer and the CCyB use risk-weighted assets as a base. If the risk weights were to decline further, these buffers would become less effective if systemic risk were to materialise because the nominal amount of capital which would need to be held as buffers would decrease. The same considerations apply to all capital requirements, which are calculated in terms of risk-weighted assets, while the leverage ratio requirement serves as a non-risk-weighted backstop.

The finalisation of Basel III reforms, with the introduction of an output floor to risk-weighted assets in the EU framework, may not suffice to address the macroprudential concerns regarding risk weights calculated by internal models. According to the policy advice provided by the EBA, the output floor should be applied at an aggregate rather than a sectoral level⁵⁷, which may only indirectly attenuate, but not directly remedy, a potential underlying sectoral macroprudential concern.⁵⁸ The CRD V will introduce the possibility of using the SyRB to target sector-specific exposures. If the risk-weighted assets to which this buffer applies do not fully incorporate the underlying risks through the computed risk weights, the capital derived from this buffer might not be sufficient to address the risk it is meant to create resilience for. However, when applying a sectoral SyRB to non-floored risk-weighted assets, if the average level of sectoral risk weights is deemed too low from a macroprudential perspective, the calibration of the measure might imply the use of significantly higher buffer rates (with all the procedural aspects under Article 133 of the CRD⁵⁹).

ECB Banking Supervision has also been taking important steps to ensure risk-weighted assets are calculated correctly, notably through the Targeted Review of Internal Models (TRIM).⁶⁰ TRIM is a multi-year project, which was launched at the end of 2015 by the ECB in close cooperation with the NCAs that are part of the Single Supervisory Mechanism (SSM) to assess if internal models comply with regulatory requirements and if their results are reliable and

⁵⁶ See Section 3.2.2.

⁵⁷ This is in line with the Basel III application of the output floor. The sectoral SyRB is not included in Basel III.

⁵⁸ Article 124 of the CRR provides for risk-weight changes for real estate exposures under the standardised approach only. Article 164 of the CRR allows authorities to increase the loss given default (LGD) floor for IRB institutions' retail exposures only.

⁵⁹ See [A Review of Macroprudential Policy in the EU in 2018](#), Special Feature C.

⁶⁰ In addition to supervisory checks of banks' compliance with regulation, including ECB Banking Supervision's TRIM, regulatory developments such as the EBA Guidelines on probability of default, loss given default and defaulted assets should also help to reduce concerns regarding the risk-weight variability across banks and jurisdictions (see also Box 1).



comparable. An important milestone in this context was the publication of the “ECB guide to internal models” in October 2019, which is a consolidated document compiling general topics and risk type-specific chapters and which aims to ensure a common and consistent approach to matters related to internal models throughout the euro area.⁶¹ Expected to be formally concluded in the first half of 2020, TRIM will require banks to continue working on addressing the deficiencies already identified and should help shape the agenda for the future development of internal models and related supervisory activities. Improving the consistency and accuracy of risk weights from a microprudential perspective is also beneficial from a macroprudential viewpoint (see Box 2 in Section 3.2.2.3).

However, from a macroprudential perspective it is essential that risk weights also reflect the systemic risk profile of underlying assets. Even if modelling practices of banks across the EU are compliant with regulatory requirements, they do not necessarily fully incorporate the systemic nature of risks as identified through macroprudential analysis. This is why it is important that national macroprudential authorities can act in a pre-emptive way when they identify a change in the intensity of macroprudential risk that is not being reflected in the level of risk weights. The tailored macroprudential response to risk weights in the real estate sector provided by Article 458 of the CRR is therefore an essential tool in this respect.

2.1.7 Changing EU legislation with macroprudential implications beyond the banking sector

Review of the prudential rules for the insurance sector

The European Commission requested the advice of EIOPA on the review of the prudential rules governing the insurance sector (Solvency II). In February 2019 the Commission asked for the advice of EIOPA on several topics, including: (i) the extrapolation of the risk-free rate term structure used to calculate technical provisions; (ii) the long-term guarantee and transitional measures; (iii) the design and calibration of the solvency capital requirements; (iv) the introduction of macroprudential tools; (v) recovery and resolution regimes; and (vi) insurance guarantee schemes. In order to deliver its response, EIOPA organised several public consultations in 2019. At its meeting in December 2019, the ESRB General Board approved a response to EIOPA’s October 2019 consultation paper. The ESRB response, which was published in January 2020, proposed three types of tools to prevent and mitigate procyclicality and the risks stemming from the provision of credit to the economy. It also specified a set of measures that should be taken to increase the resilience of insurers to the low interest rate environment and to ensure that failures, if any, are organised in an orderly manner across the EU.⁶²

⁶¹ **ECB guide to internal models**, October 2019

⁶² **ESRB response to the EIOPA Consultation Paper on the 2020 review of Solvency II**, ESRB, 2020.



Transposition of the prudential rules for the IORP sector

The IORP II Directive had to be transposed by 13 January 2019, yet only 60% of the Member States had fulfilled the requirement by the end of 2019. The European Commission opened infringement procedures against 17 Member States due to the lack or delay of the notification of national transposition measures or their incompleteness (BG, CY, CZ, DE, ES, FR, GR, IE, LU, LV, MT, NL, PL, PT, RO, SE, SI).

Changes to the rules governing central clearing

The EU co-legislators revised the rules that govern central clearing, and work on the European Commission's legislative proposal on CCP recovery and resolution resumed. The European Market Infrastructure Regulation (EMIR)⁶³ was amended by the EMIR Refit⁶⁴ and EMIR 2.2⁶⁵. These changes create new tasks for the ESRB, as will the forthcoming Regulation on the recovery and resolution framework for CCPs.

The EMIR Refit includes reclassifications of certain entities to which specific requirements of the Regulation apply, the type of transactions that are covered and the way in which they are covered. The EMIR Refit attempts to reduce the regulatory burden resulting from mandatory central clearing and the reporting obligation for certain types of entities to which the Regulation applies, as well as to promote client clearing. It introduces new safeguards to address the provision of client clearing services, mandating that contractual arrangements should be fair, reasonable, non-discriminatory and transparent (FRANDT). By extending the temporary exemption from the clearing obligation to pension scheme arrangements (PSAs) and by introducing a permanent exemption for the newly defined category of small financials, the EMIR Refit reduces the number of entities subject to mandatory central clearing. The impact of these changes on central clearing volumes is unclear as they are interacting with other developments. These include: the ongoing phasing-in of mandatory posting of initial margins for non-centrally cleared derivatives, which are higher than those applied to centrally cleared contracts; the Markets in Financial Instruments Directive II (MiFID II) its mandatory trading requirements, which are synergic with central clearing; and changes to the CRD/CRR, which reduce the capital requirement for banks that provide client clearing services. The combined set of incentives should increase the demand for voluntary central clearing. It could also increase incentives to access CCPs as a client, rather than a direct clearing member, which might lead to a further concentration of direct membership of CCPs among a few large clearing members. The ESRB provided its input for the purpose of ESMA's report on PSAs' exemption, and responded to ESMA's consultation on technical advice to the European Commission on FRANDT.

⁶³ Regulation (EU) 2012/648.

⁶⁴ Regulation (EU) 2019/834.

⁶⁵ Regulation (EU) 2019/2099.



EMIR 2.2 strengthens the supervision of CCPs domiciled outside the EU that provide clearing services to EU counterparties (third-country CCPs).⁶⁶ Financial markets in general and derivatives markets in particular are global markets. The EU27 is currently reliant on third-country CCPs to clear a large share of derivative volumes in certain products, in particular interest rate swaps and credit default swaps. EMIR 2.2 introduces a new taxonomy for third-country CCPs (“tiering”), based on their systemic importance for the Internal Market, and tasks the newly constituted ESMA CCP Supervisory Committee with the recognition and supervision of those third-country CCPs that provide services to the Internal Market which are deemed systemically important for the financial stability of the EU as a whole or of one or more of its Member States. The ESRB responded to ESMA’s consultation on technical advice to the European Commission on the tiering criteria. The Commission will adopt delegated acts to specify tiering criteria, comparable compliance and fees applicable for the supervision of third-country CCPs operating in the Internal Market.

The co-legislators made progress in establishing the EU legal framework for the recovery and resolution of CCPs. While CCPs are authorised and supervised under EMIR, there is no harmonised framework across the EU to define what would happen in the event of a stress event at a CCP beyond the minimum cover 2 safeguards⁶⁷ stipulated in the EMIR regulation. To fill this gap, the European Commission published a legislative proposal in November 2016, which resulted in revised texts by the European Parliament and the EU Council in January 2018 and November 2019 respectively. For both phases (recovery and resolution) the proposal specifies responsibilities for their planning, governance, dedicated tools and objectives; it also specifies early intervention powers and rules for the recourse to public funds, the latter being a last resort option. The ESRB responded to the Commission’s public consultation in June 2017, and made proposals on the inclusion of explicit treatment of CCP interoperable links in the report published in January 2019. At the time of writing, these proposals were only reflected to some extent in the compromise texts.

The changes to EMIR and the forthcoming legislation on CCP recovery and resolution create new tasks for the ESRB. ESMA has been mandated with consulting the ESRB: (i) on the suspension of the clearing obligation; (ii) on the tiering of third-country CCPs applying for recognition; (iii) when drafting regulatory technical standards on the content of resolution plans; and (iv) when drafting annual reports on the clearing exemption for PSAs and possible exemptions for over-the-counter derivatives resulting from certain post-trade risk-reduction services, especially portfolio compression.

⁶⁶ EMIR 2.2 also grants a new mandate regarding the supervision of EU CCPs. For a list of currently recognised EU CCPs, see the [ESMA register](#); for a list of recognised third-country CCPs, see the [ESMA register](#); and for the list of the Commission implementing acts on third-country equivalence, see the [ESMA website](#).

⁶⁷ EMIR requires the CCP to “withstand the default of at least the two clearing members to which it has the largest exposures under extreme but plausible market conditions.”



2.2 Developments at the national level

Macroprudential policy continued to gain prominence in the national policy frameworks. In particular, Spain established a system-wide macroprudential authority in compliance with the ESRB's Recommendation on the macroprudential mandate of national authorities⁶⁸. Hence, all Member States but one (Italy) now have a macroprudential authority in place (see Tables A.8.1 and A.8.2 in Annex 8). In addition, Lithuania and Poland amended their macroprudential policy strategies for their financial sectors and Luxembourg also enhanced its macroprudential toolkit with the introduction of a legal framework for borrower-based measures.

Spain established in March 2019 a macroprudential authority for the financial system, in compliance with Recommendation ESRB/2011/3 on the macroprudential mandate of national authorities. The mandate of the new Macroprudential Authority Financial Stability Council (*Autoridad Macroprudencial Consejo de Estabilidad Financiera* – AMCESFI) is to contribute to the stability of the financial system as a whole through the identification, prevention and mitigation of systemic risk. In particular, the AMCESFI can issue warnings and recommendations on any matters pertaining to financial stability. It can also issue opinions on proposed macroprudential measures previously notified to the AMCESFI by the sectoral authorities, i.e. the Banco de España, the Spanish National Securities Market Commission (*Comisión Nacional del Mercado de Valores* – CNMV) and the Spanish Directorate General of Insurance and Pension Funds (*Dirección General de Seguros y Fondos de Pensiones* – DGSFP). The AMCESFI is composed of high-ranking officials from the Spanish Ministry of Economy and Business and the three national authorities with the prudential regulatory and supervisory responsibilities for the Spanish financial system mentioned above. The Royal Decree provides clarity on the legally available macroprudential instruments in Spain which can be used by the Banco de España, CNMV and DGSFP. In addition, this legal act delegates to the sectoral authorities the responsibility for developing implementing technical acts that will operationalise those instruments to be used in Spain.

Lietuvos bankas amended its macroprudential policy strategy.⁶⁹ The strategy, which lays down the main guidelines and principles for making and implementing macroprudential policy decisions, is assessed at least once every three years. In this context, Lietuvos bankas decided to add the description of the reciprocity framework that it applies. The aim of this amendment is to enable the strategy to enhance the resilience of the financial system by mitigating a build-up of systemic risk. The strategy consists of the macroprudential policy instruments and the criteria for their application, while its ultimate purpose is to contribute to economic growth.

The Polish Financial Stability Committee (FSC-M) adopted a revised macroprudential policy strategy.⁷⁰ The strategy outlines the approach of the FSC-M to the performance of its statutory tasks related to macroprudential supervision. It sets out the macroprudential policy mission, the main principles of its implementation, strategic priorities and key elements of the macroprudential policy operationalisation. It contains revised macroprudential policy objectives which are reframed as “risk dimensions”. The strategy also explains how the FSC-M intends to implement its

⁶⁸ Recommendation ESRB/2011/3 and Spanish Royal Decree 102/2019 of 1 March 2019.

⁶⁹ Resolution No 03-5 of the Board of the Bank of Lithuania of 21 January 2019.

⁷⁰ Resolution No 29/2019 of 7 June 2019. The previous description of a macroprudential policy framework in Poland, with particular emphasis on institutional aspects, was presented in the Polish Financial Stability Committee document “Macroprudential supervision in Poland – institutional and functional framework” published in 2016.



designated tasks and competences, taking into account international practices and experience gained so far.

In Luxembourg, a new law to introduce a legal framework for borrower-based measures was enacted on 4 December 2019.⁷¹ The law adapts the macroprudential legal framework to address the threat posed to financial stability by the combination of high residential real estate sector prices and increasing household indebtedness, a threat already identified by the ESRB in its 2016 Warning⁷² to Luxembourg. The new law equips Luxembourg's Financial Sector Supervisory Commission (*Commission de Surveillance du Secteur Financier* – CSSF) with additional macroprudential measures allowing the CSSF to define the conditions for the granting of loans secured by mortgages on residential property located in Luxembourg by credit institutions, insurance companies and professionals performing credit operations. These measures include limits on the LTV ratio, the loan-to-income (LTI) ratio, the debt-to-income (DTI) ratio, the DSTI ratio and maturity. The law defines a cumulative list of conditions that must be met for the CSSF to adopt borrower-based measures and it also provides for specific corridors (maximum and minimum levels for the ratios) within which the CSSF can implement those borrower-based measures.

In Germany, the process of passing domestic legislation on CCP recovery and resolution is under way. The German domestic legislative proposal was discussed by the financial committee of the Bundestag, and is scheduled to be passed into law in spring 2020.⁷³ This is not the first time that national and EU legislation have proceeded in parallel. The aim of the German legislator is to follow the European approach as closely as possible. The European CCP recovery and resolution legislation, which is in the form of a regulation, will supersede the domestic legislation and make changes necessary.

ESRB member institutions also contributed to a global initiative on sustainable finance. In particular, many ESRB member institutions are part of the Network for Greening the Financial System (NGFS). The NGFS was launched at the Paris One Planet Summit on 12 December 2017 to share best practices, contribute to the development of environmental and climate risk management in the financial sector and mobilise mainstream finance to support the transition to a sustainable economy. In 2019 the NGFS issued a report with six recommendations for central banks, supervisors, policymakers and financial institutions to enhance their role in the greening of the financial system and the management of environmental and climate-related risks.⁷⁴

⁷¹ Luxembourg **Law of 4 December 2019** establishing macroprudential measures for residential mortgages.

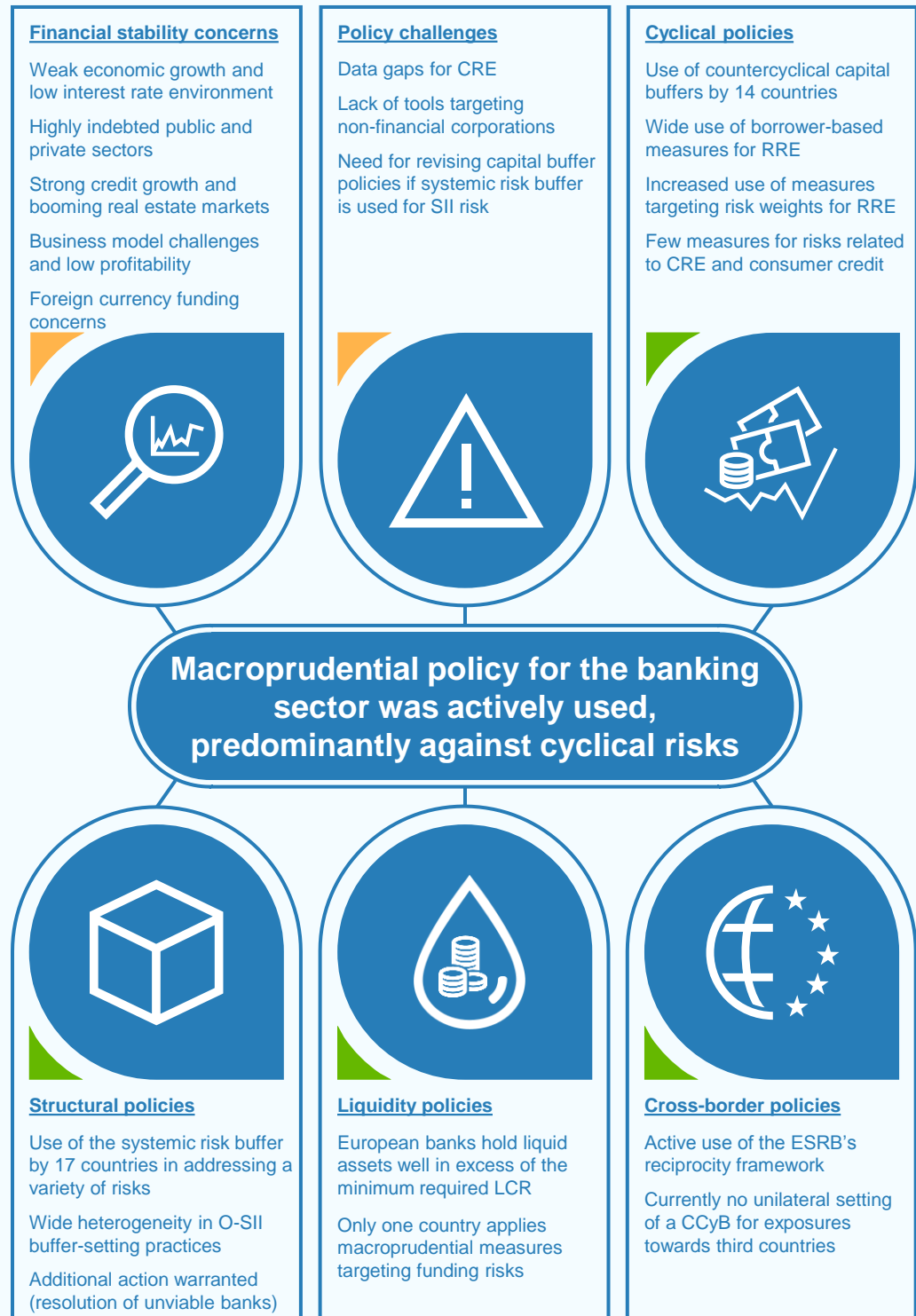
⁷² **Warning ESRB/2016/09.**

⁷³ See the **draft proposal of the German government.**

⁷⁴ **A call for action – Climate change as a source of financial risk**, NGFS, April 2019.



3 Macprudential measures for the banking sector



This section describes the macroprudential measures activated to target risks in the banking sector. The first part of this section provides a general overview of trends observed in the use of macroprudential policy targeting the banking sector. The second part reviews cyclical developments and macroprudential measures taken against these cyclical risks. These measures consist of the broad-based CCyB and measures targeting specific sectors, i.e. residential and commercial real estate, consumer lending and lending to the NFC sector. The third part looks at structural issues and the related macroprudential instruments, i.e. SII buffers and the SyRB. The fourth part is devoted to liquidity issues and macroprudential measures targeting them. The fifth part covers actions taken under the ESRB's frameworks for voluntary reciprocity and for setting and recognising countercyclical capital buffer rates for exposures towards third countries.

3.1 Developments in the use of macroprudential policy instruments

Macroprudential policy for the banking sector has been used predominantly against cyclical risks, but its use seems to have plateaued, as the number of newly adopted measures decreased compared with the previous year (see Chart 3.1.A). For this Review, the broader concept of the measure of macroprudential interest is used.⁷⁵ The macroprudential measures used most often in 2019 were reciprocating actions and first-time introductions of and increases in CCyBs, followed by BBMs such as caps on DSTI ratios, LTV ratios and maturities. Of these measures, reciprocating actions were the only measures that increased in number in 2019 compared with the previous year. The steep increase over 2018 from ten to 18 was due to reciprocation measures taken in 2019 following the ESRB's recommendations to reciprocate the Belgian (three reciprocating actions), Estonian (three), French (seven) and Swedish (six) national flexibility measures under Article 458 of the CRR taken in 2018 (see Section 3.5.2). Excluding reciprocation measures (see below), the decrease in the number of domestic macroprudential measures is attributable mostly to the CCyB and BBMs. In addition, two Member States changed their SII methodology, compared with six one year earlier.

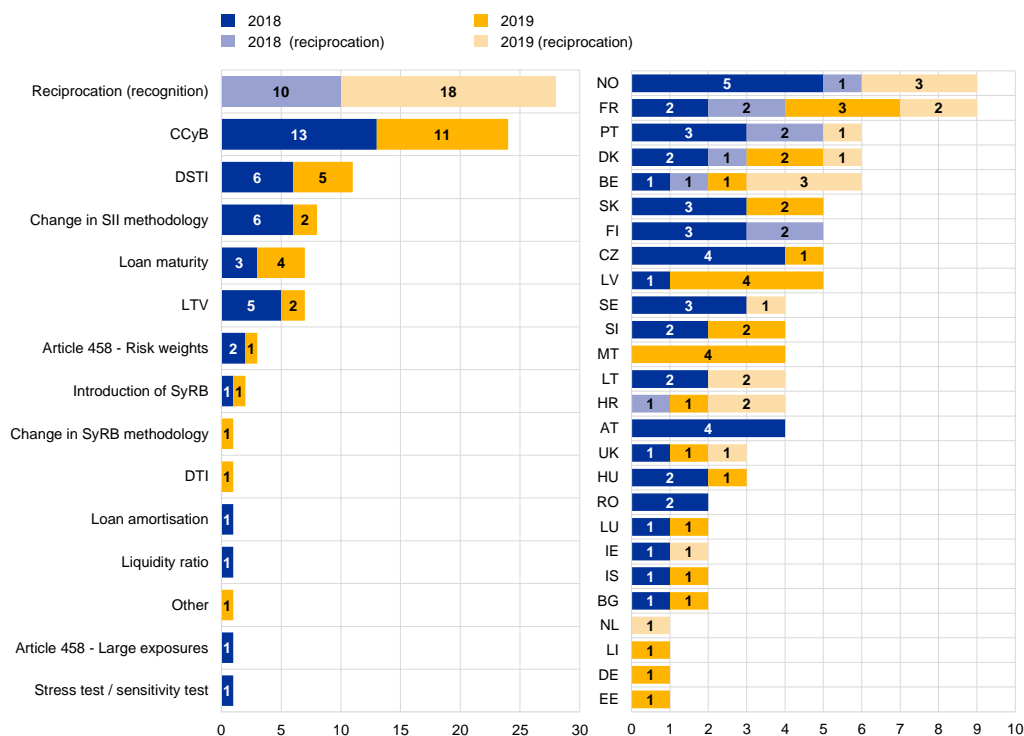
⁷⁵ Since it remains challenging to define exactly what constitutes a macroprudential measure, in this Review the broader concept of the measure of macroprudential interest is used. See **A review of macroprudential policy in the EU one year after the introduction of the CRD/CRR**, ESRB, June 2015, p. 6, for further details. To some extent, the Review relies on the qualification of a measure as macroprudential by the Member State itself.



Chart 3.1.A

Substantial measures taken by Member States in 2018 and 2019

(number of notifications received by measure type (left panel) and country (right panel))



Source: ESRB.

Notes: Notifications do not necessarily refer to new macroprudential measures, as they can also refer to changes to measures already in place. They also refer to the year the measure was decided, rather than the year it was implemented. All measures are deemed to be substantial apart from measures of a more procedural or administrative nature, such as exempting small and medium-sized investment firms from the capital conservation buffer (CCoB) or CCyB. The chart does not include unchanged CCyB rates or those set at 0%. "Change in SII methodology" covers only changes in the methodologies for identifying global systemically important institutions (G-SIIs) and O-SIIs and the accompanying buffer-settings (not changes in the number of G-SIIs/O-SIIs, their buffer levels resulting from the actual application of the same methodology or changes in the phasing-in arrangements). "Change in SyRB methodology" covers only changes in the methodology for setting the systemic risk buffer (not changes in the buffer rates). Data for 2018 may be different from what was shown in "A Review of Macroprudential Policy in the EU in 2018" due to delays in the notification process.

As in previous years, EEA Member States were active to varying degrees. Out of the 31 EEA Member States, 23 took measures in 2019. The Member States that registered the largest number of measures in that year were France (five measures taken), followed by Belgium, Latvia and Malta (four), and Denmark, Croatia, Norway and the United Kingdom (three). However, this should be put somewhat into perspective, as a number of initiatives in some of the countries were related to the reciprocation of other countries' measures or to the further development of measures already in place. Some Member States only took reciprocating measures (IE, LT, NL, NO, PT, SE), and eight EEA Member States did not take any macroprudential policy action during 2019.

There are clear differences across Member States as regards macroprudential instruments that were effectively in use in 2019 (see Table 3.1.A). Some of the countries from northern, central and eastern Europe were very active users of such instruments; others, like some of the



larger Member States and the countries most affected by the last financial crisis, applied fewer measures. Greece, Italy and Spain only took measures regarding macroprudential instruments subject to the mandatory periodical review under the CRD, i.e. the annual setting of SII buffers and the quarterly setting of the domestic CCyB rate. Generally, variations in the use of macroprudential policy can be due to: (i) differing views as regards for instance the role of macroprudential policy, (ii) different phases in the financial cycle in which countries find themselves, and (iii) banking sector conditions, such as profitability and the existence of large voluntary capital buffers.

Table 3.1.A
Overview of active macroprudential measures in Europe (Q4 2019)

	■ Currently applicable	□ Pending	* Several measures																													
	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	IS	LI	NO	
Capital conservation buffer																																
Exemption from CCoB																																
Countercyclical Capital Buffer (%)			0.5		1.75		1				0.25				1		1	0.25							2.5		1.5	1	2		2.5	
Pending CCyB (%)		0.5	1.5*		2	0.25	2*				0.5																2	2				
Systemic Risk Buffer																																
G-SII(s)						1			1		4						1					1						3				
O-SII(s)	9	8	8	6	6	12	7	4	5	3	6	4	7	8	6	4	3	8	4	4	5	9	6	9	4	7	5	15	3	3	2	
Art 458 Risk weights for RRE & CRE																																
Art 458 Liquidity requirements																																
Art 458 Large exposures																																
Art 124 Risk weights on CRE																																
Art 124 Risk weights on RRE																																
Art 164 LGD for RRE retail exposures																																
Debt-service-to-income (DSTI)																																
Loan amortisation																																
Loan maturity																																
Loan-to-deposit (LTD)																																
Loan-to-income (LTI)																																
Loan-to-value (LTV)																																
Risk weights (other)																																
Stress test / sensitivity test																																
Leverage ratio																																
Liquidity ratio																																
Pillar II																																
Other																																
DTI																																

Source: ESRB.

Notes: A coloured box means that a specific measure was active as at Q4 2019, while an empty box means that the measure has been announced but not yet introduced. An asterisk denotes that more than one measure of that kind is in place or has been announced. For Denmark, the asterisk refers to the SyRB set for the Faroe Islands. In the "Countercyclical capital buffer (%)" row, the number in the box refers to the prevailing buffer rate as at Q4 2019, with no box meaning that the countercyclical capital buffer has not been set or a positive rate has been set but not implemented as at Q4 2019, which in this case would be reflected in the "Pending CCyB (%)" row. In the "Pending CCyB (%)" row, the latest announced rates as of end-2019 are shown, with an asterisk denoting that more than one incremental increase was announced by Q4 2019. The number in the boxes for G-SIIs and O-SIIs refers to the number of such institutions identified in the latest identification exercise. This is based on the application dates of the official notifications sent to the ESRB and does not signify whether a SII buffer has been set or not and is regardless of its phasing-in arrangements.

All actions in 2019 were of a tightening nature and most of them addressed cyclical risks (see Table 3.1.B). Investigating whether a Member State has tightened or loosened the use of macroprudential instruments gives a simple indication of the orientation of its macroprudential policy. In 2019 policy actions were of a tightening nature as in 2018 and mostly addressed cyclical risks (i.e. the use of the CCyB, real estate instruments and some other cyclical measures). The most significant changes that occurred in 2019 are reviewed in greater detail below.



Table 3.1.B

Tightening or loosening of macroprudential instruments in 2019

Member State	Countercyclical capital buffer	Real estate instruments	Systemic risk buffer	O-SII or G-SII buffer	Other instruments
Austria	→	→	→	→	→
Belgium	↑	↑	n/a	→	→
Bulgaria	↑	n/a	→	→	→
Croatia	→	→	→	→	↑
Cyprus	→	→	n/a	→	→
Czech Republic	↑	→	→	n/a	n/a
Denmark	↑	→	→	→	→
Estonia	→	↑	→	→	n/a
Finland	→	→	→	→	n/a
France	↑	↑	n/a	→	→
Germany	↑	n/a	n/a	→	n/a
Greece	→	n/a	n/a	→	n/a
Hungary	→	→	↑	→	→
Ireland	→	→	n/a	→	→
Italy	→	n/a	n/a	→	n/a
Latvia	→	↑	n/a	→	n/a
Lithuania	→	→	n/a	→	→
Luxembourg	↑	→	n/a	→	→
Malta	→	↑	n/a	↑	→
Netherlands	→	→	→	→	n/a
Poland	→	→	→	→	→
Portugal	→	→	n/a	→	→
Romania	→	→	→	→	↑
Slovakia	↑	↑	→	→	↑
Slovenia	→	→	n/a	→	↑
Spain	→	→	n/a	→	n/a
Sweden	↑	→	→	n/a	→
United Kingdom	↑	→	↑	n/a	→
Iceland	↑	→	→	→	n/a
Liechtenstein	→	→	→	↑	n/a
Norway	→	→	→	→	→

Source: ESRB.

Notes: ↑ (red) refers to a tightening; → refers to no change; n/a stands for non-applicable. The latter denotes that no related measure has been notified to the ESRB and recorded in its Overview of national measures of macroprudential interest in the EU and the EEA. "Real estate instruments" include any instrument (borrower-based or capital-based) dedicated to the residential or commercial real estate sectors. The "Other instruments" column includes instruments which do not fall into any of the other categories. Tightening/loosening refers to the policy situation compared with the situation before the adoption of the measure. The table refers to measures taken in 2019, but which may sometimes come into effect later. Measures coming into effect in 2019 but adopted earlier are not shown. In the case of O-SII/G-SII buffers, tightening/loosening refers to changes in the methodology of the G-SII/O-SII identification and buffer-setting (not to changes in the number of G-SIIs/O-SIIs or their buffer levels resulting from the actual application of the same methodology) or changes in the phasing-in arrangements.



An analysis based only on the use of individual instruments or changes in their calibration gives an incomplete indication of the macroprudential policy stance in Member States. To obtain a more complete view of a country's effective macroprudential policy stance, the overall macroprudential policy mix in place should be assessed taking into account the level of systemic risk in a given Member State. The ESRB is currently operationalising the concept of macroprudential stance, which aims to close this gap.⁷⁶

Overall at the end of 2019, solvency requirements for banks were set to increase further, possibly calling for more capital and eligible liabilities. Before the outbreak of the COVID-19 pandemic, the Basel III finalisation, the gradual phasing-in of minimum requirements for own funds and eligible liabilities, the further phasing-in of O-SII buffers (see Chart A.6.1 in Annex 6) and, for some euro area banks, the ECB floor methodology for O-SIIs (see Chapter 3.3.2) would have further increased capital requirements. Although voluntary capital buffers might have helped banks meet the increased capital requirements, some banks might have needed to raise more capital, deleverage, or do both. On top of capital, substantial amounts of MREL-eligible liabilities might still have to be issued by some banks to meet their MREL targets, despite the high eligible debt issuance that was observed in 2019.⁷⁷ As a response to the COVID-19 pandemic however, the EBA⁷⁸, ECB⁷⁹, Single Resolution Board (SRB)⁸⁰ and national supervisors have provided flexibility regarding requirements and timelines in order to ensure continued lending to the real economy.

⁷⁶ **A Review of Macroprudential Policy in the EU in 2018**, ESRB, April 2019, Special Feature B.

⁷⁷ **EBA Quantitative MREL Report**, EBA, February 2020.

⁷⁸ See EBA communications of **12, 25, 31** March and **2** and **22** April 2020.

⁷⁹ See ECB banking supervision communications of **12, 20, 27** March and **16** April 2020.

⁸⁰ **COVID-19 crisis: the SRB's approach to MREL targets**, SRB, April 2020



3.2 Measures predominantly targeting cyclical risks

In 2019 the EU banking sector continued to face cyclical risks linked to credit dynamics and developments in the real estate sector.

In the context of the low interest rate environment, increased search-for-yield behaviour can lead to a mispricing of financial risks and subsequent disorderly asset price adjustments (e.g. in house prices), with potential market disruptions and spillover effects across the whole financial system. The rapid increase of prices in the RRE and especially the CRE sector was an area of concern (see Section 3.2.2). Where data on CRE prices were available, indicators pointed to significant price misalignments in almost all ESRB Member States. While credit-to-GDP gaps remained negative in most Member States, overall the gap was moving towards zero and even turned positive in a few countries (see Section 3.2.1).

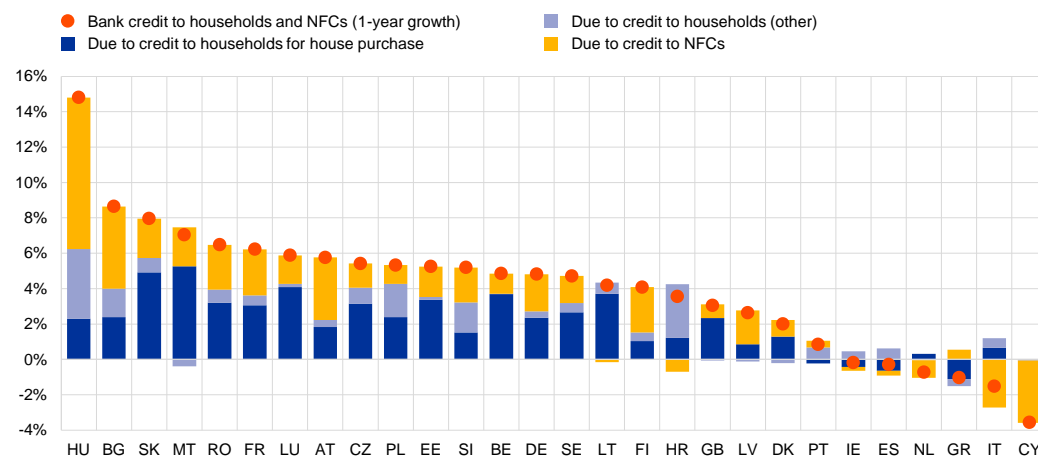
The growth in bank lending to the private sector was robust, but banks also appeared to be reallocating their portfolios towards riskier segments.

Credit dynamics were strong, with annual growth rates of bank credit above 4% in the majority of Member States clearly outpacing GDP growth in most of them (see Chart 3.2.A). The underlying dynamics of bank credit were mainly driven by lending to households for house purchase and to NFCs. Despite its relatively small size overall, lending to households for consumption also significantly contributed to overall credit growth in several Member States and was the fastest-growing loan segment in the EU (see Chart 3.2.B). In fact, over recent years, European banks' lending has been concentrated in segments regarded as riskier (i.e. CRE, small and medium-sized enterprises (SMEs) and consumer credit), which account for around a third of EU banks' loan books.

Chart 3.2.A

Decomposition of credit growth by type of loan in 2019

(annual growth, percentages)



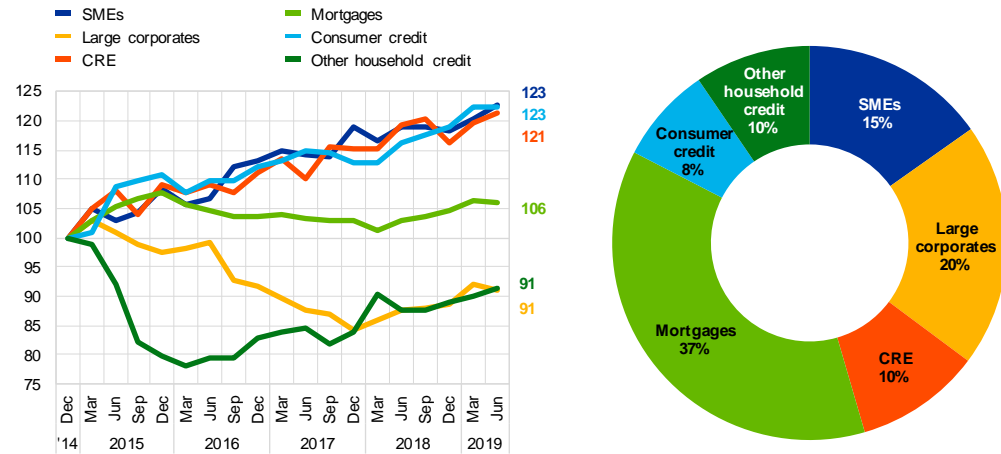
Source: ECB balance sheet item (BSI) statistics.



Chart 3.2.B

Developments in banks' portfolio composition (Q2 2019)

(index of new loans; relative share as a percentage)



Source: Risk assessment of the European banking system, EBA, November 2019.

Notes: In the left-hand plot, the individual portfolio values are indexed with Q4 2014 being set equal to 100. The comparison of the relative size of these portfolios cannot be deduced from the left scale, but is rather shown on the right-hand scale for the last observation (Q2 2019).

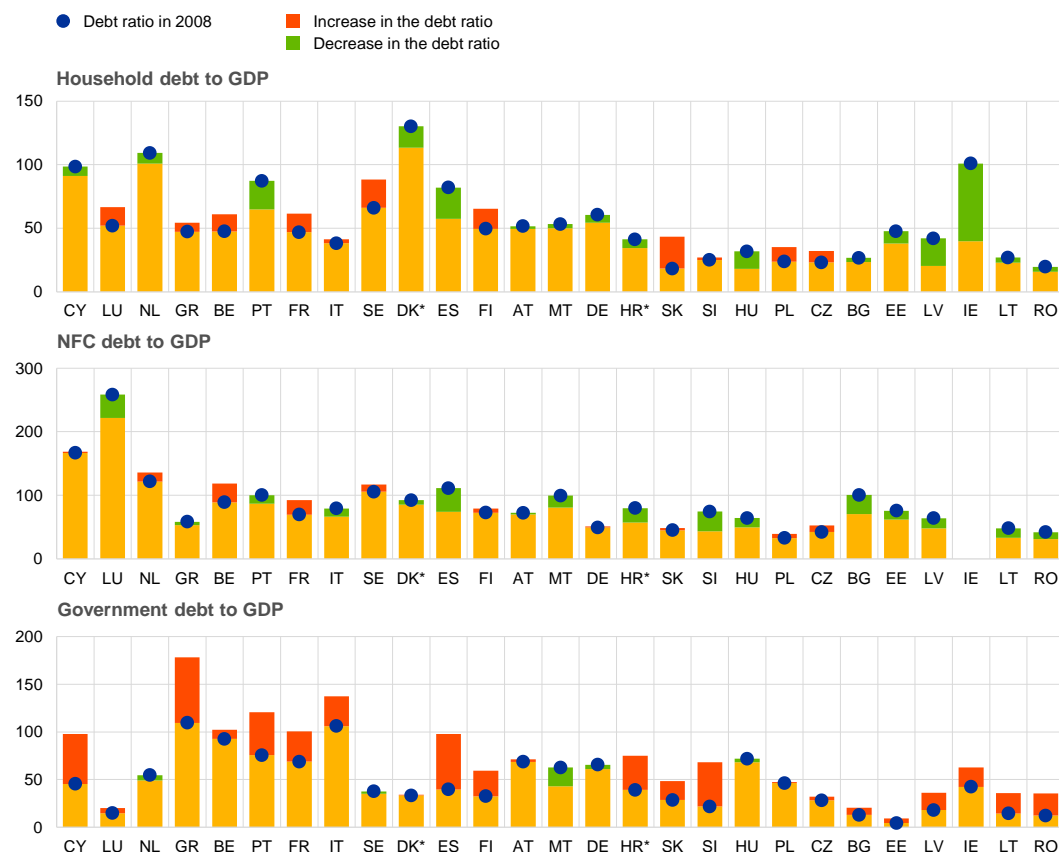
Private indebtedness is high, but compared with pre-crisis levels the increase in credit-to-GDP ratios appears to be mainly driven by increases in government debt. When – in the spirit of the Basel gap – only looking at credit to the private sector, the current credit-to-GDP ratios have declined in most Member States (see Chart 3.2.F). However, when also taking government debt into consideration, ratios have been pushed upwards due to government debt dynamics in almost all Member States (see Chart 3.2.C).



Chart 3.2.C

Indebtedness of the public and non-financial private sectors in 2008 and 2019

(level as a percentage)



Sources: ECB quarterly sector accounts (QSA) and main aggregates in the national accounts (MNA).

Notes: The asterisks indicate countries for which data are missing for Q4 2008. NFC debt refers to consolidated debt.

Regarding NFC indebtedness for CY and LU, the specific structure of these two economies should be kept in mind when analysing the data.

Most Member States with relatively high credit growth and increasing vulnerabilities related to RRE have activated some types of macroprudential measures. However, only one measure related to CRE was taken in 2019 (i.e. the recalibration of the SyRB in Hungary). More generally, macroprudential policies relevant for the banking sector have been actively, but heterogeneously, used across Member States.

The following sections analyse policies that target cyclical risks in banking. The first section reviews the CCyB, which is the broadest tool available to mitigate cyclical risks. The following sections then discuss measures that address risks related to different lending segments, i.e. RRE, CRE, consumer lending and lending to NFCs.



3.2.1 Countercyclical capital buffer for domestic exposures

The CCyB is part of a set of macroprudential instruments designed to help counter procyclicality in the financial system. Capital should be accumulated when cyclical systemic risk is judged to be increasing, making the banking sector more resilient through buffers which could be released during periods of stress when losses materialise. In turn, releases help maintain the supply of credit and dampen the downswing of the financial cycle. The CCyB can also help to dampen excessive credit growth during the upswing of the financial cycle.

Over the course of 2019, 11 EEA Member States had a strictly positive domestic CCyB rate⁸¹, either throughout 2019 (CZ, IS, LT, NO, SE, SK, UK) or phased in during the year (BG, DK, FR, IE). In addition, three other Member States announced that they would introduce a strictly positive CCyB rate in 2020 (BE, DE, LU) (see Chart 3.2.D).⁸²

- **Six EEA Member States increased their already strictly positive CCyB rates over the course of 2019, of which three announced further increases for 2020.** The Czech Republic increased its CCyB rate from 1% to 1.25% at the beginning of 2019, raising it further to 1.5% halfway through the year, with another increase to 1.75% announced for the beginning of 2020. Iceland increased its CCyB rate from 1.25% to 1.75% in the middle of May, with a further increase to 2% planned for February 2020. Lithuania increased its rate from 0.5% to 1% at the end of the second quarter of 2019. Both Norway and Sweden increased their CCyB rates from 2% to 2.5%, with Sweden doing so in September and Norway doing so at the end of the year. Slovakia increased its CCyB rate from 1.25% to 1.5% at the beginning of August and subsequently announced a further increase to 2%, to be effective from August 2020.
- **One Member State maintained its strictly positive CCyB rate in 2019 and announced an increase in 2020,** namely the UK which left its rate unchanged at 1% in 2019 but announced an increase to 2% for mid-December 2020.
- **Four Member States introduced a strictly positive CCyB rate for the first time in 2019, of which three announced further increases.** Bulgaria introduced a CCyB rate of 0.5% at the beginning of October and announced further increases to 1% and 1.5%, to be implemented at the beginning of April 2020 and January 2021, respectively. Denmark implemented a CCyB rate of 0.5% at the end of March, further increasing it to 1% at the end of September; announcements of further increases to 1.5% and 2% at the end of the second and fourth quarters of 2020 were also made. France phased in a CCyB rate of 0.25% at the beginning of July and announced a further increase to 0.5%, to be implemented at the beginning of April 2020. A positive rate of 1% came into effect in Ireland in July 2019.

⁸¹ In accordance with Article 136(4) of the CRD IV, the CCyB rate can be set at a multiple of 0.25% between 0% and 2.5%, although Article 137 also foresees the possibility of buffer rates in excess of 2.5%. For the purposes of this section, a "strictly positive buffer rate" refers to a non-zero CCyB rate.

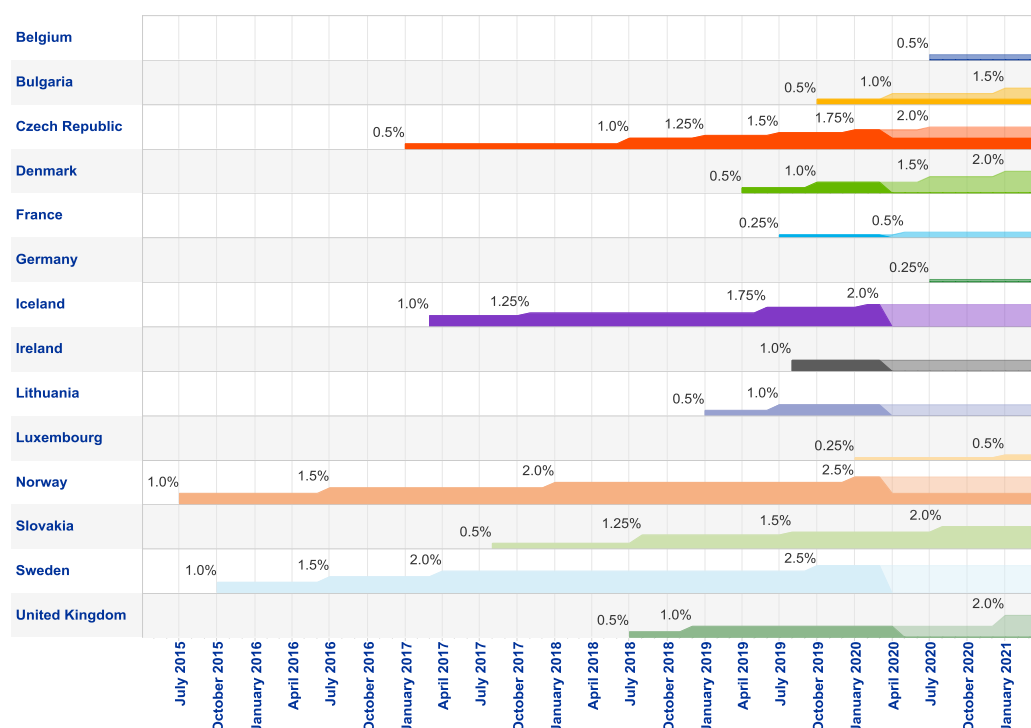
⁸² In accordance with Article 136(5) of the CRD IV, designated authorities have to decide when an increase in the prevailing CCyB rate will apply, with 12 months being the standard implementation period between a decision and the incorporation into institution-specific CCyB rates for the purpose of computing buffer requirements. For the purpose of this Review, the decision or announcement to introduce a strictly positive CCyB rate or an increase therein is considered as a measure taken in the year the decision was made, while the buffer is seen to be introduced or applicable as soon as the targeted credit institutions are required to take it into account when computing their institution-specific CCyB rates.



- **Three Member States announced the introduction of a strictly positive CCyB rate in their jurisdictions in 2020, one of which has announced a further increase.** Belgium and Germany are set to introduce non-zero CCyB rates at the beginning of July 2020 of respectively 0.5% and 0.25%. Luxembourg announced the introduction of a rate of 0.25% effective from the beginning of 2020 and an increase to 0.5% to be effective one year later.
- **The remaining 17 EEA Member States did not announce any changes to their 0% CCyB rates.**

By 31 March 2020, out of the 13 EEA Member States plus the UK which had implemented or announced a strictly positive CCyB rate at the end of 2019, 12 had released and/or cancelled upcoming increases in their CCyB rates either fully (**BE, DE, DK, FR, IE, IS, LT, SE, UK**) or partially (**BG, CZ, NO**) in response to the COVID-19 pandemic.

Chart 3.2.D
Timeline of the applicable and announced countercyclical capital buffers in Europe
(percentages)



Source: ESRB.

Notes: The coloured lines start at the date on which the countercyclical capital buffer becomes effective. The chart however also shows the announced future phasing-in arrangements as announced by 31 December 2019. In the light of the announced releases of CCyBs in several Member States, the chart has been updated beyond the regular cut-off date of 31 December 2019 with the non-transparent shaded areas in the future corresponding to the announced buffer rates as at 31 March 2020, whilst the transparent shaded areas show the previously announced future buffer rates that were revoked in response to the COVID-19 pandemic.

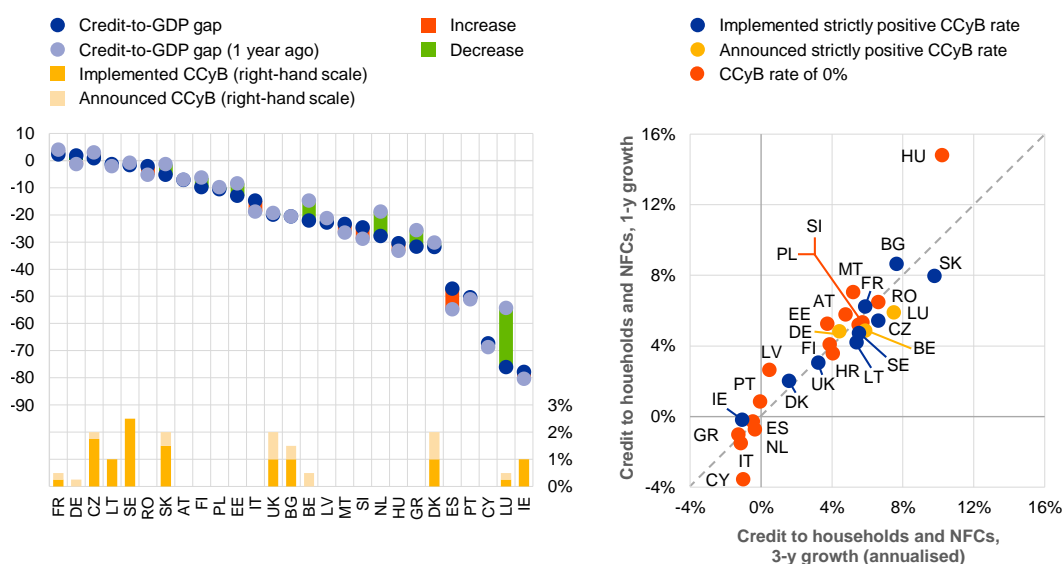


When looking at developments in the Basel credit-to-GDP gap⁸³ across Member States, a relatively high degree of heterogeneity can be observed in their setting of CCyB rates.

Notably, the CCyB is greater than zero across countries with credit-to-GDP gaps above and close to zero, as well as in countries with deeply negative gaps (see left panel of Chart 3.2.E). This divergence hints at the fact that for certain countries the credit-to-GDP gap does not perfectly reflect the specificities of their national economies and confirms the indicator's guiding rather than binding role. Country specificities combined with some technical aspects related to the computation of the credit-to-GDP gap prompted designated authorities to use additional indicators. These technical aspects pertain to the facts that: (i) prolonged periods of credit expansion can lead to structural underestimations, as the indicator will incorporate these credit developments into the trend estimate, thus causing the gap to shrink; (ii) long time series are needed to accurately estimate trends, something on which the gap hinges; and (iii) the gap can increase due to declining GDP.⁸⁴

Chart 3.2.E
Cyclical indicators and the use of the CCyB

(credit-to-GDP gap as a deviation in percentage points and CCyB as a percentage; credit growth rates as a percentage)



Sources: ECB, ESRB and ESRB Secretariat calculations.

Notes: In the left panel, the latest data for the credit-to-GDP gap are for March 2019 and the CCyB rates refer to those phased in or announced as at 31 December 2019. In the right panel, the reference period is Q3 2019 for the underlying data and the year-end for the CCyB rates.

⁸³ The credit-to-GDP gap was defined by the Basel Committee on Banking Supervision (BCBS) as the difference between the credit-to-GDP ratio and its long-run trend, and was designed to capture the risk related to the build-up of excessive credit (see the [BIS glossary](#)). The ESRB also issued a Recommendation on guidance for setting countercyclical buffer rates ([ESRB/2014/1](#)), in which decisions on CCyBs are guided by the credit-to-GDP gap and other complementary indicators.

⁸⁴ For the reasons mentioned and others, multiple alternatives to the Basel credit-to-GDP gap are being looked at and developed. For example, see Lang, J. H., Izzo, C., Fahr, S. and Ruzicka, J., "Anticipating the bust: a new cyclical systemic risk indicator to assess the likelihood and severity of financial crises", *Occasional Paper Series*, No 219, ECB, February 2019; and Baba, C., Dell'Erba, S., Detragiache, E., Harrison, O., Mineshima, A., Musayev, A. and Shahmorado, A., "How Should Credit Gaps Be Measured? An Application to European Countries", IMF Working Paper WP/20/6, International Monetary Fund, January 2020.

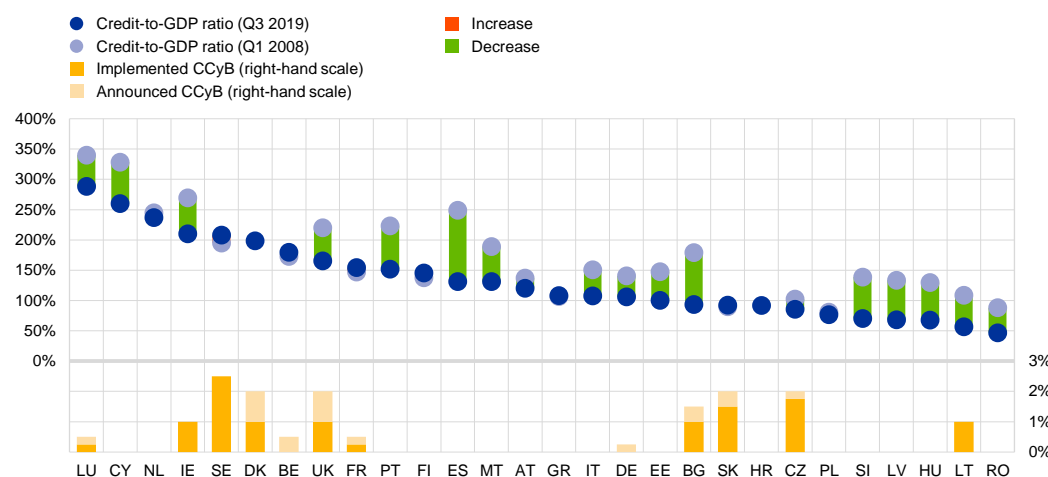


Designated authorities also use an additional suite of indicators when determining what CCyB rate to implement, with credit to the real economy being of particular interest.

Norway, for example, updated its framework for setting the CCyB, outlining that the guiding factors in setting its CCyB rate are: (i) financial imbalances and the presence of cyclical risks; (ii) access to credit for creditworthy enterprises and households; (iii) the level of the CCyB required for banks to have a releasable buffer sufficient to absorb losses in the downturn; and (iv) the effects of a change in the buffer requirement on banks and the economy.⁸⁵ Apart from the Basel gap, taking the credit-to-GDP ratio into consideration can also prove to be insightful (see Chart 3.2.F). The use of the CCyB is again found to be heterogeneous among countries with comparable ratios, as was the case for the Basel gap.

Chart 3.2.F
Current private credit-to-GDP ratios compared with pre-crisis levels and the use of the CCyB

(ratio as a percentage; CCyB rate as a percentage)



Sources: ECB (QSA and MNA) and ESRB Secretariat calculations.

Notes: For the credit-to-GDP ratio, the numerator consists of loans granted to and debt securities issued by households and NFCs, while the denominator is the four-quarter moving sum of seasonally adjusted GDP figures. Note that this is a “narrow” interpretation of NFC credit and is thus consolidated (i.e. it does not include credit between corporations such as trade credit and intra-group credit). The first quarter of 2008 was chosen for the pre-crisis level as it was the last quarter in which the EU recorded positive growth before experiencing several quarters of negative growth.

For a number of countries, relatively high and often accelerating household and NFC credit growth has been observed. However, not all of these countries have implemented strictly positive CCyB rates (see right panel of Chart 3.2.E). By contrast, a small number of countries with currently relatively low credit growth have also activated a strictly positive CCyB rate. This latter observation could stem from the implemented policy being effective and/or the countries’ designated authorities wanting to build additional resilience pre-emptively. Apart from the CCyB, countries also use borrower-based measures to halt excessive credit growth; many of the countries which have not implemented a strictly positive CCyB have such measures in place (see Sections 3.2.2 and 3.2.3).

⁸⁵ A framework for advice on the countercyclical capital buffer, Norges Bank Papers, No 4, Norges Bank, 2019, pp. 7-8.



In addition, countries have taken different decisions regarding the level of the CCyB rate in a standard risk environment. Given that the main objective of the CCyB is to increase banking sector resilience, and taking into account the time lag associated with the implementation of the CCyB, it could be argued that the buffer should be set to a strictly positive level sufficiently early in the financial cycle in order to be available for release if and when required in the downturn. The concept of a strictly positive CCyB rate for standard risk environments (sometimes also referred to as the standard or neutral rate), whereby a rate above 0% is set in a normal risk environment, has been included in three Member States' CCyB frameworks to date, namely those of the Czech Republic, Lithuania and the United Kingdom.⁸⁶ Authorities in these jurisdictions previously concluded that a 1% buffer level was appropriate for a standard risk environment. More recently, the Bank of England revised the CCyB rate that it expects to set in a standard risk environment upwards to 2%.⁸⁷ This ensures that there are releasable buffers in place in case a shock, which might be external and unrelated to the domestic financial cycle, was to hit their economies before they had decided to increase the CCyB rate or before it became applicable for the targeted institutions. The argument on building resilience against external shocks has also been used by open economies when they introduced a SyRB (see Section 3.3.1).

⁸⁶ Plašil, M., “**The countercyclical capital buffer rate for covering the usual level of cyclical risks in the Czech Republic**”, Thematic Article on Financial Stability No 2/2019, Česká národní banka, May 2019; **Countercyclical capital buffer: background material for decision**, Lietuvos bankas, December 2017; and **The Financial Policy Committee’s approach to setting the countercyclical capital buffer**, Bank of England, April 2016.

⁸⁷ **Financial Stability Report**, Bank of England, December 2019, p. iii.



3.2.2 Measures targeting risks related to real estate

The real estate sector plays a key role in financial and macroeconomic stability given its tight links with both the real economy and the financial system. Housing represents an important part of household wealth and constitutes a significant share of bank lending, so RRE risks are regularly analysed as sources of systemic risks. The impact of a downturn in real estate markets on financial stability and the real economy can be both direct and indirect and can manifest itself through various channels (e.g. reductions in consumption, higher credit default rates, decreasing bank credit to the real economy, etc.). Thus, the ESRB – alongside national authorities and the ECB – has a responsibility to help prevent the build-up of these financial stability risks.

To fulfil its responsibility to help prevent the build-up of financial stability risks in different parts and sectors of the EEA financial system and economy, the ESRB has analysed vulnerabilities related to the RRE sectors of its members. In 2019 the ESRB worked extensively on assessing the main developments in the RRE and CRE sectors across the EEA Member States. In this context, the ESRB has developed a methodological framework that allows for the continuous and coherent monitoring of risks associated with the real estate sectors. This assessment takes into account the developments in the collateral, housing and lending risks of EEA Member States. The ESRB can flag vulnerabilities to countries and recommend taking action where needed. Subsequently, national authorities could implement macroprudential measures to respond to those vulnerabilities and mitigate the related risk(s). In light of this, the ESRB published a report on vulnerabilities in the RRE sectors of the EEA Member States, as well as a methodological report for both the RRE and CRE sectors.⁸⁸

In this context, in September 2019, the ESRB also published a set of country-specific warnings and recommendations on medium-term vulnerabilities in the RRE sector. The ESRB has a mandate to issue warnings when significant systemic risks are identified and to provide recommendations for remedial action to address such risks. The warnings⁸⁹ were sent to the competent ministers of the following five countries: the Czech Republic, Germany, France, Iceland and Norway. Similarly, the recommendations⁹⁰ were sent to the competent ministers of the following six countries: Belgium, Denmark, Luxembourg, the Netherlands, Finland and Sweden.

⁸⁸ **Vulnerabilities in the residential real estate sectors of the EEA countries**, ESRB, September 2019; **Methodologies for the assessment of real estate vulnerabilities and macroprudential policies: residential real estate**, ESRB, September 2019; and **Methodologies for the assessment of real estate vulnerabilities and macroprudential policies: commercial real estate**, ESRB, December 2019.

⁸⁹ The Czech Republic (**Warning ESRB/2019/10**), Germany (**Warning ESRB/2019/11**), France (**Warning ESRB/2019/12**), Iceland (**Warning ESRB/2019/13**) and Norway (**Warning ESRB/2019/14**).

⁹⁰ Belgium (**Recommendation ESRB/2019/4**), Denmark (**Recommendation ESRB/2019/5**), Luxembourg (**Recommendation ESRB/2019/6**), the Netherlands (**Recommendation ESRB/2019/7**), Finland (**Recommendation ESRB/2019/8**) and Sweden (**Recommendation ESRB/2019/9**).



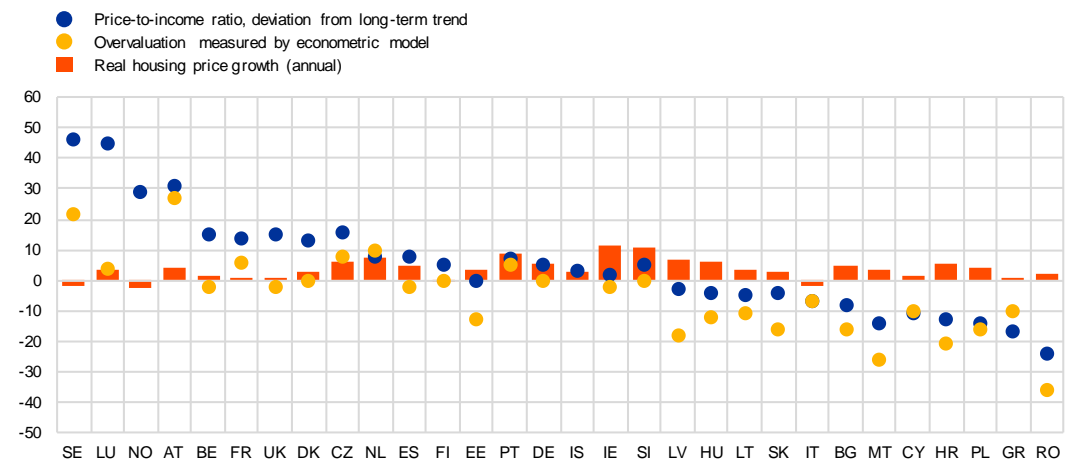
3.2.2.1 Residential real estate: risk analysis and implemented policies

A comprehensive country-specific risk and policy analysis for the EEA's RRE sectors was conducted by the ESRB, with the results and underlying methodology being published in September 2019. The assessment includes a cross-country analysis of the RRE-related risks and vulnerabilities in the EEA Member States and the respective macroprudential policy action that these countries have taken to mitigate the identified financial stability risks.

The RRE risk assessment methodology consists of three steps and is centred around three risk dimensions called “stretches”. The risk assessment is organised across the following risk dimensions: (i) the collateral stretch, which focuses on house price developments and potential price misalignments (see Chart 3.2.G); (ii) the funding stretch, which covers developments in lending (see Chart 3.2.H); and (iii) the household stretch, which focuses on fragilities in households' balance sheets including debt sustainability (see Chart 3.2.I). A distinction is made between stock vulnerabilities stemming from the levels of household indebtedness and/or the overvaluation of house prices, and flow vulnerabilities attributable to a combination of dynamics of house prices, housing lending and/or concerns about lending standards for new loans.

Chart 3.2.G
Housing price overvaluation in 2018

(percentages)



Sources: ECB and Icelandic national authorities.

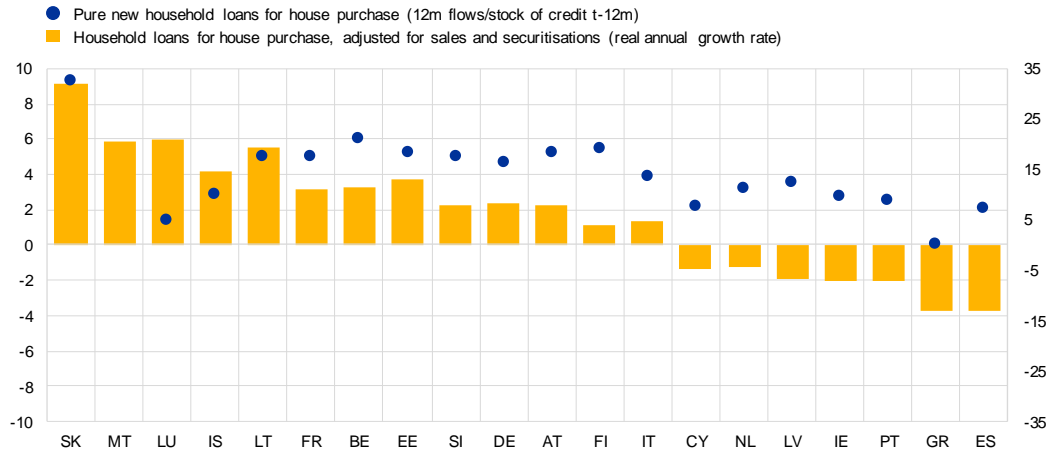
Notes: All EU and EEA countries are shown, except LI. Data for annual growth (average over four quarters) are for Q3 2018, except for DE, EE, GR, IS, LV, NL, SE, SK and UK (Q4 2018). The last data point for the price-to-income ratio and the overvaluation model is Q3 2018, except for CY, DK and HR (Q2 2018) and BE (Q1 2018). The deviation of the price-to-income ratio from the long-term trend is computed according to the methodology of the Working Group on Real Estate Methodologies. Econometric model estimates are the results of a Bayesian-estimated inverted demand model. For further details, see Financial Stability Review, ECB, November 2015, Box 3.



Chart 3.2.H

Growth in loans to households for house purchase in 2018: outstanding and new loans

(left-hand scale: loans to households for house purchase, real annual growth rates, percentages; right-hand scale: pure new loans to households for house purchase, annual growth rates, percentages)



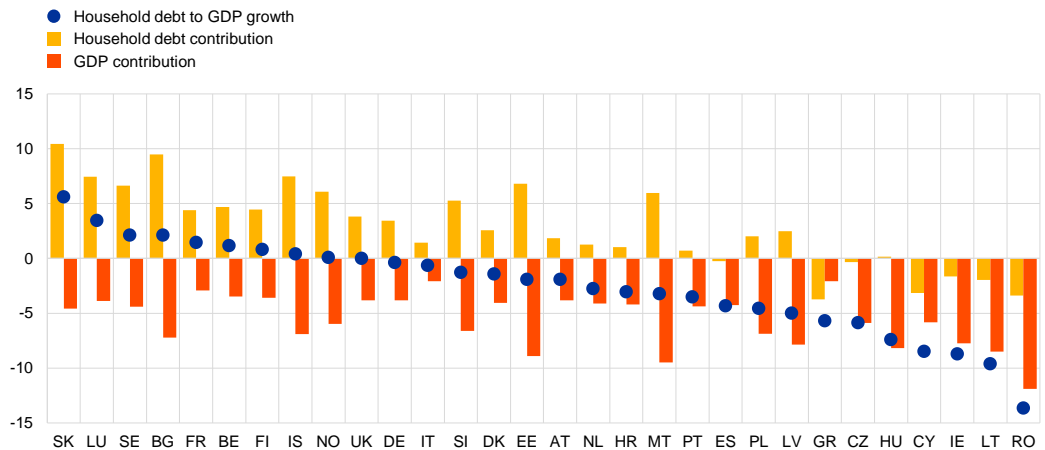
Sources: ECB and Icelandic national authorities.

Notes: The last data point is Q2 2018. Pure new loans, which exclude renegotiations, are calculated as new bank business volumes (flows) over the past 12 months relative to the stock of loans 12 months earlier. Pure new loans are missing for MT.

Chart 3.2.I

Growth of the household debt-to-GDP ratio and its components in 2018

(percentages)



Source: Eurostat.

Notes: All EU and EEA countries are shown, except LI. An increase in GDP is shown as a negative contribution to the household debt-to-GDP ratio. The last data point is Q3 2018. The growth rate of the household debt-to-GDP ratio is computed as an annual average.



In terms of the country-specific risk analysis, the majority of countries were identified as having medium-level RRE risks, while several countries were found to be in the high-risk category and one country was deemed low risk. Most countries were found to be in a firm or mature expansionary phase of the RRE cycle, while a few countries are still recovering after the last financial crisis. The cross-country assessment concluded that 19 EEA Member States presented vulnerabilities, which warranted further risk analysis as well as an assessment of macroprudential policies to address these vulnerabilities. The high overall risk levels resulted from a combination of high stock vulnerabilities and medium/high flow vulnerabilities with a direct or indirect impact on financial system stability (DK, LU, NL, NO, SE). The medium overall risk levels resulted from a combination of medium stock vulnerabilities and medium/high flow vulnerabilities (AT, BE, CZ, DE, EE, FI, FR, IE, IS, MT, PT, SK, UK). The low overall risk resulted from a combination of low stock vulnerabilities and low/medium flow vulnerabilities (SI).

The policy analysis found that most of the countries had taken macroprudential policy action – both capital and borrower-based measures – to mitigate the identified financial stability risks related to the RRE sector, in line with their macroprudential policy objectives.

In particular, the policy assessment found that in eight countries the macroprudential policies were appropriate and sufficient (AT, EE, IE, MT, PT, SI, SK, UK), whereas in three other countries policy measures were assessed to be fully appropriate and partially sufficient (DK, NO, SE). Finally, in the remaining eight countries, the policy stance relative to the intensity of risks identified was assessed to be partially appropriate and partially sufficient (BE, CZ, DE, FI, FR, IS, NL, LU). In this last category, policy is considered partially appropriate either because of some lack of policy action or because of the policy framework, which does not provide the appropriate policy instruments. Tables 3.2.A and 3.2.B below summarise the contents of the latest warnings and recommendations on medium-term vulnerabilities in the RRE sector issued by the ESRB.

Table 3.2.A
Summary of the key vulnerabilities identified in the warnings issued in 2019

Key vulnerabilities	CZ	DE	FR	IS	NO
House price developments	●	●		●	●
Mortgage lending growth	●				
Lending standards	●	●	●		
Household indebtedness			●	●	●

Source: ESRB.



Table 3.2.B

Summary of the policy recommendations issued in 2019

Policy recommendations	BE	DK	FI	LU	NL	SE
Legal framework for borrower-based measures			●	●	●	
Activation/tightening of borrower-based measures	●		●	●	●	
Activation/tightening of capital-based measures		●			●	
Activation/tightening of macroprudential measures subject to results of monitoring of vulnerabilities		●				●
Structural changes related to mortgage loans and/or the residential real estate sector		●		●	●	●

Source: ESRB.

The assessment of the developments in the collateral stretch shows that housing prices have been growing robustly in most European countries against the backdrop of an economic and financial recovery.

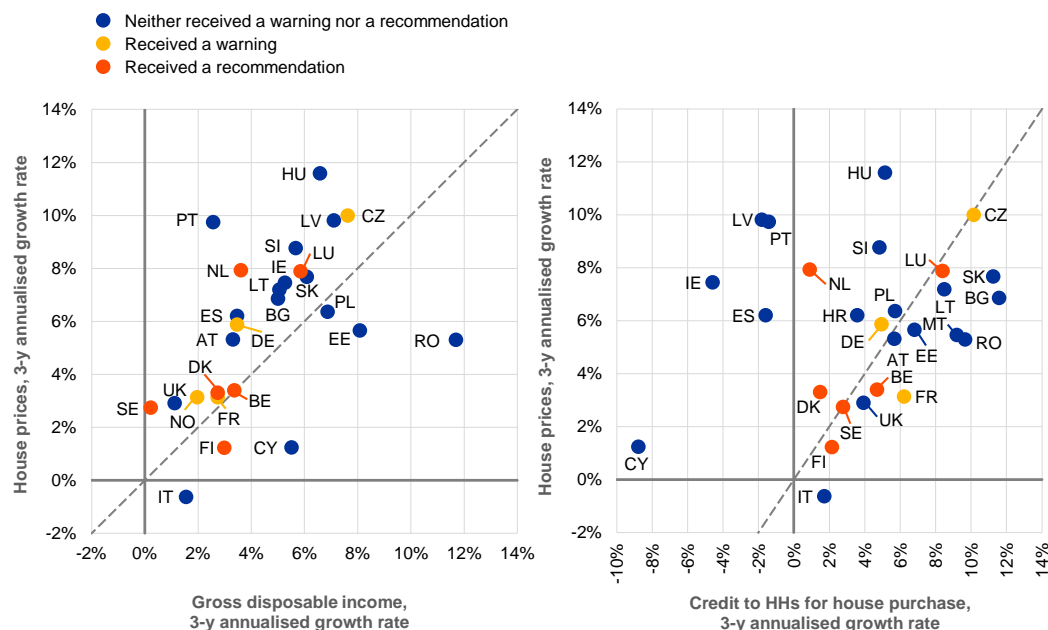
In some countries, prices of residential properties have picked up after moderate or significant drops following the last financial crisis (e.g. IE, LV, PT), while in several other countries, they have continued on a longer-lasting upward trend (e.g. AT, DE). Chart 3.2.J associates the three-year nominal house price growth rate with two variables (also expressed as three-year growth rates): (i) gross disposable income; and (ii) credit granted to households for house purchase. In the left panel, a positive relationship between disposable income and house price growth can be observed, with the majority of countries being above the 45-degree line and only six being below. This stylised fact highlights a more than proportional growth of house prices, especially for Portugal and Hungary. In particular, Portugal has income growth slightly above 2%, but house price growth close to 10%. By contrast, for Romania income growth is almost 12% and house price growth is 5%. The right panel still shows a positive relationship between the two variables, but a number of countries (CY, ES, HU, IE, LV, NL, PT) appear to behave differently. In fact, the positive relationship between credit growth and house price growth seems to have shifted to the left, associating a much lower level of credit growth (in most cases even negative) with house price growth. While the housing cycle is not necessarily correlated with the business and/or the financial cycle, the current slowdown in real economic activity across multiple European countries might trigger a price correction in overvalued real estate markets, due to decreasing demand owing to lower household income. In fact, in three countries (DK, FI, UK) the recent growth in house prices came to a halt in 2019. In addition, fiscal measures such as tax advantages for mortgage lending or property tax relief may exacerbate housing demand and, thus, housing price dynamics (see also Special Feature D).



Chart 3.2.J

House price growth versus growth in disposable income and growth in lending to households for house purchase

(left panel: y-axis: nominal house price index (2015 = 100), three-year annualised growth rate, percentages; x-axis: nominal gross disposable income, three-year annualised growth rate; right panel: y-axis: same as left panel; x-axis: nominal amount of loans, three-year annualised growth rate, percentages)



Sources: ECB (BSI statistics), ESRB, European Commission (AMECO database), Eurostat and Central Bank of Malta (for disposable income based on the Q2 2019 national accounts).

Notes: Countries with orange and yellow dots respectively received recommendations and warnings. For house prices, the latest data are for Q3 2019. Q3 2019 data are provisional for CY, FR, HU, IE, IT, LT, MT, NL and UK. The house price index (2015 = 100) refers to the total purchases of dwellings (new and existing). Greece values are not shown in either panel because there are insufficient house price data to compute the data points in a comparable way. Data on disposable income for the year 2019 (2018 and 2019 for BG and EE) are based on forecasts made by the European Commission. The data points for HR and MT are not shown in the left panel because no data on disposable income were available. The data point for NO is not shown in the right panel because no data on credit to households for house purchase were available. No data were available for IS or LI.

High household debt in many countries indicates medium or high risk levels in terms of the household stretch.

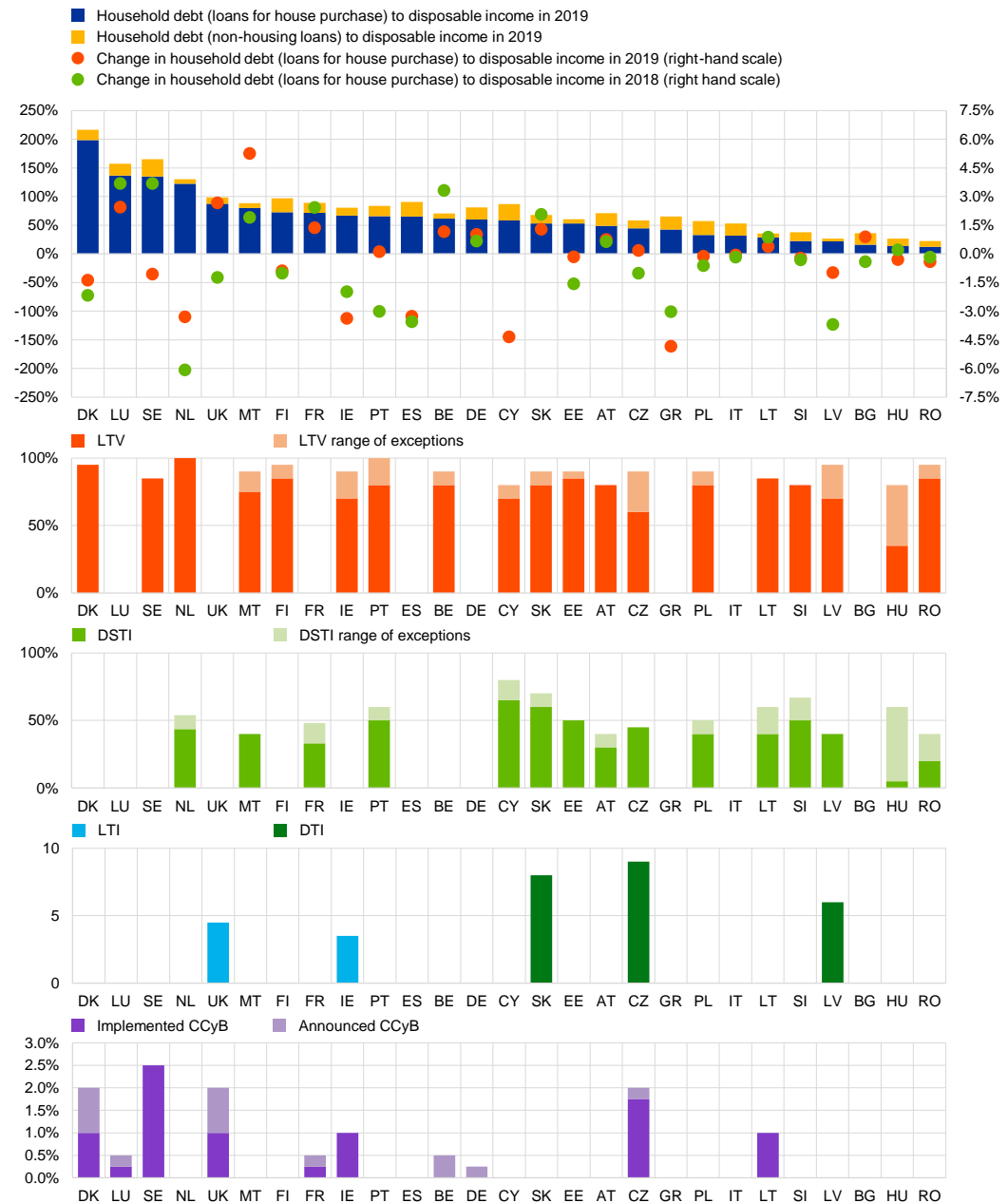
The top panel of Chart 3.2.K focuses on the RRE risks related to the household stretch, by showing both the ratio of total household debt to disposable income in 2019, as well as the share of this debt in relation to house purchases. The chart shows that four countries (DK, LU, NL, SE) reported a ratio of household debt related to house purchases-to-disposable income that is higher than 100%, indicating that the indebtedness for housing was greater than the yearly disposable income. For Denmark, this ratio is even higher than 200%. Nevertheless, in 2019, Denmark observed a decrease in the housing loans ratio of -1.4% from 2018 to 2019, similar to Sweden (-1.1%) and the Netherlands (-3.3%). The majority of the remaining Member States have reported a ratio between 40% and 60%.



Chart 3.2.K

Indebtedness for house purchase and macroprudential policies targeting it in 2019

(top panel: left-hand scale: household debt as a percentage of disposable income, shown by the bars; right-hand scale: growth in household debt for house purchase, shown by the dots; bottom panels: ratios and rates expressed as a percentage for the LTV, DSTI and CCyB, and in levels for the LTI and DTI)



Sources: ECB, ESRB, European Commission (AMECO database) and Central Bank of Malta (disposable income based on the Q2 2019 national accounts).

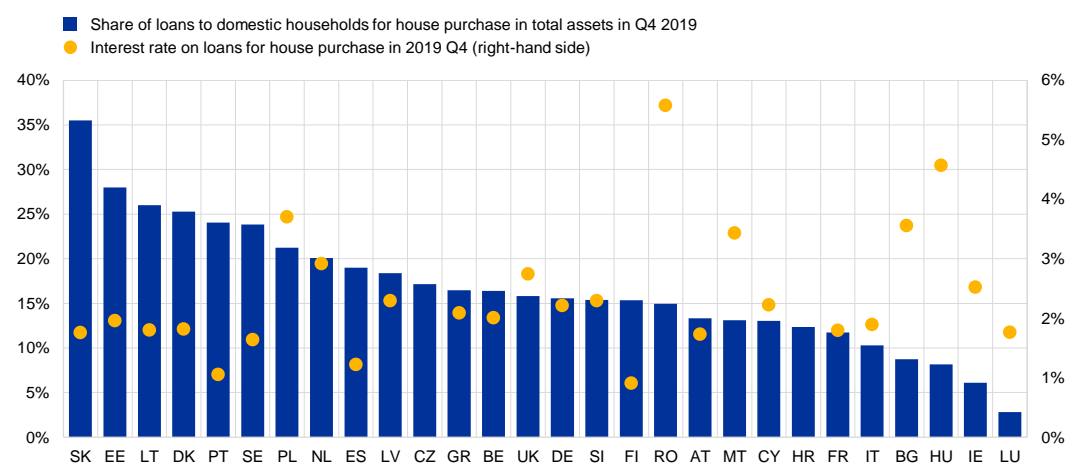
Notes: Only loans to domestic households are included in the calculations. The DTI measures consider net income. In the top panel, the change in the ratio for CY in 2018 was -21.1% and is not shown for readability reasons. Data on disposable income for the year 2019 (2018 and 2019 for BG and EE) are based on forecasts made by the European Commission. No data on disposable income were available for HR, which hadn't implemented any of the listed measures. While the CCyB is not targeting RRE risks directly, it has been cited by some national authorities as tackling this risk; in BG ad SK however, it does not.



The RRE risk assessment regarding the funding stretch also points to a considerable increase in lending to households for house purchase. Chart 3.2.L illustrates both the ratio of loans to households for house purchase to banks' total assets and the interest rate paid on these loans in 2019. In eight EU Member States (DK, EE, LT, NL, PL, PT, SE, SK) the share of household loans in banks' total assets was equal to or greater than 20%, highlighting the important role of housing in banks' lending activity. Countries with a higher share of loans for house purchase are providing them at lower interest rates, with the exception of some countries (FI, FR, IT, LU, PL). A comprehensive assessment of lending standards in terms of loan characteristics can help explain these trends, but is hampered by data gaps and a lack of harmonised definitions.

Chart 3.2.L
Share of loans to households for house purchase in banks' total assets in 2019

(percentages)



Source: ECB.

Notes: The interest rate is calculated on the stock of outstanding loans and refers to either the annualised agreed rate or the narrowly defined effective rate. For euro area countries, the interest rate is calculated on the stock of outstanding loans in all currencies. For non-euro area countries, the interest rate is calculated on the stock of outstanding loans denominated in the national currency. For CZ and HR, interest rate data are not available.

The national authorities of the EEA Member States have capital-based macroprudential instruments at their disposal, and depending on the country, potentially various types of borrower-based instruments. The capital-based measures refer to regulatory capital requirements for banks' exposures to real estate. They include risk-weight floors, LGD floors or targeted capital buffers. The legal framework for the implementation of these instruments is harmonised in the EU, and is provided by the CRD IV and the CRR. The borrower-based instruments directly affect the availability, terms and conditions of loans. Depending on respective national laws, the different borrower-based instruments, which may be available in individual countries, include limits on LTV, DSTI, DTI and LTI ratios, amortisation requirements and maturity limits. The activation of these measures is at national discretion and subject to national legal or macroprudential frameworks. The implementation of macroprudential measures is very heterogeneous across Europe and the level at which borrower-based measures are set differs substantially, even for similar observed levels of risk (see panels 2-5 of Chart 3.2.K). These depend on the respective combination of stock and flow risks, as well as specific structural factors and



countries' legal frameworks. The choice of policy instruments should be governed by the timing of the application and the strength of the transmission channels of different macroprudential instruments with regard to the identified risks.

Other macroprudential instruments designed to counter broader-based systemic risk can also mitigate risks of spillovers from the real estate sector to the wider economy. This is the case for large exposure limits, liquidity measures or additional general capital requirements such as the CCyB or the SyRB. Some national authorities also use regular stress testing of the banking sector to test capital adequacy from a macroprudential perspective and to (re)calibrate buffers.

In 2019 the majority of macroprudential measures in place were borrower-based measures, although capital-based instruments were also employed to alleviate systemic risks stemming from the real estate sector. Regarding capital-based measures, it is less obvious to distinguish the ones targeting the real estate sector, since capital buffers are mostly used to mitigate risks from all exposures. However, some national authorities have implemented capital-based measures (i.e. CCyBs and SyRBs) with the explicit intention to also target real estate-related risks. Table 3.2.C provides an overview of the macroprudential policies targeting risks in the real estate sector. In 2019 some countries implemented or recalibrated macroprudential measures, while most of the measures were already in place. To mitigate systemic risks in the CRE sector, only a few countries have taken measures so far.

Table 3.2.C
Overview of the macroprudential policies targeting risks in the real estate sector in 2019

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK	
RRE	LTV	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
	DSTI	■									■																					
	DTI																															
	LTI																															
	Maturity	■																														
	Amortisation																															
	Stress test																															
	RW (Art 124)																															
	RW (Art 164)																															
	RW (Art 458)	■																														
RW (other)																																
Other																																
CCyB																																
SyRB																																
CRE	LTV																															
	DSTI																															
	RW (Art 124)																															
	RW (Art 458)																															
	RW (other)																															
	Other																															
	SyRB																															

Source: ESRB.

Notes: The table reports on both the stock and the flow of measures in 2019. A measure is considered "implemented in 2019" if at least one of the three following conditions apply: (i) the measure was decided and applied in 2019; (ii) the measure was decided in 2018, but applied in 2019; or (iii) the measure was decided in 2019, but applied in 2020 or subsequent years.



In 2019, 14 EEA Member States had newly adopted or recalibrated macroprudential measures targeting the real estate sector, primarily borrower-based measures associated with house purchases. With regard to the borrower-based measures, Romania and Slovakia announced in 2018 that new borrower-based measures would come into force in 2019. Additionally, Belgium, France, Latvia, Luxembourg, Malta and Slovakia decided on and implemented new measures in 2019.⁹¹ To raise lending standards and reduce household indebtedness Belgium, Latvia, Malta and Slovakia adopted or tightened caps on LTV ratios. In addition, the Slovakian legislation imposed tighter caps on LTV, DTI and DSTI ratios to address strong credit growth, which is especially driven by house purchases. Loans for house purchase have grown more strongly than loans to other sectors in Malta, which prompted the authorities to take measures to strengthen the resilience of lenders and borrowers. Given the gradual loosening of credit standards, Latvia also decided on a new policy mix, tightening the LTV ratio and introducing DSTI, DTI and maturity caps.⁹² Furthermore, France, Hungary, Malta, Romania and Slovakia adopted or modified their DSTI caps. Romania now has a 40% limit on DSTI ratios, aiming to curb the excessive indebtedness of low-income debtors. Hungary adjusted the computation method for the net income threshold to take into account the rise in wages, while continuing to shield borrowers from the interest rate risk of floating rate mortgage loans. Finally, Austria, France and Malta also complemented the above-mentioned measures with maturity caps.

The most frequently applied borrower-based measures in 2019 were LTV and DSTI caps.

LTV caps are still the most commonly-used borrower-based measure across Europe, with three countries (BE, MT, SK) introducing them in 2019 and one country tightening them (LV) (see Chart 3.2.M). In addition, several countries implemented new DSTI caps in 2019 which in three cases (FR, LV, MT) were appropriately paired with maturity provisions (see Chart 3.2.N). The interaction between the DSTI caps and maturity limits plays a crucial role in containing financial stability risks in the RRE sector, since these measures can complement and reinforce each other. However, some countries (CY, HU, RO, SI) have not yet acted accordingly. In fact, maturity limits can limit the ability to lower DSTI ratios by extending loan maturities.

Overall, some Member States' macroprudential policy mixes targeting RRE are seen as appropriate, whereas other Member States may need to consider implementing further measures or tightening their existing measures in the future. To safeguard financial stability, the ESRB will regularly review risks in the RRE sector and monitor corresponding policy actions by Member States.

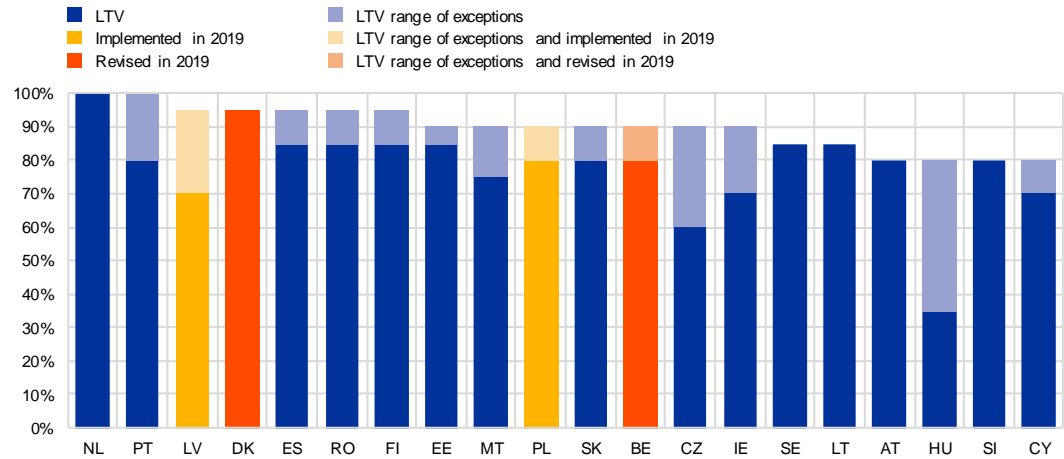
⁹¹ Some of them were decided in 2019, but they will only be implemented in 2020.

⁹² These measures will, however, come into force on 1 June 2020.



Chart 3.2.M
LTV limits in Europe in 2019

(percentages)

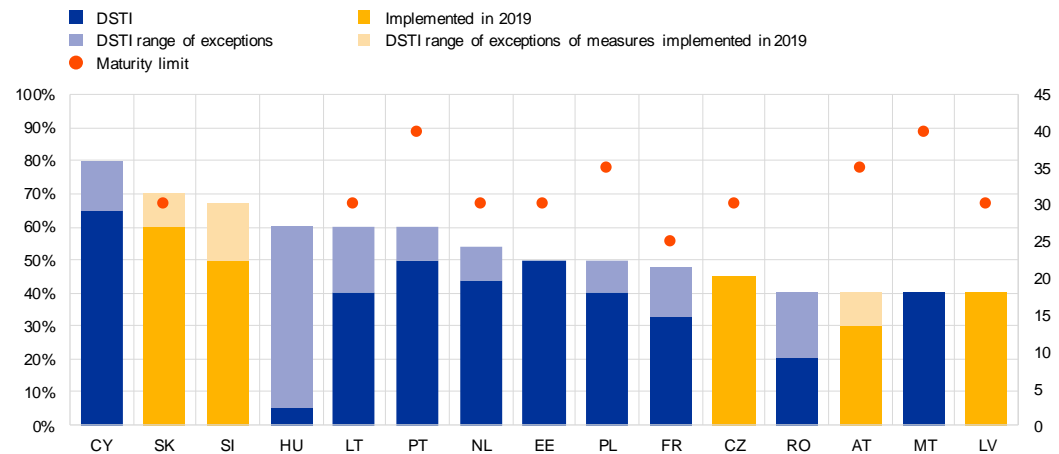


Source: ESRB.

Notes: Only countries with LTV limits in place are shown. In the case of MT, an LTV limit of 85% is applicable to Category II borrowers in the first year, and a 75% LTV limit is applicable from the second year, while an LTV limit of 90% is applicable to Category I borrowers (see Table A.2.1 in Annex 2). The range of exceptions includes both diverse horizontal treatments among borrowers and cap variations over the loan duration.

Chart 3.2.N
DSTI limits in Europe in 2019

(left-hand scale: DSTI limits as a ratio; right-hand scale: maturity limits in years)



Source: ESRB.

Notes: Only countries with DSTI limits in place are shown. The range of exceptions includes both diverse horizontal treatments among borrowers and cap variations over the loan duration. For RO, the DSTI range limit is 20% (for foreign currency loans) and 40% (for national currency loans). Currently, only 25% of the stock of bank credit to households is in foreign currency and therefore the limit of 20% is rarely applied. The exceptions in the DSTI case are for the first real estate loan and the limits are shifted upwards by 5 percentage points from 25% to 45%. In the case of MT, the maturity limit of 40 years is applicable to Category I borrowers, whereas a maturity limit of 25 years is applicable to Category II borrowers (see Table A.2.2 in Annex 2).



3.2.2.2 Commercial real estate: risk analysis and implemented policies

The CRE sector is important for financial stability due to its size and its strong connections with both the financial system and the real economy. While it is rare for a financial crisis to be

triggered solely by developments in CRE markets, past crisis episodes, such as the last global financial crisis, have shown that disorderly adjustments in CRE markets represent an important source of systemic risk. Given CRE's importance to financial stability, the ESRB conducted an analysis of risks and vulnerabilities in CRE markets in order to fulfil its mandate with regard to macroprudential oversight in the EU. In November 2018 the ESRB published a report⁹³ analysing the financial stability risks and vulnerabilities related to CRE markets, as well as the available policy instruments. The report studied both common trends across EU countries, as well as country-specific vulnerabilities.

The 2018 ESRB report analysed risks and vulnerabilities in CRE markets across four conceptual categories, called “stretches”. This methodological framework is based on an approach that is also used to analyse vulnerabilities in the RRE sector. The framework has been modified to take into account the specificities of the CRE market, as well as data limitations in EU CRE markets. The four stretches are: (i) the collateral stretch, which captures price growth and valuations in CRE markets; (ii) the income and activity stretch, which gauges the income-

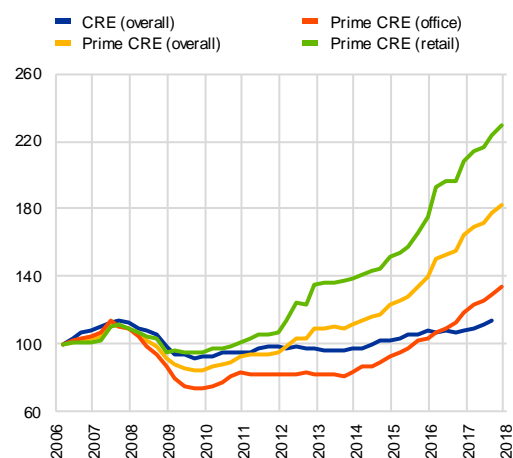
generating capacity and the level of activity in CRE markets; (iii) the financing stretch, which analyses the conditions and sources of financing of CRE; and (iv) the potential for spillovers stretch, which assesses to what extent negative shocks in CRE markets can be transmitted to the broader financial sector and the real economy. Each stretch is analysed on the basis of a scoreboard consisting of quantitative indicators and the findings of a qualitative survey conducted by the national authorities.

From a financial stability perspective, the main source of vulnerabilities in the CRE markets across several EU Member States relates to investors' search-for-yield behaviour in the low interest rate environment. The search for yield has

contributed to a combination of both high CRE prices and low CRE yields, by historical standards, across EU countries, especially in the prime segments (see Chart 3.2.O), making them potentially vulnerable to a repricing of risk premia. This trend started in 2012 and had been continuing since then. Yet the overall CRE price

Chart 3.2.O
Real CRE prices in the EU from 2006 to 2018

(index: Q1 2006 = 100)



Source: ECB calculations.

Notes: The CRE index is decomposed into its prime components. CRE prices are deflated by the consumer price index. For CRE (overall) prices, available headline data are generally compiled from commercial data supplied by MSCI. Estimated prime retail and office prices are from an ECB calculation based on Jones Lang LaSalle data and data from the ECB's Statistical Data Warehouse. Prime CRE (overall) is an average of the retail and office capital value indices. The latest observation is Q3 2017 for CRE (overall) and Q4 2017 for prime CRE.

⁹³ Report on vulnerabilities in the EU commercial real estate sector, ESRB, November 2018.

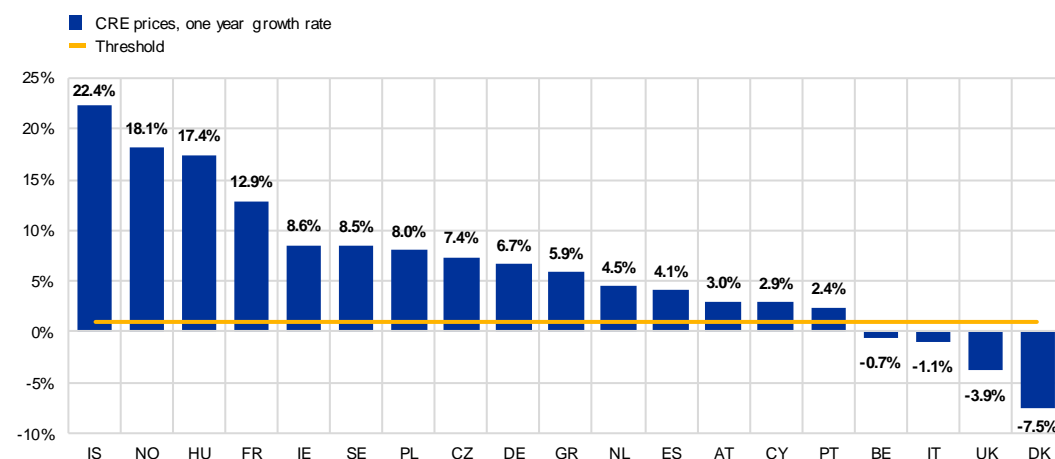


index did not show high growth, which probably remained subdued because of the strong contribution of the non-prime components. Furthermore, as regards the income and activity stretch, investor activity in CRE was at high levels and increasing, suggesting that high demand was also contributing to CRE price growth. At the same time, vacancy rates remained relatively high, showing that much of the demand was investor driven rather than user driven. There were a number of transmission channels through which these adverse developments in the CRE sector might have had a systemic impact on the financial system and the real economy (e.g. the financing stretch). A direct channel would be through lenders providing CRE loans. Although the share of other forms of CRE financing was increasing, banks continued to hold the dominant share of the existing loan stock. In some EU countries, CRE-related bank lending had even increased rapidly. As for the spillover stretch, changes to the investor base also opened up additional transmission channels through which CRE shocks could have an impact on financial stability, although they had the potential to increase risk sharing and reduce spillovers.

Since the report's publication, the vulnerabilities related to the CRE market have kept increasing across Member States, as CRE prices have continued to grow and investment in the sector has been high, although some indicators have already pointed to a market slowdown. As Chart 3.2.P highlights, most countries with available data have registered an increase in the CRE price index (some have recorded strong increases), while only four have recorded a decrease. In addition, there have been clear signs of price overvaluation in several countries. The low interest rate environment has contributed to the search-for-yield behaviour of investors, who consider that CRE delivers above-average returns. However, a comprehensive analysis of CRE sector risks is hampered by data incompleteness, which hinders the comparability of risk assessments across countries.

Chart 3.2.P
Recent changes in CRE price indices across Member States

(growth rates in percentages)



Source: ECB (CRE price statistics).

Notes: Data for BG, EE, FI, HR, LI, LT, LU, LV, MT, RO, SI and SK, were missing. The one year growth rates' endpoints refer to Q4 2017 for CY; Q4 2018 for AT, BE, CZ, DK, ES, GR, HU, IS, IT, NO, PL and PT; Q1 2019 for DE; and Q2 2019 for IE, FR, NL and SE. The threshold is equal to 1%, in reference to the European Commission's macroeconomic imbalance procedure.



Despite identified vulnerabilities related to the CRE markets, only a few Member States have taken macroprudential measures to address these. Table 3.2.C in the previous sub-section indicates that the most common measures are risk-weight floors and add-ons under Articles 124, 164 and 458 of the CRR and under national law, which have been applied by eight countries (HR, IE, LV, NO, PL, RO, SE, UK). Only three countries (CY, DK, PL) have CRE-related borrower-based measures in place and only one measure addressing CRE sector vulnerabilities was recalibrated in 2019, i.e. the SyRB recalibrated by Hungary to address CRE project loan exposures⁹⁴. Given the level of systemic risks identified and the relatively limited macroprudential policy action, the related risks should be monitored and further policy measures considered.

3.2.2.3 Measures targeting credit institutions' risk weights

Booming real estate markets coupled with declining risk weights in several Member States have prompted national authorities to take action targeting credit institutions' risk weights.

Articles 124 and 164 of the CRR give the designated authorities the power to implement stricter requirements regarding risk weights for credit institutions using the SA or the IRB approach, respectively, and have been used by some Member States (see below). Other Member States have been using their national flexibility powers under Article 458(2)(d)(vi) of the CRR to address increased risks arising from RRE and/or CRE exposures (see further details below). Finally, other countries have been using non-binding national powers to address these risks, for example, in Luxembourg, the authorities have recommended a 15% risk-weight floor for IRB banks' portfolios of non-SME retail exposures secured by real estate located there, and require those banks to also run a stress test with minimum levels for the probability of default (PD) and loss given default (LGD) parameters of 50% and 20% respectively.⁹⁵

Article 124 of the CRR for SA credit institutions

Competent authorities can set stricter requirements for the exposures secured by real estate of SA credit institutions through the power granted to them by Article 124(2) of the CRR. The use of this article to target RRE has mostly come in the form of: (i) a decreased maximum LTV threshold, which – as stipulated by Article 125(2)(d) of the CRR – normally is 80%, in order to be able to use the preferential risk weight of 35%; and/or (ii) a stricter definition of what constitutes an exposure which is “fully and completely secured by mortgages on residential property”. Competent authorities can also set a higher minimum risk weight, but to date only Liechtenstein has done so, in combination with a lowering of the LTV threshold. For CRE, the channels through which Article 124(2) is used are somewhat different. The competent authorities which have used this article have done so by increasing the preferential risk weight, which normally is 50% according to the regulation, that can be applied to the part of the loan below the maximum LTV threshold (which, as stated in Article 126(2)(d) of the CRR, normally is 50% of the market value or 60% of the mortgage lending value), rather than by changing the LTV threshold. Changes to the minimum risk weight applied to the CRE exposures held by SA credit institutions have all been increases from 50% to 100%. These measures have proven to be rather popular, with seven

⁹⁴ The SyRB mentioned also preventively addresses relatively healthier foreign currency loan exposures.

⁹⁵ [Circulaire CSSF 16/643](#), Luxembourg, 30 August 2016; and [Circulaire CSSF 12/552](#), Luxembourg, 11 December 2012.



measures related to RRE lending and nine measures related to CRE lending. A high-level summary of these measures can be found in Table 3.2.D, with more detailed descriptions in Annex 2.

Table 3.2.D

The use of Article 124 of the CRR

	BG	HR	IE	LI	LV	MT	NO	PL	RO	SE	SI	UK
RRE				●		●					●	
Definition	●	●	●					●				
CRE		●	●		●		●	●	●	●		
Definition	●											●

Source: ESRB macroprudential measures database.

Notes: The maximum LTV levels for a mortgage to get the preferential 35% risk weight in MT and SI are 70% and 60% respectively. In LI, a two-tier approach is taken where the part of the mortgage up to an LTV of two-thirds can get the preferential risk weight of 35%, while the part of the mortgage in breach of that LTV (but still below 80%) carries the risk weight of 50%. Definitions refer to the use of Article 124 to implement stricter requirements in order for an exposure to be considered “fully and completely secured by mortgages” either on RRE or CRE.

Article 164 of the CRR for IRB credit institutions

Article 164(5) of the CRR grants national authorities the power to set higher minimum values for exposure-weighted average LGD parameters as applied to the real estate exposures of IRB credit institutions. The estimation of IRB banks’ risk weights is a function of both LGD and PD parameters. Therefore, this measure only adjusting the LGD parameter has been considered as inadequate by several Member States that wanted to address risks arising from real estate exposures. Indeed, Member States that have been using the powers under Article 458 of the CRR in order to impose stricter risk-weight measures have been arguing that acting through the LGD parameter would yield unsatisfactory results by: (i) resulting in relatively little extra capital requirements; (ii) penalising unjustifiably IRB credit institutions with more prudent PD estimations; and/or (iii) causing unforeseen effects resulting from the direct alteration of IRB credit institutions’ models.

To date, Norway has been the only EEA Member State to use this measure in order to implement a floor for the LGD parameter. Norway required its IRB credit institutions to have a minimum exposure-weighted average LGD of 20% for all retail exposures secured by residential property and not guaranteed by the central government (instead of the usual 10%, as set out in Article 164(4) of the CRR).⁹⁶

National flexibility measures under Article 458 of the CRR

National authorities can also impose stricter risk weights using Article 458 of the CRR when they see a change in the intensity of systemic risk related to the real estate sector.

Article 458(2)(a) and (b) of the CRR require that the relevant authority wishing to activate this

⁹⁶ This measure, which became applicable on 1 January 2014, was implemented under the Norwegian national regime given that the CRR had not been incorporated into the EEA Agreement at that time. For more information, see **Risk weights under the IRB approach**, Finansdepartementet, 13 October 2013.



national flexibility measure demonstrates that, apart from a change in the intensity of a macroprudential or systemic risk, this change poses a threat to financial stability at the national level.⁹⁷ To ensure that a proposed measure has no adverse effects on the EU Internal Market and to avoid misuse of flexibility measures, a multi-step notification, consultation and non-objection procedure is also foreseen before a measure is implemented.⁹⁸ Since 2014 four Member States have used this national flexibility tool to address risks related to the RRE market, by increasing the resilience of credit institutions that use IRB models to calculate the regulatory capital charges for credit risk.

Over the course of 2019, a new measure implementing stricter prudential requirements for risk weights on exposures secured by RRE was taken by Estonia and a measure by Finland was extended:

- **Estonia** introduced an IRB credit institution-specific minimum exposure-weighted average risk weight of 15% for the portfolio of retail exposures secured by mortgages on immovable property granted to obligors residing in Estonia.⁹⁹
- **Finland** extended a measure taken in 2017 regarding an IRB credit institution-specific minimum average risk weight of 15% for residential mortgage loans secured by housing units in Finland.¹⁰⁰

Belgium and Sweden had already put in place stricter prudential requirements on risk weights in the past:

- **Belgium** has had a combined risk-weight add-on for retail mortgage exposures of IRB credit institutions that are secured by residential immovable property for which the collateral is located in Belgium since 2018. The risk-weight add-on is composed of: (i) a general, flat risk-weight add-on of 5 percentage points applied after the proportionate risk weight add-on; and; and (ii) a proportionate risk-weight add-on calculated as a fraction (33%) of the average microprudential risk weight of the bank's portfolio of retail mortgage exposures. Belgium was the first Member State to enact these measures, already in 2014, when it introduced a 5 percentage point risk-weight add-on for IRB credit institutions on retail mortgage exposures secured by residential immovable property for which the collateral is located in Belgium. This measure was prolonged for one year in 2016 and then replaced in 2018 by the current one.
- **Sweden** implemented in 2018 an IRB credit institution-specific minimum average risk weight of 25% for Swedish housing loans to obligors residing in Sweden which are secured by immovable property. This measure replaced a Pillar 2 risk-weight floor of 15%, which was originally introduced in 2013 and increased to 25% in 2014.

⁹⁷ These flexibility measures may only be used if national authorities can establish that a measure is necessary, effective and proportionate. Moreover, national authorities must establish that no other measure specified in the common macroprudential framework can adequately address the systemic risk.

⁹⁸ The measures under Article 458 of the CRR are notified by the national authorities to the European Parliament, the Council, the Commission, the ESRB and the EBA. The ESRB and the EBA must provide their opinions to the Council, the Commission and the notifying Member State within one month of receiving the notification. For more details, see [A Review of Macroprudential Policy in the EU in 2018](#), ESRB, April 2019, Special Feature A.

⁹⁹ [Notification by Eesti Pank on a stricter measure based on Article 458 of the CRR](#) and [Opinion ESRB/2019/2](#) regarding that notification.

¹⁰⁰ [Notification by the Finnish Financial Supervisory Authority on an extension of the period of application of a stricter national measure based on Article 458 of the CRR](#) and [Opinion ESRB/2019/16](#) regarding that notification.



The measures currently in place are characterised by different designs (e.g. add-on, floor, etc.) and slightly different definitions of the exposures. In terms of design, their activation consists of a recalibration of risk weights on the RRE exposures, either in the form of a fixed add-on to all individual risk weights (BE, 2014), an add-on that is proportionate to some measure of mortgage exposure riskiness (BE, 2018), or institution-specific risk-weight floors at the portfolio level (EE, FI, SE). With regard to the different definitions of the exposures targeted by these measures, some focus on the location of the collateral, while others target the domicile of the obligors.

Against the background of increasing systemic risk in the RRE markets, these measures aim to enhance the resilience of credit institutions to potential downward corrections in these markets. As previously mentioned in Section 3.2.2.1, the ESRB has been monitoring risks related to the RRE sector and issued warnings and recommendations to several Member States in 2019.¹⁰¹ To date, the ESRB has, through its opinions, welcomed and supported the introduction and/or extension of all national flexibility measures notified under Article 458 of the CRR.

Box 2 Systemic risks in the residential real estate markets and declining risk weights¹⁰²

Residential real estate risks have been building up in recent years across most Member States. In September 2019 the ESRB published a forward-looking EEA-wide assessment of residential real estate, which shows that most countries were found to be in a firm or mature expansionary phase of the RRE cycle, with house prices and mortgage lending consistently increasing.¹⁰³ With the outlook for European economies weakening and the risk of an economic downturn thus increasing, the potential impact on the real estate cycle could lead to the crystallisation of the identified RRE risks.

The build-up of systemic risks in residential real estate markets has not been reflected in the risk profile of exposures secured by this type of assets as derived from internal models. In fact, average risk weights for exposures secured by the RRE of IRB credit institutions have been declining across most Member States. Whether these declines are caused by a period of expansion is unclear.¹⁰⁴ When estimating risk weights, IRB credit institutions rely on PDs computed using historical data rather than forecasts. During an expansion phase, PDs are likely to decrease, thus impacting the estimation of risk weights.

¹⁰¹ One of the Member States receiving a Recommendation was the Netherlands, where on 17 December 2019 De Nederlandsche Bank took a decision to impose a risk-weight floor on real estate exposures. The floor increases with the LTV ratio of the underlying mortgage loans. Following the authorisation procedures by EU authorities, the measure was intended to be adopted by end-March 2020. However, on 17 March, in response to the COVID-19 pandemic, the DNB decided to postpone its adoption.

¹⁰² Prepared by Alexandra Morão (ESRB Secretariat).

¹⁰³ Based on this assessment, the ESRB issued a set of country-specific warnings and recommendations on medium-term vulnerabilities in the residential real estate sector. For more details, see Section 3.2.2.1 and the [ESRB's website](#).

¹⁰⁴ A 2016 report by the EBA on "[Cyclicality of capital requirements](#)" stated that "econometric analyses overall tend to show a lack of statistically significant correlation between (sentiment-based and real economic) business cycle indicators on the one hand and banks' IRB risk parameters on the other hand". However, given the upward trend in real estate prices in most countries, further analysis is warranted to support these conclusions.



Microprudential supervision can contain, but not completely remove, concerns about low risk weights during a macroeconomic expansion. The aim of microprudential supervision regarding internal models is to ensure compliance with regulatory requirements and the reduction of inconsistencies and unwarranted variability of risk weights across institutions, rather than to target specific (minimum) levels of risk weights required for macroprudential reasons. Regulatory developments, such as the EBA Guidelines on PD, LGD and defaulted assets, as well as supervisory checks of banks' compliance with regulation, including ECB Banking Supervision's Targeted Review of Internal Models, should help to reduce some concerns. The ESRB has highlighted the importance of harmonised supervision of internal models at the European level, also in view of the dispersion of risk weights across the EU regions and countries not explained by the difference in risk profiles of the underlying assets.

Given that all macroprudential buffers are based on risk-weighted assets, it is important that risk weights also reflect the systemic risk profile of underlying assets. Even if modelling practices of banks across the EU are compliant with regulatory requirements, they do not necessarily fully incorporate the systemic nature of risks as identified through macroprudential analysis. If the risk-weighted assets to which macroprudential buffers apply do not fully incorporate the underlying risks, the capital derived from these buffers might not be sufficient to address the risk it is meant to create resilience for. This is why it is important that national macroprudential authorities can act in a pre-emptive way when they identify a change in the intensity of macroprudential risk that is not being reflected in the level of risk weights. The tailored macroprudential response provided by Article 458 of the CRR is an essential tool in this respect.¹⁰⁵ The ESRB has thus far been supportive of the national flexibility measures taken under Article 458 of the CRR by the national authorities that want to address these risks (BE, EE, FI, SE).

¹⁰⁵ There is a trade-off between the flexibility of the measures and the clear identification of micro- and macroprudential objectives. As mentioned in Section 2.1.6, the CRD V will introduce the possibility of using the SyRB to target sector-specific exposures. However, when applying a sectoral SyRB to non-floored risk-weighted assets, if the average level of sectoral risk weights is deemed too low from a macroprudential perspective, the calibration of the measure might imply the use of significantly higher buffer rates (with all the procedural aspects under Article 133 of the CRD).



3.2.3 Measures targeting risks related to consumer lending

In line with recent trends, in 2019 consumer lending in the EU grew at a pace of 4.9% (after 5.5% in 2018), confirming it as the fastest-growing segment of bank lending. Consumer

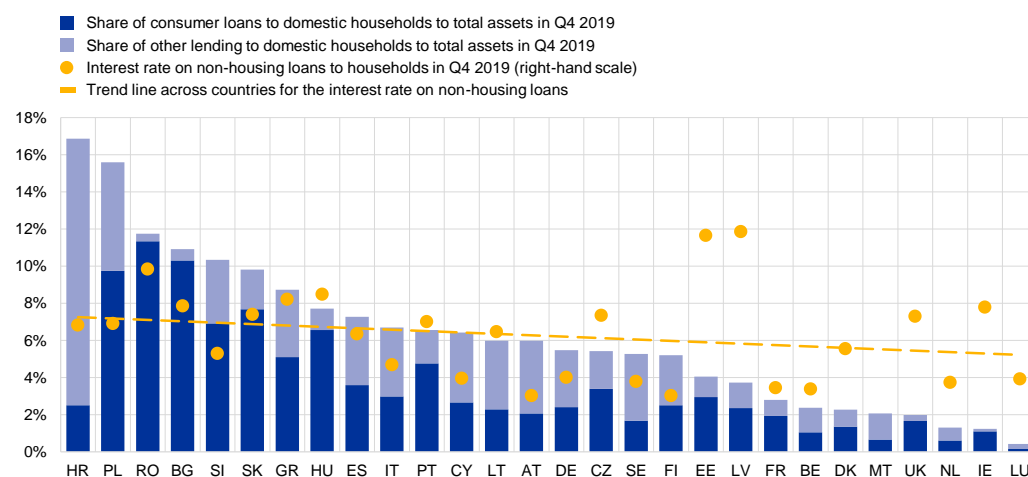
lending is defined as loans extended to individuals for personal use in the consumption of goods and services, typically through credit cards, or for the purchase of consumer goods (e.g. vehicles and electronics). Since December 2014 lending for consumption by EU monetary financial institutions (MFIs) increased by 22%, exceeding overall credit growth (10%) and making this lending segment the one that grew the most during this time (see Chart 3.2.R, left panel). Yet across countries the picture is quite varied. On the one hand, there are countries that at the end of 2019 had lower levels of consumer loans than they did at the end of 2014. On the other hand, some Member States saw pronounced increases in the stock of credit for consumption. This was the case for Spain (67%), Portugal (60%), Slovakia (55%) and Poland (51%).

While for most Member States credit for consumption represents only a small proportion of the total exposure of banks, the proportion tends to be higher in countries in the CEE region. As Chart 3.2.Q shows, the share of consumer loans in banks' total assets is lower than 10% in the majority of countries. The higher share of consumer credit in the CEE region is mostly explained by the positive risk/return ratio associated with this category of loans. Most foreign credit institutions present in these jurisdictions have important consumer credit portfolios as part of their lending strategy, due to their positive contribution to the overall level of profitability. It can be observed that there is a positive relationship between the share of non-housing loans in total assets and the level of interest rates (see Chart 3.2.Q).

Chart 3.2.Q

Share of non-housing loans to households in total assets and the related interest rate across EU MFIs

(level as a percentage)



Source: ECB (BSI statistics and MFI interest rate statistics) and ESRB calculations.

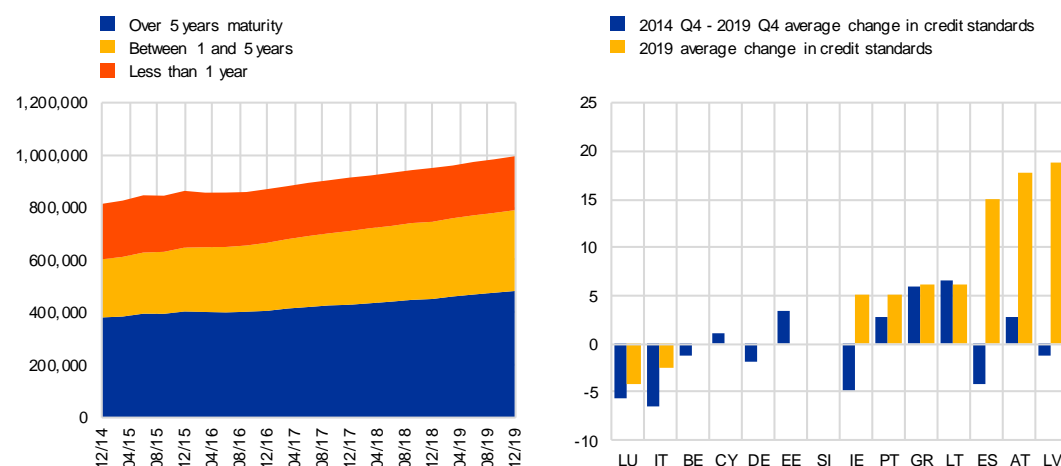
Notes: The interest rate is calculated on the stock of outstanding loans and refers to either the annualised agreed rate or the narrowly defined effective rate. Data on the interest rates of consumer loans specifically were not available. For non-euro area Member States, the interest rate is calculated on the stock of outstanding loans denominated in the national currency. Other lending refers to loans to domestic households extended for purposes other than housing or consumption.



Consumer loans are intrinsically riskier in nature than other loans and thus, in an environment of prolonged low interest rates, there is the risk that banks in search of yield increase their exposure to this kind of product. Loans for consumption are generally unsecured and have higher interest rates than mortgages or corporate loans. At the same time, ceteris paribus, the riskiness of any kind of loan increases as its maturity increases. Since 2014 consumer loans with a maturity of more than five years grew by 27% across the EU and were the main contributor to the overall increase in credit for consumption. By contrast, the amount of consumer lending with a maturity lower than one year decreased in relative and absolute terms. This move towards longer maturities, combined with the rise in the share of credit for consumption, suggests an increase in the riskiness of banks' overall portfolios. However, in 2019 banks reported a tightening of credit standards for consumer credit rather than a loosening (see Chart 3.2.R, right panel). Although data are not available for those countries in which banks' exposure to consumer credit is the highest, this shows that, according to banks, credit standards are not deteriorating as one would expect during a boom period.

Chart 3.2.R
Consumer lending in the EU: total loans and credit standards across Member States

(EUR millions; level as a net percentage)



Source: ECB (BSI statistics and BLS statistics) and ESRB calculations.

Notes: In the left panel, only loans to domestic households are included in the calculations; on the horizontal axis the first two digits refer to the month whilst the last two digits refer to the year. In the right panel, the net percentage is reported: this is the difference between the percentage of banks reporting a tightening of credit standards and the percentage reporting an easing. The averages are simple averages of quarterly data. Data on credit standards are not available for BG, CZ, DK, FI, FR, HR, HU, MT, NL, PL, RO, SE, SK and UK.

Positive macroeconomic conditions supported the growth of households' disposable income, at the same time boosting consumer confidence and private consumption. In times of positive economic growth and surging consumer confidence, households increase the amount they spend on goods and services, either funding this spending through increases in income or by taking on more debt. When the latter outpaces the former, the ratio of households' loans for consumption to their disposable income rises, signalling that they are more indebted not only in absolute terms but also relative to their disposable income. As the bottom panel of Chart 3.2.S



shows, there was no general trend in this ratio across the EU in 2018 and 2019. While some Member States deleveraged significantly, others went through two years of upward changes.

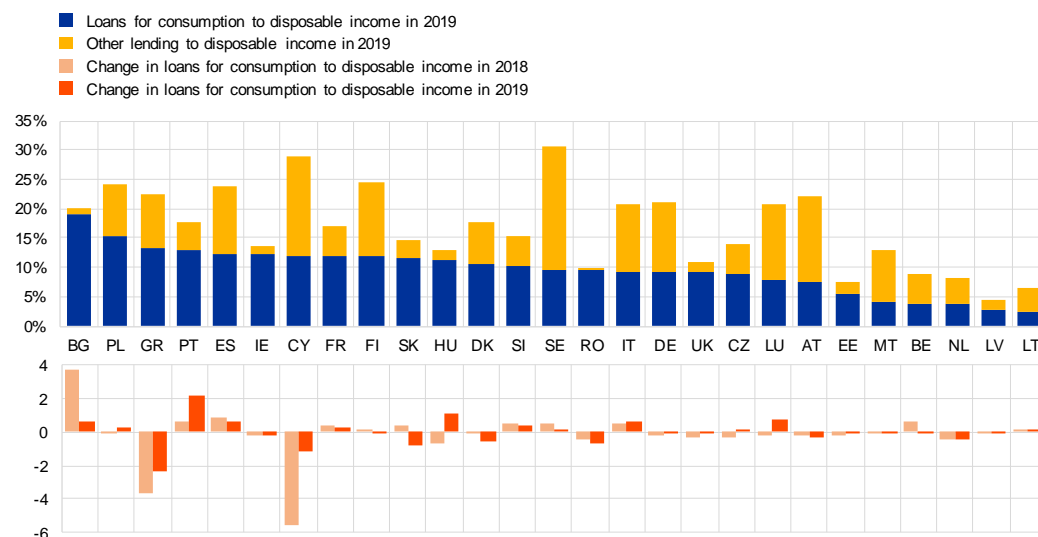
Ratios of loans for consumption to disposable income did not differ substantially among Member States.

As Chart 3.2.S shows, credit for consumption ranges from slightly more than 2% to as much as 19% of disposable income, with most countries' values hovering around 10%. As expected, there is a degree of overlap between countries with a high ratio of loans for consumption to disposable income and countries whose banks are relatively more exposed towards this kind of lending. It should be noted that loans granted to households for the purpose of business, education or debt consolidation are excluded from the definition of credit for consumption. Some Member States have high levels of lending for other purposes, which can contribute to diminishing the resilience of households.

Chart 3.2.S

Developments in the ratio of consumer lending to disposable income across the EU

(percentages; percentage points)



Sources: ECB (BSI statistics), European Commission (AMECO database) and ESRB calculations.

Notes: Only loans to domestic households are included in the calculations. Other lending refers to loans to domestic households extended for purposes other than housing or consumption. Disposable income refers to gross household disposable income. Data on disposable income for the year 2019 (2018 and 2019 for BG and EE) are based on forecasts made by the European Commission. For MT, data on disposable income were provided by the national authorities. Data for HR, IS, LI and NO are not available.

As the stock of consumer loans is relatively small compared with banks' total exposure, national authorities prefer measures that curb the flow of consumer debt instead of measures aimed at building the resilience of banks.

If the levels of the CCyB already implemented or announced are compared with the ratios of consumer debt to disposable income, no clear pattern emerges. This is not surprising as the CCyB is used by Member States to build resilience against many risks and credit for consumption is only a small component of the balance sheets of banks. Borrower-based measures are instead a more appropriate instrument. They



enable national authorities to limit the flow of new debt by preventing banks from providing loans that are above a predetermined level of risk.

As shown in Table 3.2.E, ten Member States implemented BBMs targeted at consumer lending. Measures addressing credit for consumption are mainly active in those countries where banks have the highest share of exposures towards this segment. DSTI measures and maturity limits are the most common BBMs and are implemented by seven and five Member States respectively. Romania, which is the country with the highest share of exposures to consumer lending (11%), implemented an LTV cap in addition to a DSTI cap coupled with a maturity limit. Borrower-based measures in the Czech Republic instead only apply to clients that already have a retail loan secured by RRE. Croatia simply issued a recommendation that requires banks to apply more prudent credit standards to consumer loans with a maturity of five years or more.

Table 3.2.E
Macprudential measures related to consumer lending

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK	
DSTI					■									■							■				■	■	■	■	■	■	■	
LTV														■																		
DTI					■																	■										
Maturity					■																	■				■	■					
Other													■											■								

Source: ESRB.

Notes: The measures included in the table may not exclusively apply to consumer lending (e.g. they could also apply to lending for house purchase). Consumer lending is defined as loans extended to individuals for personal use in the consumption of goods and services.

The asymmetries in banks' exposures towards consumer lending across Member States potentially signal the need for tighter macroprudential policy coordination at the EU level.

Consumer lending appears to be more prominent in regions where many subsidiaries of core countries' banks are operating.¹⁰⁶ These subsidiaries are instructed by the parent institutions to engage in these lending activities as they drive profitability, as this kind of credit is profitable even after adjusting for the risk. The presence of these mechanisms calls for increased policy cooperation between national authorities aimed at mitigating the vulnerabilities associated with consumer credit portfolios.

¹⁰⁶ Consumer lending may be more prominent in these regions also because it is used for real estate purposes as house prices are generally lower.

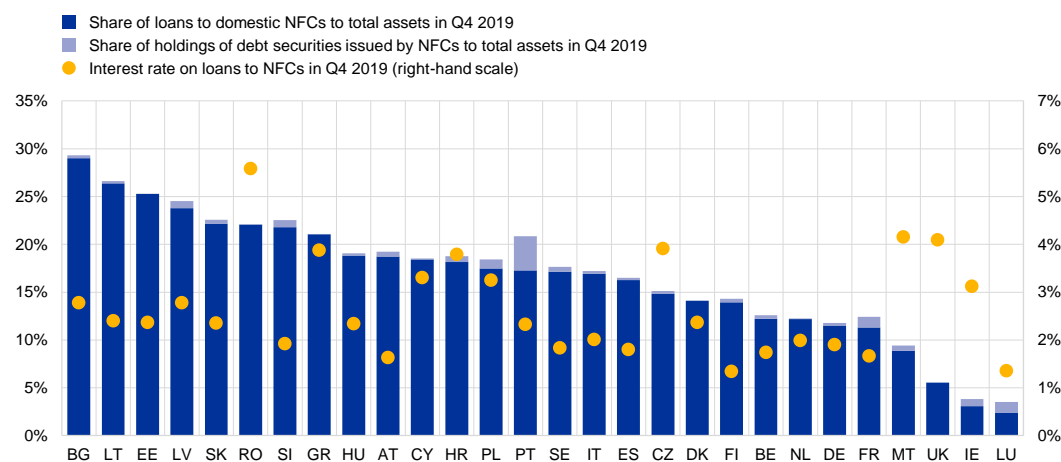


3.2.4 Measures targeting risks related to NFC lending

Across Europe, MFIs' exposures to domestic NFCs range from 10% to 25% of their total assets, with a few exceptions. As Chart 3.2.T shows, in some Member States banks are much more exposed to the NFC sector than in others. These countries are usually smaller, are characterised by shallow financial markets and have banking systems with traditional financial intermediation, where there is a natural predominance of lending to the private sector. In such environments, NFCs have less diversified access to financing and rely to a larger extent on MFI credit. Banks' large exposures towards this sector could represent a serious vulnerability should a negative shock¹⁰⁷ hit the economy, even if in these countries the overall level of NFC indebtedness relative to GDP is not among the highest in the EU (see Chart 3.2.U). During more than a decade of ultra-low and negative interest rates, many companies have seized this opportunity to raise inexpensive debt. When the next recession strikes, there is the risk that some of the more fragile firms, often referred to as "zombie companies", will not be able to service their debt obligations, transferring the distress directly to banks. Borrowing costs for NFCs are indeed low by historical standards but have not converged, with interest rates still differing substantially across Member States (see Chart 3.2.T).

Chart 3.2.T
Share of exposures to NFCs in total assets and the related interest rate across EU MFIs

(level as a percentage)



Sources: ECB (BSI statistics and MFI interest rate statistics) and ESRB calculations.

Notes: The interest rate is calculated on the stock of outstanding loans and refers to either the annualised agreed rate or the narrowly defined effective rate. For non-euro area Member States, the interest rate is calculated on revolving loans and overdrafts denominated in the national currency. For confidentiality reasons, the debt securities issued by euro area NFCs are considered in the calculations for euro area countries. For non-euro area Member States, only the debt securities issued by domestic NFCs are considered.

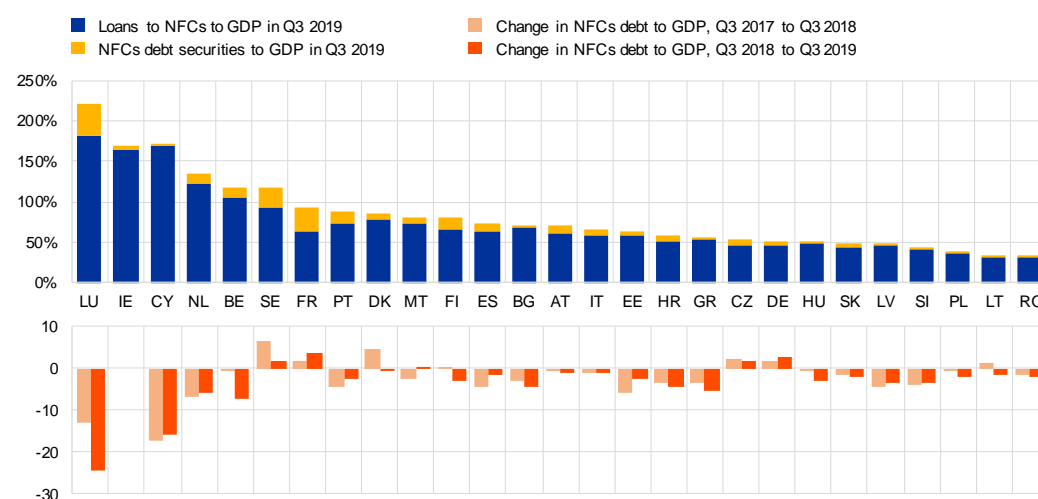
¹⁰⁷ While this report only covers the year 2019, it seems likely that the COVID-19 outbreak in the first quarter of 2020 will cause the next global recession.



The level of the NFC debt-to-GDP ratio is still riskily high in many countries, but positive economic growth across Europe has brought a decline in most Member States. As expected, there is a high degree of overlap between countries with high household indebtedness levels and countries with high NFC indebtedness levels. As shown in Chart 3.2.U, Luxembourg, Ireland, Cyprus, the Netherlands, Belgium and Sweden all have NFC debt-to-GDP ratios above 100%, closely followed by another five countries with levels higher than 75% (FR, PT, DK, MT, FI). While loans to domestic NFCs have steadily increased in recent years (by 2.7% in 2018 and 2.2% in 2019), strong economic growth has pushed the ratio of NFC debt to GDP down for the majority of countries mentioned above. In France, Belgium and the Netherlands, NFC debt-to-GDP ratios are higher now than at the peak of the credit boom in 2008, while other countries like Spain and Bulgaria have reduced their ratios considerably.

Chart 3.2.U
Developments in the ratio of NFC debt to GDP across the EU

(percentages; percentage points)



Sources: ECB (QSA and MNA) and ESRB calculations.

Notes: Data for consolidated debt for UK is not available and for IE is not available prior Q3 2019; consolidation refers to the consolidation of domestic inter-corporate loans. International inter-corporate loans are not consolidated. For CY, NFC debt excluding special-purpose entities was 102.5% for Q3 2019 and 118.7% for Q3 2018.

Countries from the CEE region continue to register relatively low levels of NFC debt-to-GDP ratios, against the backdrop of several structural factors related to the financial sector and the real economy. In small countries with less developed financial systems, large companies tend to prefer financing from abroad from parent banks or directly from parent companies. This leads to potential vulnerabilities related to: (i) increased risks in the host jurisdictions due to the fact that the remaining smaller companies and in particular SMEs have an inherently riskier profile; (ii) the increase in external debt of countries from this region; and (iii) the divergence in the dynamics of financial intermediation at the EU level.

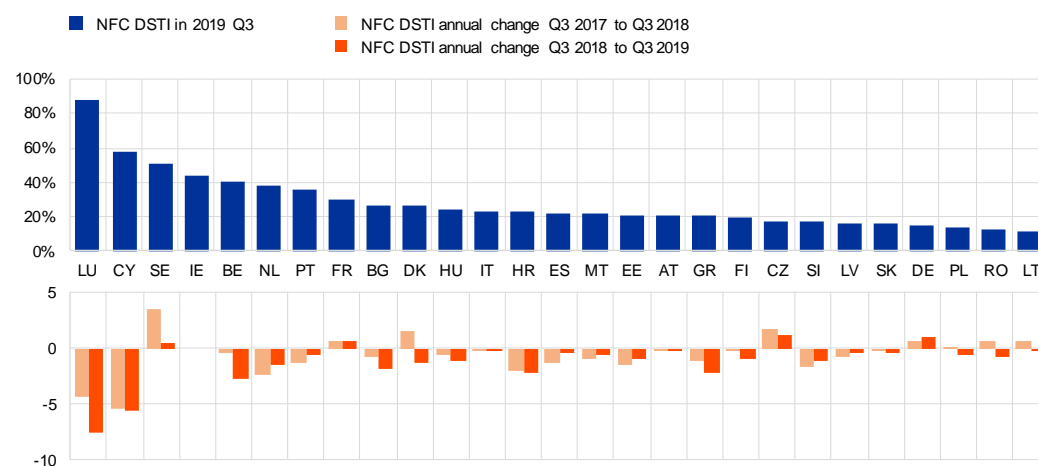


Most NFC debt is held by banks in the form of loans, but NFCs can also issue bonds directly on financial markets. Member States where market-based finance is more common have more diversified and resilient financial systems, which in turn ensure that the default risk of NFCs is better spread across the economy. However, if NFCs raise debt directly from financial markets, it is harder for national financial authorities to regulate these flows through macroprudential measures.¹⁰⁸ In Europe, the ratio of NFC debt securities to GDP is 11%, but there are countries with higher figures, usually those where the largest corporations are registered. This is the case for Luxembourg, France and Sweden. By contrast, there are Member States, like Cyprus, where capital markets are not so developed and NFC debt is entirely held in the form of bank loans.

As in 2018, NFCs' debt service continued to decline throughout 2019 supported by prolonged low interest rates. As shown by Chart 3.2.V, in most countries NFCs' debt service-to-income ratio decreased over the last two years. This downward movement is in line with the general decrease in interest rates and appears beneficial to NFCs, notwithstanding sustainability concerns. By contrast, in 2019 France and Germany experienced a rise in their NFC DSTI ratios, supported by an increase in the stock of debt. Slightly falling interest rates, which are among the lowest in the EU (see Chart 3.2.T), and increasing corporate income for France were not enough to drive down the ratio. Similarly, in the Czech Republic a recent increase in NFCs' income did not counterbalance rising rates and a growing stock of debt, leading to an upsurge in the DSTI ratio in 2019. Luxembourg is still the country with the highest DSTI ratio, although it saw a pronounced decrease in the ratio in 2019 thanks to a combination of falling interest rates, a decreasing stock of loans and increasing corporate income.

Chart 3.2.V
Developments in NFCs' DSTI ratios across the EU

(percentages; percentage points)



Sources: ECB and ESRB calculations.

Notes: For IE, no data are available before Q2 2019. The DSTI ratio is calculated with consolidated debt. No data are available for UK.

¹⁰⁸ See, for example, France's measure under Article 458(10) of the CRR.



There are no macroprudential measures at the disposal of Member States to specifically tackle cyclical risks stemming from the NFC sector. In contrast to the real estate and consumer lending sectors, borrower-based measures for corporations are not always readily available in Member States' national legislative systems. This leaves national authorities with the option to introduce measures under Article 458(10) of the CRR or to increase the CCyB. Both options build the resilience of banks, with the CCyB also curbing credit procyclicality. But the effectiveness of the tools is limited as they only apply to credit institutions, thus leaving other financial institutions out of scope. Still, they can be used to signal the risks to the wider market, as was the case in France. Furthermore, in order to tackle vulnerabilities stemming from large companies' financing patterns, macroprudential capital measures can be envisaged, together with reciprocity mechanisms.

In May 2018, in France, the High Council for Financial Stability (*Haut Conseil de Stabilité Financière* – HCSF) adopted a national flexibility measure in accordance with Article 458 of the CRR to limit concentration risk in banks' exposures to highly indebted large French NFCs.¹⁰⁹ The measure aimed to enhance banks' resilience and to reduce the risk of further increases in the debt of the most-indebted large French NFCs. The measure limited the large exposures of French SIs to 5% of their eligible capital for exposures to NFCs or groups of connected NFCs having their registered office in France and assessed to be large and highly indebted. Although the large exposure limit does not involve any restrictions on market funding, all of the financial debt a firm takes out is considered (bank debt, as well as market-based debt), thus ensuring that the indebtedness metrics are sensitive to the trends in the whole economy.

Regarding structural risks associated with the stock of NFC debt, the SyRB is the main tool at the disposal of Member States. The SyRB is a flexible measure, which can be applied to a wide array of different risks (see Section 3.3.1 below). Four countries (BG, EE, FI, HR) took into consideration the indebtedness of their domestic private sector when setting their SyRBs.

¹⁰⁹ See **A Review of Macroprudential Policy in the EU in 2018**, ESRB, April 2019, Section 2.9.3.2. The ESRB deemed that the changes in the intensity of systemic risk are of such a nature as to pose a risk to financial stability at a national level and the measure would not entail disproportionate adverse effects on the whole or parts of the financial system in other Member States (see **Opinion ESRB/2018/3**).



3.3 Measures predominantly targeting structural risks

3.3.1 Systemic risk buffer

In 2019 two EEA Member States activated a new SyRB and another Member State announced a change in the scope of its existing SyRB.

Since 1 July 2019 a new SyRB ranging from 1% to 3% has been implemented in Finland.¹¹⁰ In the United Kingdom, a new SyRB entered into force from June 2019, with rates currently ranging from 1% to 2%.¹¹¹ In Hungary, on 8 August 2019, the Magyar Nemzeti Bank announced a change in scope of the SyRB that will become effective from 1 January 2020.

In addition, a few Member States (AT, DK, HU, NL) and the Faroe Islands adjusted the rates of their existing SyRBs in 2019.

In the Faroe Islands, the SyRB was raised from 1% to 2%, as of 1 January 2019 (3% as of 1 January 2020).¹¹² In Hungary, the SyRB rate, which affected only one bank, was reduced from 1% to 0% as of 1 July 2019.¹¹³ In Austria¹¹⁴, the Netherlands¹¹⁵ and Denmark¹¹⁶, the phasing-in period ended on 1 January 2019. Bulgaria¹¹⁷, Finland¹¹⁸, Croatia¹¹⁹ and Slovakia¹²⁰ confirmed, within the periodical review procedure, the buffer rates already implemented. By 31 March 2020, six Member States had removed (FI), suspended (HU) or lowered either partially (DK for the Faroe Islands, NL) or fully (EE, PL) their SyRBs in response to the COVID-19 pandemic.¹²¹ In addition, Ireland had decided to defer the introduction of the SyRB, and Hungary had decided to temporarily suspend revisions to the 0% SyRB currently in place.¹²²

As a result, 17 Member States (plus the Faroe Islands) had a SyRB in place in 2019, with different arrangements in terms of buffer rates, institutions and exposures targeted.

These different arrangements are summarised in Chart 3.3.A and Chart 3.3.B. The buffer rates vary from 1% to 3%, in line with the notification and authorisation procedure thresholds set in Article 133 of the CRD IV. There are nevertheless two exceptions: Norway and Hungary. Norway applied a SyRB rate higher than 3% for banks identified as O-SIIs, but did not go through the authorisation procedures of Article 133 of the CRD IV, as it had not yet adopted the CRD IV. Hungary introduced the SyRB as a preventive measure and thus expected that no institution would have to maintain a

¹¹⁰ Notification by the Finnish Financial Supervisory Authority on the activation of a new systemic risk buffer.

¹¹¹ Notification by the UK Prudential Regulation Authority on the activation of a new systemic risk buffer.

¹¹² Notification by the Danish Ministry of Industry, Business and Financial Affairs on the change in the level of an existing systemic risk buffer in the Faroe Islands.

¹¹³ Notification by the Magyar Nemzeti Bank on the change in the level of an existing systemic risk buffer.

¹¹⁴ Notification by the Austrian Financial Market Authority on maintaining an existing systemic risk buffer.

¹¹⁵ Notification by De Nederlandsche Bank on the systemic risk buffer and on five O-SIIs.

¹¹⁶ Notification by the Danish Ministry of Industry, Business and Financial Affairs on the systemic risk buffer.

¹¹⁷ Notification by the Bulgarian National Bank on maintaining existing systemic risk buffer rates.

¹¹⁸ Notification by the Finnish Financial Supervisory Authority on continuing the use of an existing systemic risk buffer.

¹¹⁹ Notification by Hrvatska narodna banka on maintaining existing systemic risk buffer rates.

¹²⁰ Notification by Národná banka Slovenska on maintaining an existing systemic risk buffer.

¹²¹ Finland removed its SyRB; Estonia reduced its SyRB from 1% to 0%, Poland reduced its SyRB from 3% to 0%; the Netherlands lowered its SyRB, from its current 3% of global risk-weighted exposures to 2.5% for ING, 2% for Rabobank and 1.5% for ABN Amro, and Denmark temporarily reduced the SyRB in the Faroe Islands from 3% to 2%.

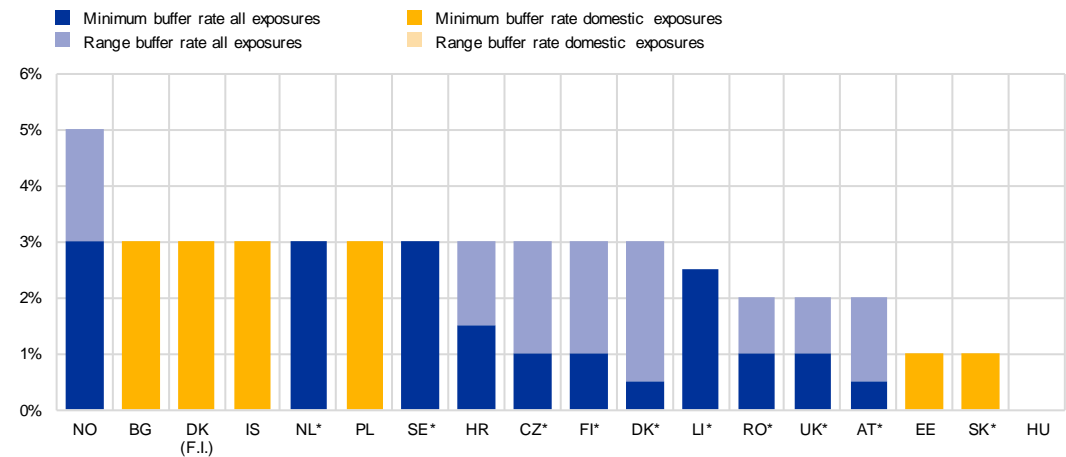
¹²² Ireland deferred the introduction of the SyRB, Hungary suspended the application of the SyRB.



positive rate in the near future. In addition, Member States also differ in how they apply different buffers to different banks. Some countries apply the same buffer to all banks, or just to specific SIs. Others use different buffer levels for different banks, based mainly on bank size.

Chart 3.3.A
SyRB rates in Europe in 2019

(percentages)

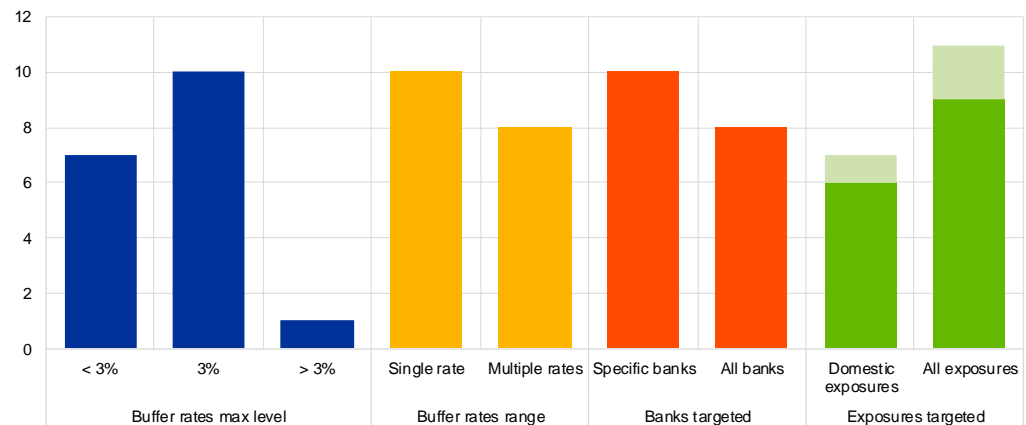


Source: ESRB.

Notes: DK (F.I.) stands for the Faroe Islands. The asterisks indicate Member States that apply the SyRB to a specific sub-sector of banks. All buffer rates refer to the fully phased-in ones. In HU, the SyRB is applied to domestic exposures, but no bank has a positive buffer rate.

Chart 3.3.B
Different SyRB arrangements in Europe in 2019

(number of Member States)



Source: ESRB.

Notes: For the exposures targeted, the light bars indicate the exceptions mentioned in the text (HR, NO, SK).



The scope of the exposures targeted by the SyRB is closely related to the way in which the SyRB¹²³ is used in combination with the O-SII buffer.¹²⁴ It can be observed that when Member States aim to build the resilience of a subset of all banks, they apply the SyRB to all the exposures of these institutions. This is the case in nine Member States. Conversely, when the SyRB is intended to build the resilience of banks to shocks in the domestic economy, it is applied only to the domestic exposures of all banks. This is the case in six Member States. There are three exceptions to this pattern, namely Croatia, Norway and Slovakia. While Slovakia applies the SyRB to the domestic exposures of three of its O-SIIs, both Norway and Croatia apply the SyRB to all the exposures of all the banks.

The flexibility of the SyRB is used by Member States to address different categories of risks.

The risks targeted by a SyRB fall broadly into three categories: (i) risks stemming from structural characteristics of the banking sector; (ii) risks stemming from the propagation and amplification of shocks within the financial system; and (iii) risks to the banking system stemming from either the real economy or specific sectors.¹²⁵ Most Member States simultaneously target risks that fall into different categories: while eight Member States only address risks that belong to one category, six Member States target two categories and four Member States target all three categories. Table 3.3.A illustrates the risks addressed by Member States through the SyRB.

- (i) **Risks stemming from structural characteristics of the banking sector.**¹²⁶ There are 12 Member States that justify the use of the SyRB with reasons related to the banking structure. Most of these countries are concerned with the concentration and size of the domestic banking sector, as negative externalities and costs of financial crises are potentially more severe in banking sectors that are highly concentrated and/or dominate financial intermediation. A few Member States also target ownership structures. Only one country targets a specific structural risk of the banking sector, namely risks related to NPLs.¹²⁷
- (ii) **Risks stemming from the propagation and amplification of shocks within the financial system.**¹²⁸ Seven Member States use a SyRB to address this type of risks, by mainly targeting exposure concentration and asset commonality. Large common exposures across financial institutions may increase the likelihood of simultaneous distress, thus amplifying an initial shock and making the system more fragile as a whole. These risks can arise, for instance, from common foreign exposures, such as those to emerging markets¹²⁹, or from

¹²³ According to Article 133(1) of the CRD IV, "Each Member State may introduce a systemic risk buffer of Common Equity Tier 1 capital for the financial sector or one or more subsets of that sector, in order to prevent and mitigate long term non-cyclical systemic or macroprudential risks not covered by Regulation (EU) No 575/2013, in the meaning of a risk of disruption in the financial system with the potential to have serious negative consequences to the financial system and the real economy in a specific Member State."

¹²⁴ With the introduction of the CRD V, it will no longer be possible to use the SyRB to address risks stemming from SIIs. This implies that all Member States targeting this kind of risk will have to either introduce or modify O-SII/G-SII buffers.

¹²⁵ **The ESRB handbook on operationalising macroprudential policy in the banking sector**, Chapter 4, Section 3.3.

¹²⁶ The main indicators monitored in this risk category relate to: (i) the size, importance for the financing of the economy and concentration of the domestic banking sector; (ii) the ownership structure; and (iii) other specific structural risks, such as high system-wide and persistent levels of NPLs or significant exposures to Level 2 and Level 3 assets.

¹²⁷ National authorities in Hungary are also concerned by NPLs but in the specific context of the CRE sector. The SyRB implemented in Hungary is thus categorised as "exposure concentrations" rather than "other structural risks" of the banking sector.

¹²⁸ The main indicators monitored in this risk category relate to: (i) exposure concentration and asset commonality; (ii) financial interconnections and contagion; and (iii) commonality in bank business models.

¹²⁹ This is the case, for example, for Austria.



exposures to domestic sectors, such as the NFC sector¹³⁰. Two Member States are also concerned about common bank business models and high financial interconnectedness.

(iii) Risks to the banking system stemming from either the real economy or specific sectors.¹³¹ Nine Member States implement the SyRB to target risks stemming from elevated economic openness. Indeed, countries that significantly depend on exports and imports are more vulnerable to global economic conditions. This risk is exacerbated by the size of the domestic economy, as small open economies are by nature more vulnerable to external shocks. This is why many Member States report “small and open economy” as a justification for the implementation of the SyRB. Two Member States instead address risks related to the indebtedness of the non-financial private sector (see Section 3.2.4).

Regarding the reciprocation of the SyRB, only one Member State, Estonia, has requested reciprocation of its SyRB measure. In June 2016 the ESRB issued its recommendation to other Member States to reciprocate the measure, motivated by a significant presence of foreign branches in Estonia (mainly from the Nordic countries). An informal institution-specific materiality threshold of €200 million was suggested in 2016 to guide the application of the de minimis principle, which was formalised and increased to €250 million following the resetting of the SyRB in Estonia in 2018.¹³² By the end of 2019, 13 Member States (BE, CZ, DE, FI, FR, HR, LT, LU, LV, MT, PT, SE, SK) had reciprocated the measure (also see Section 3.5.2.2).

¹³⁰ This is the case, for example, for the Czech Republic.

¹³¹ The main indicators monitored in this risk category relate to: (i) economic openness; and (ii) sectoral risks from the private non-financial sector, households and the public sector.

¹³² The ESRB has since 2017 recommended a maximum materiality threshold to limit potential material divergences in the application of the de minimis principle. For further information, see [Recommendation ESRB/2017/4](#) and [A Review of Macroprudential Policy in the EU in 2017](#), ESRB, April 2018, Section 9.2.



Table 3.3.A

Main categories of risks addressed by the systemic risk buffer in Europe (as at end-2019)

Country	Structural characteristics of the banking sector			Propagation and amplification of shocks within the financial system			Risks to the banking sector stemming from the real economy	
	Size and concentration of banks	Ownership structure	Other structural risks	Exposure concentration/asset commonality	Commonality in bank business models	Financial interconnections and contagion	Economic openness	Sectoral risks from the private non-financial sector, households and the public sector
AT	•	•		•				
BG							•	•
CZ	•			•			•	
DK	•							
DK (F.I.)							•	
EE				•			•	•
FI	•	•		•				•
HR	•						•	•
HU				•				
NL	•							
PL							•	
RO			•					•
SE	•			•	•	•		
SK	•						•	
IS							•	
LI	•		•	•			•	
NO	•					•		•
UK	•							

Source: ESRB.

Note: The Faroe Islands are considered as separate from Denmark.



3.3.2 Capital buffer for systemically important institutions

The failure or malfunctioning of systemically important institutions can pose a risk to the global economy and/or domestic economies. First, the default of such an institution can result in large fiscal outlays. Second, a decline in credit provision or a disruption in the critical services these banks offer to the real economy or financial system can aggravate macroeconomic conditions. The risk these institutions pose is commensurate with their size, interconnectedness, complexity and lack of substitutability. In the absence of a clear-cut measure for risk posed by systemic institutions, a measure of concentration among banks in these four dimensions (called a score) is considered as a proxy for systemic risk.

G-SII and O-SII buffers aim to increase the resilience of the targeted institutions. On a yearly basis, Member States' designated authorities engage in the identification of G-SIIs and O-SIIs and in the calibration of their buffers. For G-SIIs, both identification and buffer calibration are prescribed by regulation in detail.¹³³ For O-SIIs, the identification process is guided by EBA guidelines, and is based on scores assigned to individual institutions.¹³⁴ By contrast, there are no guidelines for the buffer calibration and designated authorities are not formally obliged to set O-SII buffer rates for identified institutions.¹³⁵ For institutions in SSM countries, the ECB may apply top-up powers, informed by a floor methodology in place since 2016 with full implementation by January 2022.¹³⁶

Global systemically important institutions

Since the identification exercise for G-SIIs began in 2015, the number of EU G-SIIs, their global systemic scores and accordingly their capital buffer rates have been steadily decreasing, reflecting a reduction in the global footprint of the EU banking sector. In 2015, 14 G-SIIs were identified and since then their number decreased to 11 in 2018 (Royal Bank of Scotland, Banco Bilbao Vizcaya Argentaria and Nordea Bank were removed from the list) and remained constant in 2019. In addition, the average of the systemic importance scores of the remaining G-SIIs has decreased by more than 12% since 2015, indicating a potential reduction in the risk posed by these institutions. While the scores for identified institutions remained stable or increased in two jurisdictions (ES, NL), they decreased significantly in France, Germany, Italy and the United Kingdom, where most G-SIIs are currently identified. As a result, Barclays, BNP Paribas, Deutsche Bank and HSBC have seen their G-SII buffer rate decrease since the measure was first introduced in 2015 (see Chart 3.3.C). In addition, while EU G-SIIs' combined assets decreased during the period analysed by approximately 4%, Asian and North American G-SIIs saw their assets increase by 5% and 10% respectively. Accordingly, the number of G-SIIs identified in North America increased from eight in 2015 to ten in 2019, while in Asia, where the number has not changed since 2015, two identified institutions were assigned to a higher bucket. Hence, since 2015 a reduction in the global systemic importance of EU G-SIIs has occurred.

¹³³ Article 131 of the CRD IV and **Commission Delegated Regulation (EU) 2016/1608**. The EBA is now working on a European methodology for the identification of G-SIIs that would consider Europe as the reference area instead of single Member States.

¹³⁴ **EBA/GL/2014/10**.

¹³⁵ In line with Article 131 (3) of the CRD V, the EBA is currently drafting a report on the appropriate methodology for the design and calibration of O-SII buffer rates in the process of which the EBA will consult the ESRB. See also Section 3.1.6.

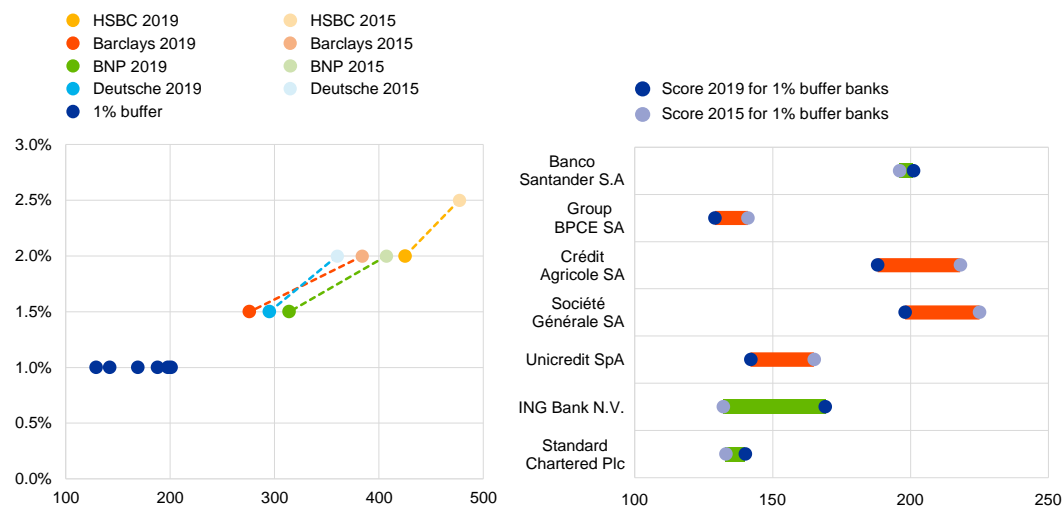
¹³⁶ **Macprudential Bulletin**, Issue 3, ECB, June 2017.



Chart 3.3.C

Buffer levels of G-SIIs relative to systemic importance scores since inception

(left panel: y-axis: buffer in percentages; x-axis: G-SII score in basis points; right panel: x-axis: G-SII score in basis points)



Source: Data are based on notifications received from 2015 onwards.

Notes: For G-SIIs whose buffer rates were changed, the migration is shown with a dashed line. For G-SIIs whose buffer rate remained constant at 1%, the score migration is shown in the right panel.

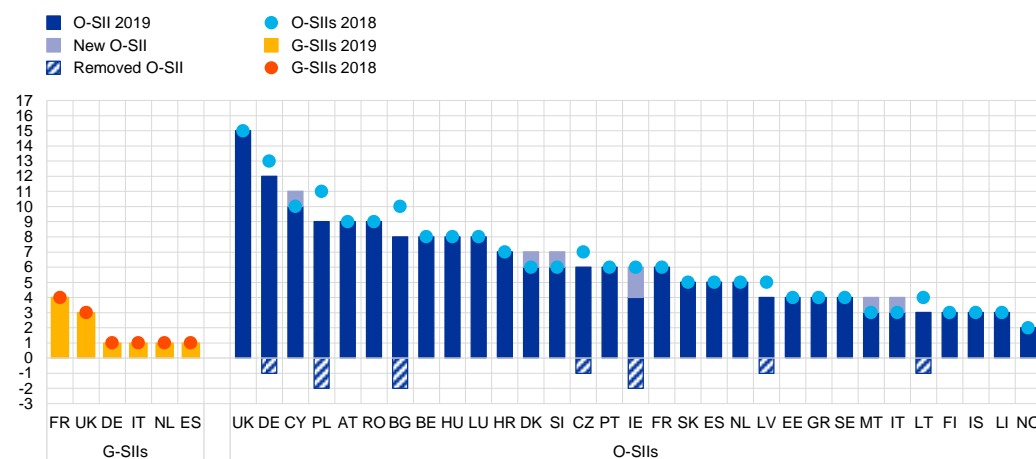
In 2019 the number of EU-based G-SIIs identified remained stable at 11, while one institution's buffer level decreased. All 11 EU-based G-SIIs are located in the six largest Member States by GDP (DE, ES, FR, IT, NL, UK; see Chart 3.3.D). All G-SIIs have also been identified as O-SIIs in their home markets. The applied G-SII buffer rates decreased for only one institution (Deutsche Bank), due to a reduction in its systemic importance score, while they remained stable for the remaining institutions. For domestic markets that are more concentrated than the global markets, it is expected that the O-SII buffer should not be smaller than the G-SII buffer, as the buffer methodologies are based on concentration. The O-SII buffer is set equal to the G-SII buffer for identified G-SIIs in three jurisdictions, while it is set higher in the Netherlands and Germany and it is not set at all in the United Kingdom. While designated authorities have never used discretion in the upward calibration of buffers for G-SIIs,¹³⁷ four designated authorities have used discretion in the application of a G-SII buffer to institutions with a lower score than the identification threshold used by the Basel Committee on Banking Supervision (BCBS) (130 basis points) since 2015.

¹³⁷ In accordance with Article 131(10) of the CRD IV.



Chart 3.3.D
Number of SIIs by EEA Member State

(number of institutions)



Source: Data are based on notifications received from 2018 onwards.

Notes: The SII classifications and changes are based on the notifications the ESRB received pertaining to the 2019 and 2018 identification exercises; the changes shown result from comparing the two. The G-SII/O-SII identifications are to take effect immediately or in the near future. All G-SIIs are also identified as O-SIIs.

Other systemically important institutions

Since the identification exercise for O-SIIs began in 2016, the number of identified O-SIIs has been decreasing, while their EBA scores have remained steady overall. In 2016, 199 O-SIIs were identified by EU Member States, while in 2017 the number decreased to 194, and it dropped further in 2018 to 190 and in 2019 to 187. By contrast, the number of O-SIIs identified by Iceland, Liechtenstein and Norway has remained stable at eight since 2017. The median EBA score slightly increased from 2016 to 2019. This was due to the removal of some low-scoring institutions, coupled with stable systemic scores for the remaining identified institutions. Hence, the domestic systemic footprint of EU O-SIIs as measured by EBA scores has remained steady during the time frame analysed, thus indicating a stable level of systemic risk.

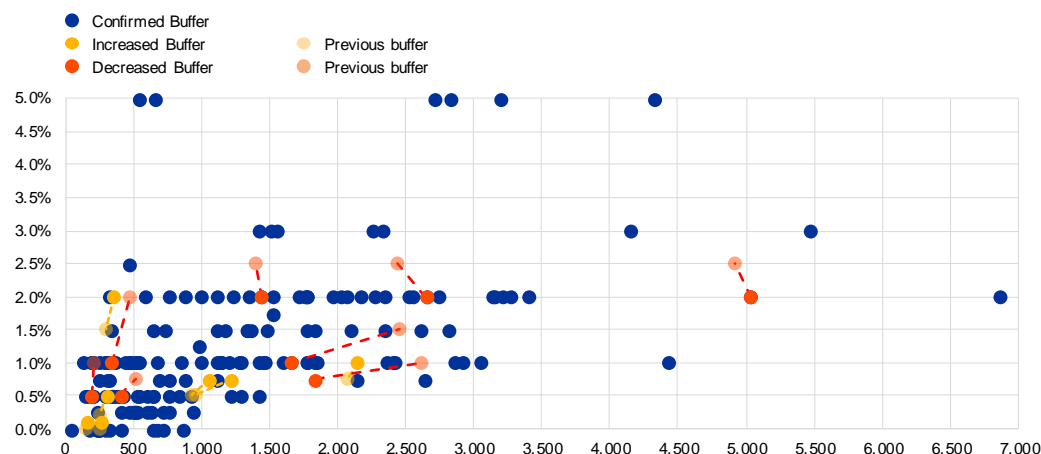
Compared with 2018, the annual O-SII identification exercise resulted in changes to the list of O-SIIs in 12 Member States and to their buffer levels in nine Member States. In total, 195 O-SIIs have been identified by designated authorities in the EEA, three fewer than in the previous year. The number of O-SIIs in a given jurisdiction ranges from 15 in the United Kingdom to two in Norway (see Chart 3.3.D). The list of identified O-SIIs changed in 12 Member States (see Table A.4.3 in Annex 4). These changes are often the result of corporate restructurings (e.g. Luminor Bank, which changed its subsidiaries into branches), changes in the systemic risk score of institutions or changes in the methodology for identifying O-SIIs. Nine Member States amended buffer levels for previously identified O-SIIs, increasing them for seven institutions and



reducing them for eight institutions (see Chart 3.3.E). By 31 March 2020 Finland¹³⁸ and the Netherlands¹³⁹ had reduced the level of the O-SII buffer for one bank in their respective jurisdictions in response to the COVID-19 pandemic.¹⁴⁰

Chart 3.3.E
SII buffer levels relative to systemic importance scores

(y-axis: buffer in percentages; x-axis: SII score in basis points)



Source: Data are based on notifications received from 2018 onwards.

Notes: The chart shows on the x-axis domestic systemic importance scores, and on the y-axis SII buffers (including O-SII buffers, SyRBs and Pillar II measures only if the national designated authority publicly stated that such measures are used to target these risks). The previous buffer dots refer to the 2018 systemic scores and buffers. For O-SIIs whose buffer rates were changed, the migration is shown with a dashed line and the previous systemic score and buffer are shown with another dot.

Among the four sub-scores, cross-border activity is on average the highest one, followed by importance. Unexpectedly, size is the sub-score contributing the least to the overall EBA score. For the 2018 identification procedure, at a country level, cross-border activity prevailed as the largest category 11 times, importance seven times, interconnectedness six times and size five times. The same results hold at bank level, where for 30% of institutions cross-border activity is the prevailing category, followed closely by importance for 29% of institutions. 22% of O-SIIs had interconnectedness as the highest sub-score, with just 19% of institutions having size as the prevailing sub-score. The institutions scoring the highest, in relative terms, in cross-border activity tend to be internationally active banks, while for the most part publicly owned (or partially publicly owned) institutions are the ones scoring the highest in the importance dimension. The apparent dominance of these two categories in the identification process could be due to the presence of a handful of outliers.

¹³⁸ After removing the SyRB, the O-SII buffer became the binding buffer for the three Finnish O-SIIs. After the reduction of the O-SII for OP Financial Group from 2% to 1%, the additional capital buffer requirements amount to 2% for Nordea, 1% for OP Financial Group, 0.5% for Municipal Finance Plc and 0% for all other Finnish banks; see ["Macroprudential decision: FIN-FSA Board lowers credit institutions' capital requirements"](#), FIN-FSA, press release, 17 March 2020.

¹³⁹ After reducing the SyRB for ABN Amro to 1.5%, the O-SII buffer of 2% would have become binding. In order to avoid this and provide a release of capital De Nederlandsche Bank also reduced the O-SII buffer to 1.5%; see ["DNB temporarily lowers bank buffer requirements to support lending"](#), DNB, DNBulletin, 23 March 2020.

¹⁴⁰ On 1 April Hungary decided to release O-SII buffer requirements from 1 July 2020. The institutions affected must gradually in three years from 2022 onwards rebuild their capital buffer initially prescribed for 2020



In 2019 five Member States did not comply with the EBA guidelines when identifying O-SIIs and 18 countries used supervisory assessments in addition to the EBA scoring procedure. If

a Member State does not identify an institution that would have been identified using the EBA scoring methodology (mandatory indicators), then it is deemed non-compliant with the guidelines. Consequently, the flexibility provided by supervisory assessment with optional indicators should be used to identify more institutions than under the scoring methodology. In 2019 Estonia, Latvia, Lithuania, Malta and Slovenia did not comply with the guidelines, mostly due to the exclusion of mandatory indicators (debt securities outstanding), the assignment of different weighting in the computation of scores, or the application of a higher threshold than allowed (425 basis points). In 2019, 19 Member States used supervisory assessment in the identification exercise, resulting in the identification of 33 additional institutions. Germany and the United Kingdom together identified 16 additional institutions.

The minimum score for an institution to be identified as an O-SII varies across the EU. The EBA guidelines allow for some flexibility when setting the threshold in order to take into account the specificities of Member States' banking systems, such as their relative concentration or fragmentation. Setting a lower threshold than the recommended one (350 basis points) results in the identification of additional institutions. Setting a higher threshold results in the identification of fewer institutions. In 2019 there were ten countries deviating from the standard threshold: six countries set a lower threshold and four countries set a higher threshold. As a consequence, a bank with a score of 100¹⁴¹ would be identified as an O-SII in one jurisdiction, while in other jurisdictions a score of 500¹⁴² would be needed to become an O-SII.

There is a marked heterogeneity in O-SII buffer levels across the EU, which is not explained by institutions' scores, assets relative to GDP or Member States' position in the financial cycle. Comparing buffer levels across Europe with EBA scores, widespread heterogeneity is found. In this respect, it could be inferred that some Member States (e.g. ES, GR, IT, SI) have relatively looser buffer rate-setting practices than other European countries given the lower buffer rates relative to scores. By contrast, some countries (e.g. AT, DK, EE, FI, LI) could be considered as having a tighter stance.¹⁴³ There are, however, several reasons which could explain some of the differences in the O-SII buffer calibration across countries. For example, the O-SII score is calculated with reference to the domestic economy. Therefore, a given O-SII score has a different relevance in a highly concentrated banking system than in a fragmented one. Furthermore, in Ireland, Latvia and Romania, some institutions have a higher buffer but a lower O-SII score compared with other institutions in the same country (see Chart 3.3.F).

¹⁴¹ Under the adjusted methodology using Title III Supervisory Assessment in Germany.

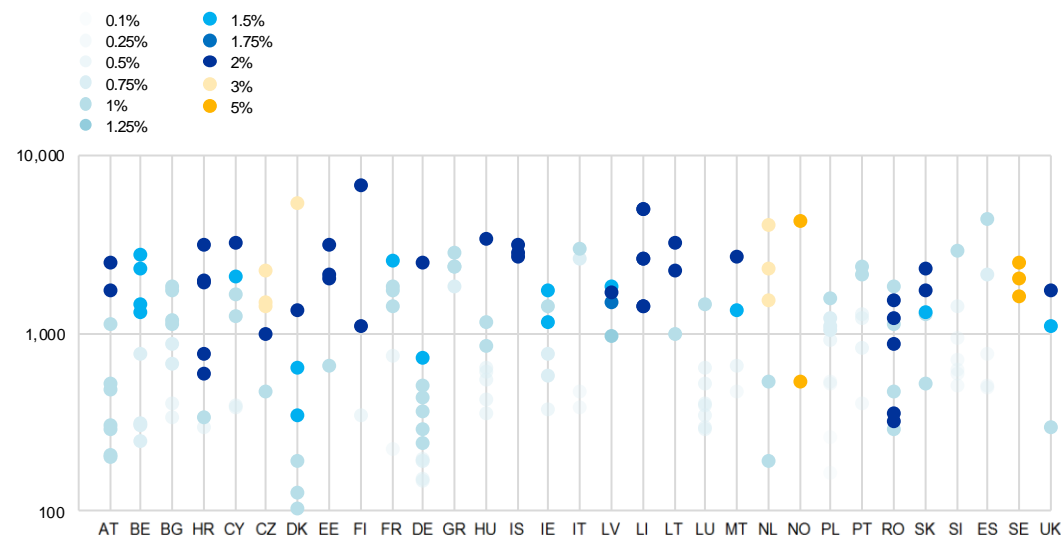
¹⁴² The threshold used in Slovenia (500) is non-compliant with the EBA guidelines.

¹⁴³ The terms "loose" and "tight" in this section are used in relative, not absolute, terms and do not mean that a loose or tight buffer-setting practice is interpreted as inappropriate given country-specific and timing considerations.



Chart 3.3.F
Actual SII buffer levels across the EU in 2019

(SII scores on a logarithmic scale in basis points)



Source: Data are based on notifications received in 2019.

Notes: The chart shows on the x-axis EU countries and on the y-axis EBA scores using a logarithmic scale. The colour coding indicates the range of SII buffers (including O-SII buffers, SyRBs and Pillar II measures only if the national designated authority publicly stated that such measures are used to target these risks) used across the EU. The chart does not include institutions with 0% buffers. In Austria, the buffer applied to UniCredit Bank Austria AG is 1% due to the cap set at the parent level. The same applies to Société Générale Bank & Trust in Luxembourg, which is assigned a 1% buffer due to the cap set at the parent level. The O-SII framework in Austria and Luxembourg would otherwise require the institution to hold a 2% buffer.

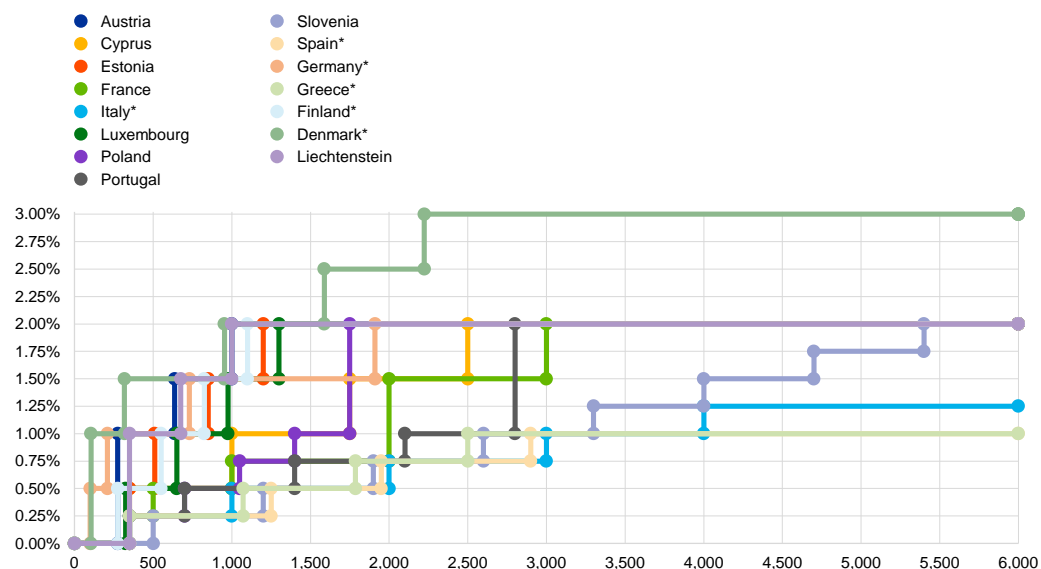
Calibration methods used by Member States to determine the O-SII buffer levels vary widely across the EU, leading to marked differences in buffer levels.

Fifteen countries adopt the bucketing approach with a clear mapping of scores to buffers, while the rest adopt a combination of the equal expected impact approach and supervisory judgement (based on information such as level playing field considerations, historical banking losses, the state of the credit cycle and G-SII buffers). Even among Member States adopting the bucketing approach, large differences persist (see Chart 3.3.G). In three jurisdictions (ES, GR, IT), a bank can never be subject to the maximum 2% O-SII buffer rate, even if it were to reach the maximum possible O-SII score. In Member States that are willing to use the 2% buffer rate, the lower threshold of the bucket for the 2% rate ranges from a minimum score of 1,000 (in AT) to a maximum score of 5,400 (in SI). Currently, the most commonly used buffer rate is 1% and is applied to institutions with scores ranging from 191 (in NL) to 4,434 (in ES).



Chart 3.3.G
Bucketing models by Member State

(y-axis: buffer in percentages; x-axis: SII score in basis points)



Source: Data are based on notifications received in 2019.

Notes: The chart shows buffer levels for intervals of scores, where the tighter methodologies lie to the left. Germany*: buffers are set according to national scores; the presented ones are an approximation of the corresponding Title II EBA score. Greece*: buffers are set in relative terms; the presented ones are based on the average maximum score over the previous three years (2,858.3). Finland*: buffers are set according to an adjusted score ($EBA_{Score} * 0.8 + OptionalIndicator * 0.2$, where the optional indicator is equal to an institution's assets-to-GDP ratio divided by the maximum assets-to-GDP ratio within the SSM area); the presented ones consider Title II EBA scores only. Denmark*: buffers are set according to national scores; the presented ones are an approximation of the corresponding Title II EBA score. Spain*: the ECB floor methodology is also used.

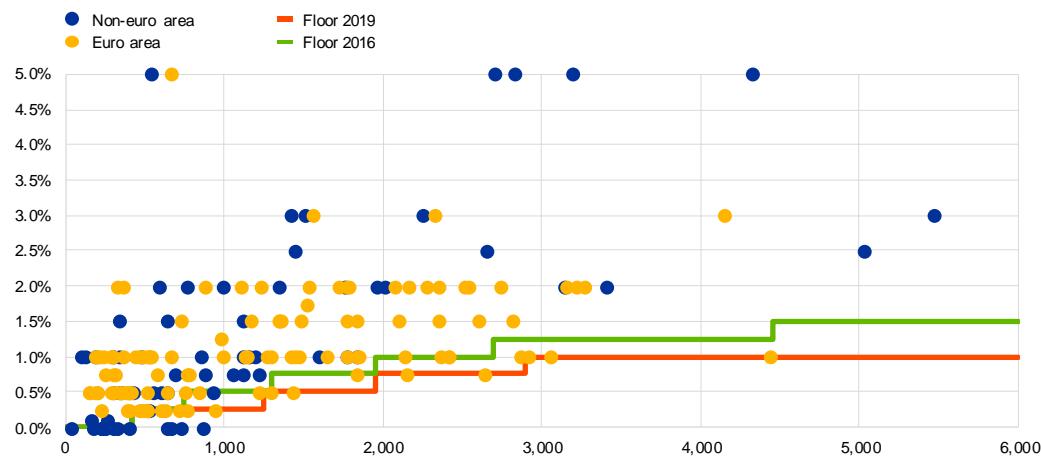
The floor methodology used by the ECB to apply top-up powers for institutions subject to ECB Banking Supervision was reviewed in 2019, affecting six institutions.

In 2019 the ECB reviewed its floor methodology, first introduced in 2016, in order to foster higher harmonisation of buffer levels among SSM countries. The revision, which is envisaged to be implemented by 2024, would require a top-up for nine banks, motivating the four Member States (ES, GR, IT, SI) concerned to increase the capital buffer rates for these institutions. Although non-SSM countries are not subjected to the floor methodology, the O-SII buffers of most of the identified institutions in non-SSM countries would be compliant with the revised ECB floor. This would also be the case for Member States using other instruments for SII risk (including SyRBs and Pillar 2 measures, if appropriate), with the exception of three UK O-SIIs and a Czech one, which are assigned 0% O-SII buffers and no SyRB buffer, respectively. As shown in Chart 3.3.H, using the ECB floor methodology, non-SSM countries seem to have a tighter stance for SII risk as they tend to require higher SII buffers for institutions which have similar scores in SSM countries.



Chart 3.3.H
ECB floor methodologies in 2016 and 2019

(y-axis: buffer in percentages; x-axis: SII score in basis points)



Source: Data are based on notifications received in 2019.

Notes: An SSM institution, represented by a dot, which lies below the line would not be compliant with the ECB floor methodology. For non-SSM countries, the buffers presented target SII-specific risk, including O-SII buffers, SyRBs and Pillar 2 measures only if the national designated authority publicly stated that such measures are used to target these risks.

Some countries continue to use the SyRB to reduce risks stemming from the size and concentration of the domestic banking system (see Section 3.3.1). Eleven EEA Member States (AT, CZ, DK, FI, HR, LI, NL, NO, SE, SK, UK) use a SyRB to target risks stemming from the size and concentration of their domestic banks. The revised CRD abolishes the use of the SyRB for O-SII risks. Some of these 11 EEA Member States may therefore have to revise their capital buffer policies by the end of 2020 when the revised CRD enters into effect.^{144, 145} The revised CRD enables national authorities to set O-SII buffers up to 3% without the need for Commission authorisation. As at end-2019 no EEA Member State had set a SyRB rate above that level.

Some host authorities might be constrained by the O-SII buffer cap for subsidiaries.

The O-SII buffer for subsidiaries in groups led by an EEA O-SII or G-SII is bound by the buffer rate of the parent institution applied on a consolidated basis.¹⁴⁶ Subsidiaries might be more systemic in the host country than parent institutions in the home country, which restricts the macroprudential space of the host authorities. For 30 out of 56 O-SIIs that are a subsidiary of a G/O-SII in another EEA Member State, the host authorities cannot use the full range of the O-SII buffer up to 2% (see Table A.4.1, Annex 4). The potentially most constrained host authorities are in central and south-eastern Europe. In the case of eight institutions, the authorities currently use a SyRB that exceeds the subsidiary cap, which indicates that the subsidiary cap can be a limitation in some jurisdictions. The revised CRD allows for more flexibility in the O-SII buffer as the subsidiary cap is set

¹⁴⁴ The revised CRD and CRR will not immediately apply to LI and NO, but rather when it is incorporated into the EEA Agreement.

¹⁴⁵ Revisions to the methodology for the O-SII buffer and the SyRB are currently ongoing in a number of Member States.

¹⁴⁶ To prevent excessive limitation for host authorities, if the buffer rate of the parent institution is below 1%, the O-SII buffer for a subsidiary can go up to 1%. The analysis here assumes that all O-SII buffers of a parent institution apply on a consolidated basis.



1 percentage point above the O-SII buffer rate of the parent. This would alleviate the current limitation for all but four subsidiaries (based in CZ, HR and SK). Nevertheless, if host authorities wish to set higher O-SII buffers than currently is the case (possibly also above 3%) and home authorities do not, the new subsidiary cap could still be binding in the future.



3.4 Measures targeting liquidity and funding risks

Liquidity shortfalls can threaten the stability of institutions or aggravate tensions in financial markets. Banks are exposed to short-term liquidity risk and medium-term funding risk. Short-term liquidity risk is associated with sudden and unexpected outflows of liquid resources in times of bank-specific or market-wide turbulence, where redemptions increase and funding opportunities become scarce. On the other hand, medium-term funding risk is associated with excessive maturity mismatches in relation to the funding of banks' activities, where less liquid assets are funded through short-term liabilities.

Measured by the liquidity coverage ratio (LCR), the European banking sector has, on average, ample short-term liquidity. The CRR prescribes that EU banks fulfil a prudential liquidity measure called the LCR, which is the ratio between liquid assets and the potential outflows in an adverse scenario over a period of 30 days. The ratio was introduced in 2015 and fully phased in in 2018. In the EU, the average LCR at a country level ranges from 133% in Belgium to 352% in Cyprus, far above the regulatory limit of 100%. The abundance of short-term liquidity is further confirmed by the ECB Banking Supervision 2019 Liquidity Stress Test (LiST).¹⁴⁷ The median survival period for an extreme liquidity shock, as reported by banks involved in the exercise, is 122 days, well beyond the 30 days of the LCR.¹⁴⁸

However, a currency mismatch between liquid assets and short-term liabilities might be a source of risk in some countries. The regulatory limit of the LCR can be fulfilled by all currencies combined, allowing institutions to run currency mismatches between liquid assets and short-term liabilities. In fact, the USD LCR is on average below 100% for European banks, and a number of institutions have a 0% USD and/or GBP LCR.¹⁴⁹ Accordingly, LiST found that USD and GBP survival periods are well below the all currency one (57 days and 53 days respectively). This currency mismatch, while not being a concern during normal times, might create difficulties during periods of market distress when access to foreign currencies might be costly. Currency swap lines between central banks, available since the last global financial crisis, were set up in order to mitigate such risk.¹⁵⁰

Only two Member States have macroprudential measures in place to address the currency mismatch. Currently, Sweden applies the LCR on an individual currency basis, requiring banks to fulfil the requirement in USD and EUR. Furthermore, Hungary applies two measures: a limit of 15% of the balance sheet to the currency mismatch between assets and liabilities, and the foreign exchange funding adequacy ratio (FFAR), which ensures that foreign currency assets are funded through stable foreign currency liabilities. Apart from the mentioned measures, no other macroprudential measures are active in the EU to address this currency gap.

Medium-term funding risk is addressed in EU law by the net stable funding ratio (NSFR), which will come into force with the CRR II in mid-2021. While risks remain subdued for now, reliance on market-based financing and central bank financing could be a cause for concern in some countries. Banking systems that are highly dependent on market-based funding will be

¹⁴⁷ [ECB Banking Supervision 2019 Liquidity Stress Test \(LiST\)](#).

¹⁴⁸ It should be noted that the LCR and LiST differ with regard to the treatment of some categories of assets and liabilities.

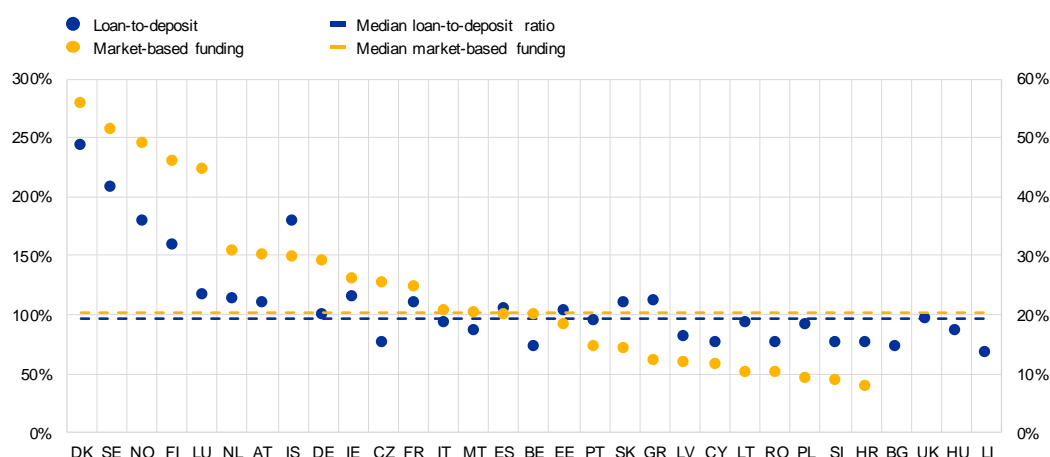
¹⁴⁹ [Update on the EBA report on liquidity measures under Article 509\(1\) of the CRR](#), EBA, 20 March 2019.

¹⁵⁰ [ECB swap lines and Global Financial Stability Report: Lower for Longer](#), International Monetary Fund, October 2019.



particularly sensitive to a possible repricing of risk premia in financial markets. On the other hand, banking systems with a high share of central bank funding (which currently are still benefiting from favourable funding costs) could face difficulties when monetary policy starts to tighten and they have to return to market-based funding, simultaneously to a repricing of risk premia. Banks in Nordic countries tend to rely more on market-based financing than institutions located in the rest of the EU. In some countries (DK, FI, LU, NO, SE), market-based funding represents more than 45% of total funding, and loan-to-deposit ratios are higher than the EU median (see Chart 3.4.A). By contrast, central bank financing is significantly higher for banks in countries that suffered the most from the sovereign debt crisis (ES, GR, IT, PT). Medium-term financing provided by the ECB under the third series of targeted longer-term refinancing operations (TLTRO III), which started in 2019, might provide banks in such countries with longer-term and stable funding. The CRR II prescribes that EU banks fulfil a medium-term prudential measure called the NSFR, which is the ratio between stable funding and illiquid assets. Even if fulfilled, this ratio does not take into account the stability of funding sources with maturities greater than one year.

Chart 3.4.A
Market-based funding and loan-to-deposit ratio in 2019



Source: ESRB.

Notes: Market-based funding is on the right-hand scale; data refer to Q4 2018 and are not available for BG, HU, LI and UK. The loan-to-deposit ratio is on the left-hand scale; data refer to Q4 2018 for IS, LI and NO, and to Q2 2019 for the rest.

Currently, only Hungary applies macroprudential measures targeting funding risks.¹⁵¹ The mortgage funding adequacy ratio (MFAR)¹⁵² and the interbank funding ratio (IFR) aim to ensure medium-term stable funding for specific asset classes. The MFAR ensures that at least 25% of household mortgage loans are financed through mortgage bonds with a minimum maturity of three years. The IFR ensures that banks are not over-reliant on interbank markets, setting a limit of 30% for liabilities coming from other financial institutions. Apart from these measures, no other macroprudential measure is active in the EU with respect to funding risk.

¹⁵¹ Slovenia has a recommendation in place since 2014 targeting funding risk. The measure, which defines the gross loans-to-deposit flows ratio, ensures that banks with increasing deposits from the non-banking sector do not reduce lending to the non-banking sector. Given the narrow scope of the measure and its non-binding nature, it is not reported in the main text.

¹⁵² As of 31st of March 2020, Hungary amended the MFAR to withdraw the restriction on the cross-ownership of mortgage bonds within the banking sector.



3.5 Cross-border linkages and reciprocity

Banks in some Member States have sizeable cross-border exposures. This section maps the cross-border exposures of Member States' banking sectors as well as the cross-border ownership structures of the underlying banks. It shows that certain Member States are relatively more exposed to other Member States and third countries than others. The same holds in the other direction where the banking systems of certain Member States are dominated by local banks or banking groups, while for others foreign subsidiaries or branches serve the majority of the market.

Reciprocity is the policy instrument that ensures a consistent application of macroprudential measures, irrespective of where the banks holding those exposures are incorporated. It thereby ensures a level playing field within the Single Market and beyond. In addition, it shields countries from being exposed to risks stemming from another country through their banking systems. In sum, the reciprocation of macroprudential measures enhances the effectiveness and consistency of macroprudential policy in the EU.

EU legislation foresees compulsory reciprocation for CCyB rates up to 2.5%. According to the CRD V, and the CRD IV before it, CCyB rates of up to 2.5% are automatically recognised and reciprocated, irrespective of whether they have been set by another Member State or a third country. Therefore, EU legislation goes beyond the globally agreed rules of Basel III, which foresees reciprocation of CCyB rates only among Basel Committee member jurisdictions for their systemically important banks.¹⁵³ The ESRB recommended that CCyB rates greater than 2.5% within the EU also be reciprocated.¹⁵⁴ In addition, the ESRB recommended that CCyB rates greater than 2.5% of third countries be coordinated among Member States.¹⁵⁵

Apart from the CCyB, compulsory reciprocation is limited. EU legislation foresees automatic reciprocation, in addition to that for the CCyB, only for measures targeting risk weights for real estate exposures taken under Articles 124 and 164 of the CRR.

Beyond these provisions, reciprocation is voluntary. In fact, EU legislation foresees voluntary reciprocation for the SyRB and national flexibility measures.¹⁵⁶ In addition, Member States are free to also reciprocate measures that have not been harmonised under EU law.

The ESRB's reciprocity framework lays the basis for a coordinated approach to the reciprocation of macroprudential measures for which EU legislation does not foresee compulsory reciprocation.¹⁵⁷ The reciprocation process is started by a formal request from the relevant authority initially activating the measure. The request specifies an institution-level maximum materiality threshold to guide the application of the de minimis exemption. If deemed

¹⁵³ See Article 140 of [Directive 2013/36/EU](#) and [Basel III: A global regulatory framework for more resilient banks and banking systems](#), BCBS, June 2011.

¹⁵⁴ [Recommendation ESRB/2014/1](#).

¹⁵⁵ [Recommendation ESRB/2015/1](#).

¹⁵⁶ Article 134 of the CRD IV and Article 458(5) of the CRR.

¹⁵⁷ The reciprocity framework is codified in three documents: (i) [Recommendation ESRB/2015/2](#); (ii) Article 5 of [Decision ESRB/2015/4](#); and (iii) Chapter 11 ("Cross-border effects of macroprudential policy and reciprocity") of [the ESRB handbook on operationalising macroprudential policy in the banking sector](#). When voluntarily reciprocating, Member States may exempt financial institutions with non-material exposures (the so-called de minimis exemption). For that purpose, Member States may use a materiality threshold above which exposures are deemed material. To harmonise the application of the de minimis exemption, the framework was amended by [Recommendation ESRB/2017/4](#).



justified, the ESRB will issue a recommendation.¹⁵⁸ In response to the ESRB recommendation, Member States will subject the financial institutions in their jurisdiction to the same, or an equivalent, macroprudential measure. If applying the de minimis principle, reciprocating Member States may set a lower threshold than requested by the activating Member State. The degree of reciprocation can also vary as reciprocating measures may cover both exposures held through branches and direct cross-border exposures to that Member State, or only one of the two. In certain situations, Member States may also decide not to reciprocate, but then need to explain their decision (“act or explain” mechanism of ESRB recommendations).

Complementing reciprocation, EU legislation gives national designated authorities the power to set a CCyB rate for exposures towards third (i.e. non-EU)¹⁵⁹ countries to be applied to these exposures held by the banks under their jurisdiction.¹⁶⁰ Reciprocation only works if measures have been taken that can be recognised and reciprocated. If, for instance, a third country faces risks from excessive credit growth, but does not set a Basel-conform CCyB, the home authority of banks with exposures to that country cannot reciprocate such a buffer to increase resilience to the materialisation of such risks. The CRD therefore allows Member States to unilaterally set CCyB rates to shield their banks against such risks. The ESRB framework for setting and recognising third-country CCyB rates ensures a consistent approach of EU Member States vis-à-vis those countries.¹⁶¹

The remainder of this section is structured as follows. Section 3.5.1 provides an overview of cross-border banking activities within the EU. Section 3.5.2 elaborates on the reciprocity actions taken during 2019 in response to the reciprocity recommendations of the ESRB during 2019 and in earlier years. Section 3.5.3 recalls the actions over the course of 2019 of the ESRB and its members under the ESRB’s framework for setting and recognising third-country CCyB rates.

3.5.1 Cross-border banking activities in Europe

Financial service providers have multiple ways of operating abroad. They can establish a subsidiary in another Member State, provide their services through a branch or directly across borders. Within the EU, the passporting system grants the EU’s financial corporations the right to directly lend across borders or operate through branches; foreign banks however need to abide by the national authorisation regimes.

While macroprudential policy directly applies to domestically incorporated banks (including subsidiaries of non-domestic banks), it generally does not apply to branches of non-domestic banks or to direct cross-border lending. To ensure a level playing field and avoid regulatory arbitrage, a reciprocity framework was needed to ensure that the same macroprudential requirements apply to the same exposure in a given Member State, irrespective of the legal status and/or location of the financial service provider.

¹⁵⁸ This recommendation amends Recommendation ESRB/2015/2 to include the macroprudential policy measures to be reciprocated.

¹⁵⁹ The CRD IV has been incorporated into the EEA Agreement with effect from 1 January 2020, so from then on a third country is defined as a non-EEA country for the purpose of setting a third-country CCyB.

¹⁶⁰ The legal basis for these buffers comes from Article 139 of the CRD.

¹⁶¹ [Recommendation ESRB/2015/1](#).



To ensure equal treatment of financial institutions, the ESRB adopted a framework of voluntary reciprocity in 2015. When a Member State activates a macroprudential measure for which EU law does not foresee mandatory reciprocity and deems that reciprocity by other Member States is necessary to ensure a level playing field, it can request that the ESRB recommend this measure for reciprocity. In line with the principle of proportionality, a Member State that wishes to reciprocate can exempt individual institutions if they have no material exposures to the Member State requesting reciprocity; this is the so-called de minimis exemption.¹⁶² The ESRB includes a maximum materiality threshold, but the reciprocating authority can opt to use a lower or no threshold when assessing materiality. The assessment of the potential for spillovers and regulatory arbitrage can take into account multiple indicators; a practical example would be the relative share of the loans targeted by a specific measure (e.g. mortgages for residential real estate) that are granted by branches or directly across borders (for a more detailed discussion on this topic, see Special Feature C).

The importance of foreign affiliates (be they branches or subsidiaries) varies greatly across Member States. In a number of Member States (ES, FR, GR, IT, NL), domestic institutions dominate the market, holding more than 90% of the Member State's banking sector assets; these are all part of the euro area (so the most significant institutions are supervised by the ECB) and hosts to the parent companies of some cross-border banking groups (see Chart 3.5.A and Table A.4.1 in Annex 4). In some Member States, foreign affiliates play a dominant role, most notably in the CEE countries and Luxembourg.

The potential for cross-border spillovers of macroprudential policy is larger when foreign affiliates already play an important role in the market of the Member State requesting reciprocity. Although the implemented macroprudential measure would be immediately applicable to the subsidiaries, the activities of non-domestic branches operating in the Member State would not be covered by the macroprudential measure, undermining its effectiveness. In addition, branches could grow at the expense of domestically incorporated banks (including subsidiaries of non-domestic banks). If non-domestic banks are present both with subsidiaries and branches, they could easily avoid the macroprudential measures by moving their business or assets from the subsidiary to the branch. Banks could even convert a subsidiary into a branch, thereby circumventing the macroprudential measures.¹⁶³

¹⁶² The ESRB has recommended, since 2017, a maximum materiality threshold to limit potential material divergences in the application of the de minimis principle. For further information, see [Recommendation ESRB/2017/4](#) and [A Review of Macroprudential Policy in the EU in 2017](#), ESRB, April 2018, Section 9.2.

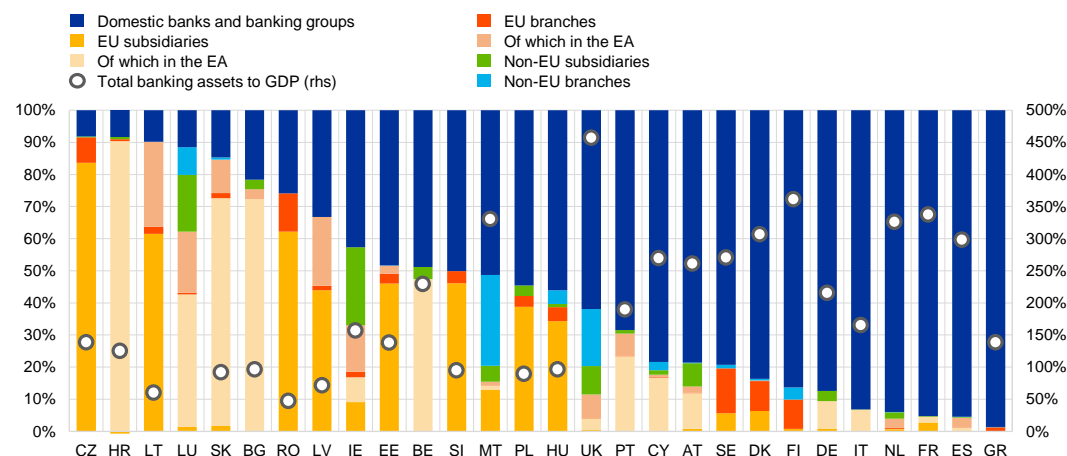
¹⁶³ If the Member State where the parent company is incorporated were to reciprocate the measure, then there would no longer be an opportunity for regulatory arbitrage through "branchification". Another, more extreme, option would be for the bank to move its headquarters and move the operations in its original home country into a branch. A practical example of a bank which did both would be the former G-SII Nordea, which originally had a subsidiary network in the Nordic and Baltic countries with its headquarters in Sweden. In 2017 Nordea converted its subsidiaries into branches under the Swedish parent and, in 2018, moved its corporate headquarters to Finland with the operations in Sweden then in a branch. For a more detailed discussion on the topic of branchification, see Box 3 of [last year's edition](#) of this Review. Branchifications can be driven by many factors (e.g. operational efficiencies, taxation, differences in legal frameworks, contributions to deposit guarantee schemes and resolution funds) and the active macroprudential policy framework of a country is just one of the elements that banks take into consideration.



Chart 3.5.A

Share of foreign affiliates in total banking sector assets across the EU (Q3 2019)

(percentages)



Sources: ECB (consolidated banking data (CBD), and banking structural statistical indicators (SSI) and derived data), ESRB survey and ESRB calculations.

Notes: The coloured stacked bars refer to the shares of assets held by branches and subsidiaries in the total banking assets of a Member State, as at Q3 2019, and correspond to the left-hand scale. Where data were available, the assets held by EU branches or subsidiaries were split according to whether or not the respective parent institution was incorporated within the euro area (EA). In cases where no data were available for branches or subsidiaries incorporated in the euro area, all branches and subsidiaries are simply shown in the chart as being incorporated in the EU. The white dots refer to the sum of total consolidated assets of domestic banking groups and stand-alone banks plus the total assets of foreign-controlled branches and subsidiaries as a percentage of nominal GDP of those countries for Q3 2019, corresponding to the right-hand scale. The right-hand scale is truncated at 500%; in this connection, it should be noted that the true value for Luxembourg is 1,477%. As data for DK, IE and UK were only partially available, two ECB databases (CBD and SSI) were used. Annual data for 2018 (latest available) were used in the case of the SSI for DK, IE and UK. The supplementary data (SSI) were only used to proportionally split the non-domestic part (which was available in the CBD).

3.5.2 Consistent treatment of exposures in the EU through the ESRB's reciprocity framework

In 2019 Sweden joined the four countries with measures for which the ESRB had recommended reciprocity (BE, EE, FI, FR). The measures previously recommended for reciprocity by the ESRB are briefly discussed at the beginning of their respective sections, with a more detailed description being provided for the Swedish measure under Article 458 of the CRR.¹⁶⁴

These sections exploit an EBA dataset available to the ESRB that provides a sectoral breakdown of cross-border loans.¹⁶⁵ This dataset is based on a sample of about 200 large EU banks and provides data for the banking sectors of most, but not all, Member States. The data are consolidated at the Member State level and do not distinguish lending provided directly across borders from lending provided by branches or subsidiaries of credit institutions in other Member

¹⁶⁴ For a more detailed discussion on this Article 458 measure taken by France and the other Article 458 measures taken by Belgium, Finland and Sweden, see Special Feature A and Section 2.9 of **last year's edition** of this Review.

¹⁶⁵ The dataset provided by the EBA is composed of country aggregates calculated on the basis of a sample of about 200 individual banks in the EU, comprising domestic banks and subsidiaries of foreign banks. The country aggregates are based on at least three reporting banks, otherwise no data are reported (which is the case for PL and RO).



States. Due to the consolidation, exposures of subsidiaries are attributed both to the Member State in which the EU parent resides and to the Member State in which the subsidiary resides.¹⁶⁶ Owing to the double-counting of the exposures held by subsidiaries of EU parents, an EU figure cannot be calculated. Furthermore, a number of macroprudential measures relate to different classifications of exposures than those that are available in supervisory reporting. For example, the measures adopted under Article 458 of the CRR by Belgium and Finland target exposures secured by real estate located in the activating country, which are not reported in supervisory reporting. Consequently, the charts in this section can only provide a proxy of the actual exposures that are relevant for reciprocity purposes. It is important that future reporting requirements also cater for the needs of macroprudential policymakers. It should be noted that in this section, the perspective of the receiving Member State which requested the reciprocation is taken.¹⁶⁷

3.5.2.1 National flexibility measure in Sweden

The Swedish Financial Supervisory Authority (Finansinspektionen) submitted its reciprocation request concerning the national macroprudential measure based on Article 458 of the CRR to the ESRB in November 2018. The measure is an institution-specific average risk-weight floor of 25% for retail exposures to Swedish obligors collateralised by immovable property applied to credit institutions that use the IRB approach. The measure has been in force in Sweden since 2013 under Pillar 2 and was reciprocated by Denmark, also by using Pillar 2.

Currently, two foreign banks with both subsidiaries and branches have material Swedish mortgage exposures. Denmark and Finland are the two Member States with significant exposures to the Swedish RRE sector (see Chart 3.5.B). Although these exposures mainly stem from the subsidiaries of these credit institutions in Sweden, the operations of their branches are also considered material. There may be an incentive for banks to shift a large part of mortgage portfolios from their subsidiaries to branches if the latter were not to be within the scope of the macroprudential measure. These incentives are amplified by the fact that the Swedish risk-weight floor is one of the highest and a significant difference can be observed between the actual risk weights estimated by IRB banks and the risk-weight floor.

The ESRB deemed the request justified to prevent regulatory arbitrage and to make it possible to adequately address all potential material sources of systemic risk relevant for Sweden and issued a recommendation for reciprocation in January 2019.¹⁶⁸ The ESRB recommended applying the Swedish measure to all credit institutions having branches in Sweden or providing direct cross-border services in Sweden. The ESRB recommended a materiality threshold of SEK 5 billion of exposures to the Swedish RRE market (de minimis principle), which corresponds to approximately 0.16% of the relevant market. A relatively lower materiality threshold was deemed justified to ensure reciprocation for all material exposures while staying proportionate.

¹⁶⁶ See [A Review of Macroprudential Policy in the EU in 2017](#), ESRB, April 2018, Section 9.1, for more details.

¹⁶⁷ When analysing cross-border loans, two different perspectives can be taken, i.e. that of the originating country and that of the receiving country. The absolute loan amount between two countries does not allow for a sensible interpretation without relating it, for example, to the size of the relative market in the originating and receiving country. In that way, the importance for the two countries can be gauged.

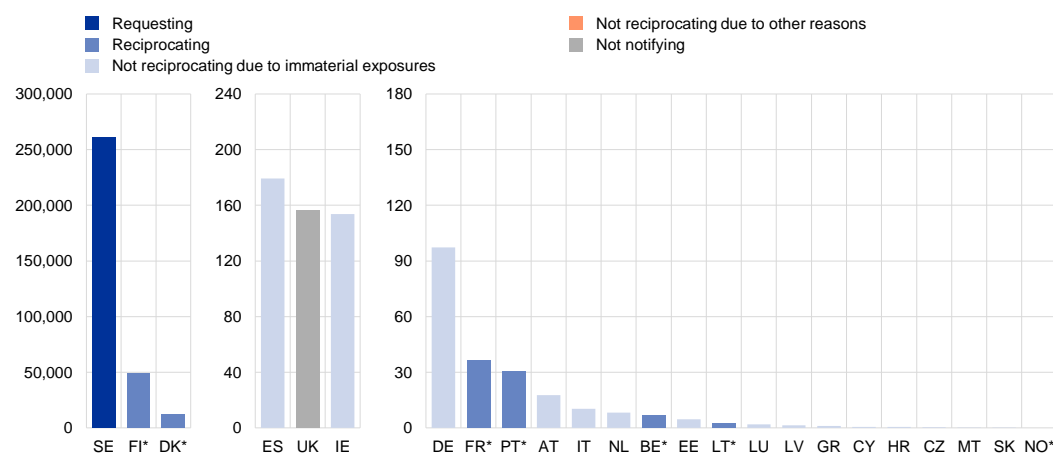
¹⁶⁸ [Recommendation ESRB/2019/1](#).



At the end of 2019 seven EEA Member States had voluntarily reciprocated the Swedish measure (see Chart 3.5.B). Denmark, Finland and Norway have reciprocated the measures due to the assessed materiality of their exposures to the Swedish residential real estate market, while Belgium, France, Lithuania and Portugal reciprocated out of principle. The move of Nordea also significantly changed the respective exposures held by banks in Finland and Sweden towards the other Member State, with Finland now being more exposed to Sweden.

Chart 3.5.B
Credit exposures to Swedish residential real estate (Q4 2019)

(EUR millions)



Sources: EBA (Detailed Risk Analysis Tools) and ESRB calculations.

Notes: Based on a sample of about 200 large banks in the EU. Data are consolidated at the Member State level. The above chart shows the original credit exposure to Swedish residential real estate of banks in different Member States, as measured by retail exposures secured by residential real estate. Member States that have reciprocated the Swedish measure are also denoted with an asterisk. No data were available for BG, HU, IS, LI, NO, PL, RO and SI. Data for Q4 2019 were used for all countries except for (i) GR, where Q2 2019 data were used, (ii) EE and LV, where Q4 2018 data were used, and (iii) LT, where Q3 2018 data were used. Non-reciprocating countries with zero or missing exposures have not been included in this chart, whilst reciprocating countries with zero or missing exposures are included with the asterisk notation. The chart cannot distinguish between exposures already covered by the Swedish measure itself and exposures that are only to be covered by reciprocation because the exposure may be taken by subsidiaries in Sweden. In addition, whilst the materiality threshold applies only to cross-border IRB exposure, the above-displayed credit exposure does not distinguish between IRB exposure and SA exposure.



3.5.2.2 Systemic risk buffer in Estonia

The Estonian SyRB was recommended for reciprocation in 2016 and was amended in 2018 to implement a materiality threshold of €250 million.

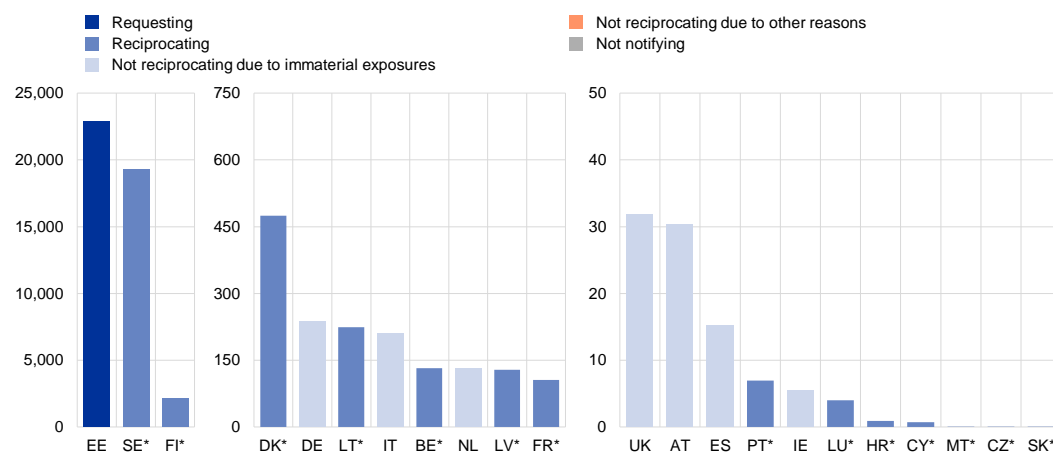
Eesti Pank set a SyRB of 1% for domestic exposures of all credit institutions authorised in Estonia and the ESRB issued a recommendation to other Member States to reciprocate the measure, motivated by a significant presence of foreign branches in Estonia (mainly from the Nordic countries).

By the end of 2019, 13 Member States had reciprocated the Estonian SyRB (see Chart 3.5.C).¹⁶⁹

These include Sweden, Denmark and Finland, the three Member States with the largest exposures towards Estonia. After Eesti Pank had reset the SyRB to 1% in 2018 and proposed to formalise an institution-specific materiality threshold of €250 million (which is approximately 1% of total risk-weighted credit exposures), some Member States revisited their previous decisions. Croatia, which had reciprocated the measure with a materiality threshold of 2% of total risk-weighted credit exposures in 2017, revised its reciprocation decision in 2019 to include a formalised materiality threshold as set by Eesti Pank. While the Netherlands and Cyprus had reciprocated the measure in 2016 and 2017, respectively, both opted not to reciprocate the renewed measure, stating that none of the credit institutions in their jurisdictions breached the materiality threshold.

Chart 3.5.C
Credit exposures to Estonia (Q4 2019)

(EUR millions)



Sources: EBA (Detailed Risk Analysis Tools) and ESRB calculations.

Notes: Based on a sample of about 200 large banks in the EU. Data are consolidated at the Member State level. The above chart shows the original credit exposure to Estonia of banks in different Member States. Member States that have reciprocated the Estonian measure are also denoted with an asterisk. No data were available for BG, GR, HU, IS, LI, NO, PL, RO and SI. Data for Q4 2019 were used for all countries except for (i) EE and LV, where Q4 2018 data were used, and (ii) LT, where Q3 2018 data were used. Non-reciprocating countries with zero or missing exposures have not been included in this chart, whilst reciprocating countries with zero or missing exposures are included with the asterisk notation. The chart cannot distinguish between exposures already covered by the Estonian measure itself and exposures that are only to be covered by reciprocation because the exposure may be taken by subsidiaries in Estonia.

¹⁶⁹ Recommendation ESRB/2016/4.



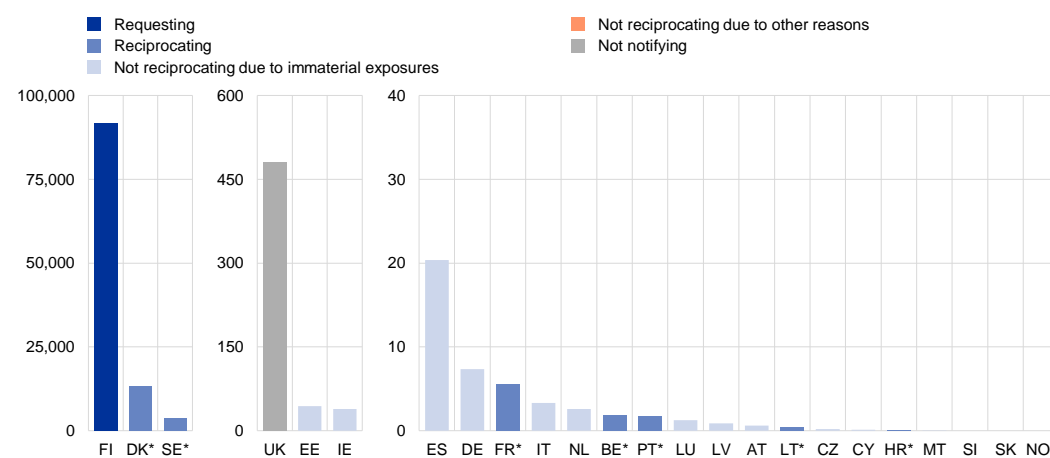
3.5.2.3 A risk-weight floor for residential real estate exposures in Finland

The Finnish risk-weight floor under Article 458 of the CRR was recommended for reciprocity in 2018. The Finnish Financial Supervisory Authority (FIN-FSA) decided on a credit institution-specific risk-weight floor of 15% for IRB banks' portfolios of mortgages with Finnish RRE as collateral, to be implemented at the start of 2018. This was subsequently recommended for reciprocity in January of that year.¹⁷⁰

By the end of December 2019 eight Member States had reciprocated the Finnish measure (see Chart 3.5.D). Sweden, the Member State with the largest exposures to Finnish real estate, reciprocated the measure in December 2017, even before the ESRB had issued its recommendation. Denmark, which also has institutions with material exposures to the Finnish market, reciprocated the measure in April 2018. Belgium, Croatia, France, Lithuania, Norway and Portugal also reciprocated the measure as a matter of principle, although their Finnish exposures were immaterial. France, Lithuania and Portugal reciprocated the measure without a materiality threshold. All other reciprocating countries exempted individual institutions with exposures below the €1 billion materiality threshold.

Chart 3.5.D
Credit exposures to Finnish residential real estate (Q4 2019)

(EUR millions)



Sources: EBA (Detailed Risk Analysis Tools) and ESRB calculations.

Notes: Based on a sample of about 200 large banks in the EU. Data are consolidated at the Member State level. The above chart shows the original credit exposure to Finnish residential real estate of banks in different Member States, as measured by retail exposures secured by residential real estate. Member States that have reciprocated the Finnish measure are also denoted with an asterisk. No data were available for BG, GR, HU, IS, LI, NO, PL and RO. Data for Q4 2019 were used for all countries except for (i) EE and LV, where Q4 2018 data were used, and (ii) LT, where Q3 2018 data were used. Non-reciprocating countries with zero or missing exposures have not been included in this chart, whilst reciprocating countries with zero or missing exposures are included with the asterisk notation. The chart cannot distinguish between exposures already covered by the Finnish measure itself and exposures that are only to be covered by reciprocity because the exposure may be taken by subsidiaries in Finland. In addition, whilst the materiality threshold applies only to cross-border IRB exposure, the above-displayed credit exposure does not distinguish between IRB exposure and SA exposure.

¹⁷⁰ Recommendation ESRB/2018/1.



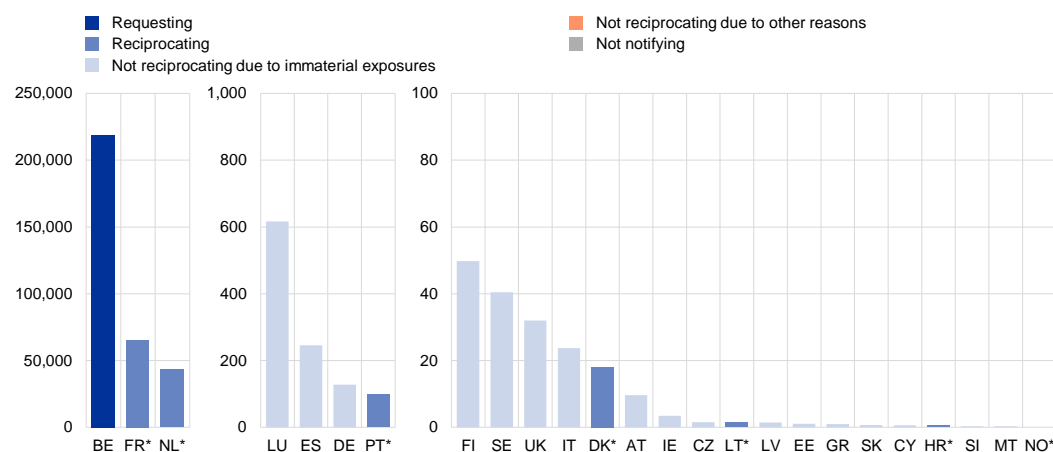
3.5.2.4 A risk-weight add-on for residential real estate in Belgium

The Belgian risk-weight add-on for IRB banks under Article 458 of the CRR was decided on in April 2018 and was recommended for reciprocation in July 2018. The measure consists of: (i) a flat risk-weight add-on of 5 percentage points to be applied after the proportionate risk weight add-on; and (ii) a proportionate risk-weight add-on of 33% of the average microprudential risk weight of the bank's portfolio of retail mortgage exposures.

At the end of December 2019 seven Member States had reciprocated the Belgian measure (see Chart 3.5.E). France and the Netherlands, the Member States with the largest exposures to Belgian real estate, reciprocated the measure with France, doing so without a materiality threshold. Croatia, Denmark, Lithuania, Norway and Portugal have reciprocated the Belgian measure as a matter of principle, with Croatia, the Netherlands and Norway setting a materiality threshold of €2 billion.

Chart 3.5.E
Credit exposures to Belgian residential real estate (Q4 2019)

(EUR millions)



Sources: EBA (Detailed Risk Analysis Tools) and ESRB calculations.

Notes: Based on a sample of about 200 large banks in the EU. Data are consolidated at the Member State level. The above chart shows the original credit exposure to Belgian residential real estate of banks in different Member States, as measured by retail exposures secured by residential real estate. Member States that have reciprocated the Belgian measure are also denoted with an asterisk. No data were available for BG, HU, IS, LI, NO, PL and RO. Data for Q4 2019 were used for all countries except for (i) EE and LV, where Q4 2018 data were used, and (ii) LT, where Q3 2018 data were used. Non-reciprocating countries with zero or missing exposures have not been included in this chart, whilst reciprocating countries with zero or missing exposures are included with the asterisk notation. The chart cannot distinguish between exposures already covered by the Belgian measure itself and exposures that are only to be covered by reciprocation because the exposure may be taken by subsidiaries in Belgium. In addition, whilst the materiality threshold applies only to cross-border IRB exposure, the above-displayed credit exposure does not distinguish between IRB exposure and SA exposure.



3.5.2.5 Tighter large exposure limits for NFCs in France

The French measure under Article 458 of the CRR targeting exposures towards heavily indebted NFCs was recommended for reciprocation by the ESRB in 2018. France's HCSF activated an Article 458 measure tightening the large exposure limit of French systemically important institutions for highly indebted¹⁷¹ large NFCs with their registered office in France to 5%.

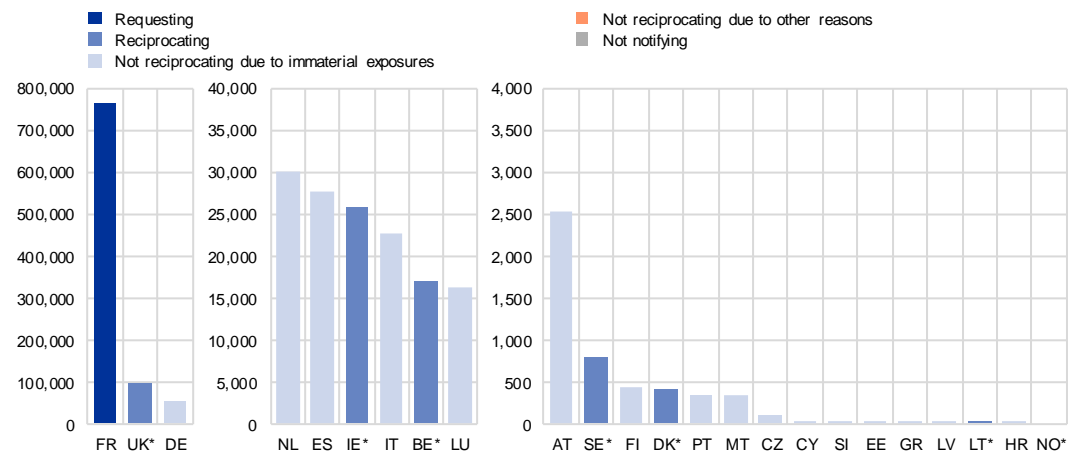
At the end of 2019 seven Member States had reciprocated the French Article 458 measure.

The available data cannot distinguish to what extent these are large exposures to individual NFCs or NFC groups of more than €300 million, which are targeted by the French measure. Among those that reciprocated (BE, DK, IE, LT, NO, SE, UK), the United Kingdom had by far the most material exposures (see Chart 3.5.F).

Chart 3.5.F

Credit exposures to French non-financial corporations (Q4 2019)

(EUR millions)



Sources: EBA (Detailed Risk Analysis Tools) and ESRB calculations.

Notes: Based on a sample of about 200 large banks in the EU. Data are consolidated at the Member State level. The above chart shows the original credit exposure to the NFC sector in France of banks in different Member States. This number is approximated by summing specialised corporate lending with other corporate exposures, thus excluding corporate lending to SMEs. Member States that have reciprocated the French measure are also denoted with an asterisk. No data were available for BG, HU, IS, LI, NO, PL, RO and SK. Data for Q4 2019 were used for all countries except for (i) EE and LV, where Q4 2018 data were used, and (ii) LT, where Q3 2018 data were used. Non-reciprocating countries with zero or missing exposures have not been included in this chart, whilst reciprocating countries with zero or missing exposures are included with the asterisk notation. The chart cannot distinguish between exposures already covered by the French measure itself and exposures that are only to be covered by reciprocation because the exposure may be taken by subsidiaries in France. In addition, the chart shows the credit exposures (and thus include both loans and securities holdings, as targeted by the measure) towards all French NFCs (and thus not only the heavily indebted ones) due to limited data availability.

¹⁷¹ Corporations are considered to be highly indebted if their leverage ratio (net of liquidity) is above 100%, and their interest coverage ratio is below 3.



3.5.3 Exposure towards material third countries and the countercyclical capital buffer

Apart from the compulsory reciprocation of other countries' CCyB rates up to 2.5%, the EU's banking legislation also allows the setting of CCyB rates for exposures to third countries.

The CRD gives national designated authorities the power to set a CCyB rate for exposures towards third (i.e. non-EU)¹⁷² countries, to be applied to these exposures held by the banks under their jurisdiction.¹⁷³ The aim of the CRD is to provide designated authorities with a tool in case they deem that the third country's credit dynamics are insufficiently addressed (for example by setting an insufficiently high CCyB rate) and a negative spillover into their banking system could materialise. Article 138 of the CRD gives the ESRB the power to recommend the setting of a CCyB rate for a third country to its membership. The methodology by which the ESRB identifies a country as material to the EU's banking system is outlined in an ESRB decision, while an ESRB recommendation sets out the way Member States can recognise those and other CCyB rates.¹⁷⁴ Third countries are first identified as material in order to focus the monitoring efforts on those third countries towards which the EU's banking system is most exposed. The objective of both the recommendation and the decision is to prevent the possibility of regulatory arbitrage (e.g. banks moving to a Member State which has set a lower CCyB for a third country, to which they have material exposures) by harmonising the approach for setting and recognising CCyB rates within the EU.

The ESRB and the ECB, in addition to the national designated authorities, identify and monitor third countries which are material for the EU and the euro area respectively, in view of these powers.¹⁷⁵ On an annual basis, the ESRB, the ECB and the Member States identify to which third countries the EU's, the euro area's and their national banking systems, respectively, have material exposures. A common methodology, using quantitative reporting on banks' exposures, was developed by the ESRB to assess the materiality of exposures that a banking system as a whole has to the real economy of a third country.¹⁷⁶ The ECB and the Member States can use the ESRB's methodology (or a variation thereof) or develop their own. Most Member States have decided to use the ESRB's methodology or a slight variation thereof (see Table A.1.2 in Annex 1).¹⁷⁷ After the annual identification, the ECB and the Member States inform the ESRB of their material third countries and which of them they will monitor themselves, instead of leaving it to the ESRB to monitor them if the respective third country had already been identified by the ESRB and is therefore already monitored by the ESRB.¹⁷⁸ If during its periodical monitoring the ESRB

¹⁷² The CRD IV has been incorporated into the EEA Agreement with effect from 1 January 2020, so from then on a third country is defined as a non-EEA country for the purpose of setting a third-country CCyB. However, **Recommendation ESRB/2015/1** already recommended interpreting a "third country" as any jurisdiction outside the European Economic Area (in Section 2(1)(g)).

¹⁷³ The legal basis for these buffers comes from Article 139 of the CRD.

¹⁷⁴ **Recommendation ESRB/2015/1** and **Decision ESRB/2015/3**.

¹⁷⁵ See **A Review of Macprudential Policy in the EU in 2017**, ESRB, April 2018, for a detailed description of the approach taken.

¹⁷⁶ See Articles 3 and 4 of **Decision ESRB/2015/3**.

¹⁷⁷ Furthermore, the data sources underlying the identification by the ESRB, the ECB and the Member States vary in granularity and coverage. The ESRB uses supervisory data that are aggregated at the EU level and obtained from the EBA in the form of Member State aggregates. The underlying sample covers around 200 large banks in the EU. The ECB uses bank-level supervisory data for about 350 large euro area banks. The Member States, in turn, have access to bank-level supervisory data for the full universe of their respective banks.

¹⁷⁸ See sub-recommendation B(2) of **Recommendation ESRB/2015/1**.



were to detect signs of excessive credit growth in any of the material third countries and were to consider that the related risks are not sufficiently mitigated (in the third country itself and/or through action by the Member States), it would issue a recommendation to the designated authorities on setting a CCyB rate for exposures to that third country in order to address those risks. Similarly, if the ECB or the Member States detect such signs for a third country they monitor and consider that there are unaddressed risks related thereto, they could opt to set a CCyB rate for exposures to that third country and notify the ESRB thereof.¹⁷⁹

With the latest identification exercise in 2019, the ESRB confirmed its 2018 list of material third countries.¹⁸⁰ The first list, as established in 2015, included Brazil, China, Hong Kong SAR, Russia, Turkey and the United States. From 2017 onwards, Singapore and Switzerland were also identified. The 2019 identification exercise resulted in the following list:

- **Brazil, China, Hong Kong, Singapore, Turkey and the United States were confirmed.** The application of the criteria for identification confirmed their earlier identification, with Singapore being a borderline case but not fulfilling the deletion criteria.
- **Russia and Switzerland remained on the list despite fulfilling the deletion criteria.** Both countries were, however, identified by seven Member States and the ECB as material. In terms of monitoring efforts, five Member States left the monitoring of Switzerland to the ESRB and all seven Member States left the monitoring of Russia to the ESRB. The ESRB decided to retain both countries on the list of material third countries in order to avoid the duplication of monitoring efforts.
- **The Cayman Islands and Mexico were not added to the list.** Although the exposures of EU banks towards the Mexican real economy are as large as those towards some countries which are identified as material, only one Member State (ES) had found it to be material to its national banking system. With regard to the Cayman Islands, doubts were raised about the real economy nature of those exposures. Due to the classification of investment firms and hedge funds as corporates in the Common Reporting Framework (COREP), the exposures towards the Cayman Islands do not constitute exposures to the real economy in the spirit of Decision ESRB/2015/3. This, combined with the fact that no Member State has identified that country as material, led to the ESRB exercising its discretionary power to not include them in the list.

In sum, the 2019 list of third countries that are material for the EU banking sector coincides with the 2018 list and includes **the United States, Hong Kong, Singapore, Switzerland, China, Brazil, Turkey and Russia** in descending order of original exposures for the EU banking sector in the fourth quarter of 2018 (i.e. the cut-off date for the data underlying the 2019 identification exercise).

¹⁷⁹ *ibid.*

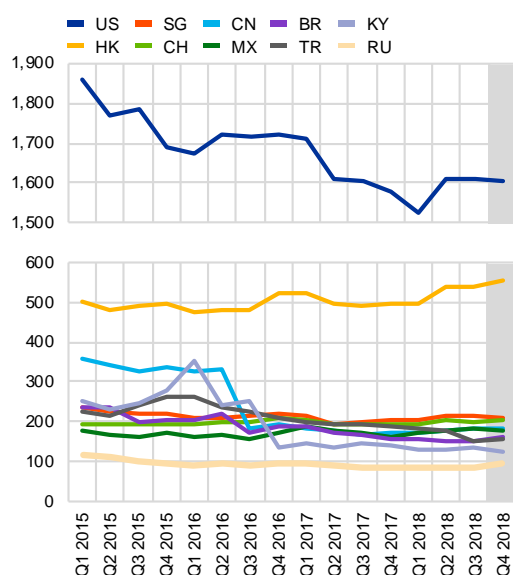
¹⁸⁰ In the annual revisions in line with **Decision ESRB/2015/3**, new countries can be added. Furthermore, the countries on the list can be either confirmed or not. In the latter case, they are dropped only if they meet the deletion criteria. Finally, discretion can be used, amending the result of a purely mechanical application of the identification rules.



The size of the exposures towards third countries held by the EU banking sector is highly heterogeneous, with the US exposure being by far the largest (see Chart 3.5.G and Table A.1.1 in Annex 1). The original exposures towards the countries to which the EU banking sector has the second (HK) and third (SG) largest original exposure are less than one-third and one-eighth respectively of the original exposure towards the United States. The size of the original exposure towards the identified material third country to which the smallest original exposure is held (RU) is less than one-seventeenth of the original exposure towards the United States. For the identification exercise defaulted exposures and risk-weighted-exposure amounts are also used.¹⁸¹

Chart 3.5.G
Credit exposures of Member States to the eight material third countries monitored by the ESRB plus Mexico and the Cayman Islands

(EUR billions)



Sources: EBA and ESRB calculations.

Notes: Sum of total original exposures to the real economy of banks in Member States to the United States (US), Hong Kong (HK), Singapore (SG), Switzerland (CH), China (CN), Mexico (MX), Brazil (BR), Turkey (TR), the Cayman Islands (KY) and Russia (RU). The US values are depicted in the top panel, while all other countries are depicted in the bottom panel. In 2019 the third countries were identified using data from Q4 2018 backwards, with that quarter highlighted in grey.

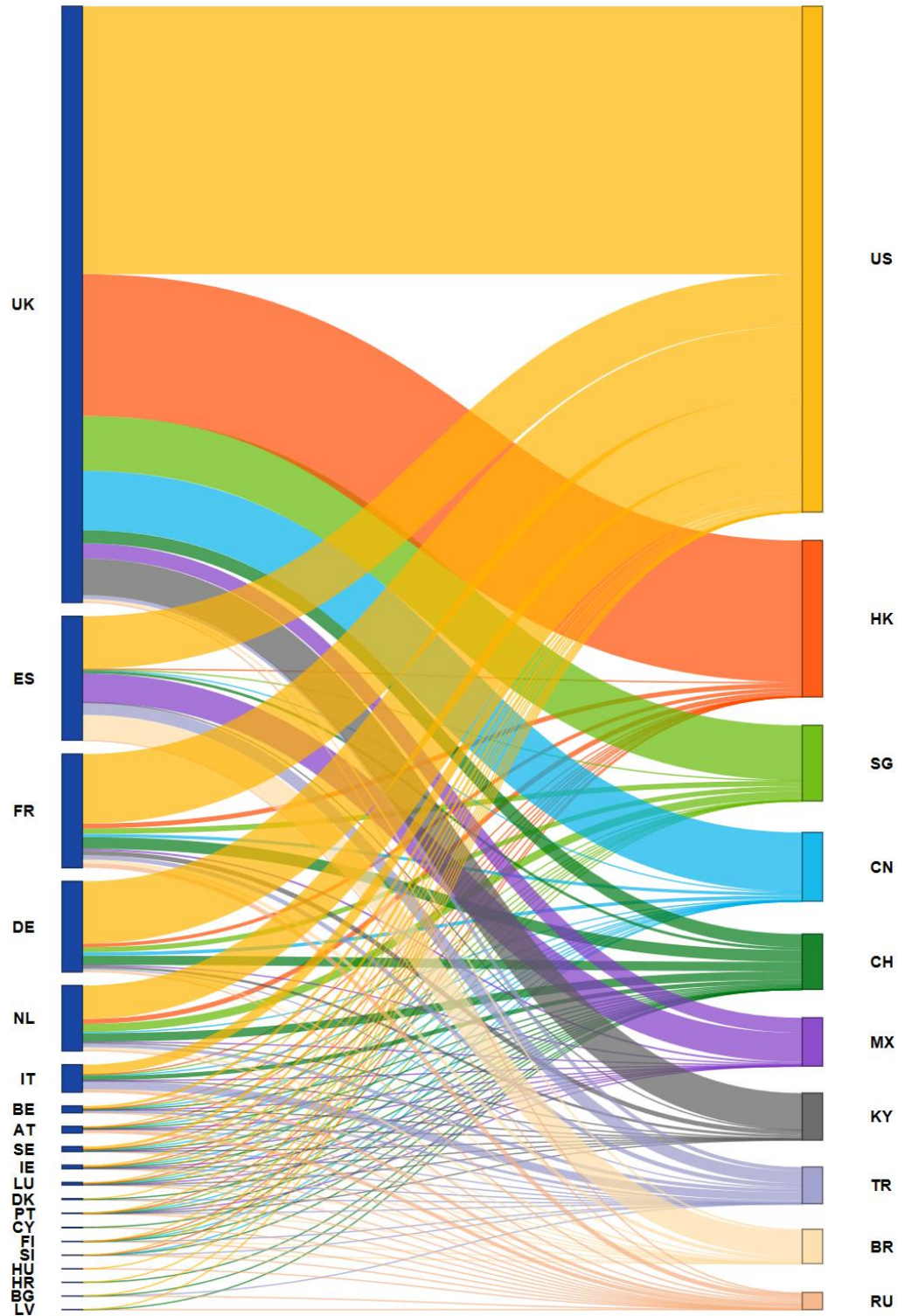
The exposures held by the national banking sectors to the different material third countries is also highly heterogeneous (see Chart 3.5.H). Certain Member States are more exposed towards material third countries, with the UK banking sector having by far the largest foreign exposures (in particular towards the United States, Hong Kong, China and Singapore). For Hong Kong, China and Singapore, the exposures held by the UK banking sector also account for the bulk of the EU banking system's exposures towards those third countries. The United Kingdom is followed by France, Germany, Spain, the Netherlands and Italy (taking into account original exposures towards the third countries identified as material by the ESRB). For each of these Member States, the foreign exposure of their banking sectors is somewhat diversified to several third countries, but their exposure to the United States is significant and the largest of their third-country exposures.

¹⁸¹ See Article 3(2) of Decision ESRB/2015/3



Chart 3.5.H

Credit exposures of EU Member States to the real economy of ten non-EEA countries



Sources: EBA and ESRB calculations.

Notes: Data for Q4 2018 are used to reflect what was used to identify the different material third countries. The original exposures are all denominated in euro. Member States and third countries are sorted by their cumulative original exposures.



In line with Recommendation ESRB/2015/1, Member States also reviewed their lists of material third countries. The first identification of material third countries by Member States was in 2016. In June 2019 Member States carried out a periodical (at least annual) review of their lists, based on their respective methodologies as developed in the past (see Table A.1.2 in Annex 1).

Member States by and large did not substantially change their lists of material third countries compared with the previous year's lists (see Table 3.5.A). One EU Member State added one third country, two Member States deleted one third country each, and one Member State removed two third countries from its list. The other 24 Member States maintained their lists of the previous year.

Table 3.5.A
Material third countries as identified by the Member States

	Third countries monitored by the ESRB Secretariat										Other third countries										#	Δ							
	United States	Hong Kong	Singapore	Switzerland	Turkey	China	Brazil	Russia	Albania	Angola	Australia	Bosnia-Herzegovina	Chile	India	Macao	Marshall Islands	Mexico	Montenegro	Morocco	Mozambique			Peru	Saudi Arabia	Serbia	Ukraine	UAE		
AT	●			●	●	×		●																		4			
BE	●			●	●																						3		
BG																											0		
CY																											1		
CZ					●			●																			2		
DE	●			●										●													4		
DK													●														0		
EE																											0		
ES	●				●		●						●				●				●						6		
FI																											0		
FR	●			●															●								3		
GR					×																						1		
HR												●															0	-1	
HU								●	▲														●	●			5	1	
IE	●																										1		
IS																											0		
IT	●			●	●																						4		
LT																											0	-1	
LU	●	●		●	●	●	●																				6		
LV	●			●	●			●																			2		
MT	●				●			●																		●	4		
NL	●	●	●	●	●	●	●				●												●				9		
NO	●																										1		
PL																											0		
PT						▲				●					●					●							4	1	
RO																											0		
SE	●																										1		
SI																											0		
SK																											0		
UK	●	●	●			●																					4		
#	14	3	2	7	8	4	3	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65		
Δ					-1	(±1)		-1	1																				
ECB	●			●	●		●	●																			5		

Sources: EBA and ESRB.

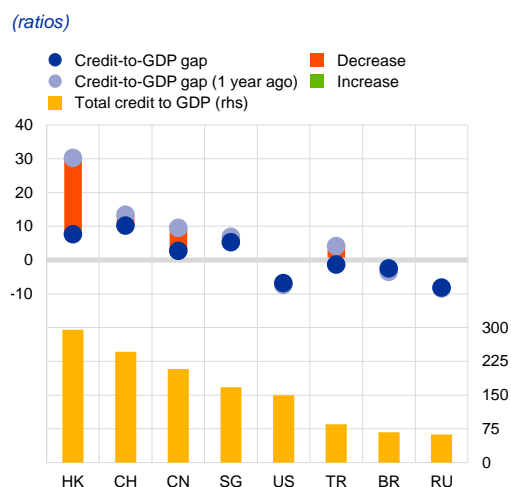
Notes: The markers show the material third countries as identified by the respective Member State. Third countries monitored by the ESRB Secretariat are ranked according to original exposures to the real economy in Q4 2017. Subsequent ordering of third countries is purely alphabetical. Markers in yellow signify that the respective Member State does not monitor this particular third country because the latter is already monitored by the ESRB Secretariat. Markers in blue signify that a Member State monitors an identified material third country. Dots refer to third countries that were assessed as material in both June 2018 and June 2019. New additions to this list, as identified in June 2019, are represented by a triangle, while the cross signifies a deletion of a third country from the list maintained by the respective Member State. The ECB's materiality assessments is not included in the tally.



As in the previous years, the number of identified material third countries varies widely by Member State, as does the overlap in the identification of such countries. The number of identified material third countries ranges from zero (ten Member States) to nine (the Netherlands). The overlap in the identification of countries is highest for the eight material third countries identified and monitored by the ESRB. The overlap is non-existent for those countries additionally identified as material by Member States, as those countries are all identified by only one Member State each.

In addition to the EU Member States, the ECB, Norway and Iceland also notified their lists of material third countries to the ESRB. Neither the ECB nor Norway made any changes to their lists of material third countries. Iceland in turn notified the ESRB for the first time but did not identify any third country as material due to the domestic focus of its banking sector. The already existing overlap between the countries identified by the ECB (for the euro area banking sector) and the ESRB (for the EU banking sector) thus endured, with all the third countries identified as material by the ECB also being identified by the ESRB. Three third countries (CN, HK, SG) are only identified as material by the ESRB and not by the ECB. This difference is due to the concentration of these exposures outside the euro area, namely in UK banks (see Chart 3.5.H).

Chart 3.5.I
Credit-to-GDP gaps and the total credit-to-GDP ratio in the eight material third countries



Sources: BIS and ESRB calculations.
Notes: The data for the credit-to-GDP gaps refer to Q1 2019 and Q1 2018. The total credit data refer to Q1 2019.

The countries identified as material are monitored by the national authorities and/or the ESRB. National authorities can opt to not monitor countries which are already monitored by the ESRB. In 2019, 13 EEA Member States did not monitor the third countries identified as material by both them and the ESRB. This is two EEA Member States less than in 2018, but this is only due to these Member States no longer identifying any third country as material. Four Member States monitor the third countries material to them on top of the monitoring already done by the ESRB (see Table 3.5.A).

A common methodological framework for third-country monitoring has been co-developed by the ESRB and the ECB (for more information on the methodology used, see Special Feature B). With the identification exercise serving as a starting point for the monitoring framework, both in terms of which countries are monitored and in terms of the

variables used, Chart 3.5.I displays some key indicators for the eight countries identified as material by the ESRB. For the members of the BCBS, reciprocation of each other's CCyB rate up to 2.5% is mandatory and the same principle applies for the ESRB's membership. However, to date the only country which has implemented a non-zero CCyB and is not a member of the ESRB is Hong Kong, which recently reduced its CCyB rate from 2.5% to 2%.¹⁸² By the time of publication, Hong Kong

¹⁸² See the [announcement](#) of the Hong Kong Monetary Authority pertaining to the CCyB on 14 October 2019.

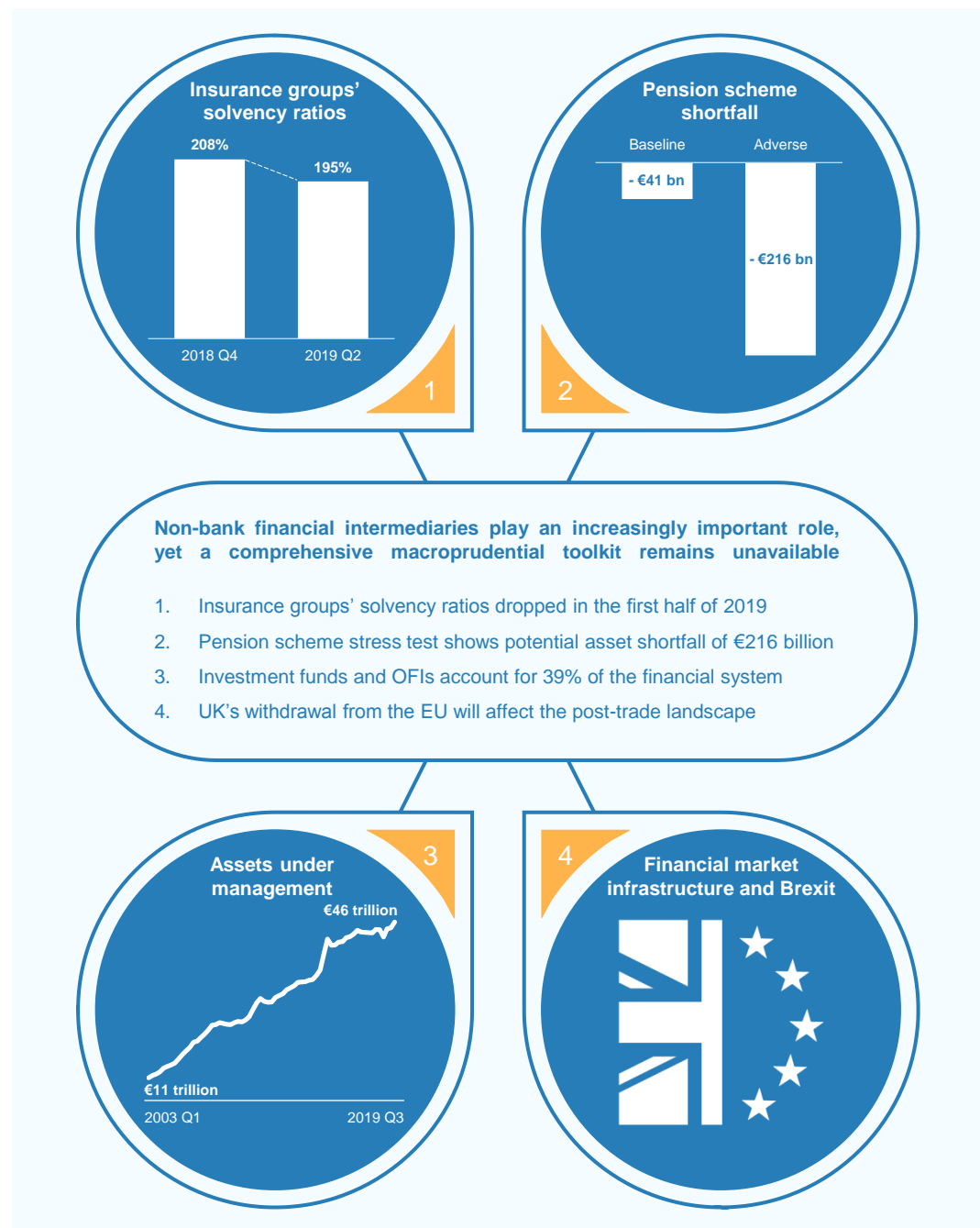


had released its CCyB further to 1% in response to the COVID-19 pandemic.¹⁸³ Because Hong Kong is a member of the BCBS, this decrease has been recognised by other BCBS members (some of which are also ESRB members and vice versa). As stated earlier, the implemented CCyB rate of the monitored third country would be taken into account if and when the ESRB would consider recommending the implementation of a CCyB rate on exposures towards that third country.

¹⁸³ See the [press release](#) of the Hong Kong Monetary Authority pertaining to the CCyB issued on 16 March 2020.



4 Macprudential measures beyond banking



The EU financial sector increasingly provides households and firms with an alternative source of funding if the banking sector becomes impaired during times of stress. The non-bank financial sector – which comprises investment funds (including money market funds), other financial institutions (OFIs), insurance corporations and pension funds – now accounts for more than half of the EU financial system, and plays an important role for firms and households. For example, in the first eight years after the crisis, euro area NFCs raised more net finance through the issuance of debt securities than through traditional bank loans.¹⁸⁴ In the Netherlands, around one-third of new mortgages to households are provided by pension funds, insurers and mortgage funds.¹⁸⁵ As the capital markets union progresses, the role of non-bank finance is expected to increase further. This can provide firms and households with an alternative source of funding if the banking sector becomes impaired during times of stress.

Authorities need a comprehensive toolkit to address risks to financial stability that might result from this development. A side effect of the increasing role of the non-bank financial sector is that existing activities and risks might migrate from the banking sector and that new risks might emerge. For example, while insurers do not attract a capital charge for mortgage loans with risk-adjusted LTV ratios of below 80%, banks using the SA would be faced with a capital charge for the same loan. And with the CCyB only applying to banks, lending by the non-bank financial sector can make it more difficult for macroprudential authorities to curb excessive borrowing during times of exuberance. This makes it important that authorities have a comprehensive toolkit to address risks to financial stability, including from the non-bank financial sector.

This section sets out the tools that ESRB members have developed to address risks beyond the banking sector and the measures they took to address them. Despite the lack of a comprehensive macroprudential toolkit to address risks beyond the banking sector, ESRB members took measures of a macroprudential nature to address such risks. Moreover, some Member States passed legislation to broaden the toolkit available in their jurisdictions and developed analytical frameworks. This included bringing a macroprudential perspective to microprudential regulation; designing recovery and resolution frameworks; and developing macroprudential tools to target systemic risk. The remainder of this section describes this in more detail for the following sectors: (i) insurance, (ii) pension schemes, (iii) asset management and investment funds, and (iv) financial market infrastructure. The ESRB's contributions in these areas are described in its Annual Reports.

¹⁸⁴ **EU Non-bank Financial Intermediation Risk Monitor 2019**, ESRB, July 2019.

¹⁸⁵ **Dutch banks see market share in home mortgage lending stabilise**, *DNBulletin*, De Nederlandsche Bank, 31 January 2019.

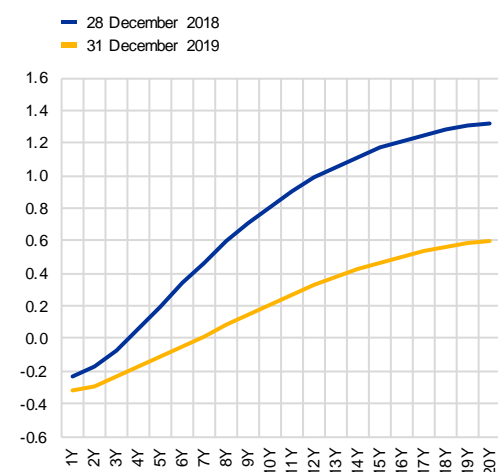


4.1 Insurance

The re-emergence of the low interest rate environment is one of the main systemic risks for the insurance sector. The decrease in interest rates can be illustrated by the downward shift of swap curves (see Chart 4.1.A). In the insurance regulatory framework (Solvency II), the risk-free interest rate term structure used to calculate technical provisions is based on these swap curves

Chart 4.1.A
Swap curves

(percentages)

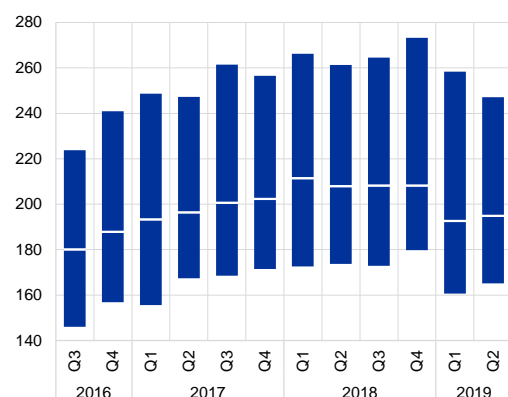


Source: ESRB calculations.

Note: The latest observations are for 31 December 2019.

Chart 4.1.B
Insurance groups' solvency ratio

(percentages)



Source: ESRB risk dashboard (December 2019).

Notes: The blue bars show the interquartile range. The horizontal white lines show the median values. The values of the solvency ratio are based on financial stability reporting data collected from 93 EEA insurance groups reporting under the Solvency II regime. The latest observations are for Q2 2019.

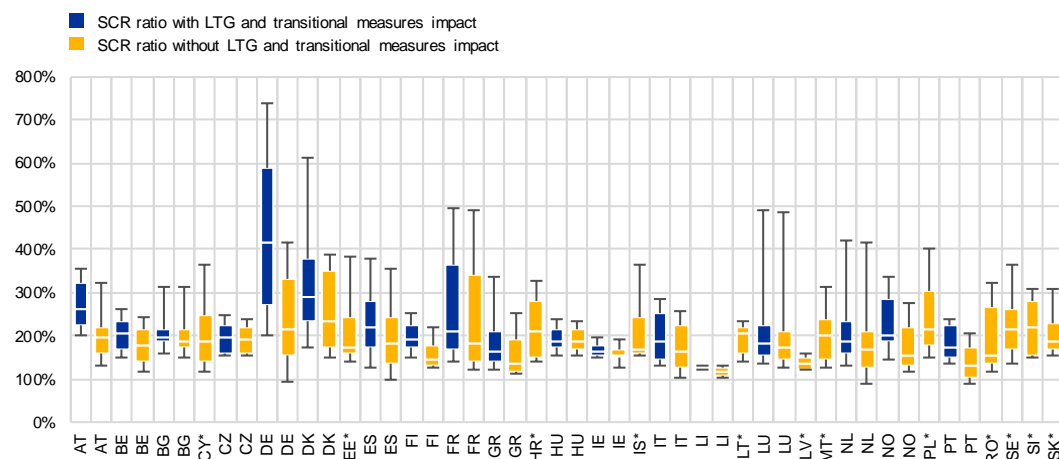
minus an adjustment for credit risk. A lower swap curve generally means higher technical provisions and – other things being equal – a decreased amount of own funds. Low interest rates therefore typically reduce (re)insurers' solvency, and in certain cases their profitability as well. Life insurers that have provided guaranteed returns to policyholders are particularly affected, as they find it increasingly difficult to invest in assets that produce a sufficient spread over the interest rates they have guaranteed. This spread is already negative for most insurers across several EU countries: Finland, the Netherlands, Norway, Poland and Portugal are the only countries where a clear majority of insurers generated positive spreads. Solvency ratios of significant insurance groups in the EEA dropped during the first half of 2019 (see Chart 4.1.B, based on financial stability reporting data collected from 93 EEA insurance groups reporting under the Solvency II regime). However, the negative impact of low interest rates on (re)insurers' solvency positions has been partially compensated for by the long-term guarantee (LTG) and transitional measures, which allow (re)insurers to add a premium to the risk-free interest rate term structure used to calculate technical provisions. The effect of these measures on solvency ratios varied widely across (re)insurers and EEA Member States, but was particularly pronounced in Denmark, Germany and the United Kingdom (see Chart 4.1.C).



Chart 4.1.C

SCR ratio by country with and without LTG and transitional measures

(percentages)



Source: Financial Stability Report, EIOPA, December 2019.

Notes: The chart shows the interquartile ranges and medians. Countries with an asterisk are either those with insurers that do not use the LTG and transitional measures or those which have less than three insurers using the LTG and transitional measures. The latest observations are for 31 December 2018. Information on the impact of LTG and transitional measures is only available in the yearly reporting. End-2019 figures were not available at the time of writing.

Despite the low level of interest rates, so far no national supervisory authority has needed to use one of the few macroprudential measures available under Solvency II: the extension of the recovery period. Under Article 138 of Solvency II, national supervisory authorities may extend the recovery period that results from non-compliance with the Solvency Capital Requirement (SCR) if the (re)insurer has been affected by a persistent low interest rate environment. In the case of a breach of the SCR threshold, a (re)insurer must submit a recovery plan to the supervisor within two months and restore compliance with capital requirements within six months. If an exceptional adverse situation is deemed to have arisen, the recovery period can be extended up to seven years. EIOPA can declare this exceptional adverse situation at the request of the national supervisor when, among other factors, a low interest rate environment has had a negative impact on a (re)insurer representing a significant share of the market. Despite the low interest rate environment, no national supervisory authority has needed to enact such a provision.

In Belgium, the authorities took alternative measures to increase the resilience of their insurance sector to the low interest rate environment. The measures taken aiming to increase the resilience relied on the national statutory accounting (local generally accepted accounting principles – GAAP). These measures usually require insurers to set aside additional reserves to ensure the payment of their obligations. For instance, Belgian insurance companies active in life or occupational accident insurance are required to establish an additional GAAP provision against interest rate risk (referred to as the “flashing light provision”). This provision compensates for the difference between the average guaranteed interest rate and the return on assets the insurer would be able to realise today. The provision should be constituted at a minimum rate of 10% of this difference per year. Insurers can be exempted from the establishment of the flashing light provision if they have an SCR ratio (without the use of the transitional measures on technical provisions)



above 100% and if they have satisfactory results in the yearly low-yield stress test of the Nationale Bank van België/Banque Nationale de Belgique (NBB/BNB). Considering the low interest rate environment and the deficiencies of Solvency II in calculating the SCR for interest rate risk (negative values of interest rates are not modelled), the NBB/BNB decided to tighten the criteria for exemption in 2019; insurers should have at least an SCR ratio of 125% (without the use of the transitional measures on technical provisions). In many other countries, there are similar reserves for the low interest rate environment. For instance, in Italy, insurers need to calculate (under local GAAP) an additional reserve if the foreseeable rate of return on the assets representing the technical provisions is lower than the commitments towards policyholders (i.e. the guaranteed rate in the contracts). In Germany, life insurers have had to build up an additional premium reserve called the Zinszusatzreserve (ZZR) since 2011, for times of persistently low interest rates. The ZZR is part of the premium reserve. Its purpose is to provide for periods in which the investment income alone is no longer sufficient to finance the interest guarantees of life insurance contracts concluded in periods with significantly higher interest rates. When these contracts gradually expire, the ZZR is released accordingly.

In Austria, France and Italy, the authorities enhanced their monitoring of the effects of low interest rates on insurers. In terms of risk monitoring, the Austrian Financial Market Authority has asked insurers to calculate their Solvency II requirements more frequently. The French Prudential Supervision and Resolution Authority has engaged in a closer monitoring of the vulnerable entities: their solvency ratio and their solvency ratio projections are being presented and analysed on a monthly basis. In addition, it has asked insurers to test, in their own risk and solvency assessments, a scenario of “low and negative interest rates for longer”. The Italian Institute for the Supervision of Insurance carries out on a semi-annual basis a monitoring exercise targeted at Italian insurers offering products with guarantees. The aim is to gather information on the level of related technical provisions (mathematical reserves) by guaranteed rate offered under stressed scenarios (the impact of an increase/decrease of 100 basis points in the interest rate on the mathematical reserves).

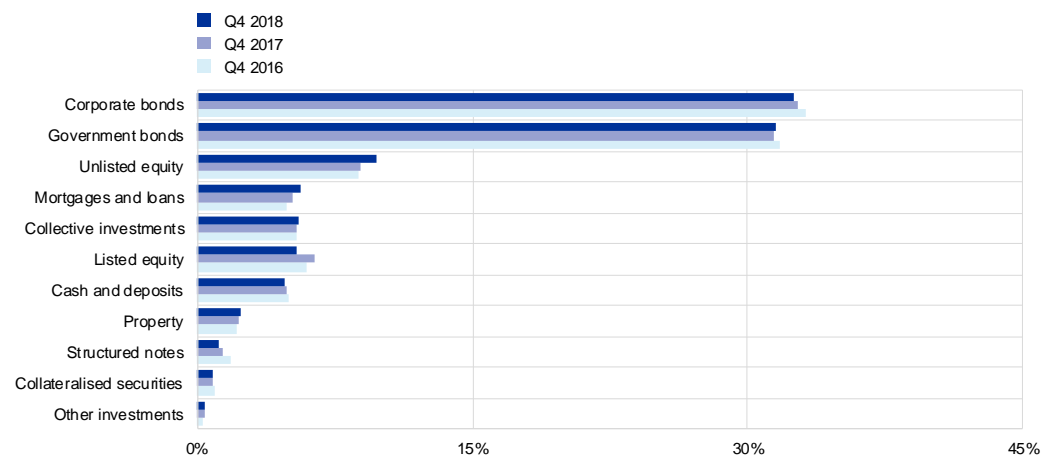
Another consequence of the low interest rate environment is that it leads to increased search-for-yield behaviour, thereby exposing insurers to a reassessment of risk premia.

Residential mortgages are an example of such behaviour. Over the last few years, EU (re)insurers have increased their exposures to riskier assets, such as unlisted equity and mortgages and loans (see Chart 4.1.D). While mortgage loans account for a small share of EU (re)insurers’ investment portfolios, their share is close to 15% and 6% in the Netherlands and Belgium, respectively. A survey of national authorities conducted by the ESRB showed that the search-for-yield behaviour is the most common motivation behind insurers providing or investing in residential mortgage loans (see Chart 4.1.E). The survey also showed that while (re)insurers have legal permission to originate residential mortgage loans in 19 EEA countries, borrower-based measures could be applied to loans originated by insurers in only 11 of them (see Chart 4.1.F). If residential mortgage provision by insurers increases further, this gap could eventually impede the efficacy of borrower-based measures.



Chart 4.1.D Investments held by (re)insurers

(as a percentage of the total investment portfolio, excluding unit-linked investments)

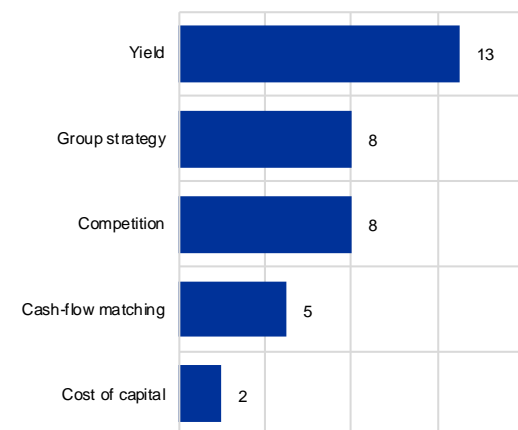


Source: ESRB.

Notes: The look-through approach is applied. The latest observations are for Q4 2018.

Chart 4.1.E Drivers of (re)insurers' exposures to residential mortgage loans

(number of countries where each driver is deemed relevant)



Source ESRB.

Notes: Countries might contribute to several categories. For instance, the same country could be counted for the category "Yield" and the category "Cash-flow matching".

A preliminary analysis by EIOPA has identified how climate change can have an impact on (re)insurers, both on their assets side and their liabilities side.

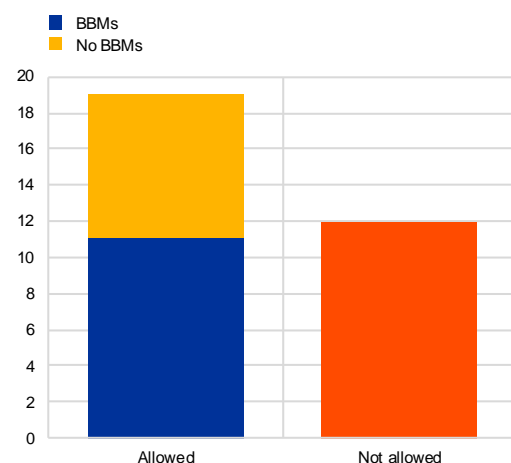
The analysis informed EIOPA's Opinion to the European Commission on the integration of climate-related risks into Solvency II. It showed that on the assets side, the transition to a green economy may expose (re)insurers to losses on assets considered "brown", which could be affected by downward revaluations due to changes in regulation, reputational impacts or shifts in markets and technology. Such climate-relevant asset exposures vary widely across EEA Member States and could account for more than 10% of total assets held by (re)insurers in many countries (AT, BE, CY, FI, FR, HR, IS, NL, NO, SI, UK) (see Chart 4.1.G). The majority of these exposures are related to the housing sector, and they also include energy-intensive fossil-fuel, transport and



utilities exposures.¹⁸⁶ On the liabilities side, underwriting risks related to natural catastrophes may pose significant challenges to (re)insurers. The amount of insured losses resulting from natural catastrophes has been increasing at the global level relative to previous decades (see Chart 4.1.H) and these losses could increase in frequency or amount in the future due to climate change.

Chart 4.1.F
Legal permission for (re)insurers to originate mortgage loans and legal scope of borrower-based measures

(number of countries)



Source ESRB.

Notes: Re-insurers are allowed to originate residential mortgage loans in AT, BE, CY, DE, DK, EE, FR, GR, HR, IS, LI, LV, NO, NL, PL, RO, SE, SI and UK. Within this group, there are no legal provisions for the implementation of borrower-based measures in EE, FR, GR, HR, LI, PL, RO and UK. (Re)insurers are not allowed to originate residential mortgage loans in BG, CZ, ES, FI, HU, IE, IT, LT, LU, MT, PT and SK. Situation as at 31 December 2019.

Authorities in France, Germany, Ireland, Italy and the Netherlands included the effect of climate change in their risk assessment frameworks.

The French Prudential Supervision and Resolution Authority published a report on (re)insurers' governance of climate change risk and concluded with key recommendations: (i) the definition of a climate change-related strategy; (ii) the integration of climate change-related issues into the internal risk management framework; and (iii) the move towards risk assessment methods that allow for the linking of climate-related risk scenarios to the usual risk parameters. The German Federal Financial Supervisory Authority (BaFin) published a guidance note¹⁸⁷ providing good practices on how to include sustainability in the risk assessment of insurers. The Italian Institute for the Supervision of Insurance passed regulation requiring the boards of insurance groups to take account of environmental, social and governance risks in their strategic decisions. In the Netherlands, De Nederlandsche Bank published Q&As for insurers explaining how to integrate risks associated with climate change. The Central

Bank of Ireland defined a framework for emerging risks faced by insurers, including climate change risks. The Central Bank of Ireland will extend its analysis and develop guidelines for supervisors in 2020.

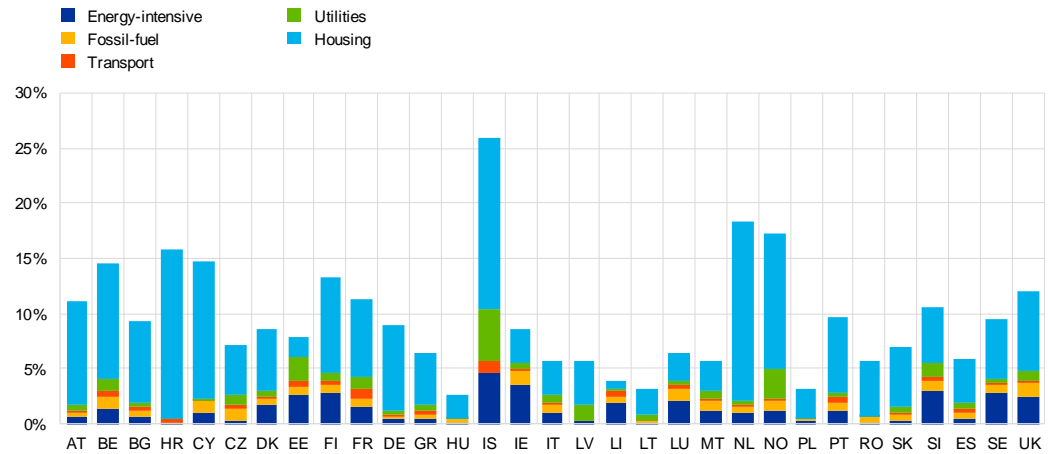
¹⁸⁶ It is important to note that these direct exposures might still understate the total potential transition risk on the assets side, as additional exposures might be held through investment funds, for which look-through was not possible, and there could be additional sectors (for instance agriculture) at risk in a transition scenario. Finally, potential second-round effects were also not considered in these direct exposures.

¹⁸⁷ **Guidance Notice on Dealing with Sustainability Risks**, BaFin, January 2020.



Chart 4.1.G
Climate-related asset exposures by country

(as a percentage of the total investment portfolio)

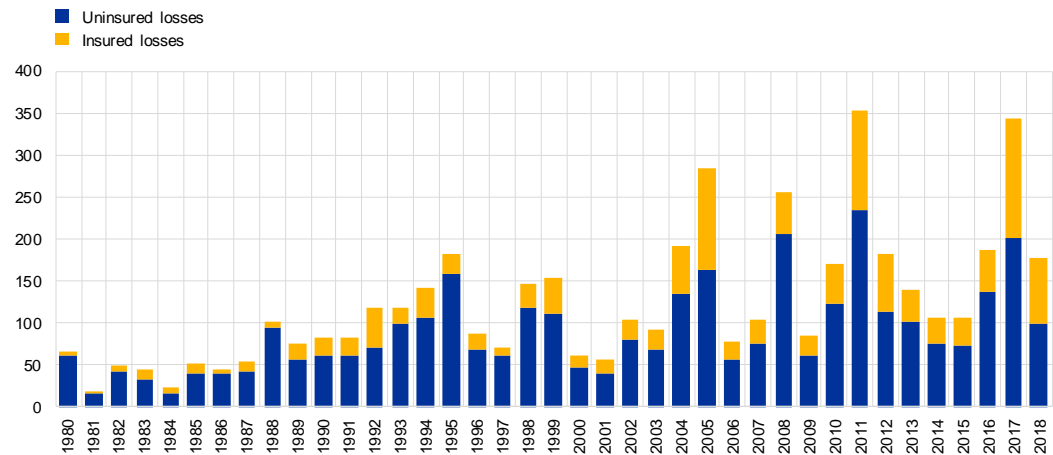


Source: Financial Stability Report, EIOPA, December 2018.

Notes: Sample consists of solo undertakings reporting for Q1 2018. Assets held for unit-linked business are included. The latest observations are for Q1 2018.

Chart 4.1.H
Overall and insurance losses for relevant natural loss events worldwide

(in 2018 USD billions)



Sources: Financial Stability Report, EIOPA, June 2019, and ESRB calculations.

Notes: According to NatCatSERVICE, relevant natural losses are those that exceed defined thresholds of normalised overall losses and/or fatalities. The threshold values are: (i) fatalities ≥ 1 ; and (ii) normalised overall loss \geq USD 100k, 300k, 1m or 3m (depending on the assigned World Bank income group of each affected country).

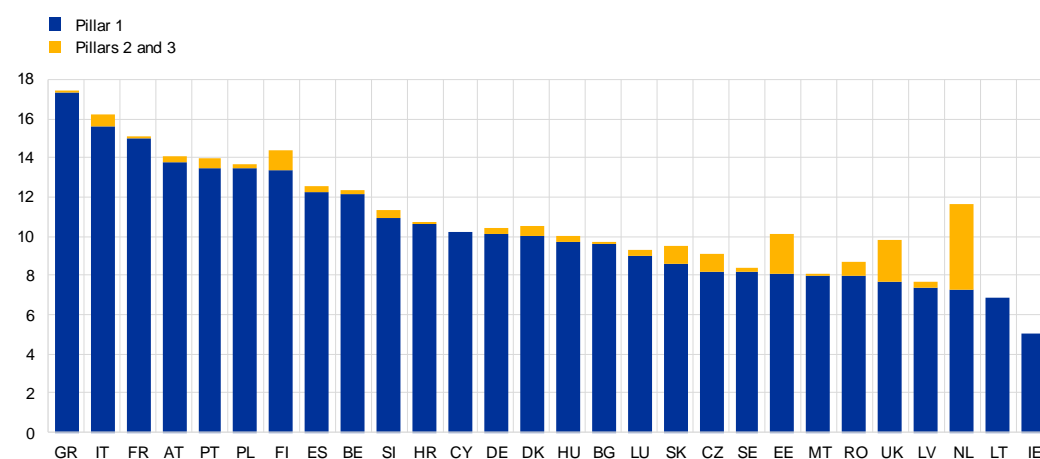


4.2 Pension schemes

In the EU, the set-up and composition of the pension landscape differs significantly across countries and is often determined by national social and labour law.¹⁸⁸ Pension schemes are usually split between three “pillars”: government-sponsored pension schemes (Pillar 1); occupational pension funds where employers and employees contribute to a pension fund designed as a defined benefit (DB), defined contribution (DC) or hybrid plan (Pillar 2); and the remaining private pension schemes, typically set up on a voluntary basis by households (Pillar 3). Chart 4.2.A provides an overview of the size of contributions to these different schemes across Europe.

Chart 4.2.A
Size of contributions to Pillars 1, 2 and 3

(as a percentage of GDP)



Sources: European Commission, Organisation for Economic Co-operation and Development (OECD), EIOPA, Eurostat and ESRB calculations.

Notes: Data on Pillar 1 are as at end-2016 and refer to gross public sector expenditure as a percentage of GDP, as disclosed in the European Commission's 2018 Ageing Report (Statistical Annex, Table III.1.66). Data on Pillars 2 and 3 are based on contributions of autonomous pension funds as reported to the OECD, with a reference date of end-2016, except for DE, FR and UK (end-2015) and GR (end-2014). Data for HR, MT, RO and SE are taken from EIOPA (total gross contributions receivable) and corresponding GDP from Eurostat, as at end-2015. No data on Pillar 2 and Pillar 3 schemes are available for CY, IE and LT. The Irish Pension Authority estimated that the Pillar 2 and 3 pension savings in their country amounted to circa €120 billion.

The way in which pension schemes are funded differs and therefore the main risks to which they are exposed can also differ. In general, as shown by Table 4.2.A, Pillar 1 pension schemes are all pay-as-you-go (PAYG) and predominantly defined benefit schemes. The main risks for Pillar 1 pension schemes are therefore typically associated with demographic factors, with fewer contributors for the pensions of the elderly. Pillar 2 and Pillar 3 pension schemes are funded by contributions which are typically invested in financial markets. Consequently, they are mostly affected by the macroeconomic environment (e.g. low productivity, low growth and low interest rates). The risk assessment of Pillar 2 pension schemes also depends on whether they are based on defined benefits or defined contributions, or whether they are hybrid schemes. The landscape of

¹⁸⁸ See **Pension schemes – Study for the EMPL Committee**, Directorate General for Internal Policies, Policy Department A: Economic and Scientific Policy, European Parliament, August 2014, for a more detailed discussion on pension arrangements in the EU and their classification.



Pillar 2 schemes in Europe is presented in Chart 4.2.B. The rest of this section focuses on the risk assessment of Pillar 2 pension schemes.

Table 4.2.A

Taxonomy of the main Pillar 1 pension schemes across countries

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
Defined benefit	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Notional defined contribution											•				•							•	•			•			
Point system				•		•					•		•				•								•		•		
Flate rate											•		•							•	•							•	

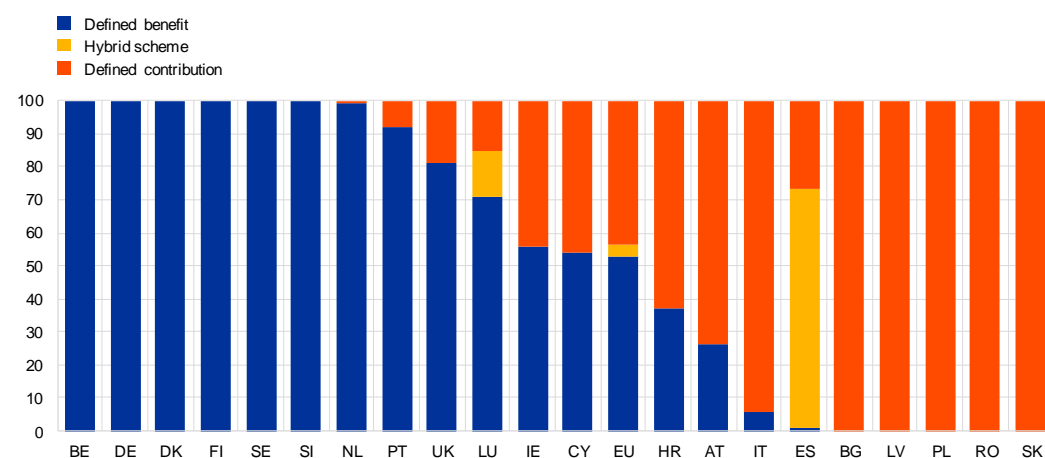
Source: The 2018 Ageing Report: Economic and Budgetary Projections for the 28 EU Member States (2016-2070), Institutional Paper 079, European Commission, May 2018.

Notes: In the case of Greece, the public supplementary pension funds have been notional defined contribution schemes since 2015. In the case of France, point system refers to the ARRCO and AGIRC pension schemes. In the case of Bulgaria, while the public PAYG system is of a defined benefit type, the statutory funded private pension scheme is of a defined contribution type.

Chart 4.2.B

Classification of IORP pension schemes across countries

(percentages)



Source: 2015 IORP Stress Test Report, EIOPA.

Notes: Data refer to end-2014. EU is the simple (unweighted) average of the observations of the countries. The defined contribution figures do not include contract-based schemes which are not IORPs. For UK, defined benefit schemes also include hybrid schemes. For BE, pure defined contribution schemes do not exist because legislation defines minimum rates of return that the sponsors of pension funds (or group insurance contracts) have to guarantee to covered employees, thus limiting the market risk that is shifted to households. For ES, the importance of hybrid schemes is explained by the fact that usually pension schemes contain a retirement contingency (defined as defined contribution) and a death, disability or dependency contingency (defined as defined benefit). For SE, the majority of Pillar 2 pension schemes are contract-based and to some extent hybrid. Defined benefit pensions constitute 25% and defined contribution pensions 75%, measured in terms of asset value. No data are available for CZ, EE, FR, GR, HU, LT and MT.



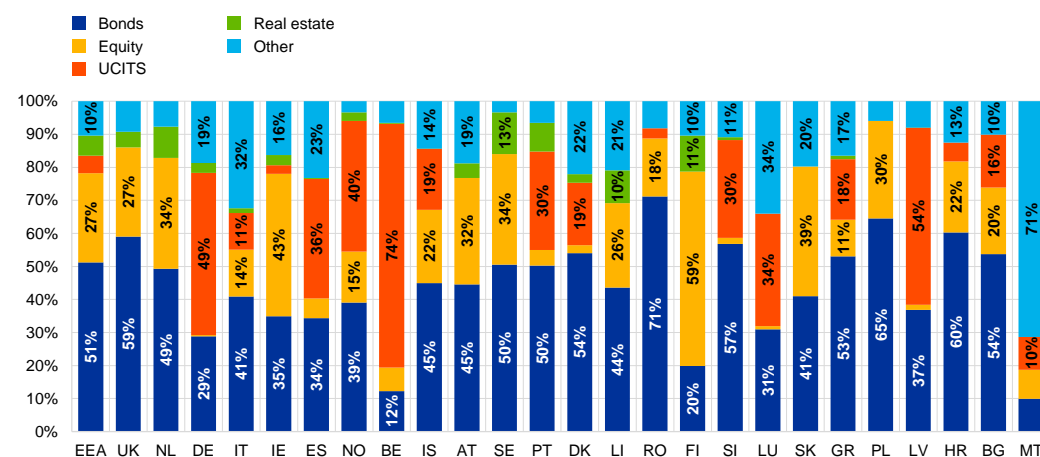
With almost €4 trillion of assets under management, the EEA IORP sector is an important actor on financial markets with potential implications for financial stability. The diversity of the frameworks for occupational pensions in Europe, in conjunction with the sector's relative importance for private pension savings and in relation to national social security frameworks, have to be considered when assessing the sector's potential impacts on financial stability.

New reporting requirements defined at the EU level by EIOPA have applied since the third quarter of 2019. In 2018 EIOPA published a decision which defines a single framework for regular information requests to national competent authorities regarding the provision of occupational pension information to effectively monitor and assess the European occupational pensions sector, with a particular focus on the effects on financial stability. This decision was applied for the first time at the end of 2019. In practice, the figures will only become available in 2020 and the rest of this section is therefore based on end-2018 data.

In the last couple of years the IORP sector has faced a constantly worsening economic environment. This environment has affected the financial situation of DB pension funds, as well as the accumulated savings of members and beneficiaries in DC funds. The persistently low interest rate environment puts the current values of DB pension obligations under stress due to the correspondingly low discount rates. For the DB sector, this has caused coverage ratios (indicating the extent to which current pension assets cover pension obligations) to drop below 100% in a number of Member States. End-2018 asset values, in particular for equity investments, deteriorated, but recovered in 2019 (which data to be released in 2020 should reflect). The low and negative interest rate environment continues to stifle the performance of the fixed income and debt portfolio – the most important asset class of the European IORP sector, as shown in Chart 4.2.C.

Chart 4.2.C
Investment allocation by country in 2018

(percentages)



Source: Financial Stability Report, EIOPA, December 2019, Figure 4.5.

Notes: "Other" includes derivatives, loans, reinsured technical provisions, other investments and other assets. For UK, figures relate to DB and hybrid schemes only. Information on investments in UCITS is not available for all countries depicted in the chart. The weighting is based on total assets. For readability purposes, only data labels of percentages equal to or larger than 10% are shown.

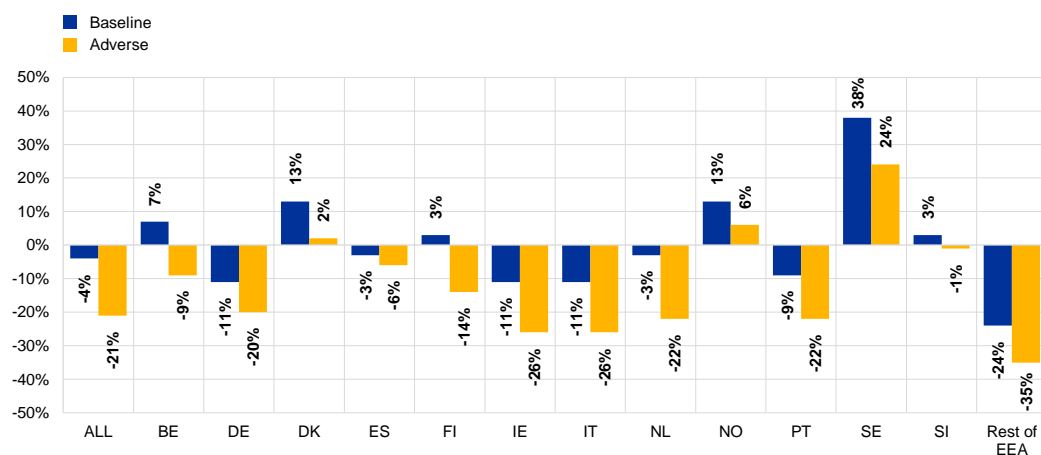


EIOPA’s 2019 occupational pension stress-test scenario builds on the narrative of a sharp reassessment of risk premia and an increase in yield curves in the short term. The shock stressed the investment assets of the EEA IORP sector, while decreasing the pressure from low discount rates on technical provisions. The adverse market scenario meant a substantial shock to IORPs’ investment assets and particularly their equity exposures, which were subject to heightened market volatility at the end of 2018. The stress would have reduced by almost €250 billion asset values in the EEA DB sector in the sample¹⁸⁹ and by €16 billion asset values in the EEA DC sector in the sample. This loss in value represents around 2% of the 2018 GDP of the participating countries. The liabilities of the DB IORPs in the sample decreased by 7% under the “common methodology” (the methodology defined by EIOPA for the stress-test exercise, which is based on mark-to-market valuation) as a consequence of the adverse market scenario, which is a higher decrease than the 3% observed for the national methodologies. The EEA aggregate figure is highly influenced by the IORP sector in the Netherlands, where pension liabilities are valued using a risk-free rate term structure, similar to the one applied in the common methodology. However, the prudential regimes in many other EEA countries use fixed discount rates of up to 4%. The adverse scenario resulted in an aggregate shortfall between total assets and total liabilities of €180 billion under the national frameworks and €216 billion according to the common methodology. Under the assumptions of the common methodology, the shortfall would result in expected sponsor support (€49 billion in the adverse scenario) and benefit reductions (€173 billion in the adverse scenario) in the common balance sheet.

Chart 4.2.D

Excess of assets over liabilities (excluding sponsor support, pension protection schemes and benefit reductions) in the baseline and adverse market scenarios

(as a percentage of liabilities, excluding benefit reductions)



Source: 2019 IORP Stress Test Report, EIOPA, Figure 2.22.

Notes: Assets include all assets on the common balance sheet except sponsor support and pension protection schemes, while liabilities include all liabilities, including conditional and discretionary benefits, except benefit reductions depicted in the chart. The weighting is based on total assets.

¹⁸⁹ The sample used for this year is different from the previous stress-test exercise since the UK IORP sector did not participate.



EIOPA's 2019 stress test was complemented by two analyses on investment behaviour and the integration of environmental sustainability factors. This assessment for the first time considered both DB and DC sectors together and its results will be a starting point for further research to better understand IORPs' investment allocation and investment behaviour, as well as the sustainability of investments. The new reporting of EEA IORPs' information will substantially improve EIOPA's capabilities in this respect. The analysis of the IORPs' expected investment behaviour after the stress event shows strong and quick rebalancing to pre-stress investment allocations, which indicates countercyclical investment behaviour, which could however potentially exacerbate financial losses in the case of a continued reassessment of risk premia. The observed high exposures to US equities and domestic sovereign bonds are assessed bearing in mind the long-term horizon of the investments and pension obligations of IORPs. The tendency of IORPs not to change their asset allocation over time may be further explored in terms of its macroprudential implications once the improved pension reporting (see above) comes into effect.



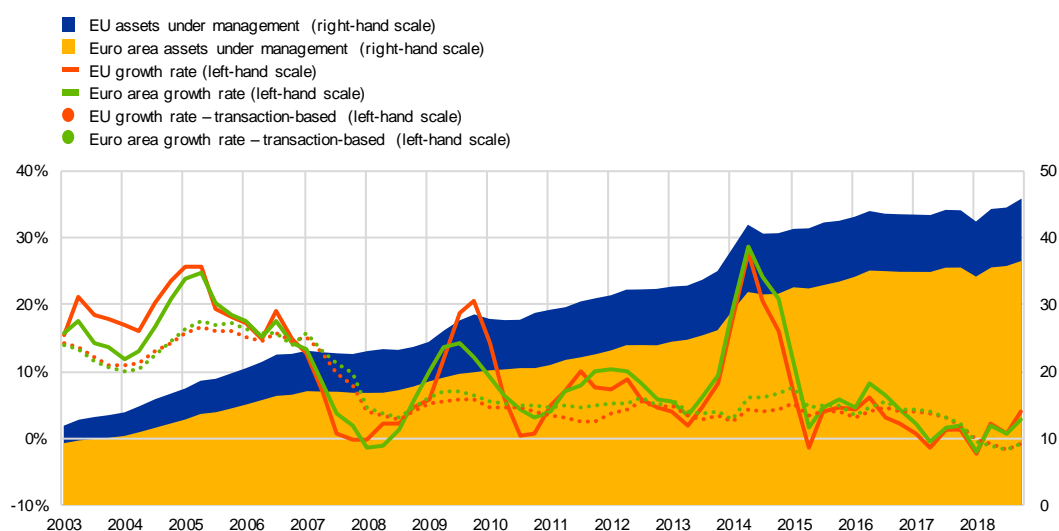
4.3 Asset management and investment funds

Assets under management in EU investment funds and other financial institutions increased in the third quarter of 2019, reaching €45.2 trillion and accounting for around 39% of the EU financial system.¹⁹⁰ The size of the investment fund and other financial institution (OFI) sector increased year on year by 4.3% in the third quarter of 2019 (see Chart 4.3.A), while the banking sector¹⁹¹ expanded by 6.8% year on year. With a relative size of 97.5% in the third quarter of 2019, the investment fund and OFI sector accounted for almost the same amount of assets under management as found in the banking sector.

Chart 4.3.A

Assets under management in EU investment funds and other financial institutions

(annual growth rates and EUR trillions)



Sources: ECB and ESRB calculations.

Note: The latest observations are for Q3 2019.

Large redemptions from investment funds could result in abrupt asset price movements, partially due to liquidity mismatches and leverage, with spillover effects owing to the sector's interconnectedness. Some open-ended investment funds tend to have high liquidity mismatches as the funds may invest in illiquid assets while offering investors the possibility to redeem at short notice. High leverage can also be a concern as it can amplify shocks and may result in contagion to other fund classes when market participants are forced to deleverage in response to deteriorating economic fundamentals or a decline in asset prices. The persistence of the low interest rate environment is supporting high levels of private and public sector indebtedness and high asset valuations. This has also supported growth in riskier segments of corporate debt such as the growing leveraged loan market. Sudden changes in investors' risk perception could

¹⁹⁰ See *EU Non-bank Financial Intermediation Risk Monitor 2020* (forthcoming).

¹⁹¹ The banking sector is computed as the MFI sector excluding central banks and money market funds.



result in significant reallocations of investments, which may lead to abrupt asset price movements, with adverse implications for the financing of the real economy.

The use of liquidity management tools can allow fund managers to avoid fire sales and effectively manage unexpectedly high fund redemptions. In 2019 several investment funds made use of such tools, including the suspension of the Woodford Equity Income Fund, swing pricing introduced by H2O Asset Management¹⁹² and the suspension of the M&G Property Portfolio¹⁹³. While these episodes had different causes, occurred in a benign macroeconomic environment and did not have consequences for financial stability, they illustrate some of the vulnerabilities related to liquidity mismatches. Rising investments in less liquid assets in the current low interest rate environment could increase such vulnerabilities and the risk of sudden changes in investors' perception of risk premia.

Liquidity management tools are an important part of the risk management toolkit and can help to prevent problems in specific funds from amplifying or causing wider market disruption. Therefore, while these are not strictly macroprudential tools, they still contribute to financial stability and appropriate guidance on their usage can help to reduce systemic risk. The UK's Financial Conduct Authority issued a policy statement in September 2019 setting out new rules governing funds' disclosure practices, liquidity risk management and the suspension of dealing. Managers of funds investing in mainly illiquid assets will have to draw up contingency plans on how to address liquidity risk and may be required to suspend dealing when there is material uncertainty concerning valuations for a significant portion of portfolio assets.

The ESRB Recommendation on liquidity and leverage risks in investment funds¹⁹⁴ proposed the inclusion of additional liquidity management tools for investment fund managers across EU jurisdictions. A wider range of liquidity management tools improves funds' resilience to redemptions and asset managers' ability to respond to exceptionally high levels of redemption requests. Since the issuance of the recommendation in 2017, some Member States (e.g. BE, DE, ES, LT, PT) have already expanded the range of liquidity management tools that can be used by asset managers located in their jurisdiction. Other jurisdictions (DK, HU, LV, SE) continue to only have the suspension of redemptions available to asset managers (see Table 4.3.A).

¹⁹² [H2O press release.](#)

¹⁹³ [M&G press release.](#)

¹⁹⁴ [Recommendation ESRB/2017/6.](#)



Table 4.3.A

Availability of liquidity management instruments in EU Member States

	Gates	Side pockets	Anti-dilution levy	Redemption fees	Redemption-in-kind	Suspension of redemptions	Swing pricing	Short-term borrowings	Mandatory liquidity buffers	Side letters	Other tools or measures
AT		•		•	•	•	•	•	•	•	
BE	•		•			•	•				
BG						•		•			
CY	•	•	•	•	•	•	•	•			
CZ						•		•			
DE				•	•	•		•	•		•
DK						•					
EE	•	•	•	•	•	•	•	•		•	
ES	•	•		•	•	•	•	•	•		•
FI				•	•	•	•	•			
FR	•	•	•	•	•	•	•	•			•
GR						•		•			
HR					•	•					
HU						•					
IE	•	•	•	•	•	•	•	•		•	
IS						•		•			
IT	•	•	•	•	•	•		•			•
LI	•	•	•	•	•	•	•	•		•	
LT	•	•		•		•		•			
LU	•	•	•	•	•	•	•	•		•	•
LV						•					
MT	•	•			•	•		•		•	
NL	•	•	•	•	•	•	•	•	•	•	
NO	•	•				•	•				
PT	•		•	•	•	•	•	•			•
RO	•		•			•		•			•
SE						•					
SI		•			•	•		•			
SK	•					•		•	•		
UK	•		•	•	•	•	•	•			•

Source: ESRB.

The development of a macroprudential framework in the EU for investment funds is continuing in line with the ESRB's recommendation.

This includes the elaboration of the details of a framework for the suspension of redemptions by national competent authorities for cross-border financial stability purposes, and provisions to reduce the likelihood of excessive liquidity mismatches. In addition, ESMA issued new guidelines on liquidity stress testing in UCITS and AIFs¹⁹⁵, while work continued on developing guidance on a framework to assess leverage and to design, calibrate and implement macroprudential leverage limits within the AIF sector. Such ex-ante tools could help prevent or reduce the build-up of vulnerabilities in the investment fund sector, whilst ex-post tools aim to mitigate the amplification of shocks after they have occurred.

¹⁹⁵ Final Report: Guidelines on liquidity stress testing in UCITS and AIFs, ESMA, September 2019.



4.4 Financial market infrastructure

This section focuses on one type of post-trade financial market infrastructure (FMI), namely central counterparties (CCPs). The term “financial market infrastructure” covers a broad range of entities. For example, the CPMI-IOSCO¹⁹⁶ Principles for financial market infrastructures (PFMI)¹⁹⁷ refer to payment systems, central securities depositories, securities settlement systems, trade repositories and central counterparties. This section concentrates on CCPs, which – following the reforms to address the fault lines identified by the last global financial crisis – act, among other things, as systemic risk managers.

The post-trade landscape is evolving, with one possible outcome being a combination of an increase in central clearing volumes and greater concentration. As described in Section 2.1.7, the coming into effect of changes to EMIR, MiFID and the CRD/CRR may both increase demand for clearing services above and beyond what is mandated by law and lead to a further concentration of direct membership in CCPs among a few large clearing members.

The withdrawal of the UK from the EU (“Brexit”) will also be relevant for the EU27 post-trade landscape. After the end of the transition period that started on 1 February 2020, for some asset classes the EU is – and could remain for an indefinite period of time – largely reliant on third-country FMIs to operate its Internal Market. This is particularly true for the clearing of interest rate swaps, currency swaps, credit default swaps and commodity derivatives. In the short term, the financial industry has developed solutions to ensure the continuity of service to EU members and clients of UK FMIs by, for example, establishing clearing memberships from EU27-based entities, from which to service EU27-based clients. (For measures aimed at reducing “no-deal Brexit”-related financial stability risks, see Box 3.)

Changes in the post-trade landscape also reflect changes in the risk profile. EMIR trade repository reporting contributed to significant improvements in the transparency of the topology and distribution of counterparty credit risk from derivatives (see Box 4 for the application in view of Brexit). The fully implemented mandatory exchange of daily variation margins for all derivatives, regardless of whether they are cleared centrally or bilaterally, prevents the build-up of credit exposures on a bilateral basis. Strengthened and harmonised CCP risk management is likely to make CCPs more resilient to shocks. Furthermore, the forthcoming pan-European recovery and resolution framework has the same purpose. At the same time, new risks are emerging. As more volumes are cleared centrally or are subject to bilateral risk mitigation techniques, the volumes of both initial margins posted at any one time and variation margins exchanged daily may be set to grow. While this reflects a reduction in the primary risk – the counterparty credit risk – it also introduces a risk of procyclicality.¹⁹⁸ Risks could also emerge when CCPs interact directly through interoperable links, especially in the event of stress at one of the two interoperable CCPs that requires the deployment of recovery or resolution tools. These risks were specifically addressed by the ESRB report on CCP interoperability¹⁹⁹. Finally, as volumes shift towards centralised clearing,

¹⁹⁶ The Committee on Payments and Market Infrastructures (under the auspices of the Bank for International Settlements) and the International Organization of Securities Commissions.

¹⁹⁷ See [Principles for financial market infrastructures](#), CPMI/IOSCO, April 2012.

¹⁹⁸ [Mitigating the procyclicality of margins and haircuts in derivatives markets and securities financing transactions](#), ESRB, January 2020.

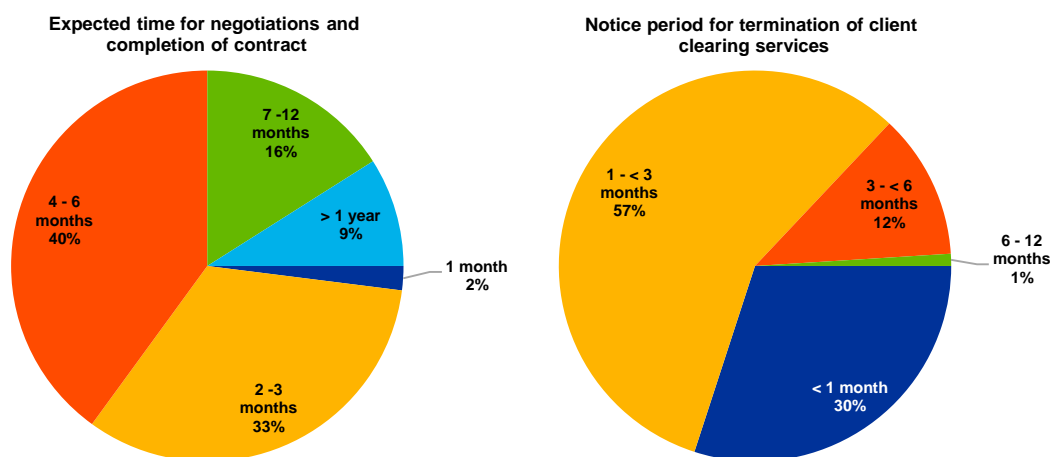
¹⁹⁹ [CCP interoperability arrangements](#), ESRB, January 2019.



the reliable and resilient access to CCPs is becoming increasingly relevant from a systemic risk perspective.

The risk of exclusion from access to FMIs, and CCPs in particular, is a risk of potentially systemic nature that so far has not been sufficiently addressed. There are two aspects of this risk: (i) access to client clearing; and (ii) access to clearing services provided by CCPs outside the EU. Regarding client clearing, the forthcoming delegated act on fair, reasonable, non-discriminatory and transparent (FRANDT) contractual terms applicable to client clearing provides an opportunity to address some of this risk. However, FRANDT does not address a situation where a large client clearing provider decides to exit a specific market segment or services, which would affect all clients equally. This is exemplified in Chart 4.4.A below, which shows the gap between the contractual notice which clearing members have to give to their clients when unilaterally terminating arrangements (right panel) and the time reported by clients to replace a clearing arrangement or re-enter into a clearing arrangement with a new clearing member (left panel). Increased demand for clearing services and a further concentration of direct membership of CCPs among a few large clearing members could accentuate this risk. Regarding access to clearing services provided by CCPs in third countries, the risk is more difficult to mitigate. This was demonstrated when, in late 2018, LCH Ltd announced its intention to issue notice letters of termination to EU27 clearing members in anticipation of a no-deal Brexit, even though this did not materialise.

Chart 4.4.A
Expected time to access new clearing arrangements and clearing service providers' notice period for termination of access



Source: *Mitigating the procyclicality of margins and haircuts in derivatives markets and securities financing transactions*, ESRB, January 2020 (joint Derivatives Assessment Team and BCBS qualitative survey).



Box 3

Measures aimed at reducing “no-deal Brexit”-related financial stability risks²⁰⁰

Facing risks of disruption in financial services emerging from a withdrawal of the UK from the EU without an agreement (“no-deal Brexit”), authorities at both EU and national level took several contingency measures aimed at smoothing potential cliff-edge effects around key Brexit dates. Indeed, a no-deal Brexit in March, April or October 2019 could have introduced stresses for the financial sector, with potential second-round effects on the EU economy. EU authorities insisted throughout 2019 on the necessity for all market participants to finalise their preparations before the UK’s withdrawal, and not to count on contingency measures. In a very limited number of cases, where necessary to mitigate financial stability risks, the EU authorities did take contingency measures. The majority of Member States complemented these measures with national contingency measures to address residual risks and protect local consumers.

At the EU level, a limited number of EU contingency measures were deemed necessary based on analysis by EU authorities and the assessment of Brexit-related risks by the joint ECB/Bank of England technical working group. Those EU measures aimed to mitigate financial stability risks, in particular as regards market infrastructures (UK CCPs and CSDs). The European Commission adopted time-limited equivalence decisions for these UK market infrastructures in December 2018. The temporary CCP equivalence would have been activated in the event of a no-deal Brexit until March 2020, in order to avoid any disruptions in the cross-border central clearing of derivatives. It was prolonged in December 2019 by 12 months from a no-deal date. The temporary CSD equivalence would have been activated in the event of a no-deal Brexit for 24 months, until March 2021. While none of these decisions was ever activated due to the ratification of the Withdrawal Agreement in January 2020, the temporary CCP equivalence reassured market participants and allowed EU participants, e.g. banks, to continue participating in the UK clearing venues. In addition, the majority of Member States adopted or prepared contingency measures. These measures aimed to address any residual risks or specific risks to customers in certain areas, in particular insurance, uncleared derivatives and other investment services. These measures were generally aimed at giving more time to firms to transfer business to the EU27 or allowing them to run off their existing business in an orderly way. The EU or national contingency measures were never activated, as the no-deal scenario did not materialise.

The situation at the end of the transition period (currently 31 December 2020) will be different from the situation around the potential no-deal dates of March, April and October 2019. Indeed, with the ratification of the Withdrawal Agreement, UK financial firms know that a change of regime is coming at the end of the transition period, with no more access to the Single Market as a Member State, and having instead to comply with the regime applicable to third-country firms, which implies equivalence of the jurisdiction and recognition of CCPs. UK and EU firms must therefore finalise their preparations to ensure that they are ready for this change of applicable regulatory framework.

²⁰⁰ Prepared by Yann Germaine and Jean-Baptiste Bernard (European Commission). Any views expressed in this box are those of the authors and do not necessarily reflect those of the European Commission.



Box 4

Analysing large-scale transaction data to monitor Brexit-related developments in the EU derivatives market²⁰¹

To assess and quantify Brexit-related financial stability risks in the derivatives markets, the ESRB developed a daily EU derivatives market monitor based on transaction-level data under the reporting framework established by the European Market Infrastructure Regulation. EU counterparties engaging in derivative transactions are mandated to report them to trade repositories authorised by ESMA. The full EU27 + UK dataset consists of around one hundred million observations per day, thereby representing an unprecedented wealth of information available to policymakers.

The ESRB and its member institutions have pioneered the analysis of these data: together with the ECB, ESMA and all its member institutions, the ESRB has developed the technological infrastructure to analyse and monitor on a daily basis systemic risk developments in the derivatives market. ESRB member institutions were provided with daily analyses and a regular dissemination of a set of aggregates (shared in anonymised and confidential format), which reflected a series of macro developments, including those between the UK and the EU. Such analysis was carried out across an extensive set of dimensions (including, among others, the type of underlying of the derivative contracts, the currency of denomination, the maturity and other relevant dimensions) for both exchange-traded and over-the-counter derivatives. The monitor covered several aspects of the complex derivatives market, including cleared and uncleared transactions, client clearing, collateral exchanged through initial and variation margins and post-trade activities such as compression. Sharing this information has enabled authorities to engage in a continuous dialogue about financial stability issues on the basis of a higher data frequency and a granular quantification of risks.

Granular information has become a powerful tool for decision-making and it is increasingly being used across the ESRB community to quantify and discuss developments of systemic relevance. This experience has further shown that only data collected at a high level of granularity and frequency can provide the necessary type of information to support the decision-making process by allowing the quantification of systemic risk developments in a highly interconnected, complex and integrated financial system.

While the ESRB's EU derivatives monitor has proven the key value of granular-level information, it is has also shown that substantial data quality issues are still present. Progress on data quality is necessary to ensure that policymakers receive reliable and up-to-date information about the financial system in order to rapidly detect financial stability issues and support the decision-making process. Hence, high-quality data should be viewed as a common good, which will provide benefits to both the financial industry and supervisors.

²⁰¹ Prepared by Antonio Ciullo, Marco D'Errico, Pedro Marques and Caroline Übelhör (all ESRB Secretariat).



Countries and abbreviations

Countries

AT	Austria	IE	Ireland	IS	Iceland
BE	Belgium	IT	Italy	LI	Liechtenstein
BG	Bulgaria	LT	Lithuania	NO	Norway
CY	Cyprus	LU	Luxembourg	BR	Brazil
CZ	Czech Republic	LV	Latvia	CH	Switzerland
DE	Germany	MT	Malta	CN	China
DK	Denmark	NL	Netherlands	HK	Hong Kong
EE	Estonia	PL	Poland	KY	Cayman Islands
ES	Spain	PT	Portugal	MX	Mexico
FI	Finland	RO	Romania	RU	Russia
FR	France	SE	Sweden	SG	Singapore
GR	Greece	SI	Slovenia	TR	Turkey
HR	Croatia	SK	Slovakia	US	United States of America
HU	Hungary	UK	United Kingdom		

Other

AIF	alternative investment fund	EBA	European Banking Authority
BBM	borrower-based measure	ECA	European Court of Auditors
BCBS	Basel Committee on Banking Supervision	ECB	European Central Bank
BIS	Bank for International Settlements	EEA	European Economic Area
BRRD	Bank Recovery and Resolution Directive	EFTA	European Free Trade Association
CCoB	capital conservation buffer	EIOPA	European Insurance and Occupational Pensions Authority
CCP	central counterparty	EMIR	European Market Infrastructure Regulation
CCyB	countercyclical capital buffer	ESA	European Supervisory Authority
CEE	central and eastern European	ESG	environmental, social and governance
CPMI	Committee on Payments and Market Infrastructures	ESMA	European Securities and Markets Authority
CRD	Capital Requirements Directive	EU	European Union
CRE	commercial real estate	FFAR	foreign exchange funding adequacy ratio
CRR	Capital Requirements Regulation	FMI	financial market infrastructure
CSD	centralised securities depository	FRANDT	fair, reasonable, non-discriminatory and transparent
DB	defined benefit	GAAP	generally accepted accounting principles
DC	defined contribution	GDP	gross domestic product
DSTI	debt service-to-income	G-SII	global systemically important institution
DTI	debt-to-income		
EA	euro area		



IFR	interbank funding ratio	OFI	other financial institution
IORP	institution for occupational retirement provision	O-SII	other systemically important institution
IOSCO	International Organization of Securities Commissions	PAYG	pay-as-you-go
IRB	internal ratings-based	PD	probability of default
LCR	liquidity coverage ratio	PFMI	Principles for financial market infrastructures
LGD	loss given default	PSA	pension scheme arrangement
LTG	long-term guarantee	RRE	residential real estate
LTI	loan-to-income	RW	risk weight
LTV	loan-to-value	SA	standardised approach
MFAR	mortgage funding adequacy ratio	SCR	Solvency Capital Requirement
MFI	monetary financial institutions	SII	systemically important institution
MiFID	Markets in Financial Instruments Directive	SMEs	small and medium-sized enterprises
MREL	minimum requirements for own funds and eligible liabilities	SRB	Single Resolution Board
NCA	national competent authority	SSM	Single Supervisory Mechanism
NFC	non-financial corporation	SyRB	systemic risk buffer
NGFS	Network for Greening the Financial System	TLAC	total loss-absorbing capacity
NPL	non-performing loan	TLTRO	targeted longer-term refinancing operations
NSFR	net stable funding ratio	TRIM	Targeted Review of Internal Models
OECD	Organisation for Economic Co-operation and Development	UCITS	undertakings for collective investment in transferable securities



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