



EURO AREA

PUBLICATION OF FINANCIAL SECTOR ASSESSMENT PROGRAM DOCUMENTATION—TECHNICAL NOTE ON MACROPRUDENTIAL POLICY

July 2025

This paper on Macroprudential Policy was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on July 2, 2025.

Copies of this report are available to the public from

International Monetary Fund • Publication Services

PO Box 92780 • Washington, D.C. 20090

Telephone: (202) 623-7430 • Fax: (202) 623-7201

E-mail: publications@imf.org Web: <http://www.imf.org>

International Monetary Fund
Washington, D.C.



INTERNATIONAL MONETARY FUND

EURO AREA

FINANCIAL SECTOR ASSESSMENT PROGRAM

July 2, 2025

TECHNICAL NOTE

MACROPRUDENTIAL POLICY

Prepared By
**Monetary and Capital Markets
Department**

This Technical Note was prepared by IMF staff in the context of the Financial Sector Assessment Program in the euro area. It contains technical analysis and detailed information underpinning the FSAP's findings and recommendations. Further information on the FSAP can be found at <http://www.imf.org/external/np/fsap/fssa.aspx>

CONTENTS

Glossary	2
EXECUTIVE SUMMARY	6
INTRODUCTION	9
INSTITUTIONAL FRAMEWORK	10
A. Willingness to Act	11
B. Ability to Act	13
C. Effective Coordination and Cooperation	15
D. Communication	18
E. ESRB Recommendations About the Institutional Framework for Macroprudential Policy	19
F. Assessment and Recommendations	19
SYSTEMIC RISK MONITORING	21
A. Risk Monitoring Framework	21
B. Monitoring of Vulnerabilities	21
C. Assessment of Macroprudential Policies and their Interactions	24
D. Data Available for Monitoring Vulnerabilities and Calibrating Measures	24
E. Recommendations and Assessment	25
MACROPRUDENTIAL TOOLS	25
A. Tools to Address Broad-Based Vulnerabilities	27
B. Tools to Address Sectoral Vulnerabilities	31
C. Tools to Address Structural Vulnerabilities	33
D. Reciprocation of Macroprudential Measures	37
E. Borrower-Based Tool Availability and Application Across the EA	38
F. Tools to Address Vulnerabilities from Funding, Liquidity and Foreign Exchange Risk, Including Vulnerabilities Arising from Linkages to NBFIs	42
G. Sovereign-Bank Nexus	43
H. Recommendations	44
BOX	
1. Releasable Capital Buffer	26

FIGURES

1. Banks' Capital Buffers And Profitability	28
2. EEA Banks' OSII Scores and Capital Buffers 2023	36
3. Banking Sector Assets to GDP Vary Across EA Countries	37
4. Banking System Profitability and Contribution to Above Floor O-SII Buffers	37
5. Implementation of Borrower-Based Macroprudential Measures in EA Countries and ESRB Warnings or Recommendations on Residential Real Estate	41
6. Banks' Sovereign Exposures	44

TABLES

1. Main Recommendations on the Macroprudential Policy Framework	7
2. EU Governance Procedures for Setting the Systemic Risk Buffer	32
3. O-SII/G-SII Buffer Rate Governance Procedures	35
4. Borrower-Based Tools Implemented Under National Legislation	40

APPENDICES

I. Status of Recommendations for Macroprudential Policy from the 2018 FSAP	48
II. Interaction of Capital Buffers with Leverage Ratio and Minimum Requirement for Own Funds and Eligible Liabilities (MREL) Requirements	51
III. ECB Macroprudential Decision-making and Processes	55
IV. Compliance Criteria for ESRB 2011 Recommendation	58
V. G/O-SII Buffer Indicators	60
References	62

Glossary

AT1	Additional Tier 1
Art.	Article
ASC	Advisory Scientific Committee
ATC	Advisory Technical Committee
BBMs	Borrower Based Measures
BCBS	Basel Committee on Banking Supervision
BIS	Bank of International Settlements
CET1	Common Equity Tier 1
CBR	Combined buffer requirement
CCB	Capital Conservation Buffer
CCyB	Countercyclical Capital Buffer
CRD	Capital Requirements Directive - 2013/36/EU
CRE	Commercial Real Estate
CRR	Capital Requirements Regulation - (EU) No 575/2013
DGMF	Directorate General Macroeprudential Policy and Financial Stability
D-SIB	Domestic Systemically Important Bank
DSTI	Debt Service-to-Income
DTI	Debt-to-Income
EBA	European Banking Authority
EEA	European Economic Area
EC	European Commission
ECB	European Central Bank
EIOPA	European Insurance and Occupational Pensions Authority
ESA	European Supervisory Agency
ESMA	European Securities Market Authority
ESRB	European Systemic Risk Board
EU	European Union
FSC	Financial Stability Committee
FSR	Financial Stability Review
FX	Foreign Exchange
GC	Governing Council
G-SIB	Global Systemically Important Bank
G-SII	Global Systemically Important Institution
LAA	Loss-absorption amount
LCR	Liquidity Coverage Ratio
LTI	Loan-to-Income
LTV	Loan-to-Value
LR	Leverage Ratio
MCC	Market confidence charge
MDA	Maximum Distributable Amount
MDA-M	Maximum Distributable Amount related to MREL

MPF	Macroprudential Forum
MPCG	Macroprudential Coordination Group
MREL	Minimum Requirement for Own Funds and Eligible Liabilities
MoU	Memorandum of Understanding
NBFI	Non-bank Financial Institutions
NSFR	Net Stable Funding Ratio
O-SII	Other Systemically Important Institution
RCA	Recapitalization amount
RRE	Residential Real Estate
RWA	Risk Weighted Assets
RW	Risk-Weight
SB	Supervisory Board
SSM	Single Supervisory Mechanism
SSMR	SSM Regulation - (EU) No 1024/2013
SSMFR	SSM Framework Regulation - (EU) 468/2014
SyRB	Systemic Risk Buffer
sSyRB	Sectoral Systemic Risk Buffer
T2	Tier 2
TN	Technical Note
TFEU	Treaty on the Functioning of the European Union

EXECUTIVE SUMMARY

The institutional framework for macroprudential policy in Euro Area (EA) is complex, but in line with IMF guidance. While the European Systemic Risk Board (ESRB) is responsible for the macroprudential oversight of the European Union (EU) financial system as a whole, there is a clear designation of tasks, responsibilities and tools for macroprudential supervision in the EA to the European Central Bank (ECB). The relevant EA national authorities and the ECB share the responsibility for the macroprudential policy tools specified in EU legislation concerning banks. The ECB has successfully advanced macroprudential actions for these tools without formally using its top-up power. The ESRB has contributed to the stability of the European financial system via its warnings, recommendations and with a focus that goes beyond banks. The ECB, ESRB and national authorities' collaboration is very important to harness the knowledge in the membership efficiently.

While the ECB and ESRB have sound frameworks for monitoring vulnerabilities, the assessment of links between banks and non-banks should be pursued further and data gaps need to be closed. Cooperation between the ECB, ESRB, ESAs, European Commission (EC) and member state authorities ensures that there is a shared assessment of risks and vulnerabilities that is a basis for discussions about the appropriate measures to be used. The assessment of linkages and vulnerabilities between banks and non-banks needs to be pursued further and the ESRB should continue to have an essential role in improving the assessment of different vulnerabilities across sectors. Data gaps arising from legal constraints hindering or restricting data sharing should be closed or access to data streamlined. In the medium term, coordinating a system-wide stress test to quantify systemic risk from interconnectedness would naturally fit with the ESRB's mandate.

The Capital Requirements Directive (CRD) should be revised to ensure that building releasable buffers through an early activation of the countercyclical capital buffer (CCyB) is possible even when cyclical systemic risks are not yet elevated. The ECB and ESRB should work towards establishing a consistent set of criteria that would guide the activation of the CCyB early in the cycle, including by revising the ESRB 2014/1 recommendation on the use of the CCyB. The ECB should make sure that releasable capital buffers are in place and consistently used across EA countries, resorting to its top-up power if necessary.

Authorities should streamline the procedures for activating macroprudential tools, and create a harmonized mapping between banks' O-SII scores and O-SII buffers to reduce heterogeneity. Some flexibility should still be available for setting O-SII buffers to provide for differences in member country characteristics. The governance procedures for using the sectoral systemic risk buffer (sSyRB) should be simplified and the process for using risk-weight measures needs streamlining. The ECB and ESRB should strive for further adoption and consistency in the use of borrower-based measures (BBMs) across EU member states.

Table 1. Euro Area: Main Recommendations on the Macprudential Policy Framework

Recommendations	Agency	Time Frame¹
Institutional Framework		
Take stock of member countries' experiences with their institutional frameworks, review the recommendation for institutional frameworks and reassess member countries' compliance with the revised recommendation to ensure timely policy action.	ESRB	ST
Systemic Risk Monitoring		
ECB and ESRB should continue to develop the monitoring and assessment of vulnerabilities arising from linkages between banks and non-banks.	ECB, ESRB	I
The ESRB should assess the interconnections across banks and non-banks to identify cross-sectoral vulnerabilities arising from cross-sectoral exposures or liquidity shortages and coordinate a system-wide stress test to quantify systemic risk from interconnectedness.	ESRB, ECB, EBA, ESMA, EIOPA	MT
Data		
The ESRB should be granted timely (ex-ante) access to granular data through European Supervisory Authorities (ESAs) for COREP/FINREP data, Solvency II institution specific balance sheet data and MiFID II/MiFIR data to be able to deliver on its mandate and contribute to the surveillance of the EU financial system.	EC, ECB, EBA, ESMA, EIOPA	MT
The ECB should be provided with access to data on UCITs, AIFs, MMFs, MiFID/MiFIR data through the European Securities Market Authority (ESMA), and the Liability Data Report through the Single Resolution Board (SRB) to assess the vulnerabilities arising from linkages between banks and investment funds.	EC, ESMA, SRB	MT
Macprudential Instruments		
Ensure that the CRD explicitly allows for early activation of the CCyB even when cyclical systemic risks are not yet elevated.	EC	ST
Develop a framework to guide the activation of the CCyB when cyclical systemic risks are not yet elevated.	ECB, ESRB	ST
Revise the ESRB recommendation 2014/1 on the use of the CCyB to account for the early activation, build-up beyond the neutral level and release of the buffer, as well as the communication of the buffer release.	ESRB	ST
Ensure that releasable capital buffers are in place and consistently used across EA countries, including with the use of the top-up power if necessary.	ECB	MT

Table 1. Euro Area: Main Recommendations on the Macprudential Policy Framework (Concluded)

Recommendations	Agency	Time Frame¹
Revise the CRD's activation procedure for the sSyRB and trigger the approval process only if the impact of the sectoral buffer as a percentage of total risk exposure amount is above the threshold(s) in the law.	EC	ST
Streamline the process for risk-weight measures in the CRR and provide a sufficiently large threshold, for applying the measures, without triggering an approval process.	EC	ST
Harmonize the methodology for the implementation of structural O-SII buffers, while allowing sufficient flexibility to reflect country specificities.	EC	MT
Strive for further adoption and consistency in the use of BBMs measures across member states.	ECB, ESRB	MT
¹ Immediately; ST: short term = less than 1 year; MT: medium term = 1–5 years.		

INTRODUCTION¹

1. The EA has weathered several shocks since the last FSAP. Since the 2018 FSAP the world has gone through a global pandemic, and a war in Europe has broken out. The pandemic saw a substantial policy response from fiscal, monetary and from the prudential policies, and the banking sector proved resilient. The supply bottlenecks during the pandemic pushed inflation up which received further impetus from the increase in energy price following Russia's invasion of Ukraine. The increase in interest rates has tested borrowers' debt servicing capacity. A few notable bank failures took place globally in 2023, mainly outside of the EA.² These challenges notwithstanding the EA banking system held up well through these shocks. EA growth is projected to pick up, but more gradually than previously expected. [IMF's WEO](#) growth forecast for EA in January 2025 was revised down to 1.0%, due to weaker-than-expected momentum and heightened political and policy uncertainty. For 2026 growth is expected to rise to 1.4 percent. Geopolitical tensions continue to weigh on sentiment and increased trade policy uncertainty is impacting investment.

2. Legislative changes have provided more flexibility to the EU macroprudential toolkit for banks. Following the adoption of CRD V in 2019, a sectoral use of the Systemic Risk Buffer (SyRB) was introduced. The limitation to use the SyRB only to structural risks was removed, making the buffer applicable to cyclical risks and releasable. The Basel Committee acknowledged in May 2022 the progress in the Banking Union, that has resulted in a reassessment of banks' intra EU banking union exposures.³

3. The EA authorities have actively used and promoted macroprudential policy. The ESRB has warned authorities and recommended addressing real estate vulnerabilities and improving data collection, and it has worked on macroprudential buffer usability and systemic liquidity risk monitoring among other areas. The ECB has worked with EA countries and promoted the build-up of capital buffers. The ECB has assessed the effect of capital buffer releases and the impact that a build-up of capital buffers can have on lending. As many EA countries have rebuilt capital buffers and introduced BBMs following the pandemic, they have moved to a "positive neutral" approach to using the CCyB, which aims at an activation of the buffer early in the cycle. The ECB and ESRB have worked together to collect EEA countries' experiences and to promote a shared understanding of the early-activation use of the CCyB. The ECB Governing Council view from June 2024, of preserving bank and borrower resilience with capital buffers and BBMs, is warranted given the current uncertain outlook.

4. This Technical Note (TN) focuses on developments since the previous FSAP in 2018. The EC review of the macroprudential framework for banks was initiated in 2022, but eventually postponed due to the Russia's war in Ukraine. The review is ongoing, and it has been folded into the

¹ This technical note was prepared by Paavo Miettinen. Sumaiyah Mirza and Radhika Vishvesh helped with the figures and tables.

² In the EA Sberbank failed in [2022](#) and AS PNB Banka in 2019.

³ See the section on structural vulnerabilities.

review of broadening the macroprudential framework beyond banks. This TN focuses on banks and the linkages between banks and non-banks.

INSTITUTIONAL FRAMEWORK

5. A properly laid out institutional framework is the foundation for effective macroprudential policy (IMF 2014). The framework needs to assure the *willingness to act* and to counter biases for inaction (or insufficiently timely action). Such biases can arise from difficulties in quantifying the benefits of macroprudential actions and are often exacerbated by lobbying of the financial industry and political pressures. A clear macroprudential mandate can counter these biases and underpin the legitimacy of policy actions when surveillance points to elevated systemic risks. Equally important, the framework needs to foster the *ability to act* in the face of evolving systemic threats, by assuring access to information and an effective surveillance capacity, and by assigning an appropriate range and reach of macroprudential instruments to the macroprudential authority. The framework also needs to promote *effective cooperation* in risk assessments and mitigation, in a manner that preserves the autonomy of separate policy functions.

6. A strong macroprudential policy framework is important for safeguarding financial sector resilience, especially for countries in a currency union. In a currency union monetary policy is set at one level for the whole union. The resulting financial conditions may then be too loose or too tight for a particular member country. Macroprudential policies seek to make sure that the financial system is resilient enough to withstand various systemic shocks that the member countries may face and that they can use the policies to forestall increases in systemic risk.

7. Macroprudential oversight in the EA is embedded in the European System of Financial Supervision and the ECB is the EU institution with directly applicable macroprudential powers. This supervisory architecture consists of three ESAs⁴, the ESRB and national supervisory authorities. It comprises a microprudential supervision pillar coordinated by the ESAs and a macroprudential oversight function entrusted to the ESRB. In the EA context, the conduct of macroprudential policy is a shared responsibility between EA member countries' macroprudential authorities and the ECB. National authorities are the first in line for macroprudential policy making at the national level, while the ECB is entrusted with specific macroprudential tasks and powers to ensure that macroprudential policy actions are taken in an appropriate and timely manner. National authorities in the EA are obliged to notify the ECB before taking decisions on macroprudential policy measures under EU legislation. When proposed macroprudential policy measures exceed predefined levels set out in the EU legislation, EC approval becomes necessary to avoid the fragmentation of the single market. The EBA and the ESRB help the EC with their opinions regarding such measures. We discuss the tasks and powers of these institutions in more detail below.

⁴ European Banking Authority (EBA), European Insurance and Occupational Pension Authority (EIOPA) and ESMA.

A. Willingness to Act

European Systemic Risk Board

8. The ESRB is assigned with the responsibility for macroprudential oversight of the EU financial system. As defined in the regulation on the ESRB, the objective of its macroprudential oversight is to contribute to financial stability in the EU. The legislation includes a secondary objective for the ESRB, to contribute to the smooth functioning of the internal market and thereby ensure a sustainable contribution of the financial sector to economic growth.⁵ The ESRB collaborates with the ESAs and the ECB on EU-wide stress testing and contributes to the design of stress test scenarios.

9. ESRB decisions are taken by the General Board. The ESRB is a member-based EU body comprising national supervisors, central banks, and European institutions. The ESRB General Board is chaired by the President of the ECB and comprises both voting and non-voting members. Voting members are governors or high-level representatives from the national central banks or designated authorities, ECB, ESAs and the EC. Non-voting members are high level representatives from member country supervisory authorities, the president of the Economic and Financial Committee and the chairpersons of the ECB Supervisory Board and Single Resolution Board.⁶ The decisions can be taken by majority vote, although typically they have reflected a consensus.

10. The Chair of the ESRB reports at least annually to the European Parliament and semiannually to the Economic and Monetary Affairs Committee. The parliamentary hearing is separate from the monetary dialogue between the European Parliament and the President of the ECB, and the hearing coincides with the publication of the ESRB's annual report, which are available to the public on the ESRB's [website](#). The semiannual updates to the Chair and Vice-Chair of the Economic and Monetary Affairs Committee are not public.

European Central Bank

11. The ECB is assigned with the task of contributing to the stability of the European Union financial system. The ECB's objectives and tasks are delineated by the Treaty on the Functioning of the European Union (TFEU), the Statute of the European System of Central Banks and the ECB ('ESCB Statute'). While the primary objective of the ECB (and of European System of Central Banks (ESCB))⁷ is price stability, and it shall also support EU policies as listed in Article 3 of the Treaty on European Union (TEU), the ECB is also entrusted with the task of contributing to financial stability.⁸ Furthermore, the Single Supervisory Mechanism (SSM) Regulation (SSMR) confers (micro

⁵ [Regulation \(EU\) No 1092/2010](#) Article 3, (1) designates ESRB responsible for macroprudential oversight that contributes to prevention or mitigation of systemic risks to financial stability.

⁶ At the time of writing the ESRB General Board has 78 members and 37 voting members. Article 6 of the Regulation (EU) No 1092/2010 contains the full overview of General Board members.

⁷ The ESCB comprises of the ECB and the national central banks. Art 282(1) of the TFEU.

⁸ The ECB contributory role in financial stability is enshrined in Art. 127(5) TFEU.

and macroprudential) supervisory tasks upon the ECB and specifies that financial stability within the Banking Union and each member state is one of the tasks for ECB's prudential supervision.⁹ The recitals in the SSMR note that the objective of the ECB supervisory tasks is to contribute to the stability of the financial system. .

12. The ECB Governing Council (GC) decides on the use of the ECB's powers for macroprudential policies, separated from monetary policy and other tasks of the ECB.

Macroprudential decisions taken by GC are based on draft proposals by the Supervisory Board. The GC meetings on supervisory tasks are separate from regular GC meetings. The SSM regulation (Article 25) requires that the staff that are involved with supervisory tasks be organizationally separate and have separate reporting lines from staff that is involved in carrying out other tasks conferred on the ECB. The Directorate General Macroprudential Policy and Financial Stability is a dedicated department responsible for the oversight function that includes macroprudential policies.

13. The ECB is accountable to the European Parliament and Council for the pursuit of its supervisory, including macroprudential, tasks.¹⁰ The ECB reports annually to the European Parliament, Council, Commission, and Eurogroup on its pursuit of supervisory tasks. The report is presented to the European Parliament and the Eurogroup, and it is also sent to national parliaments. National parliaments can address questions to the ECB on the performance of its supervisory tasks.

European Commission

14. An opinion or approval is needed from the EC and in some cases the Council, when macroprudential policy measures exceed predefined levels. The EC oversees the application of the EU law and ensures the integrity of the single market. The opinions or approvals process is in place to make sure that macroprudential measures will not result in disproportionate adverse effects on other member states or the Union as a whole by creating obstacles to the functioning of the internal market that would outweigh the financial stability benefits of the measure. The opinions provided by ESRB and EBA feed into the EC's process of forming an opinion or granting an authorization for the measures. So far, all the proposals that have gone for approval to the EC, or the Council have been approved. In line with the requirements of the Capital Requirements Directive (CRR) the EC also regularly reviews the macroprudential legislation in the EU for which it consults with the EBA, ECB and ESRB, as well as with a wide range of stakeholders.

European Banking Authority

15. The EBA is responsible for developing guidelines and technical regulatory standards which are relevant for the implementation of macroprudential measures. Although the EBA's opinion is required when national authorities want to implement macroprudential policy measures

⁹ SSM Regulation (Reg (EU) No 1024/2013), adopted on the basis of Art. 127(6) TFEU. The ECB does not have exclusive powers that relate to financial stability as other authorities (the Single Resolution Board for example), have important tasks related to EA financial system stability.

¹⁰ SSMR Articles 20 and 21.

that exceed predetermined thresholds in the legislation, EBA's opinions have no direct effect in the implementation of macroprudential policies.¹¹ The EBA collaborates with the ESRB in developing indicators for systemic risk identification and their measurement and coordinates, in cooperation with the ESRB, the EU-wide banking sector stress-tests that also help identifying institutions that may pose a greater systemic risk.

B. Ability to Act

European Systemic Risk Board

16. The ESRB can issue warnings and recommendations. These can be addressed to the EU as a whole, to one or several member states, to ESAs or one or several national supervisory authorities. The ESRB can recommend legislation to EC or a member state. The ESRB has issued warnings on vulnerabilities in the EU residential real estate sector (2016, 2019 and 2021). A general warning regarding vulnerabilities in the EU financial system in 2022 was issued amid increased geopolitical risks. The ESRB has made recommendations on the design of the macroprudential framework, specific risks or vulnerabilities and specific countries.¹² The ESRB assesses compliance with the recommendations and in case of non-compliance an explanation is sought from the addressee of the recommendation. A High-Level Group Report on the ESRB Review points to a high level of compliance (77 percent) with the recommendations, a moderate level of sufficient explanation for non-compliance (20 percent), leaving the non-compliance to only 3 percent.¹³

17. The ESRB has access to data covering supervisory, derivatives and securities holdings data sets. ESRB needs access to a broad range of data across the financial system to be able to deliver on its mandate. It is efficient for the ESRB to use the data already collected by ECB, ESAs and Eurostat. The ESRB has access to some data sets from ESAs on a continuous basis, facilitating timely and comprehensive analysis. However, for a subset of supervisory data sets, granular data is shared with the ESRB only upon justified ad hoc requests, and not on a regular, ongoing basis. The procedures involved in the requests result in a time lag that affects the ESRB's timely monitoring of the financial system.

European Central Bank

18. The EA national authorities and the ECB share the responsibility for macroprudential policy tools available in the CRD and Capital Requirements Regulation (CRR). Each member

¹¹ EBA's opinions are formed in the Task Force on Macroprudential Matters, where ECB is also a member.

¹² ESRB recommendations on macroprudential policy framework have covered institutional frameworks, banking sector tools (including the CCyB), reciprocation of macroprudential measures and data gaps. Recommendations have also been issued on money market funds, investment funds, liquidity risks arising from margin calls, commercial real estate, cyber risk and lending in foreign currencies. In addition, country-specific recommendations have been made on residential real estate vulnerabilities.

¹³ See the [report](#) by the High-Level Group on the ESRB Review (2024).

state has a national macroprudential authority¹⁴ responsible for their activation. National authorities must notify the ECB about their intention to use macroprudential policy tools and duly consider any objection that the ECB may have before taking the final decision (SSM regulation Article 5.1). National macroprudential authorities have exclusive competence for the use of macroprudential tools that are specified solely in national legislation but not in the European legislation (e.g., BBMs).

19. The ECB can apply higher requirements than those implemented by national authorities for the macroprudential tools specified in the CRD and CRR.¹⁵ The ECB decision-making regarding macroprudential policies is governed by the SSM regulation and the ECB's Rules of Procedure. The Supervisory Board prepares proposals for macroprudential decisions of the GC.¹⁶ The GC decides about objecting to national macroprudential measures and applying higher capital buffers or more stringent measures to address systemic risk. The ECB appropriately cannot release the national macroprudential requirements or measures. When using its macroprudential powers in a member state, the ECB is considered as the designated or competent authority of that country, and depending on the specific instrument used, the ECB must apply the national legislation transposing the CRD.

20. The ECB's recommendations have influenced EA member countries' macroprudential policies and the ECB has not used its top-up power to date. The ECB assesses member countries' vulnerabilities and macroprudential policies and produces a view on the enacted policies. It engages with member country authorities on the outcome of its assessment and an exchange of views takes place, where the appropriate policy responses are discussed. Since 2019, the ECB's assessment and member countries' policy actions have been broadly aligned regarding capital tools.¹⁷ While there has been an increase in the member countries' use of BBMs, the ECB's suggestions on BBMs seem to have had less traction.

21. The ECB collects and can use several data sets for systemic risk assessment. The access to data by the Directorate General of Macroeconomic Policy and Financial Stability (DGMPF) involves several processes which aim to ensure that data is managed appropriately. For some data, initial access approval is sought from the GC, but once the process is established the access is smooth for authorized users. The ECB has access to data on the real economy, banks and banking supervision, securities and derivatives, as well as monetary operations and money markets. The ECB's access to

¹⁴ The term national "macroprudential authority" in this document refers to national competent or designated authority as defined in the CRR and CRD.

¹⁵ SSMR Article 5,(1-3). The cooperation between the ECB and national macroprudential authorities is governed by SSM Framework Regulation (Reg (EU) 468/2014) Article 105. The Rules of Procedure of the ECB [2004/257/EC](#) Article 13h specifies these procedures. See also figures A4 and A5 in the Annex III.

¹⁶ The GC has the right to request the SB to submit a proposal, and if no proposal is submitted, the GC can decide in the absence of a SB proposal. To date, all macroprudential decisions taken by Governing Council have been based on complete draft proposals of the Supervisory Board.

¹⁷ The time period is somewhat challenging, as the Covid-19 pandemic resulted in a need to relax macroprudential tools for a significant period, and the war in Ukraine as well as the resulting economic uncertainty amid increased energy prices, generated concerns about the procyclicality of tighter macroprudential policies.

micro data on bank loans to non-financial corporations in the Analytical Credit Data Base (AnaCredit) has been useful in informing financial stability analyses.

22. National authorities are obliged to consult the ECB when proposing legislative changes that fall within the ECB's field of competence.¹⁸ National authorities have an obligation to consult the ECB on any draft national legislation that may materially influence financial stability. The ECB also has the right to issue an opinion on its own initiative. For example, the ECB expressed its concerns on several countries' bank taxes in the Financial Stability Review (FSR) (editions May 2024 and November 2024) and the ECB has issued comments on changes or new proposals regarding macroprudential policy-making arrangements recently in the cases of Spain, Italy and France.

C. Effective Coordination and Cooperation

European Systemic Risk Board

23. The ESRB is the forum for cooperation on financial stability and macroprudential policy issues in the EU and in the European Economic Area (EEA). The ESRB is well positioned to discuss cross-sectoral issues with its broad membership comprising of ESAs, ECB, EC, Economic and Financial Committee, national central banks, and national supervisors. The ESRB General Board meetings regularly discuss risks and policy priorities prepared by the ESRB Secretariat. In addition, the work of technical committees or designated working groups is brought to the General Board and can lead to the adoption of warnings or recommendations.

24. The ESRB's Steering Committee provides direction to the ESRB's work and the ESRB is supported by the ECB. The ESRB's governance comprises of the General Board, the Steering Committee, the Secretariat, and two statutory committees. While the General Board makes the decisions, the Steering Committee prepares the meetings of the General Board, reviews the documents to be discussed and monitors the progress of the ESRB's work. The Steering Committee comprises of the ESRB President, first ESRB Vice-Chair, the ECB Vice-President, four ESRB General Board voting members, a member from the Commission, a member from each of the ESAs, the chairs of the ESRB Advisory Technical Committee (ATC) and Advisory Scientific Committee (ASC) and the president of the Economic and Financial Committee.

25. The ESRB has two statutory committees that support the work of the General Board. The ATC is the primary operational arm of the ESRB, and it contributes to analytical work and considers topics from a policy perspective. The membership of the ATC mirrors that of the General Board and all items that are discussed regularly at the General Board go through the ATC for comments and dialogue. The ASC conducts research to inform macroprudential decisions by the General Board. Its membership consists of the Chair of the Advisory Technical Committee and 15 experts with experience and knowledge related to financial markets. In addition, working and expert groups prepare risk and vulnerability analysis on recurring and on specific topics to the committees.

¹⁸ The Article 127 (4) and 282(5) of the TFEU form a legal basis for the ECB's advisory function.

The participants to these working and expert groups are drawn from national central banks or supervisors in addition to the ESRB Secretariat, ESAs and the ECB. The ECB hosts the ESRB and provides it with analytical, statistical, logistical and administrative support. In addition, the ESRB draws approximately an equal amount of resources from the member institutions for the analytical support of ESRB working groups. In 2023 there were 23 active working groups in the ESRB.

26. The ESRB Secretariat is responsible for the day-to-day operations of the ESRB. The Secretariat draws on the technical advice from the ESAs, national central banks and national supervisors to contribute to the tasks of the ESRB under the strategic direction of the Chair and the General Board and the Steering Committee. The Secretariat manages the entire risk assessment process, initiating quarterly evaluations of systemic risks by implementing analysis of financial and economic data. These inputs represent the primary input for the risk assessment and policy priorities. The Secretariat integrates inputs from the ESAs, NCAs, national central banks, and ECB business areas to produce an assessment of systemic risks. It coordinates surveys, working group discussions, and reviews of the note on risks and policy priorities, to ensure that the note reflects diverse perspectives. The Secretariat prepares and revises materials for the ATC and General Board, develops the ESRB Risk Dashboard for publication and publishes the press releases, and any policy recommendations or warnings to address identified risks.

27. The ESRB has a coordination framework for the assessment of macroprudential policies and it recommends voluntary reciprocation of macroprudential measures. The ESRB's opinion is required by EU law for some of the policy decisions taken by national macroprudential authorities. To discharge its legal obligations, the ESRB has set out a coordination framework on how its opinions are formed in the Assessment Team for Macroprudential Measures.¹⁹ EU law requires ESRB notification of macroprudential measures taken pursuant to CRR and CRD. The ESRB has recommended national authorities notify the ESRB of all macroprudential policy decisions, including measures that are not in the EU law, and to reciprocate measures that have been taken by other authorities and have been recommended for reciprocation by the ESRB.

European Central Bank

28. The ECB GC is supported by a dedicated group and a committee that coordinate across member states from both micro- and macroprudential perspectives. The cooperation arrangements include regular macroprudential surveillance that takes place in the semi-annual Macroprudential Forum (MPF) and support for ECB's macroprudential decision-making.²⁰ It is a platform for regular discussion, bringing together the micro- and macroprudential perspectives across the SSM and is composed of the members of the GC and the Supervisory Board. The MPF Steering Committee comprises a subset of GC and SB members and guides the preparations of the

¹⁹ The procedure for issuing ESRB Opinions on national measures is governed by [Decision ESRB/2015/4](#) as amended by [Decision ESRB/2021/7](#) which establishes a coordination framework in relation to the task of assessing the appropriateness of certain macroprudential policy measures prior to their adoption. The amendment in 2021 streamlined the coordination procedures.

²⁰ See the figure A6 in the Annex III about the regular surveillance process.

MPF. The MPF does not take any formal decisions. The Macroprudential Coordination Group (MPCG) and the Financial Stability Committee (FSC) are technical bodies contributing to both the MPF meeting preparations and to ECB's macroprudential policy decisions.

29. The ECB Supervisory Board prepares the proposals for ECB macroprudential decisions.

The rules for adopting macroprudential decisions are provided by the SSM Regulation (SSMR), SSM Framework Regulation (SSMFR) and the ECB Rules of Procedure. A draft proposal is prepared by the Supervisory Board on the basis of the input from the FSC and the MPCG. The draft proposal is submitted to the GC for its final adoption. (Figure A4 in Annex III illustrates a top-up procedure). The FSC includes high-level representatives from the national central banks and supervisory authorities of the SSM Member States. The FSC meets quarterly, and it advises the GC on macroprudential policies and prepares the draft macroprudential policy decisions together with the MPCG. The draft decisions are initially discussed at the ECB Supervisory Board which then sends the proposals to the GC for decision-making. The MPCG is an internal coordination structure in the ECB. It draws input from experts from the Directorate General Macroprudential Policy and Financial Stability (DGMF) and a number of ECB Banking Supervision business areas under the chairmanship of Director Generals of DGMF and the Directorate General Horizontal Line Supervision. It prepares the MPF meetings, assesses financial stability risks, coordinates the ECB's positions in international fora on financial regulation and contributes to GC macroprudential decision proposals.

30. The ECB's DGMF provides analysis and policy advice on macroprudential policies, financial stability, financial regulation, and supervision. It comprises financial regulation and policy, macroprudential policy, market-based finance, stress-test modelling and systemic risk, and financial institutions divisions. It identifies and monitors systemic risks stemming from banking and the broader financial sectors in the EA, including those arising from market developments, insurance companies, pension and investment funds. DGMF is responsible for preparing the draft macroprudential policy proposals which are submitted to the SB after receiving input from MPCG and FSC via written procedures. DGMF is responsible, together with the ECB Banking Supervision, for carrying out stress-testing exercises to assess the banking system's resilience as well as macroprudential stress tests covering the broader financial sector. The directorate is also responsible for drafting the semi-annual FSR. Inputs from the FSR feed into the preparations of the internal report on macroprudential policies that considers individual countries in depth.

31. Cooperation between the financial stability and monetary policy functions was strengthened following the ECB strategy review in 2021.²¹ As a result of the review, a regular periodic assessment of the interaction between monetary policy and financial stability was included into the monetary and financial analysis and into the considerations taken at monetary policy meetings of the GC. In its pursuit of price stability, this enables the GC to assess financial vulnerabilities and their implications for tails risks to output and inflation as well as to consider if macroprudential policies mitigate possible financial stability risks relevant for monetary policy.

²¹ See ECB [FSR \(2021\)](#), box 8.

Cooperation Between European Authorities

32. Both ECB and ESRB assess member countries' vulnerabilities and macroprudential policies and they regularly collaborate in the development of monitoring and policy frameworks. The ECB and the ESRB both have their independent country-level analysis. In addition, the ESRB complements the work of the ECB on the SSM countries by assessing banking sector risks and policies also for the non-banking union countries and by assessing vulnerabilities and making recommendations that go beyond banks. Country-specific risk and policy assessments in relation to the banking sector for banking union countries are generally aligned. The ECB shares its country-level assessments regularly with the ESRB Secretariat staff, and ECB staff comment on the ESRB assessments in the preparation process as a member of the ESRB. The ECB and ESRB regularly collaborate in joint ECB/ESRB workstreams where the work is prepared jointly by the FSC and ATC. The ECB also participates in the ESRB workstreams in leading and contributing to the work that is approved by the ESRB General Board.²² The ECB, ESRB and EBA participate in the EC's Expert Group on Banking, Payments and Insurance as observers.

33. The ECB, EBA and ESRB actively cooperate in assessing national macroprudential measures that have been notified to the ESRB and EBA. The ECB is a member of the ESRB Assessment Team on Macroprudential Measures and the EBA Task Force on Macroprudential Measures that prepare draft opinions and assessments of measures in specific cases for approval by ESRB GB and EBA Board of Supervisors, as mandated by the CRD and CRR.²³ The ECB, ESRB and EBA exchange views and align positions on the national macroprudential measures, which provides national authorities with guidance from EU authorities as to the appropriate instruments to address specific risks, including the level of calibration.

Cooperation with Global Regulatory Agencies

34. The ECB is a member of the Basel Committee on Banking Supervision (BCBS) and the Financial Stability Board. The ECB regularly engages in with the BCBS in an exchange of views on supervisory developments, including on macroprudential issues. The ECB participates in the BCBS's Policy Standards Group, that leads the Committee's work on the development and implementation of common prudential standards, including monitoring and assessment of the Basel III macroprudential capital buffers. The ECB is also a member of the FSB and its substructures. The Commission and EBA participate in the BCBS and its substructures as observers.

D. Communication

35. The ESRB, ECB and EBA employ a comprehensive suite of channels to communicate on macroprudential policies and financial stability. The ESRB communicates its public warnings and

²² The [ECB/ESRB \(2023\)](#) paper on a macroprudential framework for climate risk is an example of the former, while the [ESRB \(2025\)](#) report on systemic liquidity monitoring framework is an example of the latter, where ECB together with ESMA contributed to the report.

²³ The ECB should receive formal notification ten days prior to taking the decision (SSMR (5)(1)).

recommendations through publishing documents that outline the reasoning behind the measures adopted by the ESRB. The ESRB also publishes compliance assessments of its recommendations. The ESRB General Board publishes a press release following its meetings. The ESRB annual report records the activities that have taken place during the year. The ECB publishes a flagship FSR biannually, and a more focused Macroprudential Bulletin that often draws from the ECB's analytical work on financial stability and macroprudential policy. The ECB publishes a brief non-technical macroprudential strategy document on its internet. GC statements on macroprudential policy were published in 2022 and 2024. The ECB publishes opinions regarding draft legislative actions in its area of competence. The EBA issues regulatory guidelines and technical standards relevant for macroprudential policy as well as opinions alongside the ESRB on macroprudential policy measures. Both ESRB and ECB officials publish speeches that discuss financial stability issues and ESRB and ECB staff working papers document research and analytical methods that are employed in their financial stability work. In addition, the ECB and ESRB organize research and policy conferences on financial stability topics.

E. ESRB Recommendations About the Institutional Framework for Macroprudential Policy

36. The ESRB issued recommendations to national authorities in 2011 regarding the macroprudential institutional framework, including the decision-making. The recommendations outline desirable roles for the central bank or the government in the macroprudential decision-making process, which is broadly in-line with the [IMF \(2014\)](#) guidance. However, consensus (unanimity) as the voting mechanism is not in line with the IMF framework. The ESRB recommendation awards full compliance for majority decision making or consensus decision-making without veto power (Tables A1 and A2). The [IMF \(2013\)](#) argues that while it may be desirable for macroprudential committees to seek consensus, a simple qualified majority could be preferable. Most EA member countries' macroprudential authorities decide based on a simple or qualified majority, but in a few countries separate approvals are needed from the government, and for some decisions unanimity is required.²⁴ Recently the ECB has opined on legal proposals by a few EA countries and argued that the proposals could be in contradiction with the ESRB recommendation to promote timely macroprudential decision making.²⁵

F. Assessment and Recommendations

37. The institutional structure of the macroprudential framework is complex, but in line with IMF guidance. There is a clear designation of responsibilities for macroprudential oversight to the ESRB, and the conferral of macroprudential tasks and powers to the ECB together with national

²⁴ In the case of [Austria](#) (TN on macroprudential policies para 9) and [Belgium](#) (TN on macroprudential policies table 2) a green light from MoF or council of ministers is required. In [Luxembourg](#) (TN on macroprudential policies para 37) unanimity is needed for the decisions.

²⁵ ECB opinions regarding the [HSCF in 2024](#) and the [establishment of the Italian macroprudential committee in 2023](#). In addition, some recent academic study related to [Denmark's](#) experiences with the institutional framework by Jensen and others (2023) points to challenges in decision-making with consensus.

authorities. Both the ECB and ESRB have been tasked with contributing to financial stability. In addition, sound accountability arrangements are in place, with both ECB and ESRB reporting to the European Parliament regularly about their activities. From the perspective of avoiding the fragmentation of the single market, some macroprudential measures and those exceeding pre-determined thresholds are subject to an EC authorization. When the procedures requiring approvals are very burdensome and the leeway for operating without the approvals is small, the macroprudential policy framework can contribute to a delay and in some cases discourage country authorities from using macroprudential tools.

38. The ECB has contributed to the resilience of the EA financial system together with the national authorities. National authorities are first movers on macroprudential policy, and the ECB has the power to intervene by tightening tools in the CRR/CRD, if necessary. The ECB has been successful in persuading national authorities to adopt macroprudential policy measures against identified vulnerabilities with tools in CRD/CRR, without making use of ECB's top-up powers. Engagement with the ECB and national authorities has also been effective to reach an agreement about the appropriate policy instrument to be used to address a particular vulnerability, especially when views may have initially diverged. The ECB also assesses member countries' BBMs, or the lack there-of, but the ECB does not have any top-up power over these tools, as they are not included in the European legislation. National authorities' alignment with the ECB's recommended policy actions for BBMs has been less than for the tools in the CRD/CRR. Overall, the ECB has worked to reduce inaction bias in macroprudential policy, and the asymmetric powers have worked as intended.

39. The ESRB has contributed to the stability of the EU financial system with its recommendations and with a focus that extends beyond banks. The ESRB recommendations on closing real estate data gaps, have improved data collection on lending standards across EU/EEA countries and together with the ESRB's and the ECB's policy recommendations have had a positive impact on the availability of BBMs. The ESRB's long-standing focus and recommendations towards vulnerabilities arising from non-bank financial institutions (NBFIs) have been appropriate in sustaining recognition and improving the understanding of interlinkages in the financial system.

40. ECB and ESRB collaboration is very important to harness the knowledge in the membership efficiently. While the ECB and ESRB are separate institutions with distinct mandates, differing scope of members and powers, it is important that synergies continue to be fully exploited. EA member countries participate in the MPF and its substructures and in the General Board and its substructures, while non-EA members have access only to the latter. There are several examples of good collaboration in the development of monitoring and policy frameworks.²⁶

41. The communication on macroprudential policy uses various outlets and the GC statements can support EA macroprudential policy making. Overall, there is a concerted effort by the ECB and the ESRB to raise awareness and promote discussion on macroprudential issues. In addition, ESRB General Board press releases and GC statements on macroprudential policy were well

²⁶ Examples include monitoring frameworks for estate vulnerabilities in [ESRB \(2016b\)](#) and for systemic liquidity risk in [ESRB \(2025\)](#) as well as the recent work on the positive neutral CCyB in [ECB/ESRB \(2025\)](#).

received in member countries that found them useful to counter pressure to relax macroprudential requirements, where conditions for relaxation were not fulfilled. The ECB GC has published only five statements on macroprudential policies to date. Given the GC's top-up powers, these statements can be supportive for macroprudential policy making in member states and a more frequent use of such statements could be helpful going forward. While some of the ECB/ESRB documents can be difficult to access for readers that are not well-versed in macroprudential policy or analysis the ECB's macroprudential bulletin constitutes a platform for providing less technical communication to a broader audience.

42. The ESRB should take stock of experience with institutional frameworks for macroprudential policy, and review compliance with its recommendation ESRB/2011/3 . Both the ESRB and ECB have mainly relied on recommendations or moral suasion in influencing national macroprudential policies. For this process to work effectively, the institutional framework should lend itself to timely action for policies that are warranted from a financial stability perspective. A review of the practices that have proven useful in the past 10 years would usefully guide a revised recommendation and a compliance assessment of national institutional frameworks. This would help identify where there may be impediments that result in inaction bias that could stand in the way of the national macroprudential policy making or adoption of ESRB recommendations. There is also scope to further streamline the process for opinions from ESRB and EBA. The ESRB Assessment Team on Macroprudential Measures and EBA Task Force on Macroprudential Measures have partially overlapping members but are organizationally separate. For opinions related to measures in the CRD and CRR, it would be useful to combine the two.

SYSTEMIC RISK MONITORING

A. Risk Monitoring Framework

43. Macroprudential policy must be based on a continuous assessment of evolving risks and vulnerabilities. This entails guided discretion where key indicators are used to generate signals of when a policy action might be required, but the decision is based on judgment that considers all relevant information. Such judgment requires access to data and qualitative information, as well as the analytical capacity to assess systemic risks, to effectively map risk assessment into policy recommendation and action.

B. Monitoring of Vulnerabilities

44. Both the ECB and ESRB have comprehensive frameworks for monitoring vulnerabilities. The ESRB's quarterly risk assessments cover developments in macroeconomics, financial markets, banks and non-banks, households and non-financial firms as well as sovereign debt. The ESRB Secretariat Risk team draws on inputs from several ESRB teams working on real estate, banks, non-banks and data that consolidate contributions from the members participating in the expert and working groups. In addition, the ESRB regularly assesses vulnerabilities arising from residential or commercial real estate risks and decides upon warnings and recommendations

accordingly. The ECB monitors risks and vulnerabilities across financial markets, banks, non-banks, market infrastructures, households, non-financial corporations, sovereigns and property markets. The ECB's assessment is published in the semiannual FSR that also contains deep dives in selected areas of interest (e.g., geopolitics). Stress tests, scenario analysis, and network analysis are used to assess the materiality of vulnerabilities. An internal report complements the FSR and provides an assessment of systemic risk and macroprudential policies at the country level and it is used to inform the conduct of the ECB's macroprudential policies.

45. The ECB and ESRB monitor area-wide and member countries' cyclical vulnerabilities with a range of indicators and models developed over time. The ECB and ESRB have developed indicator frameworks and early warning models that can signal the onset of financial stability risks. The ECB has actively developed and contributed to the literature on early warning indicators. The ECB uses its Systemic Risk Indicator for individual member countries and the EA as a whole.²⁷ A suite of early warning models is organized into dashboards used to assess countries' vulnerability to financial instability. The ESRB's annual risk analysis report includes an assessment of countries' cyclical and structural risks and policies that builds on a set of risk indicators and policy measures to derive an assessment of the macroprudential policy stance.²⁸ The ESRB combines risk and resilience factors as well as policy measures (as expressed by selected indicators) and compiles a single measure for macroprudential policy stance separately for capital and borrower-based measures. Both the ESRB and ECB run surveys to seek member countries' views about the vulnerabilities and compile their responses in surveillance reports. The ECB's framework for real estate vulnerabilities focuses on price and credit developments, household balance sheets as well as lending standards.²⁹ The framework summarizes recent developments in real estate prices and assesses price overvaluation via several methods. The flow of new credit and the level of household or commercial real estate debt are also assessed based on available data. The ECB regularly assesses credit developments to non-financial corporates, and debt servicing to assess vulnerabilities. In addition, the ESRB assesses residential or commercial real estate risks every two years together with the ECB and member countries which serve as a basis for ESRB warnings and recommendations.³⁰

46. The ESRB's and ECB's views about countries' vulnerabilities and policies are discussed with the country authorities before being presented to decision-making bodies. Both the ESRB risk analysis report and the ECB's internal report on macroprudential policies cover countries' vulnerabilities and enacted macroprudential policies. The reports work as a basis to discuss the sufficiency of measures or the need for further policy action. The assessments are independent, but the ESRB is informed of the ECB's report on macroprudential policies, and steps are taken to explain any differences in the assessments between the two reports, whenever they arise for countries that

²⁷ The SRI and its properties are described in [Lang and others \(2019\)](#).

²⁸ ESRB's stance framework is described in [ESRB \(2019a\)](#), [ESRB \(2021b\)](#) and [ESRB \(2024b\)](#). The authorities explained that the framework has continued to evolve since the publication.

²⁹ [Constancio and others \(2019\)](#) contains examples of the cyclical and residential risk scoreboards.

³⁰ The ESRB has issued warnings and recommendations on individual EU countries in 2016, 2019 and 2021. The methodology used to assess vulnerabilities and policy sufficiency was documented in [ESRB \(2019b\)](#).

are covered by both reports. The ESRB also monitors cyclical risk developments in third countries for the purpose of possible recommendation to set a CCyB on material third country exposures.

47. The ECB’s internal report on macroprudential policies monitors SSM countries’ vulnerabilities and macroprudential policies. The ECB’s internal report on macroprudential policies draws on the FSR and the above cyclical risk and real estate risk assessment dashboards. The report discusses the economic outlook, sectoral vulnerabilities and bank capitalization in addition to real estate markets, credit developments, household indebtedness and lending standards for households and firms. The report is structured to support an assessment of the adequacy of member countries’ enacted capital buffers and BBMs. The report includes an assessment of countries’ existing or announced policies sufficiency relative to the identified vulnerabilities and provides ECB’s recommendations for additional measures that member countries should take or consider.

48. The ESRB has made a concerted effort to assess vulnerabilities arising from NBFIs and their interconnections with banks. The ESRB published a strategy paper about the macroprudential policy beyond banks in 2016 and advocated for a system-wide approach to macroprudential policy in its response to the EC’s consultation on macroprudential policies for non-bank financial intermediation.³¹ The ESRB publishes its NBFi monitor annually. The ESRB has contributed to the understanding of links through selected assessments of vulnerabilities arising from commercial real estate, investment funds and securities and financing transactions, and published a monitoring framework for systemic liquidity vulnerabilities.³²

49. The monitoring of the effect of non-bank stress on broader liquidity conditions featured in the ECB’s FSR. The stress events that spread from NBFIs to the broader financial markets (March 2020 and the UK government bond markets in 2022 for example) prompted the ESRB and ECB to step up their assessments of vulnerabilities arising from non-banks. The joint work aims at identifying how disturbances in market or funding liquidity³³ or interconnections can result in materialization of systemic risk. The macroprudential framework that was introduced in the aftermath of the global financial crisis has been mainly operating in a situation where liquidity has been ample in the banking system. However, with the ECB pursuing balance sheet normalization and excess liquidity slowly decreasing, the conditions may change.

50. After changes to the SyRB with CRD V and the Covid-19 pandemic, the balance between “structural” and “cyclical” buffers has been reassessed. The [ESRB \(2017\)](#) reported on best practices for the use of SyRB and Other Systemically Important Institution (O-SII) buffers. The revision of the CRD (in 2019) disentangled the use of the SyRB exclusively for structural risks, and explicitly required that the CCyB, Global Systemically Important Institution (G-SII)/O-SII buffer and

³¹ [ESRB \(2016a\)](#) and ESRB (2024a).

³² [ESRB \(2023\)](#), [ESRB \(2024c\)](#), [ESRB \(2025\)](#).

³³ Market liquidity refers to the ease of buying and selling without affecting the market price, while funding liquidity refers to easiness of accessing credit ([ECB \(2023\)](#), special feature A).

SyRB address separate risks. In addition, the lack of releasable buffers in the aftermath of the pandemic prompted a reassessment of the balance between cyclical and structural buffers.

C. Assessment of Macprudential Policies and their Interactions

51. The ECB has developed models to assess macroprudential policy impact, costs and benefits. Leveraging the experience within the EA central banks, the ECB's FSC has conducted work to arrive at a common understanding of the use of macroprudential policy tools.³⁴ The ECB also produces impact assessments of the proposed policy measures, for example using dynamic stochastic general equilibrium models that have been constructed to allow an assessment of macroprudential policy measures. The ECB has published both empirical and theoretical papers that study the costs and benefits of capital-based measures.³⁵ These argue that the economic costs of capital-based measures can be rather low if they are introduced gradually during times when banking sector conditions are favorable. The ECB has also conducted assessments on the costs and benefits of BBMs, and some papers study the interaction between capital-based tools and BBMs.³⁶ It would be useful for the ECB to continue working towards a further understanding of the interactions between macroprudential tools.

D. Data Available for Monitoring Vulnerabilities and Calibrating Measures

52. The European authorities have a wealth of data that can be leveraged for monitoring, but there are constraints on data sharing and data access. While the ESRB has access to several data sets on regular basis, access to supervisory data concerning banks, markets and financial instruments and insurance companies is neither automatic nor regular. Current data access, that is based on ad-hoc temporary requests, can affect the timely monitoring of the financial system.³⁷ The ECB faces some data gaps when assessing vulnerabilities between banks and non-banks. Gaps arise from the lack of detailed NBFI data, including the lack of access to AIFMD, UCITS and (granular) fund-level data that is only available to supervisors at the national level. These data are essential for identifying vulnerabilities in the NBFI sector arising from liquidity mismatch and leverage. MiFID/MiFIR would also be useful for monitoring transaction-level information, possibly covering instruments issued by EA banks and governments, including assessing the footprint of foreign NBFI entities in domestic markets. In addition, AnaCredit includes a wealth of microdata for non-financial corporates, it does not include household data. Both the ECB and the ESRB rely mainly on national authorities' submissions regarding the development of lending standards and the assessment of borrower-based indicators.

³⁴ [Lo Duca et al. \(2023\)](#), [Behn and others \(2024a\)](#)

³⁵ [Lang and Menno \(2024\)](#), [Behn and others \(2024b\)](#), [Herrera et al. \(2024\)](#), [Behn and others \(2022\)](#), [Budnik and others \(2020\)](#).

³⁶ [Azzone and Pirovano \(2024\)](#), [Giannoulakis and others \(2023\)](#), [Ampudia and others \(2021\)](#) and [Tereanu and others \(2022\)](#).

³⁷ The ESRB outlined its lack of access to banking, insurance and securities markets data in a [letter](#) to the EC.

E. Recommendations and Assessment

53. While the ECB and ESRB have well-developed frameworks for monitoring of bank vulnerabilities and systemic risk, the links between banks and non-banks needs further work.

Cooperation between the ECB, ESRB, ESAs, EC and Member States authorities ensures that there is a shared assessment of bank risks and vulnerabilities that is a basis for discussions about the appropriate measures to be used. However, the existing indicator dashboards do not fully capture the vulnerabilities that can arise between banks and NBFIs. The work on NBFI vulnerabilities should be continued to further improve the understanding about potential vulnerabilities from the interlinkages and ultimately to complement the existing set of indicators. The EC raised the issue of NBFI significance for macroprudential policies in a recent [consultation](#). The High Level Group of the ESRB called for improving the holistic system-wide vulnerability assessments.³⁸ The ESRB—given its role for financial stability oversight in the EU—has a key role to play by drawing from the expertise of ECB, ESAs, and national authorities and enrich cross-sectoral assessments.³⁹ The TN on investment funds calls for the ESRB and ESA's to continue developing system-wide stress tests, and identify vulnerabilities arising from interconnections within the financial system.

54. The data gaps should be closed, and existing data access should be streamlined. Large amounts of data are collected in the EA, and they should be made available for the ECB and ESRB to assess vulnerabilities in the financial system. The TN on investment funds calls for the ESMA to centralize investment fund data collection. The access to investment fund data for the ECB and ESRB should be provided through ESMA. The ESRB would benefit from regular access to ESA's data sets such as COREP/FINREP data, Solvency II institution specific balance sheet data⁴⁰ and MiFID II/MiFIR data. While they currently have access to this data, it is subject to lengthy procedures. Streamlining ESRB's access to this data would be appropriate and support ESRB's delivery of its mandate.

MACROPRUDENTIAL TOOLS

55. The tools available for macroprudential authorities and the ECB are specified in the CRD and the CRR. The tools available to the ECB for macroprudential tasks are specified by Article 5 of the SSMR together with Article 101 of the SSMFR. SSMFR references capital buffers in CRD, but also other tools in the CRR when they are adopted to address systemic or macroprudential risk. Articles 124, 164 and 458 of the CRR and the capital buffers defined in the CRD (CCB, CCyB, SyRB, G/O-SII buffers) specify the macroprudential tools available to national authorities to tackle systemic

³⁸ See [Report by the High-Level Group on the ESRB Review](#).

³⁹ The SSM Regulation recitals (26) exclude the supervision of insurance companies from the ECB's tasks and mandate a close cooperation between the ECB and the European System of Financial Supervisors.

⁴⁰ TN on Insurance Supervision recommends that EIOPA should receive data from insurance undertakings and groups. This would facilitate ESRB's access to Solvency II data by ECB/ESRB via EIOPA.

Box 1. Releasable Capital Buffers

It is useful to distinguish between capital buffers that are “releasable” and “non-releasable”. EU banks must hold enough Common Equity Tier 1 (CET1) capital to satisfy microprudential minimum requirements and the combined buffer requirement (CBR).¹ The CBR comprises the CCB, CCyB, SyRB and the larger of the G-SII or O-SII buffer. The CCyB and SyRB are “releasable” buffers.² When macroprudential authorities release these buffer requirements, they increase the available capital headroom that banks have between the supervisory buffers and the banks actual capital level. The banks can then make use of the released capital space without becoming subject to additional supervisory scrutiny or restrictions to dividend distributions. However, the banks will be subject to restrictions to dividend distributions and supervisory scrutiny, if they dip into CCB or G/O-SII buffers that are usable, but not releasable.³

In addition to supporting lending during a downturn, a capital buffer that is built early in the cycle helps prepare countries for unforeseen shocks. The early activation of a capital buffer in normal times recognizes that it is difficult to predict periods of stress as no early warning indicator will signal all future crises, including those that arrive without a build-up in cyclical risks. When countries have releasable capital buffers in normal times, they are better positioned to reach the buffer level needed to cushion the aftermath of a credit boom and are prepared to react to unexpected shocks that may occur at any stage of the cycle by partially or fully releasing the relevant buffers.⁴ Releasable buffers would also help countries preserve the integrity of the overall prudential framework and avoids the temptation to change buffers that are not releasable.

A growing body of evidence confirms that the release of capital buffers can help banks sustain provision of credit during a downturn when banks are capital constrained. Evidence from Slovenia and Spain predating the pandemic indicates that buffer releases can be helpful in supporting the flow of credit during financial stress.⁵ In addition, evidence from a number of other European countries corroborates that buffer releases support lending by banks that had a low head room above the requirements.⁶ There is also theoretical evidence that building capital buffers during good times is not likely to be very costly, while releasing capital buffers can make a material difference to capital constrained banks’ ability to continue providing credit during downturns.⁷

Costs associated with building up a capital buffer are easier to absorb when most banks are profitable, and the buffer is accumulated gradually. The effect of an increase in capital buffer requirements on lending are likely to be small where banks are generally profitable or have built voluntary buffers. Profitable banks can meet the new buffer requirements by retaining earnings, provided sufficient time is given for the adjustment.⁸ Due attention needs to be paid to the distribution of banks’ profitability and capital buffers, to make sure that an increase in buffer requirements can be absorbed without an impact on the provision of credit.

¹ In addition to microprudential minimum Pillar 1 requirements and the Pillar 2 requirements on top of which the CBR is calculated, banks are expected by supervisors to stay above the Pillar 2 guidance, that sits above the CBR.

² More specifically CRD has specific provisions for reducing the CCyB, while the authorities can also reduce the SyRB.

³ However, the buffers also interact with other capital requirements, and the usability can be more complicated (See Annex II on Interaction of capital buffers with leverage ratio and Minimum Requirement for Own Funds and Eligible Liabilities (MREL) requirements).

⁴ The phasing in period of a CCyB, namely the time lag between the moment in which the buffer is activated and the moment in banks must meet the relevant requirement, is 12 months.

⁵ Sivec and Volk (2022) and Jiménez and others (2017).

⁶ Couaillier and others (2022) find that buffer releases had the intended effect of supporting the provision of credit in the EA, especially for banks that were close to requirements before the release. Dursun-de Neef, Schandlbauer, and Wittig (2023), Bedayo and Galán (2024), and Avezum, Oliveira, and Serra (2024) find sizable and significant effects from CCyB releases, for EU countries’ banks that had low headroom over requirements.

⁷ Lang and Menno (2023).

⁸ See Lang and Menno (2023), Bedayo and Galán (2024) Behn, Forletta, and Reghezza (2024).

risks. The CRD and CRR have several provisions aimed at avoiding overlaps. The tools should not be used to address the same systemic risk, and from that perspective are complementary. In addition, national macroprudential authorities can complement the measures provided in the EU legislation with measures included only in the national legislation of the member state such as the borrower-based measures (BBMs). The ESRB's warnings and recommendations extend beyond the tools available in the EU legislation.

A. Tools to Address Broad-Based Vulnerabilities

Countercyclical Capital Buffer (CCyB) and a Systemic Risk Buffer (SyRB)

56. The CCyB can be increased with the build-up of system-wide cyclical systemic risk, and released to help banks provide credit during a downturn. According to [BCBS \(2010\)](#) guidelines the objective for the CCyB "...is to ensure that the banking sector in aggregate has the capital on hand to help maintain the flow of credit in the economy without its solvency being questioned, when the broader financial system experiences stress after a period of excess credit growth." In addition to the CCyB rates that apply on domestic exposures, countries can also set a CCyB rate on exposures to a third country different from the one set by the third country's authority.⁴¹ In such cases, the countercyclical buffer rate shall not be set below the level set by the relevant third-country authority, unless that buffer rate exceeds 2.5 percent.

57. The SyRB should address systemic risks not covered by the CCyB, the G-SII/O-SII buffers or instruments in the CRR. The CRD V expanded the scope of the SyRB to address both "structural" and "cyclical" risks and allows also for the SyRB to be decreased. To avoid overlaps the legislation requires that the SyRB can be introduced to address systemic risks not covered by other measures.

58. Several European countries have rebuilt capital buffers since the Covid-19 pandemic (Figure 1), and many have adopted a positive neutral approach to the setting of the CCyB. A positive neutral approach to the setting of the CCyB is not a new macroprudential tool, but rather an earlier activation of the CCyB, when cyclical systemic risks are not yet elevated.⁴² All EA countries have built some releasable capital buffers as of end-2024. The buffers are in the form of the CCyB or the sSyRB. Seventeen EEA countries, of which ten are in the EA, have already adopted a positive neutral CCyB approach, while a further six EEA countries are open to potentially adopting it in the future or are at an early stage of the assessment process [ECB/ESRB \(2025\)](#). Banks continue to have substantial voluntary buffers above the combined buffer requirements although there is significant heterogeneity in banks' voluntary buffers across countries.

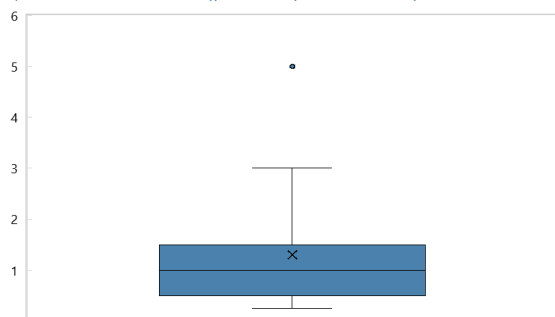
⁴¹ Such CCyB rate has not yet been applied to any third country exposures.

⁴² Miettinen and Nier (2025) forthcoming, discuss the framework for a positive neutral CCyB.

Figure 1. Banks' Capital Buffers and Profitability

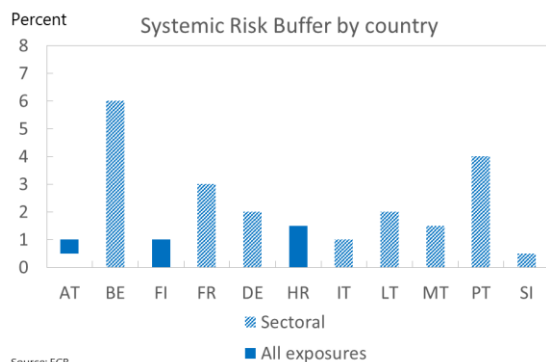
All countries' have built releasable capital.

Releasable capital buffers in EA banking systems (announced releasable buffers in % of domestic RWA)



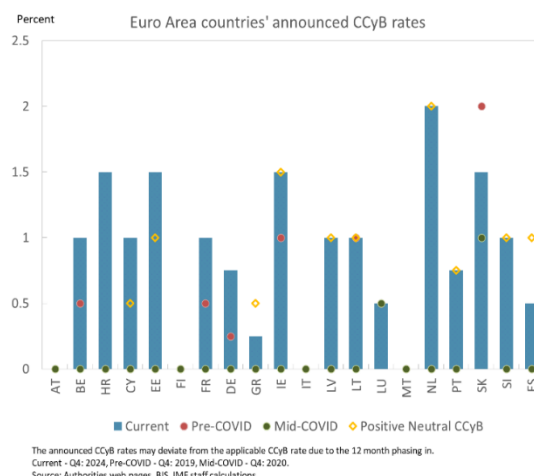
The box represents the interquartile range while the bar in the middle represents the median, the X represents the mean. The whiskers represent the minimum and maximum values excluding one outlier.
Source: ECB.

... others have activated SyRB for sectoral risk exposures.*

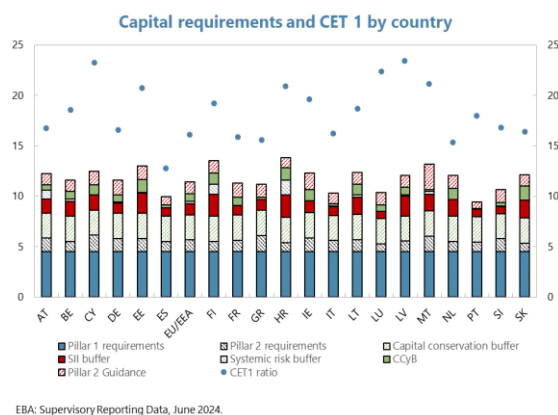


Source: ECB.

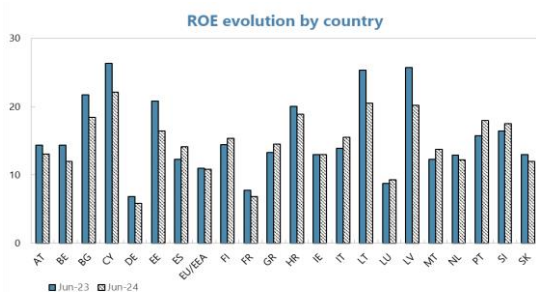
While some countries have adopted a Positive Neutral CCyB...



Banking systems have comfortable management buffers.

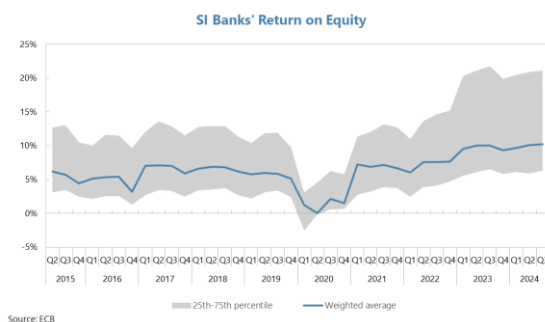


Banks' return on equity declined from 2023 to 2024 in most countries...



EBA: Supervisory Reporting Data, June 2024.

...but the improvement trend in the ROE has remained so far.



* The capital impact of sectoral and broad-based buffer rates depends materially on the size of the exposure to which these buffers are applied to.

Source: EBA Supervisory Statistics

59. Some member states' choice of the tool to build releasable capital is affected by legal uncertainty about the use of CCyB or potential overlaps with the SyRB. The CRD, in line with the original Basel framework, places a strong emphasis on excessive credit growth and the Basel Credit-to-GDP gap for calculating the 'buffer guide', which is used as a reference to then guide the exercise of judgment by national authorities in setting the CCyB. The emphasis, which appears in Art 136 (2)⁴³ CRD, is viewed by some member states as a hindrance to adopting a positive neutral approach to the setting of the CCyB, according to the ECB/ESRB survey. For some countries the legal obstacles relate also to the national transposition of the CRD, where CCyB activation is tied to the evolution of credit indicators. Countries that have implemented a positive neutral CCyB approach either do not consider the emphasis on the buffer guide to have been an obstacle or found another way around the problem. Some member states consider that both the CCyB and the SyRB can be used to build resilience against exogenous shocks unrelated to the domestic credit cycle, creating a potential overlap between the instruments, with few considering the SyRB the most appropriate instrument for this purpose.

60. The use of CCyB or SyRB to build releasable buffers has different implications for reciprocation and the possible effect on banks' requirements for loss absorbing capacity in resolution. The reciprocity for the CCyB is automatic up to a 2.5 percent buffer rate, and voluntary above this threshold. For the SyRB, reciprocation is voluntary and must be requested by the authority activating the instrument.⁴⁴ In addition, the CCyB does not influence the calculation used in the setting of loss absorbing capacity for resolution, because the CCyB is subtracted from the standard formula for the market confidence charge.⁴⁵ Setting a sSyRB could in principle affect the minimum resolution requirements, but discretion can be used not to account for changes in SyRB in setting the resolution loss absorbing requirements.

61. Member States and the ECB have used various methods to guide the calibration of releasable buffers. Stress testing, DSGE models and historical bank losses have been used to calibrate the positive neutral CCyB rates according to the survey of EEA member states, [ECB/ESRB \(2025\)](#). The ECB's approaches to calibrating releasable buffers at the EA level, indicates that at least 1 percent releasable buffer would be appropriate. It would be useful to consider country-specificities in that calibration that keys off the stock of vulnerabilities such as susceptibility to foreign shocks, share of variable rate loans and existing macroprudential tool implementation, as examples.

62. Capital buffer release can be constrained by other requirements for bank capital. The credit institutions must comply with risk-based capital requirements, leverage ratio requirements in the prudential framework. In addition, resolution authorities also set risk-based and leverage-based

⁴³ Excessive credit growth is also referred to in recital 80 of the CRD IV.

⁴⁴ The activating authority can request the ESRB to issue a recommendation for other countries to reciprocate the SyRB implemented.

⁴⁵ Please see Annex II – Interaction of capital buffers with leverage ratio and Minimum Requirement for Own Funds and Eligible Liabilities (MREL) requirements.

requirements to have enough eligible liabilities for resolution. Loss absorbing requirements for resolution requirements can also be satisfied with CET 1 capital. Releasable buffers only exist in the risk-based prudential and resolution frameworks. Therefore, the release of macroprudential capital buffers reduces the constraints that a bank faces with respect to risk-based requirements both in the prudential and resolution frameworks. However, the release may be constrained if leverage-based parallel requirements become binding before the full extent of the release can be used. As a result, banks may breach a parallel requirement before exhausting the usable risk-based buffer.

63. In some countries macroprudential authorities may not have access to all information needed to assess buffer releasability or usability. A few authorities' responses to the Commission's Call for Advice in 2022 point to deficiencies in data sharing regarding resolution requirements (e.g. MREL data), as designated authorities do not have access to such data unless they are competent authorities. The lack of such information can hamper the ability of these authorities to fulfil their respective financial stability mandates as this information is important for the design and calibration of capital buffers as well as the assessment of buffer usability. This issue appears to be relevant for only a few member states, which may also have a more complex institutional set up and different institutions in charge of micro- and macroprudential supervision, and resolution. Without the access to information about resolution requirements, macroprudential authorities are unable to assess the available headroom or releasability of capital buffers. To facilitate necessary information sharing the member states' authorities should update their Memoranda of Understanding between macroprudential and resolution authorities where appropriate and identify possible remaining obstacles to an effective exchange of information in national legislation.

Other Broad-Based Measures Provided in the CRR

64. Article 458 of the CRR allows national authorities to implement stricter national measures to address broad-based vulnerabilities, as a measure of last resort. Related to broad-based vulnerabilities, Article 458 provides the authorities the means to change the level of own funds or the level of the capital conservation buffer.⁴⁶ Since they are meant to be used as a last resort, the instruments provided under Article 458 are subject to a demanding activation process. The process may last up to 3 months and includes a notification by the national authority proposing the measure, the issuance of opinions by the ESRB and EBA, and a silent consent mechanism involving the EC and the Council of the European Union for authorizing the proposed stricter national measures.⁴⁷ The notifying national authority needs to provide relevant evidence of changes in systemic risk, argue why this poses a threat to financial stability at the national level, and explain the necessity of the proposed measure. The national authority also needs to explain why other tools in CRD or in CRR articles 124 or 164 are unsuitable to address the identified risk and to assess the likely impact of the measure on the internal market. Article 458 measures can be enacted or

⁴⁶ Art. 458 also contains some sectoral measures.

⁴⁷ The silent consent mechanism involves a proposal by the EC to the Council for the adoption of an implementing act to reject the draft national measures, if certain criteria detailed in the legislation are not met. The procedure is detailed in Art. 458(4) CRR.

extended for two years at a time and are not automatically reciprocated. To date, Article 458 has not been used to increase the level of own funds or the CCB, but mainly as a tool to mitigate risks stemming from real estate exposures through the increase in risk-weights for such exposures.

B. Tools to Address Sectoral Vulnerabilities

65. The CRD allows national authorities to apply the SyRB to sectoral exposures.

Vulnerabilities stemming from specific sectors (or subset of exposures in a sector) can be targeted with the sectoral SyRB complementing the broad-based capital buffers. The EBA developed guidelines on the appropriate subsets of sectoral exposures to which the macroprudential authorities can apply the buffer.⁴⁸ The subsets of sectoral exposures can be defined by specifying dimensions such as debtor or counterparty, economic activity, risk profile and geographic area. Legislation requires that the risks for which the sSyRB is implemented be different from all other buffers (CCyB, O-SII and G-SII buffers).

66. The sSyRB has been mainly applied to residential real estate exposures, and its activation is subject to different regimes, which depend on the buffer rate level. Belgium, Germany, Lithuania, Malta, Portugal, and Slovenia have applied the sSyRB to risks stemming from the residential real estate sector. France has used the buffer to contain exposures to highly indebted non-financial corporations. The CRD envisages different procedures for the activation of the SyRB depending on the rate of the buffer and on whether the latter applies to subsidiaries whose parent is located in another Member State. Countries can implement a SyRB that is less than 3 percent with a notification that is sent, in addition to the ECB, to the ESRB. The approval of the SyRB requires an EC opinion⁴⁹ when the relevant rate exceeds 3 percent, while for buffer rates above 5 percent an EC authorization is required (Table 2).⁵⁰ EC authorization is also required when the sum of the combined SyRB and the maximum of O-SII or G-SII rate is higher than 5 percent. The thresholds that trigger the different procedures described above are applied also to the setting of a sSyRB. Thus, the same elaborate activation procedure must be followed for a proposed sSyRB rate above the 3 percent threshold, even if the measure is applied on a relatively small portfolio having a modest capital impact. At the same time a SyRB with a rate below 3 percent applied to all exposures does not require EC approval, although its overall capital impact can be larger than that of a sSyRB with a rate above 3 percent applied on a small portfolio.

⁴⁸ EBA (2020a).

⁴⁹ The authorities of the member state imposing the measure shall either follow the EC opinion or provide reasons for not doing so.

⁵⁰ An EC opinion is required also in cases where the entity that is subject to the relevant SyRB has a parent established in another Member State.

Table 2. Euro Area: Governance Procedures for Setting the Systemic Risk Buffer		
EU-level governance trigger	Governance procedure applicable	Legal basis
Triggers for EU governance when setting the SyRB in isolation (on any set or subset of exposures)		
Combined SyRB rate up to 3 percent	Notification to the ESRB one month before the publication of the measure.	Art. 133(10) CRD
Combined SyRB rate between 3 and 5 percent, where the entity is not a subsidiary of a parent established in another member state	1. Notification to the ESRB 2. ESRB and EC's opinions 3. Macroprudential authority complies or explains	Art. 133(11) CRD
Combined SyRB rate between 3 and 5 percent, where the entity is a subsidiary whose parent is established in another member state	1. Notification to the ESRB 2. ESRB and EC's opinions 3. If authorities of concerned Member States disagree and if opinions are negative, activating macroprudential authority can request EBA's binding mediation	Art. 133(11) CRD
Combined SyRB rate above 5%	1. Notification of ESRB 2. ESRB's opinion to the EC 3. Optionally, opinion from the EBA to the EC 4. EC decides on adopting implementing act authorizing the macroprudential authority to apply the SyRB.	Art. 133(12) CRD
Triggers for EU governance procedures when setting SyRB (on any set or subset of exposures) in combination with O-SII/G-SII buffers		
Sum of combined SyRB rate, and the O-SII/G-SII buffer rate to which the same institution is subject to, above 5 percent.	1. Notification to the ESRB 2. ESRB opinion 3. Optionally, opinion from the EBA 4. EC decides on adopting implementing act authorizing the macroprudential authority to apply the O-SII/G-SII buffer.	Art. 131(5a) and (15) CRD
Source: ECB		

67. The CRR provides additional tools to address sectoral vulnerabilities. Articles 124, 164 and 458 of the CRR allow the national authorities and the ECB to adjust risk weights or loss-given default parameters in internal models related to real estate sector exposures, so that they reflect the underlying risks appropriately. Article 124 relates to the risk weights applied by the credit institutions that use the standardized approach to credit risk assessment,⁵¹ while Article 164 relates

⁵¹ The risk-weights can be set within the range of 35 % to 150 % for residential property collateral and in the range of 50 % to 150 % for exposures with commercial property collateral.

to the loss given default parameters associated with the application of the internal ratings-based approach to credit risk assessment. Article 458 allows the implementation of higher risk weights by credit institutions - using the internal ratings-based approach or standardized approach to credit risk assessment - for real estate exposures or for intra-financial sector exposures, and it also allows the implementation of stricter requirements for large exposures.⁵² Nearly all CRR measures used by national authorities so far have been risk-weight measures for IRB banks. Despite the Article 458 being labelled as the measure of last resort and its burdensome activation procedures, it continues to be used by member states. The full implementation of the Basel output floor may in some cases reduce the need to resort to risk-weight measures but would not remove the need all together. The output floor is applied at micro prudential level to all exposures while the risk-weight measures under article 458 CRR have a macroprudential role in mitigating systemic risks stemming from specific exposures.

68. The procedural requirements to implement risk-weight measures in the CRR vary. The use of Articles 124 or 164 requires notifying the ESRB and the EBA about the intended use. The ESRB and EBA will provide an opinion after one month to the authority requesting the measures and publish the proposed risk-weights or loss given defaults.⁵³ These measures are also subject to automatic reciprocity. According to the pre-established pecking order, Article 458 is only to be used after other measures are proven to be unsuitable for the vulnerability that needs to be addressed. Article 458 also includes a simplified procedure for increasing risk-weights by 25 percent above the levels provided for in the CRR for real estate and intra-financial sector exposures.⁵⁴ Measures that increase risk weights by more than that require the full activation procedure as described above.

C. Tools to Address Structural Vulnerabilities

69. G-SII and O-SII buffers reduce the probability of failure for systemically important institutions and address the identified structural vulnerabilities in EA banks. Buffers for systemically important banks represent additional loss absorbing capital that enhances G/O-SII institutions' resilience. The FSB identifies Globally Systemically Important Banks (G-SIBs) in consultation with the Basel Committee and national authorities according to the Basel Committee methodology for the designation of G-SIBs. CRD Article 131 details the criteria for identifying G-SII and O-SII banks. The legislation further requires that EBA develops the regulatory standards for the macroprudential authorities to identify the banks as G-SIIs and guidelines to identify O-SIIs, both in accordance with international standards.

70. The identification procedure for G-SII and O-SII banks uses indicators to assign banks a score, but only G-SII banks have a harmonized mapping between their score and applicable G-SII buffers. G-SII identification is based on indicators for bank's size, interconnectedness,

⁵² Art 458 (2)(d)(iv), (2)(d)(vii) and (2)(d)(ii) respectively. As stated above the Article 458 measures are to be used as the last resort when other measures in CRD or CRR are not suitable.

⁵³ In the case of risk-weights for the standardized approach, banks are provided with a six-month transition period.

⁵⁴ It is also possible to implement a limited increase of large exposure limits via a simplified procedure.

substitutability, complexity and cross-jurisdictional activity. O-SII identification combines the complexity and cross-jurisdictional activity categories and is based on bank's size, importance or substitutability, cross-border activity, and interconnectedness. The indicators used for identification are listed in Annex V Table A3.⁵⁵ The indicators map bank characteristics into G-SII or O-SII scores. The banks with a G-SII score within a specific range map divide into five buckets that matches the banks to a G-SII buffer that increases from 1 percent for the lowest scores to 3.5 percent.⁵⁶ The indicator-based approach is complemented by supervisory judgement. The O-SII methodology does not have a harmonized mapping between banks' O-SII scores and O-SII buffers. This is at the national Member States' discretion.⁵⁷ For banks that are subject to both O-SII and G-SII buffers, the higher of the two applies.

71. The BCBS review of the G-SIB methodology in 2022 modified the treatment of banks' EU banking union cross-border exposures in the G-SIB scoring methodology. Since 2022, a parallel G-SIB score is calculated for the EU banking union G-SIBs in the context of the G-SIB assessment methodology. The parallel score recognizes two thirds of the score reduction that would result from treating intra-EBU exposures as domestic exposures under the G-SIB assessment methodology.⁵⁸ The classification of a bank as a G-SIB must not be affected and any downward adjustment is limited to a single bucket.

72. The [ECB announced](#) a change to its O-SII floor methodology in 2024 reflecting the changes made to the G-SIB methodology. The ECB has applied a floor methodology to assess the O-SII buffer levels, in the context of its top-up powers since 2016. The floor was revised in 2022 to strengthen the capacity of systemically important banks to absorb losses and to reduce heterogeneity in O-SII buffers. The changes to the ECB floor methodology in 2024 add a banking union perspective. The ECB calculates an additional "banking union score" in accordance with the EBA Guidelines by using the consolidated banking sector of the banking union as the reference banking system. In addition, the cross-border exposures within the banking union are treated as partly equivalent to domestic exposures, in line with the approach adopted for G-SIBs. The ECB has used the new methodology to assess notified O-SII buffers since January 2025. The ECB's O-SII floor under the banking union perspective will then be increased in two increments that take full effect in

⁵⁵ The G-SIB methodology places more emphasis on market activities such as trading, underwriting transactions and custodial services, while the O-SII methodology places more weight on the bank's total assets as well as deposits and lending to firms and households including to and from EU recipients.

⁵⁶ The G-SII identification and buffers mirrors the Basel framework for G-SIBs. See [BCBS \(2013\)](#).

⁵⁷ The O-SII identification process reflects the principles in the Basel Committee's framework to deal with Domestic Systemically Important Banks (D-SIBs). The EBA issued guidelines for identifying O-SII banks ([EBA 2014](#)). National authorities use additional optional indicators and supervisory judgement in identification and buffer setting.

⁵⁸ The change is to the cross-jurisdictional activity category only, i.e. assets and liabilities, and reflects progress in the development of the Banking Union [BCBS \(2022\)](#).

2028.⁵⁹ Based on early assessment the change in methodology would increase the O-SII buffer floor by 25 to 50 basis points for five O-SII banks but would not affect other banks' O-SII buffers.⁶⁰

Table 3. Euro Area: O-SII/G-SII Buffer Rate Governance Procedures		
EU-level governance trigger	Governance procedure applicable	Legal basis
Triggers for EU governance when setting the O-SII buffer in isolation		
O-SII buffer rate up to 3 percent	Notification of ESRB (1 month before the decision)	Art. 131(5), (7) CRD
O-SII buffer rate above 3 percent	<ol style="list-style-type: none"> 1. Notification of ESRB (3 months before the decision) 2. ESRB's opinion to the EC 3. Optionally, opinion from the EBA to the EC 4. EC decides on adopting implementing act authorizing the macroprudential authority 	Art. 131(5a), (7) CRD
Triggers for EU governance procedures when setting O-SII/G-SII buffer in combination with the SyRB buffers (on any set or subset of exposures)		
Sum of combined SyRB rate, and of O-SII/G-SII buffer rate to which the same institution is subject to, above 5 percent.	<ol style="list-style-type: none"> 1. Notification of ESRB (3 months before the decision) 2. Opinion from the ESRB to EC 3. Optionally, opinion from the EBA to EC 4. EC decides on adopting implementing act authorizing the macroprudential authority to apply the O-SII or G-SII buffer. 	Art. 131(15), (7) CRD
Source: CRD Article 131, IMF staff elaboration.		

73. Implementation of O-SII buffers above 3 percent is subject to the EC's approval.

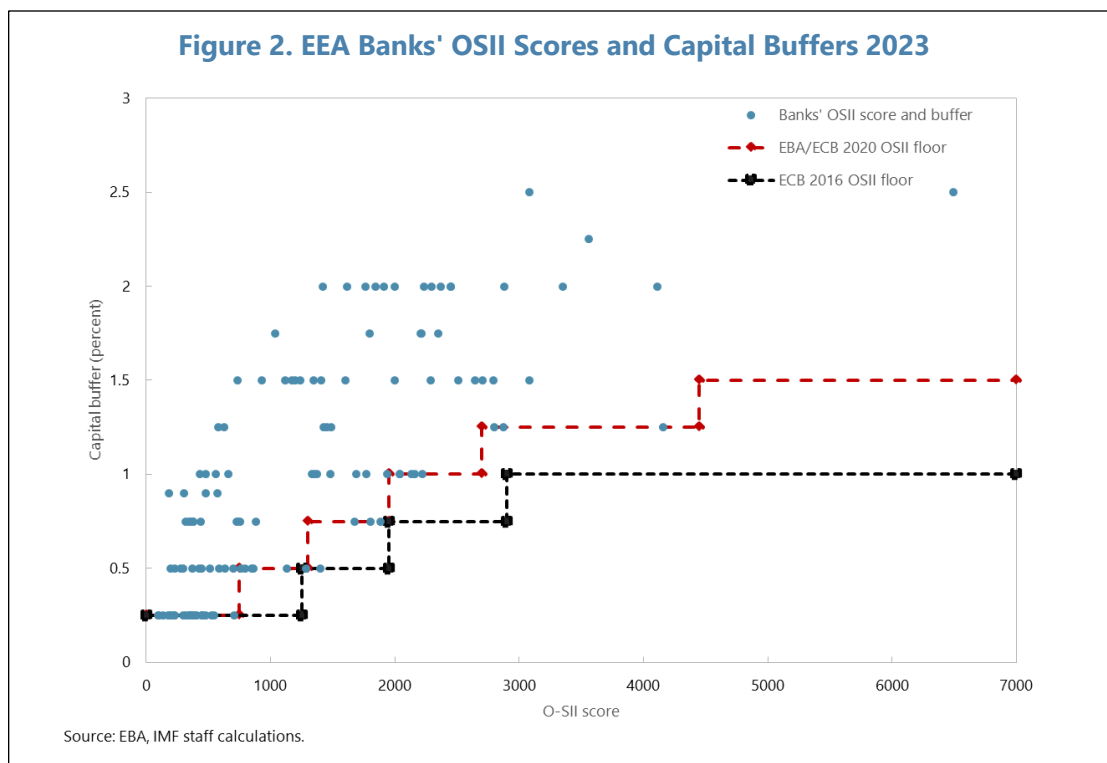
National authorities can use discretion with the O-SII buffers up to 3 percent, beyond which a Commission approval is required. The process resembles the approval process for systemic risk buffer. In addition, when the sum of a combined rate for systemic risk buffer and the O-SII or G-SII buffer goes above 5 percent, Commission approval is required. (Table 3.)

74. The O-SII buffers implemented by national authorities in 2023 were broadly in line with ECB's floor methodology, but there is a large variation across buffers set for banks with

⁵⁹ The new floor methodology is phased in with the first increase in 2027. It will be fully phased in from the beginning of 2028. Data is not yet available to assess the OSII buffers that align with the new methodology.

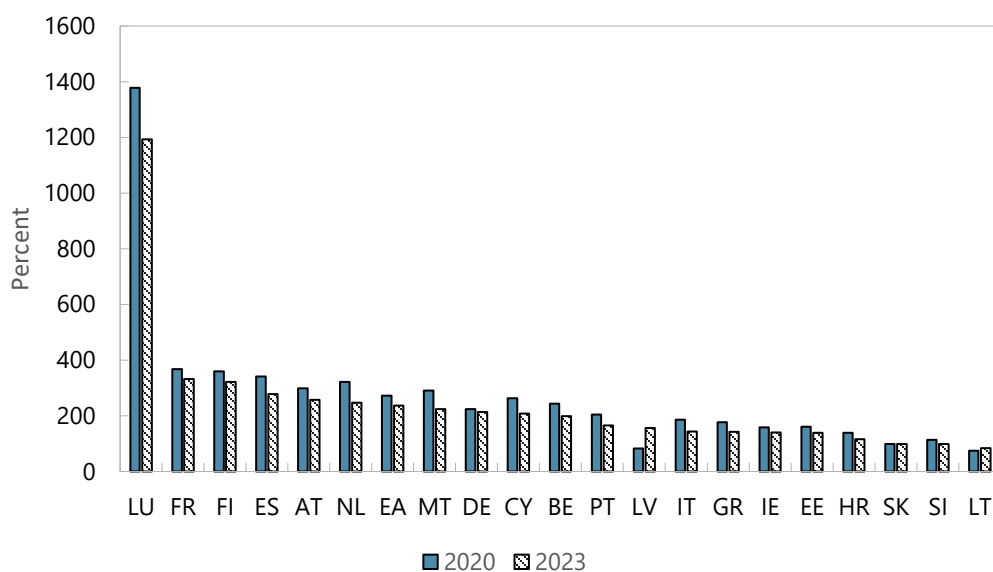
⁶⁰ The GC delegated the power to decide not to object to national O-SII measures to heads of units nominated by the Executive Board.

similar O-SII scores. Following the mandate from EC in CRD V, [EBA \(2020\)](#) considered methodologies and proposed a floor for the O-SII buffer rates for EU banks. The report drew attention to the diversity of applied O-SII buffers for a given O-SII score.⁶¹ The O-SII rates set by national authorities were compliant with the ECB's 2022 floor methodology for nearly all banks already in 2023. However, the difference between the floor rate and the highest O-SII buffer rate implemented across the buckets ranges between 1 and 1.5 percent (Figure 2).⁶² Countries with a more profitable banking system in the past seem to have set O-SII buffers that typically are above the floor and a high share of subsidiaries in a country's O-SIIs may have contributed to buffers above the minimum floor (Figure 4).



⁶¹ The EBA's proposals correspond to the 2016 and 2022 ECB floors. The data available from EBA for the O-SIIs refers only to notifications for 2023, while the ECB's 2022 floor became effective in January 2024.

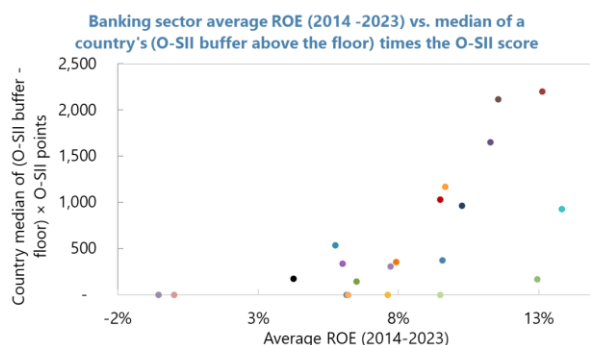
⁶² In its response to Commission's Call for Advice the ECB provided further evidence that O-SII buffer heterogeneity is not explained by country differences. ECB (2022) contains an exercise that identifies the variation in O-SII buffer rates with country specific factors and shows that the buffers tend to be far away from the predicted values.

Figure 3. Banking Sector Assets to GDP Vary Across EA Countries

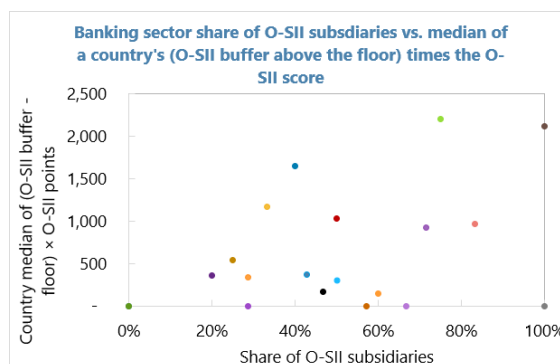
Source: ECB.

Figure 4. Banking System Profitability and Contribution to Above Floor O-SII Buffers

Countries with more profitable banking sectors tend to set higher O-SII buffers ...



... and a higher share of a subsidiaries in a country's O-SIIs tends to contribute to above floor buffer rates.



Source: EBA, Fitch Connect, IMF staff calculations.

D. Reciprocation of Macroprudential Measures

75. Reciprocation of macroprudential measures is important to maintain a level playing field and to avoid cross-border leakage and regulatory arbitrage. Reciprocation occurs when the relevant authority in the reciprocating member state applies a macroprudential measure that is the same or equivalent to a measure taken in the activating member state to address a risk related to a specific exposure. Reciprocation aims to ensure that the same macroprudential measure applies

to all financial institutions within the EA which are exposed to the risk targeted by the measure, regardless of where they are located.

76. The process of reciprocation varies by the instrument and the level of consolidation at which reciprocating measures are applied is heterogenous. The reciprocation of the CCyB rates takes place automatically, up to 2.5 percent. For higher CCyB rates or other macroprudential measures reciprocation by other member states is voluntary. The ESRB generally recommends reciprocation also for CCyB rates, above 2.5 percent. Reciprocity is also automatic for measures pursuant to Art 124 and 164 CRR. For other macroprudential measures, the activating member state has to request reciprocity, and the ESRB has an important coordination role to assess on case by case whether reciprocity is warranted. The ESRB recommendation (2015)⁶³ on voluntary reciprocity is in place to ensure that the same or equivalent macroprudential requirements are applied to the same risks across the EU. The voluntary reciprocity framework provides a possibility to exempt firms with non-material exposures. The reciprocation process involves a formal request that is sent to the ESRB by the authority activating the measure, and the ESRB—after assessing the measure and its justification—can issue a recommendation for the measure to be reciprocated by other member states. Members with banks with material exposures can then decide whether to reciprocate. If they do not reciprocate, they must explain their decision in line with the “act or explain” mechanism. The reciprocity framework has proven to be effective in maintaining a level playing field. However, some elements of the voluntary reciprocation framework for sSyRB and Article 458 of CRR seem laborious as it involves several steps between authorities and the ESRB. A fully automatic reciprocation, even when considering materiality thresholds, would need to build on some standardization to enable the easy assessment of reciprocated exposures. The level of consolidation to which reciprocity has been applied across countries has also been heterogenous in some cases according to the ESRB.⁶⁴ Accordingly, the ESRB recently started to specify in its recommendations on reciprocating specific national measures the level of consolidation at which the proposed measures should be reciprocated.⁶⁵

E. Borrower-Based Tool Availability and Application Across the EA

77. BBMs can be applied to all lenders, and they are effective in ensuring appropriate lending standards and curbing household indebtedness. The borrower-based tools can cover all loans to natural persons, which removes the incentives for circumvention, if the tools were to only apply to a subset of lenders such as banks. Academic research finds consistent evidence that borrower-based tools are effective in reducing lending growth and improving household sector

⁶³ See ESRB/2015/2.

⁶⁴ See also the discussion about the level of consolidation applied to reciprocated measures at the Commission [Expert Group on Banking, Payments, and Insurance minutes from October 2024](#).

⁶⁵ The [EBA recently clarified in its Q&As](#) that it remains in the reciprocating member state’s discretion to determine the level at which it reciprocates a SyRB of another member state.

resilience.⁶⁶ The BBMs reduce the share of households that borrow at high loan-to-value or debt-service to income multiples and reduce the household sector's sensitivity to income shocks.⁶⁷

78. There is no legal basis for BBMs in the EU legislation and their availability and use is heterogenous. Since the first warning of the ESRB in 2016, and subsequent warnings and recommendations, including in the context of the internal ECB's semiannual report on macroprudential policies, member countries have added BBMs into their national legislation. Figure 5 shows the implementation of different BBMs in EA countries. Most countries have implemented legally binding measures for Loan-to-Value (LTV) (14 countries) and Loan-to-Income (LTI) or Debt-Service-to-Income (DSTI) (12 countries). In addition, Germany Italy and Spain have a legal basis for some BBMs but have not activated them. (Table 4). Belgium, and Portugal have BBMs, only in the form of recommendations.⁶⁸ In addition, some countries have a DSTI but not a maturity limit, that can allow for circumvention via loan maturity extension. Table 4 does not fully reflect several country specificities e.g., country limits may differ in terms of the borrower type (first time buyers, not-first time buyers, investor) and may have quotas, or speed limits, that allow banks to lend a small percentage at multiples above the limit.

⁶⁶ See for example Alam and others (2024), [IMF \(2023a\)](#).

⁶⁷ [Fasianos and Lyndon \(2021\)](#) find that households with higher debt-service ratios orders of magnitude more sensitive to negative income shocks than low or medium debt-service households. [Millard and others \(2024\)](#) study capital and borrower-based tools in a general equilibrium framework and argue that having both macroprudential tools to deal with a range of financial stability risks is efficient.

⁶⁸ Finland has a legally binding Loan-to-Collateral ratio, and a DSTI recommendation. Slovenia has a legally binding DSTI and an LTV recommendation.

Table 4. Euro Area: Borrower-Based Tools Implemented Under National Legislation

	Activated LTV, percent	LTV legally binding?	Activated DSTI, percent	DSTI legally binding ?	Activated DTI/LTI	DTI/LTI legally binding?	Activated Mortgage Maturity limit, years	Maturity limit legally binding?
Austria ⁶	90	yes ⁵	40	yes	N/A		35	yes
Belgium	90	no	50 ¹	no	9 ¹	no	N/A	
Croatia	90	yes	40-45	yes	N/A		30	yes
Cyprus	50-80	yes	65-80 ⁷	yes	N/A		N/A	
Estonia	85	yes	50	yes	N/A		30	yes
Finland	90-95	yes ⁵	60	no	N/A		30	yes
France	N/A ⁴		35	yes	N/A		25	yes
Germany	N/A ⁴		N/A		N/A		N/A	
Greece	80-90	yes	40-50	yes	N/A		N/A	
Ireland	90	yes	N/A		3.5-4 ²	yes	N/A	
Italy	N/A		N/A		N/A		N/A	
Latvia	90	yes	40	yes	6-8	yes	30	yes
Lithuania	70-85	yes	40	yes	N/A		30	yes
Luxembourg	90	yes	N/A		N/A		N/A	
Malta	75-90	yes	40	yes	N/A		25-40	yes
Netherlands	100	yes	30 ³	yes	N/A		30	
Portugal	90	no	50	no	N/A		40	no
Slovakia	80-90	yes	60-70	yes	8	yes	30	yes
Slovenia	70-80	no	50	yes	N/A		N/A	
Spain	N/A ⁴		N/A ⁴		N/A ⁴		N/A ⁴	

¹ DSTI and DTI in combination with a high LTV >90 %.

² An LTI limit.

³ [DSTI limit depends on the borrower's income and interest rates, see IMF \(2024\).](#)

⁴ Germany and Spain have yet to activate their BBMs and France has not introduced an LTV.

⁵ Finland and Austria have "Loan-to-Collateral" limits.

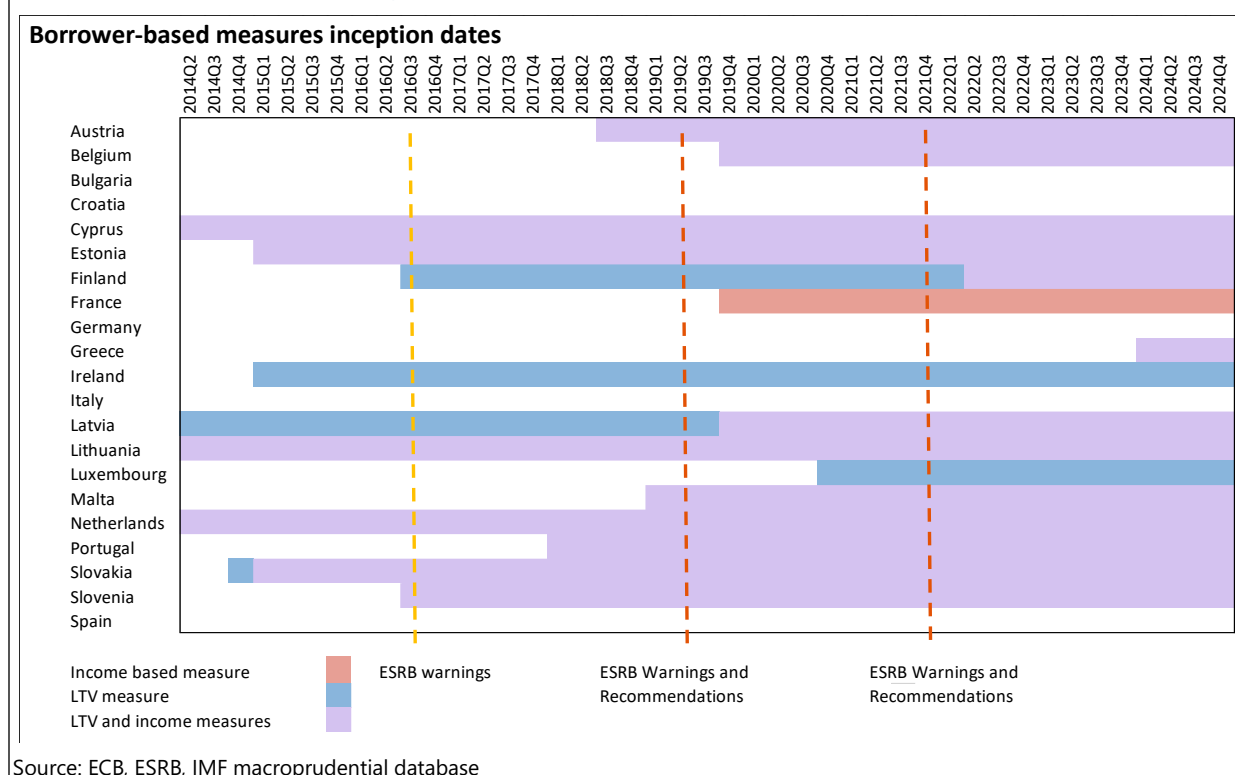
⁶ Austria's measure expires in June 2025.

⁷ Cyprus deducts basic expenses from the income in the DSTI calculation.

Sources: ESRB, IMF Macprudential Database, Country Authorities' web pages, and decision documents.

79. There would be benefits from introducing an EU legal basis for BBMs. The process of introducing national legislation on BBMs can face a lot of opposition in member states from the financial market lobby. The benefits of these measures—in the form of less likely banking or financial crisis and more resilient households—may be hard to communicate, while it is easy to point to the apparently immediate costs of reduced access to mortgage loans for borrowers. Even if the BBMs were not calibrated to be binding at the outset, their introduction would be useful as a guardrail, because lending standards evolve over time. Once the need for BBMs becomes apparent due to rapid loan growth and asset price appreciation it is typically too late to begin the legislative process. Therefore, introducing in EU legislation a legal basis for BBMs would provide national authorities with support against efforts to weaken nationally enacted measures e.g., sunset clauses or requirements to frequently re-evaluate them.

Figure 5. Implementation of Borrower-Based Macroprudential Measures in EA Countries and ESRB Warnings or Recommendations on Residential Real Estate



80. Alternatives for introducing BBMs into EU legislation have pros and cons. BBMs applicable to banks could be introduced in the CRD, which would be natural given that the macroprudential capital buffers are provided for in the CRD (apart from CRR tools). However, introducing BBMs in the CRD could result in an unintended shift of mortgage lending away from banks towards providers that are not constrained by the BBMs. Alternatively, the BBMs could be introduced in a separate directive, while making sure that it applies to all lenders. Member states

opinions about introducing or harmonizing the definitions of BBMs differ.⁶⁹ The ESRB has argued for an activity-based approach for BBMs to be introduced in the EU legislation that would maintain activation and calibration of the measures with the national member states. Such activity based BBMs would cover all loans, irrespective of the type of lender providing them. Introducing BBMs into a directive outside the CRD could place these measures beyond the scope of ECB's top-up power. In any case, the introduction of BBMs in EU legislation as an instrument applicable to banks would need to be reconciled with the ECB macroprudential tasks and powers in the banking union context. Nevertheless, current policy explorations in this area do not include in their scope changes to the SSM regulation.

81. ESRB recommendations have paved the way for improved data collection on real estate loans. The ESRB recommendations⁷⁰ invited national macroprudential authorities to implement a risk monitoring framework for domestic residential and commercial real estate (RRE and CRE) sectors that includes information on the lending standards for RRE and CRE loans. The recommendations provide detailed definitions of lending standards that are useful for monitoring residential and commercial real estate market developments and vulnerabilities. The [compliance assessment from 2021](#) found that national macroprudential authorities' were largely compliant with the recommendations for risk monitoring and information from the residential real estate sector and that they have collected information about the distribution of lending standards applied to RRE loans.⁷¹

82. An ESRB internal survey points to lingering heterogeneity in the definitions of indicators related to mortgage lending standards. An ESRB internal survey conducted in 2024 found heterogeneity across countries' definitions of mortgage lending standards and data collection. The definitions of a residential real estate loan, new loan, property value used in the LTV and income used for the DSTI calculations differed across several categories.

F. Tools to Address Vulnerabilities from Funding, Liquidity and Foreign Exchange Risk, Including Vulnerabilities Arising from Linkages to NBFIs

83. EA banks receive a sizeable share of funding via non-banks and also intermediate significant US dollar liquidity via repos and FX swaps. The ECB is actively monitoring bank's liquidity risks and building capacity to monitor vulnerabilities arising from banks and non-banks' interconnections. The ECB's FSR (May 2024) notes that banks receive around 20 percent of funding via NBFIs in the form of bonds and repurchase agreements. In addition, banks are intermediating USD funding to non-banks in the form of repos and FX swaps.⁷² The studies show that the links

⁶⁹ See views collected in the [minutes](#) of Commission Expert Group on Banking, Payments, and Insurance meeting in October 2024.

⁷⁰ The original recommendations to close real estate data gaps were made in [2016](#) and they were amended in [2019](#).

⁷¹ Out of 31 countries 21 were overall fully compliant and 10 were largely compliant with the recommendations for residential real estate. However, the compliance with the distributional data was partial for some countries. Compliance with the commercial real estate market recommendations were assessed separately.

⁷² ECB's FSR November 2024. The intermediation of USD liquidity is also concentrated to a few EA dealers.

between banks and non-banks can cause liquidity problems to transmit across sectors in stressed market conditions. The TN on Systemic Risk Analysis assessed systemwide spillovers from investment funds' liquidity stress. The assessment revealed material gaps in liquidity preparedness of investment funds and quantified significant knock-on effects on core EA funding markets, that if crystallized, could amplify market volatility.

84. Banks' LCR metrics in foreign currency are low in some countries, prompting an appropriate supervisory response. The SSM monitors' banks' Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) requirements for regulatory compliance, as well as the LCR or NSFR in foreign currencies. Banks are compliant with the consolidated LCR and NSFR requirements imposed by regulation. While the LCR and NSFR ratios in foreign currency are not minimum regulatory requirements, they have been well below 100 percent in some countries.⁷³ This is partially explained by foreign banks' subsidiaries that have access to US dollar liquidity facilities through their parents and the use of FX swaps. In addition, as documented in the BCP assessment, the ECB has introduced measures (higher LCRs in FX and extended minimum survival period) for some banks with an elevated FX liquidity risk profile in line with the risk-based supervision approach.

85. EA banks can resort to ECB's facilities for liquidity, and large-scale problems with FX liquidity could prompt the re-activation of currency swap lines between central banks. Solvent banks can access ECB's euro and USD liquidity facilities.⁷⁴ In case of more significant problems in the access to FX markets the ECB has a foreign exchange (FX) liquidity line with major central banks that can be used to provide liquidity in FX.⁷⁵

86. The macroprudential authorities have tools to influence liquidity buffers, but these have not been activated so far. Article 458 (2)(d)(iii) of the CRR provides macroprudential authorities with a tool to affect banks' liquidity requirements. Partly reflecting the sufficient intensity of risk-based microprudential supervision on liquidity risks, macroprudential measures for liquidity have not been activated.

G. Sovereign-Bank Nexus

87. EA banks' sovereign exposure as a whole is above the pre-pandemic level raising concerns about the re-emergence of the sovereign-bank nexus. For most EA countries' total and domestic sovereign holdings have increased from December 2019 to June 2024. The evolution of sovereign exposure to total assets is more nuanced with nine countries' banking systems having increased their total sovereign exposure to total assets, while the exposure has decreased in eleven countries. Banking system aggregates at the country level also mask significant dispersion across

⁷³ [EBA \(2024b\)](#) report shows that approximately 70 percent of 103 banks that reported to EBA had an LCR in USD below 100 percent, with some banks having near zero LCR in USD.

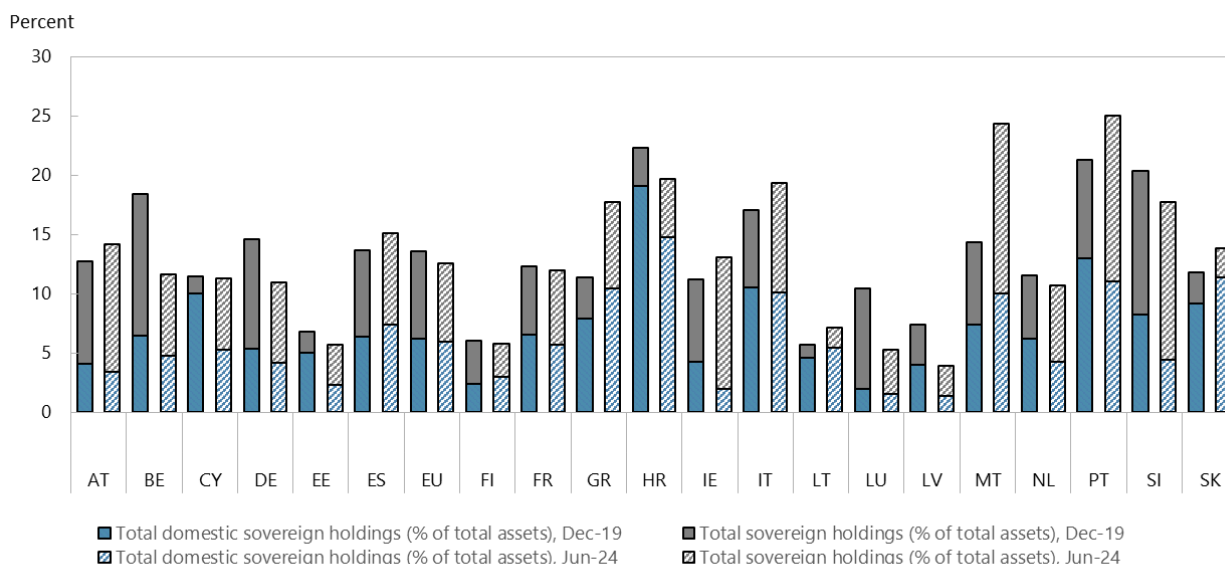
⁷⁴ See [Open market operations](https://www.ecb.europa.eu/mopo/implement/omo/html/index.en.html). <https://www.ecb.europa.eu/mopo/implement/omo/html/index.en.html>

⁷⁵ See [ECB's explanation of the liquidity lines](#) between major central banks. A reliance on the FX liquidity lines would assume that the arrangements will continue to be in place.

banks. Higher interest rates since the pandemic have added to the governments' interest expenditure and could exacerbate concerns about the sovereign-bank nexus.

88. Both microprudential and macroprudential tools are available to address concentrated exposures, but their use should be calibrated for prevailing conditions. It could be useful to reduce selected banks' excessive concentrations to domestic sovereign exposures, to avoid triggering a re-emergence of broader concerns related to the sovereign-bank nexus. The BCP assessment recommends the ECB to more systematically consider high sovereign risk concentration when setting Pillar 2 capital add-ons. A systemic risk buffer applied to the total balance sheet as a response to concentrated sovereign exposures could be another option.⁷⁶ However, in the context of the EA, microprudential tools are particularly suitable for this task given the ECB's role as the supervisor.⁷⁷ Measures to address concentrations can help reduce such vulnerabilities when markets are calm and uncertainty is low, but sovereign-bank links cannot be fully severed as argued in [IMF \(2018a\)](#). In addition, measures need to be carefully paced if the environment is subject to uncertain geopolitical developments or when sovereign expenditures are expected to increase.

Figure 6. Banks' Sovereign Exposures



Source: EBA Risk Dashboard.

H. Recommendations

89. The CRD should be amended to ensure that the CCyB can be activated even when cyclical systemic risks are not yet elevated. Currently some EA member countries cannot

⁷⁶ The Romania FSAP contains an example of such an application of the SyRB ([IMF \(2018b\)](#)).

⁷⁷ ECB can impose such measures as a part of its microprudential supervisory responsibilities to SI banks, but for macroprudential policy measures the national authorities take the lead and ECB can top-up.

implement a positive neutral CCyB due to the way that the CRD has been transposed into their legislation. Some members also think that there is legal uncertainty on whether EU legislation allows for an early activation of a CCyB. The EC should revise the CRD so that it explicitly allows the activation of the CCyB, when cyclical systemic risks are not yet elevated. Downplaying the prominence of the credit gap to one among a number of the different indicators to guide CCyB activation and build-up should also be pursued.

90. The ECB and ESRB should establish consistent criteria to guide the activation of the CCyB. The criteria would need to consider whether activation could lead to procyclical effects. The availability of banks' voluntary capital buffers and bank profitability—both at the aggregate and in terms of its distribution across banks—are important elements that can guide the activation together with expert judgement. It would be useful to consider country specificities in the calibration of releasable buffers and account for stock vulnerabilities such as susceptibility to foreign shocks and share of variable rate loans for example. The ESRB recommendation on the CCyB use should also be revised to reflect the changed legislation, give guidance on the activation and build-up beyond the neutral level, as well as guide the communication about the release of the CCyB.

91. Authorities should create a mapping between the O-SII scores and a range in which O-SII buffers can be defined, in order to reduce the heterogeneity in O-SII buffers, while providing sufficient national flexibility. Currently, a bank's O-SII buffer could be very different depending on the member state in which it is established, even if the banks' O-SII scores are the same. Differences in concentration across countries banking sector can result in very few or a large number of banks identified as O-SII, and the concentration can also drive differences in O-SII rates that are set. There is variation in EA countries' banking sector total assets relative to GDP, and countries with large banking systems may opt for more conservative O-SII buffers to account for financial stability. In addition, banks' ownership structures may affect the O-SII buffer setting. Some of the available evidence indicates, however, that heterogeneity cannot be explained with the differences in country characteristics alone. Harmonization of the mapping for O-SII banks' scores to buffer rates should be pursued to make sure that too-big-to-fail vulnerabilities are consistently addressed across Europe, while retaining sufficient national flexibility. The EBA should be mandated to create such a mapping in collaboration with the ECB and the ESRB, that can be subsequently implemented via an EBA guideline. The outcome could be a mapping of O-SII score buckets to O-SII buffer buckets, where there is leeway to adjust the buffer rate within the buffer bucket. A guideline for O-SII buffer floor would reduce the heterogeneity at the bottom, but it would continue to be present at the higher end of buffer range, if the existing practice for O-SII setting continues.

92. It should be considered if linkages between banks and non-banks are adequately reflected in the O-SII buffers. Links between banks and non-banks, arise from loans, clearing, underwriting services, derivatives trading and asset management services among others. Non-bank provision of credit to the real economy has increased in significance and the links between banks and non-banks are concentrated in a few institutions according to the ECB. The G-SII methodology has elements that specifically account for banks' market activities and whenever banks are subject to both G-SII and O-SII buffers the higher applies. If the EBA reviews its O-SII designation guidelines

from 2014, it should consider if designation adequately reflects banks' links with non-banks and whether it would be useful to include such links as a factor in calculating banks' O-SII buffers.

93. The governance procedures for using the sSyRB should be simplified. The thresholds that trigger an opinion from ESRB and EBA or an approval from EC in implementing a sectoral SyRB should be based on the planned measure's capital impact calculated on the basis of the total risk exposure amount. The ESRB opinion or EC approval process would be triggered only if a sectoral buffer rate is proposed, that causes a capital impact that is three percent or more in the total risk exposure amount. In addition, it would be useful to streamline the activation process for the SyRB, by having only one threshold beyond which approval is needed. The need to separately approve the buffers, when the sum of SyRB and O-SII/G-SII buffers exceeds 5 percent could also be reconsidered. Each buffer alone has an acceptance procedure on their own that is triggered if the buffer exceeds 3 percent. In the absence of the approval limit for the sum of SyRB and O-SII/G-SII buffers, the activation procedure would still be triggered if the sum of these buffers exceeds 6 percent.

94. The process for using risk-weight measures should also be streamlined. Risk-weight tools, under Articles 124 and 458 of CRR, have been actively used macroprudential measures in the CRR. However, the procedures for activation differ markedly, because Article 458 was meant to be a measure of last resort. It would be useful to carve out the use of risk-weight measures from Article 458 and provide authorities with threshold expressed in the proposed measure's impact on total risk exposure amount.⁷⁸ Authorities could operate risk-weight measures with an impact that is smaller than the threshold, with a notification procedure that is similar to that of Article 124 of CRR. For measures that have an impact that is larger than the threshold, stricter activation procedure would continue to apply. In addition, it would be useful to streamline the procedures for activating risk-weight measures (e.g. prior consultation and transitional periods) to be as similar as possible. Once the Basel output floor is fully implemented the risk weight tools should be reviewed.

95. Authorities should review the time that member countries take to implement different measures, and further streamline the governance procedures. Anecdotal evidence indicates that the process for implementing a measure can take a protracted period of time. In addition to potential inaction bias, this can result in delayed action and an unchecked increase in financial vulnerabilities. The ESRB should gather evidence from member states about their experience of the time that implementation of different measures has taken. This information could be useful to identify bottlenecks and inform the streamlining of procedures.

96. The ESRB should clarify the level of consolidation at which the voluntary reciprocation of macroprudential measures should take place. If a banking group, through one of its entities, is exposed to higher macroprudential risks, the group should hold more capital; otherwise, the reciprocation can fail to achieve the desired level of macroprudential resilience. The ESRB should clarify in a recommendation that reciprocation should take place at all levels, unless there are good

⁷⁸ Article 124 provides a range within which the macroprudential authority can set risk weights for residential or commercial real estate property.

reasons for not doing so, for instance if a risk addressed by the measure is already adequately covered by other measures applying to the group in the reciprocating country.

97. The ECB and ESRB should strive for further adoption and consistency in the use of BBMs across EA countries. Common definitions for lending standard indicators for RRE loans to enhance risk monitoring and policy assessment at EA level are recommended. Such data collection would also retain national specificities, while still enabling a consistent assessment and comparability of BBMs.

Appendix I. Status of Recommendations for Macroprudential Policy from the 2018 FSAP

Ensure the availability of a full set of borrower- based macroprudential instruments (EC, ESRB)	MT	<p>Status: Not implemented. The ESRB has proposed the implementation of BBMs in its responses to the European Commission's public consultations. To the consultation on banking sector macroprudential policy review in 2022 the ESRB has proposed the introduction of a common minimum set of BBMs in EU legislation for residential real estate loans. In the non-banking review, the ESRB called for the introduction of activity-based regulation into EU law, enabling national authorities to set BBMs and apply them to all types of lenders.</p> <p>In Recommendation ESRB/2022/9 the ESRB recommended that the EC assesses the current macroprudential framework in the EU and ensures that consistent rules for addressing risks related to CRE exposures are applied across all financial institutions when they perform the same activities, taking into account their specificities and specific risk profiles.</p> <p>In the 2024 report on the macroprudential review, the Commission identified BBMs as one of the key areas for further work for enhancing the framework's ability to tackle risks stemming from real estate markets. BBMs differ across the EU because the measures, where they exist, are exclusively governed by national law.</p>
Clarify the scope to use sectoral risk weights in Article 124/164 CRR for macroprudential purposes (EC, EBA)	I	<p>Status: Implemented. Originally in CRR 1 the competent authority had the responsibility for the assessments and the decisions on setting higher risk weights or imposing stricter criteria than those set out in Article 125 (2) and 126 (2) or on setting other minimum average exposure-weighted LGD values. Following the implementation of CRR 2 the Member States were tasked with designating an authority responsible for the application of these provisions. This authority is the competent authority or the designated authority.</p>
Legislate borrower-based tools, with harmonized definitions, at the EU level, make it available to macroprudential authorities, covering all credit institutions, applicable to households and corporate sectors (EC)	I	<p>Not implemented. At present, BBMs are set up based on national law of the EU Member States only and are not enshrined in EU law. The Commission is actively seeking to identify the areas where an enhanced consistency could be beneficial, however, ensuring that national authorities maintain the freedom to take into consideration country specificities and challenges when applying such measures. While including a minimum set of BBMs in EU law is a policy goal worth pursuing, achieving harmonization regarding underlying definitions might prove challenging, as is the case for aspects related to their governance and the role of the ECB in the banking union.</p>
Systemic risk arising from market based activities should continue to be analyzed and new tools may need to be developed to	MT	<p>Partially implemented. The ESRB continues to monitor market-based activities, with the particular focus on taking a system-wide approach.</p> <p>The ESRB set out this system-wide approach in 2024 as part of its response to the EC's consultation assessing the adequacy of macroprudential policies for nonbank financial intermediation. The report provides a</p>

address these risks (ESRB, ESMA)		<p>conceptual framework and applies this framework to three activities that the ESRB considers important for financial stability. These activities, which are either market-based or included market-based elements, are asset management, lending and clearing.</p> <p>To better understand interconnectedness between banks and nonbanks, and what this means for the transmission of liquidity risk through financial markets, the ESRB has conducted a top-down system-wide liquidity stress test. In this context, the ESRB also welcomes that ESMA's fifth CCP stress test (for which the ESRB has, as a matter of course, provided the adverse scenario) includes an analysis of the effect of margin calls on the central clearing ecosystem.</p> <p>Systemic risk arising from market-based activities, notably considering the effects of market volatility, is also regularly considered in the quarterly meetings of the ESRB General Board. To inform these discussions, the ESRB is, for example, conducting in-depth work to better understand the interactions between cash markets and derivative markets based on EMIR data, including on energy markets and CDS markets. Reflecting a specific mandate in the EU securitization regulation, the ESRB has analyzed and published a report on risks in the RMBS market, and the General Board discussed and approved a report on risks in the EU synthetic securitization market in March 2025.</p> <p>The monitoring of market-based activities can be hampered by availability and access to data. The ESRB tried to address is with a letter that it sent in 2024 to the co-legislators to facilitate data sharing between the ESRB and the ESAs.</p>
Data gaps related to credit-granting Other Financial Institutions and commercial real estate prices should be addressed (EC)	I	<p>Status: Partially implemented. The ECB has taken significant steps to close knowledge and data gaps related to both the other financial institutions (OFI) sector and commercial real estate (CRE) markets. Given the large and heterogeneous nature of the OFI sector, amendments to ECB Quarterly Sectoral Account (QSA) Guidelines extended granularity of the QSA. First, balance sheet (asset and liability) information for each OFI subsector (i.e., Other Financial Intermediaries (S125), Financial Auxiliaries (S126) and Captive Financial Institutions and Money lenders (S127)), at a country level, was introduced in June 2022. Additionally, in October 2024, who-to-whom data was introduced for each of these subsectors, which enables us to identify the links between these OFI subsectors and other sectors, including OFI subsector loans to EA non-financial corporations and households.</p> <p>With regard to CRE markets, the ECB has also sought to close material gaps in our understanding of financial sector exposures to CRE. For instance, examining the liquidity vulnerabilities of real estate investment funds (REIFs) and their large footprint in EA CRE markets (see April 2023 MPB article), EA insurers and pension funds exposures to CRE (including via REIFs – see Chapter 4.3 of the ECB Financial Stability Review, May 2024 and November 2023 and May 2023 editions), and profiling system-wide interconnectedness in CRE exposures across all sector types (see</p>

		<p>November 2024 MPB article). AnaCredit data has also provided unprecedented understanding of banks' exposures to CRE (see 2022 Macroprudential Bulletin Article) including to real estate funds (see 2024 Macroprudential Bulletin Article). Regarding CRE markets more broadly data gaps do remain – for example in relation to CRE prices in a number of countries and in relation to the lower quality part of the market – and the ECB continues to work closely with the ESRB and national authorities to close these.</p> <p>The ESRB issued a recommendation in 2019 on closing real estate data gaps (ESRB/2019/3), which focuses also on commercial real estate price data. The assessment of compliance with the recommendation is available here. Eurostat (EC) was considered fully compliant with the recommendation overall. However, real estate price indices are still not available.</p>
--	--	--

Appendix II. Interaction of Capital Buffers with Leverage Ratio and Minimum Requirement for Own Funds and Eligible Liabilities (MREL) Requirements

1. Two examples illustrate interactions between capital buffers, supervisory leverage requirements and risk-based resolution requirements. Figure 2 describes the CET 1 capital used to satisfy risk-weighted capital requirements in the column on the left titled RW, CET 1 capital used to satisfy leverage-based capital requirements on the middle column titled LR and CET 1 capital used to satisfy risk-weighted MREL requirements in the column on the right titled MREL-RW.

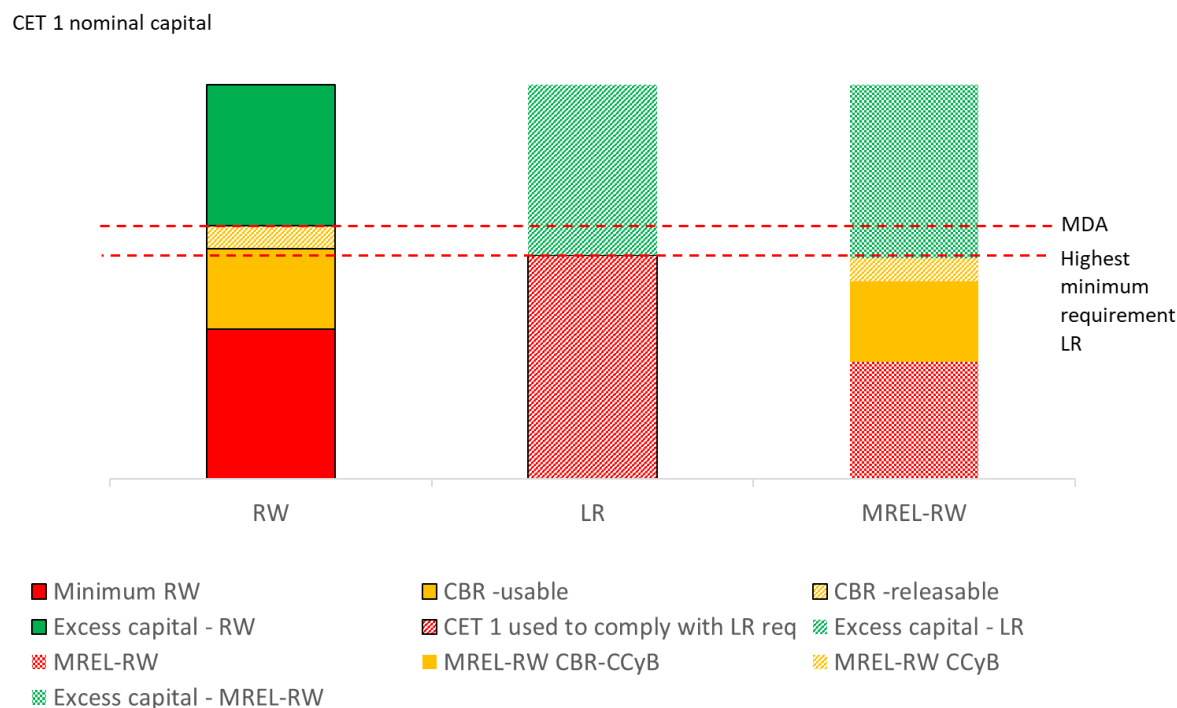
- The minimum risk-weighted requirements consist of Pillar 1 and 2 requirements.¹ The combined buffer requirement is divided into useable (CCB, G/O-SII) and releasable (CCyB, SyRB) components, and the remainder is voluntary excess capital in the stack. The minimum requirements and combined buffers define the Maximum Distributable Amount (MDA) threshold. When bank capital dips below this threshold, supervisory restrictions on capital distribution apply. We disregard Pillar 2 guidance for simplicity.
- The minimum leverage ratio capital, in terms of CET 1, is calculated assuming a 3 percent leverage ratio and an additional Pillar 2 requirement for the leverage ratio and subtracting the AT1 capital before calculating the needed CET 1 capital. The remainder is excess CET 1 for the Leverage Ratio (LR) stack.
- The MREL requirements include a loss-absorption amount (LAA) which is based on supervisory Pillar 1 and 2 requirements (times the total risk exposure amount) and the recapitalization amount (RCA) that is equivalent to the sum of LAA and the Market Confidence Charge (MCC) (times the total risk exposure amount). The MCC equals Combined Buffer Requirement (CBR) less the CCyB. The bar on the right represents risk-based MREL requirements. The minimum resolution capital amount (MREL-RW), once eligible liabilities, AT1 and T2 capital are taken into account, is depicted in red in the right-hand side bar. We abstract from the eligible liabilities as well as AT1 and T2 capital in the figure, that are used to satisfy part of the MREL requirements and focus on the part of MREL requirements that is left to be satisfied with CET1. The CBR is also added on top of the minimum resolution capital requirement, depicted in orange. The remainder in green is excess CET 1 capital in the resolution stack. There is a Maximum Distributable Amount related to MREL (MDA-M), but its breach does not result in automatic distribution restrictions.

2. **In the first example, the buffer release is not constrained by the leverage ratio requirement, but the usability is.** The release of capital buffers increases the head room for the

¹ The minimum risk-weighted capital requirement is calculated as 4.5% RWAs + max {0; 1.5% RWAs – AT1, 3.5% – AT1 – T2}. Pillar 2 is assumed to be fully satisfied with CET 1 for simplicity.

bank in the example. However, buffer usability is restricted. I.e., once the CCyB (or SyRB) is released, the bank breaches the leverage ratio requirement before having exhausted all usable buffers.

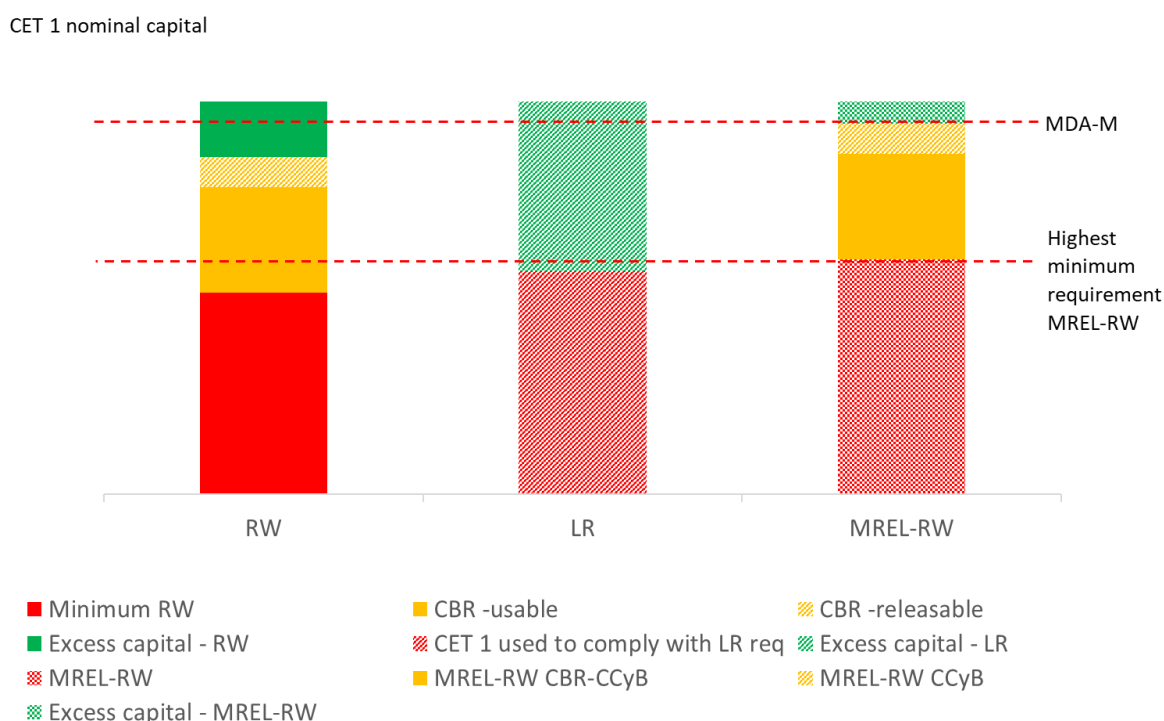
Figure 1. Interaction of Capital Buffers, Risk-Weighted Capital Requirements and the Leverage Ratio Requirement



Source: IMF staff.

3. In the second example below, we assume that the risk-weight density is higher than in the first example. Higher risk-weight density increases the RW requirements and reduces the likelihood that LR requirements bind. Higher risk-weights are also reflected into MREL risk-weighted requirements and in the example result in the MREL requirement to be the highest minimum requirement. This assumes that the bank keeps its eligible liabilities, AT1 and T2 constant. (Bank issuance of eligible liabilities or capital instruments, would reduce the CET 1 tied up in satisfying the MREL requirements.) A release of the CCyB in this example, would increase the capital headroom above the MREL stack, but the MDA-M trigger would be breached first when the bank dips into its usable capital buffers. A part of capital buffers would continue to be usable up until the MREL-RW requirement becomes binding. This takes place before the CBR is fully used in the RW stack.

Figure 2. Interaction of Capital Buffers, Risk-weight Capital Requirements and the Leverage Ratio—Effect of Higher Risk-weights



Source: IMF staff.

4. These examples do not capture the full extent of interactions and complexity between the capital buffers, supervisory requirements and resolution requirements. [ESRB \(2021a\)](#) includes an in-depth study of the interactions between capital buffers, leverage ratio and MREL requirements.² [EBA \(2024a\)](#) compares the capital stacks in Europe, UK and USA and surveys how banks focus on different stacks in setting targets for management buffers. Depending on the bank's size, there may be up to eight stacks that a large bank must fulfil. For example, there are MREL leverage and risk-based requirements that can constrain buffer release and usability as was the case in the first example above. In addition, G-SII banks must satisfy a G-SII leverage ratio buffer, that also imposes further distribution restrictions on a G-SII, if the buffer is breached. [European Commission \(2024\)](#) argued that reform of macroprudential tools, should consider its impact on prudential and resolution frameworks and not result in an increase in capital or MREL requirements. Solutions that would make the framework simpler would also be useful.

5. **The ECB monitors the buffer usability and banks' actions to satisfy MREL requirements.** The MREL requirements entered into force from the beginning of 2024. Banks' issuance of eligible liabilities as well as the implementation of the Basel output floor is expected to

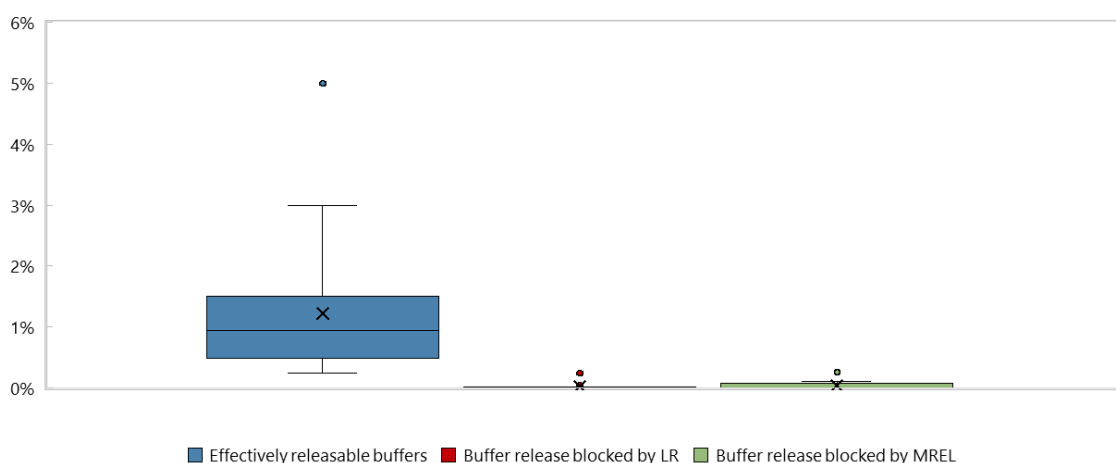
² See also [Behn and others \(2020\)](#).

improve the buffer releasability and usability.³ Also banks' decisions on what instruments to use to fulfil the capital requirements in different stacks affects the usability and releasability of capital buffers. The ECB and ESRB continue to work on assessing the interactions between the buffers, supervisory and resolution requirements.

6. Data suggests that the releasable capital buffers are only mildly constrained by MREL or LR requirements. Data collected by ECB indicates that in practice the leverage or MREL-requirements are not having a pronounced impact on buffer releasability. There are a few countries where typically either LR or MREL-requirements are binding in figure 4 below.

Figure 3. Effectively Releasable Capital Buffers after Considering Overlapping Requirements in EA Banking Systems

Percent of domestic RWA, 2024: Q2.

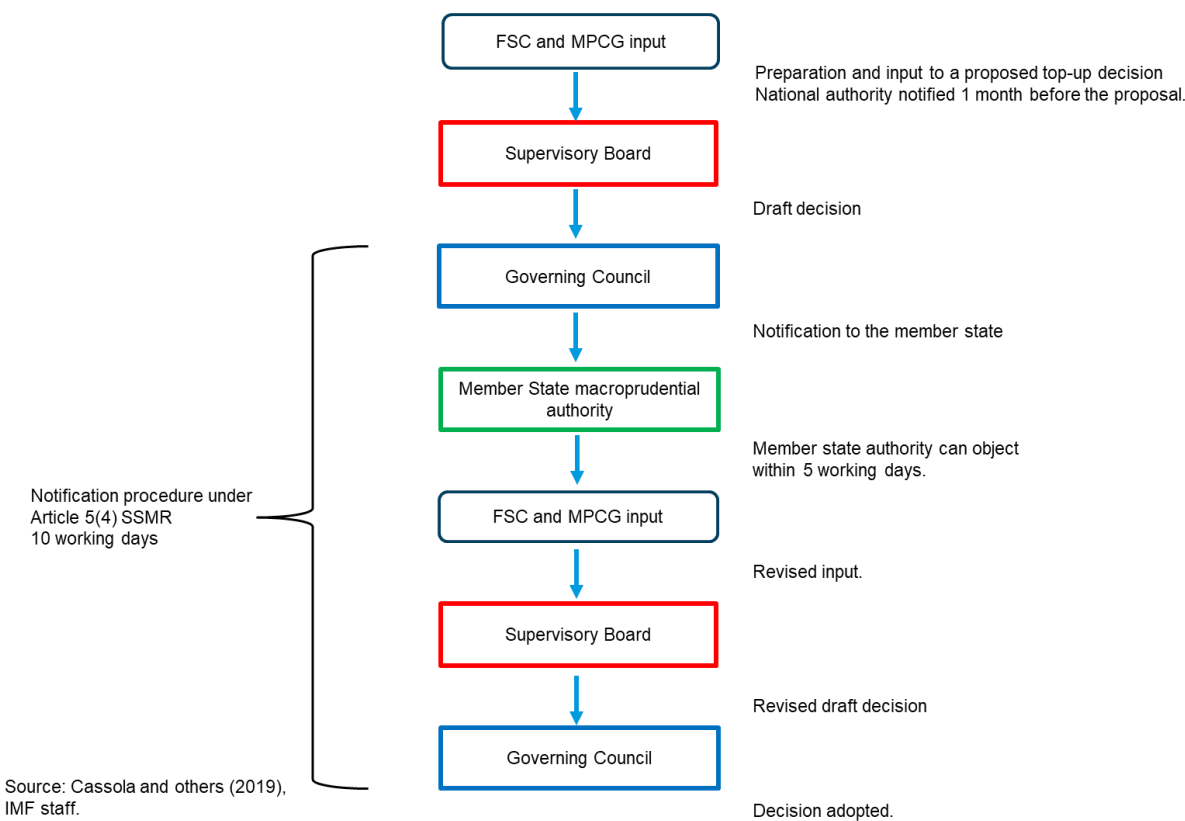


Releasable buffers reflect the domestic CCyB, SyRB and sectoral SyRB. For the broad SyRB applied to all exposures (foreign and domestic), only the capital associated with domestic RWA is considered, to ensure cross-country comparability
Source: ECB.

³Basel output floor is expected to be fully phased in by end 2029.

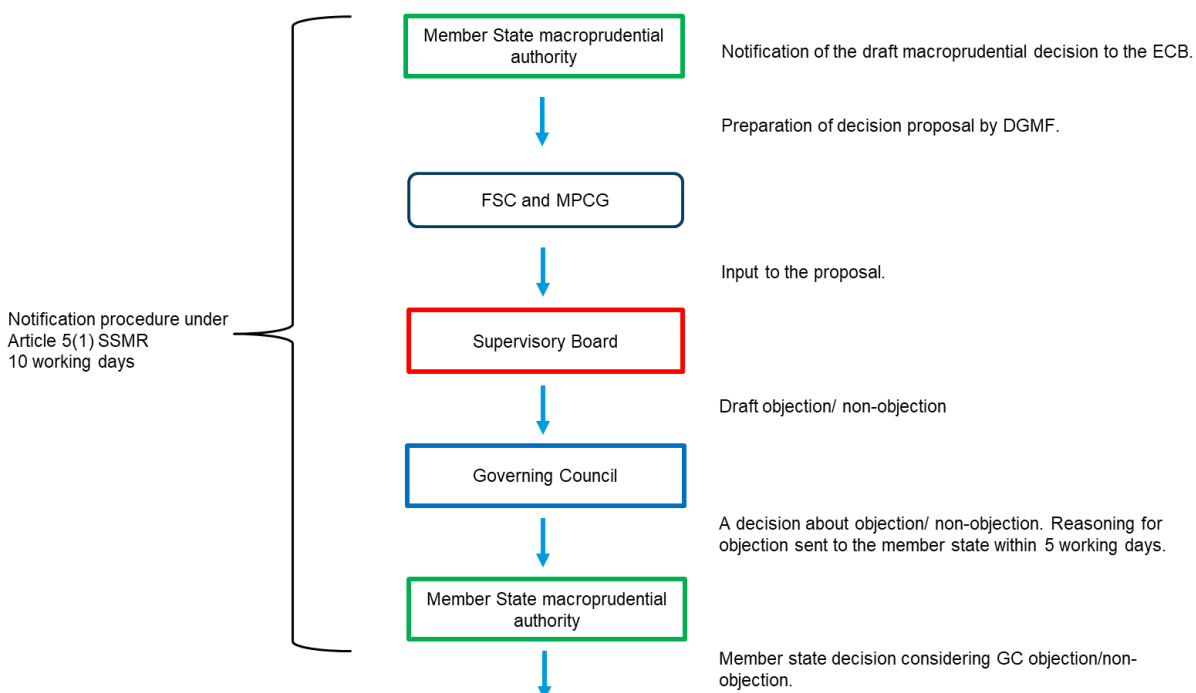
Appendix III. ECB Macprudential Decision-making and Processes

Figure 1. Decision-making Process for the Adoption of an ECB Top-up Decision.¹ (SSMR Art 5 (2,4) and ECB Rules and Procedures Art 13h(2),(3))



¹ For tools that require coordination at the EU level, there can be a lag between the GC decision and its publication to allow for the necessary assessments by the EU bodies involved.

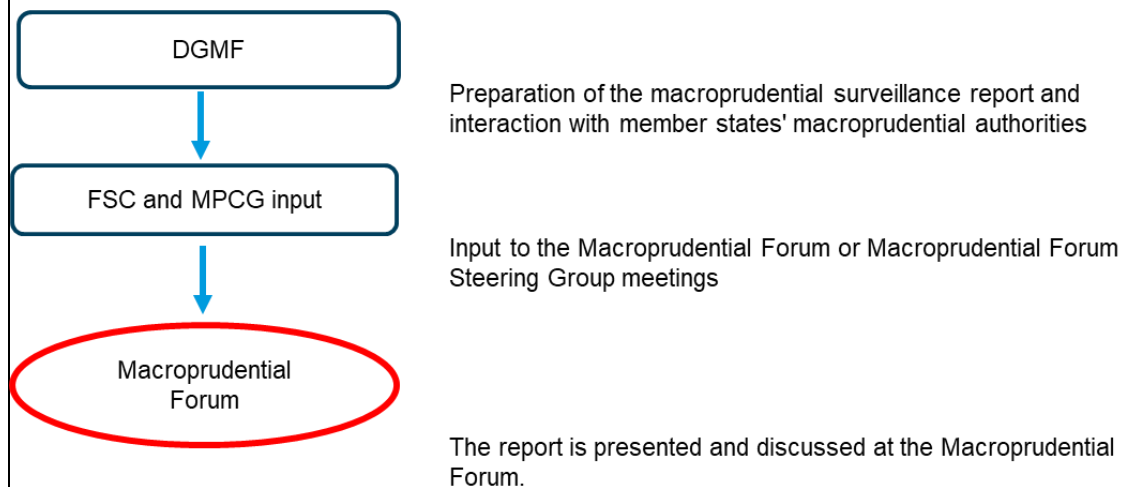
Figure 2. Decision-making Process for the ECB Assessment of National Macroprudential Notifications. (SSMR Art 5 (1) and ECB Rules and Procedures Art 13h(1), (3)¹



Source: IMF staff.

¹. The figure does not include the consultation that takes place between the ECB and the national authority on an informal basis prior to the decision. See for example IMF (2023) figure 1.

Figure 3. Informing the ECB Decision-making Bodies About the Conduct of Macroprudential Policy



Source: IMF staff.

Appendix IV. Compliance Criteria for ESRB 2011 Recommendation

Table 1. Euro Area: ESRB Recommendations and Full Compliance Criteria	
Recommendation B.3.	Recommendation E.1.
Member States are recommended to: "ensure that the central bank plays a leading role in the macro-prudential policy and that macro-prudential policy does not undermine its independence in accordance with Article 130 of the Treaty;"	Member States are recommended to ensure that 'Member States are recommended to ensure that: 1. in the pursuit of its objective, the macro-prudential authority is as a minimum operationally independent, in particular from political bodies and from the financial industry;"
Full compliance with the recommendation	Full compliance with the recommendation
<p>The central bank's independence is not undermined and its leading role is ensured by the fact that:</p> <ul style="list-style-type: none"> - the central bank is the macro-prudential authority; - the central bank accounts for the majority of representatives with voting power on the board when decisions are taken on a majority basis; or - no veto power is conferred on other board members, as is the case when decisions are taken by consensus; - the central bank conducts macro-prudential analysis; - the central bank prepares the main documents to be discussed by the board; and/or - the central bank is responsible for providing the board's secretariat; and/or - the central bank governor chairs the board and has a casting vote. 	<p>The macro-prudential authority is operationally independent because:</p> <ul style="list-style-type: none"> - the government is not represented – and if it is, it does not have any voting powers or does not hold a majority; - no veto power is conferred on the government and decisions are taken by consensus or unanimity; - the government is not the chair; - the government does not have a casting vote; - the government does not host the secretariat.

Table 2. Euro Area: ESRB Recommendations and Full Compliance Criteria

Recommendation B.1.	Recommendation D.1.
<p>Member States are recommended to:</p> <p>1. designate in the national legislation an authority entrusted with the conduct of macro-prudential policy, generally either as a single institution or as a board composed of the authorities whose actions have a material impact on financial stability. The national legislation should specify the decision-making process of the governing body of the macro-prudential authority;"</p>	<p>"D.1 "Member States are recommended to:</p> <p>1. ensure that macro-prudential policy decisions and their motivations are made public in a timely manner, unless there are risks to financial stability in doing so, and that the macroprudential policy strategies are set out and published by the macro-prudential authority"</p>
Full compliance with the recommendation	Full compliance with the recommendation
<p>"The macro-prudential authority is designated and its decision-making process is specified by law."</p>	<p>"Macro-prudential policy decisions and their motivations are required by law to be made public, unless there is a risk to financial stability. Macroprudential policy strategies are also required to be published."</p>

Table 3. Euro Area: Indicators for G-SIB and O-SII Banks Identification

BCBS approach for assessing the systemic importance of global systemically important banks (G-SIBs)			EBA Mandatory indicators for the identification of O-SII banks		
Indicator-based measurement approach					
Category (and weighting)	Individual indicator	Weight, percent	Criterion (and weighting)	Indicators ¹	Weight, percent
Cross-jurisdictional activity (20 percent)	Cross-jurisdictional claims	10.00	Complexity/cross-border activity (25 percent)	Value of OTC derivatives (notional)	8.33
	Cross-jurisdictional liabilities	10.00		Cross-jurisdictional liabilities	8.33
				Cross-jurisdictional claims	8.33
Size (20 percent)	Total exposures as defined for use in the Basel III leverage ratio*	20.00	Size (25 percent)	Total assets	25
Interconnectedness (20 percent)	Intra-financial system assets*	6.67	Interconnectedness (25 percent)	Intra-financial system liabilities	8.33
	Intra-financial system liabilities*	6.67		Intra-financial system assets	8.33
	Securities outstanding*	6.67		Debt securities outstanding	8.33
Substitutability/financial institution infrastructure (20 percent)	Assets under custody	6.67	Importance (including substitutability/financial system infrastructure) (25 percent)	Value of domestic payment transactions	8.33
	Payments activity	6.67		Private sector deposits from depositors in the EU	8.33

Table 3. Euro Area: Indicators for G-SIB and O-SII Banks Identification (Concluded)

Table 3. Euro Area: Indicators for G-SIB and O-SII Banks Identification (Concluded)					
BCBS approach for assessing the systemic importance of global systemically important banks (G-SIBs)			EBA Mandatory indicators for the identification of O-SII banks		
	Underwritten transactions in debt and equity markets	3.33		Private sector loans to recipients in the EU	8.33
	Trading volume	3.33			
Complexity (20 percent)	Notional amount of OTC derivatives*	6.67	For each bank the score is calculated by (a) dividing the indicator value of each individual relevant entity by the aggregate amount of the respective indicator values summed across all institutions in the Member State (the 'denominators') (b) multiplying the resulting percentages by 10 000 to express the indicator scores in terms of basis points (c) calculating the category score for each relevant entity by taking a simple average of the indicator scores in that category (d) calculating the overall score for each relevant entity by taking a simple average of its four category scores.		
	Level 3 assets*	6.67			
	Trading and available-for-sale securities	6.67			
* Extended scope of consolidation to include insurance activities.					
For each bank, the score for a particular indicator is calculated by dividing the individual bank amount (expressed in EUR) by the aggregate amount for the indicator summed across all banks in the sample. This amount is then multiplied by 10,000 to express the indicator score in terms of basis points. Each category score for each bank is determined by taking a simple average of the indicator scores in that category. The overall score for each bank is then calculated by taking a simple average of its five category scores.					
Source: BCBS .			Source: EBA .		
¹ The calculation of indicators is further detailed in the EBA (2014) guideline that documents the FINREP					

References

- Alam, Zohair, Adrian Alter, Jesse Eiseman, Gaston Gelos, Heedon Kang, Machiko Narita, Erlend Nier, and Naixi Wang. 2019. "Digging Deeper: Evidence on the Effects of Macroprudential Policies from a New Database." IMF Working Paper 19/66, International Monetary Fund, Washington, DC.
- Ampudia, M., Lo Duca, M., Farkas, M., Pérez-Quirós, G., Pirovano, M., Rünstler, G., and Tereanu, E. (2021), "On the effectiveness of macroprudential policy", ECB Discussion Paper Series, No 2559.
- Avezum, Lucas, Vítor Oliveira, and Diogo Serra. (2024), "Assessment of the Effectiveness of the Macroprudential Measures Implemented in the Context of the COVID-19 Pandemic." *International Review of Economics & Finance* 93 (A): 1542–55.
- Azzone, Michele and Pirovano, Mara, (2024), "Aim, focus, shoot. The choice of appropriate and effective macroprudential instruments", ECB Working Paper Series No. 2979.
- Basel Committee on Banking Supervision (2010), "Guidance for National Authorities Operating the Countercyclical Capital Buffer." Bank for International Settlements, Basel.
- Basel Committee on Banking Supervision (2013), "Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement." Bank for International Settlements, Basel.
- Basel Committee on Banking Supervision (2022), "Basel Committee finalises principles on climate-related financial risks, progresses work on specifying cryptoassets' prudential treatment and agrees on way forward for the G-SIB assessment methodology review." Press release, May 31, 2022.
- Bedayo, Mikel, and Jorge E. Galán. (2024) "The Impact of the Countercyclical Capital Buffer on Credit: Evidence from Its Accumulation and Release before and during COVID-19." Documentos de Trabajo 2411, Bank of Spain, Madrid.
- Behn, Markus, Daniel Abreu, Francesco Ciampi, Federica Ciochetti, Wanda Cornacchia, Marija Drenkovska, Marco Forletta, Benedikt Fritz, Sebastian Geiger, Barbara Jarmulska, Mariya Melnychuk, Steffen Meusel, Cristian Perales, Alexandre Reginster, Ellen Ryan, Štefan Rychtárik, Diogo Serra, Eugen Tereanu, Marcello Tumino, Ilze Vilka, Fleurilys Virel. (2024a), "The sectoral systemic risk buffer: general issues and application to residential real estate-related risks", ECB Occasional Paper Series, No 352, 2024.

- Behn, Markus, Marco Forletta, and Alessio Rugezza. (2024b), “Buying Insurance at Low Economic Cost—The Effects of Bank Capital Buffer Increases since the Pandemic.” ECB Working Paper 2024/2951, European Central Bank, Frankfurt.
- Behn, Markus, Lang, Jan Hannes, and Tereanu, Eugen. (2022), “Transmission and effectiveness of capital-based macroprudential policies”, published as part of the ECB Financial Stability Review, May 2022.
- Behn, Markus, Elena Rancoita, and Costanza Rodriguez d’Acri. (2020), “Macroprudential capital buffers – objectives and usability”, Macroprudential Bulletin, Article No. 11.
- Budnik, Katarzyna, Matthieu Darracq Pariès, Christoffer Kok, Jan Hannes Lang, Marco Lo Duca, Elena Rancoita, Costanza Rodriguez d’Acri, Ellen Ryan and Matthias Rottner (2020), “A macroprudential perspective on replenishing capital buffers”, published as part of the ECB Financial Stability Review, November 2020.
- Couaillier, Cyril, Alessio Rugezza, Constanza Rodriguez d’Acri, and Alessandro Scopelliti. (2022), “How to Release Capital Requirements During a Pandemic? Evidence from Euro Area Banks.” ECB Working Paper 2720, European Central Bank, Frankfurt.
- Clerc, L, Derviz, A., Mendicino, C., Moyen, S., Nikolov, K., Stracca, L., Suarez, J. and Vardoulakis, A., (2015), “Capital regulation in a macroeconomic model with three layers of default”, International Journal of Central Banking, Vol 11, No. 3, 9-63.
- Constancio, V. , Cabral, I., Detken, C. Fell, J., Henry, J., Hiebert, P., Kapadia, S., Altimari, S. N., Pires, F. and Salleo, C. (2019), “Macroprudential Policy at the ECB: Institutional framework, strategy analytical tools and policies”, ECB Occasional Paper Series, No. 227.
- Dursun-de Neef, Özlem, Alexander Schandlbauer, and Colin Wittig. (2023), “Countercyclical Capital Buffers and Credit Supply: Evidence from the COVID-19 Crisis.” *Journal of Banking & Finance* 154: 106930.
- European Banking Authority (2014), “Guidelines – On the criteria to determine the conditions of application of Article 131(3) of Directive 2013/36/EU (CRD) in relation to the assessment of other systemically important institutions (O-SIIs)”, EBA/GL/2014/10.
- European Banking Authority (2020), “EBA Report on the Appropriate Methodology to Calibrate O-SII Buffer Rates”, December 22, 2020.
- European Banking Authority (2020a), “Guidelines – On the appropriate subsets of sectoral exposures to which competent or designated authorities may apply a systemic risk buffer in accordance with Article 133(5)(f) of Directive 2013/36/EU”, EBA/GL/2020/13.

European Banking Authority (2024a), “Stacking Orders and Capital Buffers – Reflections on Management Buffer Practices in the EU”, July 14, 2024.

European Banking Authority (2024b), “Report on Liquidity Measures Under Article 509(1) of the CRR”, EBA/REP/2024/26.

European Central Bank (2021), “Financial Stability Review”, May.

European Central Bank (2022), “ECB response to the European Commission’s call for advice on the review of the EU macroprudential framework, Annex : Analytical addendum underpinning the policy proposals”, March 2022.

European Central Bank (2023), “Financial Stability Review”, May.

European Central Bank (2023), “Financial Stability Review”, November.

European Central Bank (2024a), “Financial Stability Review”, May.

European Central Bank (2024b), “Financial Stability Review”, November.

European Central Bank and European Systemic Risk Board (2023), “Towards macroprudential frameworks for managing climate risk”, December 2023.

European Central Bank and European Systemic Risk Board (2025), “Using the countercyclical capital buffer to build resilience early in the cycle”, Joint ECB/ESRB report on the use of the positive neutral CCyB in the EEA, January 2025.

European Commission (2024), “Report from the Commission to the European Parliament and the Council on the macroprudential review for credit institutions, the systemic risks relating to Non-Bank Financial Intermediaries (NBFIs) and their interconnectedness with credit institutions, under Article 513 of Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and amending Regulation (EU) No 648/2012.”

European Systemic Risk Board (2016a), “Macroprudential policy beyond banking: an ESRB strategy paper”, July 2016.

European Systemic Risk Board (2016b), “Vulnerabilities in the EU residential real estate sector”, November 2016.

European Systemic Risk Board (2017), “Final Report on the use of structural macroprudential instruments in the EU”, December 2017.

European Systemic Risk Board (2019a), “Features of a macroprudential stance: initial considerations”, April 2019.

European Systemic Risk Board (2019b), “Methodologies for the assessment of real estate vulnerabilities and macroprudential policies: residential real estate”, September 2019.

European Systemic Risk Board (2021a), “Report of the Analytical Task Force on the overlap between capital buffers and minimum requirements”, December 2021.

European Systemic Risk Board (2021b), “Report of the Expert Group on Macroprudential Stance – Phase II”, December 2021.

European Systemic Risk Board (2023), “Issues note on policy options to address risks in corporate debt and real estate investment funds from a financial stability perspective”, September 2023.

European Systemic Risk Board (2024a), “A system-wide approach to macroprudential policy”, November 2024.

European Systemic Risk Board (2024b), “Improvements to the ESRB macroprudential stance framework”, January 2024.

European Systemic Risk Board (2024c), “EU Non-bank Financial Intermediation Risk Monitor 2024”, June 2024.

European Systemic Risk Board (2025), “Systemic liquidity risk: a monitoring framework”, February 2025.

Fasianos, Apostolos and Lyndon, Reamonn, (2021), “Do households with debt cut back their consumption more? New evidence from the United Kingdom”, *Bulletin of Economic Research*, Volume 73, Issue 3, pp. 737-760.

Herrera, Luis, Scalone, Valerio and Pirovano, Mara, (2024), “The importance of being positive: costs and benefits of a positive neutral rate for the countercyclical capital buffer”, *Macroprudential Bulletin* 24.

Giannoulakis, Stelios, Forletta, Marco, Gross, Marco and Tereanu, Eugen, (2023), “The effectiveness of borrower-based macroprudential policies: a crosscountry analysis using an integrated micro-macro simulation model”, ECB Working Paper Series, No. 2795.

High-Level Group on the ESRB Review (2024), “Building on a decade of success”, December 2024.

- Jensen, Svend, Hougaard and Sangill, Thomas. (2023), "The Systemic Risk Council in Denmark: Assessing Strengths and Weaknesses", *Journal of Financial Regulation*, Volume 9, Issue 2, October 2023, Pages 258–267.
- Jiménez, Gabriel, Steven Ongena, José-Luis Peydró, and Jesús Saurina. (2017), "Macroprudential Policy, Countercyclical Bank Capital Buffers, and Credit Supply: Evidence from the Spanish Dynamic Provisioning Experiments." *Journal of Political Economy* 125 (6): 2126–277.
- International Monetary Fund (2013), "Key Aspect of Macroprudential Policy", Policy Papers, June 10, 2013.
- International Monetary Fund (2014), "Staff Guidance Note on Macroprudential Policy", Policy Papers, November 6, 2014.
- International Monetary Fund (2018a), "Managing the Sovereign-Bank Nexus", Departmental Paper No. 2018/016.
- International Monetary Fund (2018b), "Romania: Financial Sector Assessment Program", Country Report No. 2018/160.
- International Monetary Fund (2023a), "Macroprudential Policy Effects – Evidence and Open Questions", Departmental Paper 2023/002.
- International Monetary Fund (2023), "Finland: Financial Sector Assessment Program Technical Note on Macroprudential Policy Framework and Tools", Country Report No. 2023/063.
- International Monetary Fund (2024), "Kingdom of the Netherlands-The Netherlands: Financial Sector Assessment Program- Technical Note on Macroprudential Policy Framework", Country Report No. 2024/171.
- Lang, Jan Hannes, and Dominik Menno. (2023), "The State-Dependent Impact of Changes in Bank Capital Requirements." ECB Working Paper 2828, European Central Bank, Brussels.
- Lang, J.H., Izzo, C., Fahr, S. and Ruzicka, J. (2019), "Anticipating the bust: a new cyclical systemic risk indicator to assess the likelihood and severity of financial crises", ECB Occasional Paper Series, 219.
- Marco Lo Duca, Mehdi Bartal, Edit Giedraitė, Peik Granlund, Niamh Hallissey, Pavol Jurča, Charalampos Kouratzoglou, Petra Lennartsdotter, Diana Lima, Mara Pirovano, Algirdas Prapiestis, Martin Saldias, Ibrahima Sangaré, Diogo Serra, Fatima Silva, Eugen Tereanu, Kristiina Tuomikoski, and Jukka Vauhkonen. (2023), "The more the merrier? Macroprudential instrument interactions and effective policy implementation", ECB Occasional Paper Series No 310 / March 2023.

Miettinen, P. and Nier, E. (forthcoming). Rethinking Macroprudential Capital Buffers. International Monetary Fund.

Millard, Stephen, Margarita Rubio, and Alexandra Varadi. 2021. "The Macroprudential Toolkit: Effectiveness and Interactions." Oxford Bulletin of Economics and Statistics, Volume 82, Issue 2, pp 335-384.

Sivec, Vasja, and Matjaž Volk. (2022), "Empirical Evidence on the Effectiveness of Capital Buffer Release." Banka Slovenije Working Paper 1/2022, Bank of Slovenia, Ljubljana.

Tereanu, E., Behn, M., Lang, J.H., Lo Duca, M. (2022), "The transmission and effectiveness of macroprudential policies for residential real estate", Macroprudential Bulletin, Article 19.