



PORTUGAL

FINANCIAL SECTOR ASSESSMENT PROGRAM

July 2026

TECHNICAL NOTE ON SYSTEMIC RISK MONITORING AND MACROPRUDENTIAL POLICY

This Technical Note on Systemic Risk Monitoring and Macroprudential Policy for the Portugal Financial Sector Assessment Program was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on July 8, 2026.

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SYSTEMIC RISK MONITORING AND 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 Portugal. 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>

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Glossary

AIFMD	Alternative Investment Fund Managers Directive
ASF	Insurance and Pension Funds Supervisory Authority
BBM	Borrower-Based Measure
BVAR	Bayesian Vector Autoregression
CBMs	Capital-Based Measures
CBR	Combined Buffer Requirement
CCoB	Capital Conservation Buffer
CCyB	Countercyclical Capital Buffer
CESEF	Commission of Supervision and Financial Stability
CET1	Common Equity Tier 1
CMVM	Securities Market Commission
CNSF	National Council of Financial Supervisors
COREP	EU Common Reporting Framework
CRE	Commercial Real Estate
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
DSGE	Dynamic Stochastic General Equilibrium
DSTI	Debt Service to Income
DTI	Debt-to-Income
EA	Euro Area
EBA	European Banking Authority
ECB	European Central Bank
ECB-SSM	European Central Bank – Single Supervisory Mechanism
EEA	European Economic Area
EMIR	European Market Infrastructure Regulation
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EU	European Union
FS	Financial Stability
FSR	Financial Stability Report
GDP	Gross Domestic Product
G-SII	Global Systemically Important Institutions
GaR	Growth-at-Risk
ICR	Interest Coverage Ratio
IRB	Internal Ratings-Based
LCR	Liquidity Coverage Ratio
LFCIFC	Legal Framework of Credit Institutions and Financial Companies
LGD	Loss Given Default
LTV	Loan-to-Value
MMFs	Money Market Funds

MoU	Memoranda of Understanding
NBFI	Non-Bank Financial Institutions
NFCs	Non-Financial Corporations
NII	Net Interest Income
NPL	Non-Performing Loans
NSFR	Net Stable Funding Ratio
O-SII	Other Systemically Important Institutions
OTC	Over-the-Counter
PD	Probability of default
PCN	Positive Cycle-Neutral (Rate)
RRE	Residential Real Estate
SCRIP	Sub-Commission for Risks and Prudential Policy
SSM	Single Supervisory Mechanism
sSyRB	Sectoral Systemic Risk Buffer
SFTR	Securities Financing Transactions Regulation
UCITS	Undertakings for Collective Investment in Transferable Securities

EXECUTIVE SUMMARY

Banco do Portugal (BdP), as the designated macroprudential authority in Portugal, has developed a full-fledged macroprudential toolkit. The toolkit has been progressively strengthened, most recently with the activation, in January 2026, of a countercyclical capital buffer (CCyB) set at a positive cycle-neutral (PCN) target rate of 0.75 percent—aligning Portugal more closely with EU-wide practice. Since 2023, the toolkit also includes a sectoral systemic risk buffer (sSyRB) targeting residential real estate (RRE) risks. Borrower-based measures, including LTV and DSTI limits, have been in place since 2018 as recommendations for banks. BdP has also enhanced its risk monitoring framework and macroprudential communication mechanisms in recent years.

Portugal's institutional framework for macroprudential policy is robust and largely aligned with best practices. BdP, along with the Securities Market Commission (CMVM) and the Insurance and Pension Funds Supervisory Authority (ASF) fulfill financial stability roles. The BdP Board, which meets weekly, makes macroprudential decisions based on staff recommendations and regularly reviews policy. While BdP has hard powers over macroprudential policy instruments that are harmonized in the EU, such as capital buffers and liquidity measures, it lacks powers to implement tools beyond the EU-harmonized toolkit, relying instead on recommendations and warnings. Compliance is high in the current risk-off environment but may weaken if banks' risk appetite rises or new lenders enter the market. Binding powers need to be granted by the legislator for BdP to enforce macroprudential instruments effectively.

Macroprudential coordination is effective at all levels. Within BdP, an internal committee discusses macroprudential matters and also addresses microprudential issues, economics, markets, resolution, statistics, and payments. Across agencies, the National Council of Financial Supervisors (CNSF) issues non-binding opinions on macroprudential actions. Members maintain a shared dashboard tracking high-level risks (e.g., geopolitics) and discuss their potential transmission and impact on the financial system. Externally, BdP actively participates in multiple ECB/ESRB working groups. While many formal consultations are mandated by domestic and EU processes, early informal discussions help prevent delays in policymaking.

BdP communicates macroprudential policy through several channels, including public outreach. It publishes an FSR, quarterly banking sector updates, and an annual report on the implementation and effects of macroprudential measures, alongside accessible non-technical communications such as a podcast, "90 Seconds of Financial Stability," and "Economics in a Picture," all with strong engagement. However, analysis is spread across different platforms, so BdP should create a centralized "macroprudential hub" on its website and review communications to streamline content and avoid overlaps.

BdP has excellent data, but powers to collect data for ongoing monitoring of emerging risks should be clarified. BdP obtains high-quality data from banks and the credit registry, with minimal gaps—such as on foreign subsidiaries' securities holdings. Although it has powers to collect data for

financial stability purposes, in practice these have only been used for limited ad hoc analyses, which is insufficient for monitoring new and emerging systemic risks. To continuously monitor such risks, BdP needs clear authority to conduct regular data collection.

BdP has developed an extensive suite of state-of-the-art models to support its financial stability analysis. The Financial Stability and Economics and Research Departments work closely and have developed models for emerging cyber, climate, and operational risks, drawing on a broad range of analytical techniques. BdP's solvency stress-testing model is used for regular system-wide assessments and incorporates ad hoc scenarios. A liquidity stress-testing framework has also been recently developed; further enhancements to this framework should be prioritized to ensure robust oversight of liquidity risks, particularly in capturing system-wide dynamics such as interbank interconnectedness and potential fire-sale behavior.

BdP employs a comprehensive toolkit for macroprudential policy in the banking system. BdP has powers over implementation of the EU-harmonized toolkit; it is also actively using non-harmonized instruments (e.g., borrower-based measures) but does not have hard powers to enforce these, applying them instead on a comply-or-explain basis (as noted above). The non-bank sector is small, and most subsectors are not growing. Macroprudential instruments for non-banks are under development at the EU level, and will be applied by the relevant authority.

After the 2020 pandemic, BdP shifted to building resilience earlier in the cycle. A PCN rate of 0.75 percent was recently introduced for the CCyB; though low compared to other countries, it totals about 1 percent of releasable capital when combined with the sSyRB. Increasing the CCyB or other releasable capital buffers would likely have limited costs, given banks' strong profitability. The rate is calibrated based on a 2023 adverse EBA scenario; FSAP sensitivity analysis shows that credit losses remain relatively stable to variations in mild adverse scenarios, suggesting that the current PCN rate may adequately guard against such shocks in the neutral cycle phase.

The strategy for the elevated part of the financial cycle, including the range of releasable capital and when to build it, should be further developed. The end-2024 policy statement on the PCN rate for the CCyB clearly outlines its calibration and the indicators used to determine aggregate risks but lacks guidance on capital build-up in the elevated-risk phase. Studies suggest that significantly more capital may be needed at cycle peaks, though this varies by country-specific factors. BdP should evaluate the releasable capital for the elevated-risk phase of the cycle and develop a strategy to ensure adequate resilience in time, particularly given ownership-related barriers to raising equity faced by many Portuguese banks.

Borrower-based measures (BBMs) have helped strengthen resilience to real estate risks, but rising house prices may weaken it; the toolkit could benefit from streamlining. BdP currently applies multiple BBMs, including three LTV limits, a DSTI limit (with three bank portfolio limits), three age-based maturity limits, regular payment requirements, and an average maturity limit. While multiple tools are needed to address various resilience aspects, the toolkit has grown overly complex. BdP should conduct a holistic review to streamline and simplify the measures, mindful of the need to ensure the system-wide resilience of banks and households.

Table 1. Portugal: Key FSAP Recommendations

	Timing ¹	Agency
Systemic Risk Monitoring and Macroprudential Policy		
Grant BdP binding powers to implement macroprudential policy instruments beyond those which exist in EU regulation. (¶114)	ST	MoF
Clarify BdP powers to collect data for ongoing monitoring of systemic risks and grant more powers where needed. (¶144)	MT	MoF
Further develop liquidity stress tests for macroprudential purposes, enhancing the modeling of systemwide interlinkages. (¶156)	ST	BdP
Enhance communication on macroprudential policy by launching a centralized webpage on the BdP website, collecting existing outputs together. (¶133)	ST	BdP
Review the breadth of external publications on macroprudential policy to streamline communications for efficiency. (¶132)	MT	BdP
Streamline and simplify the BBMs be while continuing to uphold their objectives of enhancing lending standards and strengthening household and financial sector resilience. (¶178)	ST	BdP
Complete the strategy for the releasable capital in the elevated environment, including determining the range of capital that is likely to be required and the strategy to build it. (¶190)	ST	BdP
Review the impact of government support measures for housing from a financial stability perspective. (Box 1)	MT	BdP
¹ I: Immediate (within 1 year); ST: Short Term (within 1-2 years); MT: Medium Term (within 3–5 years).		

INTRODUCTION¹

1. **This technical note provides a comprehensive assessment of the institutional framework, tools, and practices underpinning macroprudential oversight in Portugal.** Prepared by the IMF's Monetary and Capital Markets Department, the note sets out the analytical foundations for the FSAP's findings and recommendations, drawing on extensive meetings with the Portuguese authorities. Its scope reflects the central role of the Banco de Portugal (BdP) in macroprudential policy within the wider EU macroprudential architecture.
2. **A direct comparison of the findings of this FSAP and the previous FSAP for Portugal is neither meaningful nor informative, given the long-time lapse between the two.** The earlier FSAP was conducted in 2006 and preceded the global financial crisis and the establishment of the current Portuguese and EU macroprudential policy frameworks. As a result, this technical note takes the 2026 institutional and macrofinancial landscape as its baseline rather than assessing progress relative to 2006, when the macroprudential framework as we know it today did not yet exist.
3. **In the context of the FSAP, Portugal's macroprudential framework was assessed from several angles.** These include: (i) the institutional framework; (ii) the operational capacity to assess systemic risks now and in the future; and (iii) the adequacy of the current macroprudential settings based on the key risks and vulnerabilities in the financial system and the calibration of tools.

INSTITUTIONAL FRAMEWORK

4. **A robust institutional framework is essential for effective macroprudential policy implementation.** It must ensure a clear willingness to act and mitigate biases that cause inaction. The macroprudential authority should have a defined mandate, accountability, and communication channels to enhance legitimacy when addressing systemic risks. The framework should support the ability to act against evolving threats through a strong legal framework, comprehensive toolkit, timely data access, effective surveillance, and operational independence. Additionally, effective coordination and cooperation among domestic and international agencies in risk assessment and mitigation is crucial while preserving distinct policy functions.

A. Principle I: Willingness to Act

5. **The macroprudential framework should be designed to counter inaction bias.** Policymakers may hesitate to implement macroprudential measures due to concerns about short-term costs or pressures from political and industry stakeholders. It is essential to design the macroprudential framework in a way that encourages a proactive stance, enabling authorities to

¹ This technical note was prepared by Rhiannon Sowerbutts.

make difficult decisions and safeguard financial stability over the long term (IMF, 2014a). Key design elements include a clear mandate, strong involvement of the central bank, a well-defined objective, as well as transparency and accountability mechanisms (IMF, BIS, and FSB, 2016).

6. Three agencies are responsible for systemic risk oversight of the financial sector. These include BdP, the Securities Market Commission (CMVM), and the Insurance and Pension Funds Supervisory Authority (ASF). BdP has been a national macroprudential authority since 2013. It is also microprudential supervisor under the EU's Single Supervisory Mechanism (SSM) and national resolution authority under the Single Resolution Mechanism, as well as being responsible for conduct of regulation and supervision. The CMVM supervises and regulates securities markets, issuers, asset management companies, financial instruments, and other capital market participants, including auditors. The ASF supervises and regulates the insurance and pension funds sectors.

7. BdP is Portugal's designated macroprudential authority, overseeing the entire macroprudential process. Its oversight responsibilities encompass defining the overarching macroprudential strategy; identifying risks and taking actions to prevent, mitigate or reduce risks; and conducting ex-post monitoring. These are clearly defined and comprehensive (see Table 2).

Table 2. Portugal: BdP's Macroprudential Responsibilities	
Category	Tasks/Responsibilities
Strategy	- Defining the overall macroprudential policy strategy and reviewing it when necessary. - Coordinating macroprudential policy with EU-level authorities and relevant national bodies. - Participating in the development and operationalization of macroprudential policy at the EU level (e.g., ESRB, EBA, ECB-SSM).
Analysis	- Analyzing cyclical and structural developments in the Portuguese financial system and its counterparties (with a forward-looking perspective). - Developing methodologies and analytical infrastructures to support risk identification and assessment. - Identifying risks and vulnerabilities—endogenous and exogenous—including their origins, probability of materialization, and potential impact on the financial system and economy. - Analyzing potential side-effects of macroprudential policy on other policy domains (microprudential, monetary, resolution, macroeconomic) and vice-versa. - Carrying out impact studies (ex-ante and ex-post) on macroprudential instruments, assessing effectiveness and efficiency for different institutional sectors.
Implementation	- Implementing macroprudential policy measures to mitigate or reduce systemic risk and strengthen financial stability. - Communicate to public and parliament.

8. Decisions on policies are made by staff proposal and then approved by the BdP Board.

For EU-harmonized instruments, BdP must also seek the approval of the ECB, and for all instruments, the CNSF must be consulted.

9. Board meetings are fixed and most discussions are planned. The BdP Board of Directors is the sole decision-making body and formally approves the staff's proposals for macroprudential measures. It meets ordinarily at least once a week, and extraordinarily whenever convened by the Governor. For existent and EU-harmonized capital-based macroprudential measures, a yearly work plan is established. The plan sets dates for submission to the Board (for discussion and/or decision) and outlines the timing of anticipated decisions, preceded by meetings with the Board member responsible for financial stability.

10. For other measures there is no preapproved plan. The scheduling of discussions and approvals is the responsibility of the Board member overseeing the Financial Stability Department.

B. Principle II: Ability to Act

11. The macroprudential framework should grant the designated macroprudential authority sufficient powers to act. To ensure timely and effective action, the willingness to act should be backed by the necessary powers to act. These include information collection powers to assess evolving risks; rulemaking and calibration powers to be able to react to changing risks, and designation powers to ensure that macroprudential policies impact all relevant institutions. These powers vary in strength (IMF, 2013): "Hard" powers provide direct control to the macroprudential authority, allowing for prompt and decisive action; "semi-hard" powers enable the policymaker to issue formal recommendations, often accompanied by a "comply or explain" mechanism; and "soft" powers limit the policymaker to advisory opinions.

12. BdP holds hard powers over EU-harmonized instruments but lacks a defined regime for the non-harmonized instruments it has developed. A clear regime for the application of the EU-harmonized instruments is set out in the Legal Framework of Credit Institutions and Financial Companies (LFCIFC). The harmonized instruments consist of the CCoB, G-SII, and O-SII buffers; the sSyRB; the CCyB; and certain risk weights for RRE and commercial real estate (CRE) lending. Other instruments, including borrower-based measures, are left to national discretion. This leaves a gap in the Portuguese framework: implying that, importantly, BdP does not have binding powers for the borrower-based instruments that it has developed.

13. Despite the lack of binding powers, compliance with BdP's recommendations has so far been high, but compliance may turn more challenging in the future. Its Macroprudential Recommendation, which outlines the BBMs, a non-binding instrument without enforcement powers, functions as a comply-or-explain mechanism that banks largely consider something that they must comply with. However, banks currently face difficulties with meeting maturity limits (see section on BBMs for more details on this). Also, as new institutions enter the market, and competitive pressures increase, compliance may decrease—potentially undermining the effectiveness of macroprudential instruments. Non-harmonized instruments are likely to remain an important part of the framework:

especially for new risks. Given that these powers are most likely to be needed for new risks where the instruments are not yet well-developed internationally and authorities around the world are in a “learning” phase, it is likely to take time before a more harmonized framework can be designed and implemented. There are also likely to be significant country specific considerations, for example countries are likely to have to design very different instruments for climate change related risks.²

14. BdP should be given binding, hard powers over non-harmonized instruments. These should be used as a backstop, with BdP ideally using recommendations first as these are more flexible. But enforcement powers should be there as a backstop in the case of non-compliance or leakages. In Portugal either the parliament or the government may adopt specific legislation and define macroprudential instruments. There are two options to grant powers: (i) in broad terms, establishing general powers in which BdP has discretion to define the design and the conditions for their implementation; or (ii) in more specific terms. Given that these powers are most likely to be needed for new risks where the instruments are not yet well-developed internationally and the authorities are in a “learning” phase, the legislation should ideally grant powers in broad terms. However, the legislation should be clear and explicit that the broad powers granted to BdP specifically include—but are not limited to—BBMs and sectoral/specific exposure requirements on banks to address systemic risks.

C. Principle III: Effective Coordination and Cooperation

15. A number of bodies exist to ensure coordination at the national and international levels. These appear to be working well as a forum for information exchange and discussion of policies. While the need to consult both internationally and nationally could delay the process of macroprudential policy implementation, early coordination has precluded this from happening.

Coordination within BdP

16. Internal coordination within BdP is good and is based on multiple formal and informal collaborations. Internal commissions involved in discussing financial stability risks assessment and proposed macroprudential measures include:

- **Specialized Commission for Supervision and Financial Stability (CESEF)**—a consultative commission within BdP. It is composed of members of the Board (including the Governor and the Board member responsible for the Financial Stability Department), the heads of several departments, and any other staff member from a relevant department that can be invited to join the meeting. CESEF aims to support the Board of Directors and to promote a broad discussion of financial stability issues, prior to the adoption of certain decisions/measures, but it is also a forum to present and discuss proposals and analysis. The CESEF meets at least annually and additionally whenever a member requests a meeting on any financial stability topic.

² In contrast, prior to the Global Financial Crisis many different countries had experience with instruments such as LTV and DSTI limits, even though they had not explicitly been applied for macroprudential purposes.

- **Sub-commission for Risks and Prudential Policy (SCRIP)**—a substructure of CESEF, which coordinates the risk assessment exercises, in particular to achieve consistency between microprudential and macroprudential policies. SCRIP is composed of the Board member responsible for the Financial Stability Department and the Heads of the Financial Stability, Banking Prudential Supervision, Economics and Research, Markets, Banking Conduct Supervision, Statistics, and Resolution and Payments Systems Departments. The SCRIP meets at least twice a year.

17. Many of the models produced for policy analysis are collaborations between the financial stability department and other BdP departments. Integration is particularly strong with the economics and research, statistics, and microprudential supervision departments; there are multiple examples of cross-department collaborations (see section III on systemic risk monitoring). The Financial Stability Department takes part in the *Forum Monetário*—an internal platform for discussing monetary policy and topics that have direct and indirect relationships with that policy area and uses it to discuss monetary policy and financial stability interactions.

18. BdP is an integrated regulator with macroprudential, microprudential, resolution and conduct regulation mandates. Coordination with the conduct department has been key to monitoring compliance with macroprudential measures. For instance, when banks have innovated and introduced products potentially non-compliant with a BdP macroprudential recommendation, like payment holidays or slow repayments, the conduct department has consulted with the financial stability department, enabling BdP to leverage broader financial literacy communications to inform the public about BBMs (see ¶33).

National Coordination

19. The National Council of Financial Supervisors (CNSF) advises BdP on macroprudential matters. The CNSF was set up in 2000 to foster coordination across the three national financial supervisory authorities: BdP, the CMVM, and the ASF. It coordinates a large number of financial sector-related matters across Portugal, and its mandate was amended in 2013 to include macroprudential topics. It meets at least quarterly, but an extraordinary meeting can be convened at any time.

20. The CNSF serves as a coordination and information-exchange forum for the supervisory authorities while respecting their autonomy. It is not a legal entity. In its advisory role, the Council:

- Contributes to the identification, monitoring, and assessment of risks to the stability of the financial system.
- Reviews specific macroprudential policy proposals submitted by BdP aimed at mitigating systemic risks and strengthening financial stability, issuing non-binding opinions.

21. The CNSF has a predetermined set of members. Its permanent members comprise the BdP Governor, who chairs the Council; the member of the BdP Board responsible for prudential supervision; the Chairperson of the CMVM; and the Chairperson of the ASF. A representative of the Minister of Finance (MoF) and the member of the BdP Board responsible for financial stability also participate in the macroprudential sessions of the Council meetings as observers without voting rights.

22. The CNSF is well supported by a secretariat and a number of working and contact groups. The secretariat is composed of the Secretary of the CNSF (appointed by the CNSF members by consensus, for a two-year term, following a rotation principle) and staff members from ASF, BdP, and CMVM (in full or part time), providing technical and administrative support to CNSF and its other structures. The contact groups facilitate information exchange, while working groups handle specific tasks. There are several working and contact groups (over 15), but the designated macroprudential contact group, which weighs on the adoption of the CNSF's macroprudential opinions, is most relevant for macroprudential policy. In technical discussions, BdP presents its analyses, findings, and ex-ante studies in order to justify proposed measures and provides regular implementation updates. Notable consultations covered the preliminary discussions on the sSyRB and the change in the CCyB strategy for the neutral environment.

23. The working group on Risks and Financial Stability effectively facilitates information exchange and adopts a system-wide perspective. It meets quarterly and produces risk reports covering banking, financial markets, and insurance and pension funds. The group has put together a dashboard tracking four key high-level risk areas for financial stability: (i) macroeconomic and geopolitical environment; (ii) financial markets; (iii) sovereign financing conditions; and (iv) financing conditions for households and companies. Members openly discuss how these risks impact their respective sectors, often sharing differing views and sharing potential spillover issues.

International Coordination

24. Apart from EU coordination forums (Table 3), BdP sits on numerous working groups. In the working groups, members share on a regular basis updated analysis on relevant financial stability issues. BdP has commented that they have found the experiences of other authorities to be helpful when considering the impact of their macroprudential measures.

Table 3. Portugal: EU Coordination Forums for Macroprudential Policy

Institution/Actor	Role/Powers	Key Processes/Requirements
ECB (Top-up Powers)	May apply higher capital buffer requirements or stricter measures than those set by national designated authorities to address systemic risk ("top-up" powers).	National macroprudential authorities must notify the ECB before taking a final decision on applying macroprudential harmonized tools.

Table 3. Portugal: EU Coordination Forums for Macroprudential Policy (concluded)

ESRB (European Systemic Risk Board)	Responsible for macroprudential oversight and prevention/mitigation of systemic risk in the EU financial system.	- Issues opinions, warnings and recommendations under a <i>comply-or-explain</i> mechanism. - May issue recommendations on the reciprocity of macroprudential measures to strengthen their effectiveness and prevent cross-border leakages.
EBA (European Banking Authority)	- Assesses EU banking risks and vulnerabilities. - Promotes convergence in regulatory rules across Member States.	Issues guidelines and recommendations, also under a <i>comply-or-explain</i> procedure.
European Commission	Develops the EU legal framework and proposes legislation related to macroprudential policy.	Assesses notifications from Member States and issues opinions/authorizations before certain harmonized macroprudential measures are adopted.

25. The voluntary reciprocity framework at EU level has been used for the sSyRB. This has improved the effectiveness of the measure. The EU has a reciprocity framework which is set out in the ESRB Handbook on Operationalizing Macroprudential Policy in the Banking Sector and is complemented by the ECB framework for assessing cross-border spillover effects. When implementing its sSyRB, BdP requested the ESRB to recommend reciprocity of the measure due to Spanish banks being a significant part of the residential mortgage market. Reciprocity was granted, implying that these banks would also have to apply the sSyRB if they were using IRB models for RRE lending in Portugal. BdP also held meetings on a technical basis with Banco de España. Banco de España, Lietuvos Bankas, and the National Bank of Belgium decided to reciprocate the Portuguese measure.

D. Communication and Accountability

26. Communication is a key macroprudential tool, making policy more effective and enhancing accountability. Effective communication is essential for macroprudential policy because it helps ensure that the public, markets, and stakeholders understand both the policy objectives and the rationale behind specific measures. In the absence of “hard powers,” it is an important “soft power,” as clearly communicating risks can induce agents in the financial system to change their behaviors—reducing systemic risk. Accountability is important because macroprudential authorities are often unelected bodies exercising significant discretion over tools that can affect credit conditions, asset prices, and the broader macrofinancial environment. Strong communication practices help provide that accountability: by explaining decisions and publishing analysis and evidence, authorities can demonstrate that their actions are aligned with their mandate of maintaining financial stability.

27. BdP submits an annual report to parliament, which specifically includes details on its macroprudential policies. According to its statute, BdP is responsible to the national parliament and has to submit an annual report of its activities. This report includes a dedicated section on the implementation of macroprudential policy in Portugal, describing the main activities. The annual report is also presented to the parliament by the Governor in a specific hearing.

28. Information on macroprudential policy decisions is publicly disclosed on BdP's website. This is done both in Portuguese and English, and in the Official Bulletin—which is the permanent record of BdP's actions. Each time a measure is implemented, a press release is issued, explaining the reasons for the adoption of the instrument. There are also regular press conferences and podcasts.

29. BdP publishes a Financial Stability Report (FSR) and a quarterly banking system update. The FSR is clearly written and focuses on the key risks and how they might propagate through the financial system. The quarterly banking update is a newer product which is more data focused. Recent versions have also included information on household and corporate sector resilience. Both contain in-depth analysis—for example, the most recent quarterly banking update contains an in-depth box on developments in the mortgage market. In that sense, there seems to be some overlaps between the two products. While the FSR was typically published semiannually in the past few years, there was no FSR in H2 2025. BdP also produces an annual report of the banking system's exposures to climate change.

30. BdP also produces the annual report “Macroprudential measures in Portugal—progress report.” This is an high-quality publication explaining each measure's purpose, rationale, market impact, and compliance. It clearly distinguishes between structural or cyclical instruments and indicates whether BdP expects each capital element to be released during stress.

31. BdP has a number of communication products aimed at the general public, frequently covering financial stability and macroprudential policy. To promote financial literacy and information to a larger audience and the general public, BdP produces a regular podcast (“BdP Podcast”) and a shorter focused podcast, “90 seconds of financial stability”, where BdP experts answer technical questions—both attracting a broad audience, including banking professionals. Another product, “Economics in a picture,” features topic charts with brief explanations, each receiving over 400 page views and social media engagements via BdP's LinkedIn and Bluesky accounts. The communications department notes that these, sometimes including FSR charts, are often picked up by the broader media, increasing the FSR's impact beyond the original publication.

32. The quality of communication is very high, but given limited resources, BdP should streamline its communications to ensure efficiency. Producing external publications is resource intensive as it takes a lot of planning and time away from analysis; yet multiple publications allow tailored messaging for different audiences. BdP should therefore review and streamline its macroprudential publication suite to maintain impactful, distinct outputs without overextending staff resources.

33. Given its broad range of in-depth analyses, BdP should launch a “Macroprudential hub” on its website to centralize and enhance access to these resources. BdP’s varied analyses are now spread across multiple products, including the FSR, the economics bulletin, the quarterly update, and working papers. It is high-quality, useful information about key financial stability issues, BdP models, policy approaches, and macroprudential effects, but is scattered across multiple publications, making it hard to find. Given that this analysis is largely timeless and valuable to financial stakeholders and international authorities, BdP should consolidate it in one accessible, navigable place without replacing existing arrangements, but complementing them outside of conjunctural publications.

OPERATIONAL CAPACITY

34. The capacity to effectively assess systemic risks and model the impact of macroprudential tools is crucial for identifying and reducing systemic risks to the financial system. This needs adequate resources: both data and people with the right skill set, and forward-looking models for the financial system.

A. Resources

35. BdP’s Financial Stability Department is responsible for carrying out BdP’s financial stability, macroprudential, and regulatory policy functions. In particular, the Financial Stability Department is responsible for assessing systemic risks and implementing macroprudential policy. The divisions are small, with the largest two—Risks and Analysis Division and Regulatory Policy division comprising around 20 people each. The Macroprudential Policy Division has just over ten employees.

36. Internal mobility within BdP is low, with many staff in the financial stability unit having long tenures and building deep expertise. Despite this, staff numbers are below the headcount, with vacancies close to 10 percent. Staff turnover remains a significant challenge, driven by strong market demand for specialized technical skills. Staff often leave to work externally—either in the private sector or in other central banks and institutions in Europe. BdP has noted that vacant positions are difficult to fill, as the expertise needed is scarce in the labor market. The need to examine new systemic risks, such as climate change and cyber risks, has exacerbated this issue.

B. Data Access

37. BdP has good access to diverse data sets (Table 4). Banks’s reporting generally follows EU standards, except for a data form on the funding and capital plans implemented just before the Economic and Financial Adjustment Program, which both banks and BdP find beneficial. Collaboration with other authorities, such as obtaining firms’ annual financial statements and monthly sales data from the tax authority, has been valuable. Most firms’ data sources are mergeable, with confidential information anonymized when needed for analysis.

Table 4. Portugal: Key Data Sources Accessible to BdP

Data Source	Description	Type of Information Provided
Central Credit Register (CCR)	Managed by Banco de Portugal; monthly reporting by banks of all credit contracts.	Credit exposures, credit type (households & NFCs), loan amounts, detailed credit characteristics.
Securities Holdings Statistics (SHS)	Information on securities held by resident sectors and banking groups.	Securities holdings at individual and group level.
Centralized Securities Database (CSDB)	Data on securities issued in Portugal and worldwide.	Instruments, issuers, prices, ratings for debt, equity, investment fund shares.
Central Balance Sheet Harmonized Panel (CBHP)	Dataset on economic & financial characteristics of Portuguese NFCs.	Firm-level balance sheet and financial information.
In-house Credit Assessment System (SIAC)	Developed by Banco de Portugal for ECB monetary policy purposes.	Firm-level probability of default (PDs).
Household Finance and Consumption Survey (HFCS) Microdata	Survey data on Portuguese households.	Household assets, liabilities, income, consumption, savings, employment status.

Data Gaps and Mitigation Measures Taken by the Authorities

38. While data gaps exist, the authorities have a number of strategies in place to mitigate them (Table 5). While these may not be material now, they could turn considerable if emerging risks, NBFIs and foreign subsidiaries' role in the financial system grow. Some of the data issues appear to be more operational difficulties or transitional as institutions adapt to new reporting templates.

Table 5. Portugal: Macroprudential Data Gaps and Limitations¹

Area	Data Gaps/Limitations	Implications	Mitigation/Plans
Foreign Subsidiaries' Securities Holdings	Limited access to granular data on foreign subsidiaries; reliant on ECB SHS data with restricted access and delays.	Hinders forward-looking analysis (e.g., interest rate risk on securities portfolios).	Increase number of staff with SHS access; establish protocol with Spanish authorities for timely data.
Cyber Risk Transmission Analysis	Insufficient data on ICT dependencies from the non-bank sector; ad-hoc data collection only.	Limits ability to assess systemic cyber risk transmission channels.	Expectation of more harmonized data from non-bank financial sectors through DORA; continued exercises via Resolution Department.
Non-Bank Financial Institutions (NBFIs)	Lack of micro-level supervisory data (AIFMD, UCITS, MMFR, EMIR, SFTR); no direct access to granular insurer/pension fund data.	Weak visibility on leverage, exposures, solvency, interconnectedness.	Use aggregated Statistics Department data; participate in CNSF joint analysis.

Table 5. Portugal: Macroprudential Data Gaps and Limitations (concluded)

Non-Financial Corporations (NFCs)	No bank-firm level data on corporate deposits; lack of micro-level climate data (Scope 1–3 emissions).	Limits analysis of liquidity risks and precise climate risk assessments.	Regulatory developments expected; current reliance on sector-level emission averages.
Household Sector (Income, Wealth, Climate & Risk Data)	Restricted access to energy efficiency certificates (ADENE); limited natural disaster insurance data; inability to link credit data with timely income/wealth data.	Reduces ability to assess vulnerability at borrower level and understand distributional risks.	Desire for more integrated borrower-level datasets; reliance on surveys (HFCS).
Systemic Risk Identification (Financial Innovation & Digitalization)	Data lags and gaps in fast-changing areas (digitalization, AI, market innovations).	Slower identification of emerging systemic risks.	Banco de Portugal expanding analytical tools, micro-data use, and coordination with national/EU authorities.

¹ Note: this table is from BdP's perspective. Other institutions in Portugal may have access but are unable to fully share the data.

39. For banks, the data gaps are related to securities holding of foreign subsidiaries and newer risks such as climate and cyber, where the data is not yet fully incorporated into regular reporting. The authorities have also indicated that while the data might exist, data access platforms may have limitations (e.g., Anacredit), and that new FINREP and COREP requirements are typically associated with delays in banks' accurate, consistent reporting.

40. For securities holdings, data for foreign subsidiaries must be obtained from ECB's SHS database. Access is currently restricted to a small number of staff and subject to delays. Plans to address this include: (i) expanding the number of staff with direct SHS access; and/or (ii) establishing a protocol with the Spanish authorities to obtain timely data, since the most significant foreign subsidiaries in Portugal have their parent companies located in Spain. An ad-hoc cyber exercise by BdP's Resolution Department required banks to submit detailed information about their internal and external relationships with various ICT providers.

41. For non-banks, there are some data gaps, but these are partially mitigated by joint analysis within the CNSF working group. BdP does not have direct access to information collected under regulatory frameworks, such as the Alternative Investment Fund Managers Directive (AIFMD), Undertakings for Collective Investment in Transferable Securities (UCITS) Directive, and ESMA's Money Market Funds Regulation. Granular data on insurers and pension funds covering assets, liabilities, and solvency are collected by national authorities and shared with EU regulators, but not accessible to BdP. BdP also lacks access to data collected under the European Market Infrastructure Regulation (EMIR) and the Securities Financing Transactions Regulation (SFTR), which could be valuable for assessing synthetic leverage of parts of the NBFIs sector. To mitigate these gaps, BdP relies on aggregated data from the Statistics Department and participates in joint analysis within the CNSF risk analysis working group. Although this sector is small and not systemically important, and collaboration within CNSF is strong, data sharing—even if limited to specific purposes—would be

valuable. A bilateral protocol between BdP and CMVM is being formalized for regular information exchange on UCITS and AIFMD, based on their identified data needs. Information related to EMIR and SFTR may also be exchanged under the same protocol.

42. BdP has broad data collection powers to fulfil its responsibilities. Its statute includes a general provision granting BdP powers to require any public or private entity to provide information deemed necessary for its responsibilities. This provision has been used by BdP to collect targeted information for monitoring compliance with macroprudential recommendations. The statute also contains specific provisions for collecting data from the credit registry.

43. Data collection powers should be clarified and strengthened for macroprudential purposes, particularly if regular reporting is required. To date, BdP has used these powers only for limited, ad hoc analyses. While one-off data collections are useful, effective risk monitoring and systemic risk assessment require ongoing monitoring. This is crucial for new and emerging risks such as climate change, cyber, and crypto, where data are not yet standardized. Data gaps exist, such as missing firm-level emissions data for monitoring climate change exposures and restricted access to household energy efficiency certificates managed by Agência Nacional de Energia (ADENE) due to data protection concerns. Granular data on natural disaster insurance coverage at the dwelling or company level also remains limited.

44. BdP should be given clarity on the powers to request ongoing information or data for macroprudential purposes and granted more powers where needed.

SYSTEMIC RISK MONITORING: MODELS AND INDICATORS

45. BdP employs a large suite of analytical models across multiple fields and techniques. Despite the small size of BdP's team responsible for these, their toolkit includes network analysis and quantile regressions for "at risk" metrics for key indicators, with a machine learning model for house price analysis and DSGE models for policy analysis currently being developed. This demonstrates a strong commitment to diverse approaches and policy grounded in analysis. Details of these models follow in the sections below.

46. These models are deeply integrated into policy analysis and often presented in FSRs. For example, the composite systemic risk indicator is used quarterly to assess the position in the cycle and serves as a key input for the CCyB. In addition, three of the house price valuation models described below have been featured in the FSR.

A. Housing and Households

47. BdP has several models for assessing risks from housing markets and real estate market overvaluation (Table 6). To model downside risks to house prices growth, a house price-at-risk model using quantile regression combined with local projections was also developed.

Table 6. Portugal: Selection of BdP Real Estate Market Models and Related Publications

Study/Publication	Focus	Methods/Tools Used	Key Insights
FSR December 2019—Special Feature	Assessment of RRE valuations.	• Price-to-income, price-to-rent, trend deviation. • Error-correction model. • Inverted demand equation. • Quantile regression.	Provides a multi-method evaluation of house-price misalignment; results updated regularly in FSRs.
FSR May 2024—Box 1	Housing Search Index using Google Trends.	• Google Trends search-intensity modeling.	Search behavior may act as a leading short-term indicator of house-price changes.
FSR November 2024—Box 2	Determinants of regional house-price dynamics.	• Municipality-level econometrics.	Confirms known drivers: unemployment, interest rates, population dynamics, construction activity.
Cascão & Neugebauer (2025)	Machine-learning assessment of price determinants.	• Gradient tree boosting. • Quantile regression.	ML methods outperform alternatives; prediction intervals enhance uncertainty assessment.

48. The BdP has recently developed a model to estimate household distress from various shocks. Using data from the Household Finance and Consumption Survey (HFCS), which provides household-level microdata on assets, debt, and consumption, the model assesses distress both in the aggregate and across income quintiles. It considers a multi-year adverse scenario and compares it to baseline scenario findings. This allows BdP to perform sensitivity analyses to specific macrofinancial shocks such as income, interest rates, real estate prices, liquid assets, inflation, and unemployment. This model is also used to assess banks' exposure to vulnerable households and potential losses from these borrowers.

B. Non-financial Corporates

49. BdP has a model for evaluating NFCs' financial soundness in the short to medium term using microdata.³ The model projects firms' balance sheets, income statements, and cash flow statements, assessing the impact of macro scenarios, with variation by firm size and sector. It has been applied to numerous scenarios such as the impact of the pandemic, the 2022 interest rate hike, and the vulnerability of CRE firms. These analyses have been published in the BdP's FSRs.

³ The original model was based on Marques, C., Augusto, F., and Martinho, R. (2022). "[Modeling the Financial Situation of Portuguese Firms Using Micro-data: A Simulation for the COVID-19 Pandemic.](#)" Occasional Papers, No. 03, Banco de Portugal, April 2022.

C. Banking Sector

Solvency Stress Test

50. BdP utilizes a top-down model to conduct solvency stress tests within the banking system. Developed by the Financial Stability Department in collaboration with several other departments, the model incorporates risks discussed among the Financial Stability, Resolution, Banking Prudential Supervision, Economics and Research, and Markets Departments. The baseline scenario comes from the quarterly projection of the Economics and Research Department, which also provides the adverse scenarios. Bank-specific information is provided by the Banking Prudential Supervision Department.

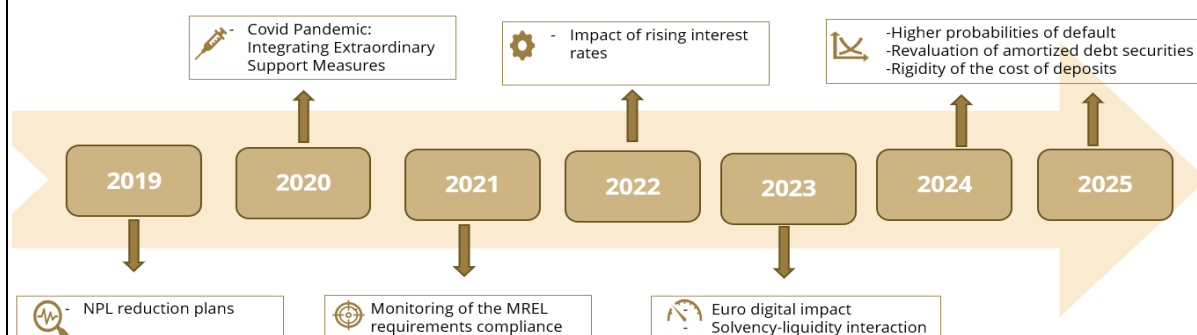
51. Banks' funding and capital plans are key inputs for the forward-looking components of the model. A dedicated data template was implemented by BdP just before the Economic and Financial Adjustment Program and is now produced once a year. While banks have stated they find the overall reporting burden high, they find this template useful as a management tool for their own planning. Given its shared value, this reporting should be maintained even if other reporting requirements are streamlined.

52. The main transmission mechanisms are from the macroeconomy to firm and household probabilities of default (PD) and to interest rates on loans and deposits. Interest rates affect credit volumes and non-interest income. There is no modeled second-round transmission from the corporate sector to the real economy as a result of reduced bank lending. BdP intends to address this area, which should be prioritized given the large share of NFC loans in banks' portfolios.⁴ BdP also plans to enhance the modeling of net interest income (NII) to reflect recent diversification and change in interest rate structures, notably the rise of "mixed" rate loans (with rates typically fixed for up to five years and then variable)—an important upgrade given NII's significance for bank profitability under stress.

53. This model is regularly used for BdP analysis, including assessing the impact of various timely issues (Figure 1). Its results are extensively discussed internally and used to identify key risks and messages for the FSR, though the model's results are not publicly disclosed. Forward-looking stress tests and banks' ability to manage a stress can serve as useful policy tools, providing market confidence. However, for Portugal's largest banks they are already subject to public stress tests undertaken by the EBA. Publishing this model and its results externally is likely to be of limited marginal benefit, given the public nature of the EBA stress tests, and may be counterproductive if it is confusing to market participants.

⁴ See the 2026 Portugal FSAP Technical Note on Systemic Risk, including stress testing.

Figure 1. Portugal: Use of Analysis of BdP's Solvency Stress Test Model for Analysis of Timely Topics



Source: Banco de Portugal.

Liquidity Stress Test

54. BdP employs several liquidity models to assess key liquidity shock resilience (Table 7).

Three different models cover the LCR, the NSFR, and cash flows and are used for standard liquidity analysis; as an input into understanding banks' business models and liquidity challenges; and in the SREP process. The tests summarized in the table below cover nearly the entire banking sector. Additionally, BdP conducts ad-hoc sensitivity analyses on selected emerging liquidity-related topics outside the stress testing framework, such as the introduction of the digital euro.

Table 7. Portugal: Overview of the BdP Liquidity Risk Models

Stress Test	Objective	Sources of Information	Scenarios/Parameters	Outputs	Threshold/Benchmark
NSFR-based Stress Test	Assess banks' resilience to long-term funding risks, including reliance on unstable short-term funding and maturity transformation.	NSFR templates (C 81.00 & C 84.00)	Migration rates: 50% from 6m–1y → <6m. 35% from ≥1y → 6m–1y. 15% from ≥1y → <6m.	Stressed NSFR	100% regulatory minimum
Cash-flow-based Stress Test	Assess banks' ability to manage adverse liquidity shocks without additional funding over 12 months.	ALMM maturity ladder templates (COREP 66.00)	4 scenarios (roll-off rates & haircuts). 4 horizons: 5 days, 4 weeks, 3 months, 12 months.	- Stressed net funding/contractual gap (cumulative inflows—outflows). - Counterbalancing capacity (CBC—cumulative liquid assets).	CBC after net funding gap > 0

Table 7. Portugal: Overview of the BdP Liquidity Risk Models (concluded)

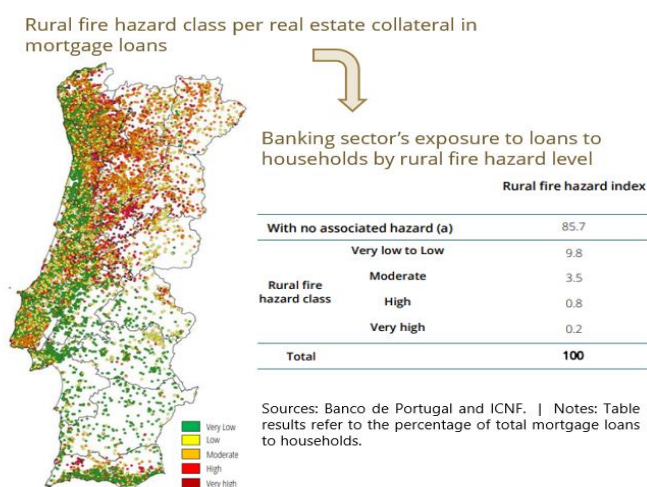
LCR-based Stress Test	Measure banks' capacity to meet 30-day obligations under adverse liquidity shocks.	COREP LCR templates (C 72.00 / C 73.00 / C 74.00 / C 76.00)	6 scenarios (roll-off rates & haircuts)	Stressed LCR per scenario	100% regulatory minimum
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55. These stresses apply simultaneously to all banks but currently lack interbank interactions and other features to enhance the models' macroprudential perspective. BdP possesses several models that support such integration but are not yet incorporated into the tests. Priority should be given to developing these interbank interactions and scenario analyses that capture feedback loops and interactions, with a focus on large short-term liquidity and funding shocks—the critical period for designing policy interventions during severe liquidity stress.

56. BdP should enhance its toolkit for modeling short-term liquidity stresses at the system-wide level. The focus should be on embedding common asset sales and interbank linkages.

D. Emerging Risks

57. The emergence of new risk types requires use of new techniques and work with a wider range of institutions, given their non-traditional and complex nature and potential to become systemic. BdP has been able to produce analyses based on new techniques despite limited resourcing. For example, the analysis of climate change risk in BdP's Annual Report on the Banking Sector to Climate Risk (Figure 2) requires spatial modeling techniques and an understanding of the keyways in which climate change risk in Portugal is likely to affect the financial system. In addition, analysis of the systemic cyber risks has involved complex network mapping and development of new models and approaches to cover operational risks.

Figure 2. Portugal: BdP's Use of New Techniques in Macroprudential Analysis

Source: Banco de Portugal.

58. Collaboration within BdP and with external stakeholders has been essential for enabling this analysis. BdP staff recognized the need to rapidly develop expertise, made possible through close collaboration across BdP departments and with external partners. For example, they applied the ESRB framework in the cyber resilience exercise to address systemic risk aspects, drew on the ECB's methodology for the cyber risk test, and worked with the supervision team on operational arrangements and information on key service providers. In climate risk analysis, BdP adapted the NGFS climate scenarios and leveraged data from established private providers on physical and transition risk exposures. While some data gaps remain, these are gradually narrowing. For example, for climate change-related physical risks, BdP has expanded internal data sources and now considers firms' local units and real estate collateral locations in its analysis.

59. Climate change is recognized as a systemic risk, and BdP has developed a strategy for considering both physical and transition risks. The BdP's May 2025 FSR includes a special feature titled "A macroprudential approach to systemic climate-related risk," which outlines the high-level strategy for considering climate change-related systemic risks.⁵ Analysis of key risks is published annually in the "Annual Report on the Banking Sector's Exposure to Climate Risk," which also covers regulatory and supervisory initiatives. This reporting is mandated by the Climate Framework Law.

60. In 2024, BdP conducted an operational cyber resilience test to evaluate how institutions recover from a successful cyber incident. The exercise assessed the institutions' vulnerability and their capacity to respond to a severe incident. Each institution completed a questionnaire covering the incident's impact, the response and recovery measures, as well as second-round effects and coordination with other institutions and authorities. Questionnaire modules addressing systemic impact specifically focused on common reliance on third-party service providers, sector-wide coordination, and economic impact assuming that multiple institutions were affected.

TOOLKIT: USAGE AND APPLICATIONS

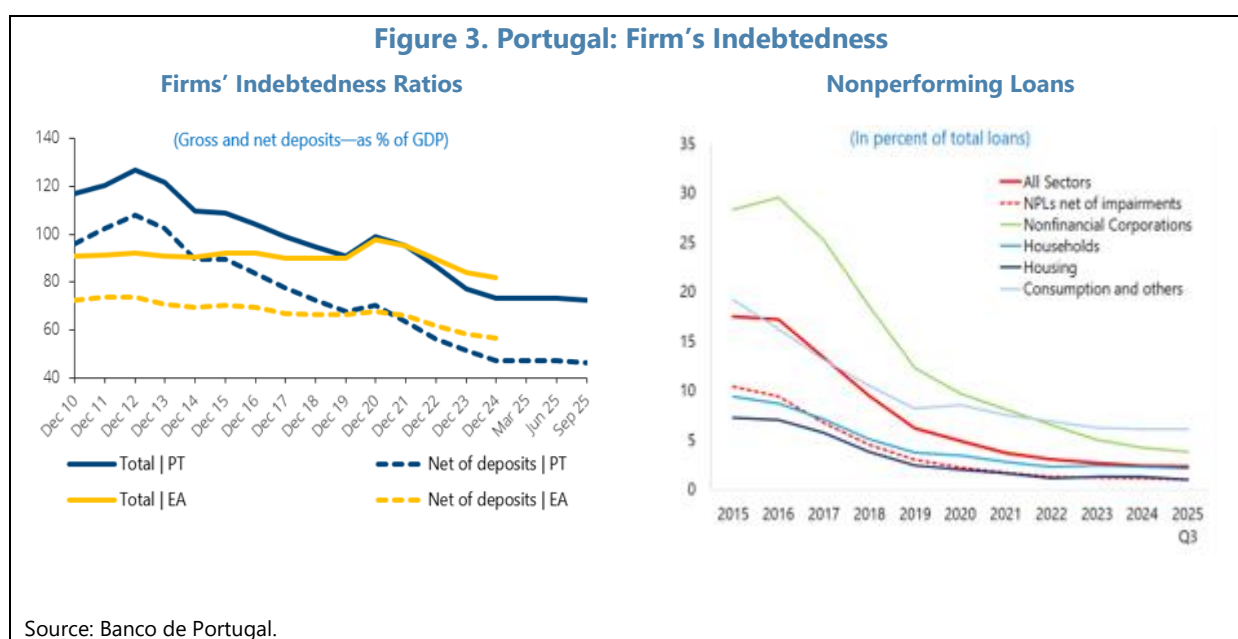
A. Context and Key Risks for the Portuguese Financial Sector

61. Portugal's financial system is bank dominated and has contracted markedly in recent years. Banking sector assets have declined to 161 percent at end-September 2025 from a peak of 293 percent of GDP at end-2012. This reflects a concerted effort by banks to address problem assets, focus on bolstering capitalization, and shift toward more stable funding sources to enable balance-sheet clean-up after the European debt crisis. As a result, loans to customers have declined to 90 percent of GDP at end-September 2025 from 182 percent at end-2012.

⁵ See [Banco de Portugal, 2025. "Financial Stability Report," May 2025.](#)

NFCs

62. NFCs are in a strong position, with low debt levels, high cash positions, and low insolvency rates. In Q3 2025, corporate profitability—measured by the ratio of operating profitability (EBITDA) to total assets—was 9.2 percent year-on-year, maintaining historically high levels. Corporates mainly rely on bank financing; the corporate bond market is small with capitalization of approximately €128.5 billion, with most (about €80 billion) attributable to financial corporations. Corporate debt is significantly lower than pre-crisis levels and has remained below the EA average since 2021. Corporates are also holding substantial cash balances. Factors contributing to this increased liquidity include limited investment opportunities, precautionary behavior following recent shocks, and delayed investment decisions amid high global uncertainty. Non-performing loans (NPLs) remain low and did not worsen during the pandemic (Figure 3).

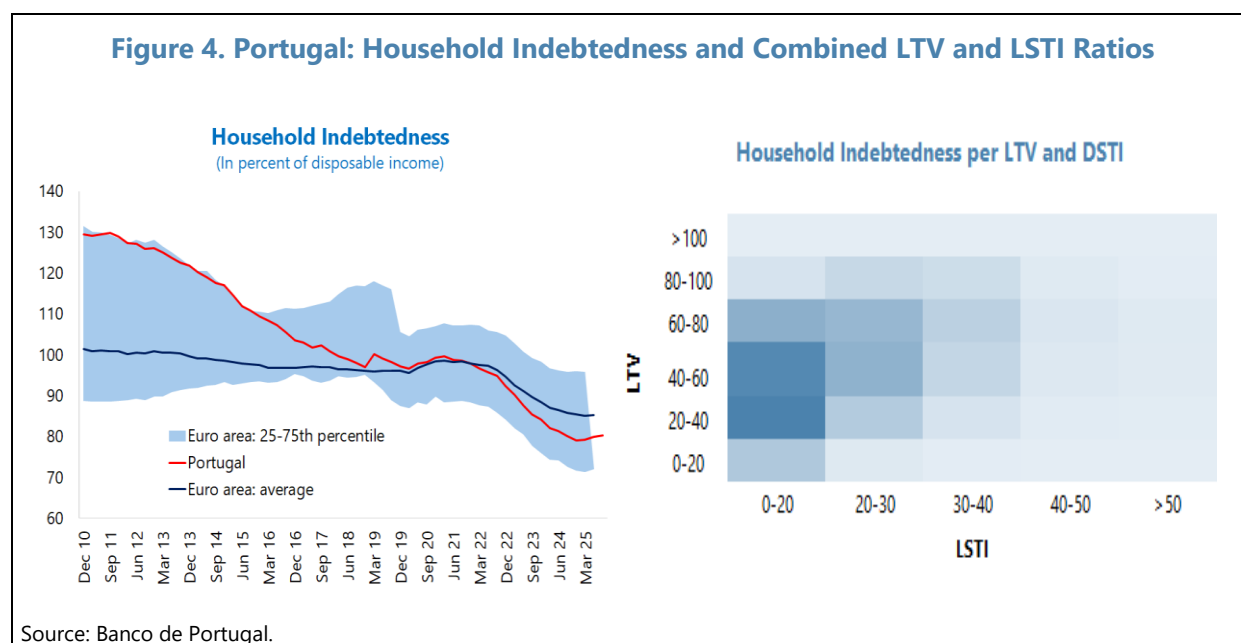


Commercial Real Estate (CRE)

63. Unlike in many advanced economies, CRE does not pose a major risk to Portugal's financial system. Over the past decade, cumulative growth in CRE prices in Portugal has been modest and significantly lower than in other countries. Following the pandemic, global CRE prices slowed in response to reduced demand and the rise of remote working. While CRE prices in the euro area (EA) decreased by 8.2 percent (after 1.5 percent growth in 2022), prices in Portugal have remained broadly unchanged, supported by supply shortages and strong demand, including from international investors.

Housing and Households

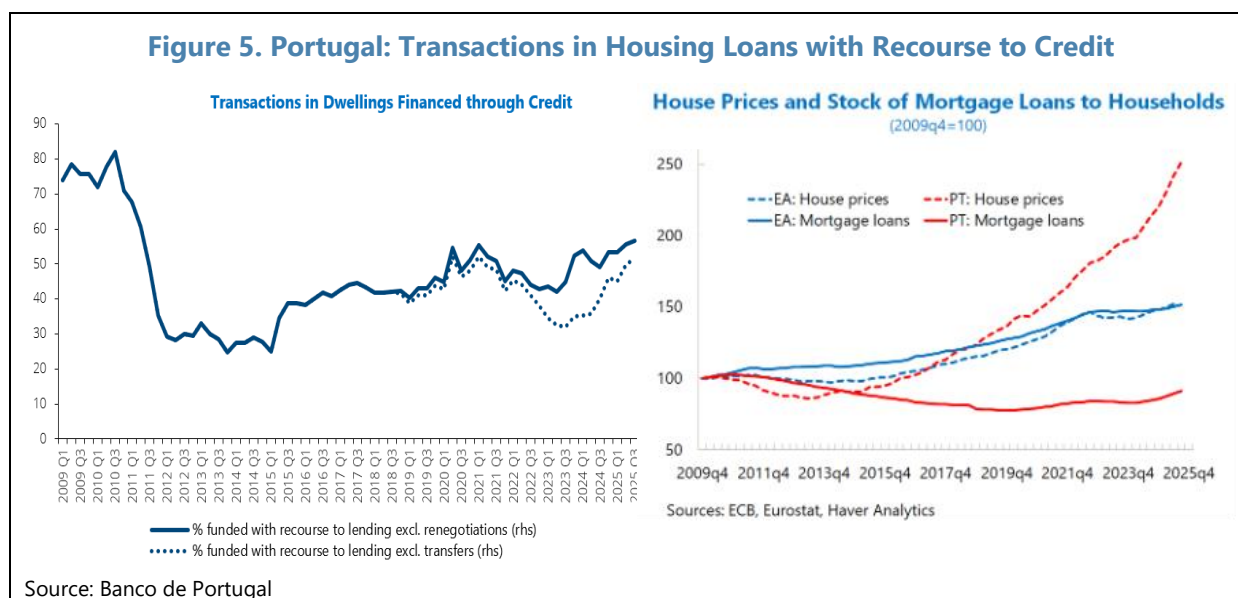
64. Households have substantially deleveraged since the European debt crisis. Household disposable income has risen, while indebtedness relative to GDP has declined markedly since 2021. As a result, household indebtedness as a share of disposable income has remained below the euro-area average since 2021 (Figure 4). Nominal household credit bottomed out in 2017 and has only recently started rising. The share of vulnerable borrowers with high LSTI and LTV ratios is small (Figure 4).



65. There are signs that the deleveraging cycle is reversing, with household indebtedness rising. Growth in house and other household lending has accelerated markedly—up 8.9 percent in 2025—supported by stronger demand, government housing support, and lower policy rates. Some of this growth reflects buyers previously delaying house purchases in anticipation of the government support measures. Household indebtedness increased to 56 percent of GDP by end-September 2025, up from its low point at end-2024. Despite a shift to fixed or “mixed” rates (fixed for up to five years and then variable) in recent years, about 60 percent of outstanding mortgage loans remain indexed to EURIBOR, leaving households exposed to interest rate fluctuations.

66. House prices have risen sharply over the past decade, driven by supply shortages, foreign demand, and government initiatives. House prices increased 18 percent in the year to end-September 2025 and have climbed 169 percent since 2015, compared to an EA average of 55 percent. Credit growth has played a limited role in this increase, with about half of house purchases made without credit (Figure 5). However, for households that do finance purchases with credit, indebtedness levels increase accordingly. Banks are significantly exposed to the housing market, as loans for RRE account for nearly half of their loan portfolio. BdP should continue to closely monitor

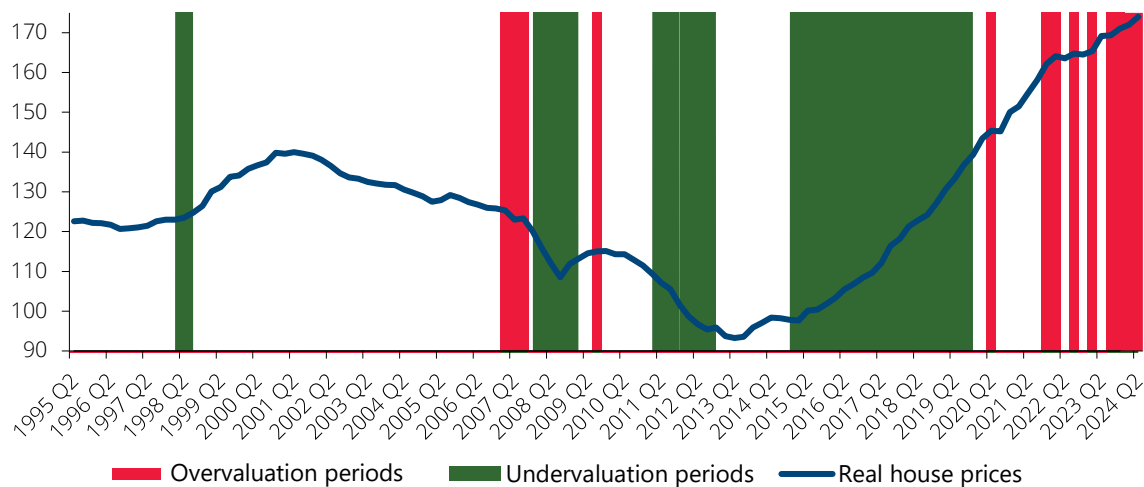
household indebtedness and take appropriate actions. While BBMs are unlikely to significantly cool the housing market given the limited role of credit in total house purchase transactions, they can strengthen household resilience and help reduce procyclicality in the housing market.



67. House prices are now considerably overvalued by some metrics and have risen much faster than incomes, but structural reasons suggest they are unlikely to fall substantially. BdP's house price valuation models show that house prices have been overvalued for several quarters (Figure 6). Similarly, the IMF's FSAP analysis identified persistent deviations of house prices from levels determined by long-term income and demographic trends.⁶ Structural challenges, especially supply shortages related to barriers to residential construction, make a short-term price correction unlikely (Figure 7). While other barriers—such as insufficient demand, labor shortages, and interest rates—fluctuate with the business cycle, the challenge of obtaining building permits is more structural and the issue is determined at the municipal level. Although efforts were made in 2024 to simplify the permitting process, the impact has been limited.

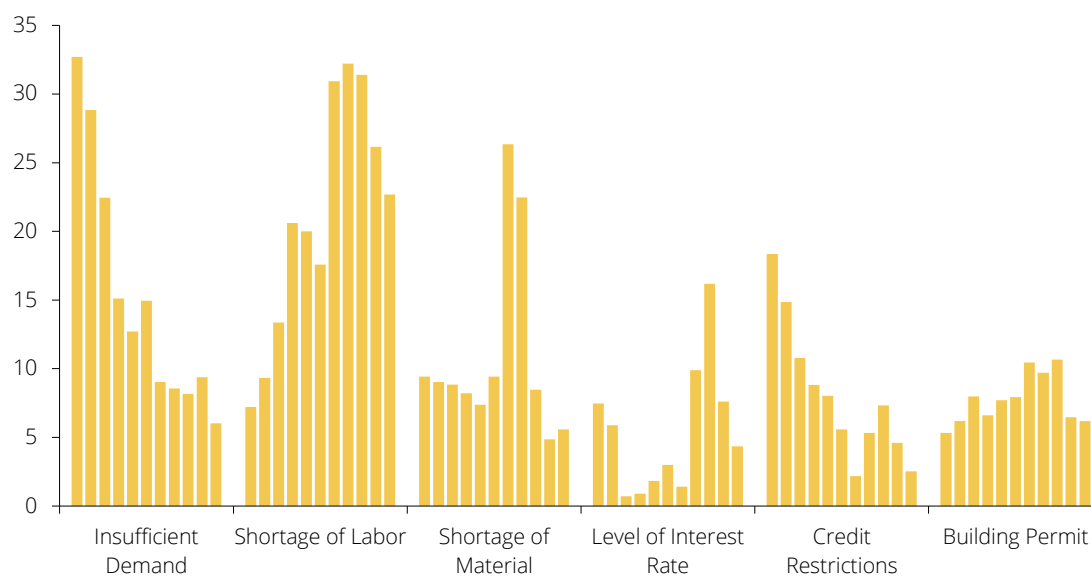
⁶ This is covered in the FSAP's Technical Note on Stress Testing.

Figure 6. Portugal: House Price



Source: Banco de Portugal.

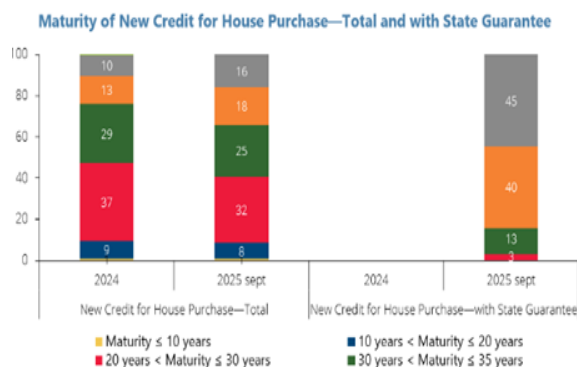
Figure 7. Portugal: Obstacles to Housing Construction



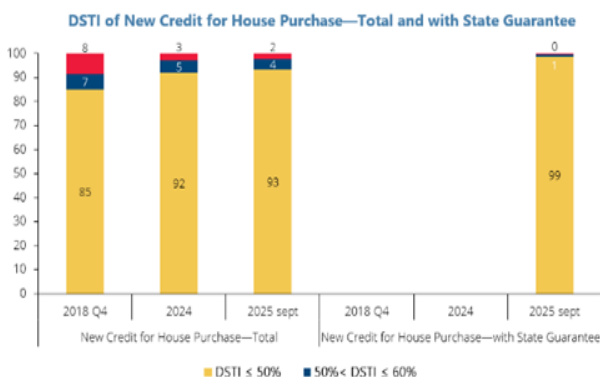
Source: Banco de Portugal.

Box 1. Portugal: The Impact of the Housing Guarantee Scheme

The government guarantee scheme for house purchases by individuals under 35 has accounted for a significant new lending. Introduced in January 2025 (with a single contract recorded in December 2024), the scheme guarantees 15 percent of the house purchase price, effectively covering the deposit for primary residence buyers under the age of 35. During the first half of 2025, 39 percent of the housing credit was granted to borrowers under 35, up from 30 percent in 2024. In the first nine months of 2025, over 17,000 credit agreements valued at €3.4 billion were made under the scheme. These loans represented 23 percent of the total number of agreements and 26 percent of the total credit amount for primary residence purchases. The scheme's impact has been most notable in Lisbon and Porto. The average loan amount under the scheme steadily increased throughout 2025, reaching €205,000 by September, higher than the €184,000 for non-guaranteed loans.



Source: Banco de Portugal.

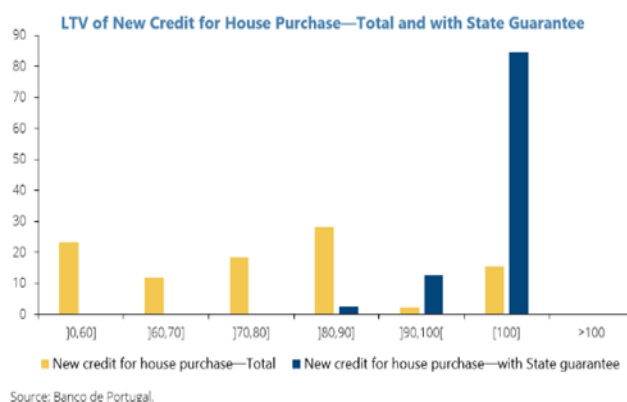


Source: Banco de Portugal.

The make-up of banks' lending portfolios has substantially changed as a result. LTV ratios have increased markedly and loan maturities have lengthened; DSTI are higher overall, but stressed DSTI are lower (see charts). The higher LTV ratios are mainly due to the government topping up loans to cover the residual value.

The direct risks are fiscal, there are still substantial indirect risks to financial stability, especially in the long term, if households leverage increases. Schemes that reduce downpayment requirements can contribute to higher household leverage and amplify the procyclicality of housing markets. However, this may need to be weighed against the limited range of savings options in Portugal, where often serves as a key savings vehicle. Structural frictions in the rental market mean that it is often cheaper, even in the higher interest rate environment, to purchase housing than to rent;

meaning that house purchase can increase household resilience if the alternative is renting. But this can also negatively affect households who are excluded from the market because of high prices but must pay rent—leading to higher use of consumer credit. The current statistics suggest that the guarantees are being taken more by people in the third and fourth quintile of the income distribution. There is an important consideration that long-term housing purchase may entice people to stay in Portugal, raising productivity.

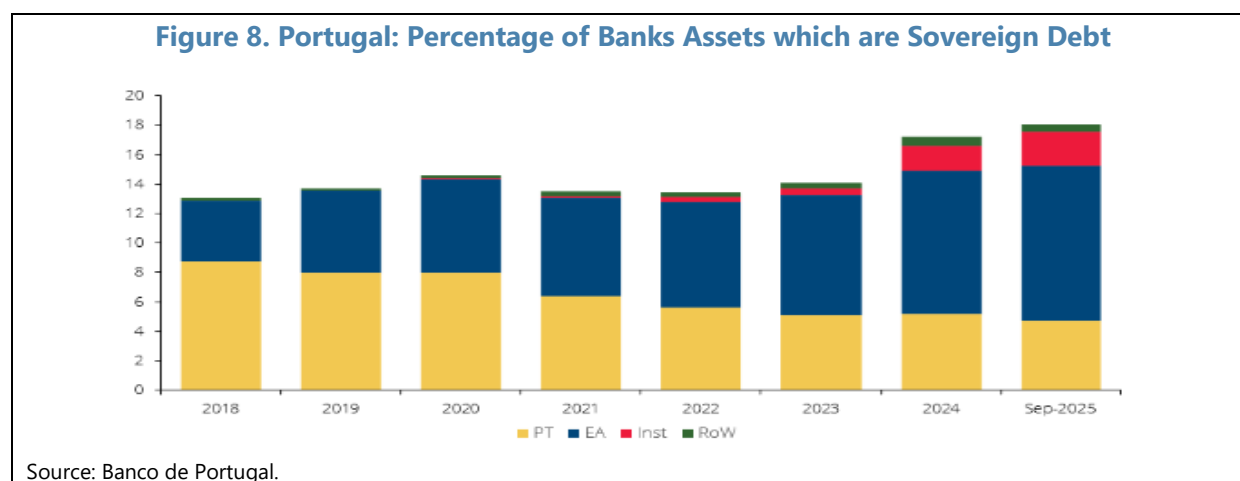


Source: Banco de Portugal.

BdP should conduct a study to consider the long-term system-wide impacts of the government measures on financial stability. The MoF could also usefully participate in the study.

Sovereign Debt

68. Since the European debt crisis, banks have significantly diversified their sovereign exposures. Although banks continue to hold substantial sovereign debt—primarily for liquidity purposes—this exposure has now shifted toward EA sovereigns (Figure 8). By the end of September 2025, banks’ debt securities holdings had increased to 29 percent of total assets, up from 11 percent in 2008. The share of government debt holdings allocated to the domestic sovereign has decreased to 26 percent, down from 73 percent in 2015, while the allocation to other EA countries’ debt such as Italy, Spain, and France has grown (Figure 8). Holdings of Portuguese government debt remain moderate (5 percent of total assets).



Nonbanks

69. The nonbank financial sector is smaller than the EA average, with most subsectors having contracted over the past decade. As of September 2025, nonbank financial institutions (NBFIs) accounted for about a third of the financial sector’s assets. Their overall footprint remains limited, with total assets amounting to approximately 80 percent of GDP, compared to 365 percent in the EA and 200 percent at end-2010—placing Portugal 14th out of the 20 EA NBFI sectors. Captive financial institutions and money lenders—including financial and non-financial holding companies—are the dominant market player, with assets at 33 percent of GDP, mainly providing funding to domestic corporates. Insurance companies play a lesser role, with assets at 20 percent of GDP. Investment funds and pension funds are noticeably less developed than in most other EA countries, with combined assets at 19 percent of GDP.

Box 2. Portugal: Actions Taken During the COVID-19 Pandemic

During the 2020 pandemic, BdP, like many other countries, temporarily relaxed several capital and liquidity requirements. Banks were allowed to operate below Pillar 2 Guidance requirements, the Combined Buffer Requirement (CBR), and the LCR in order to support credit supply. Additionally, the implementation of the O-SII buffer was postponed by a year.

Banks received state-guaranteed loans and applied moratoria to avoid credit disruptions. There is some evidence, consistent with findings in other countries, that these measures were effective. A study by [Avezum et al. \(2023\)](#) analyzing loan-level data and supervisory requirements, found that Portuguese banks with greater headroom above the overall capital requirement extended more credit to firms after the COVID-19 shock than banks with lower headroom—indicating that banks made use of their management buffers to some extent.¹ When accounting for the public guarantee, the introduction of government schemes during this period lessened the disparity, as even banks with lower capital headroom were incentivized to lend under these programs.

Short-term personal credit was excluded from the DSTI limit. This aimed to enable households to access short-term credit for liquidity needs. However, bank take-up was limited, and the measure was soon discontinued.

¹ See Avezum, Lucas, Vítor Oliveira, and Diogo Serra, 2023, “To Use or Not to Use? Capital Buffers and Lending During a Crisis,” Banco de Portugal Working Papers 2023 08.

B. Sector Specific Measures: Housing and Households

70. BdP employs a wide range of BBMs to mitigate lending risks arising from the housing market and households (Table 8). Banks are also required to maintain an average loan maturity below 30 years and are subject to the sSyRB for RRE. It is difficult to directly compare limits across countries due to different definitions and implementation of instruments (for example some countries use a simple DSTI limit while others have a stressed DSTI limit) but these are well within the range for EU countries. For example, LTV limits tend to range from 80-90% for own residences, but are up to 100% for some countries and borrower type.

Table 8. Portugal: Borrower-based Measures Applied by the BdP

	Definition	Limits	Implementation	2025 H1 Values
LTV Ratio	Ratio of the total amount of credit agreements secured by immovable property to the minimum between the purchase value and the appraisal value of the immovable property pledged as collateral.	– Up to 90% for own and permanent residence. – Up to 80% for other purposes. – Up to 100% for immovable property held by institutions and for property financial leasing agreements.	Jul. 2018	75% (average)

Table 8. Portugal: Borrower-based Measures Applied by the BdP (continued)

DSTI Ratio	Ratio of the total amount of monthly instalments of a borrower's total debt to his/her monthly income less taxes and compulsory social security contributions. It considers an interest rate rise and/or income reduction shock: – 0.5 p.p. for maturities ≤ 5 years; – 1 p.p. for maturities between 5 and 10 years; – 1.5 p.p. for maturities > 10 years; – Income reduction for borrowers aged 70 and over upon expiry of the agreement.	Up to 50%, with the following exceptions: – Up to 60% for up to 10% of the total credit amount. – Over 60% up to 5% of the total credit amount.	Apr. 2020	94% of new loans (DSTI ratio $\leq 50\%$) 4% of new loans ($50\% < \text{DSTI ratio} \leq 60\%$) 2% of new loans (DSTI ratio $> 60\%$)
Maturity of Credit for House Purchase	Limits to the maximum maturity of the credit agreement for house purchase according to borrower's age and to the average maturity of the new loans	– 40 years for borrowers aged 30 or under. – 37 years for borrowers aged over 30 and up to and including 35. – 35 years for borrowers aged over 35. – Average maturity of the set of new agreements in each quarter of each year of up to and including 30 years.	Apr. 2022	32 years (average) 100% (borrowers aged ≤ 30) 94% (borrowers aged < 30 and ≤ 35) 97% (borrowers aged > 35)
Maturity of Consumer Credit	Limits to the maximum maturity of consumer credit.	– 7 years for personal credit. – 10 years for car credit and personal credit for education, healthcare and energy transition (1).	Apr. 2020	6.7 years (personal credit average) 8.4 years (car credit average)

Table 8. Portugal: Borrower-based Measures Applied by the BdP (concluded)

Regular Payments Requirement	-	New credit agreements should have regular principal and interest payments	Jul. 2018	96%
Source: Banco de Portugal. Notes: The calculation of the DSTI ratio (i) assumes that the instalments of the new credit agreement are constant; (ii) considers the impact of an interest rate rise according to maturity in the case of variable or mixed interest rate agreements; and (iii) considers a reduction in income in the case of a borrower aged 70 and over at the planned expiry of the agreement, except if the borrower is already retired at the time of the creditworthiness assessment. Average values relate to 2024. (1) In April 2025, the concept of renewable energy credit for energy transition credit was extended. The latter covers financing for the purchase and installation of renewable energy equipment, or other equipment or operations, including works to improve the energy efficiency of buildings.				

71. BBMs appear to have been effective in containing household leverage, and banks have welcomed the clear expectation regarding lending standards. The number of households with both high LTV and high DSTI ratios remains low, with banks reporting DSTI levels well below the limits set by BdP. Beyond restricting loans, these measures have played a crucial role in shaping banks' expectations: banks appreciate that the limits have helped establish expectations on lending standards, reducing pressure to compete through looser lending standards and encouraging competition through other areas instead.

72. Maturity limits for consumer credit also exist. Consumer credit primarily consists of car purchase loans (70 percent of the total). There is little evidence that households use consumer credit to circumvent LTV limits, and consumer credit agreement above €8,000 are included in the DSTI limit calculation. These limits were extended in 2020 to incorporate climate change considerations, extending the maximum maturity for loans financing renewable energy from 7 years to 10 years. These loans cover financing for the purchase and installation of renewable energy equipment, or other equipment or operations, including improvements to buildings' energy efficiency. Since April 2025, eligible "renewable energy" credit has been broadened to encompass "energy transition" purposes.

73. All the BBMs are implemented as "comply or explain" recommendations rather than mandatory requirements. Despite this non-binding nature, compliance is high. BdP monitors compliance of 13 institutions through: (i) monthly reporting covering 91 percent of new lending operations; and (ii) annual self-assessment reports approved by institutions' Boards of Directors. For the other institutions, BdP relies on individual data from the Central Credit Register (CRC) to monitor compliance with the various limits. The limits apply to all entities authorized to make loans in Portugal, minimizing opportunities for regulatory arbitrage.

74. Banks have reported operational challenges in meeting the recommendation that the average loan maturities remain at 30 years (or less) each quarter. This is due to two main factors: (i) operational difficulties in managing maturities on a quarterly basis given various time lags in the mortgage process; and (ii) recent policies aimed at increasing lending to younger borrowers,

which tend to involve longer maturities and consequently shift the borrower age profile. To address this, BdP has introduced maturity limits based on borrower age to help banks comply more effectively. However, the recent shift to younger borrowers, driven by government initiatives, has made compliance more difficult. Some banks indicate that this has distorted the market, as banks attempt to increase shorter maturity “senior” loans to older borrowers to balance the average loan maturity at 30 years.

75. There are also various exemptions designed to make the DSTI limit less restrictive. For example, banks are allowed to consider additional factors in assessing borrowers’ creditworthiness, such as their overall wealth, the presence of a guarantor, and other regular expenses. Certain credit agreements were excluded from the limit, such as short-term loans below €8000, which enable borrowers to access small credit amounts for purposes such as furniture purchases. However, these smaller loans are included in the DSTI calculation if the borrower subsequently takes out a larger loan.

76. These exemptions exist even though banks already have discretion to apply them, and some are intended to address social objectives. For example, the DSTI exemptions noted earlier apply despite banks already having the discretion to hold a certain share of loans exceeding the 50 percent limit. Some limits reflect social considerations and the lack of better financial products. For example, one reason mortgage loans are not required to be fully repaid by retirement is allegedly the existence of other credit agreements without age limit, with some older borrowers using credit for health-related expenses. Insurance would be a more appropriate product in such cases, enabling a more efficient pooling of risks across individuals. As a result, the focus of financial stability is somewhat diluted.

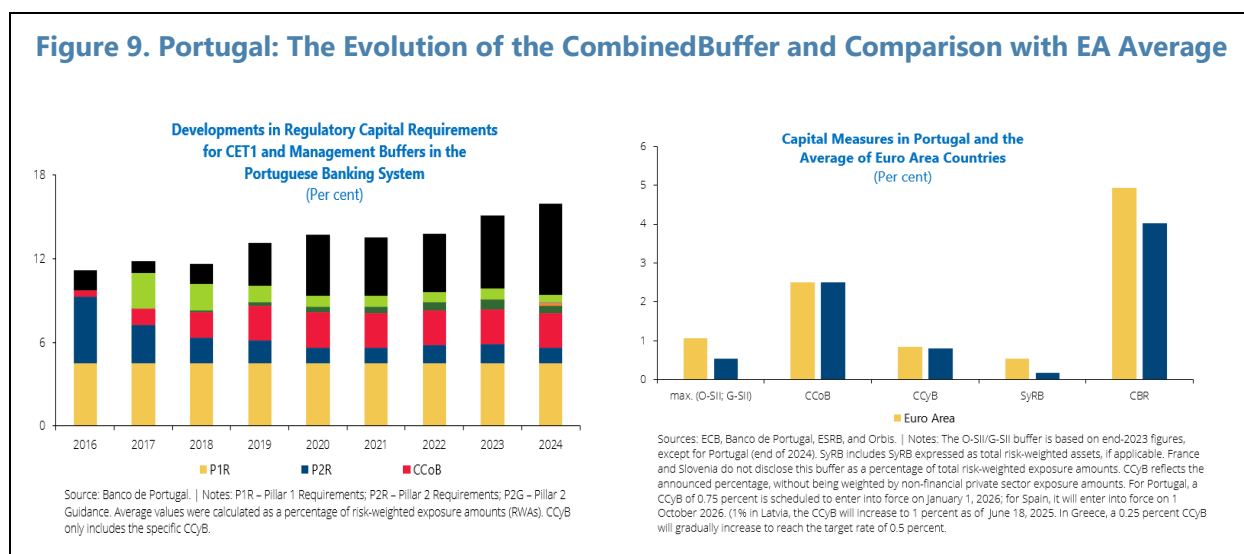
77. While employing multiple measures is prudent, their complexity means that some will be more effective than others. A well-designed framework should ensure resilience against key vulnerabilities that could amplify shocks throughout the financial system, while minimizing the costs of the measures and avoiding unintended distortions. Macroprudential policy’s goal is not to make every agent in the financial system fully resilient but to ensure the resilience of the financial system as a whole. This implies allowing for exceptions and avoiding excessive fine-tuning. Different measures serve distinct yet complementary roles in strengthening financial sector resilience. LTV limits help reduce lender losses in default and incentivize prudent borrowing by requiring down payments—especially important given the high level of recourse of mortgages in Portugal. DSTI limits help contain household leverage and indebtedness and have been shown to play a critical role in limiting the aggregate demand channel. Maturity limits prevent borrowers from circumventing the DSTI limit by taking long-term loans. Most EU countries’ macroprudential frameworks include either LTV, DSTI, and maturity limits, or a combination of LTV and DTI limits. Granular age-related limits, regular repayment requirements, and average maturity caps are uncommon.

78. The BBMs should be streamlined and simplified while continuing to uphold their objectives of enhancing lending standards and strengthening household and financial sector resilience. Some existing measures may be largely redundant; for example, the 100 percent LTV limit was originally introduced to help banks reduce their on-balance-sheet exposures following the

European debt crisis, but after nearly a decade, such loans are likely scarce. Portfolio limits can serve as an effective alternative for excessive granularity and numerous exemptions. The role of clear expectations and communication is crucial for macroprudential policy, as market participants adjust their behaviors accordingly. Establishing clear benchmarks can facilitate this process, and ongoing monitoring of compliance and the evolution of risk over time is also likely to be beneficial.

C. Capital Measures

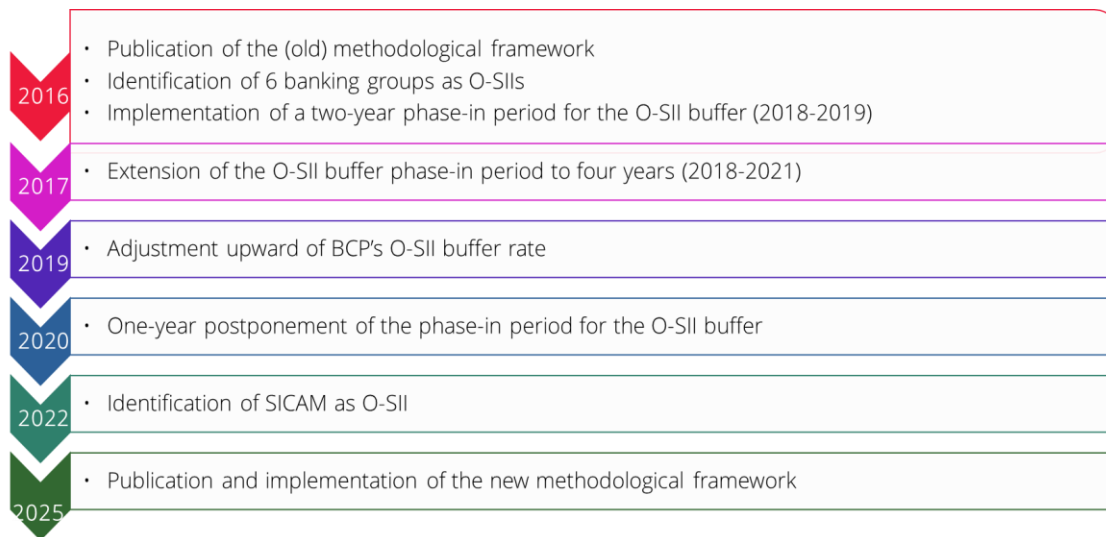
79. Currently, four capital buffers apply to the Portuguese banking sector. These include: the capital conservation buffer (CCoB), the other systemically important institutions (O-SII) buffer, the sSyRB, and the countercyclical capital buffer (CCyB). All these buffers must be fully composed of Common Equity Tier 1 (CET1) capital and together form the combined buffer requirement (CBR). At end-2024, the CBR stood at 3.27 percent of the risk-weighted exposure amounts, equivalent to €5.9 billion. The CCoB and O-SII buffers are structural, while the sSyRB and CCyB are cyclical buffers intended to be released during periods of stress to prevent the banking system from amplifying shocks to the economy. Capital requirements in Portugal are broadly aligned with the EU average (Figure 9).



O-SII Buffer

80. The O-SII buffer is a harmonized EU capital instrument designed to address structural too-big-to-fail risks. It was introduced in 2015 and phased in over time. Each year, BdP assesses the institutions' systemic risk based on their size, importance for the Portuguese economy or the EU, complexity, interconnectedness with other financial institutions, and potential contagion to the rest of the non-financial and financial sectors in case of insolvency.

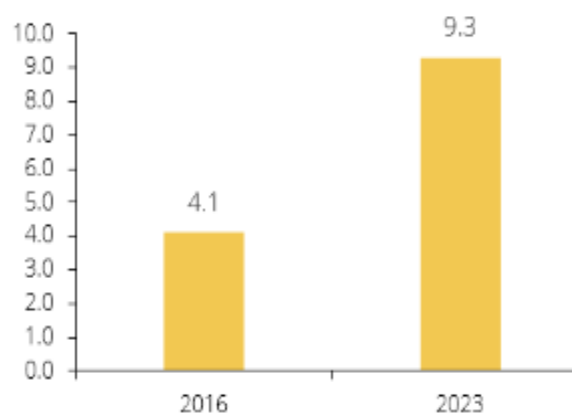
81. BdP has made numerous changes to the framework since its implementation (Figure 10). The phase-in period was initially extended due to bank difficulties in raising capital following the European Debt Crisis. The phase-in period was further modified during the 2020 pandemic.

Figure 10. Portugal: Timeline of O-SII implementation

Source: Banco de Portugal.

82. BdP has updated the methodology for identifying O-SIIs and calibrating their

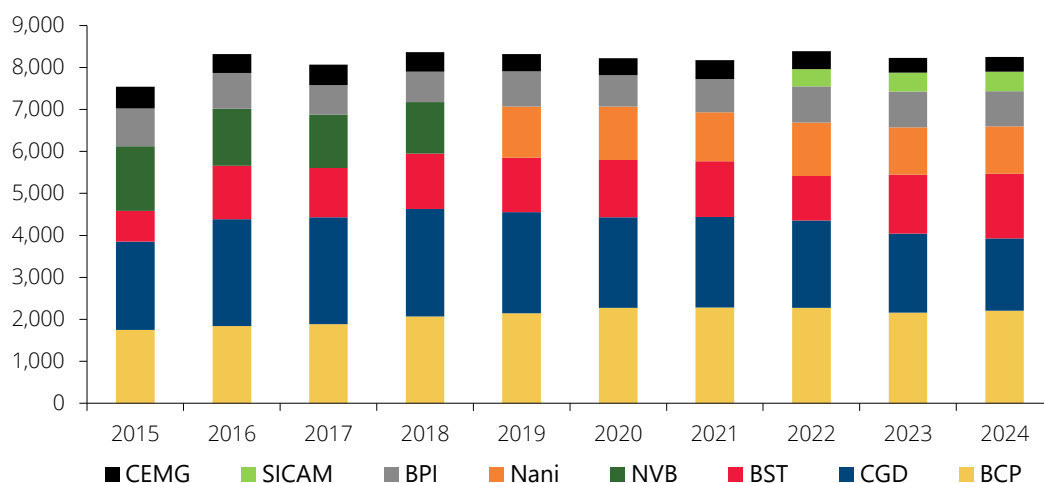
respective buffers. This revision, adopted in April 2025, reflects changes in EU regulations for O-SIIs, particularly the CRDV (Capital Requirements Directive V), which increased the maximum O-SII buffer limit from 2 to 3 percent. It also incorporates the ECB application of a floor methodology for determining the minimum buffer levels for these institutions. The lowering of this floor aims to maintain a more stable group of banks classified as O-SIIs. The increasing share of branches of EU banks—excluded from the O-SII calculation since the buffer is institution-specific—has contributed to a general decline in the scores of Portuguese institutions. In 2016, branches accounted for 4.1 percent of the composite systemic importance indicator for the banking system, more than doubling to 9.3 percent by 2023 (Figure 11).

Figure 11. Portugal: Systemic Importance of Branches
(In percent of total score for the system)

Source: Banco de Portugal.

The higher threshold introduced by these changes has caused volatility in O-SII designations, driven more by the activities of other banks than banks' own actions. Meanwhile, the scores for individual banks have remained relatively stable over time (Figure 12).

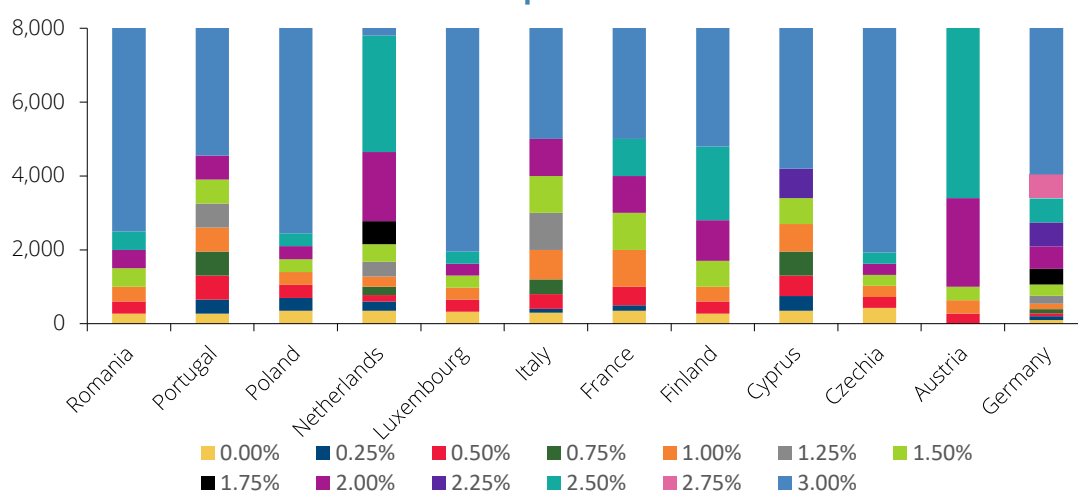
Figure 12. Portugal: Evolution of the O-SII Score



Source: Banco de Portugal.

83. While the methodology for calculating O-SII scores is set at the EU level, countries have discretion in translating these scores into capital buffer requirements. Different countries have adopted markedly different bucketing approaches (Figure 13). For example, a bank with a score of 2500 would face a 1 percent O-SII capital buffer in Portugal, compared to 2.5 percent in Poland. Portugal's chosen approach has resulted in limited variation in capital requirements, despite significant heterogeneity in O-SII scores among banks (Table 9).

Figure 13. Portugal: Different EA Countries' Mapping of O-SII Scores to Buffer Requirements



Source: CERS.

Table 9. Portugal: O-SII Scores and Determinants, by Bank

O-SII	Size	Importance	Complexity	Interconnectedness	Score
Banco Comercial Português, S.A. (JU1U6S0DG9YLT7N8ZV32*)	547	588	822	364	2,321
Caixa Geral de Depósitos, S.A. (TO822O0VT80V06K0FH57*)	568	469	563	214	1,814
Banco Santander Totta, S.A. (549300URJH9VSI58CS32*)	300	314	287	455	1,356
LSF Nani Investments S.à.r.l. (222100K6QL2V4MLHWQ08*)	227	254	287	291	1,059
Banco BPI, S.A. (3DM5DPGI3W6OU6GJ4N92*)	220	266	115	237	838
Caixa Central – Caixa Central de Crédito Agrícola Mútuo, S.A. (529900H2MBEC07BLTB26*)	142	122	106	113	483
Caixa Económica Montepio Geral, Caixa Económica Bancária, S.A. (2138004FIUXU3B2MR537*)	98	90	40	75	303

84. There is more scope to differentiate among banks within the framework and impose higher O-SII capital requirements on more systemic institutions. This would align Portugal with countries facing comparable too-big-to-fail risks. The EA FSAP recommends harmonizing O-SII methodologies across jurisdictions, and the situation in Portugal underscores this recommendation.⁷

Countercyclical Capital Buffer (CCyB)

85. Although the original Basel framework envisaged a positive CCyB only when risks were elevated, there is growing recognition of the need to build releasable capital earlier. During the pandemic, many countries discovered they lacked sufficient releasable capital and had to implement various capital relief measures.⁸ In response, the BCBS has endorsed a strategy of maintaining a “positive cycle-neutral rate” for the CCyB, a position also supported by the ECB.⁹ Several countries, including 17 in the EU, have moved toward adopting this approach.

86. In December 2024, the authorities set the CCyB rate at 0.75 percent for a neutral environment, effective from January 2026. BdP outlined its strategy for the neutral environment

⁷ See International Monetary Fund, 2025, “[Euro Area Policies: Financial System Stability Assessment](#),” IMF Country Report No.25/203, July 2025.

⁸ See Basel Committee on Banking Supervision, 2021, “[Early Lessons from the COVID-19 Pandemic on the Basel Reforms](#),” July 2021.

⁹ See Bank for International Settlements, 2022, “[Newsletter on Positive-Neutral Countercyclical Capital Buffer Rates](#),” October 5, 2022.

in the November FSR and also published a separate document. This document identifies several indicators for assessing rising risks and outlines criteria for releasing the CCyB, the latter having been developed in response to lessons from the pandemic.

87. The neutral CCyB rate of 0.75 percent was calibrated using a stress test based on 2023 balance sheets. Different countries have employed various methods to calibrate the PCN rates for the CCyB, and this approach aligns with several other EU countries and IMF (2025) guidance, which recommends setting the PCN rate based on a mild shock—reflecting a financial cycle that is neither elevated nor subdued.¹⁰ The calibration used the updated baseline and adverse macrofinancial scenarios from the December 2023 ECB BMPE (Broad Macroeconomic Projection Exercise), applied to 2023 balance sheets. The chosen rate is slightly higher than the projected loss rate in the scenario, reflecting the fact that the CCyB can only be set in increments of 25 basis points. Internal analysis conducted for the FSAP, which examined variants of the scenario in the Systemic Risk Analysis Technical Note, found that for a given severity, adjusting dimensions such as unemployment, interest rates, or real estate stress did not significantly affect credit loss outcomes. This suggests that the selected PCN rate is robust against different scenario variations of similar severity. Moreover, the Systemic Risk Analysis module indicates that the banking system is currently resilient, considering Portugal’s position in the credit cycle. However, since banks’ balance sheets have changed considerably since 2023, the authorities should regularly reassess the appropriateness of the 0.75 percent rate as the neutral CCyB rate.

88. Both the CCyB and the sSyRB are fully releasable buffers, which together represent about 1 percent of releasable capital. Although the PCN CCyB rate of 0.75 percent is low compared to other EA peers, when combined with the sSyRB, the total releasable capital at the neutral point of the financial cycle aligns with the EA average. The analysis above indicates that this rate is appropriate, assuming BdP’s objective and risk tolerance focus on ensuring that the financial system’s resilience to a mildly adverse shock in the neutral phase of the cycle. Alternative approaches—such as maintaining sufficient capital during the neutral phase while slowing capital accumulation during the elevated phase (the strategy adopted by several EA countries and the UK)—would require higher capital levels today. While building higher capital buffers enhances resilience and robustness against downside risks, it involves a trade-off, potentially reducing lending.

89. If the authorities chose to build additional resilience by increasing releasable capital now, the associated costs and disruptions would likely be minimal; delaying the buildup could lead to higher costs later. Currently, the banks are highly profitable and maintain substantial voluntary capital buffers of around 6.5 percent. Yet this situation may not persist: after a prolonged period without paying dividends, banks have resumed dividend payments, and several have capital plans that anticipate significant reductions in these buffers. The ownership structures of Portuguese banks present additional challenges to raising capital in the markets, requiring them to rely on

¹⁰ The EU countries that use a stress test approach include Estonia, Ireland, Latvia, Lithuania, Portugal, Slovenia and Spain: see [European Systemic Risk Board, 2025, “Using the Countercyclical Capital Buffer to Build Resilience Early in the Cycle,” January 2025](#). For IMF guidance, see Miettinen and Nier, 2025, “[Rethinking Macroprudential Capital Buffers](#),” [International Monetary Fund, Departmental Paper No. 25/08; November 2025](#).

organic capital generation or support from parent institutions. Multiple studies indicate that substantially more capital is needed for elevated risk environments. For example, BIS (2023) and Miettinen and Nier (2025) demonstrate significantly higher capital requirements under elevated risk scenarios based on historical loss data.¹¹ Using U.S. data and a simple stress test, Hirtle (2016) found that the capital shortfall at the peak of the cycle can more than five times larger than during low-risk periods.¹² However, these estimates are primarily based on historical losses and can mask country-specific differences. While BdP has clearly identified indicators signaling rising risks, it has yet to assess the full range of releasable capital the banking system may require under elevated conditions.

90. BdP should evaluate the amount of releasable capital that may be required for the elevated risk environment. Waiting until such conditions materialize is too late—particularly when using a cyclical stress testing approach—due to the time needed to conduct stress tests and the reliance on lagged balance sheet data. As noted earlier, several studies, including those applying the buffer guide rule without the 2.5 percent cap, indicate that significantly higher capital levels could be necessary.¹³ BdP should also assess whether banks being can realistically raise the required capital within the necessary timeframe—an assessment that appears more favorable for Portuguese banks given their high profitability compared to other countries. Additionally, BdP might consider whether publishing this capital range would be beneficial.

sSyRB

91. In November 2023, BdP announced a four percent sSyRB on the risk-weighted exposure amount of all retail exposures to individuals secured by RRE in Portugal. This buffer took effect in November 2024 and applies to institutions using internal rating models (IRB) to calculate their own funds requirements for credit risk. Although only four banking groups in Portugal use the IRB approach for RRE, their market share in 2023 Q2 for housing purchases was just over 60 percent and has since increased to 67 percent. As mandated by CRD V, this measure will be reviewed at least every two years. The overall impact on banks' capital requirements is limited, as IRB models tend not to assign low risk weights to these exposures, and the Basel III output floor further mitigates the effect.

92. The sSyRB rate was calibrated to cover unexpected losses in banks' RRE portfolios under a severely adverse scenario. This scenario assumes that banks will not draw on the CCoB or the O-SII buffer to absorb losses. Authorities expect the sSyRB to remain in place during normal times but to be released in the event of a shock, similarly to the CCyB.

¹¹ See Basel Committee on Banking Supervision, 2022, "[Buffer Usability and Cyclicity in the Basel Framework](#)."

¹² See Hirtle, Beverly, Anna Kovner, James Vickery, and Meru Bhanot, 2016. "[Assessing Financial Stability: The Capital and Loss Assessment under Stress Scenarios \(CLASS\) Model](#)," *Journal of Banking & Finance*, Elsevier, vol. 69(S1), pp. 35-55.

¹³ The 2.5 percent is only the limit for mandatory reciprocity.

D. Monitoring Policy Effectiveness

93. BdP employs various models to assess the impact of macroprudential policies both prior to and following implementation (Table 10). These models play a key role in the policy process; for example, the DSGE modeling toolkit was used in the 2024 CCyB decision for evaluating costs and benefits and was featured in the FSR to explain the rationale behind the decision.

Table 10. Portugal: BdP Publications on Macroprudential Policy Effectiveness			
Study	Methodology	Focus	Key Findings
Basto et al. (2019)	Structural multi-country model; BVAR; EAGLE-FLL.	Effect of LTV introduction.	- LTV curbs excessive credit growth. - Lower mortgage supply & GDP. - Higher bank solvency. - Slight reduction in house-price growth.
Abreu & Passinhas (2021)	BVAR.	Short-run effects of LTV, DSTI, maturities, amortization.	- Household loan growth reduced after 4 months. - No short-term effect on house prices or economic activity.
Abreu et al. (2024)	Credit registry data; Diff in Diff.	Behavior of constrained households after LTV change.	- Lower leverage & LTIs. - Higher spreads & service-to-income. - Purchase of cheaper houses. - Improved household risk profile.
Neugebauer et al. (2021)	Integrated micro-macro model.	Macroprudential policies impact on bank risk.	- LTV limits reduce PDs & LGDs. - Capital ratio rises by 0.74 p.p.
Mateus & Ramos (2023)	LGD modeling.	LTV as determinant of LGD.	- LTV strongly predicts LGD. - Non-linear effect: higher LGD only above ~80–100% LTV.

94. To conduct a comprehensive macroprudential analysis of policy effects, BdP has developed a suite of DSGE models in collaboration with a leading university. A series of Portugal-specific DSGE models were developed jointly with the University of Surrey, a leading institution in DSGE modeling. This partnership is mutually beneficial: BdP gains from the University's technical expertise, while the University benefits from the practical policy applications of its research. Currently, projects are underway to build DSGE models focusing on:

- The interaction of borrower-based measures—such as limits on LTV and DSTI ratios, along with restrictions on average loan maturities—in a manner that closely mirrors the key components of the BBMs applied in Portugal.
- The effectiveness of macroprudential policies in a small economy within a monetary union that faces inflationary pressures, also used to analyze the transmission of non-financial shocks to Portugal.

- The interplay between BBMs and capital instruments when the economy is subject to trade shocks.

95. BdP also publishes a report which clearly outlines the macroprudential measures in place and how banks and borrowers have responded to them. This publication is titled “Macroprudential measures in Portugal—progress report” and is published annually. It provides information on banks’ combined buffer requirements as well as lending volumes compared against key macroprudential instruments such as borrower-based measures. The latter shows a high level of banking system-level compliance. The BdP produces numerous research papers that examine the impact of macroprudential policies in greater detail.

96. The research papers and regular publications demonstrate BdP’s strong commitment to accountability regarding the impact and implementation of its macroprudential policies. While many macroprudential authorities publish research on their policies’ impact, such publications are often ad hoc, and researcher driven. BdP’s dedication to ongoing, systematic ex-post reporting represents best practice that is not often seen.