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The Macroprudential Approach to Systemic Risk

*Christopher P. Buttigieg
Francesco Meglioli*



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Abstract

The Global Financial Crisis (GFC) of 2008 unequivocally exposed the fatal insufficiency of microprudential supervision, which, by focusing solely on the resilience of individual institutions, failed to prevent systemic collapse. This article argues that the subsequent global adoption of macroprudential policy (MaPP) represents a fundamental and necessary paradigm shift in financial oversight.

MaPP transcends the limitations of the "fallacy of composition" by adopting a holistic, system-wide approach, targeting vulnerabilities and mitigating the build-up of systemic risk through a rigorous policy cycle and macroprudential tools, including capital-based measures (e.g., CCyB) and borrower-based measures (e.g., LTV/DSTI ratios).

While the macroprudential framework for the banking sector is mature, the system's resilience remains challenged by the non-bank financial intermediation (NBFI) sector (e.g., asset managers and insurers). The article concludes that the ongoing success of MaPP hinges on the complete integration of the NBFI sector into a cohesive, system-wide framework, which remains the critical, incomplete frontier of 21st-century financial supervision.

This article is based on a lecture delivered by the authors as part of a course on financial services law at the University of Malta.

Introduction

The Global Financial Crisis (GFC) of 2008 stands as a pivotal event in the history of financial regulation, serving as an unequivocal criticism of the then-prevailing supervisory paradigm. The crisis laid bare the critical vulnerability inherent in a framework singularly focused on microprudential supervision, the assessment and mitigation of risk within individual financial institutions in isolation. This foundational deficiency, often termed the "fallacy of composition", systematically overlooked the potential for systemic risk, demonstrating that the collective rationality of individual entities can aggregate into system-wide instability and collapse.

This article argues that the post-crisis adoption and evolution of macroprudential policy (MaPP) represents a fundamental, necessary, and ongoing paradigm shift in financial oversight. This transition moves the regulatory focus from a protective concern for entity-level soundness to a holistic imperative for system-wide resilience. By formally acknowledging the financial system as a deeply interconnected ecosystem, MaPP seeks to safeguard financial stability as a public good, thereby ensuring the sustainable functioning of the real economy.

The analysis proceeds by first delineating the conceptual and operational limitations of the pre-2008 microprudential approach, emphasising its inherent inability to address procyclicality and contagion. Subsequently, the article establishes the core principles and architecture of the macroprudential imperative, detailing its fundamental objective—safeguarding the stability of the financial system as a whole—and operationalising it through the established intermediate objectives of modern regulatory bodies.

The core of the paper examines the systematic policy cycle and instruments of MaPP, categorised by their targets: [a] Capital-Based Measures (e.g., the Countercyclical Capital Buffer and Systemic Risk Buffer), which target bank resilience and cyclicality; and [b] Borrower-Based Measures (e.g., Loan-to-Value and Debt Service-to-Income ratios), which enhance the resilience of the non-financial sector.

Crucially, the final section addresses the frontier of systemic risk, analysing the challenges and the nascent regulatory response in extending MaPP beyond the traditional banking sector to the Non-Bank Financial Intermediation (NBFIs) sector¹, particularly insurance undertakings and asset managers. The article concludes that while the macroprudential framework for banking is relatively mature, its integration across the broader financial ecosystem remains the critical, and currently incomplete, task for securing global financial stability in the 21st century.

This article is based on a lecture delivered by the authors at the University of Malta and is meant to provide students with a general overview of the meaning and development of macroprudential supervision.

¹ For a better understanding of NBFIs see amongst others: Buttigieg, C. P., Gkoutse, M., & Fenech, T. (2020). Non-bank financial intermediation in Malta. Law and Financial Markets Review, 14(3), 156-169. https://www.um.edu.mt/library/oar/bitstream/123456789/115344/3/Non-bank_financial_intermediation_in_Malta%282020%29.pdf accessed 14.11.2025

1. Microprudential Supervision

The regulatory architecture pre-dating the GFC was critically dependent upon the "fallacy of composition"—a core, yet empirically flawed, tenet asserting that the systemic stability of the financial sector could be secured solely through the ensured solvency and resilience of its individual component entities. The objective of microprudential supervision was narrowly confined to entity-level risk mitigation, primarily focused on preventing the failure of specific financial institutions and safeguarding the interests of depositors and creditors. This approach, by its very design, neglected the dynamics of systemic risk, the potential for the distress of one or a small group of institutions to propagate and cascade across the entire financial system, resulting in a generalised collapse of market functioning.

As observed by Andrew Crockett, the fundamental conceptual challenge resided in the divergent objectives of the microprudential and macroprudential perspectives². While microprudential oversight aims to enforce prudential standards at the firm level, it inherently overlooks the endogenous formation and amplification of risk that arises from the collective

behaviour of financially rational agents. Actions that are optimal for an individual firm, such as the deleveraging or liquidating of assets during a period of market stress, can generate procyclical effects, triggering fire sales that depress asset prices and transmit contagion across interconnected balance sheets.

This narrow, siloed focus on institution-specific capital and liquidity proved fatally inadequate in addressing the complex, nonlinear, and highly interconnected nature of modern financial markets. Consequently, the regulatory framework failed to manage the aggregated, emergent risks that ultimately precipitated the GFC, which ultimately created the justification for the macroprudential imperative.

² Andrew Crockett, 'Marrying the micro- and macroprudential dimensions of financial stability' (Speech before the Eleventh International Conference of Banking Supervisors, Basel, 21 September 2000) <https://www.bis.org/speeches/sp000921.htm> accessed 14.11.2025.

2. Macroprudential Imperative

MaPP represents the conceptual and operational response to the systemic failures of pre-crisis microprudential oversight. It transcends this limitation by adopting a holistic, top-down perspective on financial stability. The fundamental objective of MaPP, as formally articulated by bodies such as the European Systemic Risk Board (ESRB), is to "contribute to the safeguarding of the stability of the financial system as a whole," thereby ensuring the financial sector's "sustainable contribution to economic growth." This perspective fundamentally reframes the financial system not merely as an aggregate of individual monetary entities, but rather as an integrated ecosystem critical for facilitating societal progress and resource allocation.

In this context, financial stability is defined by the system's robust capacity to absorb and withstand macroeconomic shocks, to effectively mitigate the unravelling of accumulated imbalances, and to sustain the efficient intertemporal allocation of savings to profitable investments. This definition is consistent with the core characteristics elaborated by Garry Schinasi, which include: [a] efficient resource allocation and robust support for broader economic processes; [b] accurate risk pricing and management; and [c] comfortable shock absorption through resilient, self-corrective mechanisms³.

The transition to MaPP is thus structured around a rigorous policy cycle supported by macroprudential instruments. The broad goal of systemic stability is operationalised by macroprudential authorities through a set of intermediate objectives. These objectives serve as targeted tasks designed to address specific, identifiable vulnerabilities and to manage the key dimensions of systemic risk within the financial ecosystem. The ESRB identifies five such objectives, the: [a] mitigation and prevention of excessive credit growth and leverage; [b] mitigation and prevention of excessive maturity mismatch and market illiquidity; [c] limitation of direct and indirect exposure concentration; [d] reduction of moral hazard; and [e] strengthening of the resilience of financial infrastructures.

The achievement of these intermediate objectives is pursued through an effective MaPP framework that systematically links conceptual objectives to empirically-observable indicators and targeted instruments. The range of macroprudential instruments employed is typically categorised along two primary dimensions: the type of risk addressed (cyclical⁴ vs. structural⁵) and the target of the intervention (financial institutions vs. non-financial borrowers/sectors).

The operational efficacy of Macroprudential Policy (MaPP) is realised through a diverse set of instruments, systematically designed to address both the cyclical and structural dimensions of systemic risk by targeting either financial institutions or the non-financial sector⁶.

2.1 Capital Based Measures

These instruments primarily focus on enhancing the resilience of the banking sector and mitigating the procyclicality inherent in credit cycles. They mandate that banks maintain high-quality capital buffers, providing an essential layer of protection to absorb losses during economic contractions and sustain the flow of credit. The following are the capital based measures required in terms of applicable EU framework.

³ Garry J Schinasi, 'Defining Financial Stability' (2004) IMF Working Paper WP/04/187 <https://www.imf.org/external/pubs/ft/wp/2004/wp04187.pdf> accessed 18 January 2026

⁴ Cyclical risks are tied to the financial cycle, the natural ups and downs of credit and asset prices over time. These risks build up during "good times" when optimism is high and materialize when the cycle turns.

⁵ Structural risks are permanent or long-term features of how the financial system is built. These risks exist regardless of whether the economy is currently booming or in a recession.

⁶ European Systemic Risk Board, The ESRB Handbook on Operationalising Macroprudential Policy in the Banking Sector (ESRB 2018) https://www.esrb.europa.eu/pub/pdf/other/esrb.handbook_mp180115.en.pdf accessed 18 January 2026

Countercyclical Capital Buffer (CCyB): The CCyB is the primary tool for addressing cyclical systemic risk. It operates symmetrically by requiring banks to build up capital during periods of excessive credit growth or financial booms, it imposes an ex-ante constraint on risk-taking. Conversely, the buffer is released during downturns, allowing banks to absorb losses and prevent a sharp, destabilising contraction of lending. The calibration of the CCyB is typically driven by quantitative indicators, such as the credit-to-GDP gap⁷, which provides a metric for identifying unsustainable credit expansion relative to its long-term trend.

Systemic Risk Buffers (SyRB) and Structural Capital Requirements: These buffers address structural, non-cyclical vulnerabilities within the system. The SyRB can be applied on a case-by-case basis to mitigate specific, concentrated risks across the entire banking sector, a subset of institutions, or particular sectoral exposures. For instance, the application of a sectoral SyRB to domestic residential mortgage exposures (as demonstrated by the 1.5% imposition in Malta) directly addresses concentration risk within the real estate market.

Buffers for Systemically Important Institutions: Higher capital surcharges are imposed on Global (G-SII) and Other (O-SII) Systemically Important Institutions. This differential capital requirement is strategically employed to limit excessive institutional growth and to mitigate the moral hazard associated with institutions perceived as "too big to fail," thereby internalising the negative externalities they impose on the system.

Capital Conservation Buffer (CCoB): Introduced under the Basel III framework, the CCoB (set at 2.5% of risk-weighted assets in the EU) represents a universal minimum capital layer designed to be available to absorb losses and restrict discretionary distributions (e.g., bonuses, dividends) when capital falls within the buffer zone.

These buffers operate alongside measures which apply at the client level, in this context the borrower based measures.

2.2 Borrower-Based Measures

These instruments operate at the level of the borrower or household, effectively managing the quality of new credit origination to build resilience against future default risk and to dampen the transmission of shocks from the real economy back to the financial system.

Loan-to-Value (LTV) Ratio Limits: LTV caps restrict the amount of financing relative to the value of the collateral (e.g., property). By ensuring a greater equity stake (i.e., lower LTV ratio), these limits reduce the probability of default and minimise potential loss given default for banks, particularly during periods of declining asset values. In Malta, the implementation of a 90% LTV cap for first-time buyers is balanced against a stricter 75% cap for subsequent buyers and investors, reflecting a policy attempt to manage financial stability while addressing social objectives.⁸

Debt Service-to-Income (DSTI) Ratio Limits: DSTI caps restrict the proportion of a borrower's income that can be allocated to debt servicing. This measure directly addresses affordability risk and ensures borrowers can withstand adverse

⁷ The credit-to-GDP gap is a primary financial stability indicator used by central banks to detect "credit bubbles" or excessive debt in an economy. It measures the difference between the current credit-to-GDP ratio and its long-term historical trend. In simple terms, it asks: "Is the amount of debt in the country growing much faster than the actual economy can support?" If the gap is high (e.g., above 2% or 10%), it suggests that credit is expanding at an unsustainable rate. This often signals that a "bust" is coming, as borrowers may eventually struggle to repay that debt.

⁸ Central Bank of Malta, 'Directive No 16: Regulation on Borrower-Based Measures' (as issued under the Central Bank of Malta Act (Cap 204)) <https://www.centralbankmalta.org/site/About-Us/Legislation/Directive-16-2021.pdf> accessed 14.11.2025.

economic conditions. The Maltese measures incorporate a stressed DSTI limit (e.g., 40% under an assumed 150 basis-point [1.5%] interest rate shock) to test the borrower's capacity under plausible future stress scenarios, thereby mitigating the risk of widespread default and systemic transmission under cyclical downturns.

The application of varying limits and maximum maturities (e.g., 40 years for first-time buyers versus 25 years for second-time buyers) demonstrates the potential for granular policy design to target specific segments of the credit market.

While the efficacy of these instruments depends on their technical design, their practical impact is governed by the institutional frameworks that oversee them. To ensure these tools are deployed effectively across different jurisdictions, specific authorities have been empowered with the mandate to monitor systemic risk and activate policy responses. The following section will briefly explore the institutional frameworks in the EU and the US and will also mention the arrangement for this purpose in Malta.

3. Structural Responses and the Challenge of Cross-Border Alignment

The regulatory response to the GFC necessitated the establishment of dedicated institutional structures to effectively implement the macroprudential paradigm. This post-crisis reorganisation has been marked by the creation of prominent macroprudential authorities, notably the ESRB in the EU and the Financial Stability Oversight Council (FSOC) in the US. While both the ESRB and the FSOC share the core systemic objective of monitoring and mitigating risks to financial stability, their governance structures and mandates exhibit significant divergence, reflecting distinct legal and political frameworks.

The ESRB, established subsequent to the De Larosière Report⁹, is tasked with the macro-level monitoring and assessment of systemic risks across the EU's decentralised financial landscape. Its influence operates primarily through a persuasive framework known as "comply or explain." Lacking formal, binding directive power, the ESRB issues warnings and recommendations which national authorities are required to either implement or publicly justify their non-compliance. This structure aligns with the EU's composite institutional architecture, exerting significant influence despite its non-executive nature.

Created under the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010), the FSOC is endowed with more direct regulatory authority ("significant regulatory teeth"). Its most crucial power involves the designation of Systemically Important Financial Institutions (SIFIs). This designation extends enhanced prudential oversight by the Federal Reserve and other regulatory bodies beyond traditional banking institutions to a broader array of non-bank financial entities, directly addressing the interconnectedness of the shadow banking sector.

This fundamental difference, the advisory and decentralised model in the EU versus the executive and centralising model in the US, highlights the ongoing global challenge of achieving cross-border alignment in macroprudential oversight.¹⁰ The efficacy of MaPP is intrinsically linked to its ability to operate within diverse jurisdictional constraints while maintaining a coherent systemic focus.

⁹ High-Level Group on Financial Supervision in the EU, 'The High-Level Group on Financial Supervision in the EU: Report' (25 February 2009)

https://www.esrb.europa.eu/shared/pdf/de_larosiere_report_en.pdf accessed 31.12.2025.

¹⁰ For a detailed comparison between the ESRB and the FSOC see amongst others: [1] Buttigieg, Christopher P., Macro-Prudential Supervision in Europe and the U.S.: An Institutional Perspective (December 26, 2023). WFE Focus, Issue 79, December 2023., Available at SSRN: <https://ssrn.com/abstract=4676260>; and [2] Buttigieg, Christopher P. and Xerri, Matthew and Morganti, Margaux and Brunelli Zimmermann, Beatriz, A Comparative Analysis of the EU ESRB and the US FSOC (2023). Buttigieg, Christopher P. and Xerri, Matthew and Morganti, Margaux and Brunelli Zimmermann, Beatriz, A Comparative Analysis of the EU ESRB and the US FSOC, Journal of Business Law 7 (2023)., Available at SSRN: <https://ssrn.com/abstract=4599414> accessed 24.12.2025

At the national level, the institutionalisation of MaPP requires a clear delegation of authority and robust coordination mechanisms. In Malta, the macroprudential function is formally vested in the Central Bank of Malta (CBM). The CBM is supported by the Malta Financial Services Authority (MFSA). Formal coordination between these institutions, crucial for integrating monetary policy, microprudential, and macroprudential perspectives, occurs through the Joint Financial Stability Board¹¹, which further involves the participation of the Minister of Finance to ensure policy coherence.

The most critical and institutionally challenging dimension of the regulatory paradigm shift involves the expansion of macroprudential oversight beyond the traditional banking sector to encompass the entire Non-Bank Financial Intermediation (NBFi) or "shadow banking" ecosystem. The empirical evidence confirms that systemic risks can originate from large asset managers and (re)insurance undertakings with a magnitude and velocity comparable to that emanating from commercial banks.

4. Insurance Undertakings and Systemic Vulnerabilities

The insurance sector plays a pivotal role in risk transference and long-term capital provision. Consequently, its systemic stability is vital. While the Solvency II Directive¹² framework significantly enhanced microprudential resilience by mandating risk-based capital requirements for individual insurers, its core focus is primarily on entity-specific solvency. This framework is demonstrably insufficient for mitigating the collective build-up of systemic exposures or for incorporating robust anti-cyclical measures across the entire sector.

Key systemic risks in this sector stem from: [a] Internal Vulnerabilities, such as significant asset-liability mismatch (ALM), particularly in life insurance and pension products; and [b] systemic amplifiers, including mass policyholder lapses or the consequences of synchronised investment strategies across large institutions, which can trigger market liquidity shocks.

The recent review of the Solvency II Directive represents a crucial step towards integrating a macroprudential dimension.¹³ Specifically, two new tools have been introduced:

[a] mandatory liquidity risk management plan (LRMP), which requires selected insurance and reinsurance undertakings to maintain a comprehensive LRMP, featuring short-term liquidity projections and the continuous development of liquidity risk indicators. This aims to ensure sufficient liquidity to meet obligations under stress, with the LRMP being subjected to regular supervisory submission; and [b] integration of macroprudential considerations into the Own Risk and Solvency Assessment (ORSA) for selected undertakings, with an additional requirement for supervisory authorities to consolidate and analyse these macroprudential assessments, providing also feedback on factors to be considered in future ORSA exercises.¹⁴ Furthermore, supervisors may direct firms to reflect specific macroprudential concerns in their investment strategies, thereby aligning individual risk decisions with systemic stability objectives.

¹¹ Central Bank of Malta, 'Financial Stability' (Central Bank of Malta) <https://www.centralbankmalta.org/financial-stability> accessed 18 January 2026

¹² Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) (recast) (Text with EEA relevance)

¹³ European Insurance and Occupational Pensions Authority, 'Final Report on draft Regulatory Technical Standards on applicability criteria for macroprudential analyses in the own risk and solvency assessment and as part of the prudent person principle' (EIOPA-BoS-25/389, 17 November 2025) https://www.eiopa.europa.eu/document/download/522e1db9-d3b9-412e-942d-f168552acf6d_en accessed 24.12.2025.

¹⁴ European Insurance and Occupational Pensions Authority, 'Consultation Paper on the proposal for Regulatory Technical Standards on liquidity risk management plans' (EIOPA-BoS-24/320, 1 October 2024) https://www.eiopa.europa.eu/document/download/236fbcae-afdd-4392-8fa0-d1c7336938a2_en accessed 24.12.2025.

5. Asset Managers and Market Amplification

As detailed by analysis from bodies such as the US Office of Financial Research (OFR), asset managers (AMs) pose systemic risks primarily through mechanisms that amplify market volatility and exacerbate liquidity pressures rather than through traditional credit intermediation.¹⁵ The key transmission channels of systemic risk from the AM sector include: [a] herd behaviour and reaching for yield: synchronised investment strategies and the collective "reaching for yield" can inflate asset prices (asset price bubbles) during benign periods, subsequently leading to disorderly unwinding and amplified market shocks; [b] redemption risk and leverage: open-ended funds offering daily or unrestricted redemption rights are vulnerable to investor runs during market stress, in this context the drive towards achieving a first-mover advantage can trigger forced sales (fire sales) of underlying assets to meet redemptions, a risk profile that is severely amplified by the use of leverage within the fund structure; [c] systemic firm failure: the sheer size and interconnectedness of major AM firms mean that the distress or disorderly failure of a single entity could rapidly transmit shocks across the financial system.

In response, Institutions such as the ESRB have focused on developing macroprudential tools to manage the leverage and liquidity risks specific to this sector¹⁶. The Alternative Investment Fund Managers Directive¹⁷ (AIFMD) Article 25 framework is a landmark development. It mandates that competent authorities assess risks arising from the use of leverage by AIFMs and grants them the power to impose leverage limits or other restrictions on fund management practices where necessary to safeguard financial stability. This is widely considered one of the first comprehensive, legally-binding macroprudential tools specifically designed for non-bank entities, serving as a template for broader regulation beyond credit risk.

To address redemption and liquidity risk, AIFMD II introduces a harmonised framework for Liquidity Management Tools (LMTs)¹⁸. This framework requires AIFMs managing open-ended funds to select and implement at least two LMTs (from a pre-defined list, such as gates, redemption fees, or swing pricing) to ensure that the fund's liquidity profile is better aligned with its redemption policies, particularly under adverse market conditions. Comparable requirements are also being applied to Undertakings for Collective Investment in Transferable Securities (UCITS) managers, signalling a coordinated push for systemic liquidity resilience across the funds sector¹⁹.

6. Conclusion

The transition to Macroprudential Policy (MaPP) constitutes an essential intellectual and operational evolution in the philosophy of financial regulation. It represents the necessary, post-crisis acknowledgment that financial stability is a public good, a collective benefit that cannot be secured merely by enforcing microprudential standards focused on the isolated health of individual financial entities. The adoption of MaPP formalises the shift from an institution centric view to a systemic, holistic risk perspective.

However, this regulatory revolution remains fundamentally incomplete. While the operational framework for banking oversight—with tools like the Countercyclical Capital Buffer (CCyB) and Systemic Risk Buffers (SyRB)—has reached a relative state of maturity, the

¹⁵ Office of Financial Research, 'Asset Management and Financial Stability' (Report, 2013)

https://www.financialresearch.gov/reports/files/ofr_asset_management_and_financial_stability.pdf accessed 24.12.2025.

¹⁶ European Systemic Risk Board, 'Recommendation on leverage and liquidity in investment funds' (Press Release, 14 February 2018)

<https://www.esrb.europa.eu/news/pr/date/2018/html/esrb.pr180214.en.html> accessed 20.12.2025.

¹⁷ Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010 Text with EEA relevance

¹⁸ European Securities and Markets Authority, 'ESMA publishes implementing rules on Liquidity Management Tools for funds' (News, 15 April 2025) <https://www.esma.europa.eu/press-news/esma-news/esma-publishes-implementing-rules-liquidity-management-tools-funds> accessed 24.12.2025

¹⁹ Ibid

consistent and coherent integration of the Non-Bank Financial Intermediation (NBFI) sector (including asset managers and insurance undertakings) into a comprehensive, system-wide MaPP framework is still work in progress. The existing prudential regulations governing these non-bank sectors, such as Solvency II and AIFMD often remain fragmented and are predominantly microprudentially driven, failing to fully capture their contribution to systemic risk through liquidity transformation, leverage, and interconnectedness.

The ultimate success and enduring credibility of the macroprudential paradigm critically hinges on bridging this supervisory gap. This requires the development, consistent calibration, and rigorous implementation of a fully integrated, cohesive regulatory framework capable of targeting vulnerabilities and transmission channels that span the entire financial ecosystem.

This framework must include a sophisticated set of macroprudential instruments that authorities can deploy to address sector specific risks capable of propagating and amplifying systemic vulnerabilities across the financial system. Crucially, this entails introducing ex-ante tools that empower supervisory authorities to mitigate the buildup of such vulnerabilities before they crystallise into systemic threats.

At the same time, it is essential to recognise the unique characteristics and activities of each NBFI segment, acknowledging that a one-size-fits-all approach is neither effective nor desirable when managing heterogeneous risks, or similar risks presenting distinct dynamics in different sectors. This ongoing pursuit of a truly unified systemic risk management architecture is the critical frontier for securing and maintaining global financial stability in the 21st century.