Designing and Operationalising Macroprudential Supervisory Reforms in Indonesia, Malaysia, Singapore, and the UK:

A Comparative Legal Analysis with Lessons for Indonesia

by

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ABSTRACT

The global financial crisis (GFC) has raised international consensus about the advantages of designating the central bank as the principal authority for the macroprudential framework. Although such an arrangement could ensure better coordination between macroeconomic and financial stability policies, it does not automatically eliminate the inherent challenges within the design and operation of macroprudential supervision. Left unaddressed, these challenges can easily impede the central bank's ability and willingness to act against the emergence of systemic risk.

In light of the worldwide adoption of the macroprudential framework, this thesis critically examines its adoptions in the UK, Singapore, Malaysia, and Indonesia, with a view to draw lessons for Indonesia. Findings assert that an effective institutional arrangement and robust legal structure are key for the central bank to manage its numerous responsibilities while ensuring its ability and willingness to mitigate the build-up of systemic risk. This thesis also uncovers that the success of managing policy trade-offs and conflicts of interest in the operationalisation of macroprudential supervision will principally be determined by (i) the access to data and information, (ii) the composition of the authorities involved in the macroprudential decision-making process, (iii) a clear separation of decision-making processes between different policy functions of the central banks, (iv) robust inter-agency coordination, (v) institutional proximity of macro-and micro-prudential authorities, (vi) coordination with the Ministry of Finance, and (vii) the extent of rule-making powers assigned to the macroprudential authority.

Using the mixed methodologies of functional comparative legal analysis, doctrinal and case study analysis, this research is the first of its kind to compare the Indonesian model with more established frameworks found in three other countries: the UK, Singapore, and Malaysia. As a result, this study expands existing literatures in law and practice through empirical evidence on the macroprudential supervisory reforms adopted in four countries. Ultimately, this research provides practical implications for Indonesian policymakers and legislators by formulating seven policy recommendations to redesign the legal structures, organisational capacity of the central bank and institutional arrangements for macroprudential supervision.

Keywords: macroprudential supervision, central banks, institutional arrangements, legal structure, inter-agency coordination, financial safety net, financial stability, systemic risk

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INTRODUCTION

I. BACKGROUND

The systemic and global impacts of the subprime mortgage crisis that originated in the US in 2007 raised profound international concerns over the importance of limiting the build-up of systemic risk in the first place. The enormous costs of the financial crises' spillover to real economic sectors—as seen through the enormous amount of public taxpayers' funds and government blanket guarantees used—have highlighted the importance of preventing the systemic financial crisis. Overall, the global financial crisis (GFC) has underlined the importance of a specialised resolution regime, a robust crisis management framework, and even more importantly, better coordinated *ex-ante* and *ex-post* regulatory regimes to safeguard financial stability.

In the modern financial system, systemic vulnerabilities often endogenously emerge and build up over time within its structure and the interactions between its different elements. Moreover, the structural weaknesses of the capitalist financial system have been further amplified by the uncontrolled development of financial innovation, as seen in the severity of contagion effects triggered by the fall in the US housing market across the globe. In today's financial system, innovation has become an important determinant in the emergence of systemic risk, as it significantly increases the interconnectedness and complexity of the system. Financial innovation not only easily increases market euphoria and the marketability of its products, but unfortunately, also generates concentration of risk exposure and exacerbates the impacts of one small shock across the global financial system. The severity of impacts from financial innovation development is further exacerbated by its frequent use by financial institutions to circumvent the rules and exploit regulatory loopholes, with the sole purpose of maximising profit. Overall, the fast-paced development taking place in financial markets merely exacerbates the problems of inherent asymmetric information and uncertainty for financial system financial regulators and supervisors.

As one great '*terra incognita*', the GFC abruptly revealed two structural fallacies within the previous policy thinking, and the consequent financial regulatory and supervisory regimes adopted across the globe.[1] On the one hand, too much emphasis was given to the objective of ensuring the safety and soundness of individual financial institutions, that led to the regulatory belief that systemic stability can be achieved once all individual institutions are solvent. Thus, systemic stability was generally being overlooked by policymakers and supervisors. Evidently, regulatory attempts to safeguard the solvencies of all individual institutions in the system do not necessarily lead to the preservation of financial stability. On the other hand, the correlations between macroeconomics and financial sectors generally went unobserved, due to the previously held belief in the ability of the financial market to self-correct and self-regulate. As a result, macro-financial vulnerabilities built up unnoticed over a course of years, within the prolonged accommodative monetary policies of the central bankers. These regulatory gaps in realigning the goals of achieving price stability and protecting the soundness of financial institutions prompt the need for a more holistic and systemic approach to financial regulation and supervision, as embodied by the macroprudential framework.

The worldwide promotion of a macroprudential framework—to complement the pre-crisis regime of microprudential supervision and monetary policy—has, thus, become an integral part of the post-GFC crisis prevention regime. By focusing on the macroeconomic perspective of financial regulation and supervision, the macroprudential framework underscores the importance of identifying, monitoring, and addressing the emergence of systemic risk to better safeguard financial stability. As a worldwide phenomenon, the integration of macroprudential approach into country supervisory arrangements is based on the no-one-size-fits-all approach,[2] to date, three major institutional models exist: (i) macroprudential mandate assigned to the central bank; (ii) mandate assigned to a dedicated committee within the central bank structure; or (iii) mandate assigned to an interagency committee outside the central bank.[3] Irrespective of these configurations, macroprudential supervision faces many significant operational challenges, including short-term political pressures, inaction bias, conflicts of interest, and trade-offs with different policy goals.

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[1] Nouriel Roubini and Stephen Mihm, *Crisis Economics: A Crash Course in the Future of Finance* (Penguin, 2011) 86.
[2] Instead of assuming that one optimal supervisory model can exist and be transposed across different countries, the adoption of macroprudential approach should be tailored to each country's legal, socio-economic, political and financial structures,
[3] Erlend W. Nier and others, 'Institutional Models for Macroprudential Policy' (2011) 11/18 IMF Staff Discussion Note 19 <https://www.elibrary.imf.org/view/journals/006/2011/018/article-A001-en.xml> accessed 7 April 2018.

Due to the counter-cyclical nature of macroprudential decisions, the operationalisation and policy goals sought by macroprudential supervision systematically intersect with other policy goals, such as price stability, safety and soundness of financial institutions, fiscal stability, consumer protections, and market competition. As the first line of defence in safeguarding financial stability, the authority directly faces the challenges created by market euphoria and the unsustainable development of markets during economic booms. In 'taking the punch bowl away just as the party gets going',[4] the macroprudential authority is most likely to be subjected to market resentment and short-term electoral political interests, that further increase the bias towards inaction and political pressure against systemic-risk mitigation.

II. PROBLEM STATEMENT AND RESEARCH QUESTIONS

The increasing importance of central banks in the wake of the 2008 GFC has raised a broad international consensus on the advantages of designating a central bank as the leading authority for the macroprudential supervisory framework.[5] Although, as the principal authority, central banks can ensure better coordination and sharing of information between macroeconomic and

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[4] William McChesney Martin, Federal Reserves

[5] IMF (2011, 2013, 2014) consistently emphasises the pivotal role played by the central bank as the ideal macroprudential authority. See: IMF(a), 'Implementing Macroprudential Policy – Selected Legal Issues' (June 2013) < https://www.imf.org/external/np/pp/eng/2013/061713.pdf> accessed 9 April 2018; IMF(b), 'Key Aspects of Macroprudential Policy' (June 2013) < https://www.imf.org/external/np/pp/eng/2013/061013b.pdf> accessed 9 April 2018; IMF(c), 'The Interaction of Monetary and Macroprudential Policies' (January 2013) 9 < https://www.imf.org/external/np/pp/eng/2013/012913.pdf> accessed 6 April 2018; Claudio Borio, 'Implementing a Macroprudential Framework: Blending Boldness and Realism' (2011) 6(1) Capitalism and Society 32 < https://ssrn.com/abstract=2208643> accessed 12 June 2018; Claudio Borio, 'Towards a Macroprudential Framework for Financial Supervision and Regulation' (2003) 128 BIS Working Paper 17 < https://www.bis.org/publ/work128.pdf> accessed 1 June 2019; The De Larosiere Group, 'The High-Level Group on Financial Supervision in the EU' (February 2009) <http://ec.europa.eu/finance/general-policy/docs/de_larosiere_report_en.pdf> accessed 5 May 2018; Erlend W. Nier, 'Macroprudential Policy – Taxonomy and Challenges' (2011) 216(1) National Institute Economic Review < https://doi.org/10.1177/0027950111411375> accessed 11 March 2018; Nier and others (n 3); Luis Garicano and Rosa M. Lastra, 'Towards A New Architecture for Financial Stability: Seven Principles' (2010) 13(3) Journal of International Economic Law 597, 599 < https://doi.org/10.1093/jiel/jgq041> accessed 21 February 2021; Gabriele Galati and Richhild Moessner, 'Macroprudential Policy a Literature Review' (2013) 27(5) Journal of Economic Surveys 7 < http://dx.doi.org/10.1111/j.1467-6419.2012.00729.x> accessed 8 February 2018; Donato Masciandaro and Marc Quintyn, 'The Evolution of Financial Supervision: the Continuing Search for the Holy Grail', in Morten Balling (ed), *50 Years of Money and Finance: Lessons and Challenges* (SUERF—The European Money and Finance Forum 2013) 264 <https://econpapers.repec.org/scripts/redir.pf?u=https%3A%2F%2Fwww.suerf.org%2Fdoc%2Fdoc_8e296a067a37563370ded05f5a3bf3ec_1919_suerf.pdf;h=repec:erf:erfftc:1-8 > accessed on 12 January 2020; Itai Agur and Sunil Sharma, 'Rules, Discretion and Macroprudential Policy' (2013) 13/65 IMF Working Paper 8 < https://doi.org/10.5089/9781475546699.001> accessed 9 August 2019; Charles Goodhart, 'The Changing Role of Central Banks' (2010) 326 BIS Working Paper 30 < https://www.bis.org/publ/work326.htm> accessed 10 August 2019; Daniel Calvo and others, 'Financial Supervisory Architecture: What Has Changed After the Crisis' (2018) 8 FSI Insights 5 < https://www.bis.org/fsi/publ/insights8.htm> accessed 11 March 2019.

financial stability policies, such an arrangement does not automatically eliminate the inherent challenges in the design and operation of a macroprudential supervision. On the contrary, it further underlines the need for an effective institutional arrangement and robust legal structure, to accommodate the central bank in managing its numerous different responsibilities and ensuring the balance of policy trade-offs with other financial safety net (FSN) authorities. Indeed, the tasks of limiting and mitigating systemic risk require effective institutional design that facilitates comprehensive sharing of information, balanced policy trade-offs, and robust inter-agency policy coordination.

In particular, balancing the policy objectives of achieving price stability and supporting financial stability can create significant operational challenges for central banks with a macroprudential mandate. Although the precise results of interactions between macroprudential and monetary policies still depend on country-specific circumstances—as revealed by the GFC—monetary and macroeconomic policies tend to be procyclical, as they may further proliferate the price of assets and leverage level taken by financial institutions during economic expansion, and exacerbate instability during market downturn.[6]

Furthermore, designing a macroprudential authority with sufficient statutory powers and institutional designs that foster strong ability and willingness to respond to the emergence of systemic risk is also not a straightforward task for policymakers and legislators. In its operationalisation, the central bank faces its own pre-existing socio-political and economic complexities in policy and practice. As independent public institutions delegated with regulatory independence and policymaking power, central banks face a series of political accountability and legitimacy issues engrained in their operations.[7]

As both central banks and macroprudential authorities, the Bank of England (BoE), the Bank Indonesia (BI), the Bank Negara Malaysia (BNM), and the Monetary Authority of Singapore (MAS) are also responsible for other statutory responsibilities in their operations. Based on the researcher's observations, these multiple statutory mandates and responsibilities of central

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[6] Erlend W. Nier and Heedon Kang, 'Monetary and Macroprudential Policies – Exploring Interactions' (2016) 86 BIS Papers 29 <http://www.bis.org/publ/bppdf/bispap86e.pdf> accessed 11 March 2019; Ibid, IMF(c) 3.

[7] Tucker (2018) sees this as one of the five precepts for delegation to independent agencies. Driven by democratic values, the central bank as an independent agency is accountable to the people through their elected representatives. See: Paul Tucker, *Unelected Power: The Quest for Legitimacy in Central Banking and the Regulatory State* (Princeton University Press 2018) 250.

banks have further increased the complexity of macroprudential supervisory conduct and decision-making processes, that contain several inherent challenges themselves. Ensuring the strong willingness and ability of the four macroprudential authorities to promptly respond to the emerging systemic risk will be a strenuous task, that requires constant management of the conflicts of interest and policy trade-offs, both within the central banks' structures themselves, and within the overall FSN framework.

Contrary to the progress of reforms in the UK, Singapore and Malaysia, in Indonesia, despite the significant institutional reforms taken through the enactments of the Financial Services Authority Acts 2011 and the Financial System Stability Committee (FSSC) Acts 2016, the roles and powers of BI as the macroprudential supervisor are still absent from any statutory laws. As a result, the mitigative response and coordination mechanism towards the emergence of systemic risk in Indonesia is not clearly established. The current Indonesian financial stability framework also primarily depends on the coordination established under the FSSC, chaired by the Minister of Finance, and ruled by the political role of the President of the country, who approve the assessment of systemic crisis situations and the activation of crisis-management tools. This research raises concerns over the prevailing shortcomings of the current macroprudential supervision in Indonesia, which create major delays and impediments to systemic-risk mitigation. Ultimately, such delays will significantly imperil financial stability, by preventing prompt action being taken before the materialisation of systemic risk into a full-blown system-wide crisis.

This research evaluates the design and operationalisation of macroprudential supervisory reforms in the UK, Malaysia, Singapore, and Indonesia, with a view to draw lessons that will be translated into policy recommendations for BI and Indonesian policymakers. The three main research questions for this thesis are:

1. How the legal structure and institutional arrangement affect the macroprudential authority's ability and willingness to act?
2. What are the main factors that contribute to the success of macroprudential supervision in its management of policy trade-offs and conflict of interests inherent in its tasks?
3. What lessons can be generated from the functional comparative analysis of the UK, Malaysia, Singapore, and Indonesia that can help redesign the macroprudential supervisory framework in Indonesia?

III. RESEARCH OBJECTIVES

This research is built on a growing number of theoretical bodies of literature on the macroprudential framework, and empirical studies on the effectiveness and operationalisation of macroprudential policy tools in the aftermath of the GFC. By focusing on supervisory design and framework architecture, this thesis aims to establish and deepen the theoretical and practical understanding of macroprudential supervision. It seeks to critically assess the rationales of the macroprudential framework, the policy objectives it seeks, the operational challenges within its tasks, and the appropriate institutional arrangement for the framework. This research also aims to assess the four countries' practices and implementation of the framework and, simultaneously, draw a theoretical understanding for the legal and institutional arrangement of macroprudential supervision, by incorporating practical aspects found in the four case studies.

Overall, this research also aims to expand further the analysis of the macroprudential institutional arrangement encompassed in the IMF's Financial Sector Assessment Programme (FSAP) on the ability and willingness of authorities to act.[8] To date, there are no exact models and standardised assessments established in determining these two qualities, except for the qualitative reviews concluded by the FSAP Teams, and the supervisory information submitted by the assessed countries (resulting reports of which often vary from one country to another). Instead of focusing just on the technical aspects of the framework, this research further incorporates an understanding of the political economy, political and legal culture, and the economic history of the four case studies, to critically assess the ability and willingness of the four macroprudential authorities to respond to the emergence of systemic risk.

At a certain level, this research is a manifestation of the renewed interest in the post-GFC in the roles of central banks in safeguarding financial stability, particularly through their function as macroprudential supervisor. By focusing on the legal structure and institutional arrangement

[8] To date, most of the IMF discussion and assessment on the macroprudential framework is limited to macroprudential policy, with a broader spectrum of definition applying to macroprudential regulation and supervision. The IMF discussion on macroprudential policy has mostly started in the aftermath of the 2008 GFC, first through the 2011 publication of Macroprudential Policy—An Organizing Framework, then in 2013, Key Aspects of Macroprudential Policy and Implementing Macroprudential Policy—the Selected Legal Issues. Later in 2014, the IMF published Staff Guidance Note on Macroprudential Policy, and lastly in 2018, the IMF's Annual Macroprudential Policy Survey—Objectives, Design and Country Responses.

of macroprudential supervision, this thesis also seeks to investigate further the broad international consensus over the pre-eminent macroprudential model of allocating the macroprudential mandate to central banks. Rather than simply providing a fortification for such consensus, this research aims to closely examine the operational details and potential challenges faced by the central banks. This thesis seeks to attest that, as the leading authority for the macroprudential framework, central banks' legal and institutional arrangements do not automatically ensure a robust institutional capacity and effective inter-agency coordination in operationalising macroprudential supervision. Therefore, this research also aims to broaden the body of literature on the role of central banks in safeguarding financial stability, which will be a determinant in the evolution of modern central banking.

The functional legal comparison made between the UK, Indonesia, Malaysia and Singapore does not aim to conclude the best design of the macroprudential supervisory framework, but to build a more complete picture of the disparate and nuanced adoptions of the framework. It also aims to facilitate a more in-depth discussion on the empirical legal and institutional issues of macroprudential supervision across the four countries, useful for crafting comprehensive policy recommendations for Indonesian legislators and policymakers. Rather than imposing a specific model for Indonesia to follow, this research argues that it will be more beneficial to take desirable features and lessons derived from the four countries' assessments, that are suitable and feasible for application in Indonesia. Specifically, this research aims to generate valuable lessons relevant to address operational issues such as inaction bias, short-term political influence, conflicts of interest, and trade-offs between different policy goals.

IV. METHODOLOGY AND JUSTIFICATION

This research has used doctrinal analysis, functional comparative legal analysis, and case study as the principal methodologies. Using these tailored approaches, this research aims to critically investigate the empirical and socio-economic context of policy and practice in the macroprudential supervisory reforms adopted in the UK, Indonesia, Singapore, and Malaysia. Doctrinal research is mainly used in systematically examining the primary sources of statutes, statutory instruments, and regulations relevant to the macroprudential supervisory reforms in the four countries. As the four case studies encompassed in this research assign macroprudential supervisory functions to their central banks, the central bank acts are extensively examined. This research methodology helps investigate the legal structures defining the macroprudential authorities' statutory mandates, responsibilities, accountability, and powers.

Functional comparative legal analysis is primarily adopted to assess the similarities and dissimilarities between the functionally equivalent macroprudential responsibilities of the four central banks.[9] This methodology will enable the assessment of the design and operationalisation of macroprudential functions assigned to the authorities. Furthermore, instead of focusing on the conventional discussion of the institutional structure of financial supervision, this research examines the institutional arrangement, that is further defined as the understanding of the comprehensiveness of the internal institutional structure of authority, and its overall coordination arrangements with other relevant authorities.[10] This emphasis is deemed helpful in discussing the management of conflicts of interest and policy trade-offs within the macroprudential task.

Additionally, this research applies a case study to empirically investigate the no-one-size-fits-all factor in macroprudential supervisory reforms across different jurisdictions, by scrutinising each country's peculiarities and other pre-existent domestic factors. This methodology is also instrumental in testing and examining the international consensus of the advantages and pre-eminence of the central bank as the principal macroprudential authority. Through the combination of functional comparative analysis, and case studies on the actual designs of legal and institutional structures of the four macroprudential authorities, this research critically assesses the structure of the central banks and macroprudential committees, organisational and functional changes within the central banks, the macroprudential policymaking process, the ownership of macroprudential powers, and the mechanism for inter-agency coordination.

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[9] It is important to highlight that the terms 'functional' and 'institutional' used in this research differ considerably from the terms 'institutional approach' and 'functional approach' used in discussion of financial supervisory structure. The institutional supervisory approach mostly refers to most traditional financial supervisory design, that assigns the supervisory task to the authority based on each firm's legal status and product lines. The functional approach, on the other hand, is determining supervisory oversight of the authority based on the business conducted by the firms, regardless of its legal status.

[10] The term 'institutional structure' primarily refers to the number and structure of agencies responsible for financial supervision, which may impact aspects such as expertise, experience, and culture developing within the agencies and the approaches they adopt. It mainly focuses on which agencies are responsible for which functions. However, these emphases are seen to be insufficient in assessing the operational aspects and dynamics in the policymaking process of financial supervision. While also considering the internal institutional structure of the supervisor, this research particularly gives more emphasis to the overall arrangements of the authority with regards to its qualities and the external structure within the FSN framework.

The comparison between the four case studies has been decided for reasons of similarities in the allocation of macroprudential mandate to the central banks. Although established at different times, the four central banks—the Bank of England (BoE), the Monetary Authority of Singapore (MAS), Bank Indonesia (BI), and the Bank Negara Malaysia (BNM)—have experienced similar significant legal and organisational changes, along with the adoption of a macroprudential framework in the post-GFC. The selection of the UK as a case study is based on the extensive availability of literature and reports on the institutional arrangements of the UK Financial Policy Committee (FPC) and the BoE, that can be used to generate essential lessons for crafting more comprehensive policy recommendations and lessons for the macroprudential supervisory framework in Indonesia. On the other hand, Malaysia and Singapore are mainly chosen for their similarities to the market dynamics and socio-political culture of Indonesia. Furthermore, the three countries share proximity in terms of cross-border financial linkage and asset-interconnectedness, resulting from the operation of the largest Malaysian and Singaporean banks in Indonesia.

As the main modes of research, interview and secondary research are used to examine the gathered data on the legal, policy and practical aspects of central banking in the four countries. To further investigate the latest developments in reform and the current operationalisation of macroprudential supervision within BI, three expert interviews with the Executive Directors of the Department of Macroprudential Policy, the Financial System Surveillance Department, and the Legal Affairs Department were conducted. These interviews enable the discovery of valuable technical knowledge in the operations and decision-making processes of macroprudential supervision in Indonesia. Through these interviews, the researcher also further leveraged the opportunity to introduce the policy recommendations drawn by this research to the three experts, and seek their responses—which are further incorporated into the final concluding remarks and recommendations made in this thesis. Additionally, this thesis extensively utilises the secondary research drawn from the literature, the IMF's FSAP reports, various countries' official reports, and the central bank annual reports from 1997-2020. The IMF reports and guidance notes are especially useful in providing an important basis for understanding and assessing the implementation and design of macroprudential frameworks.[11]

[11] The Key Aspects of Macroprudential Policy (2013) and Guidance Note (2014) provide practical guidance for countries in designing and implementing the framework. Implementing Macroprudential Policy—Selected Legal Issues (2013) further guides the countries in designing the framework and addressing potential legal issues in its

By drawing on the broader existing secondary literature, this research aims to further incorporate the various empirical aspects of macroprudential supervision into the theoretical framework and understanding of the macroprudential framework.

V. SIGNIFICANCE OF THE THESIS

The studies and research on the macroprudential framework have increased exponentially in the aftermath of the GFC 2008, with some influential works from Claudio Borio, Erlend W Nier, Steven L Schwarcz, Dirk Schoenmaker, Charles Goodhart, and so on, whose writings have been extensively used to guide and build the conceptual understanding incorporated in this research. However, most of this literature is still loose in its definition of terms such as macroprudential framework, macroprudential policy, macroprudential regulation and macroprudential supervision, often using them interchangeably. Most of the work in the field also comes from empirical economic studies, focusing mainly on the effectiveness of macroprudential policy measures. Therefore, by combining analysis on legal structure and institutional arrangements, this thesis helps to both develop and enlarge the empirical legal comparative studies on macroprudential supervision, in both developed and emerging countries, in the aftermath of the GFC.

To my knowledge, this research is the first study comparing Indonesia's model with other more established frameworks in countries such as the UK, Singapore, and Malaysia. Over the last three decades, the UK financial regulatory and supervisory frameworks have driven an overwhelming amount of literature on economics, legal and political economy studies. By extending such discourse to three emerging countries, while at the same time acknowledging each country's peculiarities and pre-existing arrangements, this research expands the current scope, and lays a pathway for future research on the macroprudential framework. The analysis and observations concluded on the nuanced adoption of the macroprudential supervisory framework in each of the four countries will further fortify the no-one-size-fits-all approach of macroprudential supervision, and generate important institutional lessons for other countries considering macroprudential reforms. By critically assessing the four frameworks' legal structure and institutional arrangements, this thesis also contributes to the growing mass of

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reforms.

theoretical and conceptual literature on macroprudential frameworks drawn from countries' empirical experiences.

This thesis also provides an in-depth assessment of the four central banks' principal positions in managing the macroprudential supervisory function, and addressing the operational challenges and complexities faced by the authority. By focusing on the institutional capacity of the central banks, and the inter-agency coordination built on the broader context of the FSN framework, this thesis contributes to the current scholarly debate and the more general fascination regarding the development of modern central banking in the post-GFC era. Against the background of the constant development of the financial system, driven by innovation, this thesis further demonstrates the evolutionary developments of financial supervision and central banking in safeguarding financial stability over the last three decades. By drawing correlation lines between developments in the financial system, financial supervision and central banking, this thesis showcases the complexity inherent in the financial markets, and in their regulatory and supervisory spheres. It emphasises the urgent need to terminate the tendency towards institutional distrust and 'turf wars' between financial supervisors and central banks—as frequently seen in the 1990s—which will be a vital element in successfully addressing the growing magnitude of challenges created by future systemic risks.

Ultimately, this research provides practical implications for Indonesian policymakers and legislators, by drawing seven policy recommendations on macroprudential reforms, encompassing aspects of legal structures, the internal organisation of the central bank and institutional arrangements that can be considered in upcoming regulatory reforms in the country. This comparative research will help to identify a more desirable framework for macroprudential supervision in Indonesia, and raise in-depth discussions on the shortcomings of BI's current legal and institutional arrangements.

VI. LIMITATIONS OF THE STUDY

As the adoption of macroprudential supervision has widely diverged from one country to another, this comparative assessment can only offer limited geographical coverage, and thus risks over-generalising the peculiarities and domestic factors found in the four case studies. It is acknowledged that there is still a need to broaden further the scope of case studies, in order to generate a more conclusive analysis on the significance of the legal and institutional arrangements in affecting the willingness and ability of macroprudential supervision assigned to central banks. Overall, the construction of legal and institutional analysis applied in this research can still be expanded to accommodate other countries with different political and legal cultures. Furthermore, as this study only covers the macroprudential supervisory frameworks allocated to the central bank, the analysis may only be relevant for the institutional arrangements and operationalisation of this particular configuration, rather than all models of macroprudential authorities adopted worldwide.[12]

Although extensively examining the macroprudential supervision's legal structure and institutional arrangement, the assessment made in this research does not explicitly cover the governance aspects of the central banks. Even though the analysis is made to encompass the general governance structure, decision-making processes, accountability, and independence aspects of authority, the main lens of analysis lies on the legal and institutional aspects of the framework. Although this issue is not necessarily a significant limitation of the research, there may be some disapproval regarding the use of a few overlapping concepts in analysing the institutional arrangement of four macroprudential supervisors, and which is lacking in elaboration on governance theories and literature.

Lastly, there is a consideration over the different focus of regulatory reforms sought by Indonesian legislators, as demonstrated by the latest drafts of the Reform Bill submitted to the House of Representatives in August 2020, and then resubmitted in March 2021. While the first draft focused mainly on reversing the transfer of microprudential regulation and supervision from the Indonesian Financial Services Authority (OJK) to BI, the second draft focuses on the repositioning of the central bank's operations under the Minister of Finance; which could curtail the independence and legitimacy of BI as an independent public authority, as established since the post-AFC reforms. Therefore, considering the current political priorities, the recommendations formulated in this study might not find immediate application by the legislators.

[12] Nier and others (2011) identified eight different variations in the macroprudential model based on several key dimensions, such as the degree of institutional integration of central bank and financial regulatory functions; ownership of macroprudential policy; the role of the treasury; the institutional separation of policy decisions from control over policy instruments; and the existence of a separate body coordinating across policies to address systemic risk. See: Nier and others (n 3) 7.

VII. STRUCTURE OF THESIS

Part 1 – Conceptual Framework

This part is designed to consolidate the legal, macroeconomic, financial, economic history, and political economy discussions, to establish a conceptual understanding of the macroprudential supervision, and the systemic risk challenges it faces in safeguarding financial stability and enhancing systemic resilience. It critically examines the roles of financial supervision and macroprudential supervision in monitoring and controlling the inherently destabilising forces of the modern financial system.

Chapter I critically examines the fundamental characteristics of modern financial sectors, and the conceptual understanding of inherent systemic instability within the Minskyan Financial Instability Hypothesis (FIH). This chapter emphasises the vital role of financial innovation in generating the ever-growing complexity and interconnectedness in modern financial markets, and exacerbating the uncertainty faced by financial supervisors. Further, the structural weaknesses of the financial supervisory frameworks leading to both events of the Global Financial Crisis (GFC) 2007-2009 and the Asian Financial Crisis (1997-1999) are critically examined. It asserts that the financial sectors should never be left unregulated and unsupervised, due to their inherent instability and the tendency to excessive euphoria and mania during market upswings, that eventually lead to the emergence of systemic risk and crisis. This discussion is vital in building the macroprudential rationale in 'taking the punch bowl away just as the party gets going' that often creates political backlash and the supervisory forbearance resulting from the utter confidence that 'this time is different'.[13] The results of this analysis are also valuable for understanding the origins and characteristics of systemic risk faced by the macroprudential authority.

Chapter II explores the fundamentals determining the development of financial supervision as an independent policy area, that emerged to complement financial regulation since its early establishment in the 1970s. It underlines the rationale for the financial supervision in providing a better chance to address the ever-growing challenges imposed by financial innovation on the modern financial system. Through the theoretical explorations of the roles of law under the

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[13] Carmen Reinhart and Kenneth Rogoff, *This Time is Different: Eight Centuries of Financial Folly* (Princeton University Press 2009)

Legal Theory of Finance (LTF) and the roles of political institutions as understood under the theory of regulation, this chapter further examines the two critical factors determining the institutional design and operationalisation of financial supervision. In the last few decades, the fundamentals within financial supervision have continuously evolved alongside the evolution of the understanding of financial stability. This chapter further asserts that the new understanding of financial stability established post-GFC should be used to foster closer cooperation and coordination between the FSN authorities, while at the same time curbing market expectations that financial supervision is established to prevent the possible occurrence of the financial crisis. As an integral part of financial supervision development, this chapter also critically highlights the determinant roles played by the central banks, that always have a genuine interest and natural role in the financial sector and financial stability.

Chapter III establishes a profound conceptual framework for macroprudential supervision in the wake of the GFC, by closely examining the rationales of macroprudential reform, the policy objectives it seeks, and the operational challenges it faces. It also re-examines the understanding of financial stability with reference to the ongoing development of the macroprudential framework. The chapter attests that although the macroprudential framework has been widely acknowledged as an integral part of the strategy for achieving financial stability, it should not be overburdened with such a broad policy goal. Instead, macroprudential supervision should only focus on limiting the build-up of systemic risk and enhancing the financial system's resilience within its roles in contributing to financial stability. This chapter also critically examines the inherent operational challenges faced by macroprudential supervision, including short-term political influence, inaction bias, supervisory forbearance, conflicts of interest, trade-offs with other policy goals, and ineffective coordination with other FSN authorities. Thus, in effectively limiting and mitigating the build-up of systemic risk, macroprudential supervision depends primarily on its coordination and interactions with other policy sectors, particularly the FSN authorities. As a result, the success of macroprudential supervision rests on various factors—particularly a robust institutional framework, the quality of analysis produced, the implementation and effectiveness of the macroprudential policy tool, the persuasiveness and credibility of the recommendations issued, the institutional capacity in managing conflicts of interest and policy trade-offs, and political skill in coordinating the policy actions.

Part 2 – Case Studies

Chapter IV provides an overview of the current *ex-ante* and *ex-post* financial stability frameworks—incorporating the new resolution regime, macroprudential supervision and the crisis management framework in the aftermath of the GFC—in the UK, Indonesia, Malaysia, and Singapore. It also provides an institutional analysis of all FSN authorities in each case study, encompassing each authority's statutory objectives, functions, accountability, and governance structure. In so doing, a better understanding of the complex ecosystem and inter-agency coordination between the FSN authorities can be constructed. The chapter further discusses the current operationalisation of macroprudential supervision in targeting the build-up of systemic risk post-GFC, and during the COVID-19 pandemic crisis.

Part 3 – Comparative Analysis

Chapter V evaluates the macroprudential supervisory reforms in the UK, Indonesia, Malaysia, and Singapore, by critically analysing and comparing their legal and institutional arrangements. Incorporating the functional comparative legal methodology into the case study analysis, this chapter ascertains several critical issues relevant to the allocation of macroprudential function within the central bank in the four case studies. It further examines the structural impacts of allocating numerous policy goals and functions within the four central banks, and their respective capacities in resolving the potential conflicts of interest and policy trade-offs inherent in macroprudential operations. This chapter asserts that the allocation of macroprudential responsibility to the central bank structure has not necessarily removed the challenges to the operations of macroprudential supervision, nor ensured more effective inter-agency coordination within the FSN framework. The domestic peculiarities and other pre-existent factors may play significant roles in determining the operationalisation of the macroprudential framework. These include (i) the access to data and information, (ii) the composition of the authorities involved in the macroprudential decision-making process, (iii) a clear separation of decision-making processes between different policy functions of the central banks, (iv) robust inter-agency coordination, (v) the institutional proximity of macro- and micro-prudential authorities, (vi) coordination with the Ministry of Finance, and (vii) the extent of rule-making powers assigned to the authority.

Part 4 – Research Findings and Policy Recommendations

Chapter VI presents the thesis's final observations, summary of findings and recommendations to Indonesia. It concludes the assessments of the four macroprudential supervisors on their willingness and ability to respond to systemic risk build-up. As can be seen from the four comparative assessments made, the allocation of macroprudential function into the central banks' organisational structure does not automatically eliminate the inherent challenges in designing and operationalising macroprudential supervision. Instead, such arrangements further underline the necessity to ensure more effective institutional arrangements and legal structures, to accommodate the effective management of numerous financial stability responsibilities and powers within the central bank's structure. Deriving mainly from the assessments made in chapter V, this chapter summarises the strengths and weaknesses of the four macroprudential supervisory arrangements in affecting the ability and willingness of authority to take prompt action against the emergence of systemic risk.

Overall, the challenging counter-cyclical tasks of the macroprudential framework in supervising and monitoring ever-evolving systemic risk are aggravated by the intrinsic limitations of the financial regulatory and supervisory framework, as they are primarily reactive and quickly become obsolete due to the expeditious nature of financial markets. Thus, ensuring a well-working macroprudential supervisory framework will be vital in providing a better safeguard for the financial system. A well-designed legal structure and institutional arrangement will be essential to support the institutional capacity of macroprudential supervisors, and effective inter-agency coordination with the rest of the FSN authorities, that further strengthening the ability and willingness of supervisors to take action in response to systemic risk.

A conclusion is also drawn about the extent to which the reform and development of macroprudential supervision in the UK, Singapore, Indonesia, and Malaysia is able to provide essential lessons for redesigning and reforming the macroprudential supervisory framework in Indonesia. Ultimately, seven policy recommendations are formulated for Indonesian legislators and policymakers to redesign the legal structure, organisational capacity, and institutional arrangement aspects of macroprudential supervision. Furthermore, the challenges ahead for macroprudential supervisory reforms and the potential scope for future research are also presented.

CHAPTER I

FINANCIAL CRISES AND THE ROLES OF FINANCIAL SUPERVISION

I.I. INTRODUCTION

To date, there is a vast array of literature discussing the causes and impacts of the Asian Financial Crisis (AFC) and the Global Financial Crisis (GFC), that put forward various approaches to better understand the characteristics of each event of instability. This chapter aims to extend the analysis of the structural weaknesses in the financial supervisory frameworks, which led to the occurrence of the two significant crises in the modern capitalist financial system. It outlines a new perspective in revisiting the two events, by critically incorporating the Minskyan understanding of financial instability, and the challenges created by financial innovation. Without disregarding the roles of other factors, the exploration of these financial supervisory weaknesses aims to demonstrate the reoccurring shortcomings of financial supervision, and regulation, in the times of market upswing leading to the emergence of systemic risk prior to the events of the AFC and the GFC.

Section II discusses a theoretical understanding of the vulnerability of the modern financial system; this analysis will build a basis for assessing the inherent limitations of financial regulation and supervision in safeguarding the system. The section will include a critical examination of financial innovation's role in generating negative externalities and the emergence of systemic risk, and an analysis of the resulting complexity and uncertainty within the modern financial system. Extensive attention is given to the rise of several major financial innovations, that have grown to be significant destabilising forces during the GFC. Sections III and IV examine the extent of supervisory weaknesses and failures leading to the emergence of systemic risk in both the GFC and the AFC. A conclusion will be drawn in Section V.

I.II. HOW VULNERABLE IS THE MODERN FINANCIAL SYSTEM?

The rapid amplification of the US subprime housing crisis into the worst global recession after the 1930s highlights a vital lesson to better understanding the evolving nature of the modern financial system, and its inherent endogenous instabilities.[1] More than a decade after the global meltdown in 2007-2009, how much safer the financial system has become remains a question that cannot easily be answered. There are undoubtedly significant improvements through the larger capital buffers imposed on banks, more stringent risk management rules, and more rigorous supervision of the system. However, as new sources of vulnerabilities will continuously emerge along with ever-evolving financial innovation, stability in the modern financial system appears to always be in a state of flux. To date, this state of affairs constantly creates significant challenges to the effectiveness of financial regulation and supervision imposed on the system.

Acknowledging such inherent challenges, it is essential to understand the characteristics and vulnerabilities of our modern financial system for financial regulation and supervision to function effectively. Yet, to date, predicting the emergence of a financial crisis is still an impossible quest for economists and analysts, even using the most sophisticated risk-management tools. What we know so far is that a financial crisis is not built overnight. Frequently, there are many signs pointing to looming threats—however in most cases, these warnings go unnoticed, and sometimes, for various reasons, have even been deliberately ignored by supervisors.[2] Indeed, in the years prior to the GFC, many warned about the potential dangers of the exponential growth of global imbalances, the fragility of the US subprime housing market, severe principal-agent problems, and the danger of opaque complex financial products.[3]

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[1] The GFC is brand new in terms of its interconnectedness and the resulting shock transmission which took place in the complex globalised financial system. It brought not only the financial institution into default, but also paved the way to the sovereign debt crisis in the Euro area, and marked a period of general recession among global economies in both developed and developing countries.

[2] The Federal Open Market Committee (FOMC) in the US had actually mentioned the building fragilities over its transcripts throughout the 2000s. Since early 2000s, the build-up in household debt had already been raised, while the house price bubble had also been noticed in 2005. See: David Aikman and others, 'Would Macroprudential Regulation Have Prevented the Last Crisis?' (2018) 747 The Bank of England Staff Working Paper 21< https://www.bankofengland.co.uk/working-paper/2018/would-macroprudential-regulation-have-prevented-the-last-crisis> accessed 12 August 2020.

[3] In 2006 and 2007, BIS had frequently identified and made warnings on the potential risk in the structured

Across the history of modern civilisation, the cycle of boom and bust is a fundamental part of the capitalist financial system. Financial crises, in fact, are as old as capitalism itself.[4] Indeed, once we observe closely, a financial crisis is not a rare phenomenon, depicted by some experts as a 'freak event' or 'black swan event'.[5] Rather, financial crises are predictable, and 'generally follow the similar script over and over again'—but rarely with the same trigger.[6] There is an inherent instability—often generated by the mutual interactions between the financial system and the real economy—within the modern financial system, which is continuously building up and generating vulnerabilities leading to systemic crises.[7] Prior to almost every financial crisis, there are frequently recorded boom episodes, where the expansion of the economy is fuelled by the easing of credit conditions and market optimism.[8] Overall, this boom situation can quickly turn to bust following an increase to interest rates by the central bank to maintain the inflation rate, the unsustainable increase of lenders' and borrowers' risk, or any external trigger.[9]

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financial products. Back in 2005, Raghuram Rajan presented a controversial paper that concludes that the compensation scheme adopted by banks and other financial institutions was erroneous and extensively overpaid. See: Raghuram Rajan, 'Has Financial Development Made the World Riskier?' (2005) 11728 National Bureau of Economic Research < https://ideas.repec.org/p/nbr/nberwo/11728.html> accessed 6 June 2019.

[4] Nina Dodig and Hansjörg Herr, 'Theories of Finance and Financial Crisis: Lessons for the Great Recession, Institute for International Political Economy Berlin' (2015) 48 Berlin School of Economics and Law, Institute for International Political Economy (IPE) Working Paper 3 < https://ideas.repec.org/p/zbw/ipewps/482015.html> accessed 10 September 2020.

[5] Instead, there is actually a pattern of speculative euphoria that occurred since the Dutch Tulip Bulb Bubble (Tulip mania) in 1636, as recorded by Aliber and Kindleberger (2015). Between 1970 till 2008, there were 124 systemic banking crises, 208 currency crises, 63 sovereign debt crises and a global economic downturn about once in every ten-year period. The term 'black swan' is referred to the term popularised by Nassim Nicholas Taleb (2010) in his book *The Black Swan: The Impact of the Highly Improbable* (Penguin Books 2010). See: Robert Z. Aliber, and Charles P Kindleberger, *Manias, Panics and Crashes: A History of Financial Crises* (7th, Palgrave Macmillan 2015); Sher Verick and Iyanatul Islam, 'The Great Recession of 2008 - 2009: Causes, Consequences and Policy Response' (2010) 4934 IZA Discussion Paper 8 < https://ssrn.com/abstract=1631069.> accessed 12 April 2020; Luc Laeven and Fabian Valencia, 'Systemic Banking Crises: A New Database' (2008) 224 IMF Working Paper < https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Systemic-Banking-Crises-A-New-Database-22345> accessed 10 June 2020; Carmen M. Reinhart and Kenneth S Rogoff, *This Time is Different: Eight Centuries of Financial Folly* (Princeton University Press, 2009).

[6] Nouriel Roubini and Stephen Mihm, *Crisis Economics: A Crash Course in the Future of Finance* (Penguin Books, 2011) 16.

[7] Hyman P. Minsky, *Stabilizing an Unstable Economy* (McGraw-Hill 2008).

[8] Kindleberger (1978) and Minsky (1986) argue on the condition of credit expansion as the precondition for a boom phase in the economy. While Keynes argued for market expectations that may trigger credit expansion, Minsky focuses largely on an endogenous trigger. See: Dodig and Herr (n 4) 13; Charles P. Kindleberger, *Manias, Panics and Crashes: A History of Financial Crises* (4th, Palgrave Macmillan 1978); Hyman P. Minsky, *Stabilizing an Unstable Economy* (1st, Yale University Press 1986).

[9] Minsky (n 7).

Under the so-called Financial Instability Hypothesis (FIH), the financial system's stability is understood not to be a permanent condition.[10] Driven by excessive expectations and speculations, market behaviours and financing structures generated within modern economics will quickly move from hedge financing to speculative and eventually Ponzi financing.[11] During relatively stable conditions, the financial system is characterised by hedge financing, in which investors are able to use their income to pay back the interest and principal of their credit. As the credit expands and the expectation for higher future profitability keeps increasing, the appetite for investment also increases, and more participants join the markets, further fuelling asset prices.[12] With future profitability secured, more investors take higher risks and leverages during the speculative phase. Although credit interest can still be afforded by future revenues, investors in speculative financing start to face difficulties in paying back the principal. Eventually, at the Ponzi financing stage, investors mainly rely on refinancing to pay both credit principal and interest. Thus, any increase in interest rates will quickly amplify losses and payment commitments for Ponzi borrowers. At the systemic level, the volume of the market's debts will also grow along with the expansion of the economy. This substantial increase of indebtedness among financial participants and the entire system escalates the economy's fragility to small shocks, and the tendency of markets to easily amplify financial instability.[13]

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[10] John Maynard Keynes (1936), Hyman Minsky (1986), and Charles Kindleberger (1978) assert that the modern financial system is endogenously unstable. While Keynes led the discussion on the endogenous money supply and the role of uncertainty within the financial markets and investment decisions, his work did not systematically and explicitly discuss financial crises and the analysis of indebtedness and credit in economy, like Minsky. Hyman Minsky was the first scholar in the Keynesian tradition who developed a Keynesian model with the focus on analysis of credit, debt and the balance sheet of economic units. While Aliber and Kindleberger (2015) explicitly follow the Minskyan theoretical account, they focus on historical perspective in exploring many different triggers for each major economic boom recorded. See: Ibid, 5; Hyman P. Minsky, 'The Financial Instability Hypothesis' (1992) Levy Economics Institute of Bard College < https://www.levyinstitute.org/pubs/wp74.pdf> accessed 20 January 2020; Hyman P. Minsky, 'The Financial Instability Hypothesis: Capitalist Production and the Behavior of the Economy' (1982) Levy Economics Institute of Bard College < https://digitalcommons.bard.edu/hm_archive/282/?utm_source=digitalcommons.bard.edu%2Fhm_archive%2F282&utm_medium=PDF&utm_campaign=PDFCoverPages> accessed 20 January 2020; John Maynard Keynes, *The General Theory of Employment, Interest and Money* (Macmillan Cambridge University Press 1936); Kindleberger (n 8).

[11] Minsky (n 7) 230-1.

[12] Aliber and Kindleberger (n 5) 28; Committee on the Global Financial System, 'Recent Innovations in International Banking (Cross Report)' (1986) 1 CGFS Papers < https://www.bis.org/publ/ecsc01.htm> accessed 12 January 2020.

[13] Edgardo Bucciarelli and Marcelo Silverstri, 'Hyman P. Minsky's Unorthodox Approach: Recent Advances in Simulation Techniques to Develop His Theoretical Assumptions' (2013) 36(2) J. Post Keynesian Economics 299, 303 < https://www.tandfonline.com/doi/citedby/10.2753/PKE0160-3477360206?scroll=top&needAccess=true> accessed 12 January 2020.

I.II.a. Financial Innovation and the Emergence of Systemic Risk

As a natural outcome of competition within the capitalist financial system, innovation plays an essential role in developing novel financial products that can improve capital allocation, support higher productivity and economic growth.[14] In actively shaping the financial activities and products developments, financial innovation—since the invention of currency and bills of exchange in the 17th Century—has also brought many improvements and benefits to the economy. The technology revolution and financial innovation have profoundly changed the nature of modern financial institutions' business, products offered, and funding sources.[15] However, by its nature, financial innovation is a Janus-like creature.[16] Although undoubtedly it has brought many significant developments and improvements to the financial system, as the key feature of the 21st Century financial system, financial innovation has also generated many negative externalities due to its increasing use as the profit maximiser.[17]

Hyman Minsky perceived financial innovation, or 'displacement', as exogenous shocks that fuel market optimism and the emergence of economic boom.[18] In the form of highly sophisticated and complex financial products, the lightly regulated and uncontrolled financial innovation in the decades preceding the GFC left the financial system prone to the emergence of new systemic risks.[19] In the absence of a universally agreed definition, we can use the IMF's definition of systemic risk: 'the risk of disruptions to the provision of financial services that is caused by an impairment of all or parts of the financial system and has the potential to have

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[14] Emilios Avgouleas, 'Regulating Financial Innovation', in Niamh Moloney, Eilis Ferran, and Jennifer Payne (eds), *The Oxford Handbook of Financial Regulation* (1st, Oxford University Press 2015) 660; Stephen A. Lumpkin, 'Regulatory Issues Related to Financial Innovation' (2009) 2 OECD Financial Market Trends 2 <10.1787/fmt-v2009-art14-en> accessed 11 February 2020.

[15] Lawrence G. Baxter, 'Understanding the Global in Global Finance and Regulation', in Ross P. Buckley, Emilios Avgouleas, and Douglas W. Arner (eds), *Reconceptualising Global Finance and Its Regulation* (Cambridge University Press 2016) 36.

[16] Avgouleas (n 14) 664.

[17] Richard Barwell, *Macroprudential Policy: Taming the Wild Gyrations of Credit Flows, Debt Stocks and Asset Prices* (Palgrave Macmillan 2013) 65; Josh Lerner and Peter Tufano, 'Thoughts about Financial Innovation', in Douglas Evanoff, and others (eds), *Achieving Financial Stability: Challenges to Prudential Regulation* (World Scientific Publishing 2017) 270.

[18] Displacement generally refers to an external event in the macroeconomic system that increases financial and real assets' prices. Prior to a crisis, an exogenous shock in the form of a 'displacement' or innovation usually emerges through variant forms, which in the latest crisis came in the shape of securitisation and the shadow banking system. Aliber and Kindleberger (2015) refer to examples of displacement including war, revolution, restoration, technology revolution, regime change and financial regulation changes. See: Aliber and Kindleberger (n 5) 57.

[19] Alistair Milne, 'Macroprudential Policy: What Can It Achieve?' (2009) 25(4) Oxford Review of Economic Policy 610 < https://www.jstor.org/stable/23607081> accessed 8 April 2019.

serious negative consequences for the real economy'.[20] Systemic risk thus contains two main elements: an economic shock that can trigger either the failure of a chain of markets or institutions or a chain of significant losses to financial institutions; and secondly, the resulting impacts that create substantial financial-market price volatility.[21]

In its real events, systemic risk frequently manifests itself in the three different forms of correlation, connectedness (interconnectedness), and contagion.[22] Correlation refers to the failure of multiple institutions resulting from the exogenous event or shock, such as the collapse of asset prices or the fall of the US housing market during the GFC.[23] Connectedness, or interconnectedness, on the other hand, refers to the failure of one institution causing the losses of other institutions that are connected through the contractual obligations or funding, and may trigger a chain reaction. Lastly, systemic risk is also understood as the contagion problem, which is defined as 'the indiscriminate spread of run-like behaviour throughout the financial system'.[24] Unlike the other two problems, contagion contains more uncertainty factors, and could emerge and spread solely based on the fear that an institution *might* fail, including supposedly healthy institutions.

The GFC revealed that the market fundamentalism of the Efficient Market Hypothesis (EMH) had significantly failed to consider both the complexity of modern financial markets and the nature and pace of financial innovation.[25] The widespread popularity of the novel securitisation products and derivatives contracts across the global financial system significantly increased the markets' complexity and opacity.[26] The malevolent development of securitisation leading

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[20] IMF, BIS and FSB, 'Report to the G-20: Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations' (October 2009) <https://www.imf.org/external/np/g20/pdf/100109.pdf> accessed 6 March 2018.
[21] Steven L. Schwarcz, 'Systemic Risk' (2008) 97 The Georgetown Law Journal, 193, 204 < https://scholarship.law.duke.edu/faculty_scholarship/1903/> accessed 14 April 2019.
[22] Hal Scott, 'How to Improve Five Important Areas of Financial Regulation', in the Kauffman Task Force on Law, Innovation and Growth, *Rules for Growth: Promoting Innovation and Growth Through Legal Reform* (Ewing Marion Kauffman Foundation 2011) 114.
[23] Hal S. Scott, *Connectedness and Contagion: Protecting the Financial System from Panics* (The MIT Press 2016) 1.
[24] Ibid.
[25] Dan Awrey, 'Complexity, Innovation and the Regulation of the Modern Financial Markets' (2011) 2(2) Harvard Business Law Review 235, 238 < http://dx.doi.org/10.2139/ssrn.1916649> accessed 11 June 2019.
[26] Emilios Avgouleas, *Governance of Global Financial Markets: The Law, The Economics, The Politics* (1st, Cambridge University Press, 2012) 129; Miguel Segoviano and others, 'Securitization: Lessons Learned and the Road Ahead' (2013) 13/255 IMF Working Paper 7 < https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Securitization-Lessons-Learned-and-the-Road-Ahead-41153> accessed 21 February 2020; Ross P. Buckley and Douglas W. Arner, *From Crisis to Crisis: The*

to the build-up of systemic vulnerabilities prior to the GFC is a textbook illustration of how financial innovation generates systemic risk. Although previously hailed as a catalyst of risk diversification, securitisation euphoria merely transferred and concentrated the risk to the holders of mortgage-based securities products—who are primarily banks and sophisticated investment banks, as its most active buyers.[27]

In the past three decades, financial innovation has radically increased the marketability and standardisation of financial products, leading to ever-increasing complexity and interconnectedness between sectors and geographical boundaries. As an innovative financing technique of the 1990s, securitisation has since become an important method of transforming a pool of illiquid assets into more tradeable securities, deriving payments from underlying assets.[28] Through its complicated and sophisticated pooling, repackaging, and 'tranching' processes,[29] securitisation diversifies the risk of a pool of assets by transforming it into different types of products with varying risk and maturity features.[30] This technique is also increasingly used to further create more synthetic instruments out of pre-existing securities, such as the collateralised debt obligations (CDOs) that result from re-securitised mortgage-backed securities (MBS), by mixing the pool of mortgage loans and other asset-backed securities (ABS).[31] While a single MBS is usually made from several thousand mortgages, as many as 150 MBSs can further be repackaged into a single CDO, and a group of CDOs can be turned into the following CDO-squares, and so on. While the risks seem to be distributed among these products, the created layers of origination and repackage of assets obfuscate the entire process,

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Global Financial System and Regulatory Failure (Kluwer Law International 2011) 104, 114; Douglas Arner, 'Emerging Market Economies and Government Promotion of Securitization' (2002) 12 Duke Journal of Comparative & International Law 505 <https://scholarship.law.duke.edu/djcil/vol12/iss2/21/> accessed 23 April 2020.

[27] Ibid, Avgouleas, 101; Martin Hellwig, 'Systemic Risk in the Financial Sector: An Analysis of the Subprime - Mortgage Financial Crisis' (2009) 157(2) De Economist 6 <https://link.springer.com/article/10.1007/s10645-009-9110-0> accessed 12 March 2020; Darrel Duffie, 'Innovations in Credit Risk Transfer: Implications for Financial Stability' (2008) 255 BIS Working Paper <https://www.bis.org/publ/work255.pdf> accessed 21 February 2020.

[28] Reinhart and Rogoff (n 5) 210; Gary B. Gorton and Andrew Metrick, 'Regulating the Shadow Banking System' (2010) SSRN 8 <http://dx.doi.org/10.2139/ssrn.1676947> accessed 1 February 2020.

[29] Through tranching, a pool of loans will be sliced into different levels of tranches based on the contained level of risk, which are the senior tranche, the mezzanine tranche and the equity tranche. These securities are also further sliced and divided into different tranches based on the seniority of the payment and risk contained. See: Segoviano and others (n 26) 17.

[30] Stephen Valdez and Philip Molyneux, *An Introduction to Global Financial Markets* (7th, Palgrave Macmillan 2013) 288.

[31] Ibid.

making it impossible for credit analysts to trace the origin of underlying assets.[32] The resulting securitised products thus become opaque and difficult to understand for buyers and originators alike, which significantly challenges the effectiveness of the market disclosure imposed by the self-regulating regime.

Fast-paced innovation also significantly exacerbates boundary problems for financial regulation and supervision, as institutions can easily exercise various options to escape regulatory requirements.[33] Driven by profit maximisation interest, financial innovation further accommodates and facilitates a significant transformation in the institutions' balance-sheet structures. By establishing off-balance-sheet entities, such as special purpose vehicles (SPV) (also called special-purpose entities, or SPEs),[34] banks are able to shift their activities into securities underwriting, and raise low-cost financing through direct access to capital markets.[35] As a separate legal entity, SPVs are classified by regulators as 'bankruptcy remote', as they are seen as entities established solely to hold low-risk pools of diversified loans, and issue securities instruments that primarily received AAA rates from the credit rating agencies (CRAs).[36] Therefore, in theory, as the holder of the collateral (underlying assets), the SPV is not legally affected by risky lending activities or the failure of its originator bank.[37] Consequently, the institutions and investors purchasing the products only need to consider the SPV's credit quality, which is mainly rated by the CRAs and treated by the regulators as a relatively riskless product.

Overall, by off-loading loan portfolios into these legal conduits, banks can move their risky, complex assets off their balance sheets, significantly reducing the capital requirements imposed on them. At the same time, on the other side of the balance sheet, the SPVs conduct the

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[32] While assessing the value of simple mortgage pools of MBSs are still feasible, it becomes much harder to assess the value of the derived tranched securities, and the subsequent securities derived from the tranches of derived securities.

[33] Jonathan McMillan, *The End of Banking: Money, Credit and the Digital Revolution* (Zero-One Economics 2014) 8.

[34] The SPVs and SPEs are investment trusts that created as legal entities separated from the bank, which function in holding the purchased underlying assets, repackaging, and then issuing securities instruments from this pool of assets.

[35] This is largely done by selling and purchasing new sophisticated and complex financial products through the SPVs that fall outside the reach of regulatory and supervisory controls. The complex financial products that are held on the asset side of many financial institutions usually include the the ABSs, CDOs, MBSs, CDS, and so on.

[36] Valdez and Molyneux (n 30) 288.

[37] Because the servicer will still collect payments from the borrowers, thus the interest and principal payments collected will still go to the investors that bought the securities from the SPV. See: Ibid, 288.

securitisation process, by repacking and issuing complex asset-backed securities, that significantly transformed the previous risky loans into highly rated securities products which are ready to be sold to the global financial markets.[38] This practice of transforming the balance sheet structures of the bank was a significant regulatory loophole which increased the opacity of the entire financial system. Through such advanced techniques, financial innovation has further facilitated the proliferation of cross-border regulatory arbitrage, supporting the massive expansion of off-balance-sheet credit in the shadow banking market.[39] Thus, instead of being created purely to generate socially optimal outcomes, financial innovation has increasingly become more of a self-referential product for financial institutions, as it incentivises a small group of people and is widely abused as a tool to get around the regulations.[40]

In the case of securitisation, the arbitrage and opacity underlying the process—which have been around since as early as the 1970s-1980s—have led to the systemic risk mispricing and underestimation of risk exposure by many sophisticated financial institutions, the CRAs, institutional investors, and financial regulators. There was a widespread lack of sufficient understanding and proper assessment of risk exposure of the securitised assets. As the valuation of such securities and their underlying assets became extremely complicated to understand, the credit ratings sold by the CRAs were mainly assessed based on unsubstantiated estimations and 'magically' marked with the highest possible ratings.[41] As the euphoria continued, the widespread transaction of securitised products across the globe instead caused global financial

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[38] The securities issued by the SPV and SIV often received AAA ratings due to the repackaging of risky loans with higher quality mortgages, which later divided into various tranches of securities to further enhance credit quality. These practices of transforming and structuring low-quality loans to become highly rated securities further add another layer of complexity to the nature of new financial products and their risk exposure.

[39] Since 2011, the aggregated shadow banking assets increased by 5.6% for a year, reaching US$34.2 trillion at the end of year 2015. The US, the UK and Euro area representing 65% of total global shadow banking sector at the end of 2015. See: FSB, 'Global Shadow Banking Monitoring Report 2016' (May 2017) 47 <http://www.fsb.org/2017/05/global-shadow-banking-monitoring-report-2016/> accessed 22 February 2019.

[40] Instead, financial markets solely interact within themselves and their financial participants for the purpose of gambling and speculating. See: Panagiotis Delimatsis, 'Financial Innovation and Prudential Regulation—The Impact of the New Basel III Rules' (2012) 016 TILEC Discussion Paper 11 <http://dx.doi.org/10.2139/ssrn.2044694> accessed 12 February 2019; Paul Krugman, 'Money for Nothing', (*New York Times,* 26 April 2009) <https://www.nytimes.com/2009/04/27/opinion/27krugman.html> accessed 12 February 2019; Avgouleas (n 14) 665, 683.

[41] In fact, the absence of regulatory requirement for transparency valuation and information disclosure for these complex securities assets hindered a thorough investigation of the actual systemic risk. In practice, the CRAs solely relied on the information and confidence provided by the issuer, without further in-depth assessment of the new risk stemming from complex securitization processes. See: James Crotty, 'Structural Causes of the Global Financial Crisis: A Critical Assessment of the 'New Financial Architecture' (2009) 33(4) Cambridge Journal of Economic 567 < https://doi.org/10.1093/cje/bep023> accessed 17 April 2019.

institutions to face aggregate exposure to the same risks.[42] Once the wave of defaults among the US subprime borrowers started, and housing prices began to fall, financial institutions began to face difficulties in determining the size of their exposure.[43] The close assets and liability interconnectedness among financial institutions were only revealed after banks were forced to bring back their asset-backed securities onto the balance sheet, and calculate their actual exposure to the subprime mortgage market.

Unregulated financial innovation prior to the GFC created many systemic vulnerabilities and risk amplification channels, which eventually brought down the entire system. Financial innovation also increased the complexity of financial markets and interconnectedness between various parts, constantly shifting the ground beneath the regulators' feet.[44] While predicting the impacts of innovation can be complicated and challenging, it has become the main interest of financial supervisors to be able to map the interconnectedness and complexity created by financial innovation. As a regulatory challenge, financial innovation should be understood as a phenomenon that actively interacts with regulation in many different aspects, and is thus placed as a first-order concern for financial regulation.[45]

I.II.b. The Complexity and Uncertainty within the Modern Financial System

Financial globalisation and the euphoria around financial innovation have facilitated a high global appetite for overseas investment activities, which later channeled into the US housing bubble through the purchase of MBSs and other financial instruments.[46] Even though the number of subprime mortgage loans represented a small amount of the overall asset-backed securities issued in the US and Europe, the excessive leverage taken by financial institutions and their close interconnectedness caused the repercussions of subprime market disruption to become the perfect financial storm of the 21st Century.[47] Indeed, the bust in the US housing

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[42] Xavier Freixas, Luc Laeven and Jose-Luis Peydro, *Systemic Risk, Crises and Macroprudential Regulation* (The MIT Press, 2015) 15-16; Franklin Allen and Douglas Gale, 'Financial Contagion' (2000) 108(1) Journal of Political Economy < https://doi.org/10.1086/262109> accessed 12 April 2019.
[43] Valdez and Molyneux (n 30) 289.
[44] Awrey (n 25) 235, 276.
[45] Ford (2017) highlights the need to set the operational focus of financial regulation more towards financial innovation, and the ways innovation undermines and circumvents the regulatory structure. See: Cristie Ford, *Innovation and the State: Finance, Regulation, and Justice* (Cambridge University Press 2017) 6.
[46] Philip R. Lane, 'Financial Globalisation and the Crisis' (2012) 397 BIS Working Papers 11 <https://www.bis.org/publ/work397.htm> accessed 19 August 2019.
[47] Robert Bestani, 'Understanding the Current Financial Crisis: The Perfect Financial Storm' (2009) 44 CRGP Working Paper < https://gpc.stanford.edu/publications/understanding-current-financial-crisis-perfect-financial-

market astoundingly led to the collapse of advanced market economies that proved to be as fragile as a house of cards.[48]

Undeniably, interconnectedness has grown to become the natural framework and fundamental characteristic of modern finance.[49] Through the balance sheet interconnectedness, the failure of one financial institution easily translates into a chain reaction of failure of other financial institutions, and quickly amplifies adverse financial risks into the whole global economy.[50] Such interconnectedness can occur due to the direct credit exposures of the failed institution, through debt, equity, and derivatives contracts (asset interconnectedness), or funding exposure between the providers and recipients (liability interconnectedness).[51] The interconnectedness of the financial system is not necessarily a significant problem by itself.[52] To a certain extent, a densely connected financial system may work as a shock absorber; it is only outside such range that the interconnectedness may instead amplify shocks throughout the system, and create a contagion problem.[53] By its very nature, financial contagion propagates the risks through the widespread panic of investors or depositors from one institution to another, without discriminating between the solvent and the insolvent institutions in the system. Moreover, the risk of contagion cannot be easily prevented and contained through better risk management or improved prudential supervision.[54]

The exceedingly complex and highly interrelated financial system created by structured financial products has significantly impaired the ability of institutions to calculate their own risk exposures, and thus caused the markets to become more susceptible to contagion problems. Prior to the bust in the US housing sector, the already-over-exposed financial system to asset-backed securities further intertwined through the purchase of credit default swaps (CDSs),

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storm> accessed 19 August 2019.

[48] Jean-Claude Trichet, 'Central Bank and The Emergence of Conceptual Convergence' (*The Banker*, 2 January 2018) < https://www.thebanker.com/World/Western-Europe/France/Jean-Claude-Trichet-central-bank-and-the-emergence-of-conceptual-convergence?ct=true> accessed 12 April 2019.

[49] Georges Ugeux, *International Finance Regulation: The Quest for Financial Regulation* (John Wiley & Sons 2014) XVI.

[50] Scott (n 23) 1; IMF, 'Understanding Financial Interconnectedness' (2010) Policy Papers < https://www.imf.org/en/Publications/Policy-Papers/Issues/2016/12/31/Understanding-Financial-Interconnectedness-PP4503> accessed 10 November 2020; Schinasi (n 31) 3.

[51] Scott (n 23).

[52] Ibid,173.

[53] Andrew Haldane, 'Rethinking the Financial Network' (Speech delivered at the Financial Student Association, Amsterdam, 28 April 2009) < https://www.bankofengland.co.uk/speech/2009/rethinking-the-financial-network> accessed 1 June 2020.

[54] Scott (n 23) 6.

which were widely used by institutions to hedge against the risk of their investments, primarily for CDOs.[55] Over the years, the widespread use of CDSs further accommodated higher leverage strategies taken by firms, as the exotic financial instruments guaranteed by the CDSs were treated as having similar risk levels with the counterparty that sold such protection, e.g. AIG and other monoline insurers.[56] This regulatory treatment thus allowed banks to take higher leverage by exposing themselves to more structured financial instruments, while at the same time enjoying a reduction of capital reserves requirements.[57] Without bearing any correlation and accurate measures to the protected assets and securities, the CDS markets largely mispriced the risk contained in the structured instruments.[58] Once the defaults started to accumulate, and the risk of financial contagion increased, the CDS issuer started to face financial difficulties in paying out all the CDS claims it owed. As a critical source of interconnectedness between financial institutions and markets during the subprime crisis, the problem faced by the CDS insurers quickly induced fear of counterparty risk and risk of domino-effect collapse.[59] Moreover, the inability of market participants to fully calculate the size and consequences of their own exposures to the default risk of counterparty obligations significantly aggravated the uncertainty faced by the system during the GFC.[60]

On the other side of the system, complexity and uncertainty within the markets are further exacerbated by over-reliance by the modern financial system—both banks and non-bank financial intermediaries—on short-term funding to finance its long-term investment activity.

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[55] The CDSs are anything but insurance contracts that were widely transacted in unregulated, over-the-counter (OTC) markets. The CDS' purchasers and issuers usually do not even need to hold the underlying security, which makes its purchase more like buying fire insurance on your neighbor's house. See: Ross Levine, 'The Governance of Financial Regulation: Reform Lessons from the Recent Crisis, International Review of Finance' (2012) 12(1) International Review of Finance 46 < http://dx.doi.org/10.1111/j.1468-2443.2011.01133.x> accessed 12 April 2019.

[56] As recorded by Barth and others (2009) the CDS market in 2007 reached a notional value of US$62 trillion; the AIG had a notional exposure of US$500 billion to CDSs. See: Ibid; James R. Barth and others, *The Rise and Fall of the US Mortgage and Credit Markets* (Wiley & Sons 2009).

[57] Back in 1996, the US Federal Reserves permitted the use of CDSs to reduce the capital reserves held by banks, as the risk level of securities guaranteed by the CDS was treated similarly to the counterparty. This largely resulted from the regulatory belief that the market risks are well understood and hedged away.

[58] Christopher Brown and Cheng Hao, 'Treating Uncertainty as Risk: The Credit Default Swap and the Paradox of Derivatives' (2012) 46(2) Journal of Economics Issues 306 <https://doi.org/10.2753/JEI0021-3624460205> accessed 12 August 2019.

[59] The counterparty risk is the fear that the failure of certain institutions will cause defaults on its obligations to other market participants, who also feared for their own default on counterparty obligations. See: Schwarcz (n 21) 193, 198-200; Steven L. Schwarcz, 'Regulating Complexity in Financial Markets' (2009) 87(2) Washington University Law Review 211, 235 < https://scholarship.law.duke.edu/faculty_scholarship/2118/> accessed 14 April 2019.

[60] Scott (n 22) 115.

Through this unsustainable funding structure, financial institutions expose themselves to funding liquidity risk, which does not appear on their balance sheets (as such borrowing is primarily conducted by off-balance-sheet vehicles).[61] The resulted obscurity on the financial funding thus further exacerbated to the asymmetric information problems and led to the global credit crunch.[62]

The sudden withdrawal of funding during the runs on short-term debt on asset-backed commercial paper (repo), and the money market mutual funds (MMMFs) within the shadow banking system[63] in 2008 raised a greater awareness of how quickly liquidity can vanish, especially when it is most needed.[64] Financial institutions that are overly reliant on short-term funding are suddenly exposed to a higher degree of market and funding liquidity risks, which quickly makes the liquidity problem faced by institutions that are unable to roll over their debts become a solvency problem.[65] Eventually, once the lines of credit stop and liquidity is swallowed up, the rapid deleveraging and fire-sales of securities further push adverse feedback loops on the liquidation of securities.[66] This procyclicality of bank credit, and its interaction with the shadow banking system during the GFC, further amplifies the systemic vulnerabilities built into the system.

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[61] Markus K. Brunnermeier, 'Deciphering the Liquidity and Credit Crunch 2007 – 2008' (2009) 23(1) Journal of Economic Perspective 80 < https://ideas.repec.org/a/aea/jecper/v23y2009i1p77-100.html> accessed 12 August 2019.

[62] As two inherent problems of financial markets, asymmetric information and adverse selection problems are seen by George Akerlof (1970) as two important externalities that make the market less efficient. Akerlof explored his analysis of the 'lemon problem' in the used car market to emphasise that the buyer and the seller of the used car do not have the same information, as the seller most likely has more information about the car. This situation is further exacerbated with the adverse selection problem, in which the sellers with 'lemon' cars usually have more incentive to sell their cars, thus easily overrepresent themselves in the market. See: George A. Akerlof, 'The Market for 'Lemons': Quality Uncertainty and the Market Mechanism' (1970) 84(3) The Quarterly Journal of Economics < https://doi.org/10.2307/1879431> accessed 28 July 2010.

[63] The shadow-banking operates under the notion of disintermediation process, with the non-bank institutions taking over the traditional credit intermediation function, saving and lending, that used to be performed only by banks. See: FSB (n 39) 47; Steven L. Schwarcz, 'Regulating Shadow Banking' (2012) 31(1) Review of Banking & Financial Law 619 <http://dx.doi.org/10.2139/ssrn.1993185> accessed 17 June 2019.

[64] Gillian Tett, 'Ideas adjust to new 'facts' of finance' (*Financial Times*, 26 December 2013) < https://www.ft.com/content/a5d434b6-6e24-11e3-8dff-00144feabdc0> accessed 12 June 2019; Gary Norton and Andrew Metrick, 'Regulating the Shadow Banking System' (2010) SSRN 15 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1676947> accessed 18 July 2019.

[65] The excessive leverage and thin layer of capital cushion owned by financial institutions have made the system unable to absorb losses. The off-balance sheet activities were not necessarily helping financial institutions to avoid the impacts of the maturity mismatch created, as the sudden stop in the short-term liquidity and the collapse of interbank lending markets made many financial institutions become unable to roll their debts.

[66] Thorvald Grung-Moe, 'Shadow Banking: Policy Challenges for Central Banks' (2014) 802 Levy Economics Institute of Bard College 7 < https://www.levyinstitute.org/pubs/wp_802.pdf> accessed 1 May 2019.

The interconnectedness between many important parts of the global financial system and the US housing market revealed a significant increase of complexity in transmission channels between different institutions and financial sectors that are overly exposed to similar risks from the securitised financial instruments. This complexity created significant regulatory and supervisory challenges to monitor the size and interlinkages in the system.[67] Without the transparency to fully monitor the build-up of systemic vulnerability within the shadow banking system, and supervisory ability to understand the complexity of the markets, it becomes impossible for supervisors to fully predict the interaction, potential threats, interlinkages between elements of the modern financial system, and effectiveness of its regulatory responses. Thus, supervisors and regulators are increasingly working in the Knightian realm of uncertainty, where the risks are unknowable.[68] While risk is understood as something that can be calculated, priced, and hedged in finance, uncertainty is impossible to correctly predict and calculate.

This realm of uncertainty further becomes a source of the unpredictability in the financial system, and amplifies its instability.[69] In a world of uncertainty, the future cannot be detected, and there is a strong possibility of self-fulfilling prophecies, as the future depends on the historical development and expectation of market participants on prices.[70] Therefore, the measure of impacts from certain regulatory actions becomes less straightforward, as a rapid transmission of adverse shocks or small failures across the global financial system becomes more challenging to identify.[71] Therefore, for regulators, the task of regulating uncertainty will require different approach from the regular activity of regulating calculable risk in the financial system. Understanding the complexity and interconnectedness of the modern financial system will be the key to untangle the build-up of systemic risk concentrations, and identify the fault

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[67] Due to the huge number of transactions and activities moved off the balance sheet of companies which then fall outside the perimeter of any prudential regulation and supervision.
[68] In his work, Knight emphasises the distinction between 'measurable uncertainty' (risk) and 'unmeasurable uncertainty' (uncertainty) within the financial system. See: Frank Knight, *Risk, Uncertainty and Profit* (Houghton Mifflin 1921).
[69] Whereas Kindleberger (1978) places more emphasis on the irrationality of financial institutions as the source of instability of the market, Frank Knight (1921) emphasises more attention on the concept of uncertainty.
[70] Dodig and Herr (n 4) 5.
[71] IMF (n 50) 5.

lines along which shock propagates, which is essential for macroprudential surveillance and regulation.[72]

I.III. REFLECTIONS ON THE GLOBAL FINANCIAL CRISIS (GFC) 2007-2009: FINANCIAL SUPERVISORY FAILURES

Prior to the boom, there are usually 'periods of tranquillity' in which the financial system seems to become relatively stable, as embodied in the Great Moderation era (the 1980s-2006) in which the US financial system was perceived to be strong and stable.[73] The relatively mild recession impacts of the dot.com bubble in 2001 further built false beliefs among the US policymakers that the monetarism regime prevails over the volatility of the business cycle.[74] From 2001 until 2004, the US Federal Reserve's decision to aggressively lower its short–term interest rates and implement accommodative monetary policies created an excessive supply of cheap credit across the financial sectors.[75] As the domestic borrowing terms eased, broader access to credit also increased for larger parts of the population, allowing extremely affordable mortgage requirements and boosting the US homeownership numbers.[76] Little known back then, such conditions significantly fueled the rapid rise of asset prices, particularly in the

[72] Ibid.
[73] In this period the US experienced low inflation rates, high gross domestic product (GDP) growth, a decline in unemployment rate, and mild recession. The term was then further brought to wide attention for the public in 2004 by the former Federal Reserve Governor, Ben Bernanke. See: Roubini and Mihm (n 6) 26; James Stock & Mark Watson, 'Has the Business Cycle Changed and Why?' (2002) 9127 National Bureau of Economic Research < https://www.nber.org/papers/w9127> accessed 20 August 2020.
[74] The dot com bubble or tech bubble refers to the stock market bubble caused by excessive speculation on the US internet companies in the late 1990s. The rapid development of technology in the 1990s led to the rapid rise of the value of equity markets in internet-based companies, which ended up with the bursting of the excessive speculation bubble in 2001.
[75] These extremely low interest rates maintained by the Fed resulted in an excessive supply of cheap credit for financial institutions, but at the same time made the US Treasury Bonds become unfavorable for aggressive investors, as they significantly reduced returns. The foreign investors' appetite quickly shifted to the US MBSs and all other asset-backed securities (ABSs) markets that were able to generate more favorable returns, but however led to the build-up of an excessive supply of capital from overseas, that further fueled the US housing markets. See: The Financial Crisis Inquiry Report, *Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States* (January 2011) 84; Maurice Obstfeld and Kenneth Rogoff, 'Global Imbalances and Financial Crisis: Products of Common Causes' (2009) 7606 CEPR Discussion Paper 16, 22 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1533211> accessed 12 August 2019.
[76] Eventually, the significant increase in the US homeownership peaked at 69.2% in 2004. House prices also rose by 15% nationally in the US in 2005, peaked in April 2006, then dropped dramatically by 17% in 2008. By the end of 2009, house prices plunged by 28% from their peak in 2006. See: Ibid, Inquiry Report 85, 214 – 215.

continuously rising housing prices for homeowners, and prices for structured financial assets created from the mortgage loans.[77]

As the housing prices further appreciated along with growing demand, the popularity of MBS products also increased rapidly and continued to fuel mortgage credit expansion and push asset prices even higher.[78] This credit-led growth and other macroeconomic positive developments further solidified the US policymakers' belief in the success of deregulation in making the system more stable and less volatile, along with the Fed's low-interest policy, that came to be considered the stabilising power against deflation.[79]

This era of macroeconomic stabilisation shattered in 2007, when the entire economy started to collapse, followed by disruptive effects which caused 26.2 million Americans to be out of work, and at least 8 million families to lose their homes by the end of 2010.[80] As predicted by the FIH, credit-induced stability will always result to destabilising behaviours, such as excessive risk taking, excessive leverage taking, widespread speculative activities, and complacency in the belief that the boom period will last forever.[81] Eventually, like all other financial booms, it ended in a bust, but this time it also brought down a global capitalist financial system for the first time.

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[77] IMF, 'The Interaction of Monetary and Macroprudential Policies' (January 2013) 9 <https://www.imf.org/external/np/pp/eng/2013/012913.pdf> accessed 6 April 2018.

[78] Obstfeld and Rogoff (n 75) 25-28; Atif Mian and Amir Sufi, 'The Consequences of Mortgage Credit Expansion: Evidence from the US Mortgage Default Crisis' (2009) 124(4) The Quarterly Journal of Economics < https://doi.org/10.1162/qjec.2009.124.4.1449> accessed 21 August 2018.

[79] In the congressional hearing in October 2008, Greenspan later admitted his failure of heavily relying on self-correcting power of free markets, and not anticipating the self-destructive power of mortgage lending. See: Testimony of Chairman Alan Greenspan, 'Federal Reserve Board's Semiannual Monetary Policy Report to the Congress' (The 108th Cong., 2nd session 16 February 2005) <https://www.federalreserve.gov/boarddocs/hh/2005/february/testimony.htm> accessed 21 April 2018; Alan Greenspan, 'The Fed Didn't Cause the Housing Bubble' (*The Wall Street Journal,* 11 March 2009) <https://www.wsj.com/articles/SB123672965066989281> accessed 24 April 2018; Hershey H. Friedman and Linda W. Friedman, 'The Global Financial Crisis of 2008: What Went Wrong?' (2009) SSRN 9 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1356193> accessed 8 March 2018.

[80] By December 2009, the US alone had lost 4.7 million jobs, with the rate of underemployment reaching 17.4% in October 2009, which made it the worst level since 1994. In total, the latest financial crisis in 2008 has been predicted to cost the US economy more than US$22 trillion. See: The US Government Accountability Office, 'Financial Regulatory Reform: Financial Crisis Losses and Potential Impacts of the Dodd-Frank Act' (Report to Congressional Requester, January 2013) <https://www.gao.gov/products/GAO-13-180> accessed 8 March 2018,

[81] Minsky 1992 (n 10).

I.III.a. Structural Weaknesses of Light Touch Supervisory Approach

Since the 1970s, mainstream economists believed that stock prices fully reflected all available information, as markets were seen as efficient (the Efficient Market Hypothesis (EMH)),[82] thus guiding market participants to make rational decisions to bring the market into its equilibrium price (the Rational Expectation Hypothesis (REH)).[83] The translation of this widespread economic belief in the financial regulatory and supervisory regime was manifested in the development of the light-touch approach, giving financial institutions the ability to self-regulate, supervise and monitor their own risk. However, the GFC fundamentally challenged such long-held beliefs and the excessive optimism that a disclosure-based system is adequate to protect investors and maintain the efficiency of the market.[84] The systematic webs of complexity and interconnectedness between different parts of the financial system created by financial innovation clearly obscured the ability of market participants and supervisors to understand the risks they were taking and being exposed to. The deregulation regime that flourished since the 1980s, the use of the originate-to-distribute (OTD) model,[85] and advanced risk diversification techniques all further incentivised financial participants to undermine the importance of making proper due diligence and risk assessments on their investments.

Such conventions—letting the markets and financial system self-regulate—proved to be a disaster. Market discipline pervasively deteriorated in the years prior to the subprime mortgage collapse, and led to a vicious system subject to fraud and manipulation.[86] Evidently, the

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[82] As often seen as the father of the EMH, Eugene Fama (1970) defined several conditions supporting the efficiency of the market, which are the absence of transaction cost, homogeneous expectations, and the free availability of information to every market participant. See: Eugene Fama, 'Efficient Capital Markets: A Review of Theory and Empirical Work' (1970) 25(2) Journal of Finance 383 <https://doi.org/10.2307/2325486> accessed 12 March 2018.

[83] Alongside the EMH, the REH also began to be systematically applied to broader macroeconomics in the 1970s, and further influenced the regulatory and supervisory approach imposed on markets. The theory was proposed by John Muth (1961) in his seminar paper 'Rational Expectations and the Theory of Price Movements'. See: Dodig and Herr (n 4) 3, 7.

[84] Behzad Gohari and Karen E. Woody, 'The New Global Financial Regulatory Order: Can Macroprudential Regulation Prevent Another Global Financial Disaster?' (2015) 40(2) The Journal of Corporation Law 406 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2424818> accessed 8 August 2018.

[85] The originate-to-distribute (OTD) banking model represents a crucial transformation of the banking sector business model, as it replaced the 'originate-to-hold' model, where banks were supposed to keep the loans they originated on their balance sheets until the maturity period. This model has allowed banks to instantly distribute the loans they originate. Therefore, banks are able to limit their balance sheet exposure while generating the profits from the origination. See: Segoviano and others (n 26) 16.

[86] In 2006, no-documentation and low-documentation loans were recorded to account for 27% of all mortgages originated. The Countrywide, the largest mortgage lender at that time in the US, predicted experiencing rapid increase in potential fraudulent mortgage activity—from around 5,000 in 2005, 10,000 in 2006 to 20,000 cases in

undersupply of prudential supervision led to uncontrolled behaviour in the financial markets, significantly lowering underwriting standards to create a greater supply of subprime borrowers to meet the increasing demand from Wall Street.[87] This pervasive practice further led to sky-rocketing numbers of subprime mortgage borrowers, while the opaque quality of structured finance products continued unchecked and unregulated for years.[88]

As an important part of the self-regulating regime, the so-called market gatekeeper roles expected to be played by the CRAs also failed to ensure correct assessment of the creditworthiness of borrowers, and the risk contained in structured instruments. The absence of the regulatory requirement for transparency valuation and information disclosure for the complex securities assets also placed the CRAs very much in the dark; they relied solely on the information and confidence provided by the issuer without in-depth assessment of the complex securitisation process.[89] Over the years, pervasive misaligned incentive problems, rooted in the issuer–pays model, caused the CRAs to act merely as the seller of legislation stamps for investors and securities sellers.[90] Moreover, investors also mostly ignored the need to fully understand the underlying risk on the securities they bought, as they focused only on CRAs ratings.[91] Due to the procyclical nature of the credit ratings used by the CRAs, the

2007. The number of suspicious activity reports (SARs) filed in the US reported as much as 25,988 in 2005 climbing up to 52,862 in 2007 and 65,004 in 2008. See: The Financial Crisis Inquiry Report (n 75) 161-2, 165; Crotty (n 41) 564.

[87] Mortgage brokers started to offer options to attract more borrowers through negative amortisation, lower interest rates options, no down payments, no-documentation mortgages, and even NINJA (no income, no job or assets) loans. See: Buckley and Arner (n 26) 103; Brunnermeier (n 61) 57.

[88] The subprime mortgage market grew dramatically from US$160 billion in 2001, to become US$540 billion in 2004. In 2006, a total of US$600 billion of subprime loans were issued, representing 23.5% of all mortgage origination that year. See: The Financial Crisis Inquiry Report (n 75) 70.

[89] Kiyohiko G Nishimura, 'Financial System Stability and Market Confidence' (2010) 9(1) Asian Economic Papers 28 < http://www.bis.org/review/r090617c.pdf> accessed 17 April 2019; Mads Andenas & Iris H-Y Chiu, *The Foundations and Future of Financial Regulation: Governance for Responsibility* (Routledge 2014) 195.

[90] The external rating industry became increasingly market driven, as the oligopolistic dynamic required CRAs to compete against one another to accommodate their clients' wishes. Issuers can easily 'shop around' to get the most favorable ratings in the market. Therefore, instead of developing new methodologies in assessing new complex structured products, the CRAs—which operated in a tight competition market based on the oligopolistic market—tended to adjust their methods to make products more saleable and favorable for issuer business. See: Kevin Selig, Michael Chiasson, and Teresa Whitney, 'Greed, Negligence, or System Failure? Credit Rating Agencies and the Financial Crisis' (2011) 85 The Journal of Education for Business 9-10 < https://ethics.iit.edu/eelibrary/node/8536> accessed 12 March 2018; Hellwig (n 27) 6.

[91] Philip Arestis and Elias Karakitsos, *Financial Stability in the Aftermath of the Great Recession* (Palgrave Macmillan 2013) 33.

supposedly self-regulating market regime was later found to create destabilising impacts to systemic stability in times of systemic defaults and fire-sales events.[92]

The light-touch approach also significantly led to insufficient allocation of supervisory resources and attention to monitoring high-impact banks and their risky activities. An insufficient priority given to prudential issues can be observed, as the result of the widespread view of the Great Moderation and over-reliance on the use of capital rules imposed under the Basel regime.[93] As a result, financial supervisors mainly focused on protecting the consumer from market abuse practices in financial markets—which usually received more public attention than the prudential supervision issues in ensuring prudential practices and the solvency of financial institutions.

I.III.b. The Fallacy of Composition

Even though the debt accumulation and financial imbalances usually follow the same script as financial crises, the GFC is one great '*terra incognita'*.[94] The GFC revealed two critical lessons for regulators and policymakers worldwide, that profoundly transformed policy and regulatory thinking in safeguarding financial stability, as will be extensively discussed in the next chapters. First, the price stability achieved by monetary policy is *not* a guarantee for a stable financial system;[95] secondly, the soundness of every individual financial institution achieved through microprudential regulation does *not* automatically guarantee the soundness of the whole financial system.[96] The latter is known as a fallacy of composition: the excessive belief held by financial policymakers and regulators that systemic stability can be achieved once all individual institutions are safe and sound.[97] In the years following the GFC, this belief led to

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[92] During the market distress, the aggressive downgrading of credit ratings by the CRAS often further worsens the market panic that leads to further sell-off of badly-rated assets that further brings down asset prices.
[93] Julia Black, 'Regulatory Styles and Supervisory Strategies', in Niamh Moloney, Eilis Ferran, and Jennifer Payne (eds), *The Oxford Handbook of Financial Regulation* (1st, Oxford University Press 2015) 225.
[94] Roubini and Mihm (n 6) 86.
[95] There was a false belief at the time that financial stability could be maintained through the implementation of accommodative monetary policies achieving the price stability goal. See full discussion in Chapter III, section III. II.
[96] Markus Brunnermeier and others, 'The Fundamental Principles of Financial Regulation' (2009) International Center for Monetary and Banking Studies Centre for Economic Policy Research (Geneva Report) 11 < https://www.princeton.edu/~markus/research/papers/Geneva11.pdf> accessed 1 July 2019.
[97] Hockett (2015) refers to this as a finance-related recursive collective action problem. See: Ibid, 15; E. Philip Davis and Dilruba Karim, 'Macroprudential Regulation – The Missing Policy Pillar' (2010) 211(1) National Institute Economic Review 10 <https://doi.org/10.1177/0027950110364098> accessed 7 April 2019; Jacek Osinski, Katharine Seal and Lex Hoogduin, 'Macroprudential and Microprudential Policies: Toward

the mismanagement and negligence of systemic risk that was left unmonitored by supervisors and eventually resulted to spillover impacts on real economy sectors.[98]

The over-emphasis on microprudential supervision prior to the GFC placed the focus of most financial supervisors merely on the idiosyncratic risk of an individual institution, by imposing banks' capital adequacy, while neglecting the risks building up at aggregate level. The broad use and reliance on the capital requirements standardised under the Basel Accord regime gave false widespread expectations to the market about the safety and soundness of the system. There was apparent negligence and lack of understanding about the importance of monitoring and assessing the threats emerging from more systemic levels, such as macroeconomic and macro-financial developments.[99] As a result, the responsibility for financial stability was largely abandoned, and the more systemic, holistic picture of interlinkages between macroeconomic and financial sectors left largely unmonitored.[100]

This inadequacy of the supervisory and regulatory framework proved instead to create unintended consequences, and homogeneous behaviour of financial institutions, especially in times of distress.[101] Once the defaults started, the financial institutions' decisions to deleverage and sell their assets received broad approval from the prudential supervisors, which considered such actions as rational and necessary to protect the solvency of the firms. With the lack of a macro-perspective over the entire financial system, the supervisors were unable to see that the systemic impacts of such decisions when taken simultaneously by all institutions were destabilising and deteriorating the overall financial stability. The microprudential authority was thus unable to comprehend the link between macroeconomic developments with the expansion

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Cohabitation' (2013) 13/05 IMF Staff Discussion Note 5 <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2016/12/31/Macroprudential-and-Microprudential-Policies-Toward-Cohabitation-40694> accessed 7 May 2018; Robert Hockett, 'Recursive Collective Action Problems: The Structure of Procyclicality in Financial and Monetary Markets, Macroeconomies and Formally Similar Context' (2015) 3(2) Journal Financial Perspectives, 3 <http://dx.doi.org/10.2139/ssrn.2239849> accessed 9 April 2019.

[98] Jaime Caruana, 'Systemic Risk: How to Deal with It?' (The Bank for International Settlement, 12 February 2010) <https://www.bis.org/publ/othp08.htm> accessed 16 February 2018.

[99] Donato Masciandaro and Marc Quintyn, 'The Evolution of Financial Supervision: The Continuing Search for the Holy Grail', in Morten Balling (ed), *50 Years of Money and Finance: Lessons and Challenges* (SUERF - The European Money and Finance Forum 2013) 296 <https://econpapers.repec.org/scripts/redir.pf?u=https%3A%2F%2Fwww.suerf.org%2Fdoc%2Fdoc_8e296a067a37563370ded05f5a3bf3ec_1919_suerf.pdf;h=repec:erf:erfftc:1-8 > accessed on 12 January 2020.

[100] Brunnermeier and others (n 96).

[101] The Financial Services Authority (FSA), 'The Turner Review: A Regulatory Response to the Global Banking Crisis' (2009).

of credit and increase of asset prices, and the soundness of individual institutions under its supervision.

I.III.c. Lack of Supervisory Attentions on Non-Banking Sectors' Developments

The severity of the crisis also prominently revealed the lack of regulatory discernment on the risk build-up from unregulated financial innovation and unmonitored complex financial interconnections in the off-balance-sheet ecosystem, such as the shadow banking system.[102] With the minimum exposure of prudential regulation and absence of a lender of last resort (LoLR) protection, the shadow banking is very prone to credit run and financial contagion risk.[103] However, despite its recognition of the exponential growth of the shadow banking system, financial supervisors—especially the US regulators—largely ignored the urgent need to bring the system into its supervisory perimeter.[104]

Historically, financial regulation and supervision have been primarily designed to address the classic threat of bank runs, and focused solely on banking sectors, as such institutions were primary entities managing intermediary activities, in taking deposits from customers and allocating them by making loans to the economy.[105] However, the technological revolution profoundly changed the nature of modern intermediary activities, and the conduct and operations of financial institutions.[106] Along with the development of financial innovation in facilitating more critical roles played by the non-banking sector to take over the traditional intermediation activities, the importance and domination of the banking sector in allocating funds in the economy quickly diminished.[107]

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[102] Andenas and Chiu (n 89) 418.

[103] As seen in the failures of Bear Stearns, Washington Mutual and Lehman Brothers, the short-term funding mechanism accessed through shadow banking sector can easily dry up and become subject to a modern bank run.

[104] In fact, the US subprime mortgage bubble was built up under the supervision of the US four regulators' unwatchful eyes that charged with the mandate to ensure the safe and sound operation of banks and other financial institutions in the US. These four regulators are the Office of Thrift Supervision (OTS), Office of Comptroller of the Currency (OCC), Securities and Exchange Commission (SEC), and the obviously the Federal Reserve Banks. See: Alan S. Blinder, *After the Music Stopped: The Financial Crisis, the Response and the Work Ahead* (Penguin 2013) 70.

[105] Steven L. Schwarcz, 'Banking and Financial Regulation', in Francesco Parisi (ed), *The Oxford Handbook of Law and Economics: Volume 2: Private and Commercial Law* (Oxford University Press 2017) 424.

[106] Baxter (n 15) 36.

[107] The overly restrictive rules and capital requirements imposed on banking sectors with the aim of regulating such sectors have instead led to a flourishing exodus of market appetites, to less regulated sectors that can offer higher returns for participants, such as the money-market mutual funds.

However, the shadow banking system has not only become the main competitor of the traditional banks, but it is also actively integrating banks into its system. By operating under the disintermediation process, the unregulated shadow banking system is able to grant the US local banks easy access to the international wholesale markets.[108] The products offered in the short-term 'wholesale funding' markets were also initially perceived as good as cash, as they are primarily guaranteed by the banks' promises as the loan originator to provide liquidity and credit support for their broadly accepted, highly-rated securitised assets.[109] Short-term lending has also become a preferable funding option for financial institutions and banks, as it is considerably cheaper than long term funding or traditional deposits, and does not impose additional reserve requirements and deposit insurance premia.[110] The attractiveness and easy access to these unregulated markets have made banks actively become collateral providers and repo participants in the shadow banking system.[111] In the overnight repo contract, banks even enjoy the possibility of borrowing funds by selling a collateral asset and promising to repurchase it later the next day.[112]

As largely left unmonitored by financial supervisors, this easy access and abundance of credit availability flowing from non-banking sectors further fueled institutions' excessive level of leverage to finance their risky off-balance-sheet business activities.[113] Supposedly with adequate degree of financial supervision and regulation imposed on non-banking sectors, the build-up of systemic interconnectedness between banking and non-banking sectors can be identified in advance.

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[108] Scott (n 23) 55; Schwarcz (n 105) 425; Schwarcz (n 63) 619.

[109] Daniel K. Tarullo, 'Macroprudential Regulation' (2014) 31(3) Yale Journal on Regulation <https://digitalcommons.law.yale.edu/yjreg/vol31/iss3/2> accessed 8 March 2019.

[110] Although short-term funding usually imposes liabilities with one month or less in maturity, for banks, these types of funding sources are still rather cheap in comparison to the higher regulatory burden imposed by traditional deposits paid by the banks. See: IMF (n 50) 21; FSB (n 39).

[111] Pozsar et al (2010) and Tucker (2010) highlighted the fact that the size of shadow banking increased exponentially before the outbreak of the GFC. Gabor (2013) shows the dominant roles of big banks in the shadow banking system in Europe. See: Daniela Gabor, 'Shadow Interconnectedness: The Political Economy of European Shadow Banking' (2013) SSRN Electronic Journal < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2326645> accessed 21 March 2018; Zoltan Pozsar and others, 'Shadow Banking' (2010) 458 Federal Reserve Bank of New York Staff Reports < https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr458.pdf> accessed 21 April 2018; Paul Tucker, 'Shadow banking, financing markets and financial stability' (Remarks at a Bernie Gerald Cantor Partners Seminar, London, 21 January 2010) < https://www.bis.org/review/r100126d.pdf> accessed 27 May 2020.

[112] Brunnermeier (n 61) 80.

[113] Brunnermeier and others (n 96) 39.

I.III.d. The Institutional Weakness in Inter-agency Crisis Coordination

As the first line of defence, financial supervision is a focal point where the sharing of supervisory information and coordination of policy actions with the central bank as the LoLR and the overall crisis-management framework should take place. During the GFC, there is evidence of inefficient agency coordination in handling the institution's failures in the countries like the UK and Indonesia, that eventually led to the broader instability and panic transmitted across the financial system. Overall, the noticeable absence of coordination between the financial supervision and the LoLR function can be observed as the result of the limited regulatory understanding in handling the systemic crisis such as the GFC. Therefore, what we witnessed was that each financial authority failed to properly coordinate its handling of individual institution's failure with the rest of financial safety net (FSN) authorities.[114]

The case of the Northern Rock failure in 2007 in the UK demonstrated how quickly a liquidity problem turns into a solvency problem in times of distress, that was further exacerbated by the inability of the tripartite authority to harmoniously coordinate and communicate their policy actions.[115] With the weeks of delays in coordinated action, and without a clear division of responsibilities between the FSA as the financial supervisor, the Bank of England as the LoLR, and HM Treasury as the fiscal authority, the three-fold strategies pursued by the FSA were tumbled one by one, and led to the UK first bank run since 1866.[116] The eventual result of the unresolved management of conflicts of interest and policy goals between the FSA and the BoE created chaos, where 'nobody was actually in charge of the situation'.[117]

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[114] In the UK, it was in the context of the Tripartite authority between the BoE, FSA and HM Treasury, while in Indonesia, it was the ad hoc FSSC consisting of BI and the Minister of Finance. See: Discussion on Chapter IV Case Study II.

[115] David G. Mayes and Geoffrey Wood (eds), *Reforming the Governance of the Financial Sector* (Routledge 2013).

[116] The three options pursued by the Tripartite were a market solution through the money markets and securitisation of its debt; second, the search for a private 'safe haven', which, however, would preclude the need for a BoE liquidity support operation; and the BoE support facility guaranteed by the Government. However, it later found that no acquirers wanted to make firm offers unless a backstop facility was provided to guarantee Northern Rock liquidity. On the other hand, the Governor of BoE refused such request for providing the financing for the reason that the BoE had not been party to conversations between the FSA and the potential bidders for the Northern Rock, as well as its instinctive reluctance to act as commercial lender to a going concern case. See: House of Commons Treasury Committee, *The Run on the Rock* (HC 2007-08, 181-I) para 73, 108, 110-1.

[117] Professor Geoffrey Wood argued for 'the incompetence and chaos' of the Tripartite arrangement, where nobody was actually in charge of the situation. See: Ibid, para 283-6; Select Committee on Economic Affairs, *Banking Supervision and Regulation Volume I* (HL 2008-09, 101-I) para 96-7, 101-1; Martin Wolf, 'The Big Lessons from Northern Rock' (*Financial Times,* 16 November 2007) <https://www.ft.com/content/027b83ae-93ac-11dc-

Two months after the Northern Rock run in September 2007, the Indonesian *ad hoc* crisis-management committee, the FSSC, chaired by the MoF, conducted an emergency meeting with the bank supervisor, (also the central bank), to address the failure of the medium-sized bank, Bank Century (BC) and its depositor run triggered by the collapse of the subprime mortgage market in the US. Although the FSSC successfully reached its decision to nationalise the BC, due to its systemically important position, the decision triggered political backlash and national outrage, resulting in the resignation of the Minister of Finance and years of national political crisis. The decision was later concluded by the House of Representatives in March 2010 to be both unlawful, and problematic in both nature and implementation as a public policy.[118] Besides the criminal and embezzlement cases behind the decision to bailout the BC, this case also demonstrates the failure in inter-agency coordination in sharing important information during the handling of systemic crisis. Given a 4.5 hour window to make the decision, the MoF claimed that the information and analysis submitted by the financial supervisor at the time were inadequate and misleading, as they did not contain complete disclosures on the irregularities found in the BC's financial audit, and its suspected involvement in criminal conducts.[119] The severe asymmetric information problem between Indonesian financial authorities in handling the BC failure eventually led to the financial authorities' accountability crisis.

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acd0-0000779fd2ac> accessed 17 October 2020.

[118] In 2014, the Jakarta National Court sentenced the former BI Deputy Governor, Budy Mulya, with 10 years imprisonment after being found guilty of self-enrichment and corruption in connection to a bailout package for Bank Century. The Court sentenced the former BI Deputy Governor for wrongdoing and corruption rooted in an illegitimate policy, in classifying the bank as a systemic threat after receiving US$86,000 from the former Bank Century owner in order to set the bailout of the bank in motion. See: The House of Representatives of Republic of Indonesia No.06/DPRRI/II/2009-2010 (March 2010).

[119] For years since its establishment in 2001, in the aftermath of the AFC, Bank Century had already shown a clear indication of irregularities in audit and suspected criminal conduct related to the bank itself. Since 2004, Bank Century had been made under the special supervision of the BI due to the irregularities found in the audit regarding its purchase of risky bonds worth US$230 million; a number of frauds conducted by the bank Century's owner, Robert Tantular; and inadequate CAR. There was evidence of favourable treatment given by BI officials as the banking supervisor at the time, as it did not follow up any suspicions and further investigation in the bank. Relying only on the information and analysis submitted by BI, Mrs. Indriyani repented the short window of time given to the FSSC to make a decision about whether or not to nationalise the BC before trading began on Friday, 21 November 2008. Later in 2014, Mrs Indriyani, who was the Minister at the time and is now the current Minister of Finance, raised concerns over inadequacy and misinformation from the report and data submitted by BI in FSSC meeting on 21 November 2008. See: I Made Sentana and Joko Hariyanto, 'Former Indonesia Central Bank Official Sentenced to 10 years' (*The Wall Street Journal,* 16 July 2014) <https://www.wsj.com/articles/former-indonesia-central-bank-official-sentenced-to-10-years-1405521641> accessed 12 August 2019; Jerry Adiguna, 'I Did the Right Thing: Sri Mulyani' (*The Jakarta Post*, 3 May 2014) <https://www.thejakartapost.com/news/2014/05/03/i-did-right-thing-sri-mulyani.html> accessed 12 January 2020.

In both cases, weaknesses in inter-agency coordination amidst the handling of financial failure is proven to easily result in chaos and further system instability. While the UK case demonstrates the impact of slow coordination in handling the Northern Rock failure, the Indonesian case shows the impact of ineffective sharing of information in its crisis-management framework. Even though the banking panic was successfully averted in Indonesia, the destabilising impacts of years of national turmoil and political division to the overall financial system are comparable to the bank run experience in the UK.[120] These showcase the importance of sound judgment on financial supervision that should also be supported by close coordination and effective information-sharing within the FSN framework in times of financial distress.

I.IV. REFLECTIONS ON THE ASIAN FINANCIAL CRISIS (AFC) 1997-1999: FINANCIAL SUPERVISORY FAILURES

Ten years before the outbreak of the subprime mortgage crisis from the US, the world was shaken by the contagion effects of the devaluation of Thai Baht in July 1997 sweeping through the Philippines, Malaysia, Indonesia, and South Korea. After years of economic booms, the region suddenly experienced rapid reversals of capital inflow, prompted by the decision of the Thailand government to allow its currency to float, after more than a decade of being pegged to the US dollar.[121] This sudden destabilising development quickly stimulated the flight of foreign investments from other Asian economies that were perceived to share similar characteristics with Thailand, and thus depreciated their currencies.[122] The downgrading of the region's sovereign and corporate credit ratings also further triggered the contagion effect, with panic selling of foreign-owned local assets and capital flight across the region.[123] Similar to the GFC, the years following the economic expansion and massive capital inflow eventually built up systemic risk and instability due to the increase of debt and speculative investments taken

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[120] Even to date, the investigation of Bank Century bailout scandal is still going on, being examined by Indonesia's Corruption Eradication Commission.

[121] This decision was made after the decline in its exports and loss of the investors' confidence on the sufficient foreign currency reserves owned by the government to maintain the pegged exchange rate between the Thai baht and the US dollar. See: Gregory W. Noble and John Ravenhill, 'Causes and Consequences of the Asian Financial Crisis', in Gregory W. Noble and John Ravenhill (eds), *The Asian Financial Crisis and the Architecture of Global Finance* (Cambridge University Press 2000) 2.

[122] Aliber and Kindleberger (n 5) 12.

[123] Soedradjad Djiwandono, *Bank Indonesia and the Crisis: An Insider's View* (Institute of Southeast Asian Studies 2005) 32.

by financial participants across the system. Indeed, years of growing trade deficits financed by short-term debt and capital flowing from abroad cannot be sustained forever.

To date, the discussion on the exact causes of the AFC has raised extensive debate, embodying the diversity of many contending views on the domestic conditions and characteristics of Southeast and East Asia's financial sectors. Undeniably, the rapid amplification of the Thai Baht crisis into a series of currency crises, and eventually the systemic financial crisis across the region, signifies much more fundamental issues within the pre-existing structure of the financial system in many East Asian miracle economies.[124] While the widespread practice of crony capitalism may play an essential role as the home-grown factor causing the AFC,[125] a fair amount of blame should also be directed toward the premature financial liberalisation imposed by developed countries, without simultaneously strengthening financial regulatory and supervisory frameworks in emerging Asian markets.[126]

As financial innovation fueled the US housing market bubble in the GFC, the abrupt financial liberalisation policies can also be seen as displacement leading to an economic boom and build-up of debt across the system, as understood within the Minskian credit cycle. Following to the AFC, the discovery of emerging market equities and its increased popularity had made it as a new asset class popularised among the mutual funds and pension funds from many developed markets, that further fueled the bubble in the Asian emerging economies.[127] In some countries, like Thailand and Malaysia, a large amount of credit significantly fueled speculative market euphoria in the real estate sectors. There were also exponential stock price increases (between 300 and 500 per cent) during the first half of the 1990s experienced in Thailand, Malaysia and

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[124] In the case of Indonesia, the crisis become even more multidimensional, with nationwide socio-economic and political turmoil. See: Ibid, 26.

[125] Among these views is the analysis of Krugman (1998) and various IMF reports that argue the impacts of crony capitalism. Krugman (1998) particularly highlights the dark underside of Asian values, which was previously hailed as the reason for the many Asian businessmen's success and the spectacular economic growth that led to the term 'Asian Miracle Economies'. See: Paul Krugman, 'Asia: What Went Wrong' (*Fortune Magazine*, 2 March 1998) < https://archive.fortune.com/magazines/fortune/fortune_archive/1998/03/02/238550/index.htm> accessed 12 April 2020; Paul Krugman, 'The Indispensable IMF' (*The New York Times*, 15 May 1998) < https://www.nytimes.com/1998/05/15/opinion/the-indispensable-imf.html> accessed 12 April 2020.

[126] In World Bank's 1993 study, The East Asian Miracle: Economic Growth and Public Policy, the economic booms experienced by the tiger economies of Southeast and East Asia were largely praised by World Bank as the result of the prudent role of the state in economic development and market-friendly policies, embodying the so-called Washington Consensus. See: Shalendra D. Sharma, *The Asian Financial Crisis: Crisis, Reform, and Recovery* (Manchester University Press 2003) 24.

[127] Aliber and Kindleberger (n 5) 40.

Indonesia, that further proliferated the real estate prices and economic booms across the region.[128]

I.IV.a. Inadequate Prudential Rules and Supervision

In many Southeast Asian countries, the premature financial liberalisation since the 1980s successfully stimulated the massive foreign capital flew into the region, which, however, were not followed by strong financial structures and adequate regulatory and supervisory framework to ensure prudence practices of financial institutions. This led to the poor enforcement of capital adequacy ratios and legal lending limits on Asian banks at the time.[129] Moreover, under the spontaneous liberalisation regime promoted in the region, there was also a significant reduction of barriers for entry that further increase the number of new financial markets and instruments, and enhance the competition in the financial sectors.[130] Local Asian banks were also able to directly borrow money abroad to lend domestically. The financial liberalisation had allowed domestic banks to be able to extend their credit in foreign currencies, directly borrow from international financial markets, and sell securities on international stock and bond markets. Without adequately supervised and regulated, this benefit of credit expansion eventually culminated in foreign currency reserve imbalances faced by most of the Asian central banks leading to the AFC.[131]

In the case of Indonesia, financial deregulation alongside the liberalisation programme imposed in the late 1980s led to doubling the number of banks, and more than tripling the number of bank's branches.[132] However, this trend was not accompanied by improvements in the country's banking regulations, legal structure, and the capacity of supervisors and auditors in managing an increasingly diversified and competitive banking system.[133] As a consequence,

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[128] Ibid, 211.
[129] Reuven Glick, 'Thoughts on the Origins of the Asian Crisis: Impulses and Propagation Mechanisms', in William C. Hunter, George G. Kaufman and Thomas H. Krueger (eds), *The Asian Financial Crisis: Origins, Implications and Solutions* (1st, Springer Science and Business Media New York 1998) 39.
[130] Sharma (n 126) 27.
[131] Ibid, 27.
[132] In 1994, the number of banks more than doubled, from 111 in 1988 to become 240 banks. See: Sigit Pramono, *Mimpi Punya Bank Besar (Dream of Having Big Banks)* (Red & White Publishing 2014) 64.
[133] Paul M Dickie, 'Toward resilient financial systems', in Priya Basu (ed), *Creating Resilient Financial Regimes in Asia: Challenges and Policy Options* (Asian Development Bank Press 1999); Joseph R. Bisignano, 'Precarious Credit Equilibria: Reflections on the Asian Financial Crisis', in William C. Hunter, George G. Kaufman and Thomas H. Krueger (eds), *The Asian Financial Crisis: Origins, Implications and Solutions* (1st, Springer Science and Business Media New York 1998) 82.

there was a pervasive decline in the standards of credit evaluation and portfolio quality held by the Indonesian banking sector.

The weak and infant development of prudential regulation and supervision regimes in the region was further exacerbated by the unique close-relational model between businesses and government, cultivating pervasive nepotism and favouritism in the government's lending and investment decisions.[134] The widespread government-directed lending practices to certain selected, favoured firms, and the granting of lucrative government contracts to political allies significantly led to the deterioration of the quality of lending and investment practices, as well as rent-seeking problems across the region.[135] In Indonesia and the Philippines, major business groups with close linkages to the President and the extended bureaucratic regime received more lenient rules for their businesses, preferential allocation of financial supports, and even the authorisation to establish their own banks.[136] As the regulatory and capital requirements to establish banks were significantly eased, many domestic business owners in Indonesia with close connections to bureaucrats seized opportunities to enter the banking business.[137] This practice not only provided the companies with cheap and easy money to finance their own businesses, but also further concentrated the credit risk on corporate sectors. Meanwhile, in South Korea, the government was known to give particularly strong support to family-controlled conglomerate groups (*chaebol*), which often received preferential treatments such as negative real interest rates and government bailouts.[138] Without improvement in prudential

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[134] Tran Van Hoa, 'Causes of and Prescriptions for the Asian Financial Crisis', in Tran Van Hoa and Charles Harvie (eds), *The Causes and Impact of the Asian Financial Crisis* (Palgrave Macmillan 2000) 17.

[135] As Fischer put in his speech on April 6, 1998, that at the heart of the problems dealt with the Asian countries are issues of 'weak financial institutions, inadequate bank regulation and supervision, and the complicated and nontransparent relations among governments, banks and corporations'. See: Glick (n 129) 41; Sharma (n 126) 25; Stanley Fischer, 'The Asian Crisis: A View from the IMF' (The Midwinter Conference of the Bankers' Association for Foreign Trade, Washington, 22 January 1998) < https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp012298> accessed 12 April 2020; Richard W. Stevenson, 'With Approving Nod, IMF Wires $3.5 Billion to South Korea' (*The New York Times*, 19 December 1997) < https://www.nytimes.com/1997/12/19/world/with-approving-nod-imf-wires-3.5-billion-to-south-korea.html> accessed 12 April 2020.

[136] Noble and Ravenhill (n 121) 10.

[137] In Indonesia, the so-called 'Suharto's connections' largely benefited from their close relationship with the old government and Soeharto's family. Along with the government's initiative to increase the competitiveness of the national banking system, regulatory requirements in establishing new banks and capital requirements were significantly eased. With a capital of Rp. 10 billion, a new commercial bank could be established, and only Rp. 50 million was required for the establishment of rural bank. See: Pramono (n 132) 64.

[138] The chaebol was widely used to support the country's export industrialisation policy at the time. See: Chun Chang, 'The Informational Requirement on Financial Systems at Different Stages of Economic Development: The Case of South Korea' (2000) University of Minnesota Working Paper < https://core.ac.uk/download/pdf/51181331.pdf> accessed 1 April 2019; Andrew Sheng, *From Asian to Global*

regulation and supervision imposed on the booming banking sector across Asia, the poor pre-existing corporate governance and market discipline among the businesses further added to the seeds of instability build up within the system.

I.IV.b. Lack of Independence and Pervasive Supervisory Forbearance

In Asia, the close relational system between government and the private sector—particularly conglomerate groups and banks—was further reinforced with excessive government ownership and 'relational' involvement in the banking sectors, and thus generally framed the decision to let banks fail as a political one.[139] As most financial authorities and central banks at the time were still essentially an extension of governmental agencies, financial supervisors faced pervasive supervisory forbearance in handling banking failures before consulting the matters with the high level bureaucrats.[140] The dismissal of the Governor and four managing directors of Bank Indonesia later in February 1998 by President Soeharto were also speculated by many to be linked to the liquidation of banks owned by his family members during the handling of the AFC.[141] The lack of political independence enjoyed by Southeast Asian central banks and financial authorities significantly exacerbated the bias to inaction and supervisory forbearance that further aggravate the structural weaknesses of its prudential supervisory framework.[142]

I.IV.c. Ineffective LoLR Facility and the Deposit Insurance Scheme

The excessive liquidity and capital inflows fueling Asian miracles economies also systematically created an over-reliance by banks on cheap short-term foreign funding to fuel its excessive risk-taking and imprudent lending practices. The lack of commitment among bank

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Financial Crisis: An Asian Regulator's View of Unfettered Finance in the 1990s and 2000s (Cambridge University Press 2009) 97.

[139] The long-standing relational banking and close government ties with business elites commonly practiced by countries in the region, popularised by the term of 'crony capitalism'.

[140] Masciandaro and Quintyn (2013) believe that a weak supervision and lack of enforcement rules, political dissuasions, weak judgement, and self-interest factors could lead to supervisory forbearance. Kane (1989) demonstrated that supervisory forbearance was one of the main causes of Saving and Loan crisis in 1980s in the US. See: Masciandaro and Quintyn (n 99) 290; Edward Kane, 'How Incentive-Incompatible Deposit Insurance Fail' (1989) 2836 National Bureau of Economic Research Working Papers <https://ideas.repec.org/p/nbr/nberwo/2836.html> accessed 12 January 2020.

[141] Prior to the AFC, the proposal submitted by the Governor of BI in December 1996 to start the liquidation proceedings for seven insolvent and imprudent local banks was directly rejected by the President. See: Djiwandono (n 123).

[142] The inaction bias in macroprudential supervision defined as the decision to choose not to act, based on consideration of varying degrees of uncertainty and the prospect of gaining greater clarity at a future time. The inaction bias is mostly defined as 'the decision not to act' rather than the inability to act.

owners to strengthen corporate governance and lending practices eventually manifested in the massive number of cases of misallocation of investment and risky lending practices to the politically connected enterprises by banks in the years prior to the AFC. The poor credit standards among Asian banks later manifested into a massive increase of non-performing loans (NPL) rates across the system, ranging from 20-30 per cent in Malaysia and South Korea, 45-55 per cent in Thailand, to as high as 75 per cent in Indonesia at its peak of the AFC in 1998.[143]

Without the vigorous enforcement of prudential supervision in its lending practices, there was a systemic moral hazard problem among banks to expect implicit government guarantees to be extended for politically connected enterprises and businesses, regardless of the soundness of their business operations.[144] At the time, most of the banks in the region either had a close relationship with the reigning political regime, or acted as quasi-fiscal agents supporting government developmental agendas in channelling funds and credit into certain selected businesses. Along with the absence of a strong law enforcement culture, there was widespread expectation held by the banking sector that—should they get into trouble—the government and central bank would extend their guarantees and bail them out.

The abuse and embezzlement case of Indonesian emergency liquidity supports and banking restructuring programme during the crisis was largely channelled into few selected banks with strong political connections with the President and bureaucratic authorities.[145] Eventually, the banks that received financial support were the same banks that operated imprudently and took excessive leverage, while enjoying political privilege from their close relationships with the bureaucrats and governing regime.[146] This demonstrates the structural problem of corruption and rent-seeking embedded within the Indonesian financial system.

Moreover, most of the banking liquidation process was primarily conducted under normal corporate bankruptcy regulation, that did not prioritise the deposit holders compared to other

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143 Noble and Ravenhill (n 121) 19; Sheng (n 138) 237.
144 Sharma (n 126) 25.
145 Kusumaningtuti SS, *Peranan Hukum dalam Penyelesaian Krisis Perbankan di Indonesia (The Roles of Law in Indonesian Banking Crisis Resolution)* (RajaGrafindo Persada 2010) 180, 206.
146 Ibid,180; Muhammad Chatib Basri, 'Twenty Years after the Asian Financial Crisis', in Luis E Breue, Jaime Guajardo, and Tidiane Kinda, *Realizing Indonesia's Economic Potential* (IMF 2018) 35 < https://www.elibrary.imf.org/view/books/071/24870-9781484337141-en/24870-9781484337141-en-book.xml> accessed 12 January 2020; Hadi Soesastro and M. Chatib Basri, 'Survey of Recent Developments' (1998) 34 (1) Bulletin of Indonesian Economic Studies < https://doi.org/10.1080/00074919812331337270> accessed 18 April 2019.

types of creditors.[147] In combination with the absence of strong prudential supervision and institutional capacity among the financial authorities, the confidence of foreign investors and major local depositors in the government's handling of the AFC was further aggravated. In Indonesia, the collapse of the banking sector was not solely caused by the outflow of foreign capital and depreciation of rupiah value—instead, there were events of nationwide depositor runs and massive selling of rupiah-denominated assets to the US dollars by depositors.[148] Under the advice of the IMF staff, the government decided to close 16 small banks that accounted for only three per cent of the total Indonesian banking assets at the time, however, creating unexpected devastating impacts and the collapse of the banking sector, primarily due to low public confidence and trust in the government regime, and the effectiveness of its deposit insurance scheme.[149]

I.V. CONCLUSION

Throughout history, financial crises are frequently initiated by the expansion of credit during the economic boom. Reflecting on the AFC and the GFC, which took place across both emerging and developed countries, it is observed that large capital inflows and excessive credit expansion can quickly lead to structural changes in the attitudes of financial markets. As explained by the FIH, the rapid expansion and overabundance of easy access to credit will eventually generate an economic boom and an aggravated attitude toward risk-taking and speculation, that further exacerbate the inherent fragility of the system. Although in both the AFC and GFC the crisis did not arise from a single source, the deficiencies in financial supervision imposed on banks certainly played a vital role by failing to enforce sufficiently stringent prudential rules during the period of exuberance. Instead of acting as the first line of defence to regulate and control the markets and financial participants, financial supervision has been proven to be part of the structural problem by allowing the deteriorations of market behaviour and prudential practice among the financial institutions. The frequent failures of

[147] Djiwandono (n 123) 173.
[148] Ibid.
[149] The failure of this government's exit policy spiked concerns among depositors about the safety of the domestic banking sector, which later resulted in massive withdrawing of funds and depositors' flights to foreign banks. By guaranteeing a maximum of 20 million rupiah (US$5,500) per depositor, the existing deposit guarantee was only covering the small deposit holders—these constituted more than 80 per cent of the accounts but less than 20 per cent of deposits in value. See: Ibid, 119; IMF, 'Indonesia – Memorandum of Economic and Financial Policies' (Letter of Intent, 15 January 1998) <https://www.imf.org/external/np/LOI/011598.htm> accessed on 12 January 2020.

financial supervisors in regulating and supervising the markets as discussed in this chapter have also proven the premise that financial sectors should not and cannot be left unregulated and unsupervised.

Although no two crises are exactly alike, particularly in terms of triggers and amplifying factors, there are, however, some recurring themes and issues that can be learned from the AFC and the GFC. While the AFC revealed the structural weaknesses in the practices and governance structure of financial supervision during the premature enforcement of financial liberalisation across Southeast Asian countries, the GFC revealed the structural weaknesses of the light-touch supervisory approach, hailed by developed countries under its fully liberalised financial system. The pervasive moral hazard problem, and practices of systemic nepotism and corruption caused by certain characteristics of a 'relational' business environment in the region, and weak enforcement of prudential and corporate governance rules, are all relatively comparable to the excessive risk-taking behaviour and regulatory arbitrage pervasively groomed by the light-touch approach and the 'efficient markets' hypothesis prior to the GFC.

CHAPTER II

THE FUNDAMENTALS IN THE FINANCIAL SUPERVISION

II.I INTRODUCTION

As previously discussed, the GFC 2008 shook the core of the financial regulatory and supervisory framework and exposed the structural inadequacies of previously adopted approaches. The costs of the financial crisis are also found to be indisputably significant, not only by the impact of losses incurred by the institutions, but also the cost of interventions imposed by authorities and the government to stabilise the system and safeguard the spillover impacts to the real economy. An understanding hence emerges that mitigating the probability of a crisis has become much less expensive than managing the *ex-post* costs of a financial crisis. Therefore, most of the focus of financial reforms in the aftermath of the GFC is in better preparing for a crisis, by emphasising the importance of well-coordinated crisis-preparedness and crisis-management frameworks, imposing recovery and resolution plans, establishing the macroprudential supervisory framework, and preventing the emergence of risk through the early warning system and better early supervisory intervention.

To date, the conduct of financial supervision has been long acknowledged as a thankless task. The best that can happen to a supervisor is when undesirable events are entirely prevented, and stability prevails, thus creating the general impression that nothing has happened.[1] Once banking failures have taken place, there is frequently excessive public blame, and an overemphasis on the shortcomings of the financial supervisory regime.[2] Hence, financial supervisory reforms have been used as political tools by elected politicians and policymakers

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[1] Charles A. E. Goodhart, 'The Organisational Structure of Banking Supervision', in Richard A. Brealey and others (eds) *Financial Stability and Central Banks: A Global Perspective* (Routledge 2001); Charles A. E. Goodhart, 'The Organisational Structure of Banking Supervision' (2002) 31(1) Economic Notes: Review of Banking, Finance and Monetary Economics < DOI:10.1111/1468-0300.00070> accessed 9 January 2019.

[2] The vast public criticism of the BoE's supervision in the wake of failures of the UK's secondary banking sector between 1973–1975, the Johnson Matthey Bankers (JMB) in 1984, the Bank of Credit and Commerce International (BBCI) in 1991, and the Barings Group in 1995—altogether with the failure of the Northern Rock (2007) and Halifax Bank of Scotland (HBOS) (2008) under the supervision of the Financial Services Authority (FSA)—demonstrate the challenges faced by the financial supervisors.

to show the public that 'a change' has been made. This dynamic further reinforces the trend of insufficient regulation and supervision in times of boom, and excessive regulation in the wake of crises.[3]

This chapter will analyse several fundamentals that continuously shape the development of financial supervision from the 1970s to date. It starts by discussing the rationale of financial supervision as an independent policy area complementing the financial regulatory framework. The section also consists of the latest developments in the financial supervisory framework, in becoming more forward-looking and preventive in response to market failures and financial instability. In response to this discussion, section III highlights the increasing need for a more balanced perspective, and regulatory efforts on *ex-ante* crisis prevention and *ex-post* crisis-management frameworks, and at the same time, more effective coordination between the entire FSN framework. Section IV discusses the institutional aspects of financial supervision by critically examining the roles of law and political institutions in influencing the design and operationalisation of financial supervision. Section V critically assesses the evolutionary roles of central banks as one of the important determinants in the development of financial supervision. Section VI draws the conclusions of the chapter.

II.II. THE RATIONALES FOR FINANCIAL SUPERVISION

Until the mid-twentieth century, international financial law still mainly operated under the system of 'bumper cars', as cross-border financial transactions were solely built on mutual and *ad hoc* agreements between countries, while coordination between different central banks was absent.[4] It was only in the aftermath of the German *Bankhaus Herstatt* failure in 1974 that the recognition of the need for a sound financial supervision emerged, gaining more public attention, that peaked with the establishment of the Basel Committee on Bank Supervision (BCBS).[5] Established by the G10's central bankers, the BCBS was established to improve the

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[3] John Armour and others, *Principles of Financial Regulation* (1st, Oxford University Press 2016) 93.
[4] Michael Malloy, 'Bumper Cars: Themes of Convergence in International Regulation' (1992) 60 Fordham L. Rev 23; Lawrence G. Baxter, 'Understanding the Global in Global Finance and Regulation', in Ross P. Buckley, Emilios Avgouleas, and Douglas W. Arner (eds), *Reconceptualising Global Finance and Its Regulation* (Cambridge University Press 2016) 31
[5] The failure of Herstatt bank in June 1974 created huge international implications through the foreign-exchange transaction settled in New York, and led to the failure of Franklin National. Goodhart (2002) also adds that the recovery period, the success of the Bretton Woods arrangement in securing the international stability following the great depression in the 1930s, and the plummeting occurrence of financial failures and crises made any rationales for financial regulation and supervision prior to the 1970s inessential. See: Charles Goodhart, *The Basel*

quality of banking supervision worldwide, and enhance more regular cooperation between its members.[6] The initiative demonstrated the increasing international concerns over the global implications of banking failures, and thus successfully laid the critical foundation for international cooperation between banking supervisors to date.[7]

However, it was only in 2001, that Andrew D Crockett, the former General Manager of the BIS (1994–2003), raised broad attention for international policymakers of the importance of moving away from this sole focus in regulating the financial markets to the act of supervising the markets.[8] A profound recognition of the need for the financial authority to do more than simply establish the basic 'rules of the game' and check compliance also further emerged.[9] The general operations of financial supervision started to place emphasis on more proactive supervisory tasks, such as identifying idiosyncratic risks and ensuring the soundness of the bank's management practice in controlling risk.[10] Financial supervision has evolved into an independent policy area outside financial regulation, and gained wide acceptance of its importance in safeguarding financial stability.[11]

Committee on Banking Supervision: The History of the Early Years 1974 – 1997 (Cambridge University Press 2011); Charles Goodhart, 'Financial Supervision from An Historical Perspective: Was the Development of Such Supervision Designed or Largely Accidental?', in David Mayes and Geoffrey E. Wood (eds), *The Structure of Financial Regulation* (Routledge 2007) 57; Donato Masciandaro and Marc Quintyn, 'The Evolution of Financial Supervision: the Continuing Search for the Holy Grail', in Morten Balling (ed), *50 Years of Money and Finance: Lessons and Challenges* (SUERF - The European Money and Finance Forum 2013) 264 <https://econpapers.repec.org/scripts/redir.pf?u=https%3A%2F%2Fwww.suerf.org%2Fdoc%2Fdoc_8e296a067a37563370ded05f5a3bf3ec_1919_suerf.pdf;h=repec:erf:erfftc:1-8 > accessed 12 January 2020.

[6] BIS, 'History of the Basel Committee' < https://www.bis.org/bcbs/history.htm> accessed 10 January 2020.

[7] Eventually, the unravelling events of banking failures across the developed and developing worlds throughout the 1970s became the impetus for more stringent regulation and supervision imposed on modern financial markets. Spain and Canada experienced banking problems from the late 1970s through 1985; Denmark and the US in the period of 1987–1992; France, Italy, Finland, Sweden, and Switzerland experienced banking problems in the period 1987–1995; the Latin American debt crisis occurred in the 1980s; Japan in early 1990s; and finally, the Asian financial crisis in the late 1990s.

[8] Andrew D. Crockett, 'Banking Supervision and Regulation: International 4th Trends' (the 64th Banking Convention of the Mexican Bankers' Association, Acapulco, March 2001) < https://www.bis.org/speeches/sp010330.htm> accessed 12 August 2019.

[9] Charles Goodhart and others, *Financial Regulation: Why, How and Where Now?* (1st, Routledge 1998); Douglas W. Arner, *Financial Stability, Economic Growth, and the Role of Law* (1st, Cambridge University Press 2007) 196.

[10] Previously, the traditional prudential supervision mainly formed a regulatory approach focusing on assessing the bank's balance sheet and loans used to determine compliance with capital requirements. Such a shift of focus to management process was recorded in the Federal Reserve System's 1993 guidelines to examiners on trading and derivatives activities. In the late 1990s, the BCBS was also observed to make the move towards the supervisory approach in deciding on capital requirements. See: Frederic S. Mishkin, 'Prudential Supervision: Why Is It Important and What Are the Issues?' in Frederic S. Mishkin (ed), *Prudential Supervision: What Works and What Doesn't* (The University of Chicago Press 2001) 13-15.

[11] Although often used interchangeably, the conceptual separation between financial regulation and financial

Although fundamentally sharing similar objectives—safeguarding the safety and soundness of institutions and financial stability—there are significant differences between financial regulation and financial supervision. Financial regulation primarily encompasses the rulemaking and standards-setting aimed at governing the behaviour of financial firms, which may also include licensing or authorisation, while financial supervision is primarily seen as the monitoring and oversight of firms' behaviour and compliance with the established rules.[12] As the *de facto* law-maker, a regulator is responsible for devising day-to-day secondary sources of law, such as rules, standards, and guidelines that emanate from 'primary sources' such as statutes.[13] On the other hand, the scope of supervisory tasks is much broader than simply enacting and enforcing rules and regulations, as it is also responsible for assessing and guiding the institutions and development within the markets and system. Moreover, the supervisor is also responsible for verifying the accuracy of the information disclosed by firms, and imposing punishment for false or misleading disclosures (enforcement).[14]

Undoubtedly, prescriptive rules and regulations are still crucial to guide a well-functioning financial system as, in practice, it has direct impact on financial products, the characteristics of the markets, and the behaviour of the market participants shaping the competition in the markets.[15] Yet, financial markets contain some inherent externalities that continue to place the

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supervision has widely been emphasised and discussed among scholars since the late 1990s. See: Donato Masciandaro and Marc Quintyn, 'Regulating the Regulators: The Changing Face of Financial Supervision Architectures Before and After the Crisis', in Slyvester Eijffinger and Donator Masciandaro (eds), *Handbook of Central Banking, Financial Regulation and Supervision* (Edward Elgar 2011) 456; Rosa M. Lastra, 'The Governance Structure for Financial Regulation and Supervision in Europe' (2003) 10 Columbia Journal of European Law 49; Eric J. Pan, 'Challenge of International Cooperation and Institutional Design in Financial Supervision: Beyond Transgovernmental Networks' (2010) 11 Chicago Journal of International Law 1 265; Charles Goodhart and Dirk Schoenmaker, 'Should the Functions of Monetary Policy and Banking Supervision Be Separated?' (1995) 47 Ox Econ Papers 539–560; Masciandaro and Quintyn (n 5) 274.

[12] Regulation is largely seen to refer to 'the set of laws and rules' (Crockett, 2001), 'rules governing the behaviour of intermediaries' (Barth and others, 2006), 'specific rules of behaviour' (Goodhart, 1998). Meanwhile, supervision is commonly associated with 'monitoring of activities and enforcement of regulation' (Crockett, 2001), 'oversight in ensuring compliance over the rules' (Barth and others, 2006), 'general oversight of firms' behaviour' (Goodhart, 1998), and 'process of monitoring to ensure the adherence of applicable rules and standards' (Pan, 2010). See: Crockett (n 8); James R. Barth, Gerard Caprio Jr., and Ross Levine, *Rethinking Bank Regulation: Till Angels Govern* (Cambridge University Press 2006) 4; Goodhart and others (n 9); Ibid, Pan 265.

[13] Dalvinder Singh, *Banking Regulation of UK and US Financial Markets* (Ashgate Publishing Limited 2007) 46; Martin Shapiro, 'Administrative Discretion: The next Stage' (1983) 92 Yale Law Journal 1510 < https://digitalcommons.law.yale.edu/ylj/vol92/iss8/8/> accessed 18 November 2019.

[14] James R. Barth, Gerard Caprio Jr., and Ross Levine, 'The Design and Governance of Bank Supervision' (Riksbank Conference, Stockholm, July 2006) 4.

[15] Richard Davies and others, 'Evolution of the UK Banking System' (2010) 4 The Bank of England Quarterly

markets and its participants at the risk of behaving incompatibly and illicitly in regard to the imposed rules and standards. As extensively revealed during the GFC, the pervasive systemic principal-agent and moral hazard problems embodied in the creation of the mortgage-backed securitised products and the very existence of too-big-to-fail (TBTF) financial institutions have signified the pressing need for the more stringent ethical standards in finance.[16] Although regulation has widely been used to impose rules to incite changes in ethical behaviours of its regulated institutions, it is, however, inadequate in imposing such changes directly upon the market participants.[17]

Overall, prudential supervisors may offer a better chance of accommodating flexible adaptation to ever-changing financial innovation, by actively developing monitoring tools and supervisory understanding of the latest trends and culture adopted by financial institutions.[18] Financial supervision is, thus, an essential complementarity for financial regulation, in addressing the limits of what can be achieved through detailed, prescriptive and complex rules and regulations imposed on financial sectors.[19]

II.II.a. The Limits of Financial Regulation

As the financial regulation and supervisory frameworks are primarily reactive to every financial instability and crisis, the overall framework is built over the accumulation of various rules and laws, created to avoid the repetition of the previous problem. Particularly in the aftermath of a crisis, there are usually natural forces—primarily driven by political short-termism—that want to prevent the next financial crisis. However, the reforms imposed are frequently used to fight the last war, instead of visioning for an upcoming crisis.[20] The reforms following the GFC

Bulletin 326 https://www.bankofengland.co.uk/quarterly-bulletin/2010/q4/evolution-of-the-uk-banking-system accessed 20 January 2020.

[16] Georges Ugeux, *International Finance Regulation: The Quest for Financial Regulation* (John Wiley & Sons 2014) 181.

[17] Ibid.

[18] Charles Littrell, 'Cultural Considerations for Prudential Supervisors', in David G. Mayes and Geoffrey Wood (eds), *Reforming the Governance of the Financial Sector* (Routledge 2013) 260

[19] David T. Llewellyn, 'Central Banks and the New Regulatory Regime for Banks', in David G. Mayes, Pierre L. Siklos and Jan-Egbert Sturm (eds), *The Oxford Handbook of the Economics of Central Banking* (Oxford University Press 2019) 507.

[20] The timeline compiled in Barth (2019) shows that most of laws and reforms imposed are enacted to respond to past mistakes, instead of preventing the subsequent crisis and being proactive. See: Carmen M. Reinhart and Kenneth S Rogoff, *This Time is Different: Eight Centuries of Financial Folly* (Princeton University Press, 2009); Buckley, Avgouleas and Arner (n 4); James R. Barth, 'Regulatory Responses by Countries to Banking—Financial

demonstrate a pattern that eventually leads to over-regulation, and which could grow to be a source of systemic risk itself.[21] Adding more rules and regulations are unlikely to effectively prevent the occurrence of subsequent financial crises.[22]

Whereas regulation is understood to impose a cost for its failure, the price attached to its application is often overlooked.[23] This raises the impression that regulation is a free good that eventually will create over-demand.[24] As financial markets are constantly changing and innovating, financial institutions are also continuously adapting to the new rules. Undeniably, as soon as a rule becomes a binding regulation, the institutions' risk management changes in order to make it less binding and less effective—known as the regulatory uncertainty principle.[25] However, the institution's attempts to circumvent regulation through innovation and changes of firms' conducts of business will instead result in new regulations imposed by regulators, creating the 'regulatory dialectic'.[26] In other words, the principles used in financial regulation have become more like 'shooting at a moving target, with the target itself moving partly because of regulation'.[27] This constant back and forth between the regulators and innovators/institutions exacerbates the system's complexity, and eventually increases the information costs imposed on market participants and regulators themselves.[28]

Crises' (2020) 13 (1) Journal of Risk and Financial Management 3 < https://doi.org/10.3390/jrfm13010001> accessed 15 February 2020.

[21] In fact, at the heart of the GFC were highly regulated financial institutions. Emilios Avgouleas, 'Regulating Financial Innovation', in Niamh Moloney, Eilis Ferran, and Jennifer Payne (eds), *The Oxford Handbook of Financial Regulation* (1st, Oxford University Press 2015) 686.

[22] In contrast to the 37 pages of the Glass-Steagall Act of 1933 in response to the Great Depression, the US Dodd-Frank Act of 2010 totalled 848 pages, not to mention a third of finalised rules in 2012 of the Act, which added another 8,843 pages to the rule book.

[23] David Llewellyn, 'Institutional Structure of Financial Regulation and Supervision: The Basic Issues', in Jeffrey Carmichael, Alexander Fleming, and David Llewellyn (eds), *Aligning Financial Supervision Structures with Country Needs* (World Bank Publication 2004) 23 <http://hdl.handle.net/10986/14876> accessed 11 January 2019.

[24] Ibid.

[25] Jaime Caruana, 'Financial Regulation, Complexity and Innovation' (Speech at Promontory Annual Lecture, London, 4 June 2014) < https://www.bis.org/speeches/sp140604.htm> accessed 21 January 2021.

[26] Therefore, the dynamic relationship between financial markets and financial regulation and supervision, in general, significantly reinforce one another. See: Edward Kane, 'Good Intentions and Unintended Evil: The Case Against Selective Credit Allocation' (1977) 9(1) Journal of Money Credit and Banking < http://links.jstor.org/sici?sici=0022-2879%2819770 ... 0.CO%3B2-Y&origin=bc> accessed 12 April 2019; John Lerner and Peter Tufano, 'Thoughts about Financial Innovation', in in Douglas Evanoff, and others (eds), *Achieving Financial Stability: Challenges to Prudential Regulation* (World Scientific Publishing 2017) 271.

[27] Llewellyn (n 19) 508.

[28] Ibid.

Moreover, the current regulation has become more standardised and homogenised, by becoming 'more detailed, intensive, granular, voluminous and complex'.[29] These overly specific rules might instead create unintended consequences by fostering and incentivising regulatory arbitrages in the system.[30] The rise of disintermediation resulting from the exponential growth of the shadow-banking sectors and money-market mutual funds in the period leading up to the GFC 2008 are perfect examples of this.[31] In one way or another, financial institutions will mostly find a way to get around regulation. The tendency of the regulatory responses to create more complexity may instead make regulators become 'as boundedly rational as market participants and as challenged as the latter by rule complexity'.[32]

The development of financial innovation has also been increasingly driven by the private aim to circumvent regulation. Innovation has not only enabled financial institutions to move their activities and instruments off-balance-sheet, but it has also created a tendency for 'risks migrate to where regulation is weakest', which further increases the challenges faced by the regulators and limits what regulatory strategies can reasonably achieve.[33] As the primary form of laws are

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[29] Llewellyn (2019) argues that the recent regulation has become 'more detailed, intensive, granular, voluminous and complex', as banks are required to hold higher levels of capital and liquidity, while subjected to more intensive and extensive supervision as well as reporting requirements. See: Emilios Avgouleas, 'Regulating Financial Innovation', in Moloney, Ferran and Payne (n 21) 685; Llewellyn (n 19) 510; Vasileios Madouros and Andrew Haldane, 'The Dog and the Frisbee' (Proceedings - Economic Policy Symposium, Jackson Hole, Federal Reserve Bank of Kansas City, 2012) 122 < https://econpapers.repec.org/article/fipfedkpr/y_3a2012_3ap_3a109-159.htm> accessed 1 June 2018.

[30] This was apparent from the case of money fund and asset-backed commercial paper conduits that grew unconstrained prior to the 2008. See: Paul Tucker, 'Regulatory Reform, Stability and Central Banking' (2014) Hutchins Center on Fiscal and Monetary Policy at Brookings 9 < https://www.brookings.edu/wp-content/uploads/2016/06/16-regulatory-reform-stability-central-banking-tucker.pdf> accessed 20 May 2020.

[31] Schwarcz (2015) points to Regulation Q in the US prior to the GFC 2008, that imposed limits on the interest rates that banks can give to depositors, and which helped push institutional depositors to seek higher returns in the money-market mutual funds. See: Steven L. Schwarcz, 'Banking and Financial Regulation', in Francesco Parisi (ed), *The Oxford Handbook of Law and Economics: Volume 2: Private and Commercial Law* (Oxford University Press 2017) 425.

[32] Thus, the best way to regulate and control a complex financial system is through a simplified and streamlined regulatory framework which combined the five measures, which are: reduce the layers of Basel framework; put leverage on a stronger regulatory footing; reinforce supervisory discretion and market discipline; explicitly regulate complexity; and structurally reconstruct the financial system. See: Madouros and Haldane (n 30) 144; Llewellyn (n 19) 508; Emilios Avgouleas, 'Cognitive Biases and Investor Protection Regulation: An Evolutionary Approach' (2006) SSRN <http://dx.doi.org/10.2139/ssrn.1133214> accessed 5 April 2018.

[33] The financial sectors do not face physical impediments to circumvent the regulatory requirements imposed, as financial contracts and assets can easily be moved virtually and legally, and institutions have all the incentives to shift their balance sheet transactions, product, and even legal establishment, to another jurisdiction with a weaker requirement or supervisory enforcement. See: Andrew G. Haldane, 'The $100 billion Question' (Speech at the Institute of Regulation and Risk, Hongkong, 30 March 2010) < https://www.bankofengland.co.uk/speech/2010/the-100-billion-question-speech-by-andy-haldane> accessed 1 April 2019.

national in character, while financial intermediation has become more global, financial regulation and supervision have also become more anachronistic compared to the markets and financial innovation they aim to regulate and supervise.[34] Without a robust international effort to further improve cross-border supervisory coordination and cooperation, financial institutions still hold the major cards to play with this boundary issue and regulatory arbitrage.[35]

Overall, these regulatory limitations are also encapsulated in the understanding of the Keynesian uncertainty world, in which financial regulation will constantly fail to catch up with development in the financial system, due to the incompleteness of information.[36] Generating information from this system will require an understanding of the constituent elements and their relationships, which is highly complex. By acknowledging this decentralised nature of knowledge, financial supervisors should always attempt to optimise the information and understanding over the complex financial system, within the context of the locality of their jurisdiction. Hence, a well-designed and more proactive supervisory framework may become essential to further monitor and control the market's imprudent behaviours and development.[37]

II.II.b. From Safety of Individual Institutions to Systemic Risk

Financial supervision broadly encompasses two different goals: the safety and soundness of institutions and financial system (prudential supervision) and the consumer protection and market integrity (market conduct supervision). This chapter focuses solely on *prudential supervision*—generally referred to as *financial supervision*—that can be further divided into microprudential supervision and macroprudential supervision.

Historically, the banking sector used to be the primary focus of prudential supervision due to its principal role as the sole intermediary in the economy. However, following the exponential

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[34] Goodhart 2011 (n 5) 62.
[35] One immediate impact of such increase in complexity and internationalisation of banking and financial activities is through the increase of focus in global approach / efforts to financial regulation and supervision. However, as we have seen until today, such an effort in addressing cross-border challenges is still falling behind the fast pace of development and innovation in the financial sector. See: Mario Tonveronachi, 'Empowering Supervisors with More Principles and Discretion to Implement Them Will Not Reduce the Dangers of the Prudential Approach to Financial Regulation' (2010) 63(255) PSL Quarterly Review 369 <https://ssrn.com/abstract=1815160> accessed 9 August 2019.
[36] The fundamental problems faced by financial regulators and supervisors are not new; the discussion of uncertainty and complexity of the sector has been taken place since the era of Knight (1921), Hayek (1945) and Minsky (1992).
[37] Mishkin (n 10) 8.

expansion of credit and capital flows between countries during the second half of the twentieth century—often called the 'Golden Age of Capitalism'—there was a significant increase in direct financing to capital markets that spurred massive development in the international financial markets.[38] This trend has gradually diminished the roles of banks and other more traditional financial intermediaries in financing the economy. By the turn of the 21st Century, the conventional objective of financial regulation—in focusing only on the mitigation of banking failures through capital requirements introduced under the Basel Accord regime—had become anachronistic.[39] As the sources of market instability had moved to less traditional non-banking sectors, the prudential regulatory and supervisory perimeters started to extend to these new types of financial intermediaries.

In the aftermath of the GFC, the scope of financial supervision has been further redefined to also focus on better understanding the SIFI business models and strategies, including their organisational and funding structure complexities.[40] Along with the greater supervisory intensity on the most systemic institutions, financial supervision has also become more focused on understanding the institutions' business models and their risk drivers, developing forward-looking risk assessments and facilitating early intervention to prevent problems from escalating and materialising into a broader crisis.[41]

Focusing on attempts to reduce the probability of individual failure and control the externalities generated by financial market activities, the microprudential supervision primarily aims to make sure financial institutions internalise their losses and limit the cost of LoLR support.[42]

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[38] Largely as the banking sectors are now able to directly access the capital markets through the establishment of the special purposes vehicles and other off-balance sheet entities in conducting securitisation. See: Chapter I, Section II.a.

[39] Capital requirements introduced in the 1980s under the Basel Accord I regime were used to be seen as effective in ensuring the solvency of individual banks and addressing credit risks. See: Steven L. Schwarcz, 'Protecting Financial Markets: Lessons from the Subprime Mortgage Meltdown' (2008) 93 Minn L. Review 374 < https://scholarship.law.duke.edu/faculty_scholarship/1981/> accessed 9 January 2020; Schwarcz (n 31) 424.

[40] FSB (2014) acknowledges the basic criteria and expectations imposed by the IMF and World Bank FSAP on financial supervisors that ill-suited the complex financial system prior to the GFC. See: FSB, 'Thematic Review on Supervisory Frameworks and Approaches for SIBs' (May 2015) < https://www.fsb.org/2015/05/thematic-review-on-supervisory-frameworks-and-approaches-for-sibs/> accessed 12 August 2020; FSB, 'Progress Report on Enhanced Supervision: Supervisory Intensity and Effectiveness' (April 2014) < https://www.fsb.org/2014/04/r_140407/> accessed 13 August 2020.

[41] BCBS, 'Frameworks for Early Supervisory Intervention' (March 2018) < https://www.bis.org/bcbs/publ/d439.htm> accessed 12 August 2020.

[42] Howard Davies and David Green, *Global Financial Regulation: The Essential Guide* (The Polity Press 2008) 18.

By complementing the established prudential rules, microprudential supervision specifically controls the behaviours of financial institutions by monitoring regulatory compliance and excessive risk-taking behaviour through its capital and liquidity requirements. Overall, post-GFC, microprudential regulatory reforms show global commitment to focus on increasing the quantity and quality of capital held by individual institutions against their asset exposures, as embodied in the Basel III Accord.[43]

In strengthening the crisis-prevention mechanism, microprudential authorities have also increasingly given their attention to the implementation of forward-looking risk analysis and early supervisory intervention to reduce the probability and materialised impact of individual institutional failures.[44] By being firmly ingrained within a risk-based supervisory approach, the early supervisory intervention requires the supervisor to 'take actions to correct an identified weakness or potential issue before rules or buffers are materially breached'.[45] These early supervisory interventions include pre-emptive measures from moral suasion and normal risk assessment processes during the normal situation, to corrective sanctions when the institution's financial condition deteriorates—widely known as the prompt corrective actions (PCAs) in the US.[46] Although variously incorporated and applied across different jurisdictions, the implementation of the early supervisory intervention measures requires a balance of rules and discretion exercised by financial supervisors in taking action against weak and likely failing financial institutions.

To further complement the microprudential framework, more supervisory emphases are pursued to monitor systemic risk and the macro-stability of the financial system, as seen from the trend of macroprudential adoption across the globe. By focusing on the macroeconomic

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[43] Basel III raised the quantity of capital by increasing the common equity capital from 2% to 4.5%, while the quality of capital held by institutions is improved through the tightening of the types of financial instrument eligible as loss-absorbing capital. See: BCBS, 'Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems' (June 2011) < https://www.bis.org/publ/bcbs189.htm> accessed 19 April 2019.

[44] Forward-looking supervisory tools used to support the early identification of risk include the early warning systems, stress testing, horizontal assessment, and thematic analysis. While the early warning system creates alerts on any significant changes in financial indicators, the stress tests supplement the supervisor with qualitative and quantitative information on the institutions' exposure of risks and vulnerabilities. Horizontal assessment and thematic analysis provide the supervisors with additional information to understand industry trends and risks. See: BCBS (n 41) 9 -10.

[45] Ibid 1.

[46] The PCA was first introduced by the Federal Deposit Insurance Corporation (FDIC) Improvement Act 1991 to reduce the impact of failing banks on the deposit insurance scheme during the savings and loans crisis in the late 1980s. See: Ibid, 3-4.

perspective of financial regulation and supervision, the macroprudential framework has become the primary instrument in the defence against financial instability

Using the analogy of forest management, the macroprudential supervision can be described as supervision of the entire forest; meanwhile, microprudential supervision is seen as the supervision of individual trees.[47] By focusing on day-to-day supervision and using the result of bottom-up stress tests,[48] microprudential supervision ensures the safety and soundness of individual banks through the management of risks and market behaviours. Meanwhile, macroprudential supervision, using its 'top-down' approach,[49] pays greater attention to the interactions between institutions and their environment (structural dimension) and the dynamism of the financial market (cyclical dimension) to monitor the financial system and the development of systemic risk effectively.[50] Rather than focus on idiosyncratic risks related to individual institutions, the macroprudential supervisor oversees the financial system as a whole, to identify potential risks incurred by the system. Overall, the microprudential and macroprudential approaches also perceive sources of systemic risk differently. While the microprudential approach recognises the risk created by some exogenous factors, and therefore focuses only on evaluating transactional disclosure, the macroprudential approach assumes such elements as part of endogenous characteristics of the markets. The framework, therefore, is paying greater attention to liquidity, cyclical forces, and capital adequacy within the scope of a sector.[51]

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[47] Rosa Lastra,'Systemic Risk and Macroprudential Supervision', in Moloney, Ferran and Payne (n 21) 315.

[48] The bottom-up stress test is conducted by a bank or financial institution by using its own stress test framework (data, scenarios, assumptions, and models). This model can also include the test that is a part of a system-wide exercise where the authorities provide the common scenarios and assumptions to be used by banks. See: Patrizia Baudino and others, 'Stress-Testing Banks- A Comparative Analysis' (2018) 12 Financial Stability Institute Insights 6 < https://www.bis.org/fsi/publ/insights12.pdf> accessed 8 April 2019.

[49] As opposed to the bottom-up stress test, the top-down approach is the stress test performed by macroprudential authority using its own stress test framework in assessing the system-wide resilience to financial and economic shocks. See: Ibid; Chapter III, section III.IV.a.

[50] Jakob de Haan, Aerdt Houben and Remco van der Molen, 'Governance of Macroprudential Policy' (2012) 67(2) R. Z. offentl Recht 284 <https://doi.org/10.1007/s00708-012-0137-3> accessed 8 April 2018; Claudio Borio, 'Macroprudential Framework: (too) Great Expectations?' (2014) BIS the 25th Anniversary Edition of Central Banking Journal <https://www.bis.org/speeches/sp140813.htm> accessed 1 February 2018; Claudio Borio, 'Towards a Macroprudential Framework for Financial Supervision and Regulation' (2003) 128 BIS Working Paper 2 < https://www.bis.org/publ/work128.pdf> accessed 1 June 2019 2.

[51] Ibid (Borio 2019) 17; Behzad Gohari and Karen E. Woody, 'The New Global Financial Regulatory Order: Can Macroprudential Regulation Prevent Another Global Financial Disaster?' (2015) 40(2) The Journal of Corporation Law 429 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2424818> accessed 8 August 2018.

II.III. FINANCIAL SUPERVISION AND FINANCIAL STABILITY GOAL

In recent years, the understanding of the financial stability goal has continuously evolved, along with the changes we have witnessed within the financial system. Until the 1970s, the idea of financial stability remained underdeveloped and taken for granted by policymakers and central bankers. It was only in the early 1990s that policymakers increasingly pursued the policy goal of safeguarding financial stability.[52] Even in the years following the GFC, there was a broad acceptance that the financial system is mainly related to private counterparts and its specific financial activities, with little government involvement.[53]

In the wake of the GFC, the definitions and understandings of financial stability have significantly developed, from the state of 'absence of financial instability' into a condition resulting from active actions towards 'preserving or safeguarding financial stability' or 'withstanding the shocks'.[54] Such rhetorical changes demonstrate a significant shift in regulatory understanding, to place greater emphasis on the system's pre-emptive and proactive abilities to absorb the shocks rather than amplify them.[55] As a result, attention has emerged on developing analytical tools to identify early vulnerabilities, and better understand how risks

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[52] Garry J. Schinasi, 'Understanding Financial Stability: Towards a Practical Framework', in IMF (ed), *Current Developments in Monetary and Financial Law: Volume 5* (IMF 1999) 66.

[53] Garry J. Schinasi, *Safeguarding Financial Stability: Theory and Practice* (IMF 2006) 15.

[54] More than two decades ago, Crocket (1996) defined financial stability as the absence of financial instability, which he further defined as 'a situation in which economic performance is potentially impaired by fluctuations in the price of financial assets, or in the ability of financial intermediaries to meet their contractual obligations'. The approach and definition used by Arner (2007), Milne (2009), and Allen (2014) place more emphasises on the ability of the system to withstand the shocks and build-up its resilience against the vulnerabilities. Milne (2009) sees the objective of financial stability is to avoid widespread disruption of financial flows that can be achieved by enhancing the resilience of system towards external shocks, and responding to unsustainable expansions of credit and growth of asset prices promptly. Meanwhile, Arner (2007) defines a robust financial system as when it is less susceptible to the risk of a crisis and is more resilient when the crises do occur. See: Hilary J. Allen, 'What is 'Financial Stability'? The Need for Some Common Language in International Financial Regulation' (2014) 45 Georgetown Journal of International Law 929, 934 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2484070> accessed 11 August 2020; Schan Duff, 'The New Financial Stability Regulation' (2018) 23 Stanford Journal of Law, Business and Finance 46 < https://law.stanford.edu/publications/new-financial-stability-regulation/> accessed 1 August 2020; Alistair Milne, 'Macroprudential Policy: What Can It Achieve?' (2009) 25(4) Oxford Review of Economic Policy 609 < https://www.jstor.org/stable/23607081> accessed 8 April 2019; Douglas W. Arner, *Financial Stability, Economic Growth, and the Role of Law* (1st, Cambridge University Press 2007) 71; Andrew Crockett, 'The Theory and Practice of Financial Stability' (1996) 144(4) De Economist 532; Claudio Borio and Mathias Drehmann, 'Towards an Operational Framework for Financial Stability: 'Fuzzy' Measurement and its Consequences' (2009) 284 BIS Working Paper < https://www.bis.org/publ/work284.htm> accessed 6 June 2018.

[55] William Allen and Geoffrey Wood, 'Defining and Achieving Financial Stability' (2006) 2(2) Journal of Financial Stability 152, 155 < http://www.sciencedirect.com/science/article/pii/S1572-3089(06)00020-9> accessed 1 June 2019.

propagate across the financial system through the overall crisis-prevention and crisis-management frameworks. The crisis has thus significantly transformed the common policy and regulatory thinking in designing financial supervision, and initiated debates over the best way to ensure financial stability.[56]

However, to date, the measurement of financial stability is much more complicated than the achievement of price stability. There are no cohesive or practical toolkits in place to analyse, monitor and assess financial stability.[57] Thus, unlike price stability, the goal of financial stability is a less-developed area and difficult to measure.[58] In fact, to date, there is no single measurable target to define and maintain financial stability—as with monetary stability, and its inflation target number.

Having said that, in the aftermath of the GFC 2008, financial stability has become the post-crisis buzzword in promoting a new reformed regime of financial regulation and supervision. Despite the absence of a consensus on its definition, the pursuit of financial stability has widely been acknowledged as the primary concern in our modern economy, and thus classified as a 'public good' that was largely under-supplied prior to the crisis in 2008.[59] The increasing importance and embeddedness of financial sectors into broader socio-economic aspects of society have framed the volatility of financial markets to be a significant threat to the real

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[56] Moloney, Ferran and Payne (n 21) 2.

[57] Ibid, 14.

[58] Blaise Gadanecz and Kaushik Jayaram, 'Measures of Financial Stability: A Review' (BIS Irving Fisher Committee Conference, Basel, August 2008) 365–380 < http://www.bis.org/ifc/publ/ifcb31.pdf> accessed 13 August 2020; Renee Haltom and John A. Weinberg, 'Does the Fed Have a Financial Stability Mandate?' (2017) 17(06) Economic Brief Federal Reserve Bank of Richmond 6 <https://www.richmondfed.org/publications/research/economic_brief/2017/eb_17-06> accessed 11 August 2020; Frank Smets, 'Financial Stability and Monetary Policy: How Closely Interlinked' (2014) 35 International Journal of Central Banking 10.

[59] Financial stability has been seen as a commodity without any depletability or excludability. It means that the benefactor of financial stability is not depleting / diminishing the benefits that go to other users of financial service, and all users of financial services cannot be excluded from the benefit derived from the financial stability. The understanding and acceptance of financial stability as a public good has been emphasised by Oosterloo and de Haan (2004), Tucker (2018). Lastra (2015) further emphasises the nature of financial stability as a global public good, due to the interconnectedness of financial markets and the transnational nature of its benefits. See: The Central Bank Governance Group, 'Central Bank Governance and Financial Stability' (BIS May 2011) 32 <https://www.bis.org/publ/othp14.pdf> accessed 1 February 2019; Mads Andenas and Chiu, Iris H-Y, *The Foundations and Future of Financial Regulation: Governance for Responsibility* (Routledge 2014) 8; Frank Partnoy, 'Financial Systems, Crises and Regulation', in Moloney, Ferran and Payne (n 21) 70; Sander Oosterloo and Jakob de Haan, 'Central Banks and Financial Stability: A Survey' (2004) 1 Journal of Financial Stability 261; Paul Tucker, *Unelected Power : The Quest for Legitimacy in Central Banking and the Regulatory State* (Princeton University Press 2018); Rosa M. Lastra, 'Systemic Risk and Macroprudential Supervision', in Moloney, Ferran and Payne (n 21) 314.

economy. Hence, the general understanding of financial stability has shifted from the derivative result of monetary stability to become a primary goal that must also be achieved alongside price stability.

The systemic importance of financial stability as a modern public good emphasises the significance of close policy coordination between different authorities with a shared interest in promoting financial stability.[60] Particularly with the increasing complexity and interconnectedness of financial sectors, the perplexity of supervisory actions has ominously increased, as they now easily intersect with different policy interests and concerns. Close cooperation and coordination between the authorities whose responsibilities and objectives may conflict with one another are, thus, essential.[61] As a multifaceted task, every part of the framework should work together to safeguard financial stability. Overall, the FSN framework encompasses more general compositions of different authorities, with the common goal of financial stability—which consists of macro-and micro-prudential supervision, monetary policy, the conduct of business supervision, resolution regime, LoLR, deposit insurance, and a crisis-management committee.[62]

Overall, balancing the perspectives of crisis prevention must be pursued alongside attempts to contain the crisis effectively. As an essential part of the financial crisis-preparedness mechanism, the supervisory framework plays a vital role in safeguarding financial stability; however, they could never guarantee a zero-failure regime of the financial framework. Financial supervision should not be viewed as a failsafe, creating the perception of being a silver bullet to prevent bank failure.[63] This understanding is critical, due to the increasing trend in *ex-post*

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[60] Andrew D Crocket, 'Marrying the Micro and Macro—Prudential Dimensions of Financial Stability' (The 11th International Conference of Banking Supervisors, Basel, September 2000) <https://www.bis.org/speeches/sp000921.htm> accessed 9 May 2018.

[61] Crockett further emphasises the importance of placing the policy goal as a joint responsibility among the authorities within the FSN framework. Caruana (2010) emphasized four building blocks for financial stability which are: macroeconomic policies, prudential policies, market discipline, and international cooperation. See: Ibid; Jaime Caruana, 'The Challenge of Taking Macroprudential Decisions: Who Will Press Which Button(s)?', in Stijn Claessens and others, *Macroprudential Regulatory Policies: The New Road to Financial Stability?* (World Scientific Studies in International Economic 2011) 20.

[62] Tucker (2016) argues for five critical elements necessary for an effective financial stability regime: a clear definition of a 'standard of resilience'; microprudential regulation and supervision; macroprudential surveillance; macroprudential regulation; and crisis-management tools and policies. See: Paul Tucker, 'The Design and Governance of Financial Stability Regimes: A Common-Resource Problem that Challenges Technical Know-How Democratic Accountability and International Coordination' (2016) 3 The Centre for International Governance Innovation Essays on International Finance.

[63] Masciandaro and Quintyn (n 5).

public sector interventions and issuing government blanket guarantees since the series of instabilities in the 1990s across the globalised financial system.[64] As seen during the GFC 2008, the unprecedented government guarantee given by the US government unconventionally extended to directly rescue the non-banking sector, as an attempt to avoid the total meltdown of the financial system.[65] Altogether, with the central bank's LoLR function and the explicit deposit insurance scheme—the two critical components to safeguard financial stability amidst the sudden panics and runs—the over-extended *ex-post* crisis-containment framework will instead exacerbate moral hazard problems and market disciplines in the markets.[66] Along with the ever-growing financial innovation and the size of SIFIs, the potential market failures and costs of the financial crisis have increased to go beyond the ability of traditional emergency liquidity facility and government guarantees to contain. There is also a rising concern over the extension of the central bank's LoLR facility to modern banking and non-banking sectors, that has increasingly integrated into the opaque and unregulated shadow banking system.[67] This will thus impose additional credit risk to the central bank, that eventually falls on the shoulders of taxpayers.

Hence, it has become of paramount importance to ensure that the FSN framework, especially the resolution and supervisory authorities, allows insolvent financial institutions to fail in an orderly way, without risking the depositors and financial stability. Robust financial supervision

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[64] In 2008, the total assets of the three Icelandic banks equaled to more than 11 times the national GDP. Such huge amount of capital resources will increasingly demand appropriate guarantee, which at this point, not even the host country's government can handle. Historically, Chile in 1983, Sweden in 1992, Finland in 1992, and Mexico in 1993 are among the first countries that introduce full blanket guarantees to cover all banks' liabilities in order to prevent the total collapse of their economies. See: Luc Laeven and Fabian Valencia, 'The Use of Blanket Guarantees in Banking Crises' (2008) 08(250) IMF Working Paper <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/The-Use-of-Blanket-Guarantees-in-Banking-Crises-22411> accessed 21 August 2019.

[65] This decision was largely taken due to the fear of the systemic consequence of large-scale creditor losses. These actions were indeed seen to be unprecedented, especially when compared to the historical roles of the central banks during the Long-Term Capital Management (LTCM) crisis in the 1990s, which mostly limited to indirect banking involvement of the Federal Reserves, which instead dealing with the bankers of such non-bank financial firms. See: Goodhart 2011 (n 5) 46.

[66] Explicit deposit insurance is used to secure insured depositors and maintain the public's confidence in times of bank failure, thus, reducing the rational incentives to withdraw money that may provoke systemic risks during a case of bank run. On the other hand, the central bank's LoLR facility is aimed to secure the solvency of illiquid banks through direct lending and injection of liquidity to the system through its open market operations. See: Mishkin (n 10) 6.

[67] Modern banking sectors are increasingly becoming integrated into shadow banking system as collateral providers and repo participants. See: Thorvald Grung-Moe, 'Shadow Banking: Policy Challenges for Central Banks' (2014) 802 Levy Economics Institute of Bard College 23 <https://www.levyinstitute.org/pubs/wp_802.pdf> accessed 1 May 2019.

will be needed to support an effective resolution process and crisis management; therefore, the risk of moral hazard and other unintended consequences can be curbed. In its absence, the potential colossal expense of public funds and a significant fiscal burden may eventually force taxpayers to become the insurer-of-last-resort for the financial industry.[68]

Moreover, an over-emphasis on financial supervision's ability to safeguard financial stability might also lead to a widespread sense of false security and regulatory complacency. This will create the impression among the authorities that the work 'has been done', and further breed a rampant system-wide moral hazard problem for the market.[69] Overall, this thesis further raises the importance of financial supervision in ensuring its consistency in improving the markets' resilience to absorb the market shocks and vulnerabilities when systemic risk materialises, and limit spillover into the real sector.

II.IV. THE INSTITUTIONAL ARRANGEMENTS FOR FINANCIAL SUPERVISION

Overall, policy discussion and scholarly debates on the design of institutional arrangements of financial supervision have been extensively developed over the past three decades.[70] The GFC has significantly renewed scholarly discussion on the institutional aspects of financial supervision and the role of the central banks in such supervision.[71] The crisis became the impetus for many countries to either significantly alter the structure of their supervisory models

[68] Although the profits made by financial institutions are governed by the privatisation principles of free market ideas, however, the risks and failures of such institutions are rather socialised to the wider parts of the economy, which effectively place taxpayers as the insurer of last resort. See: Llewellyn (n 19) 506, 510.
[69] Especially in the case of press and media coverage, which further increase the pressure on the politicians to publicly appear to take action in correcting the problems of the existing system. See: Andrew Large, 'Financial Stability Governance Today: A Job Half Done, Ongoing Questions for Policy Makers' (2015) 92 G-30 Occasional Paper 15 < https://group30.org/publications/detail/388> accessed 1 March 2020.
[70] The discussion and debate on the merits of different financial supervisory structures largely intensified during the 1990s, after the recorded global trend in shifting financial supervisory responsibility from central banks to a separate unified supervisory authority, pioneered by the UK's FSA. The OECD (2002) study was the first conducted by the OECD in examining regulatory and legislative frameworks for financial supervision. Later, the 2007 survey conducted by the Financial Stability Institute (FSI) focused largely on the structure of integration of financial supervision. See: Daniel Calvo and others, 'Financial Supervisory Architecture: What Has Changed After the Crisis' (2018) 8 FSI Insights 5 < https://www.bis.org/fsi/publ/insights8.htm> accessed 11 March 2019; Financial Stability Institute, 'Institutional arrangements for financial sector supervision' (2007) 7 FSI Occasional Paper 13 < https://www.bis.org/fsi/fsipapers07.pdf> accessed 18 August 2019; Stephen Lumpkin, 'Supervision of Financial Services in the OECD Area' (2002) OECD < https://www.oecd.org/finance/insurance/2089622.pdf> accessed 18 August 2019.
[71] Masciandaro and Quintyn (n 11) 465.

(as in the case of the UK), or simply adjust the existing model to incorporate better financial stability goals and newly introduced frameworks—such as the macroprudential framework, the resolution regime, and the crisis-management framework. Over the years, the series of structural reforms imposed across countries have brought significant reconfigurations of the overall FSN framework, particularly on institutional rearrangements within the structure of the central banks and financial authorities.

In the late 1990s, the worldwide trend of establishing an integrated financial authority has ignited heated discussions on how to optimise financial supervision through the designs of its institutional structure. Two key issues have been discussed extensively: first, the structure and objectives assigned to financial supervision, and second, the appropriate role of the central banks.[72] The latter issue is generally more difficult and contentious, as the appropriate degree of the central bank's role remains largely a country-specific issue.[73] Meanwhile, concerns over the structure and objectives of financial supervision observed in scholarly debates and policy discussions mainly revolve around two central questions.[74] First, whether to have a consolidated model, where the conduct of prudential regulation and supervision encompasses all financial sectors, or whether it should be based on specialist agencies for each sector.[75] Second, whether to integrate the prudential and market conduct regulation and supervision within the same agency (a single-peak approach) or separate them into two different authorities dedicated to

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[72] The general discussion on the structure and objectives of financial supervision can be followed in the works of James R Barth, Michael Taylor, Donato Masciandaro, Marc Quintyn, David Llewellyn, and so on, while discussions on the optimal involvement and roles of central banks in financial supervision can be found in most of the works of Charles Goodhart, Rosa M Lastra, Tommaso Padoa-Schioppa, Paul Tucker, and so on.

[73] See Goodhart and Schoenmaker (1995) for early discussion on the arrangement of financial supervision within the structure of central banks. See: Goodhart and Schoenmaker (n 11) 47; Jeffrey Carmichael, 'Summary of the Discussion', in Carmichael, Fleming and Llewellyn (n 23) 6.

[74] Llewelyn (1998) argues that the general approach, style and intensity of regulation and supervision are more important than the questions of institutional structure. However, in the aftermath of the Northern Rock debacle in 2007, Llewellyn (2009) later acknowledged the importance of having an institutional structure that is 'likely to be optimal in a financial crisis, and most effectively able to undertake crisis management'. See: David T Llewellyn, 'Principles of Effective Regulation and Supervision of Banks' (1998) 6(4) Journal of Financial Regulation and Compliance 313 <https://doi.org/10.1108/eb024982> accessed 5 August 2020; David T. Llewellyn, 'The Northern Rock Crisis: A Multi-Dimensional Problem', in Franco Bruni and David T. Llewellyn (eds), *The Failure of Northern Rock: A Multi-Dimensional Case Study* (SUERF Studies 2009) 23; Michael Taylor and Alex Fleming, 'Integrated Financial Supervision: Lessons from Northern European Experience' (1999) 2223 World Bank Working Paper <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/365881468771104377/integrated-financial-supervision-lessons-of-northern-european-experience> accessed 5 January 2020.

[75] This issue first occurred along with the changing financial landscape, in which the traditional structure of separate agencies regulating each financial sector become obsolete, due to the blurring and overlap business activities and financial products offered by institutions in the 1980s–1990s.

each objective (a twin-peaks approach).[76] One noticeable criticism of these previous debates is the overemphasis on authority structures to assess the effectiveness of financial supervision.

Although regulation architecture is still an essential factor in defining regulator identity, the scope of jurisdiction, and accountability; the severity of the GFC experienced by various supervisory models across the globe significantly raised the question of the importance of the institutional design of financial supervision.[77] After all, adopting a specific supervisory model should never substitute effective implementation and conduct of the financial supervisory approach itself.[78] Moreover, no structure can be set in stone, particularly in the context of continuously evolving financial markets and innovation.[79] It is also impossible to identify and draw an objectively superior model of financial supervision, as different jurisdictions organise their supervisory structures in various ways.[80] Although each model has both strengths and shortcomings, the quest for the optimal model generally cannot be concluded through a simple cost-benefit analysis.[81]

There are indeed more fundamental issues faced by the modern financial system that affect countries regardless of their specific supervisory structures, as emphasised by the GFC, such as better inter-agency coordination and effective communication during financial crisis management. However, to a certain extent, the selection of financial supervisory models may also affect the synergies across policy objectives and the management of conflicts of interest between different FSN authorities.[82]

Specifically, a better institutional design of financial supervision is called for, incorporating

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[76] The Twin Peaks model has been primarily proposed by Michael Taylor since 1995 who advocates for the separation of supervision for the purpose of prudential supervision and conduct of business.
[77] Armour and others (n 3) 87.
[78] David Llewellyn, 'Institutional Structure of Financial Regulation and Supervision: The Basic Issues', in Carmichael, Fleming and Llewellyn (n 23) 26.
[79] Eddie George, Governor of the Bank of England 1993 – 2003. See: Eddie George, 'Some Thoughts on Financial Regulation' (1996) 36 Bank of England Quarterly Bulletin 215.
[80] In fact, most countries adopt the hybrid model of financial supervision that primarily accommodates the financial markets structure on a case-by-case basis. See: Steven Seelig and Alicia Novoa, 'Governance Practices at Financial Regulatory and Supervisory Agencies' (2009) 09/135 IMF Working Paper <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Governance-Practices-At-Financial-Regulatory-and-Supervisory-Agencies-23055> accessed 12 August 2019; Calvo and others (n 70) 4.
[81] Donato Masciandaro, 'Determinants of Financial Supervision Regimes: Markets, Institutions, Politics, Law or Geography?', in Kern Alexander and Rahul Dhumale (eds), *Research Handbook on International Financial Regulation* (Edward Elgar 2012).
[82] Calvo and others (n 70) 4.

and supporting the new resolution regime, systemic risk control and crisis-management framework.[83] These become vital to ensure close coordination and effective information sharing among authorities, especially in times of crisis.[84] Any supervisory model can more or less work during normal times—but it is only during times of crisis that the effectiveness of such structures in managing and preventing structural disruptions can be truly tested. While the allocation of responsibilities between various authorities is often explicitly established and arranged within the legislation and the MoUs, most relational aspects, policy coordination, and inter-agency conflicts will primarily be addressed in *ad hoc* meetings and coordination between authorities.[85] Thus, well-designed institutional arrangements that can better prepare for potential conflicts of interest and policy trade-offs during the handling of crisis will be crucial. As the complexity and size of modern financial markets have grown beyond the sole LoLR facility's capacity, preparing and preventing the emergence of financial failures and crises will be preferable to secure overall macroeconomic stability. The success of financial supervision in controlling the behaviour of markets and early risk warnings will significantly define the burden imposed on other authorities—particularly the LoLR, the resolution framework, the deposit insurance scheme, and eventually the fiscal authorities. Thus, as the first line of defence, ensuring the well-designed institutional arrangement of financial supervision is vital, to reduce the need for liquidity assistance and the use of public funds in the first place.

Moreover, by becoming more forward-looking and proactive in identifying and addressing the financial institutions' and system's weaknesses at its early stages, the current micro and macroprudential supervisory frameworks have also become more dependent on its supervisory judgement in interpreting information and undertaking supervisory actions. To support the supervisory timely and effective actions, it has become more critical to ensure financial supervisors' strong willingness and ability in facing the supervisory forbearance and inaction biases, as frequently emphasised by the IMF's Financial Sector Assessment Programmes (FSAPs).[86] Thus, it becomes increasingly essential for the financial supervisor to have a clear

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[83] Luis Garicano and Rosa M. Lastra, 'Towards A New Architecture for Financial Stability: Seven Principles' (2010) 13(3) Journal of International Economic Law 597, 599 < https://doi.org/10.1093/jiel/jgq041> accessed 21 February 2021.
[84] Seelig and Novoa (n 80) 26.
[85] Seelig and Novoa (2009) found that in two-thirds of the countries it surveyed, the allocation of responsibilities between different agencies is determined in legislation and MoUs, while in resolving the inter-agency conflicts, ad hoc meetings and coordination are used. See: Ibid, 12.
[86] The FSAP was established in 1999 as an important element of the IMF's surveillance of countries' financial

mandate, operational independence, strong accountability and transparency measures, adequate legal protection, skilled staff and effective information sharing and coordination with other authorities.

Overall, the analysis of roles played by law and political institutions is frequently missing or primarily overlooked in the discussion of institutional arrangements of financial supervision, or their importance in understanding the fragmented development of financial supervision across different countries. More importantly, both factors may also significantly influence the operationalisation of financial supervision, and the behaviour and reasonings of supervisors in taking necessary actions to achieve their goals.

II.IV.a. The Roles of Law

The importance of law in constituting the functioning of the modern financial system has been encapsulated mainly in the development of the legal theory of finance (LTF), that attempted to better understand the financial markets from a predominantly legal perspective.[87] The LTF asserts the centrality of law in constructing and enforcing the modern financial system (the legal construction of finance) and recognises the law-finance paradox, which sees the law as actively contributing to the instabilities and collapse of the system.[88] As financial assets are constructed and predetermined as legal commitments that are binding and non-negotiable, in times of distress, when all depositors or investors are at the same time enforcing their contractual rights, law can instead exacerbate the procyclicality of the system and thus further amplify its vulnerabilities. Financial markets are, thus, seen to exist within the law and other social structures, in which law plays a decisive role in determining contemporary financial relations and commitments.[89] Fundamentally, financial assets are nothing more than contracts created under legal rules, and whose value is primarily derived from the legal justification of such contractual agreements.[90] The LTF also recognises fundamental uncertainty and liquidity

sector, later used as a valuable input to the IMF's Article IV consultations, the IMF's broader surveillance of countries' economies.

[87] Unlike the mainstream law and economics theories that solely considers the utility-maximising individual's reactions to various legal rules, LTF emphasises more the fundamental roles of law on economy and finance. Prior to the LTF, the research and debates on financial system largely ignored the fact that most financial instruments are enabled and enforced by law, and in their basic sense are legal contractual obligations.

[88] Katharina Pistor, 'A Legal Theory of Finance' (2013) 41 Journal of Comparative Economics 40 <https://scholarship.law.columbia.edu/faculty_scholarship/2283/> accessed on 19 June 2020.

[89] Ibid.

[90] Marcos Reis and Daniel Vasconcelos, 'The Legal Theory of Finance and the Financial Instability Hypothesis:

volatility as the main characteristics of the modern financial systems, at both national and global levels.

As an inductive theory, with its main premises derived from observable facts, the LTF incorporates the main aspects of Hyman Minsky's Financial Instability Hypothesis (FIH) on fundamental uncertainty, the constraint of liquidity, and the role of government and central bank as the LoLR.[91] The LTF argues for combining Knightian uncertainty of the future and the impossibility of endless refinancing and liquidity creates inherently unstable financial markets, as asserted under the FIH. Furthermore, the LTF also imposes the elasticity of the law within a hierarchical financial system. The law is understood to be more elastic at the apex of the financial system than its periphery sectors, thus creating different applications of the rule of law that further reinforce the inherent hierarchical aspect of the modern financial system.[92] As the very survival of the financial system is at stake, regulators tend to use the law to do everything it takes to ensure the system's stability.[93] A similar assumption also applies to the global financial system, where the strongest and most developed markets, such as the US and the UK, primarily have more elasticity in their legal treatment during the crisis period. Thus, the LTF emphasises the hierarchical nature of finance, while the law is asserted as elastic.

The importance of law and legal infrastructures in supporting effective financial theories and models can also be applicable to well-working financial regulation and supervision. Law not only constructs the market, but also eminently plays a principal role in building the regulatory and supervisory frameworks, the characteristics of the supervisory approach, the scope of legal powers, legitimacy, and coordination arrangements with other authorities. Even in previous self-regulatory and deregulation regimes, the law played an essential role in deliberately

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Convergences and Possible Integration' (2016) 39(2) Journal of Post Keynesian Economics 211 <http://dx.doi.org/10.1080/01603477.2016.1165622> accessed on 17 May 2020.

[91] As Pistor notes, the LTF is an inductive theory, as it emerged from the observation of a broad spectrum of financial markets, including stock, credit, sovereign debt, foreign exchange, and derivatives markets. See: Pistor (n 88) 7.

[92] Perry Mehrling, 'The Inherent Hierarchy of Money' (Duncan Foley Festschrift Conference, 20-21 April 2012) <https://ieor.columbia.edu/files/seasdepts/industrial-engineering-operations-research/pdf-files/Mehrling_P_FESeminar_Sp12-02.pdf> accessed 19 April 2020.

[93] Ben Bernanke, the former chairman of the Fed, argued that regulators have a tendency to do everything it takes to save the financial system. Pistor (2013) pointed to the fact that the emergency liquidity support by Fed was largely given to major financial intermediaries, while homeowners across the country were forced to bear their personal bankruptcies and foreclosures based on the law. Pistor (2013) raised important questions towards the elasticity of law in the financial system on the legitimacy of law, accountability, and parties benefited from such law. See: Pistor (n 88) 17, 29.

delegating rulemaking powers to non-state actors or markets.[94] Fundamentally, the financial system has never truly operated without regulation and the protection of the law.

In the context of the 'unelected power' of the independent authorities with the delegated functions such as central banks and financial supervisors, the legal framework is particularly important in defining the objectives, roles, responsibilities and powers essential to support its political independence and legitimacy. The law also plays a vital role in granting the power to identified authorities to 'act in which ways they consider to be pragmatic and appropriate from a list of statutory alternatives'.[95] It also further defines what the authority can and cannot do to ensure financial stability. Particularly in the context of crisis management, the law designs and allows the selection of statutory choices for particular regulatory actions and decisions to deal with various scenarios in crisis conditions.[96] More importantly, the law also plays an essential role in establishing a clear accountability framework for legally permissible actions and the scope of operations that can be taken to preserve or restore stability.[97] This may include the activation of bail-in power, banking restructuring programmes, the use of public funds, and other crisis-management arrangements.

Apart from being essential for the design and structure of financial supervision, the law is also important in supporting the operationalisation and decision-making processes of the framework, particularly in its exercise of discretionary powers and judgements. Discretion is 'the space both within and between rules in which legal actors exercise choice'.[98] While legal and organisational rules may partly determine how supervisors make their decisions, other factors play another part in affecting such decisions—those which encompass the organisational norms and practices, past experiences, personal relationships, personal perceptions and

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[94] Ibid, 22.
[95] Alastair Hudson, *The Law of Finance* (2nd, Sweet & Maxwell 2013) 196.
[96] While on the other hand, finance theory and economics play a major role in the practice of financial regulation, especially in enabling the regulators to assess the conditions of financial institutions and the risks in the markets. See: Ibid.
[97] Hal S. Scott, *Connectedness and Contagion: Protecting the Financial System from Panics* (The MIT Press 2016); Viral Archarya, 'Financial Stability in the Broader Mandate for Central Banks: A Political Economy Perspective' (2015) 1 Brookings' Hutchins Center on Fiscal and Monetary Policy 3 <https://www.brookings.edu/wp-content/uploads/2016/06/14_financial_stability_central_banks.pdf> accessed 9 August 2020.
[98] Julia Black, *Rules and Regulations* (Oxford University Press 1997) 216; K. Hawkins, 'The Use of Legal Discretion: Perspectives from Law and Social Science', in K. Hawkins (ed), *Uses of Discretion* (Oxford University Press 1992) 11; D.J. Galligan, *Discretionary Powers: A Legal Study of Official Discretion* (Oxford University Press 1986) 20.

attitudes.[99] The rule of law is essential to finding the balance between rules and discretion practised by financial supervisors in taking appropriate actions and decisions. Particularly in the cases of early supervisory interventions and unpopular macroprudential decisions, a sound legal framework that provides legitimacy for supervisory actions and immunity from potential personal legal challenges will be of the utmost importance.

In regulating and supervising today's complex financial system, a rigid rules-based approach is undesirable, as the more the rules are established and the more precise they are, the easier it becomes to get around these rules—thus incentivising regulatory arbitrages. Instead of choosing a specific action within a set of options determined by the prescriptive rules and law, supervisors need the space and freedom to choose between courses of action, and make their own judgements when facing unexpected structural changes imposed by financial innovation. Discretionary power will allow supervisors to flexibly adapt to such changes and actively observe the interactions and behaviour of the market. However, such flexibility comes at a cost. The overuse of discretion will reduce supervisor transparency and accountability.[100] It may also reduce the predictability of decisions and increase the tendency toward supervisory forbearance.[101] Therefore, the law establishing financial supervision will also attempt to determine and guide the use of discretion, and the balance between the exercise of rules and discretion in decision-making processes.

II.IV.b. The Roles of Political Institutions

It is indisputable that changing political debates and economic paradigms have significantly affected the approaches adopted in regulating and supervising the financial markets. Apart from the legal framework, the political economy aspects also play determining factors in designing the structure and choices of the financial supervisory model. Banking regulation and supervision are seen to reflect national approaches towards the role of the government in the

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[99] Julia Black, 'Managing Discretion' (ARLC Conference Papers, London, June 2001) 2 < https://www.lse.ac.uk/law/people/academic-staff/julia-black/Documents/black21.pdf> accessed 12 June 2020.
[100] Sukarela Batunanggar, 'Comparison of Problem Bank Identification, Intervention and Resolution in the SEACEN Countries' (2008) South East Asian Central Banks (SEACEN) Research and Training Centre 25 < https://ideas.repec.org/b/sea/rstudy/rp73.html> accessed 16 June 2020.
[101] Mario Quagliariello and Massimo Libertucci, 'Rules VS Discretion in Macroprudential Policies' (*VOX EU,* February 2010) <https://voxeu.org/article/rules-vs-discretion-macroprudential-policies> accessed 15 January 2021.

economy.[102] The establishment and later abolishment of the UK's first integrated financial authority, the FSA, which took place along with the changing government political regimes in the country, is the apparent manifestation of the strong influence of political institutions and factors in determining the country's financial regulatory and supervisory structures.[103] However, in recent years, the coordination and relationship between elected representatives and unelected bureaucrats became more significant and complex.[104] Although a degree of cooperation and coordination in safeguarding financial stability is needed, the likelihood of competing interests between these two persists and increases. In the event of unresolved differences, the relationship between representatives and bureaucrats could easily endanger financial stability, such as in the case of contesting views between the FSA and the BoE during the handling of the Northern Rock failure in 2007.[105]

Politicians and bureaucrats have distinct accountability mechanisms and incentives.[106] By their very nature, policymakers and legislators are politicians, held accountable to the people through election.[107] While politicians have an intrinsic motivation to please the voters, bureaucrats are primarily accountable to their professional peers, or the public at large through the fulfilment of their organisation's goals, and are thus motivated mainly by career concerns.[108] Financial regulators are primarily dependent on political contexts, particularly a political license to operate and impose regulation, irrespective of formal legal powers and the widespread belief in the market's capacity to regulate itself.[109] This was also applied, even during the self-regulatory regime that relied on the market's capacity to regulate itself.

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[102] Barth, Caprio and Levine (n 12) 309.
[103] As put forward by Ferran (2015), the UK's financial supervisory reforms are largely politically driven, and thus are always less politically forgiving of its supervisors. See: Eilis Ferran, 'The Break-up of the Financial Services Authority in the UK', in Robin Hui Huang and Dirk Schoenmaker, *Institutional Structure of Financial Regulation: Theories and International Experiences* (Routledge 2015).
[104] Alesina and Tabellini (2007) provide important discussion on finding the socially optimal allocation of tasks between politicians and bureaucrats, from both normative and positive perspectives. They find that politicians are generally preferable when the tasks require less ability than effort, or when there is less uncertainty about policymakers' abilities, whereas the opposite case applies for the bureaucrats. See: Alberto Alesina and Guido Tabellini, 'Bureaucrats or Politicians?', in Donato Masciandaro and Marc Quintyn (eds), *Designing Financial Supervision Institutions* (Edward Edgar 2007).
[105] See Chapter IV, Case Study I; Chapter I, section I.III.d.
[106] Alesina and Tabellini (n 104) 418, 434.
[107] Donato Masciandaro and Marc Quintyn, 'Helping Hand or Grabbing Hand? Supervisory Architecture, Financial Structure and Market View' (2008) 08/47 IMF Working Paper 4 <https://doi.org/10.5089/9781451869095.001> accessed 8 January 2019.
[108] Alesina and Tabellini (n 104) 418.
[109] Julia Black, 'Regulatory Styles and Supervisory Strategies', in Niamh Moloney, Eilis Ferran, and Jennifer

Elected representatives—politicians, governments representatives and legislatures—generally hold the key to the political legitimacy of public authorities such as financial supervisors and central banks. Thus, unelected authorities may occasionally need to bend to the electoral needs of a politician.[110] Ultimately, financial supervisory reform is always a political process by nature.[111] Although its operational independence is principally guaranteed and established by law, the general design and arrangements for financial supervisors are still predominantly exercised under the dispensation of the discretionary decisions of policymakers and legislators.[112] There is often practical inconsistency between the *de jure* and the *de facto* independence of financial supervision, and more frequently in the actual central bank operations.[113] Hence, political institutions play essential roles in determining the institutional design and arrangements, and the operationalisation of financial supervision delegated to independent agencies such as financial authorities and central banks.

To further broaden the understanding of the dynamics between political power and financial supervision, it is essential to briefly revisit the theoretical understanding of the role of government in regulation. Within the theories of regulation, two broad and contrasting traditional approaches are available to help understand the incentives and roles of financial regulators and supervisors in general: the public-interest and private-interest theories.[114] The private interest view generally emphasises the inability of political and legal institutions to eliminate rent-seeking behaviour, and other private forces influencing the conduct of financial regulation and supervision.[115] It asserts that politicians and their appointed regulators will tend to actively promote their own private interests and political benefits, instead of enhancing the efficiency of the banking sector and imposing discipline on the institution.[116] Policymakers, in

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Payne (eds), *The Oxford Handbook of Financial Regulation* (1st, Oxford University Press 2015) 226.
110 Alesina and Tabellini (n 104) 426.
111 Masciandaro and Quintyn (n 107) 18.
112 Masciandaro and Quintyn (2009) highlight the inadequacy of economic rational to explain the reason for supervisory reforms, thus emphasising the role of politics and politicians to understand how and why the reforms are taken. See: Masciandaro and Quintyn (n 11) 465.
113 Although the US Federal Reserve is the de jure independent central bank, it sometimes required to accommodate government policy. While on the other hand, the Bank of Japan (until 1998 the world's most de jure dependent on a central bank) was frequently found to operate independently of the government. See: Thomas F. Cargill, *The Financial System, Financial Regulation and Central Bank Policy* (Cambridge University Press 2017) 244.
114 Shleifer and Vishny (1998) and Barth et al (2005) extensively discuss the two approaches in affecting the roles and effectiveness of banking supervisors. See: Andrei Schleifer and R Vishny, *The Grabbing Hand* (Harvard University Press 1998); Masciandaro and Quintyn (n 107).
115 Barth, Caprio and Levine (n 12) 179.
116 George J. Stigeler, 'The Theory of Economic Regulation' (1971) 2(1) The Bell Journal of Economics and

the context of the 'grabbing hand view' of government, are most likely to be more sensitive to the preference of market participants, as their main aim is to get re-elected, and thus please the voters and the vested interest groups.[117] By this understanding, it is therefore important to emphasise market discipline, information disclosure, private monitoring, and strong legal and regulatory environments to regulate and supervise the system effectively.

In contrast, the public interest approach emphasises the incentives and goals held by the government in regulating the financial sector for the benefit of the broader society and facilitating the efficient functioning of the system.[118] From the public-interest perspective, the government and supervisors have both incentive and expertise to address market failures resulting from imperfect information, and therefore they will play an important role in directly monitoring institutions to enhance the corporate governance and boost their efficiency.[119] The policymakers within this view, also known as the 'helping hand view', can also be sensitive to the market as it aims to optimise the supervisory structure, and further improve the efficiency and effectiveness of financial supervision.[120]

Regardless of whether the country has the grabbing-hand or helping-hand type of government, this brief discussion demonstrates the strong linkages between political actors and their motivations in shaping the design and conduct of financial regulation and supervision delegated into the hands of unelected bureaucrats. As the complexity and interconnectedness of the financial system have grown to be significant challenges to fully understanding and monitoring the behaviour of market participants, financial supervisors will require closer information sharing and policy coordination with other authorities, including the fiscal authorities and other governmental agencies. Therefore, we may expect new relational and institutional dynamics built between elected politicians and delegated authorities in financial regulation and supervision.

Management Science < https://doi.org/10.2307/3003160> accessed 12 August 2020.

[117] Barth et al (2001) used the term of the helping hand approach and the grabbing hand approach of government regulation. The work concludes that the regulatory approach more consistent with the grabbing hand is better in promoting banking performance and stability. See: Masciandaro and Quintyn (n 107) 8; James R. Barth, Gerard Caprio, and Ross Levine, 'Bank Regulation and Supervision: What Works Best?' (2002) 9323 NBER Working Paper 11 < https://ssrn.com/abstract=351423> accessed 12 August 2020.

[118] Barth, Caprio and Levine (n 12) 18

[119] Ibid

[120] Masciandaro and Quintyn (n 107) 7.

II.V. THE EVOLUTIONARY ROLES OF CENTRAL BANKS

One key standing issue within the discussion of the financial supervisory structure over the past three decades is closely related to the degree of appropriate roles and involvement of the central bank. As an important public institution, the modern central bank is already responsible for setting interest rates, managing the nation's money supply, acting as a fiscal agent of the government, maintaining the payment systems, providing currency and check-clearing system, providing lender of last resort facility, and maintaining macro-financial stability in general.[121] Throughout its history, central banks have seen many fundamental changes resulting from their institutions' evolution and financial stability responsibilities.

Historically, the financial stability and price stability goals have continuously operated hand-in-hand, yet were perceived as two separate goals.[122] Throughout the era of Great Moderation (the 1980s–2006), the concern over systemic financial stability was universally sought by central banks to support the achievement of the well-working operation of monetary policy.[123] However, the financial stability goal was generally overlooked by the central bankers, mainly after being granted independence in the pursuit of price stability as its primary mandate in the 1990s, which accompanied the trend of moving away from the supervisory tasks.[124] As a result, the macroeconomic and financial linkages were left unmonitored by financial authorities, that had no access to the macroeconomic indicators affecting the build-up of financial vulnerabilities in the system. In the wake of the GFC, policymakers and regulators came to the realisation that price stability and financial stability are two dimensions of the same public good.[125] Close correlations between macroeconomic and financial indicators raise scholarly and

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[121] Cargill (n 113) 234.
[122] Goodhart (n 1) 4.
[123] Llewellyn (n 19) 504; Agustin Villar, 'Macroprudential Frameworks: Objectives, Decisions and Policy Interactions' (2017) 94 BIS Papers 8; Thomas Cottier, John H. Jackson, and Rosa M. Lastra (eds), *International Law in Financial Regulation and Monetary Affairs* (Oxfords University Press 2012) 84; Udaibir S. Das, Marc Quintyn, and Kina Chenard, 'Does Regulatory Governance Matter for Financial System Stability? An Empirical Analysis' (2004) 04(89) IMF Working Paper <https://www.imf.org/en/Publications/WP/Issues/2016/12/30/Does-Regulatory-Governance-Matter-for-Financial-System-Stability-An-Empirical-Analysis-17410> accessed 9 March 2018.
[124] Rosa M. Lastra, 'Central Bank Independence and Financial Stability' (2010) 18 Banco de Espana < https://www.bde.es/f/webbde/Secciones/Publicaciones/InformesBoletinesRevistas/RevistaEstabilidadFinanciera/10/May/Fic/ref0318.pdf> accessed 18 April 2020.
[125] Jaime Caruana, 'Redesigning the Central Bank for Financial Stability Responsibilities' (The 135th Anniversary Conference of the Bulgarian National Bank, Sofia, 6 June 2014) < https://www.bis.org/speeches/sp140606.htm> accessed 19 April 2020.

policy acknowledgements over the benefits of assigning central banks with supervisory responsibility to better ensure more effective financial stability management. The understanding of the roles of central banks in financial supervision has thus evolved, along with the conceptual development of the importance of financial stability for central banking operations.

By their nature, irrespective of whether they have a formal role as a financial supervisor, central banks have a genuine interest and natural role in the financial sector, particularly in the banking sector.[126] Through central bank reserves, the central banks can closely influence banking activity to create inside money or affect the general supply of money in the economy.[127] Overall, financial stability is also essential to support the central banks in providing a means of payment and immediate liquidity to the market, for the smooth functioning of the national payment system. As seen at the onset of the GFC, central banks have also started to provide liquidity in interbank and other wholesale markets that further solidified its crucial role as the market maker of last resort (MMLR).[128]

As the *de facto* LoLR, central banks have further developed an ingrained interest in financial stability. As elaborated under the application of the Bagehot's rule (1873), the central bank's role as the LoLR was also long used to ensure the banking sector's compliance on liquidity provision, which will be a prerequisite to receive the emergency facility in times of the banks get into trouble.[129] The UK handling of Northern Rock also provides an important case for

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[126] Goodhart consistently argues that central banks have always had a dual role in maintaining price stability and financial stability. See: Goodhart (n 1) 1; Charles Goodhart, 'The Macroprudential Authority: Powers, Scope and Accountability' (2011) 2 OECD Journal Financial Market Trends < https://www.oecd.org/finance/financial-markets/48979021.pdf> accessed 12 September 2019.

[127] Central banks generally do not directly control the money creation within banking activity, however, they hold control over the tools and channels that affect banking, mainly through changing the amount of available central bank reserves. As part of their legal requirement, banks hold some parts of their assets in the form of central bank reserves, which are mostly used to settle depositors' withdrawal requests; make payments with other banks; and fulfill the legal reserve requirements. See: Jonathan McMillan, *The End of Banking: Money, Credit and the Digital Revolution* (Zero/One Economics 2014) 103.

[128] Erlend W. Nier, 'Financial Stability Frameworks and the Role of Central Banks: Lessons from the Crisis' (2009) 09/70 IMF Working Paper 10 < https://www.imf.org/external/pubs/ft/wp/2009/wp0970.pdf> accessed 19 August 2019.

[129] Under Bagehot's rule (1873), to avert panic, central banks should only lend to solvent banks with good collateral and at penalty rates. This rule has, for centuries, created the incentive for banks to maintain compliance under central banks' requirements. This happened prior to the trend of establishing the financial authority and the use of capital ratio introduced by the Basel I Accord. Moreover, the relatively low risk-taking behaviour among the banking sector at the time not only supported the adequacy of applying liquidity ratio, but also resulted in a period of relatively stable financial systems, in the post-World War II era. See: Goodhart 2007 (n 5) 55.

having timely access to supervisory information to support the effectiveness of the central bank's LoLR decisions.[130] The task of differentiating the illiquid from insolvent banks can undoubtedly be difficult for central bankers, without adequate, timely information about the financial institutions. However, using this argument to solidify central bank involvement in financial regulation and supervision is still rather insubstantial, due to the possibility of information sharing arrangements and a centralised database with the financial supervisors.[131]

At the end of the 1990s, despite broad acknowledgement of its informational, operational and independence advantages, there were mounting concerns and policy debates over the shortcomings of assigning the prudential role to the same authority responsible for monetary policy.[132] There were concerns over the potential conflicts of interest raised from the central banks' dual roles in prudential supervision and monetary policy, that could undermine its monetary policy independence and create legal and reputational risks to its function as the monetary authority (conflicts of interest effect).[133] As any bank failure could easily be inferred by markets as a central bank failures as the supervisor, the role could also undermine its reputation and credibility in its conduct of monetary policies (a reputational effect).[134] However, for some, this concern will instead incentivise the central banks to adopt a tough supervisory stance and protect the integrity of their balance sheet, so that they can avoid such reputational costs.[135] There was also concern over the inability of central banks to properly adjust their interest rates in addressing inflation once facing the likelihood of bank failures, in its capacity

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[130] Garicano and Lastra (n 83) 609.
[131] Cargill (n 113) 241
[132] Goodhart and Schoenmaker (1995) discuss extensively the arguments for and against separating monetary policy from banking supervision. See: Goodhart and Schoenmaker (n 11) 47; Charles Goodhart and Dirk Schoenmaker, 'Institutional Separation between Supervisory and Monetary Agencies' (1993) 52 Financial Markets Group London School of Economics <https://www.fmg.ac.uk/publications/special-papers/institutional-separation-between-supervisory-and-monetary-agencies> accessed 9 March 2019.
[133] Goodhart and Schoenmaker argue that it will be impossible to put both policies together under the central bank, as the former is counter-cyclical, while the latter is pro-cyclical. They also believed that central banks will not be able to properly adjust interest rates when needed in times of banking failures and financial instability in general. See: Ibid, 1993, 7; Fernando Restoy, 'Central Banks and Financial Oversight' (Bank for International Settlements speech, Madrid, 4 June 2018) https://www.bis.org/speeches/sp180618.htm accessed 19 June 2020; Tommaso Padoa-Schioppa, 'Central Banks and Financial Stability: Exploring A Land in Between' (The ECB Second Central Banking Conference – The Transformation of the European Financial System, Frankfurt, October 2002) <https://www.econbiz.de/Record/central-banks-and-financial-stability-exploring-a-land-in-between-padoa-schioppa-tommaso/10001769772> accessed 10 March 2020.
[134] Goodhart (n 1) 6.
[135] Erlend W. Nier, 'Financial Stability Frameworks and the Role of Central Banks: Lessons from the Crisis' (2009) 09/70 IMF Working Paper 15 < https://www.imf.org/external/pubs/ft/wp/2009/wp0970.pdf> accessed 19 August 2019.

as supervisor.[136] The relevance of the credit allocation aspect in financial regulation and supervision may also further increase the exposure of the central banks to broader political pressures and interests.[137] Lastly, being a source of liquidity and acting as LoLR, the central banks' ability to take discretionary action in their capacity as financial supervisors might also quickly increase the risk of moral hazard among its supervised banks (a moral hazard effect).[138]

To date, the consensus over the optimal degree of central bank involvement in financial supervision is yet unreached. The post-GFC era has witnessed the renewed interest in the subject that leads to the emergence of terms 'the great reversal' and 'the pendulum is swinging back', referring to the trend of reassigning the supervisory responsibility and financial stability mandate to the hands of the central bankers.[139] In the case of the macroprudential framework, central banks have even received international recognition as the principal authority in mitigating the emergence of systemic risk, and safeguarding macro-financial stability.[140] Central banks' informational and expertise benefits are widely recognised to be essential in supporting the effectiveness of systemic risk prevention and understanding macro-financial linkages. However, as the concerns over the conflicts of interest and reputational risk still carry some weight in the task of ensuring the safety and soundness of individual institutions, the claim for central banks' responsibility in microprudential supervision remains a less clear-cut case.[141]

The GFC has significantly reaffirmed the belief that financial stability is in the 'genetic code' of central banks, and this will not disappear even with the absence of formal statutory

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[136] Tommaso Padoa-Schiopa, 'Financial Supervision: Inside or Outside Central Banks?', in Jeroen JM. Kremers, Dirk Schoenmaker, and Peter J. Wierts (eds), *Financial Supervision in Europe* (Edward Elgar 2003) 165.
[137] Cargill (n 113) 241.
[138] Even if the supervisor is discretionally able to manage liquidity, moral hazard risk will still increase. See: Goodhart and Schoenmaker (n 11) 47; Stephen G. Cecchetti and others, 'The Future of Central Banking under Post-Crisis Mandates' (Ninth BIS Annual Conference, Lucerne, June 2010) < https://www.bis.org/publ/bppdf/bispap55.htm> accessed 14 March 2018; Donato Masciandaro, 'Divide et Impera: Financial Supervision Unification and Central Bank Fragmentation Effect' (2007) 23(2) European Journal of Political Economy < https://doi.org/10.1016/j.ejpoleco.2006.02.001> accessed 19 June 2019; Masciandaro and Quintyn (n 5) 285.
[139] Dalla Pellegrina, Donato Masciandaro, Rosaria V. Pansini, 'The Central Banker as Prudential Supervisor: Does Independence Matter?' (2013) 9(3) Journal for Financial Stability; Carmen M. Reinhart and Kenneth S. Rogoff, 'Shifting Mandates: The Federal Reserve's First Centennial' (2013) 103(3) American Economic Review 48 < https://www.aeaweb.org/articles?id=10.1257/aer.103.3.48> accessed 19 August 2019.
[140] See Chapter III, section III.VI.a.; and Chapter V section V.II.
[141] Garicano and Lastra (n 83).

responsibility for banking supervision.[142] However, without an explicit mandate for financial stability, there is still a danger that the authority will instead overemphasise its macroeconomic perspective and fail to fully safeguard macro-financial stability.[143] The GCF specifically highlighted the need to expand the mandate of central banks beyond maintaining price stability, a robust payment system, and acting as the LoLR *per se*, to also preserve the stability of the financial system through macroprudential supervision.[144]

II.VI. CONCLUSION

As an integral part of regulatory innovation, the financial supervisory framework plays a vital role in complementing the rigid rules of law and regulations imposed on the continuously evolving modern financial markets. The common characteristic of regulation as being primarily prescriptive may easily hinder their ability to keep pace with market development. Financial supervision will focus mainly on tasks of monitoring, controlling, and understanding better the market behaviour and developments taking place in the system. As financial innovation will continuously evolve, ensuring a well-designed and working supervisory framework to fully understand such fundamental aspects of the financial system will be the key for safeguarding financial stability, instead of continually adding complexity into the current regulatory framework. There are, of course, limits to what financial supervision can achieve concerning its tasks in monitoring and understanding the financial system and elements within it. The rapid financial innovation significantly exacerbates the complexity and uncertainty faced by financial supervisors, limiting its ability to assess and quantify the risk build up in the system.

In the last few decades, the fundamentals within financial supervision have continuously evolved alongside the evolution of the understanding of financial stability. This changing

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[142] Ibid, 82; Padoa-Schioppa (n 133).

[143] These roles, as argued by Ferran (2010), indicate the very fact that the central bank can never fully separate itself from systemic stability concerns, including supervisory issues. See: Eilis Ferran, 'The Break-up of the Financial Services Authority in the UK' (2010) 10(04) University of Cambridge Faculty of Law Research Paper Series 121; Masciandaro and Quintyn (n 11) 462.

[144] Erlend W. Nier, 'Financial Stability Frameworks and the Role of Central Banks: Lessons from the Crisis', (2009) 09/70 IMF Working Paper < https://www.imf.org/external/pubs/ft/wp/2009/wp0970.pdf> accessed 19 August 2019; Borio (n 50) 17; Andrew Crockett, 'In Search of Anchors for Financial and Monetary Stability' (The SUERF Colloquium, Vienna, April 2000) < https://www.bis.org/speeches/sp000427.htm> accessed 19 April 2020; Claudio Borio and Philip Lowe, 'Asset Prices, Financial and Monetary Stability: Exploring the Nexus' (2002) 114 BIS Working Papers <https://www.bis.org/publ/work114.htm> accessed 18 April 2020; Claudio Borio, William B. English and Andrew Filardo, 'A Tale of Two Perspective: Old or New Challenges for Monetary Policy' (2003) 127 BIS Working Papers <https://www.bis.org/publ/work127.htm> accessed 18 April 2020.

policy and practical understanding of financial stability should also encourage a better understanding of each FSN authority's role in supporting the achievement of the goal, especially regarding the roles of financial supervision as the first line of defence to control and influence market behaviour and culture. The growing interconnectedness of different policy practices and goals supporting financial stability further broadens the need for financial supervision to cooperate closely and coordinate with the rest of the FSN framework. It has become more critical than ever that the tasks of financial supervision should be well-coordinated with the resolution framework, the deposit insurance scheme, LoLR provision, and the crisis-management framework. Overall, the task of financial supervision should not be associated with the full prevention of a financial crisis.

CHAPTER III

MACROPRUDENTIAL SUPERVISORY FRAMEWORK

III.I. INTRODUCTION

The reforms in the aftermath of GFC 2008 have brought significant structural changes in the financial regulatory and supervisory frameworks across the globe. Among these changes is the emergence of international consensus on the importance of financial stability as the primary goal of financial regulation and supervision and the Financial Safety Net (FSN) framework. Higher capital and liquidity requirements have been thus imposed, more disclosure and transparency in the market and transactions are now required, and layers of regulation and inter-agency coordination schemes are added into the crisis prevention and management framework post-GFC.[1] More importantly, it has now become imperative to develop robust crisis prevention and early warning frameworks, along with the improved crisis management framework in safeguarding financial stability. By focusing more on macro and holistic views of the financial system, the worldwide promotion of a macroprudential supervisory framework, complementing the pre-crisis regime of microprudential supervision and monetary policy, has become an integral part of this new financial stability regime.

This chapter aims not to limit the definition, or to place specific labels on the still-developing macroprudential framework. Instead, it seeks to establish a profound understanding of the conceptualisation of the macroprudential supervisory framework, that includes its rationales, the policy objectives it seeks, the operational challenges it faces, and the appropriate institutional arrangement for the framework. Section two will cover the underlying macroeconomic and financial rationales of adopting the macroprudential framework in the wake of the 2008 crisis. The third section will establish the two most attainable working

[1] Some scholars call for more significant reforms, as the fast-changing nature of financial system drives the assumption of even bigger challenges lying ahead, and these will be different to the causes of the crisis in 2008. Thus, there are also growing pressures on international regulatory reforms in managing TBTF problem, regulating shadow banking, the over the counter (OTC) derivative sectors, and the credit rating agencies (CRAs) practices. See: Ross P Buckley, Emilios Avgouleas, and Douglas W Arner (eds), *Reconceptualising Global Finance and Its Regulation* (Cambridge University Press 2016) 5.

objectives of the framework, and the fourth section will systematically consider the framework from the perspective of its policy operationalisation, in three stages of regulatory interventions: to prevent systemic risk, to mitigate the systemic risk, and later, to support the crisis management framework. Sections five and six will further discuss inherent operational challenges, and concrete institutional arrangements to address such challenges. In the last section, a brief debate on the potency of the framework in better safeguarding financial stability and mitigating systemic risk challenges will be covered, followed by a conclusion.

III.II. MACROPRUDENTIAL SUPERVISION

Following the GFC 2008, macroprudential reform received international recognition and an 'extraordinary boost', especially among developed countries most affected by the crisis. There has been widespread interest in using the macroprudential framework in the last two decades, which further moved the approach from a relatively unpopular enclave of the BIS to the centre of the global policy agenda.[2] In November 2009, the G-20 leaders arrived at a joint agreement to promote the macroprudential approach in national and regional policy arrangements across the globe.[3] The Geneva Report and the De Larosiere Report also further reasserted the urgent need to upgrade macroprudential supervision to be a fundamental part of regional and international financial regulatory and supervisory reforms following the crisis.[4]

Although reaching the peak of its popularity in the wake of the GFC 2008, the term 'macroprudential' can be traced to its first use in 1979, at the meeting of the Cooke Committee,

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[2] Andrew Baker, 'The New Political Economy of the Macroprudential Ideational Shift' (2013) 18(1) New Political Economy 112, 122 < https://doi.org/10.1080/13563467.2012.662952> accessed 9 April 2018.

[3] IMF (2011) recorded that since early 2009 there were some 50 jurisdictions to have formally adopted the macroprudential regulatory framework. See: Claudio Borio, 'Implementing a Macroprudential Framework: Blending Boldness and Realism' (2011) 6(1) Capitalism and Society 32 < https://ssrn.com/abstract=2208643> accessed 12 June 2018; Cheng Hoon Lim and others, 'Macroprudential Policy: What Instruments and How to Use Them? Lessons from Country Experiences' (2011) 11/238 IMF Working Paper < https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Macroprudential-Policy-What-Instruments-and-How-to-Use-them-Lessons-From-Country-Experiences-25296> accessed 12 June 2018; IFAC, 'Recommendations for G20 Working Group 1 - Enhancing Sound Regulation and Strengthening Transparency' (2009) <https://www.ifac.org/knowledge-gateway/contributing-global-economy/publications/recommendations-g-20-working-group-1-enhancing-sound-regulation-and-strengthening-transparency> accessed 22 June 2018.

[4] Markus Brunnermeier and others, 'The Fundamental Principles of Financial Regulation' (2009) International Center for Monetary and Banking Studies Centre for Economic Policy Research (Geneva Report) < https://www.princeton.edu/~markus/research/papers/Geneva11.pdf> accessed 1 July 2019; The De Larosiere Group, 'The High-Level Group on Financial Supervision in the EU' (February 2009) <http://ec.europa.eu/finance/general-policy/docs/de_larosiere_report_en.pdf> accessed 5 May 2018.

the precursor of the Basel Committee of Banking Supervision (BCBS) in Basel.[5] However, its broad implementation can first be found in the IMF recommendations imposed on East Asian countries following the Asian Financial crisis (AFC) in the late 1990s, and the remark made by Andrew D Crockett—the BIS General Manager at the time—in 2000, as he called for a better marriage between micro-and macro-prudential dimensions of financial stability.[6] Although the contagion impacts resulting from the AFC provided a significant lesson on the need for a more systemic perspective, and the importance of building up systemic resilience, international adoption of macroprudential frameworks was finally initiated after the global impacts of the US subprime market crisis across the developed markets.[7] The interconnectedness and integration of the global economy and financial markets significantly exposed countries to systemic shocks from which no country could insulate itself.

In recent decades, international bodies such as the IMF, the FSB and BIS have made a growing number of attempts to develop the macroprudential framework for financial supervision and regulation.[8] Despite the worldwide adoption of the framework and an ever-increasing number of researches in the field, to date, the consensus on the definition of the macroprudential

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[5] At the time, the term macroprudential was largely used in the Committee' concerns related to the disproportionate transnational lending and the issue of procyclicality. See: Piet Clement, 'The Term 'Macroprudential': Origins and Evolution' (2010) BIS Quarterly Review 59 – 61 < https://www.bis.org/publ/qtrpdf/r_qt1003h.htm> accessed 9 April 2018.

[6] Ibid, 59-60; Gabriele Galati and Richhild Moessner, 'What Do We Know About the Effects of Macroprudential Policy?' (2014) 440 De Nederlandsche Bank Working Paper 6 < https://doi.org/10.1111/ecca.12229> accessed 1 June 2019; Andrew D Crockett, 'Marrying the Micro and Macro – Prudential Dimensions of Financial Stability' (The 11th International Conference of Banking Supervisors, Basel, September 2000) <https://www.bis.org/speeches/sp000921.htm> accessed 9 May 2018.

[7] After the AFC, the IMF attempted to develop some macroprudential indicators as part of its reconstruction agenda of financial surveillance in the region. By the end of 1990s, a number of East Asian countries had adopted macroprudential measures such as loan-to-value ratios and capital inflows in dealing with the vulnerabilities emerging from the Asian financial crisis. See: Paul Louis C. Hilbers and others, 'Macroprudential Indicators of Financial Soundness' (2000) 192 IMF Occasional Papers <https://doi.org/10.5089/9781557758910.084> accessed 1 August 2019; Manuela Moschella, 'Lagged Learning and the Response to Equilibrium Shock: The Global Financial Crisis and IMF Surveillance' (2011) 31(2) Journal of Public Policy 121 <https://doi.org/10.1017/S0143814X11000043[Opens in a new window]> accessed 1 June 2018.

[8] IMF(a), 'Implementing Macroprudential Policy – Selected Legal Issues' (June 2013) < https://www.imf.org/external/np/pp/eng/2013/061713.pdf> accessed 9 April 2018; IMF(b), 'Key Aspects of Macroprudential Policy' (June 2013) < https://www.imf.org/external/np/pp/eng/2013/061013b.pdf> accessed 9 April 2018; IMF, FSB and BIS, 'Elements of Effective Macroprudential Policies: Lessons from International Experience' (August 2016) < https://www.bis.org/publ/othp26.htm> accessed 8 April 2018; IMF, 'Staff Guidance Note on Macroprudential Policy' (December 2014) 38 < https://www.imf.org/en/Publications/Policy-Papers/Issues/2016/12/31/Staff-Guidance-Note-on-Macroprudential-Policy-PP4925> accessed 8 April 2018; FSB, IMF, BIS, 'Macroprudential Policy Tools and Frameworks: Progress Report to G-20' (February 2011) 2 < https://www.imf.org/external/np/g20/pdf/021411.pdf> accessed 9 April 2020.

framework has yet to be reached among scholars, regulators and international policymakers.[9] Despite some contentious debates on the depth of structural and philosophical changes brought by adopting the macroprudential framework,[10] we can all agree, as Friedman once said, 'we are all Keynesians now'—by the same rationale, 'we are all macroprudentialists now'.[11]

In view of this absence of consensus, this research focuses on the macroprudential supervisory framework, which is separately defined from the macroprudential regulatory framework, which is mainly limited to the setting of rules of conduct and responsibilities with a macroeconomic perspective. The use of the term 'macroprudential supervision' is deemed more suitable, as the research places more emphasis on critical macroprudential roles in assessing and monitoring system-wide stability, information gathering and sharing, coordination with other authorities and policy sectors, the rulemaking process, and risk communication.[12] Thus, considerable attention on the extent of macroeconomic–financial activities and decision-making processes in managing the potential conflict of interests and policy trade-offs within the systemic risk mitigation can also be further explored. As previously discussed, the emphasis on the supervisory framework also ensures consistent implementation of rules and continuous adaption to the complexity, innovation, and constant changes arising within the financial sector.[13] This scope of discussion will also be wider than the discussion of the macroprudential policy that is mostly referred to as 'the use of primarily prudential tools to limit systemic risk',[14]

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[9] There are still debates as to whether the macroprudential supervision is distinct from macroprudential regulation, or is instead a part of it. However, observing the conceptual development of the financial stability objective, there is a possibility that the macroprudential framework will be left open to interpretation. See: Galati and Moessner (n 6) 848; Malcolm D. Knight, 'Marrying the Micro and Macroprudential Dimensions of Financial Stability: Six Years On' (the 14th International Conference of Banking Supervisors, Merida, 4 – 5 October 2006) < https://www.bis.org/speeches/sp061005.htm> accessed 1 June 2019.

[10] While the IMF perceived macroprudential policy as another tool to deal with financial stability, some argue that macroprudential is no more than another perspective of prudential policy, while others imposed the different philosophies behind the framework which should make it a different kind of public policy. See: Jacek Osinski, 'Institutional Needs for Optimal Macroprudential Arrangements', in Rodolfo Maino and Steven A. Barnett (eds), *Macroprudential Frameworks in Asia* (IMF 2013) 2.

[11] Claudio Borio, 'Towards a Macroprudential Framework for Financial Supervision and Regulation' (2003) 128 BIS Working Paper 17 < https://www.bis.org/publ/work128.pdf> accessed 1 June 2019.

[12] Jamie Caruana, 'Regulatory Stability and the Role of Supervision and Governance' (Tenth High Level Meeting on Global Banking Standards and Supervisory Priorities in the Americas, Montevideo, October 2015) <https://www.bis.org/speeches/sp151103.htm> accessed 9 February 2018; Charles Goodhart, 'The Role of Macroprudential Supervision' (The Federal Reserve Bank of Atlanta 2010 Financial Markets Conference, Atlanta, May 2010) < https://bit.ly/3ySZzNr> accessed 1 June 2018.

[13] Chapter 1I, section II.II.

[14] IMF(b) (n 8).

or similarly in the same essence, 'the use of regulatory and other instruments to reduce the risk of financial instability'.[15] [16]

Macroprudential supervision, therefore, can be defined as

> the entire process of (i) monitoring and analysis of the financial system as a whole in order to chart vulnerabilities; (ii) assessing potential threats to financial stability and deciding to take mitigating action; (iii) implementing measures to actually mitigate vulnerabilities; and (iv) evaluating these actions in order to ascertain to what extent vulnerabilities have indeed been diminished.[17]

III.II.a. Rationales for 'Macroprudential Supervision as the Missing Link'

Intending to safeguard the economy as a whole from the risk of system-wide financial distress, adopting a macroprudential approach marks a vital paradigm shift in financial regulation and supervision.[18] The 2008 crisis has highlighted fundamental gaps in the initial regulatory and supervisory framework overseeing the nexus between the macroeconomy and the financial system. More importantly, it also demonstrated the absolute lack of understanding and analytical framework on systemic risk and its propagation across the economy, that led to broad severe macroeconomic consequences. Moreover, as *ex-post* interventions have proven to impose an enormous burden to the taxpayers, and have sometimes not been well targeted, the crisis prevention regime and the *ex-ante* macroprudential approach—in limiting and mitigating systemic risk before it materialises into system-wide crisis—have become regulatory preferences in the aftermath of the GFC.[19]

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[15] Alistair Milne, 'Macroprudential Policy: What Can It Achieve?' (2009) 25(4) Oxford Review of Economic Policy 609 < https://www.jstor.org/stable/23607081> accessed 8 April 2019.

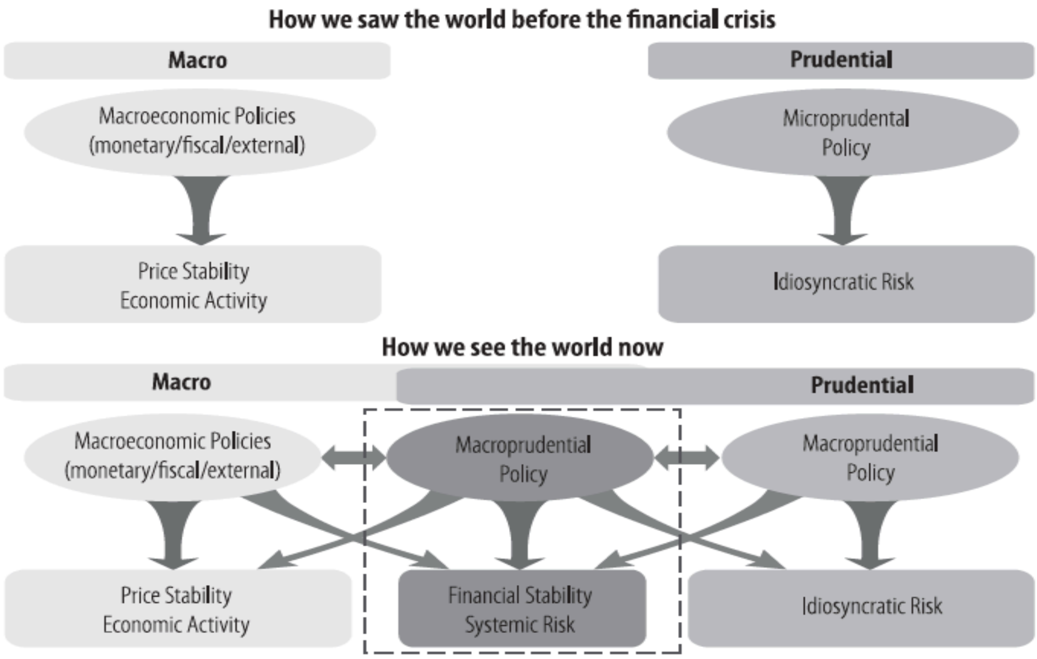
[16] In general, the discussion of macroprudential policy encompasses measures that aim to build up buffers, discourage risky lending, and strengthen the system's resilience. However, the scope of IMF discussions on macroprudential policy mostly encompasses much broader reference to the overall institutional design and functions of macroprudential authority. As the result, in reference to IMF publications, this research has selectively applied suitable and appropriate discussion in the context set by each specific discussion and assessment. See: IMF(a) (n 8); IMF(b) (n 8); IMF, FSB, BIS (n 8).

[17] De Nederlandshe Bank, 'Towards a More Stable Financial System' (May 2016) 12 < https://www.dnb.nl/media/gspdg10h/financial_stability.pdf> accessed 19 April 2019.

[18] Claudio Borio, 'Moving Forward with Macroprudential Frameworks', in BIS (ed), *BIS Annual Economic Report 2018* <https://www.bis.org/publ/arpdf/ar2018e4.htm> accessed 3 April 2019; Christian Weistroffer, 'Macroprudential Supervision: In Search of An Appropriate Response to Systemic Risk' (2012) Deutsche Bank Research 1.

[19] IMF, 'The Interaction of Monetary and Macroprudential Policies' (January 2013) 9 <

Figure 3.1: How we saw the world before the financial crisis



Source: IMF (2013) Interaction of Monetary and Macroprudential Policies

Previously, as seen in the figure above, there was a regulatory gap reconciling the attempts to achieve price stability through monetary policy, with the goal of protecting financial institutions and customers through microprudential regulation. This absence of an authority responsible for holistically monitoring the development of the system prompted the unrestrained growth of macro-financial vulnerabilities.[20] Macroprudential supervision plays a vital role, as the missing link in bridging the regulatory gap between monetary policy and microprudential supervision, while also ensuring close coordination between the two.[21] The framework is designed to be more countercyclical than microprudential supervision, while on the other hand, it is also more granular than the interest rate policy of the monetary policy.[22] Through an effective

https://www.imf.org/external/np/pp/eng/2013/012913.pdf> accessed 6 April 2018.

[20] Chapter I, section I.III.

[21] Dirk Schoenmaker and Peter Wierts, 'Macroprudential Supervision: From Theory to Policy' (2016) 2 European Systemic Risk Board Working Paper Series 4 < https://www.esrb.europa.eu/pub/pdf/wp/esrbwp2.en.pdf> accessed 11 March 2019; Weistroffer (n 18) 6; Charles A.E. Goodhart, 'Powers and Scope of the Macroprudential Authority', in John R Labrosse, Rodrigo O. Caminal and Dalvinder Singh (eds), *Financial Crisis Containment and Government Guarantees* (Edward Elgar Publishing Ltd 2013) 30.

[22] Charles Goodhart, 'The Use of Macroprudential Instruments', in Dirk Schoenmaker (ed), *Macroprudentialism* (Centre for Economic Policy Research 2014) 13 <https://voxeu.org/sites/default/files/file/macroprudentialism_VoxEU_0.pdf> accessed 9 January 2019.

macroprudential framework, the *ex-ante* risk can be contained, and at the same time, the buffers to absorb *ex-post* shocks can be built.[23]

Fundamentally, there was a solid regulatory belief that instability would be hindered when risk at the individual institution level is well managed and avoided—known as a fallacy of composition—which nourished a false sense of security across financial markets and policymakers.[24] As revealed in the GFC, the financial system as a whole behaves differently from its individual components.[25] This narrow and myopic view of the microprudential supervisor for individual financial institutions inadequately safeguarded financial stability, and left the build-up of macro-financial vulnerabilities undetected. Thus, from a system-wide perspective, the operation of microprudential supervision fails to adequately draw the link between macroeconomic developments and the soundness of individual institutions to safeguard financial stability. Instead, it behaves in a procyclical way, and overlooks the lurking dangers from the collective behaviour of financial institutions in selling their assets when perceived risk increases during the times of distress.[26] The macroprudential framework should thus aim to address the limitations of 'the microstructure regulation' that mostly reinforces herding behaviours among financial institutions.[27]

On the other hand, monetary policy—that is primarily dedicated to achieve price stability and general macroeconomic stability—has also proven to be insufficient for guaranteeing a stable financial system.[28] Although monetary and macroprudential policies have closely interlinked goals in achieving price and financial stability, in their operations, both goals can diverge and

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[23] IMF (n 19).
[24] Brunnermeier and others (n 4) 15; Robert Hockett, 'Recursive Collective Action Problems: The Structure of Procyclicality in Financial and Monetary Markets, Macroeconomies and Formally Similar Context' (2015) 3(2) Journal Financial Perspectives, 3 <http://dx.doi.org/10.2139/ssrn.2239849> accessed 9 April 2019; E. Philip Davis and Dilruba Karim, 'Macroprudential Regulation – The Missing Policy Pillar' (2010) 211(1) National Institute Economic Review 10 < https://doi.org/10.1177/0027950110364098> accessed 7 April 2019; Jacek Osinski, Katharine Seal and Lex Hoogduin, 'Macroprudential and Microprudential Policies: Toward Cohabitation' (2013) 13/05 IMF Staff Discussion Note 5 < https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2016/12/31/Macroprudential-and-Microprudential-Policies-Toward-Cohabitation-40694> accessed 7 May 2018.
[25] Schoenmaker and Wierts (n 21).
[26] Brunnermeier and others (n 4).
[27] Charles Goodhart, 'The Macroprudential Authority: Powers, scope and accountability' (2011) 2 OECD Journal Financial Market Trends <https://www.oecd.org/finance/financial-markets/48979021.pdf> accessed 12 September 2019.
[28] Brunnermeier and others (n 4).

may conflict with one another.[29] Operationally, monetary policy is typically effective in handling the causes of instability relating to liquidity; however, as seen in the GFC, the prolonged use of accommodative monetary policy may instead affect risk-taking incentives and increase asset prices.[30] Without being supplemented with holistic assessment, the impacts of interest rate policies on risk perceptions and risk appetite in times of boom (and therefore the emergence of asset prices bubbles in the financial system) are easily overlooked by the monetary authority.[31]

Consequently, it has become even more critical to ensure that monetary and macroprudential policies work in tandem.[32] When an asset bubble is fuelled by rapid credit expansion and creates an over-investment in a particular sector, macroprudential supervision will need to request action from monetary and fiscal policymakers to address such an underlying threat.[33] Hence, the macroprudential framework is now designed to fill the gap between the two existing frameworks, and ensure close coordination between the two policy realms.[34]

III.III. WHAT SHOULD MACROPRUDENTIAL SUPERVISION AIM FOR?

Although the macroprudential policy has been widely acknowledged as an integral part of the strategy for financial stability, the macroprudential framework should not be overburdened with broader objectives, other than its primary objective of containing systemic vulnerabilities.[35] Speaking in the same tone, Claudio Borio, one of the pioneers of the framework, emphasises the importance of not defining the goal of macroprudential supervision as achieving financial

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[29] In the absence of a stable price environment, financial markets cannot properly function; while in the absence of financial stability, it will be very challenging to ensure price stability. See: Committee on the Global Financial System, 'Macroprudential Instruments and Frameworks: A Stocktaking of Issues and Experiences' (2010) 38 CGFS Paper <https://www.bis.org/publ/cgfs38.htm> accessed 6 February 2018; Weistroffer (n 18) 6; David Lieberg and Michaela Posch, 'Macroprudential Regulation and Supervision: From the Identification of Systemic Risks to Policy Measures' (2011) 21 Financial Stability Report 65 <https://ideas.repec.org/a/onb/oenbfs/y2011i21b2.html> accessed 17 May 2018.
[30] IMF (n 19) 3; Milne (n 15) 609.
[31] IMF (n 19) 7.
[32] Claudio Borio, 'Macroprudential Framework: (too) Great Expectations?' (2014) BIS the 25th Anniversary Edition of Central Banking Journal <https://www.bis.org/speeches/sp140813.htm> accessed 1 February 2018.
[33] Erlend W. Nier, 'Macroprudential Policy – Taxonomy and Challenges' (2011) 216(1) National Institute Economic Review < https://doi.org/10.1177/0027950111411375> accessed 11 March 2018.
[34] Weistroffer (n 18) 6.
[35] The IMF also highlights the importance of not overloading the framework with a broader role in managing macroeconomic stability through the containment of unsustainable credit booms and reduction of the effect of shocks on the provision of credit to the economy. See: IMF(b) (n 8) 8.

stability, a goal that he sees as rather an illusion.[36] By assigning a macroprudential framework to promote financing stability, one will instead create 'blurring areas of responsibility and overstretching the term', as almost any other policy can affect financial stability.[37] As discussed previously, the goal of safeguarding financial stability should be understood as a continuous one that requires cooperation and coordination between different FSN authorities at various stages.[38]

Having asserted this, macroprudential supervision does play an essential role in safeguarding stability, through the achievement of its primary goals in containing and mitigating the emergence of systemic vulnerabilities. Recognising the looming dangers of financial cycles and the time-dimensional aspects of systemic risk, this research asserts that the macroprudential objective of limiting the build-up of systemic risk should also be complemented by its operational objective of enhancing the resilience of the financial system against the materialisation of aggregate shock.[39] Admittedly, the two goals envisioned are operationally intertwined with one another, but one is not automatically ensured by the presence of the other.

III.III.a. Limiting and Mitigating the Build-Up of Systemic Risk

In general, the objective of limiting the build-up of systemic risk has been constantly promoted by the IMF, since its early work in establishing the international framework on macroprudential policy, used to limit and contain systemic vulnerabilities.[40] Among the various discussions on the macroprudential supervisory framework, the objective to identify, monitor and address systemic risk is primarily accepted among scholars and policymakers as part of the macroprudential 'lean against the wind' measures.[41] Such an admission is derived from the

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[36] Borio calls for modesty of macroprudential goal to solely focus on increasing the resilience of the system against financial shocks. See: Borio (n 3) 16.

[37] As one of the early proponents of the macroprudential framework, Borio holds a strong opinion on the importance of coordination between different policy areas as the most realistic way to achieve the financial stability. See: Ibid, 3; Claudio Borio and Illhyock Shim, 'What Can Macroprudential Policy Do to Support Monetary Policy' (2007) 242 BIS Working Papers < https://www.bis.org/publ/work242.htm> accessed 9 April 2019.

[38] Chapter II, section II.III.; Sander Oosterloo and Jakob de Haan, 'Central Banks and Financial Stability: A Survey' (2004) 1 Journal of Financial Stability 271 < https://ideas.repec.org/a/eee/finsta/v1y2004i2p257-273.html> accessed 13 April 2018.

[39] Weistroffer (n 18); Lieberg and Posch (n 29).

[40] IMF(b) (n 8); IMF, 'Macroprudential Policy: An Organizing Framework' (March 2011) <https://www.imf.org/external/np/pp/eng/2011/031411.pdf> accessed 10 April 2018.

[41] Daniel K. Tarullo, 'Macroprudential Regulation' (2014) 31(3) Yale Journal on Regulation <https://digitalcommons.law.yale.edu/yjreg/vol31/iss3/2> accessed 8 March 2019.

costly experience of systemic risk negligence, built up during the US housing bubble, which is proven to create negative externalities and spillover to the economy, on both national and international levels.[42]

To date, like financial stability, systemic risk is still an evolving concept, with no commonly shared definition. Like financial innovation, systemic risk is also an inherent part of the financial system that continuously evolves, along with the development of markets and innovation taking place in the system. Systemic risk can be defined as the risk of disruption to financial services resulting from partial impairment of the financial system, creating severe negative costs to the real economy.[43] Overall, two central elements are found in the emergence of systemic risk: firstly, the presence of an economic shock that can trigger either the failure of a chain of markets or institutions, or a chain of significant losses to financial institutions; secondly, the results from it create substantial financial-market price volatility.[44] The IMF, BIS and FSB broadly define it as 'a risk of disruption to financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy'.[45] Hence, a risk is generally defined as 'systemic' under the macroprudential perspective when the resulting financial shocks will impose significant consequences or spillover effects on economic activity.[46]

Systemic risk could easily occur in all events that may endanger the stability of the banking and financial system, such as macroeconomic shocks and contagion from one bank's failure spreading to the entire banking system.[47] As revealed in the GFC, regulatory and supervisory failures can also become a major contributing factor to the rise of systemic risk.[48] In general, any idiosyncratic risk and market externality can grow into a systemic threat when there are

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[42] Jaime Caruana, 'Systemic Risk: How to Deal with It?' (The Bank for International Settlement, 12 February 2010) <https://www.bis.org/publ/othp08.htm> accessed 16 February 2018.
[43] IMF, BIS and FSB, 'Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations:Report to the G-20' (October 2009) <https://www.imf.org/external/np/g20/pdf/100109.pdf> accessed 6 March 2018.
[44] Steven L. Schwarcz, 'Systemic Risk' (2008) 97 The Georgetown Law Journal, 193, 204 < https://scholarship.law.duke.edu/faculty_scholarship/1903/> accessed 14 April 2019.
[45] IMF, BIS and FSB (n 43).
[46] Christian Noyer, 'Macroprudential Policy: from Theory to Implementation', in Banque de France, 'Macroprudential Policies: Implementation and Interactions' (2014) 18 Financial Stability Review April 2014, 7 <https://ideas.repec.org/a/bfr/fisrev/20141801.html> accessed 8 March 2019.
[47] Stephen Valdez & Philip Molyneux, *An Introduction to Global Financial Markets* (7th, Palgrave Macmillan 2013) 132.
[48] Lieberg and Posch (n 29) 68.

enough interlinkages and channels of propagation.[49] Having said that, generally, the concerns over the interconnectedness of markets, channels of contagion, market manias or bubbles, herding behaviours during fire sales, and counterparty risks among financial institutions and markets are among the concerns justifying the need for macroprudential supervisory actions. Overall, the channels of systemic transmission can be classified into: inter-bank, inter-institution, inter-instrument channel; the payment systems channel; the information channel; and the psychological channel.[50]

Macroprudential supervision is primarily designed to identify systemic vulnerabilities when they arise and remove them before they trigger systemic problems. In its approach to understand and contain the build-up of risk, macroprudential supervision differentiates two dimensions of systemic risk: the time dimension and cross-sectional (structural) dimension.[51] The time dimension of systemic risk refers to the evolution of risk over time (or pro-cyclicality) in the financial system, while the structural or cross-sectional dimension emerges at any time from the distribution of risk and common exposures across the financial system.[52] From the cross-sectional dimension, the supervisor attempts to understand how risk is distributed within the financial system at any time, with main concerns over systematically important financial institutions (SIFIs), market failures, and propagation channels such as interlinkages between institutions, interconnectedness, and contagion.[53] Thus, a better understanding of the different channels of contagion and interlinkages will be an important key for limiting the build-up of structural, systemic risk, and crisis handling general.[54]

[49] The prevention of systemic risk is not much about the trigger event, but more about understanding and addressing the strong interconnections and transmission mechanisms that are able to transform a local crisis into global financial crisis. Limiting and labelling the understanding of systemic risk into the groups of externalities will instead risk restricting the supervisory efforts to monitor and understand the entirety of the system-wide vulnerabilities. See: Rosa M. Lastra, 'Systemic Risk, SIFIs and Financial Stability' (2011) 6(2) Capital Markets Law Journal 200 < https://doi.org/10.1093/cmlj/kmr009> accessed 12 June 2019.
[50] Ibid, 202.
[51] Borio (n 11) 10.
[52] Gabriele Galati and Richhild Moessner, 'Macroprudential Policy a Literature Review' (2013) 27(5) Journal of Economic Surveys 7 < http://dx.doi.org/10.1111/j.1467-6419.2012.00729.x> accessed 8 February 2018; IMF, BIS and FSB (n 43) 5.
[53] Thus, it is understood that not all institutions create the similar potential of systemic risks. The risk is understood to occur due to the size of institutions; the interconnection between one to another; and the propensity of fire sales. There will be more focus on the balance sheet size; interconnection, cross-border lending, typical bank behaviour or areas where banks are more likely to behave commonly, source of funding such as the increasing reliance on wholesale funds, common exposure and mutual interlinkage. See: Clement (n 5) 64 – 65; Borio (n 32); Davis and Karim (n 24) 11.
[54] Xavier Freixas, Luc Laeven and Jose-Luis Peydro, *Systemic Risk, Crises and Macroprudential Regulation* (The

Dealing with temporal systemic risk means protecting institutions from the financial cycle, and taming the financial cycle for financial institutions.[55] Through understanding the time dimension of systemic risk, the supervisor aims to increase the resilience of the financial system and, at the same time, constrain financial booms.[56] To contain such accumulation of risk throughout the business or financial cycle, the macroprudential supervisor needs to monitor the market developments closely, measure how risk evolves over time, and make a discretionary decision in imposing certain measures to 'lean against the wind'.[57] This task is particularly challenging as the *perception* of existent risk tends to be at its lowest during boom time, whereas the actual risk is at its most dangerous point.[58] In general, the macroprudential supervisor is better equipped to deal with cross-sectional systemic risk, rather than the time dimension of risk.[59] However, as discussed next, the macroprudential role in dealing with the time dimension of systemic risk is closely linked to its goal to strengthen the system's resilience—that also deals with the financial cycle and the pro-cyclicality of the financial system.[60]

III.III.b. Enhancing Financial Resilience

In dealing with the temporal dimension of systemic risk, the supervisor faces the so-called 'paradox of financial instability', as it faces a situation where the system looks strongest precisely when it is most vulnerable.[61] The perception of low risk can instead be a sign of

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MIT Press 2015) 109.

[55] In 2009, the BoE published a discussion paper that debated the objectives of macroprudential policy between 'protecting banks from the cycle' and 'protecting the economy from the banks'. See: Borio (n 32) 3; The Bank of England, 'The Role of Macroprudential Policy' (2009) Discussion Paper November 2009 <https://www.bankofengland.co.uk/-/media/boe/files/paper/2009/the-role-of-macroprudential-policy.pdf> accessed 18 July 2019; Agustin Villar, 'Macroprudential Frameworks: Objectives, Decisions and Policy Interactions', in the Bank for International Settlements, *Macroprudential Frameworks, Implementation and Relationship with Other Policies* (94 BIS Papers 2017) 8 < https://www.bis.org/publ/bppdf/bispap94.htm> accessed 12 April 2019.

[56] Borio (n 32).

[57] The origin of the term 'lean against the wind' is from the practice of monetary policy, when the central bank responds to a potentially detrimental asset price boom through a policy in rising the interest rates. See: Jakob de Haan, Aerdt Houben and Remco van der Molen, 'Governance of Macroprudential Policy' (2012) 67(2) R. Z. offentl Recht 284 <https://doi.org/10.1007/s00708-012-0137-3> accessed 8 April 2018; Clement (n 5) 64 – 65.

[58] Borio (n 32) 3.

[59] Borio (n 11) 8.

[60] IMF(b) (n 8) 7.

[61] The paradox of financial instability is a concept mostly developed by Claudio Borio, drawing its notions from Minsky's insights on risk and instability. See: Claudio Borio and Mathias Drehmann, 'Towards an Operational Framework for Financial Stability: 'Fuzzy' Measurement and its Consequences' (2009) 284 BIS Working Paper < https://www.bis.org/publ/work284.htm> accessed 6 June 2018.

aggressive risk-taking, as the highest risk usually occurs when credit growth and asset prices are unusually strong, and the artificially low leverage measured at market prices, risk premier and volatilities appear unusually low. Such a paradox creates fallibility in the macro-stress test's results and systemic risk assessment.[62] Apart from the supervisor's role in managing the macro-financial conditions during the upswings, market euphoria and psychology are usually difficult to control. Therefore, it is becoming increasingly important to build a resilient system with a high loss-absorbing capacity that can withstand shocks and vulnerabilities. By strengthening resilience, the extent to which vulnerabilities are amplified into a wider economy and create systemic disruption in credit and other financial flows will be significantly reduced.[63] Thus, a macroprudential framework could reduce the probability of spillover and contagion effects inherent in the financial system.

In strengthening the system's resilience, the macroprudential framework imposes additional capital cushions through the measures such as the countercyclical buffers (CCyB) and the capital conservation buffer (CCoB), both of which could help preserve financial stability.[64] By building these additional buffers during the upswing times, when credit and capital are considerably cheap and abundant, then releasing them to help cushion the losses and aggregate shocks, the supervisor may have a better chance to maintain the ability of the financial system to continue functioning effectively. Largely through the prompt use of CCyB, the macroprudential supervisor will have more control over enhancing the system's resilience and may also help mitigate the pro-cyclicality of the credit cycle.[65] The buffers may also help lean against the build-up phase of the credit cycle, since the capital buffer imposed will raise the cost of credit and therefore dampen demand.[66] The result of stress tests at the stage of system-

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[62] Borio (n 3) 7; Rodigo Alfaro and Mathias Drehmann, 'Macro Stress Tests and Crisis: What can We Learn?' (2009) BIS Quarterly Review December 2009 <https://www.bis.org/publ/qtrpdf/r_qt0912e.htm> accessed 8 August 2020.
[63] Milne (n 15) 620; Freixas, Laeven and Peydro (n 54) 16; Nier (n 33) 4.
[64] Besides the two, the Basel III framework also introduced additional buffers for global and other systematically important institutions (G-SIIs and O-SIIs) and the systemic risk buffers (SyRB). See: BCBS, 'Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems' (June 2011) < https://www.bis.org/publ/bcbs189.htm> accessed 19 April 2019.
[65] IMF, 'Staff Guidance Note on Macroprudential Policy—Detailed Guidance on Instruments' (November 2014) 7-8<https://www.imf.org/en/Publications/Policy-Papers/Issues/2016/12/31/Staff-Guidance-Note-on-Macroprudential-Policy-Detailed-Guidance-on-Instruments-PP4928> accessed 1 April 2018.
[66] BIS, 'Guidance for National Authorities Operating the Countercyclical Capital Buffer' (December 2010) 1 <https://www.bis.org/publ/bcbs187.htm> accessed 5 April 2019.

wide monitoring will also play an important role in guiding the decisions of macroprudential supervisor in measuring and increasing the system's resilience.[67]

In implementation, enhancing the system's resilience is the most proximate goal of the macroprudential framework, which will define its success in achieving the ultimate goal of limiting system-wide financial distress. However, by their nature, attempts to enhance resilience—such as increasing capital buffers and deleveraging the balance sheet—may also create side impacts leading to a contraction in the supply of credit, which could blow into a credit crunch.[68] Therefore, the goal of enhancing financial resilience should closely be coordinated with different policy sectors in the system, particularly in times of policy trade-offs are needed.[69]

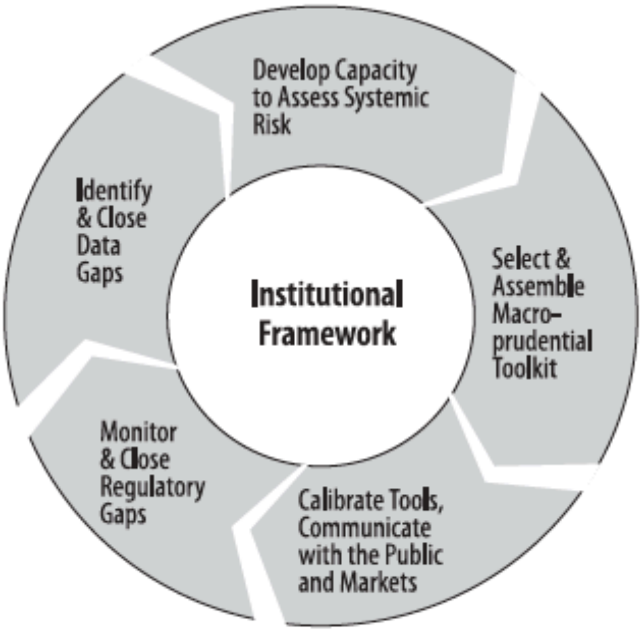
III.IV. HOW DOES MACROPRUDENTIAL SUPERVISION ACHIEVE ITS POLICY OBJECTIVES?

IMF emphasised three essential functions that should be assigned to a macroprudential authority, regardless of its detailed configurations across different countries. These are (1) identification of systemic-wide risks, (2) formulation of policy responses, and (3) mitigation of systemic risks through rulemaking, supervision and enforcement.[70] As illustrated in Figure 3.2, the IMF also later concluded that an effective macroprudential policy would require the authority to have the ability to assess systemic risk, assemble and deploy the toolkit, monitor and close regulatory gaps, and address data and information gaps.[71] In general, macroprudential supervision could act as both 'a preventive measure' in limiting the build-up of risk during the upswings, and 'a containment mechanism' in reducing the impact of negative externalities

[67] Tarullo (n 41) 510.
[68] Barwell (2013) argues that having a resilient financial system is not a necessary nor a sufficient condition for the smooth supply of financial core services such as bank credit. Resilience is usually achieved through increased capital buffers, de-risking and deleveraging the balance sheet, that may usually create a contraction in the supply of credit and even credit crunch. As a result, attempts to design macroprudential supervision only to strengthen the resilience of the financial system might be insufficient and instead, could be contradictory in contributing to the financial stability. See: Richard Barwell, *Macroprudential Policy: Taming the Wild Gyrations of Credit Flows, Debt Stocks and Asset Prices* (Palgrave Macmillan 2013) 46, 65.
[69] Riles (2018) argues that the resilience goal is in nature a relationship that requires a partnership between all participants in the economy. See: Tarullo (n 41) 510; Annelise Riles, *Financial Citizenship: Experts, Publics and the Politics of Central Banking* (Cornell University Press 2018) 50.
[70] IMF(a) (n 8) 9.
[71] IMF(b) (n 8).

related to spillover and contagion.[72] As summarised in Figures 3.3 and 3.4 below, the role of macroprudential supervision mostly spans from risk prevention in normal times, to systemic-risk mitigation and crisis management. Throughout these stages, the macroprudential supervisor will build different coordination and cooperation with various relevant authorities, to achieve the evolving goals of enhancing systemic resilience, containing systemic risk build-up and safeguarding financial stability.

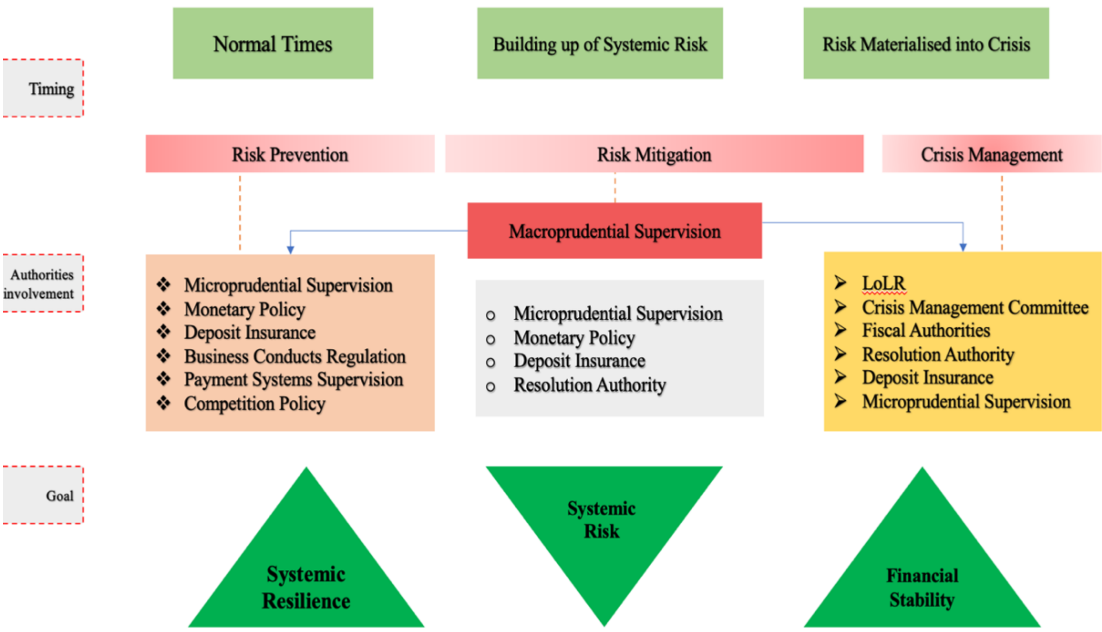
Figure 3.2: Five key aspects of macroprudential policy (MaPP)



Source: IMF, Key Aspects of Macroprudential Policies

[72] Behzad Gohari and Karen E. Woody, 'The New Global Financial Regulatory Order: Can Macroprudential Regulation Prevent Another Global Financial Disaster?' (2015) 40(2) The Journal of Corporation Law 423 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2424818> accessed 8 August 2018; Freixas, Laeven and Peydro (n 54) 16.

Figure 3.3: Normal Times / Build-up of Systemic Risk / Risk Materialised into Crisis



Source: Author's illustration

III.IV.a. Systemic Risk Prevention Scheme

As the first line of defence against systemic risk, the macroprudential supervisor is responsible for continuously monitoring potential vulnerabilities and enhancing the resiliency of the system, while improving its understanding of interconnectedness and interlinkages. At this stage, systemic-risk monitoring and identification can often become arduous and challenging, as sometimes risk can be invisible or built up throughout a long period. The highly dynamic and complex modern financial system will continually challenge the supervisor with fundamental uncertainty in market development, which consequences are not easily measured.[73] To create an effective risk-prevention scheme, it is also pivotal that the supervisor can close the data and information gap, monitor the migration of activities outside its purview, and address the regulatory gaps between different policy sectors.[74] In operation, close coordination with other supervisory authorities is imperative for a successful risk-prevention

[73] Paul Cavelaars and others, 'Challenges for Financial Sector Supervision' (2013) 11(6) DeNederlandche Bank (DNB) Occasional Studies 16
< https://www.researchgate.net/publication/335185233_Challenges_for_financial_sector_supervision> accessed 16 April 2018.
[74] IMF(b) (n 8) 25.

scheme, particularly as day-to-day interventions are still primarily conducted at the microprudential level.

III.IV.a.i. System-wide Monitoring

At this stage, information collection and aggregation are very much the essence of macroprudential supervision's success in preventing the build-up of systemic risk. The holistic information and data held and gathered by the macroprudential supervisor will become important leverage for diagnosing the emergence of systemic risk, and understanding the nature and implications of the risk. This is particularly important at a time of crisis, where the availability of consolidated system analysis and insights will be of the utmost importance. As revealed during the GFC, the complexity of data collection, especially on system-wide information and data across the system, has been proven to be a significant challenge for supervisors.[75]

Evidently, micro and granular information are essential for macroprudential analysis, as they provide input to identify common exposures, concentration risk, and network resilience.[76] Yet, as systemic risk could emerge from various sources and sectors from different policy areas, in practice, the macroprudential supervisor will often need to go beyond the recorded balance-sheet positions, shared exposures and interlinkages between the institutions.[77] Comprehensive system-wide information and data can only be achieved through close coordination and sharing of information and insights with other authorities. These is particularly the case for microprudential authorities that hold most of the individual information and data regarding the health of financial institutions, and the central bank responsible for monetary policy and payment-system supervision, thus holding most of the macroeconomic information.

In mapping the interconnectedness and complexity in the system, the supervisor is also required to designate certain institutions as SIFIs, which will then be put under its direct supervision and policy assessment. To further enhance its holistic assessment, top-down stress-testing models

[75] Previously, market data and information were individually kept by sectoral or individual authorities, without a centralised system that enabled them to be shared and coordinated with one another.
[76] Cavelaars and others (n 73) 33.
[77] To comprehensively understand the structure of system and its future developments, the supervisor may also need to consider qualitative elements such as legal and institutional constraints affecting the institutions; changes in regulation and competition; as well as innovation in the market. See: Barwell (n 68) 191.

will be used as an active surveillance tool to transparently examine system-wide resilience and the potential impacts of an adverse scenario on the system.[78] A stress test will thus help the supervisor to understand the strengths and weaknesses of the SIFIs and the financial sectors, which are important inputs to better evaluate the scenario of their failures and potential impacts on the financial system.[79] As a systemic-risk indicator, the results of stress tests will also be used to determine the nature of macroprudential measures and the timing for their implementation.[80] However, as a mere hypothetical exercise, based on conditional assumptions in methodology and scenario design, the results of stress tests still need to be complemented by other tools to fully supply the supervisor with a better systemic picture of the financial system and the emergence of systemic risk.

III.IV.a.ii. Identification and Assessment of the Potential Vulnerabilities

Assessing systemic risk is another challenge faced by macroprudential authority, for the enormous volume of data and information, and the elusive nature of systemic risk is often not easy to measure or quantify.[81] In diagnosing and measuring the existence of systemic risk, the supervisor also needs holistically to evaluate the macroeconomic and financial linkages which were previously unmonitored.[82] In operation, the macroprudential supervisor will often encounter challenges in determining the exact sources of risk, assessing impacts, and concluding policy action.[83] Thus, strong expertise and judgement in market analysis will also

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[78] Top-down stress testing is a forward-looking exercise performed by the macroprudential authority using its own stress-test framework, encompassing data, scenarios, assumptions, and models. See: Patrizia Baudino and others, 'Stress-Testing Banks—A Comparative Analysis' (2018) 12 Financial Stability Institute Insights 1 <https://www.bis.org/fsi/publ/insights12.pdf> accessed 8 April 2019.

[79] Although built on hypothetical scenarios, the outcome of such forward-looking assessment could supply the macroprudential supervisor with additional qualitative and quantitative information on risks and vulnerabilities that the financial institution is or might be exposed to. See: BCBS, 'Framework for Early Supervisory Intervention' (March 2018) 13 < https://www.bis.org/bcbs/publ/d439.htm> accessed 8 April 2019.

[80] At times of systemic financial crises, stress-test results are also useful to inform recapitalisation needs for both individual banks and the banking system, important to restore and maintain the market confidence. See: Baudino and others (n 78).

[81] Lucas Papademos, 'Financial Stability and Macroprudential Supervision: Objectives, Instruments and the Role of the ECB' (Speech at the Conference 'The ECB and Its Watchers XI' Frankfurt, 4 September 2009) < https://www.ecb.europa.eu/press/key/date/2009/html/sp090904_3.en.html> accessed 8 April 2019.

[82] This includes the macro-financial factors; the size, likelihood and potential impacts of systemic risks; and the triggers and transmission mechanisms for systemic risks.

[83] Mads Andenas and Chiu, Iris H-Y, *The Foundations and Future of Financial Regulation: Governance for Responsibility* (Routledge 2014) 417; Bart PM Joosen, 'The Limitations of Regulating Macroprudential Supervision in Europe' (2010) 10 Journal of International Banking Law and Regulation 493 < https://recofise.eu/the-limitations-regulating-macro-prudential-supervision-europe/> accessed 1 April 2019.

become key defining factors in building up the supervisor's credibility to make early warnings to the system.

As the systemic supervisor, the authority is expected to conduct a timely forward-looking assessment (e.g., stress test) and early risk identification, which will be used to identify triggers and probability for systemic-risk scenarios and to estimate costs for the financial system. However, as most supervisors will rely on the willingness of other authorities to support their policies—that often have conflicting interests with macroprudential goals—the assessment needs to be robust and clear in identifying the emergence and impacts of systemic risk to the economy, and a more complete picture that also includes the causes, affected markets, propagation channels and the policy responses to mitigate such risks. All these details and the quality of the analysis produced will define the supervisor's success, not only in predicting the trends and developments in the market, but also in making a credible and reasonable judgement to convince the markets and relevant authorities in following its recommendations and coordinating with the macroprudential supervisor.[84]

In effectively assessing and monitoring the systemic risk, macroprudential supervision targets both pro-cyclicality and cross-sectional dimensions of systemic vulnerabilities. In assessing systemic imbalances over time, macroprudential supervision will monitor the signs of enthusiasm and development in the asset prices and credit volume, which have historically become the most common triggers for the financial crisis.[85] Hence, the supervisor has to pay attention to the economic cycle, which often increases the pro-cyclicality of financial vulnerabilities. Although risk primarily becomes under-priced and develops undetectably over time, the supervisor still needs to be meticulous in distinguishing the dangerous from the normal financial cycle.[86] Consequently, the supervisor must understand the mutually reinforcing dynamic between the financial system and the real economy.[87]

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[84] Davis and Karim (n 24) 7.

[85] Weistroffer (n 18) 11

[86] Indeed, not every credit boom is necessarily able to trigger systemic financial crisis, therefore, the macroprudential supervisor needs to have a solid judgement before taking any actions. Thus, the implementation of time-series macroprudential regulation will mostly rely on the balance of rules and discretion principles taken by the supervisor.

[87] Borio (n 11) 7.

Meanwhile, in assessing structural vulnerabilities, the macroprudential supervisor will employ a holistic assessment of financial risk, including the assessment of shared exposures, contagion channels, interlinkages, data on liquidity and maturity mismatch on the propensity of fire sales, the shadow banking sector, and so on.[88] The supervisor will need to focus mainly on the SIFIs, and how common exposures in cross-sections and the interconnectedness of the financial system can propagate the risk when it occurs, and amplify it to become systemic.

III.IV.a.iii.Risk Communicating

After the potential build-up of risk is diagnosed with certainty of analysis and judgment, the supervisor will promptly communicate the assessment to other relevant authorities and the public, primarily through its biannually Financial Stability Reports (FSRs), speeches and press releases. The results of systemic-risk diagnoses, early warning indicators, and macro stress-testing will mainly be used to judge when to push the 'emergency' button and activate macroprudential policy measures.[89] Through these communication channels, the supervisor attempts to promote awareness and early warnings to the related authorities, and disseminate information about systemic risk to the broader financial system, including the general public, before the risk materialises.[90]

Generally, risk communication has a huge potential role in addressing reputational risks, while also fostering a more accountable macroprudential decision-making process.[91] The publication of FSRs, in particular, will also raise public awareness and support of tackling risks, and, therefore, the legitimacy of supervisory action and understanding among relevant authorities of the need to take mitigative actions.[92] Also being used to enhance the supervisor's accountability, effective macroprudential risk communication can simultaneously reduce information externalities for financial participants.[93]

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[88] Weistroffer (n 18) 12.
[89] Gohari and Woody (n 72) 411; Samuel G. Hanson, Anil K. Kashyap, and Jeremy C. Stein, 'A Macroprudential Approach to Financial Regulation' (2011) 25(1) Journal of Economic Perspective 412, 424 < https://www.aeaweb.org/articles?id=10.1257/jep.25.1.3> accessed 1 June 2018.
[90] Peter Sarlin, 'Macroprudential oversight, Risk Communication and Visualization' (2015) 27 Journal of Financial Stability 160 < https://doi.org/10.1016/j.jfs.2015.12.005> accessed 12 February 2019.
[91] Benjamin Born, Michael Ehrmann and Marcel Fratzscher, 'Communicating about Macroprudential Supervision – A New Challenge for Central Banks' (2012) 15(2) International Finance 180 < https://doi.org/10.1111/j.1468-2362.2012.01301.x> accessed 12 February 2019.
[92] IMF(b) (n 8) 23; IMF (2014) (n 8) 38; CGFS (n 29).
[93] Domenico Lombardi, 'Reinventing the Role of Central Banks in Financial Stability' (2016) Bank of Canada

To fully calculate whether the exact impacts of a potential risk can lead to a crisis is not always a straightforward task, as there is much room for miscalculation on its timing, and uncertainty on its impact.[94] Therefore, the supervisor needs to precisely calculate the risks relevant to financial institutions and their behaviours, as well as other granular information related to the probability of a tail event. This decision is a delicate one, as risk warnings can negatively affect the psychology of markets—thus a wrong risk signal will significantly reduce the credibility and reputation of supervisor's judgment. Throughout history, the market has always reacted strongly to bad news, and could easily turn a reaction into panic and other unintended consequences. Therefore, if warnings are often inaccurate, subsequent macroprudential warnings and judgment credibility are undermined by other authorities and markets. As Richard K Betts wrote: 'making warning systems more sensitive reduces the risk of surprise, but increases the number of false alarms, which in turn reduces sensitivity'.[95] Therefore, in giving warnings to the market, the macroprudential supervisor needs to have a high quality of judgement, not only in its assessments, but also in deciding the selection of communication tools and the timing for the communication of early warnings to the market.[96]

III.IV.b. Risk Mitigation Scheme (Policy Formulation)

Once the build-up of systemic vulnerability is identified and communicated, the supervisor will need promptly to translate the risk assessment into macroprudential policy actions. Acting as the first-line defence against systemic risk, the macroprudential supervisor needs to make

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Review 7 < https://ideas.repec.org/a/bca/bcarev/v2016y2016iautumn16p1-11.html> accessed 8 March 2019.

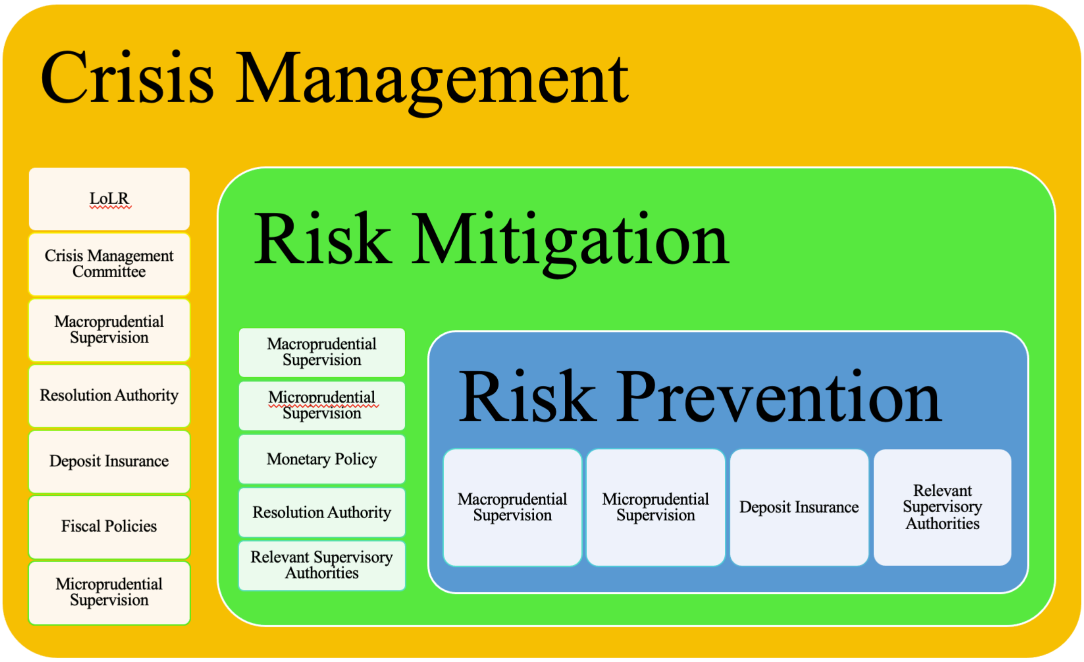
[94] In some cases, financial vulnerabilities may have also been built over long-term periods but have not been resulting in systemic shocks—until one small, unexpected trigger happens, such as in the case of subprime mortgage crisis as discussed in Chapter 1. See: Borio (n 18) 65.

[95] Richard K. Betts, 'Analysis, War and Decision: Why Intelligence Failures are Inevitable' (1978) 31(1) World Politics < https://doi.org/10.2307/2009967> accessed 12 April 2019.

[96] Indeed, although there was an increasing trend in the use of the FSR in communicating the risks since 1996, Cihak et al (2012) concluded that there still no clear correlation can be established to link it with effectiveness in maintaining the stability of financial system. The effectiveness of the FSR communication in controlling the financial cycle is also still not well supported by the findings of Lim et al (2017) and Correa et al (2017). Meanwhile, Corea et al found that even though the FSRs show how the central bank communicates the financial conditions and changes, these communications have little effect on the financial cycle. Further, Born et.al. (2012) found that while the FSRs tend to reduce the volatility of the market, the use of speeches and interviews tend to increase volatility and uncertainty. See: Martin Cihák and others, 'Financial Stability Reports: What are they Good For?' (2012) 12/1 IMF Working Paper < https://www.imf.org/external/pubs/cat/longres.aspx?sk=25470.0> accessed 6 May 2019; Cheng Hoon Lim and others, 'Financial Stability Reports in Latin America and the Caribbean' (2017) 17/73 IMF Working Paper < https://ssrn.com/abstract=2967428> accessed 9 August 2020; Ricardo Correa and others, 'Sentiment in Central Banks' Financial Stability Reports' (2017) 1203 International Finance Discussion Paper < https://ideas.repec.org/p/fip/fedgif/1203.html> accessed 9 April 2019; Born, Ehrmann and Fratzscher (n 91) 200.

prompt responses by selecting the right policy tools, and setting the timing for its implementation.[97] Part of this is to properly assess the potential impacts of its policy responses and fully ensure that the benefits of its implementation outweigh its possible macroeconomic impacts.

Figure 3.4: Crisis Management / Risk Mitigation / Risk Prevention



Source: Author's illustration

III.IV.b.i Selecting the policy tools and setting the timing

In the mitigation of systemic risk, there is no specific set of tools that can be widely imposed to address both dimensions of systemic risk and influence all financial behaviours consistently.[98] Depending on which type of threat has emerged, the macroprudential supervisor will deploy specific tools that can target the capital requirements (such as countercyclical buffers, dynamic provisions, sectoral capital requirements); or liquidity (such as countercyclical requirements); or the asset side of the balance sheet (such as loan-to-value and debt-to-income ratios).[99] By

[97] Milena Vucinic, 'Importance of Macroprudential Policy Implementation for Safeguarding Financial Stability' (2016) 3(1) Journal of Central Banking Theory and Practice (Central Bank of Montenegro) 80 < https://doi.org/10.1515/jcbtp-2016-0021> accessed 9 April 2019.
[98] IMF(b) (n 8) 19; IMF (n 19).
[99] Meanwhile, for the time-dimension systemic risk, the macroprudential supervisor will usually focus on three sets of tools: (i) the CCyB and provisions to increase the resilience toward shocks, (ii) sectoral tools in targeting

their nature, the macroprudential instruments are primarily derived from microprudential tools—such as lending and capital requirements; countercyclical capital buffers; LTV ratio; and systemic risk surcharge—and applied at the macro level to address systemic risk.[100] The setting of timing and the selection of policy tools by macroprudential supervisor are roughly illustrated in the figure below.

Figure 3.5: Macroprudential Policy Instruments

	Policy Tool				
	Restrictions related to borrower, instrument, or activity	**Restrictions on financial sector balance sheet (assets, liabilities)**	**Capital requirements, provisioning, surcharges**	**Taxation, levies**	**Other (including institutional infrastructure)**
Expansionary phase	Time varying caps/limits/rules on: - DTI, LTI, LTV - margins, hair-cuts - lending to sectors - credit growth	Time varying caps/limits on: - mismatches (FX, interest rate) - reserve requirements	Countercyclical capital requirements, leverage restrictions, general (dynamic) provisioning	Levy/tax on specific assets and/or liabilities	- Accounting (e.g., varying rules on mark to market) -Changes to compensation, market discipline, governance
Contractionary phase: fire-sales, credit crunch	Adjustment to specific loan-loss provisioning, margins or hair-cuts (e.g., through the cycle, dynamic)	Liquidity limits (e.g., Net Stable Funding Ratio, Liquidity Coverage Ratio)	Countercyclical capital requirements, general (dynamic) provisioning	Levy/tax (e.g., on non-core liabilities)	-Standardized products -OTC vs. on exchange -Safety net (Central Bank/Treasury liquidity, fiscal support)
Contagion, or shock propagation from SIFIs or networks	Varying restrictions on asset composition, activities (e.g., Volcker, Vickers)	Institution-specific limits on (bilateral) financial exposures, other balance sheet measures	Capital surcharges linked to systemic risk	Tax/levy varying by externality (size, network)	- Institutional infrastructure (e.g., CCPs) - Resolution (e.g., living wills) - Varying information, disclosure

Enhancing resilience
Dampening the cycle
Dispelling gestation of cycle

Source: Claessens, Ghosh and Mihet, 2013.

Overall, the availability of macroprudential policy tools will also vary from one country to another, as defined by the structure of the financial sector and risks that might occur in the country. Based on its institutional arrangement, in responding to systemic risk, the supervisor

the build-up of risk in particular sectors, and (iii) liquidity tools in containing funding risks.

[100] As they are now used for macroprudential policies, the nature of these policy tools has changed. They are specifically tailored to certain sectors or practices, unlike the normal monetary or microprudential policies which typically applied uniformly across institutions. Microprudential policies for example, are made to target only individual institutions on a standalone basis, regardless of the size or impact of the institution in financial system. See: Hyun Song Shin, 'Macroprudential Tools, Their Limits and Their Connection with Monetary Policy' (IMF Spring Meeting Event, Washington, 15 April 2015) <https://www.bis.org/speeches/sp150415.pdf> accessed 15 March 2020; Kaushik Jayaram and Blaise Gadanecz,' Macroprudential Policy Frameworks, Instruments and Indicators: A Review', in the Bank for International Settlements (ed), *Combining Micro and Macro Data for Financial Stability Analysis* (41, BIS 2016) 5 < https://ideas.repec.org/h/bis/bisifc/41-03.html> accessed 19 April 2019.

can either directly apply policy measures on sectoral markets, or coordinate with other authorities to choose the tools and the policy recommendations to be implemented.[101]

As the price for mistimed policy action or inaction will be very costly, the timing of action should be promptly calculated, for delayed action could trigger potential high-instability risks to the system. Unnecessary regulatory costs might occur in a time of too-early activation, as this will send the wrong signal to the market, with potential moral hazard, and may also undermine the impact and credibility of macroprudential decisions in the future.[102] Similarly, the timing of activation and withdrawal of the tools is also critical in calculation, as this will significantly influence the result of the policy. Meanwhile, the delayed deactivation of policy tools may also amplify procyclical effects. A well-timed macroprudential response to emerging systemic risk is key to successful risk-prevention and -mitigation schemes. Yet making a forward-looking judgement with prompt timing for macroprudential early warnings and responses could be very challenging and unpopular, as it may hinder access to credit when the general economy is booming. Thus, there is a high probability of bias towards inaction for the macroprudential authority, due to the potential political economy pressures on its decisions.[103]

The complex interactions and interdependencies between different components of the modern financial system have caused the source of systemic risk quickly to shift from one sector to another, imposing challenges for the supervisor to create ideal rules and regulations in mitigating the risk. While some form of rules-based approach will be essential in supporting the decision-making process and addressing the pressures not to act for unpopular macroprudential decisions, the supervisor cannot solely depend on the rules in addressing the continuously evolving systemic risk. Only through a balanced degree of discretion can the

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[101] Macroprudential policy tools are usually deployed after the supervisor has chosen the instruments to be used, the assessment of their costs and benefits, and has determined the appropriate timing to deploy them. The timing of action should be promptly calculated to avoid unnecessary market interference which may trigger adverse market reactions. See: Gohari and Woody (n 72) 424; Hilary J. Allen, 'A New Philosophy for Financial Stability Regulation' (2013) 45 Loy. U. Chi. L. J. 173, 184 < https://lawecommons.luc.edu/luclj/vol45/iss1/4> accessed 1 March 2019; Anne Le Lorier, 'How to Deploy the Macroprudential Toolkit?', in Aerdt Houben, Rob Nijskens and Mark Teunissen (eds), 'Putting Macroprudential Policy to Work' (2014) 12(7) DeNederlandche Bank (DNB) Occasional Studies 118 <https://www.dnb.nl/media/nifovret/201410_nr-_7_-2014-_putting_macroprudential_policy_to_work.pdf> accessed 12 August 2018.

[102] Jayaram and Gadanecz (n 100) 1.

[103] Borio (n 18) 65.

supervisor flexibly adapt to the changing practices of institutions and effectively reduce the need to constantly adjust the regulatory framework.[104]

To create a more accurate judgment for the activation and deactivation of policy tools, the macroprudential supervisor should be able to make a flexible response and, more importantly, find the right balance in the use of discretion and rules.[105] The supervisor should enjoy the independence to exercise discretion in making their judgement on which tools to use, and when to promptly deploy and withdraw the tools. On the other hand, an adequate degree of rule-based approach will guide and specify specific actions to be taken when systemic-risk warnings occur and rise beyond a certain threshold.[106] In operation, this balanced degree of rule-based approach is also vital to support the transparency of decisions and accountability of the supervisor.[107]

Finding the balance of rules and discretion in macroprudential supervision is particularly significant for the implementation of the CCyBs, which needs to be adjusted based on the level of risks and resilience of the system.[108] However, as the buffers are aimed to be the countervailing force to the natural financial cycle, a certain extent of rules are needed to limit the short-term interests of prolonging the boom.[109] In its implementation, the CCyB will be released, usually to 0%, as an immediate response to the system's emerging risk. By cutting the CCyB requirement, the authority aims to reduce the banks' capital requirements and therefore

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[104] Caruana (n 12); Davis and Karim (n 24) 11.

[105] The importance of striking the right balance between rules versus discretion has long been raised for microprudential supervision in general. The sole emphasis on one particular approach of supervision could, in practice, be counterproductive. In a discussion of the effects of the AFC, Batunanggar (2008) raised the challenge faced by the financial supervisor in striking the balance between rules and discretion in handling banking problems. See: Sukarela Batunanggar, 'Comparison of Problem Bank Identification, Intervention and Resolution in the SEACEN Countries' (2008) South East Asian Central Banks (SEACEN) Research and Training Centre 25 < https://ideas.repec.org/b/sea/rstudy/rp73.html> accessed 16 June 2020; Nier (n 33) 6.

[106] This, however, will require the supervisory authority to have the ability to identify all possible triggers, specify the policy measures and the specific timing or events for when it will be triggered. While capturing the emergence of systemic risk itself already is a complex and difficult task for supervisors, determining the possible scenarios and policy responses to trigger rule-based macroprudential policy will be even more challenging. See: Itai Agur and Sunil Sharma, 'Rules, Discretion and Macroprudential Policy' (2013) 13/65 IMF Working Paper 8 < https://doi.org/10.5089/9781475546699.001> accessed 9 August 2019.

[107] Davis and Karim (n 24) 11.

[108] The timing and pacing of the CCyB release require a precise judgment of the supervisor, in times of stress, to ensure the undisrupted flow of a supply of credit to the economy. In practice, there are two limitations that might occur from the use of the CCyB, which are: creating a false alarm relatively too early in the cycle, and the risk of incentivising regulatory arbitrage by pushing institutions towards the shadow banking sector.
See: BIS (n 66); Vitor Constancio, 'Making Macroprudential Policy Work', in Aerdt Houben, Rob Nijskens and Mark Teunissen (eds), 'Putting Macroprudential Policy to Work' (2014) 12(7) DeNederlandche Bank (DNB) Occasional Studies 27 <https://www.dnb.nl/media/nifovret/201410_nr-_7_-2014-_putting_macroprudential_policy_to_work.pdf> accessed 12 August 2018.

[109] Brunnermeier and others (n 4) xii.

allow the excess of capital to help absorb losses and preserve the bank's lending capacity. Therefore, this will help support the banking system's capacity to continually support the economy through its lending facility, and help cushion the economic shock and promote economic recovery.[110] Conversely, during the upswings the CCyB will be increased, and thus, the additional capital required, as the effect will help curb the unsustainable behaviours of the banks during such times.[111]

III.IV.b.ii. Coordinating the Responses toward Systemic Risk

During a market upswing, conflicts of interest and the need for trade-offs between different FSN authorities are relatively less likely to happen, as most of the policy objectives are benefited from the credit and market expansion.[112] However, as the cycle arrives at its peak, macroprudential concerns will start to build up as a response to the early identification of potential dangers from market manias and speculation emblematic at the time, thus may start deviating the macroprudential policy approach from the others. At the time of market downturn and financial distress, several different authorities may attempt to address the risk simultaneously, as systemic risk could manifest itself in many forms and emerge in any part of the financial system. At this point, the negative impacts of one policy sector to another can easily amplify and create further distortions in financial stability.[113] Without close policy coordination within the FSN framework, such policy response may worsen the situation, as different authorities have different policy objectives and views on how they address the risk.

Therefore, a well-designed macroprudential framework aims to ensure strong institutional capacity and political skill of the authority in fulfilling its coordinating role and strengthening the incentives of other authorities to cooperate in responding to risk efficiently.[114] Despite its

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[110] For example, by cutting the CCyB from 2% to 0%, the FPC can preserve banks' capacity to lend to the UK households and businesses by £500 billion. See: Mark Carney, 'The Grand Unifying Theory (and Practice) of Macroprudential Policy' (Bank of England Speech, University College London, 5 March 2020) 26 <https://www.bankofengland.co.uk/speech/2020/mark-carney-speech-at-university-college-london> accessed 1 June 2020.
[111] The CCyB is offering a countercyclical effect compared to the prior capital requirements determined by the microprudential supervisor, which applied without a focus at macro level, and largely focus on maintaining the capital at all costs when shocks hit.
[112] Relatively limited differences can be apparent only between microprudential, macroprudential, and monetary policy. See: Osinski, Seal and Hoogduin (n 24)13.
[113] Stijn Claessens, 'An Overview of Macroprudential Policy Tools' (2014) 14/214 IMF Working Paper 10 <https://www.imf.org/external/pubs/ft/wp/2014/wp14214.pdf> accessed 14 August 2020.
[114] Weistroffer (n 18) 8; Osinski, Seal and Hoogduin (n 24)18; Alison Lui, *Financial Stability and Prudential*

various configurations, the macroprudential supervisor needs to be designated with adequate rulemaking powers—in accordance with each domestic characteristics—in directing the policy actions of other authorities for the purpose of macroprudential supervision.[115] This is particularly important when the macro-and micro-prudential supervisions are assigned to two separate authorities.

As two complementary parts of the financial stability framework, macro-and micro- prudential supervisions not only share two closely linked objectives, but also overlapping policy toolkits that may create complementarities or tensions, or even policy confusion.[116] Overall, the macroprudential supervisor depends on the microprudential authority for the input of data and supervisory insights obtained and the implementation of the microprudential policy tools—e.g., capital and liquidity requirements.[117] This is particularly important in the case of a macroprudential supervisor that solely relies on the implementation of policy tools exercised by microprudential authority.[118]

Regulation: A Comparative Approach to the UK, US, Canada, Australia and Germany (Routledge 2018) 17.

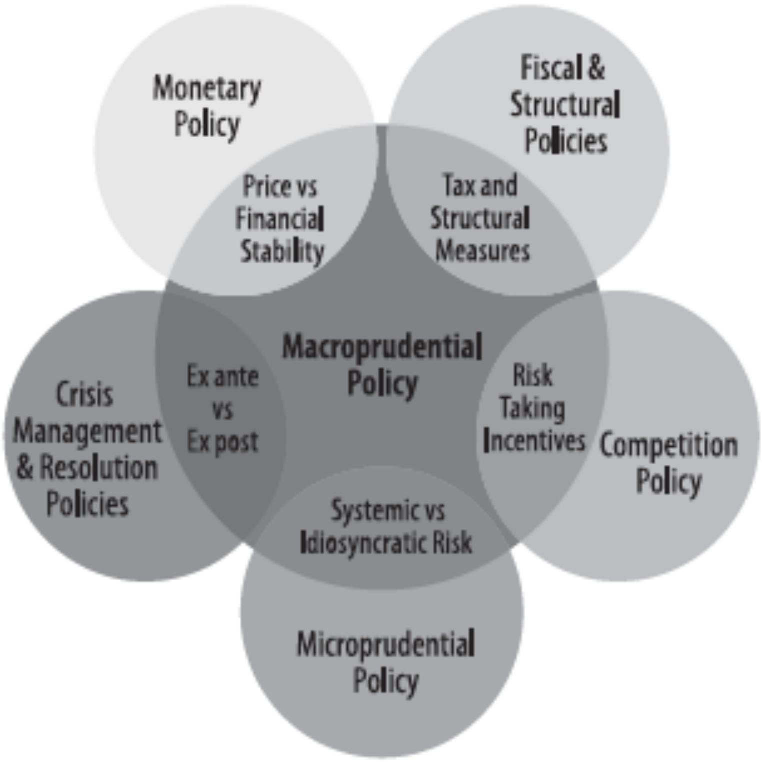
[115] This should include the power to make recommendations and to give directions. See: Chapter V, section V.III.c.iv

[116] Osinski, Seal and Hoogduin (n 24) 9.

[117] Aerdt Houben, Rob Nijskens and Mark Teunissen (eds), 'Putting Macroprudential Policy to Work' (2014) 12(7) DeNederlandche Bank (DNB) Occasional Studies 9 < https://www.dnb.nl/media/nifovret/201410_nr-_7_-2014-_putting_macroprudential_policy_to_work.pdf> accessed 12 August 2018.

[118] King (2013) emphasise the grey boundary between macro- and micro- prudential policies due to the share of similar interests between the two policy areas. See: Mervyn King, 'Challenges for the Future' (Panel Comments at the Federal Reserve Board Conference, Washington, 24 March 2012) <https://www.bankofengland.co.uk/speech/2012/challenges-for-the-future> accessed 15 August 2020.

Figure 3.6: Relationship between Macroprudential and other Policies



Source: IMF (2013) Key Aspects of Macroprudential Policy

The nature of limiting and mitigating the build-up of systemic risk will further place the importance of broader coordination between macroprudential authority with various relevant authorities, interlinking with financial stability. The figure above shows the strategic position of a macroprudential framework in affecting other policy sectors, that indicates the potential of various policy interactions and conflicts. Not only is macroprudential supervision an important missing link for microprudential supervision and monetary policy, but it is also an essential link for resolution, the crisis management framework, conduct supervision, fiscal policy, and competition policy. Through its policy recommendations and direction, the macroprudential authority can encourage other relevant authorities and government agencies to take policy action in responding to the growing vulnerabilities.[119]

[119] Depending on country's specific legal arrangement, the macroprudential authority will impose directions / recommendations to the related microprudential authority and other regulators in the system, including the Treasury / Ministry of Finance, to act on the risk identified in a timely manner. See: IMF(b) (n 8) 28.

Overall, the coordination with appropriate fiscal and structural policies is important for the macroprudential supervisor in limiting the occurrence of macroeconomic shocks.[120] Taxation and public investment policies imposed by the authority can create macroeconomic imbalances that can easily drive the build-up of systemic risk, especially in the regulatory and tax treatment on housing and property sectors, as well as debt and equity contracts.[121] Fast-paced financial innovation also further attracts regulatory attention to technology-driven financial products and innovation, that broadens the scope of potential sources for future systemic risk. Particularly relevant to the current exponential development of financial technology (fintech) companies, it will be in the primary interest of the macroprudential supervisor to build close coordination and sharing of information with the competition authority and relevant technology - innovation authorities.

The expertise of a macroprudential supervisor may also be needed to ensure that the resolution of failing SIFIs and other financial institutions are not creating contagion effects and counterparty risk that further amplifies instability throughout the system. Similarly, in the case of emergency liquidity assistance by central banks, the system-wide inputs and analysis gathered by the macroprudential supervisor will further facilitate more effective and well-targeted policy actions of the LoLR. As the liquidity linkages between modern financial institutions become harder to disentangle, the timing of liquidity support will be of the essence in preserving stability in the system in times of distress. The macro-systemic information and analysis held by macroprudential supervision will thus become essential to facilitate a prompt LoLR response and preserve creditor and depositor confidence during the uncertainty.

III.IV.c. Supporting the Crisis-Management Framework

When early intervention mechanisms and risk mitigation fail to contain the build-up of systemic risk, and crises start to unravel, the macroprudential supervisor will further play a distinct role in supporting and complementing the crisis-management framework.[122] The GFC 2008 notably

[120] Ibid, 10.

[121] While the tax treatment for housing significantly affects the household financial decision-making on taking mortgage and house-ownerships, the tax treatment of debt and equity will largely affect the corporate risk allocation in its financing strategy. See: Vucinic (n 97) 93.

[122] Crisis management is defined as a set of policies and procedures employed by the financial safety-net authorities in times of financial crises. The financial safety-net authorities consist of the authorities responsible for micro and macroprudential supervision and regulation; resolution; lender of last resort (LoLR); deposit insurance; and Ministry of Finance / Treasury. See: International Association of Deposit Insurers (IAIDI),

demonstrates the importance of quick and efficient crisis management and resolution processes to maintain stability in times of distress.

At this stage, the macroprudential supervisory role ought not to be leading the crisis management process, as it is primarily part of the greater role of the Fiscal Authority (Minister of Finance / Treasury) in leading and coordinating the joint response, for the possibility of the use of public funds. The crisis-management framework will also broadly emphasise the roles of the monetary authority in conducting monetary easing and emergency liquidity assistance, the resolution authority and deposit insurance in handling the failing banks, and the fiscal authorities in activating public guarantees and general capital supports.[123] Because of its expertise in system-wide assessment and holistic analysis, the macroprudential supervisor will play a crucial role in providing advice in the management of the unravelling of crises, and managing the impacts of SIFIs' problems. By complementing the microprudential information and data, macroprudential knowledge in system-wide information and assessment are important inputs in supporting the framework to limit the spillover impact of the financial crisis to the broader economy. Remarkably, the macroprudential authority will coordinate closely with the resolution authority in providing advice and policy recommendations for its SIFIs resolution process.[124]

With the establishment of macroprudential supervision, ideally, each country will have two coordination mechanisms in dealing with financial stability. Before the materialisation of crisis, the macroprudential framework will primarily be responsible to lead the coordination to limit and mitigate the systemic-risk build-up, that should be distinguished from the coordination within the crisis-management framework once the crisis unravels.[125] Such separation is essential, as the management of crises may require policy actions beyond the use of prudential tools and broader coordination with the LoLR, resolution authority, deposit insurance authority,

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'Deposit Insurers' Role in Contingency Planning and System-wide Crisis Preparedness and Management: Guidance Paper' (May 2019) < https://www.iadi.org/en/core-principles-and-guidance/guidance-papers/> accessed 7 August 2019; IMF(b) (n 8) 14.

[123] IMF(b) (n 8) 14.

[124] Vucinic (n 97) 93.

[125] Nier et al (2011) emphasised that this differentiation can also help minimise the strong involvement of the Treasury / Ministry of Finance in the crisis-prevention scheme, under macroprudential and microprudential supervision. See: Erlend W. Nier and others, 'Institutional Models for Macroprudential Policy' (2011) 11/18 IMF Staff Discussion Note 19 <https://www.elibrary.imf.org/view/journals/006/2011/018/article-A001-en.xml> accessed 7 April 2018; IMF (2014) (n 8) 38.

and fiscal authority for the possibility of using public guarantees.[126] As financial stability is also a shared objective for the entire FSN framework, macroprudential supervision and crisis management, especially the resolution regime, will generally need to complement each other to achieve success.[127] The extent and efficiency of the *ex-ante* framework in preventing crisis will ultimately determine the success of an orderly *ex post* crisis-management framework.

III.V. THE INHERENT CHALLENGES IN MACROPRUDENTIAL SUPERVISORY TASKS

Operationally, the tasks of preventing the emergence of systemic risk and *ex-ante* crisis interventions are far from straightforward jobs. The institutional design of systemic risk monitoring, the implementation of macroprudential policy, and the interaction with other policies have created various challenges for achieving macroprudential objectives.[128] While the assessment on how the macroprudential framework interacts with the broader political process still largely falls under the realm of speculation,[129] the task of managing system-wide risk will require broad and close coordination and policy interactions with other FSN authorities. Thus, the nature of such tasks places the operationalisation of the macroprudential framework as inherently paradoxical, and thus runs a high risk of bias towards inaction.[130]

III.V.a. Conflict of Interests with Microprudential Supervision

Conceptually designed to complement the existing framework, the macroprudential framework is particularly assembled to work in tandem with microprudential supervision, to safeguard financial stability.[131] Both frameworks mostly complement and reinforce each other in pursuit

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[126] The policy actions in handling the financial crisis might require coordination in terms of monetary easing, emergency liquidity assistance, resolution of failing banks, deposit insurance scheme, activation and execution of contingency plans and public guarantees and capital supports provided by the fiscal authorities. See: Ibid (IMF)38.
[127] IMF(b) (n 8) 14; Crockett (n 6) 10.
[128] Freixas, Laeven and Peydro (n 54) 2.
[129] Andrew Baker, 'The Bankers' Paradox: The Political Economy of Macroprudential Regulation' (2015) 37 Systemic Risk Centre (SRC) Discussion Paper 3 < http://eprints.lse.ac.uk/61998/> accessed 13 June 2019.
[130] Baker (2015) argues that in its quest to address three paradoxes characterised by the financial system, the macroprudential framework further creates two distinct political paradoxes. These paradoxes are the fallacy of composition; the procyclical paradox of credit; the paradox of financial instability; the political paradox of countercyclical policy; and technocracy's depoliticisation and legitimacy paradox. Baker (2015) emphasises that among the five, the last paradox (central bankers' paradox) will occupy the future political economy of macroprudential regulation. See: Ibid, 3-4.
[131] Weistroffer (n 18) 7; FSB, IMF and BIS (n 8) 2; IMF(b) (n 8).

of their respective goals, and as essential parts of the broader framework in preserving stability. The health of individual financial institutions is critical for achieving financial stability, whereas a stable financial system secures the safety and soundness of individual institutions.[132] Moreover, both microprudential and macroprudential supervisions use overlapping prudential policy instruments, mostly capital and liquidity tools, although applied at different applications and sometimes for different objectives.[133]

There is tension between the different objectives in promoting the safety and soundness of financial institutions and the protection of consumers and investors on one side, and the limiting the build-up of system-wide risk on the other—this juxtaposition may increase the potential tensions and conflicts between both. During the peak of the credit cycle, the conflicting interests between the two are mostly intensified in the face of the 'paradox of financial instability', as both have different perceptions of the situation; the timing of intervention for microprudential indicators mostly appear very positive, whereas the systemic indicators show urgent warning signs.[134] In dealing with herd-buying during this time of mania, the macroprudential authority will also act in a more countercyclical manner to curb massive misallocation of resources and excessive risk-takings in the system. Meanwhile, for the microprudential authority, curbing such market enthusiasm is beyond the capacity of their tools, and in conflict with their mandate to ensure the institution's safety and soundness. Without close communication and consultation between the respective authorities, the policy measures used by the two will further diverge and may instead raise challenges in their interactions. In responding to this potential challenge, some proposals are raised to create an explicit hierarchy of policy objectives that could ensure closer alignment of macroprudential and microprudential objectives.[135]

Particularly in times of distress, the interaction between the two policy goals will be put to the test. The microprudential interest, to ensure the solvency of individual institutions—thus concerned mostly with the liquidity and capital ratios held by individual banks—will most likely diverge from the systemic interest of macroprudential supervision.[136] Within its nature, each individual market participant will act on the interest of protecting themselves rather than

[132] Osinski, Seal and Hoogduin (n 24) 8.
[133] Ibid.
[134] Ibid, 13; Borio and Drehmann (n 61).
[135] Osinski, Seal and Hoogduin (n 24) 5; Nier (n 33).
[136] Ibid, Osinski 14.

protecting the stability of the financial system. Amidst the uncertainty, institutions that face funding difficulties themselves will rationally avoid significant greater loss and prevent their own insolvency by selling assets. Such a prudent move in the eyes of the microprudential supervisor will, however, destabilise the system through its deleveraging pressures and contraction in the supply of lending.[137] When collectively taken simultaneously, this action will enhance the cyclicality of 'run on assets', thereby pushing down prices into a 'downward spiral' yet further, creating negative feedback loops between the financial system and the economy.[138]

In this situation, the microprudential approach imposed through capital requirement will also often be procyclical and ill-suited to prevent liquidity and credit crunch. From the macro perspective, such action further reinforces the negative externalities on the reduction of credit supply to firms and households resulting from the disturbance in deposit renewal in the interbank market and deleveraging.[139] The macroprudential supervisor may consider this rationale as an act of neglecting the financial stability, as it undermines the potential propagation of systemic risk and ignores the pro-cyclicality and the build-up of risk.[140] Thus, with its systemic view, macroprudential supervision will consider the price impacts of collective market actions and aim to prevent institutions from joining the herding behaviour in selling off their assets during times of distress.[141] However, this action will result in an increased number of failing institutions under the remit of microprudential supervisors that are guided by the mandate to ensure solvency standards and protect the interest of depositors.

III.V.b. Policy Interactions with Monetary Policy

The recent shift in monetary policy measures to become more unconventional in dealing with financial vulnerabilities (e.g., through quantitative easing (QE) and purchase of private sector debts) is generally blurring the distinction between monetary and financial measures, and the

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[137] Brunnermeier and others (n 4) 15–19.
[138] Osinski, Seal and Hoogduin (n 24); Robert Hockett, 'The Macroprudential Turn: From Institutional 'Safety and Soundness' to Systematic 'Financial Stability' in Financial Supervision' (2015) 9(2) Virginia Law and Business Review 213 <https://scholarship.law.cornell.edu/facpub/1405/> accessed 21 August 2020.
[139] Goodhart (2011) emphasises the importance of macroprudential regulation, as microstructure regulation mostly reinforces herding behaviours among individual banks. See: Goodhart (n 27); Jean-Pierre Landau, 'Macroprudential Policy: Central Banking Reconsidered', in Stijn Claessens and others, *Macroprudential Regulatory Policies: The New Road to Financial Stability?* (World Scientific Studies in International Economic 2011) 92; Borio (n 32).
[140] Ibid (Landau).
[141] Hanson, Kashyap, and Stein (n 89).

possibility of quasi-fiscal influence of the central bank on the taxpayer.[142] Theoretically, the principal goal of price stability is closely interlinked with financial stability, for effective macroprudential and monetary policies closely complementing one another, rather than substitutive.[143] Thus, monetary policy and macroprudential framework should instead work in tandem.[144] Mainly through well-calibrated policies in controlling unsustainable increases in credit and asset prices, the macroprudential framework can help ease the burden on monetary policy in achieving macroeconomic stability.[145] Whereas, the effective monetary response will further reduce the need for macroprudential mitigative policies for its side-effects. However, the macroprudential policy cannot be used as a substitute, or used to offset the shortcomings in a weakly-conducted monetary policy; likewise for the other way around.[146]

However, in practice, the interactions between the two are complicated and often create side effects.[147] As revealed in the GFC, the use of monetary policy tools can have major implications on credit growth, market participants' risk appetite, borrowers' credit quality, asset price dynamics, and eventually the build-up of an asset bubble that threaten financial stability. Particularly as the time horizon between monetary policy and financial cycles is significantly different—with the first being shorter—the repercussions of one policy to another become harder to identify and mitigate.[148] Although macroprudential policies could balance out the adverse side-effects of monetary policy on financial stability, empirically, such task in

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[142] Goodhart (n 12) 55.
[143] IMF (n 19) 17; IMF(b) (n 8) 9; Claudio Borio and Piti Disyatat, 'Global Imbalances and the Financial Crisis: Link or No Link?' (2011) 346 BIS Working Papers < https://www.bis.org/publ/work346.pdf> accessed 18 April 2020; Erlend W. Nier and Heedon Kang, 'Monetary and Macroprudential Policies – Exploring Interactions' (2016) 86 BIS Papers 29 < http://www.bis.org/publ/bppdf/bispap86e.pdf> accessed 11 March 2019; Cheng Hoon Lim and others, 'The Macroprudential Framework: Policy Responsiveness and Institutional Arrangements' (2013) 13/166 IMF Working Paper 14 < https://www.imf.org/en/Publications/WP/Issues/2016/12/31/The-Macroprudential-Framework-Policy-Responsiveness-and-Institutional-Arrangements-40789> accessed 19 August 2019.
[144] Borio (n 32).
[145] IMF (n 19) 10.
[146] Ibid.
[147] The IMF (2013) acknowledges its current limited knowledge on the interactions between macroprudential and monetary policies, as the precise interaction between both will still depend on country-specific circumstances. Overall, monetary policy can also attract capital inflows and appreciation of currency in emerging markets and small open economies; whereas macroprudential policies have been observed to have impacts on output and inflation rate through constraints on credit, especially on property market. See: IMF (n 19) 9; Monetary Authority of Singapore, 'Macroprudential Policies: A Singapore Case Study', in the Bank for International Settlements, 'Macroprudential Frameworks, Implementation and Relationship with Other Policies' (94 BIS Papers 2017) 323 < https://www.bis.org/publ/bppdf/bispap94.htm> accessed 12 April 2019.
[148] Stefan Ingves, 'The Role of the Central Bank after the Financial Crisis - The Challenges Ahead' (The Swedish Economics Association, Stockholm, June 2013) < https://www.bis.org/review/r130614b.pdf> accessed 2 August 2019.

containing incentives of the market to borrow at low rates is very challenging and may instead create costly distortions for regulatory arbitrage.[149] Macroprudential authority will still need to coordinate and request policy actions of the monetary and fiscal policymakers, particularly in times of rapid credit expansion and over-investment. On the other hand, the monetary policy might also be used to compensate for the limitations of macroprudential policy.[150] Thus, it becomes even more important to ensure the policy coordination between the two, as the ineffectiveness of one policy is more likely to affect the achievement of the other policy goal. To further maximise the synergies and policy coordination, there is an increasing recognition of the importance of ensuring effective sharing of information and analysis in both decision-making mechanisms while at the same time preserving the independence and credibility of each authority.[151]

III.V.c. Difficulty of Measuring Output and Success of Macroprudential Tasks

Whereas the development of the macroprudential framework in the wake of the GFC is often compared with the development of monetary policy in the early 1950s,[152] there are significant operational differences between the two. In effectively preventing the build-up of systemic risk, macroprudential authority is often required to act promptly through the enforcement of macroprudential measures and other relevant policies. These prompt interventions may be perceived as 'sudden moves', with little to no time for the normal process of public deliberation, and thus may easily create legal issues, as this approach is counter to the normal procedural deliberation in public policymaking.[153] Moreover, unlike price stability, the task of mitigating systemic risk and promoting financial stability at large are less straightforward goals to measure, as their results are not immediately apparent within a short span of time.

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[149] Nier (n 33); IMF (n 19) 18; Nier and Kang (n 143) 30.
[150] IMF (n 19) 17.
[151] Nier (n 33).
[152] Schoenmaker and Wierts (n 21); Douglas Elliot, 'Macroprudential Policy: Time to Start Experimenting' (*The Economist,* 4 June 2013) < https://www.economist.com/free-exchange/2013/06/04/time-to-start-experimenting> accessed 8 March 2019; Andy Haldane, 'Macroprudential Policies: When and How to Use Them' (The IMF Rethinking Macro Policy II Conference, Washington, April 2013) < http://www.imf.org/external/np/seminars/eng/2013/macro2/pdf/ah.pdf> accessed 10 August 2018; Charles M. Kahn and Joao A.C. Santos, 'Institutional Allocation of Bank Regulation: A Review', in David Mayes and Geoffrey E. Wood (eds), *The Structure of Financial Regulation* (Routledge 2007).
[153] Hockett (n 138) 242.

Unlike monetary policy, that relies on using the tools of interest rates and management of quantity of money, macroprudential policy tools are much more varied depending on the diagnosis of the source of risk and its scope of impact. To date, there is no particular macroprudential tool identified as a standard taxonomy of instrument that is fully effective in curbing the same types of risk across different countries.[154] A systemic risk is not only more elusive than the presence of inflation that can be detected through economic models; it is also more difficult to identify, as it easily spreads to broader sectors of the financial and economic sectors—the spillover effect.[155] Moreover, the systemic financial stability concern under the macroprudential framework is much harder to measure, largely due to the psychological factors of the markets and the length of financial cycles, where there is a long lag between the time when the risk is taken and its materialised consequences.[156] Thus, the calculation of the real benefit of macroprudential policies and supervision will be challenging, as the resulting benefits and successes from interventions are unable to be easily and clearly identified over a short horizon, and may only be apparent in retrospect.[157] On the other hand, the impacts of the framework on the market participants, especially their profitability, are almost always immediately experienced and much more visible.[158] Hence in terms of accountability, the measures used for the macroprudential framework are essentially less straightforward than measuring the accountability of monetary policy.[159]

Lastly, in its decision-making process, and in its daily functioning, the monetary policy committee is mainly facing the decision of choosing between two alternatives (leaving the interest rate unchanged or changing it by 25 basis points).[160] In operation, however, the

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[154] Galati and Moessner (2013) provide an overview on the summary of debates and discussions on the macroprudential policy tools from main scholars in the field. They also summarise the various underpinning methodologies and studies relevant to the macroprudential policy and its empirical issues. See: Galati and Moessner (n 52).

[155] Goodhart (n 22) 11-20.

[156] The price of financial assets is also often more complex to determine, as it is affected not only by economic supply and demand factors, but also the psychology of the market and its cross-structural interconnectedness with the entire financial system, which is therefore more complex than price stability aimed at by monetary policy. See: Borio (n 3) 12-13.

[157] Nikhil Patel, 'Macroprudential Frameworks: Communication', (2017) in the Bank for International Settlements, 'Macroprudential Frameworks, Implementation and Relationship with Other Policies' (94 BIS Papers 2017) 50 <https://www.bis.org/publ/bppdf/bispap94.htm> accessed 12 April 2019.

[158] Nier (n 33) 7.

[159] Hockett (n 138) 241.

[160] Using the Condorcet Jury Theorem, Sibert (2006) discussed monetary policymaking in more detail, from two aspects: the ideal size of a monetary policy committee, and distinguishing aspects of decision-making in the form of committees and individual policymakers. See: Anne Sibert, 'Central Banking by Committee' (2006) 9(2)

macroprudential committee typically faces much more complex decisions resulting from the level of complexity and policy trade-offs or dilemmas within financial stability policymaking. Consequently, such characteristics of macroprudential objectives and the fluid experimental nature of the framework have made the problem of bias towards inaction and supervisory forbearance among the most deeply-rooted issues faced by the macroprudential authority.

III.V.d. Uncertainty and Complexity in Macroprudential Operationalisation

In operation, the preventive roles of the macroprudential framework will likely create a series of uncertainty and complexity faced by the authority in predicting the case of a tail-risk event.[161] Such complexities easily hinder the feasibility of calculating and judging the consequences of market vulnerabilities, and as a result, the regulatory and supervisory frameworks in place often lag behind the developments and innovations of supervised institutions.[162] With rapidly evolving financial innovation, the macroprudential supervisor will be expected to face Knightian uncertainty and complexity, under which it is impossible for the authority to correctly predict the next systemic risk and its impacts, let alone the outcomes of measures imposed on them. Therefore, the macroprudential supervisor faces the fundamental *'unknown unknowns'* at every stage of its operations.

There are, at least, two uncertainty challenges faced by the macroprudential authority: uncertainty about the economy and the macro-financial environment in accurately measuring the risk; and uncertainty about the effects and effectiveness of the measures taken to mitigate the risk.[163] The implementation of macroprudential supervision is also perplexing, as it requires extensive information surveillance on the matter of financial and economic signals, and must be naturally pre-emptive.[164] Notably, the effectiveness of policy measures will become even

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International Finance 148 < https://doi.org/10.1111/j.1468-2362.2006.00180.x> accessed 21 April 2019.

[161] Allen (n 101).

[162] Steven L. Schwarcz, 'Regulating Complexity in Financial Markets' (2009) 87(2) Washington University Law Review 211, 220 < https://scholarship.law.duke.edu/faculty_scholarship/2118/> accessed 14 April 2019; Cavelaars and others (n 73) 16.

[163] Claudia Buch, 'Macroprudential Policy: What Do We Need to Know?', in Aerdt Houben, Rob Nijskens and Mark Teunissen (eds), 'Putting Macroprudential Policy to Work' (2014) 12(7) DeNederlandche Bank (DNB) Occasional Studies 78, 84 < https://www.dnb.nl/media/nifovret/201410_nr-_7_-2014-_putting_macroprudential_policy_to_work.pdf> accessed 12 August 2018.

[164] Iris H-Y Chiu, 'Macroprudential Supervision: Critically Examining the Developments in the UK, EU and Internationally' (2012) 6(3) Law and Financial Markets Review 194 <https://doi.org/10.5235/175214412800650563> accessed 19 August 2019.

harder to predict, while policy re-adjustments are more likely to happen from the policy interactions and trade-offs. Thus, challenges can quickly occur due to the constraints, imperfections, and limited information faced by the macroprudential supervisor in its operations.[165]

III.V.e. Pressures from Political Economic Interest

Operating pre-emptively in detecting and mitigating the early build-up of systemic risk, the actions taken by the macroprudential supervisor may not always easily be understood by other authorities, nor justified to the public and market participants at large. The difficulty of closely monitoring and supervising a complex financial system and predicting a rare tail-risk event will put the supervisor under the scrutiny of the political-economic interest of politicians. Further strengthened by the paradox of financial instability and the 'this time is different' narrative, the countercyclical macroprudential measures will quickly become the target of public and political sentiments, due to their unpopular approach of leaning against the prevailing market appetite, as has been referred to by Andrew Baker as 'the political paradox of countercyclical policy'.[166] From the distributional impacts of its policy measures, the central banks' high level of discretion and independence, in which the macroprudential framework is primarily assigned, will further increase the political pressures on unelected central bankers, which—during the 1990s—were expected to have a uniquely apolitical and technocratic agency.[167]

By and large, the complexity of macroprudential operations and the inherent paradoxes of the financial system create informational and knowledge challenges, for the public to grasp the arguments for macroprudential interventions and their long-term benefits in safeguarding financial stability. In the case of mounting public discontent on macroprudential interventions, politicians and legislators who come under pressure will further seek to secure electoral incentives. Some critiques of the macroprudential framework have also pointed out the

[165] Jon Danielsson and others, 'Why Macropru Can End Up Being Procyclical' (*VOXEU,* 15 December 2016) <https://voxeu.org/article/why-macropru-can-end-being-procyclical > accessed 19 January 2021.
[166] This paradox is also derived from the depoliticisation of central bank policymaking in the last past decades, which has in turn increased the politicisation of the institution and its technical authority. Therefore, Baker (2015) argues that the nature of macroprudential measures will risk not only politicising macroprudential policy, but also the central banks themselves. See: Baker (n 129) 19.
[167] Ibid, 26.

limitation of the framework in addressing such political risk, as macroprudential authorities are authorised by, controlled by, and gain legitimacy from political leadership.[168] As a consequence of this delegation contract,[169] there will be a strong tendency of bias toward inaction and insufficient timely actions, as the supervisor is 'pulling away the punch bowl' before the party gets out of hand.[170]

III.VI. DESIGNING THE INSTITUTIONAL ARRANGEMENTS FOR MACROPRUDENTIAL SUPERVISION

The above discussion demonstrates the complexity and challenging nature of the macroprudential tasks, for the emergence of potentially conflicting interests and policy trade-offs are unavoidable from its interactions with other policy goals. Effective institutional setup for a macroprudential framework is believed to better equip authorities to take preventive actions against systemic risk—however, it should never be perceived as a sufficient condition for the effective prevention of crises.[171] Ensuring a well-designed macroprudential supervision will require that not only is the empty seat filled, but also that the entire framework can coordinate accordingly in limiting and mitigating systemic threats and safeguarding financial stability at large. Moreover, although the success of its policy implementation is crucial for macroprudential supervision, the effectiveness of these measures will largely depend on the capacity of the authority and the strength of the institutional arrangement in determining macroprudential operation, decision-making processes, and policy coordination with other authorities.

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[168] Macroprudential authorities are not designed to look at risk that has been created by politicians themselves; it is most likely that macroprudential framework will ignore the incorporation of political risks in its analysis of the cause of the financial crisis. See: Jon Danielsson and Robert Macrae,'The Fatal Flaw in Macropru: It Ignores Political Risk' (*VOXEU,* 8 December 2016) <https://voxeu.org/article/tmacroprus-fatal-flaw> accessed 12 January 2020.

[169] Baker (n 129) 3.

[170] The 'punch bowl' metaphor seems to trace back to a speech given on October 19, 1955, by William McChesney Martin, who served as Chairman of the Federal Reserve from 1951 through 1970, to the New York Group of the Investment Bankers Association of America. See: Timothy Taylor, 'The Punch Bowl Speech: William McChesney Martin' (*Conversable Economist,* 24 June 2013) <https://conversableeconomist.blogspot.com/2013/06/the-punch-bowl-speech-william-mcchesney.html> accessed 12 January 2020; Papademos (n 81).

[171] Nier, Erlend W. and others, 'Towards Effective Macroprudential Policy Frameworks: An Assessment of Stylized Institutional Models' (2011) 11/250 IMF Working Paper 7 < https://doi.org/10.5089/9781463923327.001> accessed 9 March 2019; IMF(b) (n 8).

Even though achieving an effective institutional arrangement for macroprudential supervision is highly desirable, it is still worth emphasising that no single ideal model can fully be transplanted across countries. The effectiveness of macroprudential supervisory reform will need to be examined by a fair judgement, considering the country-specific circumstances and legal-political backgrounds underlying the adoption of a specific model. Hence, it becomes increasingly important to carefully design the legal and institutional arrangements that can generally ensure the institutional strength of the supervisory system, effective implementation of tools, strong willingness and ability of the authority to act, strong accountability, and effective policy coordination with other policy sectors and authorities.[172] Particularly in dealing with the potential policy tensions and conflicts in its interactions with other policy areas, ensuring well-defined mandates, functions, policy tools, and powers are essential for the macroprudential framework.[173]

A robust institutional arrangement for macroprudential supervision will foster the ability and willingness of the supervisor to act, thus ensure a robust organisational capacity and promote effective inter-agency coordination.[174] The ability to act in response to an evolving systemic risk will be ensured by providing the authority with a clear definition of responsibilities, a well-defined legal mandate, and adequate powers. Whereas the willingness to act against the political pressures and inaction bias can be ensured through well-defined objectives and functions mandated by legal obligations, including the accountability and governance of its decision making.[175]

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[172] The IMF, FSB, BIS (2016), BIS (2011), CGFS (2012) and IMF (2013) agree on the importance of well-defined objectives, adequate powers, and strong accountability of the macroprudential authority to support an effective macroprudential framework. See: IMF (n 40); IMF, FSB, and BIS (2011) (n 8) 5; IMF(b) (n 8); IMF, FSB, and BIS (2016) (n 8) 5; BIS 2011; Committee on the Global Financial System, 'Operationalising the Selection and Application of Macroprudential Instruments' (2012) 48 CGFS Papers < https://www.bis.org/publ/cgfs48.pdf> accessed 12 August 2020.

[173] Osinski, Seal and Hoogduin (n 24) 5; Nier (n 33) 3.

[174] IMF, FSB, and BIS (2016) (n 8) 5.

[175] In general, the IMF recognises three aspects of the legal framework that need modification in the light of macroprudential reform: the objectives, functions, and powers assigned for the supervisor. While function defines the scope of authorised activities, the objectives define the purpose of actions, and the extent of powers signifies the legal capacity to carry out the functions consistent with the stated objectives. The well-defined objectives and functions assigned to the macroprudential supervisor will enhance accountability and provide a clear benchmark for evaluating performance, secure inter-agency coordination, and distinguish responsibilities with other FSN authorities. See: IMF(a) (n 8) 16; IMF(b) (n 8) 30.

The macroprudential supervisor will be the authority telling financial institutions 'what they must and must not do'.[176] As a result, it becomes critical that the supervisor has a strong ability to act and ensure its recommendations and directions among other authorities. Besides the risk of biases for inaction, the macroprudential supervisor is also facing challenges due to the nature of its policy actions, that mainly depend on the use of microprudential policy tools and tools held by other authorities. With the use of its rulemaking power in giving directions and recommendations to other authorities, the supervisor is largely still relying on the willingness and incentives of others to effectively coordinate their policy actions under the guidelines of macroprudential authority. Thus, ensuring strong political skill and position, and assigning power to direct action and control over specific policy tools of other agencies may be essential to support the coordinating role of macroprudential supervision.[177] Further, some proposals are made for the closer alignment of statutory objectives, or even the creation of a hierarchy of policy objectives between microprudential and macroprudential supervisions, to help reduce the conflicts and enhance the coordination between the two.[178] Some proposals also emphasise the importance of creating a decision-making committee in order to address the potential conflicts of interest between different policy areas, while at the same time foster strong accountability and transparency in the macroprudential decision-making process and policy coordination.[179]

Irrespective of different configurations adopted for macroprudential supervision across the world, each authority should be appropriately designed with an adequate set of powers that, at the minimum, should include power in aggregating system-wide information, conducting macro surveillance, communicating early-warning risk, and rulemaking both for other authorities and market participants.[180] The formulation of these four primary powers mainly

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[176] Baker (n 2) 112.
[177] Borio (2011) argues that the mandates assigned to the macroprudential supervisor should adhere to the availability of policy tools under the control of the authority. Nier (2011) emphasises the importance of assigning power to direct actions of other agencies and the direct powers over specific policy tools to the authority in order to support its task of inter-agency coordination. See: Nier (n 33); Weistroffer (n 18) 8; Borio (n 3) 13.
[178] Nier (n 33) 8.
[179] Ibid.
[180] In 2013, the IMF recognises the broad categories of powers assigned to macroprudential authority, which are (i) rule-making powers; (ii) powers to collect information; (iii) supervision powers; and (iv) enforcement powers. While incorporating these recommendations, this research, however, combines the power of enforcing compliance into the rule-making power. The rule-making power referred to in this research is therefore also combining the power to execute policy tools directly to the markets, and the power to make rules that direct the policy responses of other authorities or make recommendations of policies to be applied. IMF (2013) further specifies the three categories of rule-making powers, that includes the power to adjust the perimeter of regulation and supervision,

stems from the author's conclusion from the various discussion and policy papers. Three out of four of these powers are in line with the IMF recommendations on the primary category of powers assigned to the macroprudential framework, which include the power to make rules, the power to collect information, the power to supervise regulated entities, and the power to enforce compliance with applicable rules.[181] The IMF, FSB and BIS pointed out the need for the macroprudential supervisor to be equipped with a specific list of powers, such as the power to obtain information from other authorities, to encourage the activation and calibration of regulatory restraints, to designate the significantly important financial institutions (SIFIs), and to initiate regulatory changes in order to expand the macroprudential policy coverage to important providers of credit and liquidity.[182]

Indispensable to the effective institutional arrangement for macroprudential framework is the task of ensuring assertive decision-making, an adequate degree of discretion, and the use of a judgement-led approach in the macroprudential framework.[183] Acknowledging the operational challenges of taking preventative unpopular decisions to mitigate the systemic risk, the exercise of the right balance of rules and discretion-setting will also ensure the ability of the supervisor to take actions, based on the perceived-risk profile, and the nature and severity of the identified risk. The discretionary power would also allow the supervisor to properly weigh trade-offs when needed, before the risk materialises. It would also enable the macroprudential supervisor to quickly adapt to the new environment and a new type of systemic risk, resulting from the constant financial innovation change.[184] Meanwhile, an adequate degree of rules will be essential in dealing with unpopular actions and making decisions that are easily subjected by the political economy interests.

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the power to calibrate macroprudential instruments, and the power to formulate new macroprudential instruments. Nier (2011) postulates similar three basic powers that should be assigned to the macroprudential authority, which are: (i) the power to collect information from all financial institutions and to access the data and information collected by other financial supervisors and authorities; (ii) the power to designate institutions as individually systemic and include all collective systemic institutions within its scope of policy; and (iii) rulemaking and calibration powers. See: IMF(a) (n 8) 10.

[181] Ibid.

[182] IMF(b) (n 8) 27; IMF, FSB, and BIS (2016) (n 8) 7; Nier (n 33).

[183] IMF(a) (n 8) 12; Dalvinder Singh, Banking Regulation of UK and US Financial Markets (Ashgate Publishing Limited 2007) 47.

[184] The exercise of discretionary power of the macroprudential authority can be expected in a form of different issuance of regulations from time to time, including the adjustment in designating institutions that fall within the perimeter of regulation and supervision; calibration of macroprudential instruments; and formulation of new macroprudential instruments. See: IMF(a) (n 8) 11

III.VI.a. The Leading Roles of the Central Bank

Amid the debates on how to optimally design the macroprudential institutional arrangement, there is astonishingly widespread acceptance among scholars and policymakers on the key role that central banks need to play in leading the macroprudential reforms.[185]

Before the GFC, the financial stability objective assigned to central banks was not necessarily followed by strong accountability requirements, as it was largely observed as the derivative of the monetary stability condition.[186] The events leading to the GFC, however, have changed the direction of modern central banking. The understanding and acceptance over the roles of the central bank in safeguarding financial stability have fundamentally broadened to not only manage the financial stress through its LoLR function, but also as an integral part of the crisis prevention scheme.

The international acceptance on the adoption and operationalisation of the macroprudential framework within the central bank particularly asserts the authority's prominent re-emergence after being mostly idle throughout the 1990s–2000s.[187] Central to this argument is the central bank's major role in supporting crisis-management tools and managing liquidity injections such as the LoLR and Open Market Operation (OMO).[188] The central bank's involvement in the

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[185] IMF (n 8), (n 40), (n 19); Borio (n 3), (n 11); De Larosiere (n 4); Nier (n 33); Nier and others (n 125); Garicano and Lastra (n 191); Galati and Moessner (n 52); Masciandaro and Quintyn (n 188); Agur and Sharma (n 106); Charles Goodhart, 'The Changing Role of Central Banks' (2010) 326 BIS Working Paper 30 < https://www.bis.org/publ/work326.htm> accessed 10 August 2019; Daniel Calvo and others, 'Financial Supervisory Architecture: What Has Changed After the Crisis' (2018) 8 FSI Insights 5 < https://www.bis.org/fsi/publ/insights8.htm> accessed 11 March 2019.

[186] Ingves (2013) even emphasises that previously, the impacts of monetary policy on financial stability were largely ignored as the possible trade-offs mostly emphasise the objective of price stability in the short term. See: Oosterloo and de Haan (n 38); Ingves (n 148).

[187] As discussed earlier in Chapter II, Pellegrina et al. (2013) argued that the evolution of central banks' roles had experienced a 'great reversal' post-GFC 2008, by returning to the concern of prudential supervisory function after the trend of separating monetary and prudential responsibilities in the 1990s. See: Dalla Pellegrina, Donato Masciandaro, and Rosaria V. Pansini, 'The Central Banker as Prudential Supervisor: Does Independence Matter?' (2013) 9(3) Journal for Financial Stability < https://www.sciencedirect.com/science/article/abs/pii/S1572308913000077> accessed 16 January 2020.

[188] Goodhart (2011) adds that the proposal of Buiter (2009) on the possibility of establishing a macroprudential authority outside the central bank, but with the independent ability to draw the central bank's balance sheet, as constitutionally and institutionally problematic. Goodhart emphasises the importance of this liquidity access in the central argument of assigning a macroprudential function to a central bank. Goodhart (2011) also further emphasises the need to assign the responsibility to decide on the lending channels of the central bank to private sector, that includes LoLR loans, emergency liquidity assistance lending to individual, and Credit Easing (CE), with the main goal of restoring the functionality of the market. Tucker (2016) also imposes the importance of central bank roles in managing crisis-management tools and policy. See: Goodhart (n 12) 50; Goodhart (n 21) 31; Goodhart (n 27); Lui (n 114); Paul Tucker, 'The Design and Governance of Financial Stability Regimes: A

macroprudential could ensure better decision-making and access to timely supervisory information, in both supporting the monetary policy in normal times and the LoLR function in exceptional times.[189] On the other hand, a study also found that the involvement of the central banks further reduces the response time needed for macroprudential policy actions.[190] Particularly, the central bank in charge of macroprudential surveillance may become more considerate and aware of the financial instability impacts of its monetary decisions.[191]

On its operationalisation, macroprudential supervision will also benefit from the central bank's extensive expertise in macroeconomics, and its ownership of macro-financial information and data.[192] These advantages will further support the central banks' success in systemic risk identification and monitoring that could factor into the credibility of its policy actions and decision-making processes. Relevant to address the inherent bias towards inaction, placing the macroprudential framework within the independent central bank will also potentially increase the political support and greater public awareness to support macroprudential decisions, particularly in times when countercyclical measures are needed.[193] This is exceptionally important for communicating vulnerabilities and risk assessments without creating excessive market reactions, while at the same time enhancing greater compliance from the markets.[194]

Common-Resource Problem that Challenges Technical Know-How Democratic Accountability and International Coordination' (2016) 3 The Centre for International Governance Innovation Essays on International Finance; Donato Masciandaro and Marc Quintyn, 'The Evolution of Financial Supervision: the Continuing Search for the Holy Grail', in Morten Balling (ed), *50 Years of Money and Finance: Lessons and Challenges* (SUERF—The European Money and Finance Forum 2013) 264 <https://econpapers.repec.org/scripts/redir.pf?u=https%3A%2F%2Fwww.suerf.org%2Fdoc%2Fdoc_8e296a067a37563370ded05f5a3bf3ec_1919_suerf.pdf;h=repec:erf:erfftc:1-8 > accessed on 12 January 2020.

[189] Ibid, Masciandaro and Quintyn, 297; Pierre C. Boyer and Jorge Ponce, 'Central Banks and Banking Supervision Reform', in Slyvester Eijffinger and Donator Masciandaro (eds), *Handbook of Central Banking, Financial Regulation and Supervision* (Edward Elgar 2011) 159.

[190] Lim and others (n 143) 14.

[191] Luis Garicano and Rosa M. Lastra, 'Towards A New Architecture for Financial Stability: Seven Principles' (2010) 13(3) Journal of International Economic Law 597, 599 < https://doi.org/10.1093/jiel/jgq041> accessed 21 February 2021.

[192] This results from its unique position as being simultaneously the macroprudential policymaker, monetary authority and supervisor of payment systems. See: Nier and others (n 125) 22; Stephen Ceccheti, 'Subprime Series, Part 3: Why Central Banks Should Be Financial Supervisors' (*VOXEU,* 30 November 2007) <https://voxeu.org/article/subprime-series-part-3-why-central-banks-should-be-financial-supervisors> accessed 19 April 2020; Lim and others (n 143) 14.

[193] Villar (n 55) 12.

[194] Besides, clear communication that enhances greater public awareness can also be useful to set realistic expectations for the public on the central banks' limited ability in its capacity, and that it is not a panacea for financial instability and crises.

Admittedly summarised by Mervyn King, in the case of the UK, the BoE's operations undeniably have some *de facto*, if not *de jure,* responsibility for macroprudential supervision.[195]

Having said that, there is one important concern in this arrangement related to the unknown interactions of macroprudential and monetary policies in times of crisis, when both objectives reside within one central bank institution. Indeed, the allocation of the macroprudential to the central bank does not resolve the potential conflict of interest that arises between price stability and financial stability goals.[196] There is a need to properly differentiate the monetary policy communication from macroprudential communication, to ensure that the risk from one aspect is not threatening the credibility of the conduct of the other aspect of the central bank.[197] Especially in times of market upswing, balancing the two goals of financial stability and monetary stability can be very challenging, as they might not always align with one another.[198] There may be a tendency to focus more on the most visible function and goal of monetary policy, as it is more straightforward and measurable, compared to achieving the objective of financial stability, that is harder to measure and has a longer-term impact.[199] Without a clear structure established for each policymaking process, central bank will also tend to use monetary tools to repair private balance sheets following a financial shock, which instead, may lead to a welfare loss.[200] Thus, vital for this particular arrangement is to establish separate decision-making, accountability and communication structures between the two functions of the central bank.[201]

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[195] King—the Governor of the BoE at the time—argued that 'I learnt from the experience after Northern Rock, that even if the legislation says that you do not have responsibility for supervision, people out there, including in Parliament, obviously feel the Bank of England must have something to do with banks and therefore they hold us accountable'. See: Select Committee on Economic Affairs, *Banking Supervision and Regulation Volume I* (HL 2008-09, 101-I) para 106.
[196] Goodhart (n 21) 31.
[197] Born, Ehrmann and Fratzscher (n 91) 199.
[198] See previous discussion in section III.V.b.
[199] Tucker (n 188); Paul Tucker, 'Regulatory Reform, Stability and Central Banking' (2014) Hutchins Center on Fiscal and Monetary Policy at Brookings < https://www.brookings.edu/wp-content/uploads/2016/06/16-regulatory-reform-stability-central-banking-tucker.pdf> accessed 20 May 2020.
[200] Kenichi Ueda and Fabian Valencia, 'Central Bank Independence and Macroprudential Regulation' (2012) 12/101 IMF Working Paper < https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Central-Bank-Independence-and-Macro-Prudential-Regulation-25872> accessed 15 February 2020.
[201] IMF (n 19).

III.VII. HOW FAR SHOULD WE RELY ON MACROPRUDENTIAL SUPERVISION?

The implementation of macroprudential supervision is admittedly still rather in its infancy, in comparison to microprudential and monetary policy. The effectiveness of macroprudential supervision is therefore still untested, and requires further research and evaluation in its operationalisation. There is still a need to manage the expectation on its ability to prevent future real tail-risk events. Thus, it is noteworthy that the macroprudential task in limiting the build-up of systemic risk, should not be associated with a 'zero failure' regime that prevents any possible individual failures and financial crisis.[202] Such perception is certainly neither feasible nor desirable, as it instead may lead to pervasive moral hazard problems across the system. Instead of the complete elimination of financial crisis and failures, macroprudential supervision is expected to reduce the cost of a tail-event crisis, as the understanding and analysis of the systemic threats and the extent of its consequences in the economy are improved.

To date, macroprudential supervision has been placed under the spotlight by the international regulators as an integral pillar in providing a better chance to promote and achieve financial stability.[203] Although a well-designed macroprudential supervision is believed to be able to identify risks in their early stages and strengthen the resilience of the system, the sole reliance on its operation will be insufficient to preserve financial stability in the long run. Macroprudential supervision should also not be perceived as a panacea for financial instability. More importantly, it should also not micromanage or even disrupt the financial cycle.[204] Indeed, it should not also be expected to be the only/main responsible actor in bearing this burden, as it is only a part of the solution.

The rapid evolution of the financial system and its inherently complex and uncertain nature have also made monitoring the system and identifying the early build-up of risk—whilst also having sufficient certainty to act—such a perplexing task.[205] As the nature of the risk is

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[202] Lui (n 114) 10.
[203] Largely through advocacy coming from the IMF's FSAP recommendations, BIS research and FSB meetings.
[204] Klaas knot, 'Governance of Macroprudential Policy', in Banque de France, 'Macroprudential Policies: Implementation and Interactions' (2014) 18 Financial Stability Review April 2014, 26 <https://ideas.repec.org/a/bfr/fisrev/20141801.html> accessed 8 March 2019.
[205] There is also a higher challenge to effectively capture the potential risk from the shadow banking sector and non-banking sectors, especially the financial markets, which are still often outside the macroprudential regulatory perimeter. See: Steven L. Schwarcz, 'Systematic Regulation of Systemic Risk' (2019) 11 Winconsin Law Review

constantly evolving, transferring risk within the system also becomes much quicker and less controllable. In assessing the extent and impacts of risk, the supervisor will require extensive information surveillance in capturing the correct economic and financial signals.[206] But in practice, the proactive measures of the macroprudential could create the potential for regulatory paranoia regarding the build-up of systemic risk, especially with the post-crisis new reporting and disclosure requirements, which may result in data overload. In general, the authority's ability to deal with such an enormous amount of information and an intricate analytical framework is still yet to be proven.[207] It is also essential to note that in containing the systemic risk, it will neither be desirable nor feasible for the authority to assume a direct role of central planner to the system.[208] Instead, the supervisor will participate more in 'guiding' the private decision without generating excessive interference and unintended consequences for the market.[209] Ensuring a robust institutional capacity and design, and the policy interaction and coordination with relevant FSN authorities will be key ways to ensure the success of the framework, in limiting the build-up of systemic risk and safeguarding financial stability in the long run.

III.VIII. CONCLUSION

As the latest structural development in financial regulatory and supervisory framework, macroprudential supervision introduces some important changes in the post-GFC financial crisis prevention scheme. With its macroeconomic characteristics, unlike the traditional financial supervision, macroprudential framework relies more on the use of a forward-looking analytical framework and system-wide assessment in identifying the signs of accumulation of financial imbalances and systemic risk emergence. The reform has provided a better chance to safeguard financial stability by focusing on such preventative efforts prior to the materialisation of a costly financial crisis. Having said that, financial stability should not be associated with the objective of macroprudential framework, as it is both a multifaceted and complicated task. The goals of enhancing the resilience of the system and limiting the build-up of systemic risk are

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2 <http://dx.doi.org/10.2139/ssrn.3233666> accessed 8 April 2020.

[206] Chiu (n 164) 194.

[207] Ben S. Bernanke, 'Implementing a Macroprudential Approach to Supervision and Regulation' (The 47th Annual Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, 5 May 2011) 2 < https://www.bis.org/review/r110509b.pdf> accessed 9 May 2020.

[208] Weistroffer (n 18) 13.

[209] Ibid.

better assigned to the macroprudential framework, for they are more achievable and closely intertwined with one another. Hence, despite the mounting unresolved debates on the optimal objectives and powers assigned to the macroprudential supervisor, this chapter emphasises the great importance of assigning a clear mandate and attainable objectives to the authority.

By extensively examining the inherent challenges in its conceptual understanding and operationalisation, this chapter substantiates the legitimate and practical expectation on the worldwide adoption of macroprudential framework. The current growing expectation of the macroprudential framework makes it paramount to place macroprudential supervision as one block of stone in reconstructing financial stability, cooperating with other authorities' parts in the overall safety-net framework. In limiting and mitigating the build-up of systemic risk, macroprudential supervision depends primarily on its coordination and interactions with other policy sectors, particularly the FSN authorities. As a result, the success of macroprudential supervision will be defined by various factors, particularly a robust institutional framework, the quality of analysis produced, the implementation and effectiveness of the macroprudential policy tool, the persuasiveness and credibility of the recommendations issued, the institutional capacity in managing conflict of interests and policy trade-offs, and political skill in coordinating policy action.

CHAPTER IV CASE STUDIES

IV.I. INTRODUCTION

The GFC structurally transformed the understanding of regulators and policymakers in comprehending financial stability and systemic instability as two sides of the same coin. While financial stability has been accepted as an eternal quest for financial regulators, recently, the focus has moved to attempts to prevent the occurrence of crisis in the first place. Through more stringent rules and a forward-looking approach imposed on the microprudential regulation and supervision in the adoption of the macroprudential framework, the post-GFC 2008 regulatory regime is focusing on improving the crisis preparedness of financial institutions and the resilience of the system in absorbing shocks.

This chapter will provide significant background for the comparative functional analysis between the four case studies, by discussing the *ex-ante* and *ex-post* financial stability frameworks adopted by the UK, Indonesia, Malaysia, and Singapore in the post-GFC reforms. It systematically incorporates the new resolution regime and crisis management framework into each country's financial safety net (FSN) framework. The chapter also provides the institutional analysis of all FSN authorities in each case study, encompassing each authority's statutory objectives, functions, accountability, and governance structure. In doing so, a better understanding of the complex ecosystem and inter-agency coordination between FSN authorities can be constructed. The chapter further discusses the current operationalisation of macroprudential supervision in targeting the build-up of systemic risk post-GFC, and during the COVID-19 pandemic crisis.

IV.II CASE STUDY I: THE UNITED KINGDOM

IV.II.a. Overview of Financial Stability Framework

In the past five decades, the UK financial regulatory framework has been acknowledged and widely accepted as an international trendsetter for financial regulation and supervision, in adapting to ever-changing financial innovation and its global advancements.[1] From leading the Big Bang Revolution in the 1980s, to the use of principle-based and risk-based approaches under the FSA regime, the UK financial stability framework has been actively tailored to promote the competitiveness of the City of London (the City). The GFC brought to an end the UK's 'light touch' regime as it unfolded the structural weaknesses of the tripartite regime and its single supervisory authority, the FSA.[2] Besides not having sufficient legal powers to resolve a failing bank quickly, the tripartite MoU update in 2006 also failed to provide a more precise separation of responsibilities, and address the conflicts of interests between its members.[3] Amidst the Northern Rock handling, the BoE imposed a strong stance against injecting liquidity and using its money market operations, on the basis of increasing the risk of moral hazard in the system, which directly challenged the FSA's policy goal as financial supervisor.[4] At the peak of the Northern Rock failure in September 2007, the delayed responses and coordination between the tripartite authorities eventually blew up into the UK first high street bank run in the last two and half-centuries.[5]

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[1] Refer to Chapter I, section I.II.a. and Chapter II Section II.II.a.

[2] Historically, the UK regulatory and supervisory approach has always been known as the 'light touch' regime, designed primarily to boost the competitiveness of the City of London (the City), administered under the the Bank of England (BoE)'s 'velvet glove' approach. This approach has encouraged some ground-breaking revolutions within its financial markets, e.g., the Big Bang Revolution in 1986.

[3] Although the tripartite MoU specified the responsibility of the BoE to 'contribute to the maintenance of the stability of the financial system as a whole', it did not clearly specify how this responsibility relates to the FSA's responsibility in prudential supervision and conduct of business supervision. Professor G Wood pointed out 'the incompetence and chaos' of the tripartite arrangement, where nobody was actually in charge of the situation. See: Select Committee on Economic Affairs, *Banking Supervision and Regulation Volume I* (HL 2008-09, 101-I) para 96-97.

[4] 'Letter of the Governor of the Bank of England, Mervyn King, to the Chairman of Treasury Select Committee', (12 September 2007) <https://publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/56/5607.htm#note219> accessed 17 August 2020; David T. Llewellyn, 'The Northern Rock Crisis: A Multi-Dimensional Problem', in Franco Bruni and David T. Llewellyn (eds), *The Failure of Northern Rock: A Multi-Dimensional Case Study* (SUERF Studies 2009) 123; Sharon Blei, 'The British Tripartite Financial Supervision System in the Face of the Northern Rock Run' (2008) 01 Supervisory Policy Analysis Working Paper – Federal Reserve Bank of St. Louis 9-10.

[5] The Northern Rock run was the first bank run since the panic of 1866 was triggered by the failure of Overend, Gurney and Company in London, which led to Bagehot's rule 'Lend without limit, to solvent firms, against good collateral, at 'high rates''. This panic also led to the 1867 Reform Act in the UK.

Aiming to avoid the repetition of tripartite failures, the UK new financial stability framework ensured a better division of responsibilities between its authorities, with the BoE at its apex and a more active involvement of the Treasury in the crisis-management framework. For the first time in its history, the BoE is assigned with statutory mandate in financial stability under the Banking Act 2009.[6] Overall, the UK regulatory regime is primarily built under the Financial Services and Markets Act (FSMA) 2000 and Financial Services Act 2012 (FSA 2012) that established the Prudential Regulation Authority (PRA) as the new microprudential regulator, the Financial Conduct Authority (FCA) as the conduct of business authority, and the Financial Policy Committee (FPC) as the macroprudential authority.[7] The three new authorities built a new 'complex web of powers, obligations and protocols' of financial stability frameworks in the UK.[8] The arrangement also emphasises the deliberated design of overlapping membership between the three authorities to ensure a more efficient flow of information and stronger inter-agency coordination. Later, through the enactment of the Bank of England and Financial Services Act 2016 (2016 Act), the Prudential Regulation Committee (PRC) was established as the governing body for the PRA. To further clarify the governance structure and separation of responsibility between the policy decisions conducted by the management and the oversight responsibility of the BoE's Court of Directors, the 2016 Act also placed the PRC, the MPC and the FPC as three policy committees of the BoE, with equal statutory and legal footings.[9]

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[6] The Banking Act 2009 s 238 introduced the BoE statutory footing 'to contribute to protecting and enhancing the stability of the financial system', thus making the authority responsible for financial stability and crisis management, through the special resolution regime (SRR) to deal with troubled banks. See: Alison Lui, *Financial Stability and Prudential Regulation: A Comparative Approach to the UK, US, Canada, Australia and Germany* (Routledge 2018); Iris H-Y Chiu, 'Macroprudential Supervision: Critically Examining the Developments in the UK, EU and Internationally' (2012) 6(3) Law and Financial Markets Review 194 <https://doi.org/10.5235/175214412800650563> accessed 19 August 2019 184; Alastair Hudson, *The Law of Finance* (2nd, Sweet & Maxwell 2013) 196.

[7] Together with the Banking Act 2009, the FSA 2012 was implemented to amend the FSMA 2000, which is still the principal Act providing the details for the means of powers granted to the BoE and HM Treasury; and the general statutory powers and obligations of the new regulatory agencies, including the interactions between them. The completely new outlook of the UK FSN framework has been the main response to mounting public and political criticisms against the failure of the previous integrated regime under the FSA in managing the balance between its conduct of business and prudential regulation. The HM Treasury's White Paper (2009) and the 2009 Turner Review concluded to the British House of Lords that 'in recent years, the FSA has emphasised conduct of business supervision at the expense of prudential supervision' that also admitted by Lord Turner (2009). See: Ibid (Lui) 65; Financial Services Authority (FSA), 'The Turner Review: A Regulatory Response to the Global Banking Crisis' (2009); Select Committee (n 3) para 33; The FSA Internal Audit Division, 'The Supervision of Northern Rock, a Lessons Learned Review' (March 2008) 1 < https://www.fca.org.uk/publication/corporate/fsa-nr-report.pdf> accessed 19 August 2019.

[8] Hudson (n 6) 190.

[9] These changes also align with the BoE's 'One Mission, One Bank' strategic plan, launched in 2014, that aimed to ensure closer policymaking across policy committees. The 'One Bank' strategic plan was a three-year

Amidst the unravelling failures of the London-based banks during the GFC, the UK Parliament quickly established the Special Resolution Regime (SRR) that specified the BoE powers in directly addressing the failing banks and implementing stabilisation option tools to ensure the orderly resolution process.[10] Under this regime, the BoE may exercise a broad selection of toolkits, that consist of the following stabilisation options: the Bank Insolvency Procedure (BIP), and the Bank Administration Procedure (BAP). The SRR is designed to ensure the continuity of banking services and critical functions, to protect and enhance the financial system's stability and public confidence, to protect the investors and depositors, and protect public funds in general.[11] Later, the Banking Reform Act 2013 also introduced the bail-in stabilisation option that imposes the costs of the banking failure on the shareholders and creditors of the bank to avoid the use of taxpayers' money.[12] Under this option, the UK legislation is allowed to entrust senior management of banks to hold the responsibility of ensuring institutions do not fail, while the shareholders will have their shares divested and creditors' claims cancelled or reduced to restore the financial viability of the bank.[13] Along with the Bank Recovery and Resolution Order 2014, the UK banking insolvency regime further expanded to encompass five stabilisation mechanisms, which are now encompassing: the transfer to a private sector purchaser, the transfer to a bridge bank, the transfer to an asset management vehicle, the bail-in option, and the transfer to temporary public ownership.[14]

Under the Financial Services Act 2010 (the FSA 2010), the UK also further introduced the rules on recovery and resolution plans by requiring all UK financial institutions to draw up *ex-ante* plans.[15] As the resolution authority, the BoE is also subjected to the responsibilities

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programme initiated by Governor Mark Carney, that aimed to enhance the pooling of knowledge, resources, and skills from across the organisation of the BoE. See: The Bank of England, 'Transparency and Accountability at the Bank of England' (December 2014) <https://www.bankofengland.co.uk/-/media/boe/files/news/2014/december/transparency-and-the-boes-mpc-response> accessed 19 August 2019.

[10] As specified under the Banking (Special Provision) Act 2008, which later replaced by the Banking Act 2009.

[11] Instead of mutually exclusive, Singh (2011) argued that these objectives are interdependent and interrelated with one another. See: The Banking Act 2009 s 4 (3A-9); Dalvinder Singh, 'The UK Banking Act 2009, Pre-Insolvency and Early Intervention: Policy and Practice' (2011) 1 Journal of Business Law 7 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1707406> accessed 19 July 2019.

[12] The Banking Reform Act 2013 was enacted in December 2013 following the Report of the Independent Commission on Banking headed by Sir John Vickers and the Parliamentary Commission on Banking Standards (PCBS).

[13] Only later will the shares be transferred to the affected creditors to provide compensation.

[14] The asset management vehicle option was added through the Bank Recovery and Resolution Order 2014 which will further equip the BoE to conduct the transfer of all or part of the business of the bank or the bridge bank. See: Banking Act 2009 s 12ZA, 12A; BoE 1998 s 1(3).

[15] Shortly before being replaced by the newly elected Coalition Government, the Labour Government introduced

specified under the Bank Recovery and Resolution Directive (BRRD) to conduct an annual review and update the resolution plans for firms. The FSA 2012 also required the BoE to provide the Treasury with the draft of the resolution plan or group resolution plan, the assessment of the systemic risk of the firm and other analysis of the implications of such assessment for public funds.[16] In the UK resolution process, the supervisors pull the trigger for the SRR process by determining the bank's status as 'failing' or 'likely to fail'. Once this decision is made, the BoE, as the resolution authority, adopt the stabilisation option tools to deal with the failing bank, with consent given by the Treasury. Moreover, the BoE may also apply the new BIP, that introduced some changes in the UK deposit insurance scheme which allow the Financial Services Compensation Scheme (FSCS) to offer the insured depositors quick access to their savings. Lastly, the BoE can also apply the bank-administration procedure to deal with a part of a bank that is not transferred or considered as the good part of the insolvent bank to carry on with its business activities.

In amending the Banking Act 2009, the FSA 2012 also extended the ability of the UK authorities to place the systemically important investment firms, group companies of investment firms and deposit-taking entities, and central counterparty clearing houses (CCPs) under the SRR, and amended the BoE's stabilisation powers to apply to parent undertakings of investment firms and deposit takers.[17] The UK financial stability framework is further enhanced with the introduction of the ring-fencing provision for banks that came into force from 1 January 2019, as specified under the Banking Act 2013.[18] Through the ring-fencing mechanism, UK retail banking is structurally insulated from risky activities within a banking group by introducing three types of banking activities: 'core activities', 'prohibited activities', and 'permitted activities', each of which are subject to specific restrictions.[19] A separate legal

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the FSA 2010, with aim to 'toughen the regulation of the financial system' by introducing new objectives and duties to the FSA related to financial stability and ensuring the authority has sufficient powers under the amended the FSMA 2000.

[16] The BRRD further requires BoE to review and update these plans, as well as to provide any material changes, including assessments and analysis, to the Treasury. See: Banking Act 2009; Bank Recovery and Resolution (No.2) Order 2014, SI 2014/3348 s 37-28.

[17] The FSA 2012 part 8.

[18] The concept of 'ring-fencing' was first introduced in the US through the National Bank Act of 1866 and later in the aftermath of the Great Depression, through the so-called the Glass–Steagall Act 1933.

[19] As Sir John Vickers summarised in his speech in 2011, this structural reform will bring an end to universal banking in the UK. Core activities encompass the related activity of accepting deposits; prohibited activities include dealing in investments as principal; and permitted activities are any activities not falling under the two other activities. See: The Banking Reform Act 2013 s 4(1); Sir John Vickers (Opening remarks, the Independent Commission on Banking Consultation Interim Report, 11 April 2011) access: <http://s3-eu-west-

entity (a 'ring-fenced body' or 'ring-fenced bank') should also be established within the banking group to perform critical retail activities, with a separate equity buffer, liquidity requirements and subject to a different governance regime.[20]

The current UK crisis management coordination is built through an MoU signed in 2017 on resolution planning and financial crisis management between the Treasury and BoE (and the PRA), specifying the coordination between each function relevant for safeguarding the stability of the UK financial system.[21] It is now clearly defined that the BoE holds the primary operational responsibilities for the financial stability framework, while the Treasury will only intervene once the BoE gives notification of the presence of a threat to financial stability and material risk to public funds.[22] The BoE will primarily be responsible for all matters from regulation and supervision, the LoLR function, and its responsibilities as resolution authority. The Chancellor and the Treasury, on the other hand, will be responsible for authorising the BoE proposal on the provision of emergency liquidity, the use of any stabilisation power with implications for the public fund, the use of liquidity support via the Resolution Liquidity Framework (RLF) and the exercise of the Temporary Public Ownership stabilisation option.[23] Overall, in times of crisis, the BoE and Treasury will establish closer engagement and policy coordination in managing the financial crisis and protecting the use of taxpayers' money and the overall economy.

1.amazonaws.com/htcdn/Interim+Report+publication+JV+opening+remarks+-+check+against+delivery.pdf> accessed 13 June 2018.

[20] The PRA-authorised person is recognised as an authorised person who has permission as a ring-fenced body, or by any other provision of the FSMA 2000, to carry on regulated activities that consist of or include one or more PRA-regulated activities under s 22A. See: FSMA 2000, Chapter II s 2B (5).

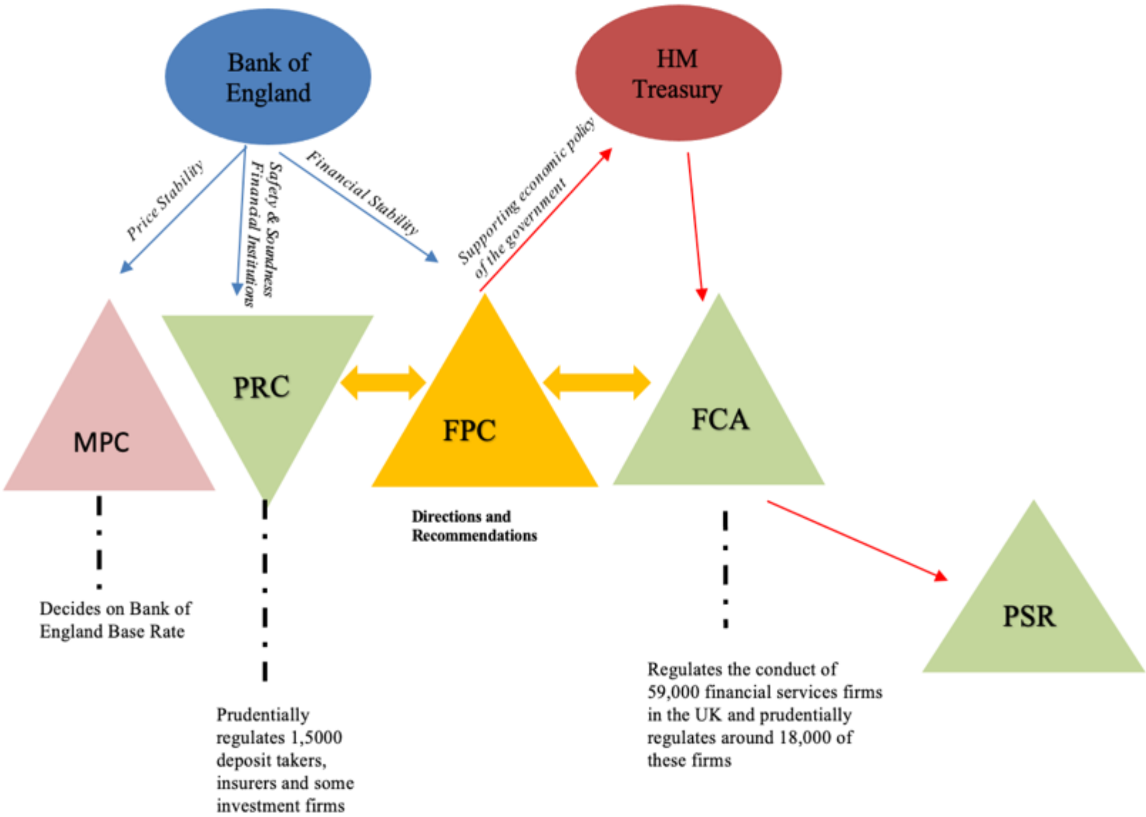
[21] FSA 2012 s 64.

[22] Ibid, s 58 (1).

[23] HM Treasury, 'Memorandum of Understanding on Resolution Planning and Financial Crisis Management' (October 2017) para.6.

IV.II.b. Analysis of the UK Financial Safety Net Authorities

Figure 4.1: The Structure of the UK FSN Framework



Source: Author's Illustration

IV.II.b.i The Bank of England (BoE)

Established in 1694 as a private entity, the BoE holds a statutory objective to 'protect and enhance' the stability of the UK financial system and maintain price stability, with a view to supporting the economic policy of the UK government.[1] In achieving these mandates, the BoE plays the principal roles of the monetary authority, the LoLR, micro-and macroprudential regulator and the resolution authority. Whereas some of these roles are delegated to its three statutory policy committees, as discussed in the following subsections, as the resolution authority the BoE is directly responsible for managing the failure of the UK incorporated financial institutions, including subsidiaries of foreign firms.

[1] To achieve this, the BoE Act s 2A (2) requires the BoE to work with other relevant bodies including the Treasury and the FCA. See: BoE Act 1998 s 2A and 11.

At the centre of the BoE is the Court of Directors, acting as the governing body for the BoE's affairs, other than monetary policy formulation, and has its members appointed directly by the Crown and the Chancellor.[2] Overall, the functions of the Court encompass the determination of the objectives and strategies in financial stability and manage the budget and oversight functions of the BoE.[3] As a public body, the BoE is answerable to both the UK parliament and the public. Its accountability is also ensured through an annual report on its activities to the Chancellor of the Exchequer, and to the public through the financial stability report and monetary policy report. Since 2013, the Court has also started publishing its minutes of meetings, albeit with a six-week delay in its release from the meeting taken place.[4]

IV.II.b.ii The Financial Policy Committee (FPC)

Prior to coming fully into force on 1 April 2013, an interim FPC was first created in 2011 as a sub-committee at the BoE's Court of Directors.[5] In 2016, the FPC status further changed to be a statutory policy committee within the BoE, with an equal statutory footing with the MPC and the newly established PRC. As specified under the FSA 2012 s 9C, the FPC is established to contribute to the BoE's financial stability objective and support the Government's economic policy (including growth and employment objectives). As the macroprudential supervisor, the FPC holds the functions of identifying, monitoring, and taking action to mitigate the systemic risk in protecting and enhancing the financial system's resilience.[6]

The FPC meets quarterly and has a broad membership consisting of the BoE Governor, four BoE Deputy Governors, the Chief Executive of the FCA, a member appointed by the Governor, five external members appointed by the Chancellor, and a non-voting representative from the

[2] Ibid, s 2 (1).

[3] After the abolishment of the Oversight Committee by the 2016 Act, the oversight function is now assigned to the Court of Directors. In determining the Bank's financial stability strategy, the Court is required to have a prior consultation with the FPC and the Treasury. See: The BoE 1998 s 2, 9A (2); The 2016 Act s 3 (2)(b); HM Treasury, *The Financial Services Bill: the Financial Policy Committee's Macroprudential Tools* (Cm8434, 2012) 19.

[4] In November 2011, the House of Commons Treasury Committee called for a 'radical overhaul' of the BoE's governance, especially in relation to the transparency of the operation of the Court. The pressure was given by the Treasury Committee over the Court to make available the minutes of its meetings taken during the financial crisis, which was first denied using the provisions of the Freedom of Information (FoI) Act. In 2014, the Court decided to release the minutes of its historical meetings from 1914–1987 to foster the governance and accountability of the BoE. The BoE also decided to make special release of the minutes between 2007–2009, responding to the request by the Treasury Committee to understand the roles of the Court in the crisis. See: The Bank of England, 'Annual Report 2015' (15 June 2015) 51 < https://www.bankofengland.co.uk/annual-report/2015> accessed 19 August 2019; Treasury Committee, *Accountability of the Bank of England* (HC 2010-12, 874).

[5] FSA 2012 s 9B (1), 9ZA (4).

[6] Ibid, s 9C (2).

Treasury.[7] The achievement of the financial stability objective of the FPC is monitored and overviewed by the BoE Court of Directors, whereas the Chancellor will specify its annual recommendation and remits on how the FPC could support the economic policy of the Government. Besides its annual policy remit, the statutory accountability duties of the FPC are also conducted through the publication of its Record of Meetings, the Financial Stability Reports (FSRs), and quarterly Policy Statements.[8] Through the publication of the biannual FSRs—which will be laid before Parliament by the Treasury—the FPC provides a summary of its actions, an explanation on the rationale of the FPC's actions, and updates on the necessary progress of the direction received by the regulators, as well as the estimated costs and benefits of such action. In making its decisions, whenever it is possible, the FPC should reach its decision by consensus, or by vote as the alternative. Any decisions made by the Committee must also be set out in a formal record of policy meetings, laid before the Parliament and published within six weeks of the meeting.[9] In its record of meetings, the FPC must also specify its decisions to give or revoke direction to the FCA and PRA on macroprudential measures, and make recommendations within the BoE and the Treasury.

IV.II.b.iii The Prudential Regulation Committee (PRC)

Established in March 2017, the PRC is the designated governing body of the PRA, through which the BoE exercises its functions as the microprudential authority. Like the MPC and FPC, the PRC is chaired by the Governor with membership composition similar to the FPC: a Deputy Governor for financial stability; a Deputy Governor for markets and banking; a Deputy Governor for prudential regulation; and the Chief Executive of the FCA (but without a Deputy Governor for Monetary Policy and a representative from the Treasury).[10] It has one external member appointed by the Governor of the BoE with the approval of the Chancellor of the Exchequer, and at least six external members directly appointed by the Chancellor of the Exchequer. The PRC delegates the day-to-day management and implementation of the PRA functions to the Chief Executive, who is also the BoE's Deputy Governor for Prudential

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[7] The four BoE Deputy Governors come from financial stability, markets and banking, monetary policy, prudential regulation divisions. Each member of the FPC is personally accountable to Parliament and will usually be asked to provide testimony at least once a year. The FPC members are also subject to a set of code of conduct, and a statutory conflict of interest code of practice separate to the BoE.
[8] FSA 2012 s 9G (1) (d), 9H, 9O, 9R, 9U (2), 9W.
[9] In the case that a vote is taken, the FPC is required by Act 2012 to include the balance of arguments in the record of the meeting, where members should be free to explain their differences.
[10] BoE Act 2016 s 30 (A) (2).

Regulation. The Chief Executive of the PRA is also responsible for preparing the draft of the prudential regulation strategy, any proposed revision drafts of the annual budget for PRA functions, and any proposed variations.

Previously, in 2012, the PRA was established as the UK prudential authority responsible for regulating the solvency and prudential practices of 1,500 deposit takers, insurers and some investment firms.[11] The PRA has a general objective of promoting the safety and soundness of its authorised persons.[12] The authority also has an insurance objective, in contributing to secure an appropriate degree of protection for those who are or may become policyholders, and additional objectives concerning specified activities.[13] As the UK prudential supervisor, the PRA is also accountable to ensure that every financial institution it supervises develops a Recovery Plan, which should be regularly reviewed and updated.

IV.II.b.iv The Monetary Policy Committee (MPC)

The MPC was established in 1997, with the aim to operationalise the monetary independence granted to the BoE, by setting base interest rates to achieve the inflation target set by Government through the Treasury. Under the BoE Act 1998, the MPC has a statutory objective to help the BoE maintain price stability, and support the HM Government's economic policy, including its growth and employment-related goals.[14] The MPC comprises the Governor as its chair, three Deputy Governors (for Monetary Policy, Financial Stability, and Markets and Banking), the BoE's Chief Economist, and four external members appointed by the Chancellor. A representative from the HM Treasury may also attend and be involved in the MPC meetings but without voting rights. The MPC conducts meetings eight times a year, in which voting takes place to set the interest rates and be released immediately to the public, together with the

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[11] The formal powers of the PRA are administered under the FSMA 2000 as amended by the FSA 2012.

[12] In order to advance this objective, the PRA should actively ensure the business of its authorised persons is not creating any adverse effect on financial stability (prudence practice); to minimise the adverse effect from the failure of a PRA authorised person; to ensure that the business of ring-fenced bodies is conducted in a prudent manner, and is protected from risk that could adversely affect the continuity of core financial services; as well as to minimise the negative effect from the failure of a ring-fenced body or its members on the financial stability in general. See: FSA 2012 s 2B (2) (3).

[13] In the exercise of its general and insurance objectives, the PRA is also required to ensure the secondary objective of facilitating effective competition in the markets for services provided by PRA-authorised persons in carrying out regulated activities. To achieve these objectives, the FSMA 2000 s 2J provides the PRA with a general power in rulemaking which includes technical standards, codes, general policy, and principles over firms it regulates and, on regulated activities and other unregulated business activities that such firms carry out. See: FSMA 2000 s 2D (2), 2H; FSA 2012 s 2C (2).

[14] BoE Act 1998 s 11.

minutes of the MPC meeting.[15] In achieving its objectives, the MPC is assigned statutory powers to obtain information from institutions for the preparation and publication of its quarterly Monetary Policy Report.[16] The BoE's Court of Directors is directly responsible for monitoring and reviewing the procedures followed by the MPC, including the information collection conducted by the Committee.[17]

IV.II.b.v The HM Treasury

In the UK, the HM Treasury is the Government's economic and finance ministry with responsibility for public spending, the financial services policy, strategic oversight of the UK tax system, delivery of infrastructure projects, and to ensure the economy is growing sustainably. Besides holding the statutory mandate as the body to which the FCA is accountable, the Treasury has an additional role in determining the contents of the BoE's policy actions and its policy committees' policies, to keep it aligned with the Government's economic policies. The Treasury also holds power to alter, add or remove a BoE deputy governor as specified under the BoE Act 1998 s 1A. The Treasury writes to the FCA and PRA about the aspects of economic policy, to which both should pay due consideration in advancing their objectives. The BoE Act 1998 also further requires the Chancellor to specify, at least once a year, written remits and recommendations to the FPC over matters that it should consider in being responsible for the achievement of the BoE's Financial Stability Objective, their contribution in supporting the Government's economic policy, and all other matters relevant to the exercise of its functions.[18] In determining the operation of macroprudential policy, the Treasury administers the power to set out specific tools directed by the FPC to the FCA and the PRC under the FSA 2012 s 9L.[19] In protecting the taxpayers' money and the general public interest, the Treasury also holds the vital key in authorising the use of any stabilisation power that may involve public funds and the use of any public sector backstop funding mechanism.

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[15] Before the Act 2016, the MPC met every month to make these decisions; however, it received much criticism regarding meeting 12 times a year, when there is not much new information available to be discussed. See: Ibid, s 15.
[16] Prior to November 2019, the Monetary Policy Report was known as the Inflation Report.
[17] BoE Act 1998 s 16(1)(2).
[18] The Committee can reject such recommendations on this, as long as it provides reasons for not acting accordingly. See: The FSA 2012 s 9C (1) (b), 9D (1), 9E (1) (a)-(d); the Bank of England Act 1998 s 9D and 9E.
[19] These measures should be first prescribed by the Treasury, and laid before and approved by resolution of each House of Parliament.

IV.II.b.vi The Financial Conduct Authority (FCA)

As one of the successors of the FSA, the FCA takes over the FSA's market regulatory functions, enforcement and supervision of around 58,000 firms and the FSA's prudential regulation function on 18,000 of these firms in the UK.[20] The authority's main operational objectives are: including the consumer protection objective, the integrity objective, and the effective competition objective.[21] The FCA has general functions in making rules, preparing and issuing codes, giving general guidance, and determining the general policy and principles for all regulated firms in the UK. For its consumer protection objective, the FCA has primary responsibilities in securing an appropriate degree of protection for consumers, and ensuring the regulated firms follow the regulation in handling their customers.[22] The FCA is also authorised to introduce intervention rules, require the withdrawal of misleading financial promotions, and impose the warning notice. The FCA also works to protect and enhance the integrity of the UK financial system by regulating financial crime and market abuses. Lastly, the FCA also aims to 'promote effective competition in the interests of consumers and the markets' for both regulated financial services, and services provided by a recognised investment exchange.

Although the FCA is a limited company financed by its members—and thus independent from the Government—at least once a year, it must report and answer the HM Treasury and Parliament on its functions and the progress of its performance. At the head of its decision-making, the FCA is governed by a Board that consists of a Chairman and one Chief Executive appointed by the Treasury, the BoE's Deputy Governor for prudential regulation (Chief Executive of the PRA), two members assigned by the Secretary of State and the Treasury, and at least one other member appointed by the Treasury.[23]

IV.II.b.vii The Financial Services Compensation Scheme (FSCS)

The FSMA 2000 established the FSCS in 2001, as the statutory compensation scheme manager with a statutory 'paybox plus' mandate, and accountability to both the PRA and the FCA.[24]

[20] The FCA only regulates the firms outside banks, building societies, credit unions, insurers, and large investment firms that have been authorised by the PRA. Since 2017, the FCA discontinued to use the term UK Listing Authority (UKLA) to refer the FCA's primary market functions. The regulation of consumer credit that previously exercised by the Office of Fair Trading is now part of FCA responsibility.
[21] FSA 2012 s 1B (3).
[22] Ibid, s 1C (1).
[23] Ibid, Schedule 1ZA Part 1 (2).
[24] The FSCS was first established through the Banking Act 1987 to administer the UK Deposit Protection Scheme.

The FSCS has the main functions of establishing and implementing procedures to fulfil its responsibilities in administering the UK Deposit Protection Scheme, determining and collecting levies from depositors, and assessing and paying compensation to claimants. Based on the FSMA 2000, the FSCS is conducted by the Board of Directors appointed jointly by the PRA and the FCA, with a Chairman appointed through the Treasury's approval.

The FSCS compensation scheme is designed to ensure market confidence, and protect UK customers when financial institutions (authorised by the PRA and regulated by the PRA and/or the FCA) fail to meet their obligations or constitute default. The FSMA 2000 also requires the Board of the FSCS to report on an annual basis to the PRA and the FCA, who are responsible for making rules for compensation schemes and determining the provisions of the FSCS's protection for each type of regulated financial activity.[25] Under the SRR, the Treasury also holds the authority to require the FSCS to make payments to the Treasury or any other institutions, alongside the exercise of a stabilisation power.[26] The Banking Act 2013 also further introduces depositor preference, and enhances information-sharing between the FSCS and the Treasury.[27]

IV.II.b.viii The Payments Systems Regulator (PSR)

Established as an independent subsidiary of the FCA through the Banking Act 2013 s 40, the PSR became fully operational on April 1, 2015. The PSR holds primary mandates in promoting effective competition in the payment systems market and market for services provided by payment system (competition objective), promoting the development and innovation of payment system (innovation objective) and ensuring the operation and development of the

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See: The Bank of England—Prudential Regulation Authority and Financial Services Compensation Scheme, 'Memorandum of Understanding between the Bank of England and the Financial Services Compensation Scheme Ltd' (September 2019) para 9; FSMA 2000 s 212.

[25] The PRA and FCA are required to ensure that the FSCS is, at all times, capable of exercising its functions under FSMA Part 15A and 15. The PRA is responsible for making rules that determine protection in relation to deposits and insurance provision, including the rules that are part of the PRA Rulebook, which includes rules on Depositor Protection Part, Dormant Account Scheme Part and the Policyholder Protection Part. Meanwhile, the FCA is responsible for making rules for all other types of financial activity covered by the FSCS. The Treasury, however, has the authority to approve or reject the rules made by the PRA and FCA in relation to the compensation scheme. See: FSMA 2000 s 213(1), (1A).

[26] This is applied to institutions that are likely to fulfil their claims, but due to the exercise of the stabilisation power under Part 1 of the Banking Act 2009 become unable to satisfy such a claim. See: ibid, s 214B.

[27] The deposit preference provides that the FSCS-covered deposits are to be preferential debts and prioritised in comparison to the claims of unsecured creditors. See: Banking Reform Act 2013 s 49 (4), 54, 96.

market takes account and promotes the interest of users (service-user objective).[28] In achieving these objectives, the PSR is authorised to give general directions and guidance to the payment system participants and determine the general policy and principles.

The Board governing the PSR consists of a Chair—who is also the FCA's Chairman—a Managing Director, a Director of Retail Banking and FCA Payment Supervision, and four other members appointed by the FCA with the Treasury's approval. The Treasury holds powers to determine the designation and the revocation of a designated payment system, based on the consultation result with the PSR and the BoE (when applicable).[29] To date, the PSR has closely coordinated the exercise of its functions together with the BoE, the FCA and the PRA, to prevent an adverse material effect on the advancement of other regulators' objectives and obtain any information and advice relevant to common regulatory interest.[30]

IV.II.c. Current Operationalisation of Macroprudential Supervision

The enactment of the FSA 2012 has established the macroprudential framework in the UK for the first time, with the creation of the high-level Committee, the FPC, to support the achievement of the BoE's financial stability objectives. In its operations, the FPC is bound to the stability of the graveyard clause that derived from its secondary mandate to support and ensure the consistency of its policies with the Government's economic policy, which regularly updated through the Chancellor's annual written remits and recommendations.[31] The FPC is thus mandated not to exercise its functions in a way that would be likely to have a significant adverse effect on the capacity of the financial sector to contribute to the growth of the UK economy in the medium or long term.[32] Hence, in addressing the systemic risk, the FPC should

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[28] In achieving these objectives, the PSR must have regard to the 'importance of maintaining the stability of, and confidence in, the UK financial system; the importance of payment systems in relation to the performance of functions by the BoE in its capacity as a monetary authority; and the regulatory principles of Section 53 of the Banking Reform Act 2013'. See: Ibid, s 49 (2), 50, 51, 52.

[29] Ibid, s 43, 45 (1).

[30] The 2015 MoU between the BoE, FCA, PSR and PRA specifies each regulator's functions and duties to ensure the coordinated exercise of their functions. This duty is reciprocal from these three authorities toward the PSR too, in which the BoE has the duty under its functions of inter-bank payment systems (Part 5 of the Banking Act 2009), the FCA for its functions as specified under the FSMA 2000 s 1A (6), and the PRA for its functions as specified under the FSMA 2000 s 2AB (3).

[31] The FPC is required to disclose its identification, assessment of the possible systemic risk, and any relevant information; take action in addressing the systemic risk; and consider the objective of protecting and enhancing the resilience of the UK system in responding to systemic risk. See: HM Treasury, The Financial Services Bill: the Financial Policy Committee's Macroprudential Tools (Cm8434, 2012) 16; the BoE Act 1998 s 9C (1), (4).

[32] The Chancellor George Osborne raised concerns over the importance of the BoE not overly focusing just on banking stability, and thereby undermining the near-term economic recovery. See: George Parker and Brooke

act proportionately and balance the pursuit of stability with the wider impact of its actions. The FSA 2012 specifies systemic risk as ‘a risk to the stability of the UK financial system as a whole or of a significant part’ that emerges from the structural feature of financial markets, distribution of risk and an unsustainable level of leverage, debt, or credit growth.[33]

To date, the FPC has imposed its power to make recommendations to the PRA and FCA regarding the mortgage loan to income ratios (since 2014) and mortgage affordability (since 2017). The FPC has asserted that the potential instabilities from the provision of cross-border financial services during the transition period of Brexit on the UK financial sector—that ended in December 2020—have been largely mitigated.[34] Prior to the COVID-19 pandemic, the FPC also noted the potential danger of liquidity mismatch in open-ended funds that could incentivise investors to redeem funds ahead of others and may result in asset sales.[35]

In the past decade, the UK major banks have significantly strengthened their resiliencies by holding higher capital and liquid assets that were well maintained during the pandemic crisis. By reducing the capital ratio and the release of the CCyB rate—until at least the end of 2021—the UK banking system has been able to maintain its financing and absorb the potential losses among the UK households and businesses during the pandemic crisis.[36] This was mainly due to the Government and BoE guarantees of nearly £90 billion in 2020, channeled to banks and financial markets to help support the UK businesses.[37] Thus, the unprecedented COVID-19 crisis increased the UK net bank-lending to its small–medium enterprises (SMEs) in 2020 to be more than 40 times higher than the 2016-2019 average, which primarily comes from the government-backed loan schemes.[38] Currently, the FPC is closely observing the UK retail and property sectors, which may create potential systemic concerns from the failing property prices

Masters, ‘George Osborne warns Bank of England against curbing growth’ (*Financial Times*, 30 April 2013) <https://www.ft.com/content/5bd92878-b1b2-11e2-9315-00144feabdc0> accessed 21 April 2020.

[33] FSA 2012 s 9C (3) & (5).

[34] The Bank of England, ‘Financial Stability Report 2020’ (December 2020) ii <https://www.bankofengland.co.uk/financial-stability-report/2020/december-2020> accessed 12 April 2021.

[35] Open-ended funds may include mutual funds, hedge funds and exchange-traded funds (ETFs). See: The Bank of England, ‘Financial Policy Summary and Record of the Financial Policy Committee Meeting on 11 March 2021’ (26 March 2021) 3 < https://www.bankofengland.co.uk/financial-policy-summary-and-record/2021/march-2021> accessed 11 April 2021.

[36] In 2019, the CET 1 ratios held by UK banks were over three times higher than in 2007. In December 2020, the UK major banks and building societies increased its aggregate CET 1 capital ratio to 16.2%. See: Ibid; The BoE (n 57) 11.

[37] BoE (n 57).

[38] Ibid, 2.

(especially retail and office segments) and its impacts on the UK middle and small banks.[39] There is also risk from the increasing number of unemployment and insolvencies that could affect bank capital position and credit losses.[40] Additionally, the sharp increase in the volume of corporate bonds that have lost their investment-grade status since the beginning of the pandemic crisis still imposes a significant risk to UK financial markets, as it could potentially lead to fire sales and disproportionate tightening in credit conditions.[41]

IV.III CASE STUDY II: INDONESIA

IV.III.a. Overview of Financial Stability Framework

In the last three decades, the Indonesian financial stability framework has been primarily shaped by the socio-economic and political impacts resulting from its experiences in riding out two major financial crises, the 1997 AFC and the 2008 GFC. Following the complete collapse of its banking sector amidst the AFC panic, the Indonesian Banking Architecture blueprint programme 2004—2014 marked a new phase of the monetary and central banking regime and the country's economic recovery.[42] The foundation of the Indonesian FSN framework started to take shape with the granting of operational independence to Bank Indonesia (BI), in its conduct of monetary policymaking as embodied in the enactment of the Central Bank Act No.23/1999 (CBA 1999).[43] At the end of its blanket guarantee and restructuring programme—initiated in January 1998—the Government also further established the deposit insurance scheme and banking resolution regime under the Indonesian Deposit Insurance Corporation (IDIC) Acts No. 24/2004 (IDIC Act 2004).

Although not fully completed, the country's FSN framework and financial stability legal foundations succeeded in shielding the Indonesian economy during the GFC.[44] In weathering

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39 IMF, '2020 Article IV FSAP Consultation' (IMF Country Report No.20/320, December 2020) 20 <https://www.imf.org/en/Publications/CR/Issues/2020/12/18/United-Kingdom-2020-Article-IV-Consultation-Press-Release-Staff-Report-Staff-Supplement-and-49971> accessed 12 January 2021.
40 The BoE (n 58).
41 The BoE (n 57) 6.
42 The blueprint programme was designed to enhance the resilience of the Indonesian banking system in supporting economic growth through improvement in the six pillars of the banking system: banking structure, regulatory system, supervisory system, banking industry, infrastructure, and consumer protection.
43 This momentum was largely driven by the IMF programs that aim to reform the country's institutional and legal frameworks, as specified under the Letter of Intent of IMF in January 1998. See: IMF, 'Indonesia—Memorandum of Economic and Financial Policies' (Letter of Intent, 15 January 1998) <https://www.imf.org/external/np/LOI/011598.htm> accessed on 12 January 2020.
44 The AFC led to a significant decline in the country's economic growth, collapse of exchange rate and Rupiah

the global contagion impacts in 2008, the newly established deposit insurance scheme and BI liquidity facilities admirably supplemented the Government's quick responses in issuing three emergency laws and establishing the Financial System Stability Committee (FSSC).[45] However, the general public's low confidence in the credibility of Indonesian authorities—from the mishandlings and embezzlement cases amidst the 1998 banking restructuring programme[46]—instead turned the evaded financial catastrophe into a national political crisis, that imperilled the functioning of its crisis management framework. The MoF and BI's decision to designate Bank Century (BC)—a medium-sized bank—as a systemically important threat, and to provide a bailout of Rp 630 billion (US$60 million) resulted in an institutional crisis and political charade that peaked with the resignation of the Minister of Finance and ten years imprisonment for BI Deputy Governor in 2014.[47] The judicial reviews by the Supreme Court and the Plenary Meeting of the House of Representatives in 2010 concluded that the decisions made by the Indonesian FSN authorities in their handling of BC's failure to be illegitimate, and classified as unlawful action.[48] Although there are pieces of evidence for an embezzlement case behind the provision of liquidity facilities to BC—which was imprudently managed by its

value, and sharp rise in the inflation rate; however, the impacts of GFC on economic growth and inflation were rather mild. In September 1997, Indonesian banking sector had a loan-to-deposit ratio exceeded 100% in 1997 and the ratio of NPLs to total loans was 27%. While in 2008, NPLs at less than 4%, with loan-to-deposit ratio less than 80% and the capital adequacy requirements at 17%. See: Muhammad Chatib Basri, 'Twenty Years after the Asian Financial Crisis', in Luis E Breue, Jaime Guajardo, and Tidiane Kinda, *Realizing Indonesia's Economic Potential* (IMF 2018) 22 < https://www.elibrary.imf.org/view/books/071/24870-9781484337141-en/24870-9781484337141-en-book.xml> accessed 12 January 2020.

[45] Through the Government Regulation in Lieu of Acts No.4/2008 on Financial System Safety Net on 15 October 2008, the government established the emergency crisis prevention and management framework consisting of the Minister of Finance and Governor of BI. The President also quickly enacted two other emergency laws, the Government Regulation in Lieu of Acts No.2 in amending the BI Acts No. 23/1999, and the Government Regulation in Lieu of Acts No.3 in increasing the deposit insurance coverage ceiling from Rp. 100 million to Rp. 2 billion per depositor, on 13 October 2008.

[46] Following the AFC, the government established an ad hoc Indonesian Banking Restructuring Agency (IBRA) to administer the blanket guarantee programme and restructure distressed banks. However, the IBRA was widely criticized for its lack of transparency, and controversies in the abuse of loan programmes that channeled selectively to banks with strong political connections with the previous political regime. Most of the banks that received government supports and loans facilitation programmes were the very same banks that had operated imprudently, prior to the AFC. See: Kusumaningtuti SS, *Peranan Hukum dalam Penyelesaian Krisis Perbankan di Indonesia (The Roles of Law in Indonesian Banking Crisis Resolution)* (RajaGrafindo Persada 2010) 180; Basri (n 67) 35.

[47] Jerry Adiguna, 'I Did the Right Thing: Sri Mulyani' (*The Jakarta Post*, 3 May 2014) <https://www.thejakartapost.com/news/2014/05/03/i-did-right-thing-sri-mulyani.html> accessed 12 January 2020.

[48] In the FSSC meeting on 21 November 2008, BI as the banking supervisor, recommended the bailout of Century Bank to the FSSC with projected cost of Rp 630 billion (approximately US 60 million) only. After the IDIC's takeover, liquidity was simultaneously injected to BC amounting to Rp. 2.8 trillion. After the takeover concluded, there were further injections of Rp. 2.2 trillion and Rp. 1.2 trillion in December 2008 and February 2009 to the BC. However, the House of the Representatives and the Vice President at the time, Jusuf Kalla, later claimed that these injections were illegal and unauthorised.

owner and executives—the decision to directly attack and nullify the discretionary judgement of the FSSC in assessing the potential systemic threat of the BC failure may instead create a dangerous precedent for public policymaking in Indonesia. It may, instead, set a precedent for the criminalisation of independent FSN authorities, and thus increase the risk of bias towards inaction in mitigating systemic risk and managing the crisis in general.

In the post-GFC era, the Indonesian financial stability framework was further completed with the long-awaited establishment of the Financial Services Authority (*Otoritas Jasa Keuangan* / OJK) as the country's first integrated authority, and the FSSC as the statutory crisis management committee in 2016.[49] The enactment of the Financial Services Authority Acts No. 21/2011 (OJK Act 2011) effectively started the consolidated supervisory regime in the country, and the institutionalisation of the macroprudential framework administered under BI. Assigned the single mandate to maintain price stability, BI's role as macroprudential supervisor has not yet been explicitly mentioned under the CBA 1999. However, in ensuring its commitment to financial stability, since 2011, BI has started to actively implement macroprudential policy instruments as a vital part of its policy mix, in balancing the achievements of price and financial stability goals.[50] The OJK Act 2011 also mandated the close coordination between BI and OJK in determining the bank's minimum capital, information-sharing on the banking system, fund admission from abroad, activities related to the banking business, and designation of SIFIs.[51] Over the years, the close cooperation and relational coordination built between the two authorities has helped foster market confidence over the financial regulatory framework in Indonesia.

The complete picture of the Indonesian CMF is finally completed by enacting the long-awaited Prevention and Resolution of Financial System Crises Acts No.9/2016 (FSSC Act 2016) and establishing the standing FSSC chaired by the MoF.[52] The Act has enhanced the clarity of the

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[49] The CBA No. 23/1999 imposed the establishment of such authority by the end of 2002, but later, further amended through the Acts No.3/2004 Article 34 to push back the deadline to the end of year 2010. The government explained the delay was related to inadequate infrastructure, lack of funding and human resources. See: The CBA 1999 Art 34; Perry Warjiyo and others, *Bank Sentral Republik Indonesia: Tinjauan Kelembagaan, Kebijakan dan Organisasi (Republic of Indonesia Central Bank: Institutional, Policy and Organisational Review)* (Pusat Pendidikan dan Studi Kebanksentralan (PPSK) 2003),145.

[50] Ayomi Amindoni, 'Bank Indonesia to Strengthen Policy Mix Deal with Economic Integration' (*The Jakarta Post*, 24 November 2015) <http://www.thejakartapost.com/news/2015/11/24/bi-strengthen-policy-mix-deal-with-economic-integration.html> accessed 19 November 2020.

[51] OJK Act 2011 Art 39, 41 (2).

[52] After a long process of redrafting and resubmitting the proposal of draft Bills in 2008, 2009 and 2012, the House

roles and responsibilities of each FSN authority, that includes the use of the MoF's fiscal policy to control fiscal deficit, public debt and the stability of government bond market; BI's monetary, macroprudential and payment system policies to mitigate risks arising from the currency and macro-financial imbalances; OJK's microprudential supervision to maintain the safety and soundness of institutions; and IDIC's roles in the resolution of financial institutions.[53]

In the crisis-prevention scheme, the FSSC Act 2016 not only specifies the coordination mechanism in monitoring and maintaining financial stability, but also determines the criteria and indicators for the assessment. Each FSSC member will monitor early-warning indicators, and conduct crisis-management protocols based on its respective roles and responsibilities. The result of these early-warning protocols and indicators will be used as the basis for discussion and policy coordination in the FSSC quarterly meetings and monthly meetings at the deputy level among its members. The FSSC also actively conducts regular national simulation in crisis prevention and management, alongside the crisis-management protocols conducted by each of its members to assess their preparedness, and ensure clarity on the conduct and procedures in dealing with an emergency situation.[54] These simulations primarily focus on the implementation of the resolution process, the decision-making process, and effectiveness of the inter-agency coordination among its members.

The Act further regularly determines the criteria for the designation of SIBs by the OJK following the recommendations given by BI based on their asset size, interconnectedness, and complexity, every six months.[55] Each SIB is required to meet higher capital adequacy and liquidity ratios, maintain recovery and resolution (action) plans as approved by OJK, and fulfil

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of Representatives finally approved the FSSC Act in 2016. The initial Financial System Safety Net Act proposed by the government was rejected due to the bail-out clause, which is now is completely ruled out and replaced with bail-in provision.

[53] Perry Warjiyo, 'Indonesia: The Macroprudential Framework and the Central Bank's Policy Mix', in the Bank for International Settlements, 'Macroprudential Frameworks, Implementation and Relationship with Other Policies' (94 BIS Papers 2017) < https://www.bis.org/publ/bppdf/bispap94.htm> accessed 12 April 2019 191.

[54] The simulation is conducted on every level of the decision-making of the four FSSC members, and examined by a team consists of representatives from the World Bank, IMF and Australia–Indonesia Partnership for Economic Governance (AIPEG). Each year, the focus of the national crisis simulation will change to expand the coverage of the evaluation. See: Bank Indonesia, 'Annual Report 2018' (May 2019) 88 < https://www.bi.go.id/en/publikasi/laporan/Pages/LKTBI-2018.aspx> accessed 19 August 2020; Bank Indonesia, 'Annual Report 2019' (June 2020) 69 <https://www.bi.go.id/en/publikasi/laporan/Pages/LTBI-2019.aspx> accessed 19 August 2020.

[55] OJK Act 2011 Art 17 (1) (3).

additional capital requirements to absorb losses during times of distress.[56] OJK will also ensure that the SIBs' recovery and resolution plan requires the shareholders to increase bank capital or convert certain debt into equity, as part of the bail-in mechanism imposed under the FSSC regime.

The FSSC Act 2016 also clearly specifies the mechanisms for the resolution of liquidity and solvency problems of SIBs, and the respective roles and responsibilities of each FSN authority in supporting the IDIC in its resolution process.[57] The FSSC Act 2016 also specifies the OJK's responsibility to promptly inform and coordinate with BI, once one of its banks faces a liquidity problem and requires the LoLR facility. The OJK Act 2011 Art 20(7) also provides that OJK and BI are coordinating in supervising the SIBs that receive short-term liquidity loans or short-term shariah liquidity financing. The BI's new Short-Term Liquidity Assistance programme, introduced in 2018, further facilitates the OJK's active involvement in the application process, assessment, and supervision of fund usage.[58] In 2019, BI and IDIC signed two MoUs to further coordinate its policies and functions, regarding the preparation of the resolution mechanism and exchange of information on data portfolio for government securities.[59]

In the event that the recovery plan drawn by SIBs and implemented under the supervision of OJK failed to solve the solvency problem, OJK will request the IDIC to intensify the preparation of the resolution process, and may order bank management to maintain its financial condition, assisting in the transfer of assets, and /or facilitating the IDIC in its tasks, and in the acquisition process.[60] As the microprudential authority, OJK is responsible for implementing the SIB recovery planning, and promptly responding using its corrective action powers to the emerging stress arising under its remit. Only when the situation deteriorates may OJK convene the FSSC emergency meeting to authorise the handover of the resolution process to IDIC, and

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[56] Warjiyo (n 76) 191.
[57] FSSC Act Art 18(1), 19(3), 21(7), 43, 41 (1) (o).
[58] In the aftermath of the Bank Century bailout scandal, BI raised the financing requirements and mechanisms, by prioritising prudential aspects to prevent moral hazard. This is also part of its response to the FSAP recommendation in 2017, on the amendment of BI's emergency liquidity assistance (ELA) framework, by extending the criteria for its provisions. See: Bank Indonesia, 'Annual Report 2017' (May 2018) 61-62 < https://www.bi.go.id/en/publikasi/laporan/Pages/LKTBI-2017.aspx> accessed 19 August 2020; IMF, 'Indonesia: Financial System Stability Assessment' (Country Report 17/152, June 2017) 28 < https://www.imf.org/en/Publications/CR/Issues/2017/06/12/Indonesia-Financial-System-Stability-Assessment-Press-Release-and-Statement-by-the-Executive-44981> accessed 12 August 2019.
[59] MoU Bank Indonesia and IDIC No.21/12/NK/GBI/2019 and No. 21/6/NK/GBI/2019 on 'Coordination and Cooperation on the Implementation of Function, Task and Authority of Bank Indonesia and IDIC'.
[60] FSSC Act 2016, Art 21(1)-(4).

determine other measures that need to be taken by other authorities.[61] As the resolution authority, IDIC may exercise the powers specified under the FSSC Act 2016 to transfer the assets and liabilities of the failing bank to either beneficiary bank, intermediary/bridge bank, or directly carry out the management of the bank.[62]

In managing the systemic crisis, the FSSC Act 2016 strictly limits any possibility of using government funding or bailout option as a source of financing for the Banking Restructuring Programme.[63] Although any member of the FSSC may initiate a meeting, the FSSC's decisions and responses need to be first discussed and decided through consensus, to ensure all members share the same judgment over the existence of a crisis.[64] Once a consensus is reached, the FSSC is still required to submit a recommendation to the President of Indonesia to give its approval in declaring the crisis status on the financial system and authorise the FSSC policy recommendations.[65] In the event that the President rejects the recommendations submitted by the FSSC, the problems identified will instead be addressed by its members according to their respective tasks and responsibilities.[66] Therefore, the President essentially holds the highest power to approve expertise judgment on the emergence of the systemic crisis, and the recommended policy measures to mitigate the crisis. There is a significant risk that Indonesia's current financial stability arrangements may create a risk of politicisation on resolution decisions, that could further delay and complicate crisis responses.[67]

Currently, under the National Legislation Programme 2021, Indonesia is anticipating further amendments on its financial stability legal arrangement and the revision of the IDIC Act 2004

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[61] Ibid, Art 21 (6)-(7).
[62] Meanwhile, the resolution of non-D-SIBs will be directly managed by the IDIC, after OJK gave instruction for the company's closure based on the IDIC Act. See: Ibid, Art 22; The IDIC Act Art 21 (5), 22 (1), 40.
[63] Allmen and Kang (2018) point out that the complete elimination of public funding in the resolution framework under the FSSC Act 2016 may be overly constraining, especially for the case of systemic bank resolutions. Besides which, the current funding structure and lack of clear creditor-hierarchy in Indonesia will create a major challenge for implementation of bail-in tools. They also point out the need to develop clearer guidance on how bail-in powers will be applied in respect of deposits and other instruments without bail-in clauses. See: The FSSC Act 2016 Art 41 (1) (o), 39 (1); Ulric Eriksson von Allmen and Heedon Kang, 'Reinforcing Financial Stability', in Luis E Breue, Jaime Guajardo, and Tidiane Kinda, *Realizing Indonesia's Economic Potential* (IMF 2018) < https://www.elibrary.imf.org/view/books/071/24870-9781484337141-en/24870-9781484337141-en-book.xml> accessed 12 January 2020 296; IMF (n 81) 28, 295-6.
[64] FSSC Act 2016 Art 11.
[65] ibid, Art 38 (1).
[66] ibid, Art 33.
[67] Allmen and Kang (n 86) 295; FSB, 'Peer Review of Indonesia' (February 2014) 27 <https://www.fsb.org/2014/02/r_140228/> accessed 12 June 2020.

and CBA 1999, to incorporate the arrangements under the OJK Act 2011 and the FSSC Act 2016.[68] Since 2020, Indonesian legislators and the Government are working on arranging the third amendment of CBA 1999, that will be finalised by 2021 - 2022.[69] The latest draft of bill proposed by the government attempts to extent BI's mandates to promote job creation, support sustainable economic growth and financial stability. The draft also includes the proposals to establish an integrated banking supervisory forum, transfer the macroprudential framework for non-banking sectors to OJK, allow BI to finance the government debt, allow BI to directly purchase of bonds in the primary market and repurchase government securities, and create a supervisory board of BI with members selected by the President and the HoR.[70]

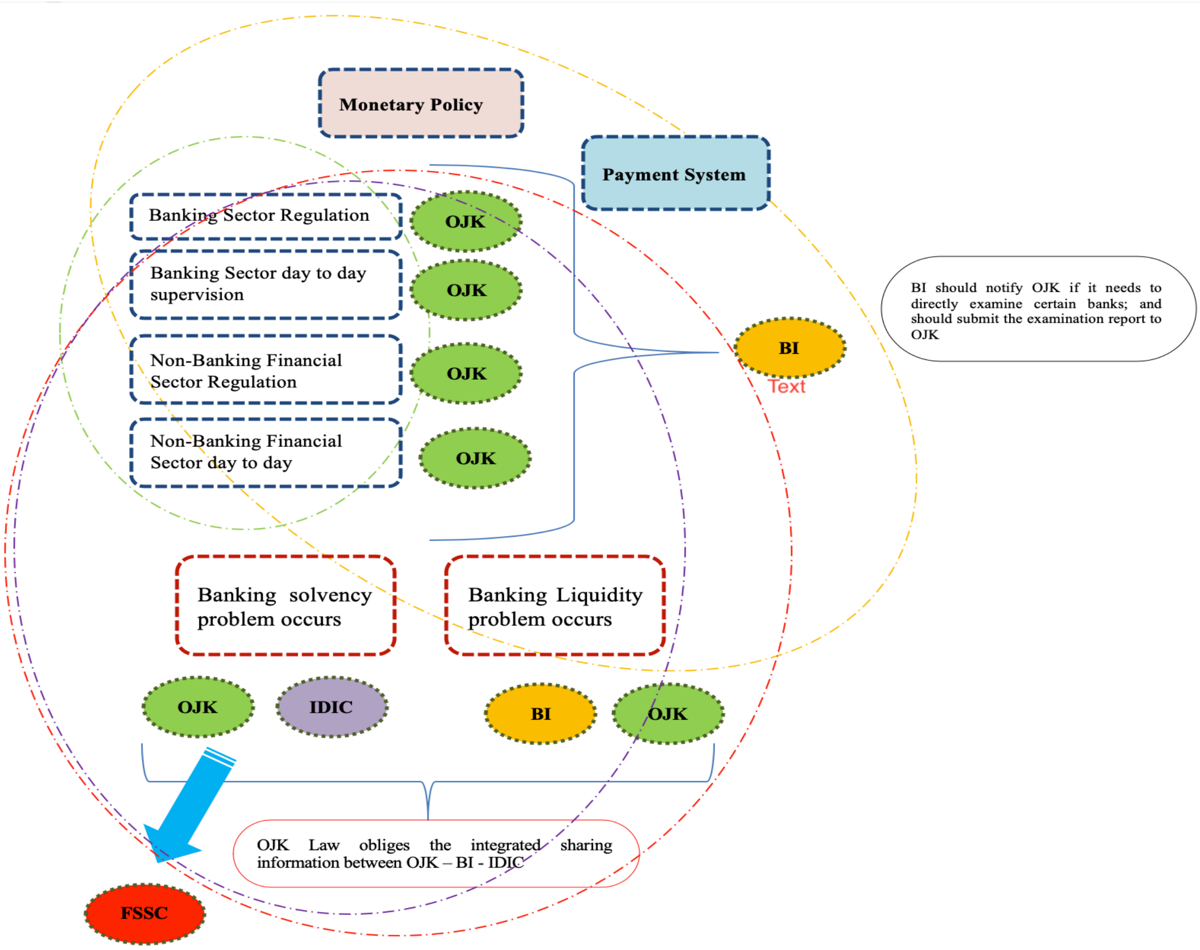
[68] Although it was amended on 13 October 2008, the IDIC Act has not been updated to accommodate the structural changes in its roles and the overall FSN institutional arrangements in the country. The IDIC Act 2004 only specified two ways for handling systemic failing bank under IDIC Act: through capital injection by the shareholders; or without the capital injection.

[69] The first proposed Reform Bill submitted in August 2020 for the third amendment of BI Acts No.23/1999 is mostly focused on the re-establishment of the Monetary Board, chaired by the Minister of Finance in formulating and deciding on the monetary policies of BI. As it received so much criticism, especially among financial markets, amid concerns about the independence of the central bank, this bill was later dropped in December 2020. The House of Representatives is now focusing on the omnibus bill for the financial sector, to strengthen the country's financial system, now part of the country's National Legislation Programme Priority 2021. See: Government Draft Bill submitted August 2020 Art 9A, 7(1), 34.

[70] Arys Aditya and Grace Sihombing, 'Indonesia Draft Law Seeks to Limit Central Bank Autonomy' (*Bloomberg,* 12 March 2021) < https://www.bloomberg.com/news/articles/2021-03-12/indonesia-draft-finance-law-seeks-to-limit-central-bank-autonomy> accessed 21 February 2020.

IV.III.b. Analysis of Financial Safety Net Authorities

Figure 4.2: The Structure of Indonesian FSN Framework



Source: Author's Illustration

IV.III.b.i Bank Indonesia (BI)

Established in 1953, BI received its operational independence in 1999, shortly after the collapse of its banking sector and currency value, Rupiah, during the 1997 AFC. To date, BI holds a single mandate in maintaining the value of the Rupiah, but with statutory roles in prescribing and implementing the monetary policies, regulating the payment system, and regulating and supervising the overall financial system.[71] In maintaining financial stability, BI performs the

[71] Before the CBA 1999, BI was assigned with developmental objectives in promoting productivity, economic development, and employment, in order to increase the welfare of society. As the result of the transfer of BI's banking regulatory and supervisory function to OJK in 2013, BI tasks, as specified under Art 8 (c) of CBA 1999, implicitly changed from broadly regulating and supervising banks, to implicitly become regulating and

roles of the monetary authority, the macroprudential authority, the payment system authority, and the LoLR.[72]

At the peak of its governance, BI's Board of Governors encompassed the Governor of BI and Deputy Governor Senior, appointed by the President through approval of the Parliament, and four to seven Deputy Governors that are proposed by the Chairman and appointed by the President.[73] In its monthly Board of Governors Meetings (BGM), BI's monetary, macroprudential and payment system policies are made through consensus, with the Chairman's final say when no consensus is achieved by the end of the meeting.[74] As an independent entity, BI is accountable to the legislative body (the House of Representatives) and Government by providing a written annual report and quarterly working reports on the performance of its duties and exercise of its powers. In 2004, a Supervisory Board was established to assist the legislative body in strengthening BI's accountability, independence, transparency, and credibility.[75] Through its quarterly monetary policy report and annual economic report, BI also provides data, analysis, and economic projections to support its monetary policymaking conducted within the monthly BGM. Additionally, since early 2003, BI also publishes a Financial Stability Review every six months, that contains BI's surveillance assessment and the implementation of its functions on financial stability.

IV.III.b.ii The Financial Services Authority (Otoritas Jasa Keuangan / OJK)

The OJK is established under the OJK Act 2011 as the country's first integrated supervisory authority, beginning its operations on 31 December 2013.[76] The authority is established with

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supervising the overall financial system. However, there is still a need for official statutory amendments to record such a change.

[72] BI's role in financial stability was established for the first time following the AFC 1998. See: IMF, 'Indonesia—Memorandum of Economic and Financial Policies' (Letter of Intent, 15 January 1998) <https://www.imf.org/external/np/LOI/011598.htm> accessed on 12 January 2020.

[73] Even though the President plays an important role in the appointment of the members of the Board of Directors, however, the President cannot fire the Executive Board. The members of the Board hold their position for five years, with possibility of being reappointed subsequently.

[74] CBA 1999 Art 43.

[75] The members are selected by the House of Representatives and appointed by the President. Besides this, there is also the Supreme Audit Board, responsible for supervising BI, in particular in financial aspects. See: ibid, Art 58A; Bank Indonesia, 'The Accountability Report of Bank Indonesia to the House of Representative and Government Quarter IV 2019' (March 2020) 127 <https://www.bi.go.id/id/publikasi/laporan/Pages/LaptriDPR_0419.aspx#> accessed 20 August 2020.

[76] In December 2012, OJK took over the supervisory tasks of capital markets and non-banking financial sectors from its predecessor, the Capital Market and Financial Institution Supervisory Board (Bapepam-LK), which was responsible for non-banking financial institutions and the capital market. The transfer of BI supervisory function to the banking sector was finalised only on 31 December 2013.

objectives to ensure that the financial system is implemented in an organised, fair, transparent, and accountable manner; capable of growing in a sustainable and stable manner; and capable of protecting the consumer and public interests.[77] Thus, as an integrated authority, OJK is responsible for regulating and supervising financial sectors, investigation and enforcement function, the conduct of business regulation, and consumer education and protection.[78] The scope of OJK microprudential responsibilities encompasses the overall activities of the financial system, which cover the activities in banking, capital markets, insurance, pension funds, finance institutions and other financial services in the country.[79] Additionally, the OJK is also responsible for the issuance and withdrawal of financial licenses.

The OJK's highest decision-making processes and governance are held by the Board of Commissioners, consisting of seven members elected by the House of Representatives based on the proposal from the President, and other two additional *ex-officio* members from BI and MoF.[80] The Board holds a regular meeting at least twice a month, or when requested by one of its members.[81] As an independent authority, OJK is obliged to provide monthly, quarterly and annual activity reports to the House of Representatives, and financial statements to the Audit Board of the Republic of Indonesia (BPK).[82]

IV.III.b.iii The Financial System Stability Committee (FSSC)

As the first Indonesian standing crisis-management committee, the FSSC is responsible for monitoring and maintaining financial stability, mitigation of financial system crisis, and resolving systemic banking failure, both in normal and crisis situations.[83] Among the long lists of its mandates, the FSSC has primary responsibilities for determining criteria and conducting the assessment of financial stability, determining and coordinating the response towards failures of SIBs and systemic banking crises, making recommendations to the President on decisions to handle the crisis, and determining measures to be performed by members to

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[77] OJK Act 2011 Art 4.
[78] In general, the hierarchy of OJK objectives is conduct of business, financial stability and protection of consumers and community.
[79] Ibid, Art 5 and 6.
[80] The President proposes and selects candidates based on the recommendation of the Selection Committee which consists of representations from Government, BI and the public in general (academics). See: Ibid, Art 11 (3), 12 (1)(2).
[81] Ibid, Art 24 (1).
[82] Ibid, Art 38.
[83] FSSC Act 2016 Art 5.

support the IDIC's resolution process.[84] The FSSC provides recommendations to the President regarding determining the status of financial crisis, establishing resolution measures in handling the crisis situation, and the activation and termination of the Banking Restructuring Programme. In preventing a financial crisis, FSSC will monitor and maintain financial stability through assessment submitted by its members, and recommend specific policy measures to be implemented by its members.

The Committee is led by the Minister of Finance, and consists of the Governor of BI, the Chairman of the OJK's Board of Commissioners, and the Chairman of IDIC's Board of Commissioners, which meets every three months, as a non-voting member. Any FSSC decisions and responses toward the crisis, should in general first be discussed and decided through consensus, and in the resubmission of decisions, adopted by majority voting.[85] The FSSC ensures its accountability through the publication of information on the decisions taken in the FSSC meetings and direct reporting to the President on its quarterly financial stability reports, resolution process and implementation of the Banking Restructuring Programme by the IDIC.[86]

IV.III.b.iv The Minister of Finance (MoF)

The Ministry of Finance is the Indonesian Financial Manager, the Fiscal Authority, and the designated Chairman of the country's crisis management framework. The Ministry holds the statutory mandate to implement the Government's main interest in handling the state's financial matters and supporting the President in its roles.[87] The Ministry has direct responsibility to the President by regularly providing reports on the conducts of its functions and activities. In maintaining financial stability, the MoF has primary functions in formulating and providing recommendations in fiscal and financial sector policies.[88] Prior to the enactment of the CBA 1999, the MoF controlled the conduct of BI's monetary policy and the banking regulation through its chairmanship of the Monetary Board.[89] Less than two decades after the

[84] Ibid, Art 6(c) (d),16 (4).
[85] Ibid, Art 11.
[86] Ibid, Art 15.
[87] Presidential Regulation of Republic of Indonesia on the Ministry of Finance 2020/57, Art 4.
[88] Ibid, Art 5(b).
[89] The Monetary Board consists of the Minister of Finance as the Chair, and Minister of Trade and the Governor of BI as Board Members. Based on Art 16(1) Acts No 13/1968, the Monetary Board was responsible for setting the inflation target and interest rates in the country. Before the enactment of the Acts No.10/1998, the MoF was also responsible for granting and revoking bank licenses, while BI was only responsible for recommending and

transfer of its roles in regulating and supervising the banking sector to BI, as specified under the Banking Sector Acts No.10/1998, the MoF has now re-emerged as the key FSN player in managing crisis prevention and management, along with the establishment of the FSSC in 2016. In representing the Government's main interest in handling the financial crisis and SIBs' resolution, the MoF determines the provision and use of public funds.[90] Effectively, the MoF gives its seal of approval, and monitors the measures taken by BI, OJK and IDIC in dealing with financial stability threats.

IV.III.b.v The President of the Republic of Indonesia

The FSSC Act 2016 specifies that the essential role is played by the President, in holding the primary key to determining the effectiveness of the Indonesian FSN framework, in particular the Crisis Management Protocols and implementation of resolution tools. In times of systemic crisis, the FSSC will submit its recommendations to the President to approve the FSSC's assessment of the existence of a financial crisis in the country, increase the deposit insurance protection, and approve the policy measures to mitigate the systemic crisis.[91] The President has the right to reject the recommendations of FSSC on its judgement of national stability, or partially reject the mitigation measures proposed.[92] The President's declaration of financial-system-crisis status is a prerequisite to activate a more comprehensive range of resolution powers, such as bail-in power. The President also plays central roles in selecting members of the BI Board of Directors, and the Boards of Commissioners of OJK and IDIC; however, the President cannot discharge the Executive Board of BI.

IV.III.b.vi The Indonesia Deposit Insurance Corporation (IDIC)

As a masterpiece of the 1997 AFC reforms, IDIC was established in 2004 as an independent corporation with two main functions in insuring customers' deposits and actively participating in maintaining the banking system's stability by resolving failed banks.[93] As the deposit insurer, IDIC is responsible for formulating and determining the implementation policies of

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reporting banks to the MoF.

[90] Sukarela Batunanggar, 'Comparison of Problem Bank Identification, Intervention and Resolution in the SEACEN Countries' (2008) South East Asian Central Banks (SEACEN) Research and Training Centre 25 < https://ideas.repec.org/b/sea/rstudy/rp73.html> accessed 16 June 2020 72.

[91] FSSC Act 2016 Art 32 (7)-(8), 35.

[92] Ibid, Art 33, 34.

[93] IDIC Act 2004 Art 4.

deposit insurance, implementing the deposit insurance programme, and making payouts to its insured depositors.[94] IDIC provides coverage to the deposits made in all conventional and Islamic banks operating within the country, with the deposit insurance coverage of about Rp. 2 billion per depositor (about US$150,000).[95] As the resolution authority, IDIC is responsible for formulating and determining policies to help maintain banking stability, formulate and implement resolution policy for non-systemic banks, and perform the resolution process.[96]

The decision-making within the IDIC is conducted by the Chief Executive Officer and the Board of Commissioners, consisting of three official representatives from the MoF, OJK and BI, and three other members nominated by the MoF, and approved and appointed directly by the President.[97] The IDIC is directly accountable to the President for providing the annual reports to the President and the House of Representatives.[98] During the resolution process of SIBs, the IDIC must submit progress reports every six months, or if required, to the FSSC.[99]

IV.III.c. Current Operationalisation of Macroprudential Supervision

In Indonesia, the implementation of macroprudential policy measures has been engineered since 2011, following the gradual development of BI macroprudential function in the aftermath of the 1997 AFC since 2002.[100] The current operationalisation of BI macroprudential regulation and supervision is primarily built on the elucidation of OJK Acts 2011 Art 7 and the BI Regulation No.16/11/PBI/2014 on the Macroprudential Regulation and Supervision (BI Regulation No.16).[101] However, as an internal regulation formulated and imposed by BI, BI Regulation No 16 has no legitimacy to establish its own macroprudential mandate, thus it

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[94] Ibid, Art 5.
[95] The FSB (2014) found this amount of coverage to be excessively high, compared to the average retail deposits and per capita GDP. There is a concern that this coverage will increase the risk of creating moral hazard and weakening market discipline among banks, and risk of IDIC-funding shortfalls, while at the same time reducing the scope for bail-in. See: FSB (n 90); IMF (n 81) 2.
[96] IDIC Act 2004 Art 5 (2).
[97] The Chief Executive Officer is one of the members of Board who implements the operational activities of the IDIC.
[98] IDIC Act 2004 Art 2(4) and 4.
[99] FSSC Act 2016 Art 27.
[100] Warjiyo (n 76) ; Rani Wijayanti, Nur M Adhi P and Cicilia A Harun, 'Effectiveness of Macroprudential Policies and Their Interaction with Monetary Policy In Indonesia' (2020) 110 BIS Paper 31 < https://www.bis.org/publ/bppdf/bispap110d.pdf> accessed 19 January 2021.
[101] Whilst the article 7 itself contains no wording and mention of the macroprudential mandate, the elucidation of the article specifies that the scope of macroprudential regulation and supervision remained under the duty and authority of BI, as established under the CBA No.23 1999. Interview with Rosalia Suci, Executive Director of Legal Affairs Department, Bank Indonesia (Jakarta, 17 April 2021).

principally acts as the legal footing for the implementation of BI's macroprudential supervisory rules and decisions imposed on the financial sectors.[102] Therefore, to date, BI's macroprudential inter-agency coordination is mainly relying on the FSSC framework to formulate and coordinate macroprudential policy measures, with broader impacts on financial stability.

Under BI Regulation No 16/2014, the macroprudential framework was implemented with objectives to contain and reduce systemic risk, promote a balanced and sound intermediary function, and enhance the efficiency of the financial system and financial access. Systemic risk is primarily defined as the potential instability of contagion across part or all of the financial system, emerging from factors such as size, complexity, and interconnectedness between financial institutions/sectors, and the procyclical tendency of institutions to follow the economic cycle.[103] In conducting macroprudential regulation, BI exercises powers to impose capital buffers and leverage ratios, manage intermediary functions, limit exposure concentration, impose financial infrastructure buffers, and/or any efforts that enhance the efficiency of the financial system and financial access.[104]

To date, BI has been actively implementing four main macroprudential instruments, namely, the Loan-to-Value (LTV) ratio, the countercyclical capital buffer (CCyB), the macroprudential intermediation ratio (MIR) and the macroprudential liquidity buffer (MPLB).[105] As an integral part of the BI policy mix introduced in 2010, macroprudential policy in Indonesia has been primarily implemented to control the risk appetite relevant to banking intermediation, credit growth, mortgage loans, property and automotive lending, and the interconnectedness between

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[102] As defined by the Art 1 (8) of the CBA, 'Bank Indonesia's Regulation is a legal provision which is prescribed by Bank Indonesia and binds every individual or entity and published in the State Gazette of the Republic of Indonesia'. The BI Regulations are mostly created to guide the implementation of its policies and clarify how the regulation and supervision will be conducted for the banking sector.
[103] Bank Indonesia, The Regulation of Central Bank on Macroprudential Regulation and Supervision 2014, No.16/11/PBI/2014 Art 1(4).
[104] Ibid, Art 3.
[105] In general, MIR was introduced in Indonesia in July 2018 for conventional banks, and October 2018 for Shariah banks. MIR is the reformulation of loan-to-deposit ratio-based reserve requirement (LDR-based RR) and loan-to-funding ratio-based reserve requirement (LFR-based RR) that were implemented in 2011. BI has put in place CCyB regulation for SIBs since 2015. In 2012, BI also introduced LTV ratios of 70% on auto and property lending, which later relaxed to 85–90% in June 2015. In 2013, BI revised the regulation on loan-to-value ratio, in order to restrain the harmful growth of housing loans and automotive credit. See: Rani Wijayanti, Nur M Adhi P and Cicilia A Harun, 'Effectiveness of Macroprudential Policies and Their Interaction with Monetary Policy In Indonesia' (2020) 110 BIS Paper 31 <https://www.bis.org/publ/bppdf/bispap110d.pdf> accessed 19 January 2021 31; Warjiyo (n 76) 199.

banking and non-financial corporate sectors that are part of financial conglomerates.[106] Since the last decade, the development in banking credit risk has been closely monitored at systemic level, that once rose to 23% during 2010-2012.[107]

Through Act No.2/2020 on Policies on State Finance and Financial System Stability in Responding to COVID-19 Pandemic, BI further strengthened its support for financial stability through the modifications of its short-term liquidity assistance facility.[108] Despite the current abundant liquidity in its banking sector during the COVID-19 pandemic, BI currently anticipates impact from this prolonged crisis on the increase of credit risk in Indonesia. The authority also foresees further challenges in banking intermediation performance resulting from the current low domestic demand for credit, and high risk-aversion in the banking sector, as seen in the tightened lending standards imposed by banks.[109] As a result, Indonesian banks have increased the purchase of government securities to channel their excess liquidity, and address the decline in profitability during the pandemic.[110]

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[106] BI's policy mix consists of the inflation targeting framework, exchange rate stabilisation policy, and capital flow management policy. See: Warjiyo (n 76) 197; Bank Indonesia, 'The Accountability Report of Bank Indonesia to the House of Representative and Government Quarter III 2012' (November 2012) 38 <https://www.bi.go.id/id/publikasi/laporan/Pages/lap_dpr_tw312.aspx> accessed 20 August 2020.

[107] Ibid, Bank Indonesia.

[108] Bank Indonesia, 'Financial Stability Review 35' (September 2020) < https://www.bi.go.id/id/publikasi/kajian/Pages/KSK_3520.aspx> accessed 19 August 2020.

[109] As the pandemic crisis is still withholding economic activity, the credit demand from SMEs and households is still relatively low in Indonesia. Without an optimal performance of banking intermediation, the economic recovery in Indonesia will be further suspended. See: Bank Indonesia, 'Financial Stability Review 36' (March 2021) 17 < https://www.bi.go.id/id/publikasi/kajian/Pages/KSK_3621.aspx> accessed 19 August 2020.

[110] Ibid, 40.

IV.IV CASE STUDY III: MALAYSIA

IV.IV.a. Overview of Financial Stability Framework

During the 1997 AFC, Malaysia provides a unique case study, as the only country in the region that was severely hit by the crisis, yet declined to adopt IMF recommendations on imposing the stringent cuts in government spending and increasing interest rates.[111] Malaysian economic recovery and financial regulatory reforms were later implemented on the guidance of the ten-year Financial Sector Masterplan (FSMP1) and Capital Market Masterplan (CMP1) 2001-2010 as formulated by Bank Negara Malaysia (BNM).[112] Following the FSMP and CMP I successes in stimulating the economic recovery, the Financial Sector Blueprint 2.0 (Blueprint 2.0) was implemented in 2011-2020, to strengthen its regulatory foundation in safeguarding financial stability and achieving real economic growth in the post-GFC 2008 era.[113]

Overall, the Malaysian financial stability framework is characterised by the leading role of its central bank, the BNM, over regulation and supervision of significant parts of its financial system. Although it is not the sole authority in the country, the BNM holds broad powers as administered under the Central Bank of Malaysia Act (CBMA) 2009, Financial Services Act

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[111] In the aftermath of the Thai baht devaluation, Malaysia experienced stock and currency market runs that severely affected its stock exchange and currency value. However, instead of implementing the austerity measures, Malaysia boosted its economy through the reduction of interest rates and an increase in liquidity. Sachs (1997) and Stiglitz (1998) also refer the IMF conventional structural adjustment programme as 'the wrong medicine for Asia'. See: Jeffrey Sachs, 'The Wrong Medicine for Asia' (*The New York Times*, 3 November 1997); Michael Richardson, 'Q&A/ Jeffrey Sachs: IMF Prescribes 'Wrong Medicine'' (*The New York Times*, 15 January 1998) <https://www.nytimes.com/1998/01/15/business/worldbusiness/IHT-q-a-jeffrey-sachs-imf-prescribes-wrong-medicine.html> accessed 19 June 2021; Joseph E. Stiglitz, 'Personal View: Boats, Planes, and Capital Flows' (*Financial Times*, 28 March 1998).

[112] The Financial Blueprints are formulated and developed by the BNM, with collective inputs and engagements with the industry and other government ministries and agencies. The Blueprint primarily contains the recommendations formulated by the BNM for all aspects of financial sector development policies in the country. Since the AFC, the Blueprint has been used to communicate and provide guidance and recommendation for the direction of the financial system strategic plan and regulatory priorities in Malaysia. See: IMF, 'Malaysia : Financial Sector Stability Assessment' (IMF Country Report No.13/52, February 2013) 16 < https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Malaysia-Financial-Sector-Stability-Assessment-40359> accessed 21 August 2019; IMF, 'Malaysia : Financial Sector Performance, Vulnerabilities and Derivatives (Technical Note)' (IMF Country Report No.14/98, April 2014) 8 < https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Malaysia-Financial-Sector-Assessment-Program-Financial-Sector-Performance-Vulnerabilities-41478> accessed 21 August 2019.

[113] Currently, the BNM is still working to develop the next financial sector Blueprint 2021–2025, to be published in 2022, that will set out its regulatory priorities on technology and data-driven innovation in the financial sector and general digital economy. See: The Edge Markets, 'BNM to Release Five-year Plan for Financial Sector in 2022' (31 March 2021) <https://www.theedgemarkets.com/article/bnm-release-fiveyear-plan-financial-sector-2022> accessed in 5 April 2021.

(FSA) 2013, Islamic Financial Services Act (IFSA) 2013, Money Services Business Act 2011, Development Financial Institutions Act 2002, and Anti-Money Laundering, Anti-Terrorism Financing and Proceed of Unlawful Activities Act (AMLA) 2001.

Coming into force in November 2009, the CBMA 2009 grants the BNM with operational independence to formulate its monetary policy, and a broader mandate to promote financial stability. In the interest of financial stability, the CBMA 2009 provides the BNM with the ability to request information on a financial institution from any authority, or directly from any non-supervised persons, specify measures and issue orders to any financial institutions under its supervision.[114] By establishing the Financial Stability Executive Committee (FSEC), the CBMA 2009 also further expands the BNM's powers in specifying measures and issuing orders to other financial institutions or persons outside its supervisory purview.[115] As the primary authority, the BNM may also make recommendations on the implication of any law or policies of other supervisory authority that may affect financial stability, and any measures to promote stability. The two latest Acts (the FSA 2013 and the IFSA 2013) also provide the BNM with extensive and far-reaching supervisory and enforcement powers over all important financial institutions' risk management and internal governance policies. This includes specifying fit and proper requirements and approving the appointment and election of the chairperson, directors and chief executive officer, or senior officers, and in the case of Islamic institutions, members of the Shariah committee.[116] As the primary regulator, the BNM also holds the authority to impose formal enforcement actions on any financial institutions that fail to comply with its regulatory standards and requirements.

The Capital Markets and Services Act 2007 (CMSA) specifies rules and regulation on the licensing and operational requirements of capital markets as administered by the country's secondary regulator, the Securities Commission (SC). Under its adoption of an institutional type of financial supervision, the BNM supervises the banking sector, insurance and Takaful operations[117], the Development Financial Institutions (DFIs), the money and foreign exchange markets, and the payment, clearing and settlement systems; whereas the SC is responsible for

[114] The CBMA came into force on 25 November 2009 effectively replaces the old Central Bank of Malaysia Act 1958. See: CBMA 2009 s 30-31.
[115] Ibid, s 38(1)(a).
[116] FSA 2013 s 54, 55 and IFSA 2013 s 63.
[117] Takaful is a type of Islamic insurance based on Shariah or Islamic religious law.

regulating capital market intermediaries that also cover the Islamic capital market intermediaries, the fund management companies, brokerage houses, exchange houses, clearinghouses, registered market operators, and all other entities licensed under the CMSA 2007.[118] Together, both authorities are co-regulating Malaysian investment banks, in which the SC is responsible for its business and market conduct regulation while the BNM regulates and supervises the prudential aspects of the sector.[119]

As the second-largest Muslim population in Southeast Asia, the duality of the Malaysian system of law is also reflected in the parallel existence of the conventional and Islamic financial systems as administered under the CBMA 2009 s 27, the FSA 2013 and the IFSA 2013.[120] The country's ambition to be a global Islamic finance centre has also been supported by its mature and robust Islamic finance regulatory framework, established and exponentially grew over the past 30 years.[121] The IFSA 2013 effectively specifies the regulation and supervision of Islamic financial institutions, payment systems and other relevant entities, and oversees the Islamic money market and Islamic foreign exchange market in Malaysia. The Act also provides broader legal frameworks on Shariah compliance and governance of the Islamic financial sector, covering all aspects of regulation and supervision, and the resolution process.[122]

As the leading authority, the BNM plays a vital role in preventing and addressing the risk to financial stability through its provisions of liquidity assistance to all financial institutions,

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[118] Under the DFI Act, the BNM is mandated to monitor the activities and financial performance of DFIs, as well as to ensure their resilience, efficiency, and success in fulfilling their mandates in a financially sustainable manner, contributing to financial stability. See: The FSA 2013 s 47 (2); IMF, 'Malaysia: Detailed Assessment of Observance of Core Principles for Effective Deposit Insurance Systems' (Country Report No.13/60, March 2013) 4 < https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Malaysia-Publication-of-Financial-Sector-Assessment-Program-Documentation-Detailed-40377> accessed 17 August 2019.

[119] Based on the MoUs between the BNM and the SC as signed in 2002, 2007 and 2012. The latest MoU seeks to enhance operational coordination between the two authorities, especially in sharing information on the ongoing oversight assessments and risk management framework of the FMIs. It also covers the supervision of financial groups, management of financial crisis, supervision of monetary and derivatives markets, combating money laundering and terrorism financing, and supervision of auditors of financial institutions.

[120] The CBMA 2009 s 60 (1) mandates the BNM and other government agencies and relevant supervisory authorities to actively promote Malaysia's place as a leading international Islamic financial centre.

[121] Over the years, the Islamic financial sector in Malaysia has grown exponentially, as seen from the total funds placed with Islamic banks, which accounted for 38% of total banking sector deposits in 2019, demonstrating an increase from 37.7% in 2018. There is also a significant increase in the financing of households and Islamic businesses, that accounted for 39.2% of total banking sector financing in 2019, and the Takaful business, that represents 18.3% of the total insurance and Takaful business in 2019. All commercial banks may provide Islamic banking services after receiving approval from the BNM, and will therefore be subjected to the IFSA 2013 provisions.

[122] Bank Negara Malaysia, 'Financial Stability and Payment Systems Report 2012' (March 2013) 93 < https://www.bnm.gov.my/-/fspr2012> accessed 12 August 2019.

including institutions outside the BNM's supervisory purview and their overseas subsidiaries or branches of institutions, as administered under the FSEC rulings.[123] The resolution process will be activated once the authority is of the opinion that an institution has ceased to be viable, or is likely to cease to be viable, and after the notification given to the Malaysian Deposit Insurance Corporation (MDIC).[124] As the resolution authority, the MDIC holds the powers to compel the financial institution to follow its direction; to acquire shares from existing shareholders; to assume control of all or part of the assets, carry on the whole or part of business, or appoint any person to do so on its behalf; to apply to the High Court to appoint a receiver or/and manager to manage all or part of the assets; to transfer any assets, business, and other liabilities to a bridge institution; or any combinations of these powers.[125] The MDIC is, however, required to get the approval of the Minister before applying for the winding up of an institution, designating one of its subsidiaries as a bridge institution, and transferring all or any of the shares and capital instruments to any person other than the MDIC and its subsidiaries.[126]

Although its banking system mainly consists of many large financial groups, the Malaysian resolution process has not yet adopted the bail-in provision power. Whilst the amount of MDIC's reserves are still relatively small to handle the resolution costs of its banks, there is a concern over the inadequacy of MDIC's backup funding.[127] It has been observed that the Malaysian resolution regime is primarily focusing on the extensive coverage of the BNM liquidity assistances under the FSEC, and the MDIC's ability to make a request for loans or financing from the Minister that specified as the use of taxpayers' fund.[128] In averting the risk to financial stability, the FSEC is significantly broadening the scope of the BNM's liquidity

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[123] For Islamic financial institutions, the Islamic deposit liabilities will only be transferred to a member or a bridge institution whose operations are conducted consistently with Shariah rules. See: CBMA 2009 s 32 (1)(b), (2); MDIC Act 2011 s 99 (1).
[124] MDIC Act 2011 s 98 (1).
[125] The exercise of any MDIC resolution powers will be fully funded by its members. In its resolution process, the MDIC has a time limitation of up to two years after the assumption of control of institutions, or after the expiration of an extension of resolution process, as approved by the Minister of Finance. The bridge institution in Malaysia is a subsidiary of the MDIC, as designated under the IDIC Act 2011s 99(1)(f) and 118, or a body corporate established by the BNM under the CBMA 2009 s 48 (1) (da) for the purpose of vesting the business, assets or liabilities of a failing institutions. Similarly, the designation of a bridge institution will also expire in two years unless extended by the approval of the Minister of Finance. See: Ibid, s 99(1)(a)-(d),(g),(h); FSA 2013 s 176, 179.
[126] MDIC Act 2011s 99(1) (e) (f) (ga); 103 (3).
[127] IMF, 'Malaysia: Detailed Assessment of Observance of Core Principles for Effective Deposit Insurance Systems' (Country Report No.13/60, March 2013) 14 <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Malaysia-Publication-of-Financial-Sector-Assessment-Program-Documentation-Detailed-40377> accessed 17 August 2019.
[128] The MDIC may give these loans to any member institutions. See: MDIC Act 2011 s 25(2), 29(1).

assistance, to effectively cover all financial institutions outside its supervisory purview and any overseas subsidiaries or branches of Malaysian financial institutions.[129]

In supporting the MDIC's resolution process, the BNM—with the approval of the FSEC—may purchase or subscribe to the shares or other capital instruments; or provide financing to other financial institutions or a corporate body established by the BNM to purchase the whole or part of the business, or other capital instruments; or vest the business or other capital instruments in the BNM, a corporate body established by the BNM, another financial institution, or any other person.[130] BNM can also remove a director, chief executive office or senior officer from an institution whenever it considers such person is no longer fulfilling the fit and proper requirements, or has breached or failed to comply with any provision of the FSA 2013 and IFSA 2013.[131] Overall, the establishment of the FSEC is further broadening the scope of the Malaysian financial stability framework in managing systemic instability and crisis, by securing memberships of high-level representatives of the BNM, SC, MDIC and the Treasury. The CBMA 2009 s40 also provides the BNM with statutory powers to enter into agreements with other authorities and obtain any information it considers necessary.

The Malaysian resolution process is also completed with close coordination between its authorities, as encapsulated in the Strategic Alliance Agreement (SAA) between the BNM and the MDIC since 2006 and the Operational Framework for Financial Crisis Management and Resolution between the BNM and the SC.[132] The SAA—which was lately revised in 2012—ensures regular policy collaboration, supervisory intervention, and exchange of information between the BNM and MDIC, in managing the overall resolution process and the implementation of the 2020 Malaysian Recovery and Resolution Planning (RRP) framework.[133] Under the RRP framework, the BNM will ensure the development and implementation of recovery planning among Malaysian financial institutions, whereas the

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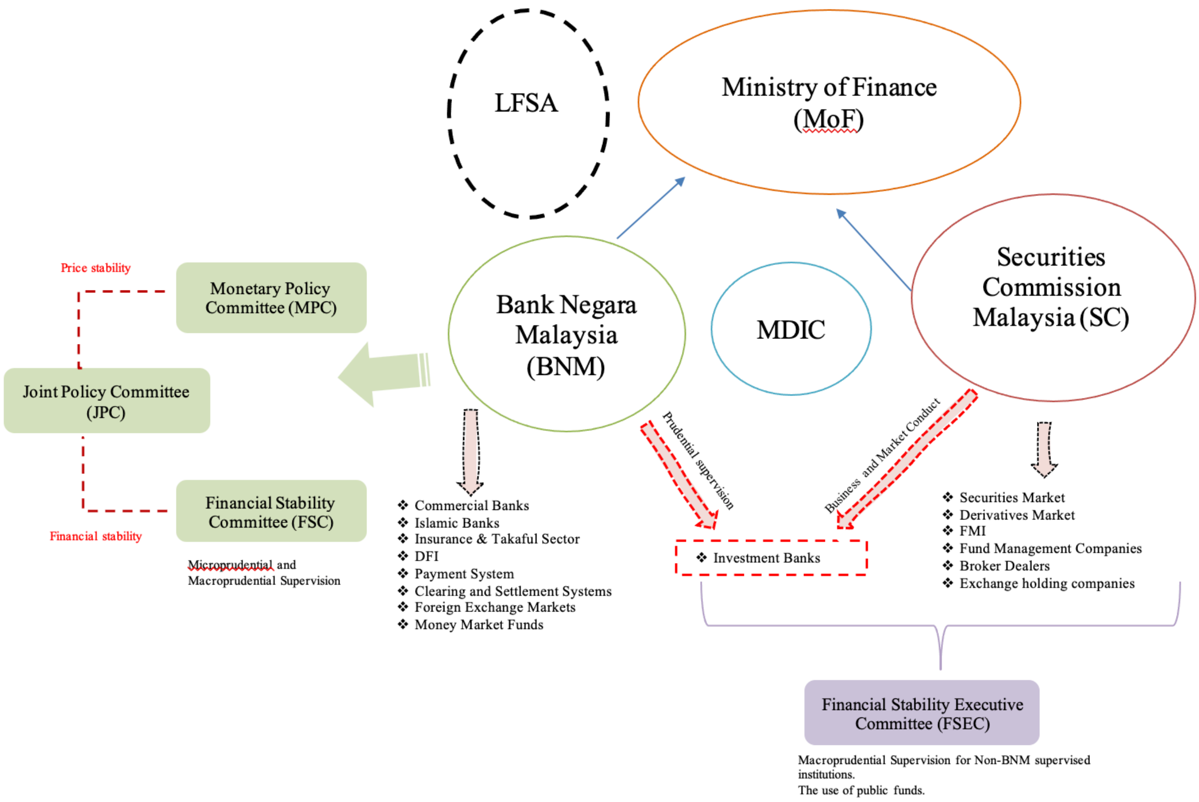
[129] CBMA 2009 s 32 (1) (a)(b), (2), and 38.
[130] In the case of the BNM purchases or subscribes to the shares of a failing institution, it may remove and appoint any new director, officer or employee. Provided under the FSA 2013 and IFSA 2013, the BNM also has the capacity to remove senior officers, directors, and chief executive officers, if it is perceived as necessary to reduce risk of financial failure, on the approval of the FSEC. See: Ibid, s 32 (1)(c), 35 (1).
[131] FSA 2013 s 162, IFSA 2013 s 174.
[132] The SAA was first mandated by the first MDIC Act 2005 and the amended MDIC Act 2011. The new SAA 2012 enhances the scope and frequency of information sharing and coordination on the intervention and resolution actions in line with the MDIC's enhanced powers and responsibilities, as administered under the MDIC Act 2011.
[133] The BNM, 'Exposure Draft on Recovery Planning' (17 January 2020) < https://www.bnm.gov.my/-/exposure-draft-on-recovery-planning-1> accessed on 26 March 2021.

MDIC is responsible for planning and implementing the resolution process. Meanwhile, through the BNM—the SC's Operational Framework—the two authorities closely collaborate in information-sharing for the purposes of risk assessment, monitoring and coordination for supervisory intervention and the resolution process.[134] In 2012, cooperation between the two authorities was further enhanced under the new MoU, covering coordination for more effective supervision of financial groups and banking activities in capital markets.[135]

IV.IV.b. Analysis of Financial Safety Net Authorities

Figure 4.3: The Structure of Malaysian FSN Framework



Source: Author's Illustration

[134] The BNM–SC operation framework provides operational guidance for clarifying the cooperation in the management of financial stability and systemic risk in the capital market; development and changes in legislation and policies; access and sharing of information; and examination, regulation and supervision of investment banks, under its joint regulatory purview. See: Sukudhew Singh, 'Financial System in Malaysia', in Ulrich Volz, Peter J. Morgan, and Naoyuki Yoshino (eds), *Routledge Handbook of Banking and Finance in Asia* (1st, Routledge 2018) 132.
[135] BNM (n 145) 93.

IV.IV.b.i Bank Negara Malaysia (BNM)

From its establishment in 1958 to date, the BNM has acted as financial adviser, banker, and financial agent to the Government of Malaysia.[136] Effectively, the BNM acts as the monetary authority, main regulator, and supervisor for the financial system, payment system supervisor, and development agent. The authority is formally assigned with primary mandates to 'promote monetary stability and financial stability conducive to the sustainable growth of the Malaysian economy'.[137] The enactments of the FSA 2013 and the IFSA 2013 assign the BNM with two further regulatory objectives, in fostering the safety and soundness of financial institutions, the integrity and orderly functioning of the money and foreign exchange markets, the safety and efficiency of payment systems, and fair and responsible business conduct; and protecting the rights and interests of consumers in light of its mandate to promote financial stability.[138]

At top-level governance, the BNM's Board of Directors consists of the Governor and the Deputy Governors, which are respectively appointed by the Head of State of Malaysia (the King of the Constitutional Monarchy) and the Minister of Finance.[139] Moreover, the Secretary-General of the Treasury is also a member of the BNM's Board of Directors, and four to seven other independent non-executive directors are appointed by the King on the Minister's advice.[140] The BNM's Board of Directors is required to meet not less than once a month, and is responsible for the general administration of the affairs and business of the BNM, the approval of the BNM budget and operating plan, supervising the management, reviewing the performance of the BNM, carrying out the functions and the resources of the BNM, and all other matters provided under the CBMA 2009.[141] As part of its accountability, the BNM submits to the Minister the quarterly financial statements and performance reports, and informs the Minister of policies relevant to its principal objectives, and the exercise of the BNM powers

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[136] The BNM was established through the Central Bank of Malaysia Act 1958 that was later repealed by the CBMA 2009. See: CBMA 2009 s 5(2) (i).
[137] As the central bank, the BNM is assigned multiple functions that include the issuance of currency; the promotion of a sound, progressive and inclusive financial system; the management of the foreign reserves; and the promotion of the exchange rate regime. Additionally, the BNM is also further assigned with powers and functions specified under the FSA 2013 and the IFSA 2013. See: Ibid, s 5(1)-(2).
[138] FSA 2013 s 6; IFSA 2013 s 6.
[139] CBMA 2009 s 15(1).
[140] Ibid, s16(1) and 14(3).
[141] The CBMA 2009 also further strengthened the governance framework of the BNM by establishing two new Board Committees—the Board Governance Committee and the Board Risk Committee—in 2010. See: Ibid, s 21(1); Bank Negara Malaysia, 'Annual Report 2010' (March 2011) 109 < https://www.bnm.gov.my/-/ar2010> accessed 12 August 2019.

for its functions specified under the FSA 2013.[142] The BNM is answerable to parliament, the Minister, and the public through the publication of an annual economic and monetary review, and since 2007, the annual financial stability and payment systems report.

IV.IV.b.ii The Monetary Policy Committee (MPC)

The MPC was established in 2002, with responsibility for promoting monetary stability through formulating and implementing the monetary policy, and relevant policies supporting its conduct of monetary policy operations independent from any external influence.[143] In promoting monetary stability, the MPC is also mandated to consider the developments in the economy.[144] Currently, the membership of the MPC includes the BNM Governor, two Deputy Governors, and three to seven other members, that include assistant governors and external members appointed by the MoF based on the recommendation of the Board Governance Committee.[145] The MPC holds meeting at least six times a year, and following each meeting, is required to publish a Monetary Policy Statement (MPS) on the decisions made at the meeting and the rationale for such decisions.

IV.IV.b.iii The Financial Stability Executive Committee (FSEC)

The FSEC was established in 2010, under the CBMA 2009, to contribute to the fulfilment of the BNM's statutory mandate to promote financial stability.[146] Through the FSEC, the BNM may extend its issuance of measures and orders, and liquidity assistance to all financial institutions—including ones outside its supervisory purview, and the overseas subsidiaries or branches of Malaysian financial institutions to avert the risks to financial stability.[147]

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[142] In the case of the Minister and the BNM have disagreements on these principal objectives, the Cabinet may determine the policy to be adopted by the BNM. See: The CBMA 2009 s 72 (5); the FSA 2013 s 7(3).
[143] Previously under the old CBMA 1958 s 34 (1), the BNM was responsible for keeping the Financial Minister informed of any monetary and banking policies taken. The Minister was also able to issue directives in regard to BNM policies. See: The CBMA 2009 s 22 (2), 23; Bank Negara Malaysia, 'Annual Report 2019' (April 2020) 89 < https://www.bnm.gov.my/o/annual-report/index.html> accessed 12 August 2019; BNM (n 164) 111.
[144] CBMA 2009 s 22 (1).
[145] Currently two Assistant Governors and two external members from the Universities / Academics are building the membership of the MPC structure. See: BNM (n 166) 89.
[146] CBMA 2009 s 37.
[147] Thus, the overarching powers bestowed on the FSEC should not betoken the Committee as a 'peace-time' oversight group, but instead as the last resort authority to tackle financial instability. See: CBMA 2009 s32 (c), 38 (1) (a) (c)-(e); IMF (n 135) 34.

The FSEC will hold its meetings as requested by the BNM, but these should be conducted at least twice a year.[148] The FSEC is chaired by the BNM Governor, and comprises one deputy governor, Chairman of the SC, CEO of the MDIC, and one to two private-sector experts in legal, accounting, or financial sector matters, appointed by the Finance Minister.[149] The membership also includes the Secretary-General to the Treasury, who should always be informed and invited to all FSEC meetings that involve financial institutions not regulated by the BNM. When the Secretary or their representative attends the meeting, they will be treated as a member of the FSEC. Similarly, for other supervisory authorities upon which the BNM and the FSEC impose measures, orders, or enter into an arrangement for the purpose of financial stability, the highest representative of such authority shall be present at the FSEC meeting as a member.[150]

IV.IV.b.iv Shariah Advisory Council (SAC)

Established in May 1997, the SAC is the highest Shariah authority that ensures the consistent practice of Shariah rules applied in Malaysian Islamic banking and the Takaful industry. The SAC holds main functions of determining how Islamic law applies to all of its Islamic banking and Takaful sectors, advising the BNM on any Shariah issues, and providing advice to any Islamic financial institutions.[151] All legal matters and arrangements are governed under the IFSA 2013, with the SAC holding authority to determine the basis for its Shariah contract-based regulatory framework. Thus, on any Islamic financial business issues and Shariah matters, the BNM shall consult the SAC, and ensure accordance with its rulings as the primary reference.[152] Additionally, the CBMA 2009 also specifies that any queries on Shariah matters in court or arbitration proceeding must be referred to the SAC, which will give its legally binding decisions and opinions.[153] Administered as the statutory committee of the BNM, SAC members are approved by the King, based on the advice given by the MoF in consultation with the BNM.

[148] Ibid, s 37 (9).
[149] Ibid, s 37 (2).
[150] Ibid, s 37 (4)-(6).
[151] CBMA 2009 s 51(1), 52 (1).
[152] Ibid, s 55 (1).
[153] Ibid, s 55(2), 56 and 57.

IV.IV.b.v The Minister of Finance (MoF)

As an integral part of Government, the MoF in Malaysia holds the mandate in ensuring sustainable growth and strengthening the resilience of financial and economic outcomes and the prosperity of the people and the nation.[154] Within the FSN, the MoF is responsible for overseeing overall economic and fiscal policy, particularly on legislation and the formulation of financial and economic plans. In the financial stability framework, the Minister is responsible for approving or revoking any applications submitted by the BNM on financial operational licenses. The Minister also holds the powers to approve the stock exchange or derivatives exchange application,[155] the exchange holding company,[156] and to withdraw approval of stock and derivative exchanges operating in the country.[157]

The MoF actively coordinates with the BNM in the designation of payment instruments and the revocation of its license.[158] Further, the MoF holds power to prescribe any institutions outside the purview of the BNM that pose or are likely to pose a risk to financial stability, based on the recommendation by the BNM and the relevant authorities.[159] Additionally, the MoF also designates the BNM recommendations on establishing a bridge institution for the purpose of vesting business, assets, or liabilities of the insolvent financial institutions.[160]

IV.IV.b.vi The Securities Commission (SC)

Established on 1 March 1993, under the Securities Commission Malaysia Act 1993 (SCMA), the SC is a statutory body with primary responsibilities for advising the Minister on all matters relating to the capital market, regulating and supervising the capital market, protecting investor confidence, and promoting the development of the capital market in the country.[161] In achieving its mandates, the SC holds the rule-making, investigative and enforcement powers on the Malaysian capital market, and all entities specified under the CMSA 2007. The SC is governed

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[154] Official Portal of Ministry of Finance Malaysia, <https://www.mof.gov.my/en/profile/policy> accessed on 26 March 2021.
[155] CMSA 2007 s 8.
[156] Ibid, s 15.
[157] Ibid, s 12 (1).
[158] FSA 2013 s 31, 38.
[159] This prescription also includes additional agreement, dealing, transaction or any other person as market participant. The BNM, together with other relevant authorities, can only make recommendations to the Minister regarding such matters. See: Ibid, s 3 (a) (b), 7 (3), 212, 216.
[160] Ibid, s 176 & 179.
[161] All the debt issuances (including bond and Sukuk) in the country will require the approval of the SC.

by the Board of Commission, that consists of a Chairman, a Deputy Chief Executive and seven other members appointed by the MoF—who is primarily representing the Government and private sector.[162] Although privately funded, the SC is directly accountable to the Minister, whereas its annual reports and accounts are also submitted to parliament.[163] From time to time, the Minister may give directions relating to the exercise and performance of SC functions to its Board.[164]

IV.IV.b.vii The Malaysia Deposit Insurance Corporation (MDIC)

Established in 2005, under the Malaysia Deposit Insurance Corporation Act 2005 (MDIC Act 2005), the MDIC holds a mandate in administering and providing insurance against loss among its deposit-taking members, including all commercial banks and locally-incorporated foreign subsidiaries, Islamic banks, insurance companies and Takaful operators. Specified under the MDIC Act 2011 as both the deposit insurance scheme and the Takaful and Insurance Benefits Protection (TIBP) System, the MDIC is also mandated to promote sound risk management and contribute to the stability of Malaysia's financial system.[165] In the event of a bank failure, the MDIC has a legal mandate to reimburse depositors no later than three months after the wind-up of the bank, and to provide coverage of RM 250,000 to depositors, that should cover 99 per cent of depositors. As the risk minimiser, the MDIC is the designated resolution authority, and holds a wide range of resolution tools to promote financial stability, by acting in a manner that minimises the costs to the financial system.[166] As part of its accountability, the MDIC shall meet not less than four times a year, and submits its annual account and annual performance report to the Minister of Finance. The MDIC is governed by the Board of Directors that consists of a Chairman, as appointed by the Minister, the BNM Governor, the Secretary-General of the Treasury, two directors from the public sector, and not more than four other directors with relevant private sector experience.[167]

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[162] SCMA 1993 s 4 (2).
[163] Section 19 of SCA 1993 states the power of the Minister of Finance to give directions that are binding on the SC, and the duty of SC to provide all necessary information with respect of the performance of any of its functions.
[164] SCMA 1993 s 19; CMSA 2007 s 335 (1), 344.
[165] Through the revision of the MDIC Act in 2011, the Malaysian special resolution regime is extended to insurance companies and Takaful operations in order to facilitate minimally disruptive resolutions of these sectors. See: MDIC Act 2011 s 4.
[166] Ibid, s 4 (2).
[167] Ibid, s 11 (2).

IV.IV.b.viii The Labuan Financial Services Authority (LFSA)

Besides its dual financial system, Malaysia has also established its own mid-shore jurisdiction on the island of Labuan, developed as an international offshore financial centre since October 1990, under the name of the Labuan International Business and Financial Centre (Labuan IBFC). Any financial activities in this jurisdiction are administered, regulated, and supervised by the Labuan FSA, a statutory body that is also responsible for ensuring all these entities remain in compliance with the domestic and international standards adopted by Malaysia.[168]

The LFSA also acts as the central enforcement authority with the main objectives of promoting and developing Labuan IBFC as an international financial centre, and implementing national objectives, policies, and priorities for developing and administering international business and financial services. As the central authority regulating and supervising the offshore financial centre of Malaysia, the LFSA is subject to the general directions and control of the Minister of Finance.[169] The LFSA is governed by a board known as the Authority, whose members primarily come from the private sector, and representatives from the Government as appointed by the Minister of Finance.[170]

IV.IV.c Current Operationalisation of Macroprudential Supervision

The implementation of macroprudential measures have been initiated in Malaysia since 1993, and intensively used during the 1997 AFC to manage financial imbalances and massive capital flows.[171] However, the institutionalisation of the macroprudential framework in Malaysia began primarily through the enactment of the CBMA 2009, as it expanded the financial stability mandates and powers of the BNM and established the FSEC. To date, the BNM has

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[168] Established under the Labuan Financial Services Authority Act 1996 (Labuan FSA Act), LFSA currently supervises 55 banks and 217 insurances companies, as well as trust and fund management, all carried out in non-Ringgit foreign currencies. Entities supervised by the LFSA benefit from tax advantages through very low financial sector income tax and no stamp duty. The Labuan FSA administers the Labuan Financial Services Authority Act 1996, the Labuan Financial Services and Securities Act 2010, and the Labuan Islamic Financial Services and Securities Act 2010.

[169] Labuan FSA Act s 9.

[170] Ibid, s 5 (1).

[171] In dealing with massive capital inflows into Malaysia, a series of macroprudential measures were implemented to discourage large-scale inflows of short-term funds in 1993, and selected exchange control measures imposed in 1998 to address the pervasive speculative activities during the AFC. In the period 1994–1996, the BNM was recorded as imposing macroprudential measures such as LTV ratio on the purchase of non-owner-occupied residential properties, and lending extended for the purchase of shares. See: Bank Negara Malaysia, 'Financial Stability and Payment Systems Report 2009' (March 2010) 48-49 < https://www.bnm.gov.my/-/fspr2009> accessed 12 August 2019.

successfully managed its multiple roles in financial stability and the prevention of systemic risk, through various policy committees established at different levels, aiming to reduce the potential conflicts between its policy goals. At the highest level of governance is the high-level forum of the FSEC, that effectively secures inter-agency coordination for macroprudential purposes; the inter-departmental Joint Policy Committee (JPC), managing the macroprudential responses with broader implications on the economy; and the Financial Stability Committee (FSC), bridging the microprudential and macroprudential concerns within the BNM tasks.

The CBMA 2009 defines systemic risk as the risk of disruptions to its financial intermediation process, money market and foreign exchange market, and risk towards public confidence in its financial system.[172] Within the BNM, the FSC has been actively monitoring levels of domestic debt, imbalances in the property market, and overall household and non-financial corporate debt. Thus, to date, the use of Malaysian macroprudential policy instruments mainly target the management of destabilising capital flows, the level of credit growth and risk-taking activities, and stimulating economic activities during downturns.[173] Since 2010, the BNM actively imposed macroprudential measures in strengthening household resilience as a response to the elevated level of its domestic household debt, and imbalances in the property market.[174] In tackling these problems, the BNM broadly deploys macroprudential measures to encourage more responsible lending and broader financial literacy among its public. In July 2019, the BNM also launched a National Strategy for Financial Literacy, and was proposing a Consumer Credit Act to strengthen household resilience through borrower protection.[175]

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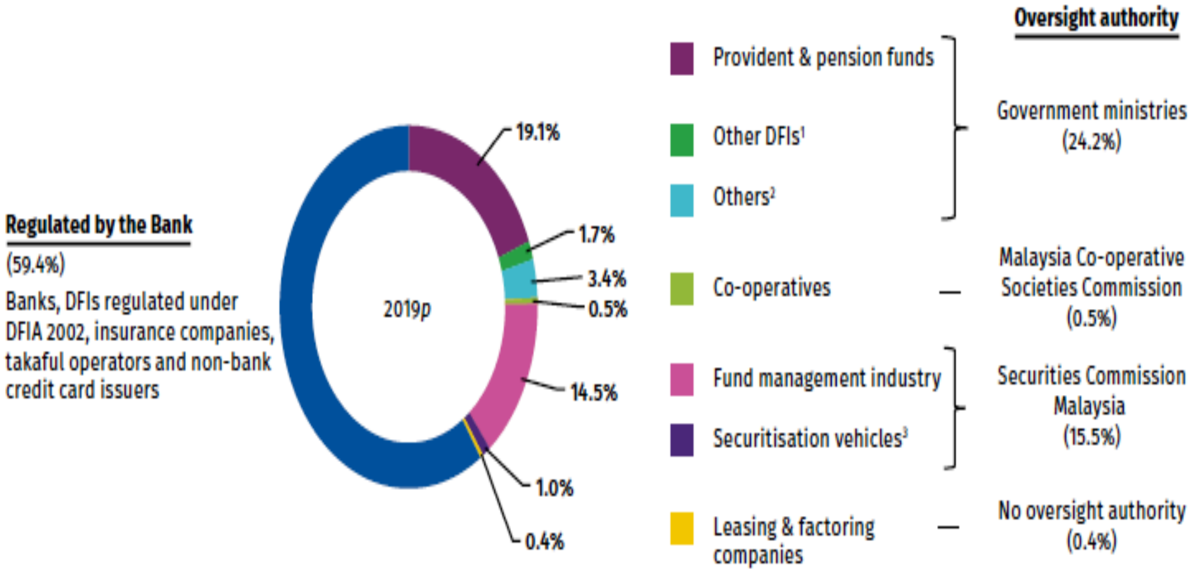
[172] CBMA 2009 s 29.
[173] Bank Negara Malaysia, 'Financial Stability and Payment Systems Report 2018' (March 2019) 11 < https://www.bnm.gov.my/-/fspr2018> accessed 12 August 2019.
[174] Household financing accounted for 57.3% of the total financing extended by the banking sector, including Islamic banks, in 2018. Most of the financing in Malaysia goes to the household sector, then SMEs, followed by the large enterprises. See: Ibid, 11, 37.
[175] In 2006, the BNM has also established the National Cyber Security Policy, and developed a National Cyber Crisis Management Plan (NCCMP) in 2011. There is also the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). See: IMF, 'Malaysia: 2020 Article IV Consultation' (Country Report No. 20/57, February 2020) 12-13 < https://www.imf.org/en/Publications/CR/Issues/2020/02/27/Malaysia-2020-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-49105> accessed 21 August 2020.

Figure 4.4: Malaysian Financial System's Composition of Assets



Source: BNM, FSPSR 2019, 29

The advancement of the Malaysian financial system is apparent from the diversity of financial sectors, that consist of conventional banking, a thriving Islamic financial sector, and non-bank financial institutions (NBFIs). In recent years, the government-backed DFIs have significantly grown, as seen in the increase in the household financing and lending given to civil servants on residential and non-residential properties, personal financing, and credit card loans.[176] Although the DFIs significantly enhance financial access, and address broad developmental issues in the country, without the BNM's close supervision and effective system-wide assessment in understanding its interlinkages, the steady increase of DFI financing during the pandemic crisis may increase the vulnerability of the already alarming Malaysian household debt-level.[177]

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[176] In 2019, the financing approved by DFIs amounted to RM 44.9 billion that increased from RM 32.3 billion in 2018. The DFIs financing was also closely driven by the infrastructure and agriculture sectors supported by the Government of Malaysia. Besides this, the DFIs also provide financing to more than 14,600 SMEs in the country, amounting to RM 3.8 billion. See: Bank Negara Malaysia, 'Annual Report 2019' (March 2020) < https://www.bnm.gov.my/o/annual-report/index.html> accessed 12 August 2020.

[177] In Malaysia, DFIs are primarily established with the aim of promoting strategic socio-economic sectors specified under the government's national strategy, and supervised and regulated by the BNM under the Development Financial Institutions Act 2002 (DFIA). Some important sectors, such as agriculture, small- and medium-size enterprises, infrastructure, maritime, export-oriented sectors, capital intensive and high-technology industries are part of the DFIs. See: BNM (n 196) 11.

IV.V CASE STUDY IV: SINGAPORE

IV.V.a. Overview of Financial Stability Framework

In the aftermath of its separation from Malaysia in 1965, Singapore actively established itself as an offshore trading centre for foreign currencies, by launching the Asian Dollar Market (ADM).[178] With strong macroeconomic fundamentals, a healthy financial system, and socio-political stability, the impacts of the AFC in Singapore were relatively less severe compared to its regional peers.[179] Overall, the rapid development of the country's financial sector was primarily characterised by the 'systematic efforts' and strong government involvement in the form of legislative measures and administrative monitoring by its single unified authority, the Monetary Authority of Singapore (MAS).[180] Amidst the 1997 AFC, the adaptive regulatory environment in Singapore had also allowed the authority to quickly shift its focus from regulation to emphasising using the risk-focused supervisory approach, to minimise the systemic risk resulting from regional contagion and evaluating the risk management process of its banks.[181] To date, Singapore has been widely acknowledged for its efficient pro-business and effective regulatory environment, which combined well with its excellent infrastructure and highly skilled professionals.

Overall, the financial stability framework in Singapore is characterised by a strong imprint of state planning and a growth-driven regime, complemented by policy co-creation embedded in the active participation of industry in its policymaking process.[182] The close ecosystem between

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[178] The creation of ADM in 1968 succeeded in attracting MNCs to set up operations in Singapore, channeling savings in foreign currencies from advanced countries; this also boosted the growth of Singapore's foreign exchange market. See: Hwee Kwan Chow and Sai Fan Pei, 'Financial Sector in Singapore', in Ulrich Volz, Peter J. Morgan, and Naoyuki Yoshino (eds), *Routledge Handbook of Banking and Finance in Asia* (1st, Routledge 2018) 169; Jun Jie Woo, *Business and Politics in Asia's Key Financial Centres* (Springer Singapore 2016) 75.

[179] Chia Siow Yue, 'The Asian Financial Crisis: Singapore's Experience and Response' (1998) 15(3) ASEAN Economic Bulletin 297 < https://www.jstor.org/stable/25773544> accessed 21 May 2019.

[180] Government ambitions in developing and promoting Singapore as an international competitive financial centre have led to extensive efforts and strategies targeting financial activities, such as giving a favourable tax system, creating a robust regulatory regime, strong rule of law and a pool of trained financial professionals. See: Woo (n 201) 75; Chow and Pei (n 201) 165; Jun Jie Woo, 'Beyond the Neoliberal Orthodoxy: Alternative Financial Policy Regimes in Asia's Financial Centres' (2015) 9(3) Critical Policy Studies 297-316, 301 < https://doi.org/10.1080/19460171.2015.1005110> accessed 21 March 2020.

[181] To date, the risk-based approach is still an integral part of MAS's assessments of impact and risk ratings of banks, in determining the intensity of its supervision. See: Francis Mok, 'Chapter 32 Singapore', in Jan Putnis (ed), *The Banking Regulation Review* (12th, The Law Reviews 2019) 483; MAS, 'Annual Report 1997–1998', (August 1997) 29 < https://www.mas.gov.sg/-/media/MAS/resource/about_us/annual_reports/annual19971998/MASAnnual9798.pdf> accessed 21 May 2020.

[182] Policy co-creation is a social innovation in creating long-lasting outcomes to address societal needs, by

the regulators and industry has also allowed the industry to actively collaborate with MAS in promoting innovation and a conducive pro-business environment in Singapore.[183] This commitment is mainly embodied in MAS's statutory mandates to maintain financial stability and grow Singapore as an internationally competitive financial centre, by helping to minimise the compliance costs and foster the ownership of regulation among its financial institutions.[184] The 2017 amendment of MAS Act 1999 further ensures the promotion of financial stability over the MAS's market promotion mandate. Moreover, there are also stark regulatory and accounting separations imposed between the international and domestic banking activities, with higher liquidity requirements and tighter restrictions applied on the latter.[185]

MAS plays two critical functions in promoting financial stability, through its microprudential supervision of individual financial institutions and macroprudential oversight of the financial system. As both a central bank and integrated financial supervisor, MAS holds the far-reaching authority and powers to oversee all aspects of Singapore's financial sectors, as specified under the Insurance Act 1966, the Banking Act 1970, the MAS Act 1999, the Securities and Future Act 2001, the Financial Institutions Act 2013, and the Payment Services Act 2019. Altogether, MAS may impose its authorities on licensing, requesting information, making recommendations and issuing directions to institutions, whenever it considers necessary in the public interest.[186] Additionally, the authority holds control over the approval and removal of

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fundamentally changing the relationships, positions and rules between the involved stakeholders, through an open process of participation, exchange and collaboration with relevant stakeholders. Since 1998, financial institutions and academics have played significant roles through their close involvement in Singapore's financial policymaking and a consultative relationship between MAS and the industry. This long-practiced regime aims to help minimise compliance costs and other unintended consequences of regulation, while at the same time ensuring the practicality of policies, and allows the industry to 'take ownership of regulations'. See: WH Voorberg, VJJM Bekkers, and LG Tummers, 'A Systematic Review of Co-Creation and Co-Production: Embarking on the Social Innovation Journey' (2015) 17(9) Public Management Review 1333–1357 <https://doi.org/10.1080/14719037.2014.930505> accessed 20 May 2020; Jun Jie Woo, 'The Politics of Policymaking: Policy Co-Creation in Singapore's Financial Sector' (2019) 42(2) Policy Studies 6 <https://doi.org/10.1080/01442872.2019.1634185> accessed 25 May 2020; Natasha Hamilton-Hart, *Asian States, Asian Bankers: Central Banking in Southeast Asia* (Cornell University Press 2002) 84.

[183] Jun Jie Woo, 'Policy Relations and Policy Subsystems: Financial Policy in Hong Kong and Singapore' (2015) 38 International Journal of Public Administration 553-561, 557 <https://doi.org/10.1080/01900692.2014.949750> accessed 24 May 2020.

[184] MAS Act s 4 (1)(b) & (d), (1A), (2).

[185] Since 1968, Singapore has adopted the two-tier banking system that requires banks to separate their offshore operations from local ones, by using separate accounting units. The international and domestic activities of banks have been separated through the Asian Currency Unit (ACU) and the Domestic Banking Units (DBUs), in which the ACU activities enjoy minimal regulation and withholding tax exemptions. See: Chow and Pei (n 201) 169.

[186] This may include the institutions from securities, future markets, and exchange markets under the Securities and Futures Act 2006. See: The MAS Act s 27(1), 28(1)(2)(4); The Securities and Futures Act 2006 s 27-31.

the chief executive officers and directors of financial institutions, whenever essential for the public interest.[187] The close coordination and interaction between MAS with other government authorities and agencies also further complements the scope of the authority's information collection ability, to support its financial stability mandate.

Above all, the 2017 amendment of the MAS Act 1999 also strengthens the robust legal framework for the role of MAS as the designated resolution authority, to impose recovery and resolution planning requirements for all domestic systematically important banks (D-SIBs), including holding companies and domestic branches of foreign banks, and insurance companies.[188] The authority determines entry into resolution, develops and implements the resolution strategy, reviews recovery plans prepared by institutions, assesses their resolvability, and draws *ex-ante* resolution plans.[189] The 2017 amendment of the MAS Act 1999 also provides MAS with further powers in handling the failure of large and complex financial institutions, by establishing a cross-border recognition framework, a creditor compensation framework, and a resolution funding framework.[190] In addressing failing financial institutions, MAS has in place a wide range of powers to assume control of a financial institution, to transfer assets, liabilities and shares to a third party, to establish a bridge institution, cancel or restructure share capital, impose bail-in provision, implement temporary stays, and conduct reverse transfers and onward transfers.[191] MAS's bail-in powers cover the write-down or conversion into equity of the unsecured subordinated debt, unsecured subordinated loans, and contingent convertible instruments and contractual bail-in instruments. It, does not however, extend to the senior unsecured creditors, who may disincentivise the use of the private-sector solution and weaken the credibility of the resolution funding strategy.[192]

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[187] Financial Institutions Act 2013 s 54 (1)(2).

[188] The Insurance Act 2002; IMF, 'Singapore: Financial Sector Assessment Program: Technical Note—Crisis Management, Resolution and Safety Nets' (IMF Country Report No.19/226, July 2019) 4 < https://www.imf.org/en/Publications/CR/Issues/2019/07/15/Singapore-Financial-Sector-Assessment-Program-Technical-Note-Crisis-Management-Resolution-47110> accessed 20 July 2020.

[189] FSB, 'Peer Review of Singapore: Review Report' (February 2018) 24 < https://www.fsb.org/2018/02/peer-review-of-singapore/> accessed 20 July 2020.

[190] IMF (n 211) 4.

[191] MAS is required to submit the application to the Court for the wind-down option. See: The MAS Act 1999 Division 2-4A.

[192] The IMF (2019) FSAP teams argue that without such an extension, there is a risk to the use of public funds during a resolution. This provision is also important to ensure Singapore resolution regime is aligned with international best practices. See: IMF (n 211) 5.

Within MAS, the resolution functions are assigned to supervisory units and the newly created resolution unit (RSU) that consists of staff from various other departments, including policy, legal, and supervision departments. The supervisory teams are responsible for monitoring banking institutions, developing and regularly updating the resolution plans, and implementing the plans.[193] Meanwhile, the RSU is responsible for assisting the supervisory teams in reviewing the resolution plans, providing comments and inputs into the development of the plans and selection of tools, and building expertise and institutional knowledge.[194] Both or either team may decide whether institutions are a going concern or gone concern, later escalate to the Management Resolution Committee (MRC) at the level of deputy managing director, or to the higher coordination forum of the Crisis Management Team (CMT) chaired by the MAS's managing director.[195] The approval of the CMT will be mandatory in the case that the proposed resolution plan requires public funding, or involves a D-SIB or a bank whose failure will have systemic impacts. Although the Minister-in-Charge (Chairman) of MAS does not get involved in the operational and technical aspects of the resolution process, the Minister does hold the authority to approve any plans that include the use of public funds, transfer of business or shares of a failing institution to a third party, or the restructuring of the share capital of a failing institution.[196]

Whereas the entire resolution process in Singapore is handled by MAS, the Singapore Deposit Insurance Corporation (SDIC) implicitly acts as a pay-box plus insurer through its contribution to the resolution funding.[197] The shareholders and unsecured subordinated creditors will first bear the losses, and when additional funds are required, the 2017 amendments of the MAS Act 1999 authorised the use of the *ex-ante* deposit insurance fund collected by the SDIC to finance the resolution of its members. However, the SDIC is not involved with any decisions on the use of its fund. The Act has also created a new *ad hoc* Resolution Fund framework, that further

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[193] Ibid, 4.
[194] Meanwhile the supervisory staff focus on determining whether the institution is insolvent, and the appropriate resolution strategy for resolving it; the RSU is mostly focused on seeking the viable private-sector solution and determining the public interest in preventing liquidation.
[195] The MRC is chaired by the Deputy Managing Director for Financial Supervision, with membership of the heads of supervisory, policy, legal and technology risk, and payments units. Meanwhile, the CMT is a coordination forum, chaired by MAS's Managing Director; its membership consists of senior management from both the supervisory and central banking functions of MAS. See: IMF (n 211) 15.
[196] Ibid.
[197] The IMF (2019) recommended Singapore to improve the participation of the SDIC in the bank resolution discussions of its DI scheme members, and to be given notification of any emerging distress. See: Ibid,7.

expands the temporary use of public resources obtained from the loans from MAS.[198] Established by the MoF, based on the recommendation of MAS, the Resolution Fund is a financial account for each financial institution in resolution, and is managed by a trustee that will recover the funds withdrawn from the industry's *ex-post* funds by making a claim directly to the institution or/and imposing a levy on other institutions within the same category.[199] With the Minister's direction, the Resolution Fund may be used for the purposes of paying the operating costs, providing capital to the financial institution under resolution (recapitalising), discharging a guarantee for a liability of the institution, or paying the costs of transferring the business, compensation, remuneration and other expenses incurred in resolution measures.[200]

Before channeling the fund, MAS should first determine that no private-sector solution exists, and that the losses have been first absorbed by shareholders and subordinated debt holders. Eventually, once the crisis escalates, a higher level of inter-agency committee, the Financial Stability Coordinating Meeting (FSCM), will be activated. This consists of MAS and the MoF coordinating and executing the broader policy decisions to address an emerging crisis and the broader use of the public fund. In managing the crisis, the MoF will undertake specific roles only when there is potential use of public resources.

IV.V.b. Analysis of Financial Safety Net Authorities

IV.V.b.i The Monetary Authority of Singapore (MAS)

Established in 1971 under the MAS Act 1970, MAS is a single integrated authority that holds multiple roles as the central bank, issuer of currency, payment system supervisor, banker and financial agent for the Government, resolution authority, market conduct regulator, microprudential and macroprudential authority in the country. The authority has four main statutory objectives: to maintain price stability, foster a sound and reputable financial centre and promote financial stability, to ensure prudent and effective management of the official

[198] The IMF (2019) recommended that there should be a restriction imposed on the use of central bank funding for this purpose, as it should only be done through the use of government resources. MAS funding should only be used temporarily, and must be quickly replaced by government funding. The IMF (2019) also further recommends the development of more detailed guidelines for the conditions and pace of recovery of resolution costs from the industry. See: Ibid,5, MAS Act 1999 s 99.
[199] The MoF will appoint a trustee of the resolution fund. For market infrastructure resolution, a levy will be imposed on those participants of the market infrastructure and of other market infrastructures, whereas for payment system operator, the levy is imposed on those participants of the payment system operator. See: MAS Act 1999 s 99 (1)–(4), 102.
[200] Ibid, s 101 (1).

foreign reserves of Singapore, and to grow the country as an internationally competitive financial centre.[201]

At the peak of its governance, MAS is governed by the Board of Directors responsible for all high-level governance matters, including the policy and general administration of the MAS's affairs and business.[202] The Board is also mandated with the task to keep the Singapore government informed of the MAS's regulatory, supervisory and monetary policies.[203] The Chairman of the Board of MAS is currently held by the Coordinating Minister for Social Policies, and the Board comprises the MAS Deputy Chairman (Ministry of Trade and Industry), two Board Members—who are also the Minister for Finance and the Minister for Transport—the MAS Managing Director, and other five board members from various governmental agencies and the private sector.[204] The President of Singapore has the power to appoint all board members, with the appointment of the Chairman based on the recommendation of the Cabinet; the Managing Director is appointed based on the recommendation of the Minister.[205] The Managing Director, answerable to the Board of Directors, is responsible for day-to-day administration, including making decisions, exercising all powers and acting on behalf of the authority.[206] The Managing Director is also responsible as the chair of MAS's Executive Committee that oversees all matters handled at management level, and ensures that MAS's policies are aligned with its overall direction and objectives.[207]

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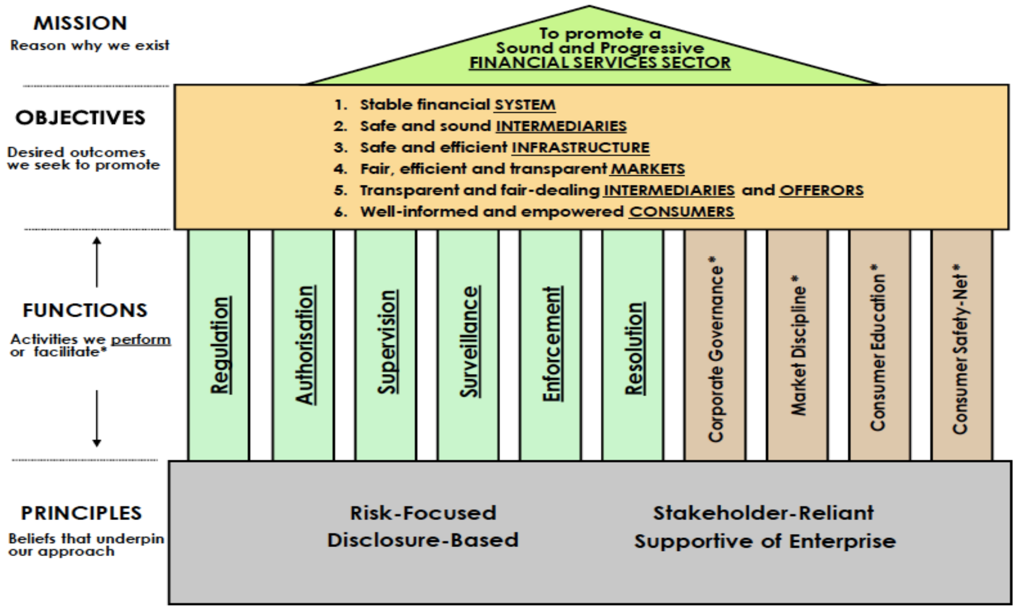
[201] Ibid, s (4) (1).
[202] Ibid, s 7.
[203] Ibid, s 7 (2).
[204] Besides various governmental ministries, MAS Board members currently also include representatives from the Council for Estate Agencies (a government agency that regulates Singapore's real estate agency industry); the Enterprise Singapore (a government agency under the Ministry of Trade and Industry that is responsible to support Singapore's SME development); the Ministry of Health; the Attorney-General's Chambers; and the Netlink NBN Management Pte Ltd (Business trust under the Infocomm Media Development Authority of Singapore). See: MAS, 'Board of Directors', <https://www.mas.gov.sg/who-we-are/Board-of-Directors> accessed 21 June 2020.
[205] The President also holds the power to refuse appointments and to revoke such appointments of the Chairman, Deputy Chairman, Directors or Managing Director of MAS based on disagreement on the advice or recommendations given by the minister or the Cabinet, and the appointment by the Minister under s 9(5)(b) of MAS Act 1999. See: MAS Act 1999 s 7, 8 (1), 9 (1), 11A.
[206] Ibid, s 9 (3).
[207] MAS, 'Annual Report 2013-2014' (June 2014) 11 < https://www.mas.gov.sg/publications/annual-report/2014/annual-report-2013-2014> accessed 21 May 2020.

Figure 4.5: The MAS' Mission in Financial Services Sector



Source: Monetary Authority of Singapore, 2015

MAS is accountable to a designated Minister or Minister-in-Charge, who is also the Chairman of the Board of Directors and is accountable for any actions and decisions taken by the authority in front of Parliament.[208] Besides its annual report, MAS also publishes the annual Financial Stability Reviews since 2004; this document describes the stress scenario, breakdown of the financial market stress parameters, a review of potential risks and an overview of the resilience of the entire system.

IV.V.b.ii MAS' Chairman's Meeting (CM)

Established in 2003, the CM acts as MAS's highest decision-making fora for financial stability concerns. The CM gives its approval to MAS's major supervisory policies, regulatory framework, and strategies concerning the authority's financial centre development and international and regional relations. The CM effectively acts as a macroprudential board-level policy committee, with an all-encompassing regulatory purview on financial and monetary stability concerns, including microprudential policies. With a completely overlapping

[208] MAS has the view that the position of the designated Minister is essential in ensuring that the public interest will be taken into consideration in its decision-making process, which is even more important in the context of providing MAS with more legitimacy to support its resolution decisions. See: FSB (n 212) 26.

membership with the MIPM, the CM consists of two selected MAS's Board Members, the Chairman, Deputy Chairman, and MAS Managing Director. This membership arrangement is designed to effectively manage the trade-offs and possible conflicts of interest between microprudential, macroprudential and monetary policy measures, and other major policy decisions relevant for broader financial stability and monetary stability concerns between the CM and the MIPM.[209] The CM plays a vital role as a forum for discussing the emerging financial stability issues, meeting on a fortnightly basis.[210] At this level, MAS and the MoF will discuss emerging macroeconomic and financial stability issues and pursue agreement on policies with potential broad fiscal ramifications.[211]

IV.V.b.iii MAS's Monetary and Investment Policy Meeting (MIPM)

Established in 2003 together with the CM, MIPM is responsible for the deliberation, decision-making, and implementation of monetary policies of MAS, with the primary objective of maintaining price stability and issues related to the investment of MAS reserves.[212] Unlike some other central banks, the MIPM within MAS has no explicit inflation target, as this is usually set by Government.[213] As an open economy, Singapore has kept its inflation relatively low by managing the exchange rates, as the only form of monetary policy adopted by MAS. The MIPM has the same membership as the CM, with the Chairman, Deputy Chairman of the Board, the Managing Director, and one to two other directors from MAS's board members. All policies made by the MIPM are communicated to the public through the Monetary Policy Statement (MPS) every six months.

IV.V.b.iv The Singapore Deposit Insurance Corporation Ltd (SDIC)

The SDIC is a public limited company, responsible for managing the deposit insurance (DI) and policy owners' protection (POP) schemes in Singapore. As a pay-box insurer, the SDIC

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[209] IMF, 'Singapore: Detailed Assessment of Compliance: Basel Core Principles for Effective Banking Supervision' (Country Report No.13/342, December 2013) 12 <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Singapore-Detailed-Assessment-of-Compliance-on-the-Basel-Core-Principles-for-Effective-41083> accessed 21 May 2020.
[210] FSB (n 212) 10.
[211] IMF, 'Singapore: Financial System Stability Assessment' (Country Report No. 13/325, November 2013) 21 <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Singapore-Financial-System-Stability-Assessment-41051> accessed 21 July 2020.
[212] This is also to include discussion on the economy and the MAS budget.
[213] On average, MAS aims for an average of 2% for its core inflation rate. As Singapore is an open economy, with an open capital market, the exchange rate has much stronger influence on the inflation rate and prices in its economy than the conventional interest rate.

holds a mandate to collect premiums from scheme members, and provide protection to the insured depositors, policy owners or beneficiaries in the event of a failure of its member. The 2017 Amendment of MAS Act 1999 further expands the SDIC's role as an implicit pay-box plus insurer, with the possibility of using DI funding to finance resolution measures.[214] With the absence of a broader mandate for ensuring financial stability, the SDIC is not involved in the design and decision making of the MAS's resolution strategies and policy actions, including the decision to use resolution funding.

The DI and POP Scheme Act 2011 further specifies the Singaporean DI system to cover all locally incorporated banks and finance companies, including foreign branches, except for wholesale banks and foreign currency deposits.[215] Through the introduction of the POP scheme, all MAS licensed insurers are now included as members of the SDIC.[216] The Act has also increased the coverage limit in the country from S$20,000 to S$75,000 per depositor per institution, which fully covers 91 per cent of insured depositors, and introduced coverage for insurance policyholders. It also removes the requirement to net depositor's liabilities against deposits and provides a more streamlined process for payments in liquidation. The SDIC's Board of Directors is accountable to the Minister-in-Charge of MAS (the Chairman), and holds full control over the company's operations and day-to-day decisions.

IV.V.b.v The Minister for Finance (MoF)

Within the financial stability framework, the MoF is an active member of the MAS Board of Directors, which also holds the authority to require information regarding MAS's duties and function. The current MoF is also taking official positions as the Deputy Prime Minister and the Coordinating Minister for Economic Policies; it is also actively recommending the appointments of MAS's Board of Directors, including the Deputy Chairman and the Managing Director, except for the Chairman, which will be appointed directly by the President.[217]

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[214] IMF (n 211) 10.

[215] In general, the SDIC's deposit insurance coverage is equally applied to all its members, with deposits denominated in Singapore dollars. The IMF (2019) assessment recommended the inclusion of foreign-exchange denominated deposits and exclusion of the deposits of large and controlling shareholders from the deposit insurance coverage. See: Ibid, 30.

[216] MAS Act 1999 s 7 (4).

[217] Ibid, s 8 and 9 (1).

The MoF is also involved in several important regulatory matters, giving its approval prior to mergers or consolidations of Singaporean banks, change of control on substantial shareholdings in designated financial institutions, and the acquisition of rights in voting shares of an aggregate of 5 per cent or more of the total votes in a designated financial institution.[218] The Minister's approval is also applied for a person who becomes 12 per cent or more controller of a designated financial institution.[219] However, in the banking resolution process, the MoF plays a relatively limited role in deciding on technical matters, and only intervenes in the case of the use of public resources, and when there are no viable private-sector solutions available.[220] The MoF's approval is also required for authorising MAS's transfer of all or any part of the business of financial institutions and the use of bail-in power, including the public announcements and notifications of such determination.[221]

IV.V.b.vi The Financial Stability Coordinating Meeting (FSCM)

As an *ad hoc* crisis management committee, the FSCM is responsible for coordinating and executing the crisis responses in Singapore. The FSCM also maintains its role as a venue for exchanging information and policy coordination in normal times. The forum maintains its communication and coordination throughout all stages of financial stability, starting from the preparation stage in which the crisis simulations and exercises are conducted by MAS along with any relevant government agencies. During the crisis situation, meetings will be convened at the recommendation of MAS, in particular, once the risk of using public funds emerges.[222]

IV.V.c Current Operationalisation of Macroprudential Supervision

The general operationalisation of the macroprudential framework in Singapore was initiated at the beginning of the AFC, through macroprudential policy tools developed in 1996, designed to address its overheated property markets and the adoption of system-wide supervision, and a more risk-focused approach in 1997 for its systemic monitoring and assessment.[223] As the

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[218] Banking Act 2019 s 15A (1) (2) (3); Banking Act 2008 s 14 (1).
[219] Banking Act 2019 s 15B (1).
[220] IMF (n 211) 4.
[221] MAS Act s 57 (7), 74 (1).
[222] The IMF (2019) further recommends more regular meetings at the working group level, and more periodical meetings with involvement principal authorities. See: IMF (n 211) 25-26.
[223] MAS, 'Annual Report 1997–1998' (August 1997) 29 < https://www.mas.gov.sg/-

integrated financial supervisor, MAS actively manages policy measures to address the build-up of systemic risk at the macro level, and enhance safety and soundness at the micro-level at the same time. In order to balance and enhance its management of different policy goals and roles in macroprudential policymaking, MAS established policy committees at two levels: the FSC at the management level, and the CM at board level. This differentiation is also designed to ensure a better separation of operational and strategic decision-making processes within the MAS structure.

Although it does not explicitly define systemic risk in its statutory law frameworks, MAS fully recognises the potential threats of the interconnectedness among its financial institutions and broader economic actors, through direct and indirect exposures, that may propagate shocks across the financial system and the broader economy (cross-sectional dimension), and the potential impacts of excessive volatilities in its financial conditions over time (time-varying dimension).[224] As an integrated supervisor, MAS has actively conducted both top-down and bottom-up types of stress tests for its microprudential and macroprudential surveillance.[225] To further improve its data collection, the authority is also actively conducting systemic risk analysis on interbank and bank-to-non-banking financial institutions linkages, and risk monitoring of banks' currency, interest rate and credit exposures.[226] Given the size and cross-border interconnectedness of the Singaporean financial system, the system-wide surveillance conducted by MAS covers the identification and assessment of potential risks raised from the interactions, contagion risk, and transmission channels on domestic and global financial developments.[227] In its operations, MAS constantly monitors the five main sectors in its systemic risk identification: banks, non-bank financial institutions, corporates, households and the external sector.

/media/MAS/resource/about_us/annual_reports/annual19971998/MASAnnual9798.pdf> accessed 21 May 2020 29; MAS, 'Annual Report 1998–1999' (August 1998) 52 < https://www.mas.gov.sg/who-we-are/annual-reports> accessed 21 May 2020.

[224] MAS, 'Approach to Macroprudential Policy' (January 2019) 4-5 < https://www.mas.gov.sg/publications/monographs-or-information-paper/2019/mas-approach-to-macroprudential-policy> accessed 24 May 2020.

[225] IMF, 'Singapore: Financial Sector Assessment Program: Technical Note Macroprudential Policy' (Country Report No.19/227, July 2019) 13 < https://www.imf.org/en/Publications/CR/Issues/2019/07/15/Singapore-Financial-Sector-Assessment-Program-Technical-Note-Macroprudential-Policy-47111> accessed 21 May 2020.

[226] Ibid, 14.

[227] MAS (n 247) 12.

Like most countries during the COVID-19 pandemic, the Singaporean banking sector experienced deterioration in asset quality, and potential credit losses that will pressure the sector's profitability.[228] The Government has introduced various credit relief measures to facilitate credit supply from its financial sectors to Singaporean borrowers, especially SMEs and retail borrowers, during the crisis.[229] In the last decade, MAS has been focusing on the application of macroprudential policy tools in anticipating the emergence of any adverse development of its residential property markets that entangled its household, banking and the broader macroeconomy sectors.[230] There is also a high correlation between the global investors and the increase of housing prices in Singapore, due to the demand for safe assets among investors.[231] To date, the authority is still focusing on the property market-related macroprudential measures, such as the LTV, Total Debt Servicing Ratio (TDSR), and Mortgage Servicing Ratios (MSR) on property markets and housing loans, to promote a stable and sustainable property market. Besides these credit-based measures, the fiscal-based measures are also actively imposed (such as the seller's stamp duty to curb speculative investments, by directly constraining property transactions, especially among the non-residential buyers).[232] In addressing the challenges, MAS also applies a 'whole-of-government' approach, in which macroprudential policies are coordinated closely with other government agencies, particularly the MoF and the Ministry of National Development (MND) under the Inter-Agency Property Market Taskforce.[233]

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[228] MAS, 'Financial Stability Review 2020' (December 2020) 39 < https://www.mas.gov.sg/publications/financial-stability-review/2020/financial-stability-review-2020> accessed 21 May 2021.

[229] By end of quarter III 2020, there are 18,000 firms in Singapore which received about SGD 14.5 billion of loans under the Enterprise Singapore ESG) scheme. See: Ibid,47.

[230] Almost 50% of Singaporean total household assets is residential property, while housing loans account for about three quarters of total household liabilities. About 30% of bank lending to the non-banking sector also comprised property-related loans. See: IMF, 'Singapore: Financial Sector Assessment Program: Technical Note Macroprudential Policy' (Country Report No.19/227, July 2019) 7 < https://www.imf.org/en/Publications/CR/Issues/2019/07/15/Singapore-Financial-Sector-Assessment-Program-Technical-Note-Macroprudential-Policy-47111> accessed 21 May 2020.

[231] Ibid, 19.

[232] Ibid, 23-24.

[233] Such a task force is established with the aim to facilitate collaboration between MAS and the relevant government authorities, in designing macroprudential policy measures that support a sound and sustainable housing market. It also aims to better manage the short-term trade-offs between different objectives and policy goals. It also further ensures regular sharing of data and surveillance insights between MAS and other government agencies, while at the same time facilitating the monitoring of developments and coordinating of policy measures imposed on the property market. See: Ibid, 10.

IV.VI. CONCLUSION

Even though the AFC had initiated major structural reforms in the FSN frameworks in Indonesia, Malaysia, and Singapore, as in the case of the UK, the GFC provided important momentum for the financial regulatory and supervisory reforms taking place in the four countries. Gradually, all four countries have significantly upgraded the legal framework of both crisis-prevention and -mitigation frameworks, particularly through the implementation of recovery and resolution plans, the establishment of a macroprudential framework, the adoption of additional resolution powers, and the upgrade of deposit insurance schemes. Overall, the current financial stability frameworks in each of the four countries adhere to best practices, although they are based on different configurations within each set of institutional arrangements, as apparent in the composition of each FSN framework. This chapter builds an important picture of the complexity of each regulatory system and its accountability structure, essential for mapping the coordination and organisational dynamics between different FSN authorities. Hence, the four case studies presented in this chapter provide important foundations for the comparative analysis accomplished in the next chapter

CHAPTER V

THE FUNCTIONAL COMPARATIVE ANALYSIS OF THE MACROPRUDENTIAL SUPERVISORY REFORMS

V.I. INTRODUCTION

In the wake of the GFC, the UK, Singapore, Malaysia, and Indonesia have integrated the macroprudential supervisory framework into the structure of their central banks. Although the integration has come with informational and expertise benefits essential for the success of macroprudential supervision; however, the structure does not score out the need for ensuring a robust institution and well-designed inter-agency coordination. By critically analysing the legal and institutional arrangements, this chapter critically examines the allocation of macroprudential function within the four central banks and their capacities in resolving potential conflict of interests and policy trade-offs inherent in operating the framework. The chapter attests that in safeguarding financial stability, a well-designed macroprudential supervision will need to effectively support and facilitate inter-agency coordination from the stage of systemic risk prevention to the point when it materialises into a systemic crisis at the level of the financial safety net (FSN) framework.

By aligning the conceptual discussion built in Chapters II and III and the financial stability framework established in the four case studies in Chapter IV, this chapter aims to draw some principal assessments using the mixed lenses of functional comparative analysis, case study, and doctrinal analysis. Instead of seeking to determine the superiority among the four countries, this chapter aims to critically explore the variabilities between the four authorities fulfilling the same function of macroprudential supervision. The results of the four assessments will be used in the final evaluation on the willingness and ability of the four macroprudential supervisors to act in responding to systemic risk in Chapter VI.

The first section will cover the discussion of allocation of macroprudential function and other financial stability functions within the structure of the central banks in the four countries. Later, four assessments on the legal and institutional changes resulted from macroprudential reforms in all countries will be presented. It will begin with the functional and organisational changes taking place within the central banks, followed by the assessment of macroprudential policymaking and the macroprudential powers assigned to the authority. Lastly, the inter-agency coordination arrangement under the macroprudential framework will be assessed against three stages of coordination: systemic risk prevention, systemic risk mitigation and crisis management schemes. A conclusion will later be drawn in Section VII. This chapter ascertains several essential issues relevant to the institutional integration of macroprudential function within the central bank by assessing the four case studies.

V.II. FOUR CENTRAL BANKS' ANALYSIS ON THE ALLOCATION OF MACROPRUDENTIAL SUPERVISORY FUNCTIONS

Over the last few decades, central banks worldwide have experienced significant institutional evolution and deconstruction of their mandate that redefine their roles in safeguarding financial stability.[1] Overall, the prominent emergence of central banks' importance in the wake of the 2008 GFC has accumulated various powers and responsibilities unto the authority. Contrary to the 1990s debates on the unification of monetary policy and microprudential supervision, the allocation of macroprudential supervisory function to the central banks in post-2008 was concluded with a broad international consensus on the advantages of designating a central bank as the leading authority.[2]

Notwithstanding the advantages of having multiple policy functions within one institution, such an arrangement does not automatically eliminate the inherent challenges in the design and operation of macroprudential supervision. Indisputably, the tasks of limiting and mitigating systemic risk require an institutional design that can effectively facilitate comprehensive sharing of information, balanced policy trade-offs and robust inter-agency policy coordination. Besides signifying the need for transparency, more stringent accountability and good

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[1] Padoa-Schioppa (2012) emphasised the unbundling and re-bundling of some elements of the central banks. The return to financial stability in the aftermath of the GFC has been seen as the rebundling event of previously dispersed functions of the central banks. See: Tommaso Padoa-Schioppa, 'Global Macroprudential Regulation', in Stijn Claessens and others, *Macroprudential Regulatory Policies: The New Road to Financial Stability?* (World Scientific Studies 2012) 13-16.

[2] IMF (2011, 2013, 2014) consistently emphases the pivotal role played by the central bank as the ideal macroprudential authority. See discussion Chapter III, Section III.VI.a.; IMF(a), 'Implementing Macroprudential Policy – Selected Legal Issues' (June 2013) < https://www.imf.org/external/np/pp/eng/2013/061713.pdf> accessed 9 April 2018; IMF(b), 'Key Aspects of Macroprudential Policy' (June 2013) < https://www.imf.org/external/np/pp/eng/2013/061013b.pdf> accessed 9 April 2018; IMF, 'Macroprudential Policy: An Organizing Framework' (March 2011) < https://www.imf.org/external/np/pp/eng/2011/031411.pdf> accessed 10 April 2018.

governance practice, this accumulation of powers also calls for well-designed legal and institutional arrangements in supporting effective management of multiple policy functions within the central banks.

Following the unprecedented extension of central banks' interventions during the GFC, the latest scholarly work also demonstrates the increasing concerns and fear of giving too much power and discretion to such an unelected institution of the central bank. The increase of its financial stability responsibilities has created the expectation that central banks will become more politically dependent.[3] Some have seen that the accumulation of financial stability powers in the hands of central bankers raises a series of heightened concerns over the legitimacy, credibility, and transparency of its decision-making processes.[4] In regard to its role in macroprudential supervision, the lack of an institutional mechanism to challenge the 'group think' within the central bank's decision-making processes may pose major challenges for the success of systemic risk assessment.[5] There is an increasing number of calls for a separation of decision-making, accountability, and communication structures between the central bank's different functions and, more importantly, between the macroprudential and monetary functions.[6]

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[3] Charles Goodhart, 'The Changing Role of Central Banks' (2010) 326 BIS Working Paper < https://www.bis.org/publ/work326.htm> accessed 10 August 2019.

[4] Ibid.

[5] Tucker (2014, 2016, 2018) conducted extensive research on the concentration of too much power at central banks run by unelected officials. Boyer and Ponce (2011) argue for the danger of regulatory capture from the concentration of supervisory authority in the hands of central banks, thus supporting the structure that split the supervisory powers from central banks in general. See: Paul Tucker, 'The Design and Governance of Financial Stability Regimes: A Common-Resource Problem that Challenges Technical Know-How Democratic Accountability and International Coordination' (2016) 3 The Centre for International Governance Innovation Essays on International Finance; Paul Tucker, *Unelected Power: The Quest for Legitimacy in Central Banking and the Regulatory State* (Princeton University Press 2018); Paul Tucker, 'Regulatory Reform, Stability and Central Banking' (2014) Hutchins Center on Fiscal and Monetary Policy at Brookings < https://www.brookings.edu/wp-content/uploads/2016/06/16-regulatory-reform-stability-central-banking-tucker.pdf> accessed 20 May 2020; Pierre C. Boyer and Jorge Ponce, 'Central Banks and Banking Supervision Reform', in Slyvester Eijffinger and Donator Masciandaro (eds), *Handbook of Central Banking, Financial Regulation and Supervision* (Edward Elgar 2011).

[6] IMF, 'The Interaction of Monetary and Macroprudential Policies' (January 2013) 9 < https://www.imf.org/external/np/pp/eng/2013/012913.pdf> accessed 6 April 2018; Benjamin Born, Michael Ehrmann and Marcel Fratzscher, 'Communicating about Macroprudential Supervision – A New Challenge for Central Banks' (2012) 15(2) International Finance 199 < https://doi.org/10.1111/j.1468-2362.2012.01301.x> accessed 12 February 2019; Dirk Schoenmaker and Peter Wierts, 'Macroprudential Policy: The Need for a Coherent Policy Framework' (2011) 13 Duisenberg School of Finance Policy Paper Series < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1876595> accessed 1 April 2019.

Table 5.1: The Comparison of Central Bank Powers

	Bank of England (BoE)	**Monetary Authority of Singapore (MAS)**	**Bank Negara Malaysia (BNM)**	**Bank Indonesia (BI)**
Monetary Authority	YES	YES	YES	YES
LoLR	YES	YES	YES	YES
Microprudential Supervision	YES (shared with the FCA)	YES	YES	NO
Macroprudential Supervision	YES	YES	YES	YES
Conduct of business regulation	NO	YES	YES	NO
Resolution	YES	YES	YES	NO
Crisis Management	YES with Treasury	YES, with the MoF	YES with FSEC	NO
Payment System	NO	YES	YES	YES

Source: Author's illustration

Previously claimed to lack the necessary tools to tackle the 2008 crisis, the BoE has now emerged as the 'principal beneficiary' of the GFC, through its roles in monetary policy, the LoLR function, micro-and macro-prudential supervision, and the resolution process in the UK.[7]

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[7] Alastair Hudson, *The Law of Finance* (2nd, Sweet & Maxwell 2013) 196; Alison Lui, *Financial Stability and Prudential Regulation: A Comparative Approach to the UK, US, Canada, Australia and Germany* (Routledge 2018).

Although without authority over the payment system, many scholars fear that the BoE might have become 'too powerful' and is deemed to become an 'overmighty' institution.[8] Notably, as the Governor serves as Chair for most critical committees regulating and supervising the country's financial sectors, the Governor of the BoE is often being compared to the 'Sun King', the second most powerful individual after the Queen of England.[9] In addition to the criticisms over its accountability and governance, the concentration of financial stability powers within the BoE may also lead to the absence of constructive challenges in the way of thinking and policy direction of its three policy committees, that eventually creates a 'new brand of groupthink'.[10]

Similar to the BoE, the MAS and the BNM have also become mighty authorities in managing financial stability issues—however, with less public reservation towards their accountability and legitimacy. As bankers and financial agents to their Governments, the BNM and MAS have a close-knit relationship and coordination with government bodies that provide the two authorities with greater political support and legitimacy in their governance process.[11] As quasi-government authorities, the two authorities also closely operate within the government's policy direction and thus are subjected to various control of the dominant political actors. Although all four central banks are accountable to the government and the Cabinets / the House of Representatives, the BoE and BI relatively enjoy more operational independence from the

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[8] Such concerns are indeed drawing many political interests to keep the balance of democratic practice in an independent agency such as a central bank. However, Lui (2018) argues that this fear is premature. See: Ibid, Lui 4; Tucker, 2018 (n 5); Eilis Ferran, 'The Break-up of the Financial Services Authority' (2011) 31(3) Oxford J Legal Studies < https://www.jstor.org/stable/23014703> accessed 21 June 2020; Hal S. Scot, 'The Reduction of Systemic Risk in The United States Financial System' (2010) 33 Harvard Journal of Law & Public Policy 671–734 < http://dx.doi.org/10.2139/ssrn.1602145> accessed 12 March 2020.

[9] The term 'Sun King' was given by Alistair Darling, the former Chancellor, in his forthright view in the evidence given for the Joint Committee on the Draft Financial Services Bill, 11 October 2011. The Treasury Committee (2011) recommended that the Governorship term to be limited to eight years 'so that there is less risk of a Governor remaining in office past the point when his or her effectiveness is diminishing'. See: Financial Times, 'Accountability and the Bank of England' (*Financial Times,* November 2011) <https://www.ft.com/content/e8e17ff2-0a26-11e1-92b5-00144feabdc0> accessed 21 April 2020; Treasury Committee, *Accountability of the Bank of England* (HC 2010-12, 874) para 39 – 41.

[10] The accumulation of powers within the BoE are used by some critiques as evidence to prove that the UK actually still has a single financial regulator within the claimed 'twin peaks' model. The UK Government's decision to abolish the FSA and claim its transition to the twin peaks model are merely seen to be for political reasons. See: Hudson (n 7) 204.

[11] In the case of Singapore, the Chairman of MAS, is the Minister-in-charge recommended and selected by the Cabinet, and the composition of its Board Members encompasses the various high-ranking government officials and Ministers. In both countries, the Minister of Finance (in the case of Malaysia represented by the Secretary-General of the Treasury) is actively involved as a member of the Board of Directors and macroprudential decision-making process. All other FSEC's members, apart from the BNM governor and Deputy Governor, are selected by the Minister of Finance.

government in their policymaking process. Despite its secondary mandate in supporting the Government's economic policy and the active involvement roles of the HM Treasury—in determining the macroprudential remit and powers—the BoE enjoys a certain degree of operational autonomy ensured through the establishment of the FPC.[12]

The concern over excessive financial stability powers in the hand of central bankers is absent in the case of BI. The GFC 2008, instead, resulted in the removal of banking regulatory and supervisory functions from BI through the establishment of the country's first integrated supervisory authority, OJK. Moreover, to date, there is no primary legislation specifying the macroprudential mandate and powers of BI. In combination with some overlapping responsibilities with the crisis management committee, the macroprudential supervisory reform in Indonesia has taken a different direction from the over-accumulation of powers of the central banks in the other three countries.

V.III. THE FUNCTIONAL COMPARATIVE ASSESSMENT ON MACROPRUDENTIAL SUPERVISION

V.III.a. ASSESSMENT I: The Functional and Organisational Changes of the Central Banks in the Post of Macroprudential Supervisory Reforms

V.III.a.i. The Changes in Mandates and Functions of Central Banks

A mandate is a legal basis—established either by statute, constitution, international treaty or other authorised body—for implementing a policy that allocates responsibilities to an authority to perform certain activities.[13] An effective mandate will ensure macroprudential supervision, based on a clear and consistent set of objectives, functions, and powers, which foster the ability and willingness of the authority to act.[14] Providing a clear mandate can also guarantee the clear

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[12] As emphasised by the HM Treasury (2012), the FPC is established within the BoE based on the consideration of insulating macroprudential policymaking from political pressures, to exercise the benefit from the expertise and resources of the BoE and to facilitate close coordination between macroprudential and microprudential regulation. See: HM Treasury, *The Financial Services Bill: the Financial Policy Committee's Macroprudential Tools* (Cm8434, 2012) 15.
[13] IMF(a) (n 2) 6.
[14] IMF(b) (n 2); IMF, FSB and BIS, 'Elements of Effective Macroprudential Policies: Lessons from International Experience' (August 2016) <https://www.bis.org/publ/othp26.htm> accessed 8 April 2018; IMF, 'Staff Guidance Note on Macroprudential Policy' (December 2014) 38 < https://www.imf.org/en/Publications/Policy-Papers/Issues/2016/12/31/Staff-Guidance-Note-on-Macroprudential-Policy-PP4925> accessed 8 April 2018; Erlend W. Nier and others, 'Towards Effective Macroprudential Policy Frameworks: An Assessment of Stylized

division of responsibilities and coordination framework with the rest of the FSN authorities, while at the same time ensure more attainable objectives are achieved.[15] A clear mandate is particularly essential for macroprudential framework assigned to the central bank, as its policy actions always have implication for other objectives of the central bank, particularly price stability.[16]

In the wake of the GFC 2008, BI is the only central bank among the four that has not witnessed any amendments to its statutory law and has no explicit mandate on financial stability. The BoE Act 1998 s 2(A), MAS Act s 4(1)(b), and the CBMA 2009 s 5(1), respectively, established the formal financial stability mandates of the BoE, MAS, and the BNM, to 'protect and enhance' and 'promote' financial stability alongside the preexisting mandate in maintaining the price stability.[17] To date, the CBA 1999 Art 7 merely establishes that BI has the primary mandate to achieve and maintain the stability of Rupiah value. Even though a financial stability mandate should not be the prerequisite of an effective macroprudential supervisory framework, BI will principally benefit from an explicit statutory mandate and well-defined objectives in supporting its pursuit of financial stability and macroprudential operations.[18]

Institutional Models' (2011) 11/250 IMF Working Paper < https://doi.org/10.5089/9781463923327.001> accessed 9 March 2019; Committee on the Global Financial System, 'Operationalising the Selection and Application of Macroprudential Instruments' (2012) 48 CGFS Papers < https://www.bis.org/publ/cgfs48.pdf> accessed 12 August 2020.

[15] De Haan et al (2012) emphasise the importance of assigning macroprudential authority with secondary operational objectives, alongside primary and general objectives. Similarly, Nier (2011,2012) also called for the setting out of a hierarchy of primary and secondary objectives of the macroprudential authority, that can open up and at the same time constrain the use of discretionary powers in times of trade-off. See: Jakob de Haan, Aerdt Houben and Remco van der Molen, 'Governance of Macroprudential Policy' (2012) 67(2) R. Z. offentl Recht 291 <https://doi.org/10.1007/s00708-012-0137-3> accessed 8 April 2018; Erlend W. Nier, 'On the Governance of Macroprudential Policies', in Stijn Claessens and others (eds), *Macroprudential Regulatory Policies: The New Road to Financial Stability* (Series World Scientific Studies in International Economics 2012) 196; Erlend W. Nier, 'Macroprudential Policy – Taxonomy and Challenges' (2011) 216(1) National Institute Economic Review 8 < https://doi.org/10.1177/0027950111411375> accessed 11 March 2018.

[16] Christian Upper, 'Macroprudential Frameworks, Implementation and Relationship with Other Policies', in the Bank for International Settlements, 'Macroprudential Frameworks, Implementation and Relationship with Other Policies' (94 BIS Papers 2017) 1 < https://www.bis.org/publ/bppdf/bispap94.htm> accessed 12 April 2019

[17] The BoE Act s 2A: '(1) to protect and enhance the stability of the financial system of the UK; (2) in pursuing the financial stability objective, the Bank shall aim to work with other relevant bodies (including the Treasury and the FCA)'.
The MAS Act s 4(1): 'b. to foster a sound and reputable financial centre and promoting financial stability'.
The CBMA 2009 s 5(1): 'to promote monetary stability and financial stability conducive to the sustainable growth of the Malaysian economy.'

[18] Although the Federal Reserve of US also has no direct mandate over the financial stability, its three primary mandated functions (in monetary policy, payments system operations and banking supervision) are seen to give the Fed an inherent role in financial stability. Thus, the Fed formally acknowledged its role in financial stability even without an explicit mandate. However, in the US's case, the Fed does not claim the role of macroprudential

The establishment of the FSSC in 2016 also further challenges the inadequacy of the BI statutory mandate, because—acting as a crisis management committee—the FSSC is assigned with an overarching mandate to coordinate 'the monitoring and maintenance of the financial system stability'.[19] This mandate operationally overlaps with BI macroprudential objectives as specified under the BI Regulation 2014/No.16 Art 2, which encompasses the prevention and reduction of systemic risk, the promotion of a balanced and sound intermediary function, and the enhancement of financial system efficiency and access. Meanwhile, in pursuing the function as macroprudential supervisors, the FPC, BNM, and MAS generally have more clearly specified working objectives and a broader range of regulatory and supervisory purviews in conducting system-wide surveillance and monitoring the systemic risk.

V.III.a.ii Reorganisation of the Macroprudential and Financial Stability Divisions

The allocation of macroprudential function has also raised issues of organisational changes and human resources capacity of the central bank, in performing the macroprudential tasks and managing different functions in achieving both price and financial stability goals. Although all four central banks have a long history of regulating and supervising the financial sector, particularly the banking sector, macroprudential supervision requires different organisational strategies and skills for its forward-looking monitoring and assessment, as well as in systemic risk mitigation. As the financial cycle usually lasts longer than the experience and memories of the supervisors, it becomes more essential that the macroprudential authority has experienced and skilful staff to conduct its tasks.[20]

While most of the central banks at the time were focusing solely on the operationalisation of monetary policy and establishment of the monetary policy committees, in 2003, Singapore had begun to focus on financial stability concerns by establishing its Chairman's Meeting (CM) within MAS. As the highest decision-making forum, the CM is designed to take and approve major policy decisions in financial and monetary stability concerns—including the

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regulator, but instead the policy committee outside the structure of Fed, the FSOC. See: Renee Haltom and John A. Weinberg, 'Does the Fed Have a Financial Stability Mandate?' (2017) 17(06) Economic Brief Federal Reserve Bank of Richmond 2 <https://www.richmondfed.org/publications/research/economic_brief/2017/eb_17-06> accessed 11 August 2020.

[19] The FSSC Act 2016 Art 3(1).

[20] Vasileios Madouros and Andrew Haldane, 'The Dog and the Frisbee' (Proceedings - Economic Policy Symposium, Jackson Hole, Federal Reserve Bank of Kansas City, 2012) < https://econpapers.repec.org/article/fipfedkpr/y_3a2012_3ap_3a109-159.htm> accessed 1 June 2018.

macroprudential, microprudential and monetary policies. Overall, Singapore was also ahead of its time in operating system-wide supervision and institutionalising the risk-focused supervisory approach in its monitoring and assessment of risk in the system since 1997.[21] Around the same time in 2003, BI also established the Financial System Stability Bureau (FSSB) within its Banking Regulation and Supervision Department (BRSD). However, FSSB was primarily established as a management level department alongside the subdepartment of microprudential banking regulation and supervision within the BRSD. Meanwhile, as early as 2004, the BNM had also established the high-level Financial Stability Policy Committee (FSPC) alongside its Monetary Policy Committee, as the highest-level decision-making forums within the BNM that chaired by the Governor.[22] By 2006, the Financial Surveillance Department (FSD) had also been established to facilitate a more integrated, holistic, and harmonised approach to regulation and supervision at both micro and macro levels, thereby further strengthening the conduct of financial stability within BNM.[23]

Although the implementation of macroprudential policy measures had been taking place since as early as the 1990s for Malaysia and Singapore, and from around 2003 for Indonesia, their institutionalisations only started in the wake of the GFC. The three Southeast Asian countries continued their macroprudential reorganisation by establishing various policy committees within their structures. The reforms in the post-GFC were particularly essential for the BNM, as the enactment of the CBMA 2009 not only led to the granting of its first monetary operational independence but also further enhanced the BNM financial stability mandate. Specifically, the creation of the Financial Stability Executive Committee (FSEC) expanded the BNM's authorities and powers in dealing with the systemic risk concerns outside its regulatory purview.[24] In 2012, the previous FSPC was also changed to the Financial Stability Committee (FSC) as the microprudential and macroprudential policy committee within the BNM's

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[21] MAS, 'Annual Report 1997–1998' (August 1997) 29 < https://www.mas.gov.sg/-/media/MAS/resource/about_us/annual_reports/annual19971998/MASAnnual9798.pdf> accessed 21 May 2020; MAS, 'Annual Report 1998–1999' (August 1998) 52 < https://www.mas.gov.sg/who-we-are/annual-reports> accessed 21 May 2020.

[22] The FSPC later in 2012 changed to Financial Stability Committee (FSC). See: Bank Negara Malaysia, 'Financial Stability and Payment Systems Report 2012' (March 2013) 93 < https://www.bnm.gov.my/-/fspr2012> accessed 12 August 2019; Bank Negara Malaysia, 'Financial Stability and Payment Systems Report 2010' (March 2011) < https://www.bnm.gov.my/-/fspr2010> accessed 12 August 2019.

[23] Bank Negara Malaysia, 'Financial Stability and Payment Systems Report 2009' (March 2010) 52 < https://www.bnm.gov.my/-/fspr2009> accessed 12 August 2019.

[24] The CBMA 2009 s 37 (10).

management level.[25] The FSC exercises its authority to deliberate macroprudential and microprudential supervisory responses that include monitoring and prevention of systemic risk, and implementing macroprudential measures or any specific actions to address problems faced by individual financial institutions that can help maintain the financial stability in the country.[26]

In the light of the operationalisation of the FSEC, the FSC is entrusted with another responsibility to make recommendations to the Committee on all matters relating to financial stability, and monitor the effectiveness of policies and actions it commissioned. These recommendations may include the appropriate intervention and resolution actions and other aspects in the exercise of the FSEC powers as specified under the CBMA s 38.[27] In addition—recognising the interdependence and the complex interactions between monetary policy and financial stability—in September 2010, the BNM also further established the Joint Policy Committee (JPC) as an *ad hoc* policy forum to discuss issues escalated between the MPC and FSC.[28] The creation of the JPC with the cross-membership arrangement of the MPC and FSC is designed to foster policy understanding and discussion between the two committees while at the same time also to manage the trade-offs and potential conflicts between financial stability and price stability goals within the BNM's management structure.[29]

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[25] With the same membership composition as the FPSC, the FSC is chaired by the Governor of the BNM and consisted of high-level executives from various policy sectors such as financial regulation, supervision and development; consumer and market conduct; payment system; economics; monetary policy; and treasury operations. See: Sukudhew Singh, 'Financial System in Malaysia', in Ulrich Volz, Peter J. Morgan, and Naoyuki Yoshino (eds), *Routledge Handbook of Banking and Finance in Asia* (1st, Routledge 2018) 134.
[26] Ibid, 135; Central Bank of Malaysia, 'Macroprudential Framework: Implementation, and Relationship with Other Policies – Malaysia', in the Bank for International Settlements, 'Macroprudential Frameworks, Implementation and Relationship with Other Policies' (94 BIS Papers 2017) 23 <https://www.bis.org/publ/bppdf/bispap94.htm> accessed 12 April 2019; Bank Negara Malaysia, 'Annual Report 2010' (March 2011) 112 <https://www.bnm.gov.my/-/ar2010> accessed 12 August 2019.
[27] The CBMA 2009 s 38(1).
[28] BNM (n 26) 79.
[29] The JPC thus has cross-membership arrangement of the Governor of BNM, two Deputy Governors and the Assistant Governor for financial market development.

Table 5.2: Two-Level Macroprudential Committees within Central Banks

	UK	**Singapore**	**Malaysia**	**Indonesia**
Statutory level Committee	FPC	CM	FSEC	BGM
Chairman	Governor of BoE	Chairman of MAS	Governor of BNM	Governor of BI
Decision-making	√	√	√	√
Management level Committee	FSD	FSC	FSC & JPC	FSSPC
Chairman	Deputy Governor	Managing Director MAS	Governor of BNM	Deputy Governor

Source: Author's illustration

Following the transfer of its banking regulatory and supervisory responsibility to OJK, BI quickly established two new departments under the FSSB in 2013, the Macroprudential Policy Department (MPD) and the Financial System Surveillance Department (FSSD). The MPD is responsible for formulating, implementing, and assessing the macroprudential policy recommendations; and conducting risk assessments on financial institutions and stability of the financial system. Moreover, the MPD is also acting as the single point of contact for BI in coordinating its systemic assessments with OJK, IDIC and other authorities, while at the same time ensuring the implementation of macroprudential policy between different departments and policy committees within BI.[30] The FSSD, on the other hand, handles the macroprudential supervisory and surveillance tasks, including the supervision and assessment of policy implementation of macroprudential, monetary and payment system policies; the implementation of BI off-site and on-site surveillance; the implementation and monitoring of BI's LoLR facility; and the dissemination of supervisory frameworks and assessment results to other policy committees and relevant external authorities.[31] Additionally, the SMEs

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[30] Bank Indonesia Website, <https://www.bi.go.id/en/tentang-bi/profil/organisasi/Pages/Departemen-Kebijakan-Makroprudensial.aspx > accessed on 15 January 2021.
[31] Following the transfer of the Banking Regulation and Supervision Department (BRSD), and its sub-department of microprudential banking regulation and supervision, the FSSB became department level. See: Ibid.

Development and Consumer Protection Department (SDCPD) is also placed under the FSSB to enhance its scope of analysis in the corporate and household sectors. The three departments are working together to ensure the analysis, materials and policy recommendation submitted to the Board of Governors Meeting (BGM) have been examined and studied thoroughly.

Following the departure of 1,150 BI's BRSD staff to OJK, the remaining 120 FSSB staff have not experienced significant operational changes in their day-to-day tasks, as it mainly was continuing a system-wide assessment that had been taking place since 2003.[32] Later in 2016, the FSSB changed to the Financial System Stability Policy Committee (FSSPC), as one of three main management level committees within BI, alongside the Monetary Policy Committee (MPC) and the Payment System Policy Committee (PSPC). Swiftly after the establishment of OJK, BI also strengthened its framework by issuing regulations to guide macroprudential policy, developing analytical tools to assess systemic risk, and introducing macroprudential instruments under its direct control.[33] Moreover, as early as 2010, BI had also actively increased its commitments in balancing the price and financial stability goals by implementing the Policy Mix.[34] A Policy Support Directorate was also established to enhance the coordination of the three policy functions, integrate the analysis and assessment of the three management-policy committees, and support the formulation of BI policy mix.

In the case of MAS, the GFC 2008 led to the establishment of the Financial Stability Committee (FSC) and the Management Financial Supervision Committee (MFSC) in 2013, to strengthen the MAS management committees in conducting its day-to-day decision-making. Chaired by MAS' Managing Director, the FSC has broad operational responsibilities that include assessing the emergence of systemic risk, deliberating macro stress-tests results, formulating micro and

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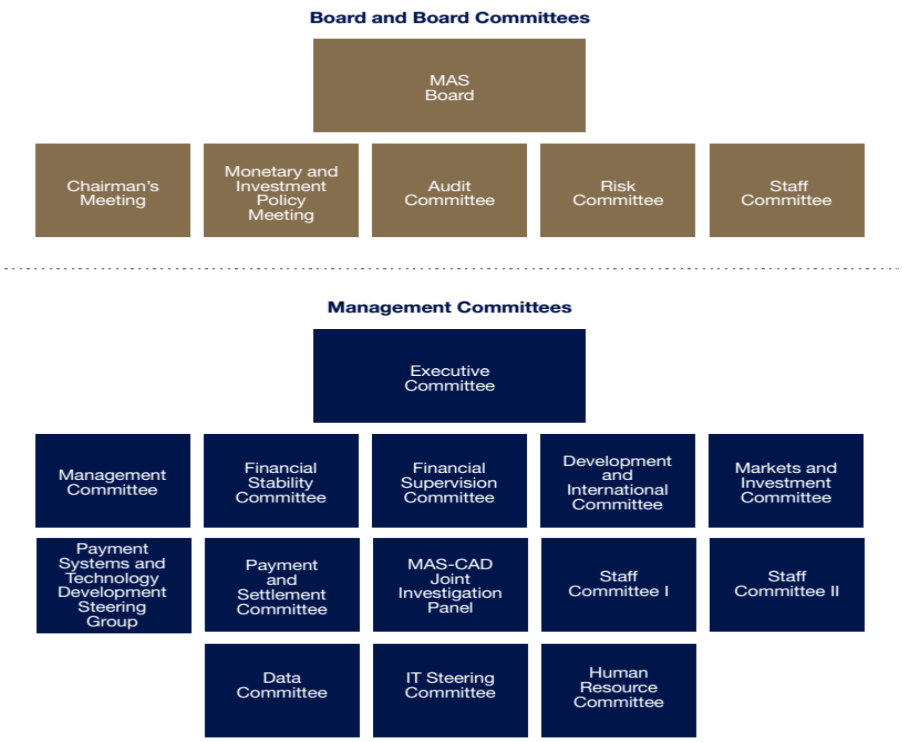
[32] At the end of the transitionary period in 2017, 700 BI former staff decided to stay and become permanent employees of the OJK.

[33] Ulric Eriksson von Allmen and Heedon Kang, 'Reinforcing Financial Stability', in Luis E Breue, Jaime Guajardo, and Tidiane Kinda, *Realizing Indonesia's Economic Potential* (IMF 2018) 292 < https://www.elibrary.imf.org/view/books/071/24870-9781484337141-en/24870-9781484337141-en-book.xml> accessed 12 January 2020.

[34] The policy mix stems from the understanding that monetary policy transmission is made through a financial system that includes banking and payment systems; thus, it mainly aims to ensure that policy responses pursued in financial stability also need to support macroeconomic and price stability. See: Perry Warjiyo, 'Indonesia: The Macroprudential Framework and the Central Bank's Policy Mix', in the Bank for International Settlements, 'Macroprudential Frameworks, Implementation and Relationship with Other Policies' (94 BIS Papers 2017) 197 < https://www.bis.org/publ/bppdf/bispap94.htm> accessed 12 April 2019; Bank Indonesia, 'The Accountability Report of Bank Indonesia to the House of Representative and Government Quarter III 2012' (November 2012) 38 <https://www.bi.go.id/id/publikasi/laporan/Pages/lap_dpr_tw312.aspx> accessed 20 August 2020.

macroprudential policies, and communicating and interacting with other authorities. At its technical level, the MFSC also actively ensures closer coordination and effective management of policy trade-offs and tensions between microprudential and macroprudential objectives.[35] Chaired by Deputy Managing Director, the MFSC is primarily supporting the operation of the FSC through its assessments and weekly discussions on regulatory and supervisory matters, and referral of any financial stability concerns to the FSC for further policy deliberation. Besides the MFSC, the FSC is also supported by the Macroprudential Surveillance Department (MSD)—located under the Economic Policy Directorate—that analyses and reports the system-wide issues, and acts as a forum for exchange of information across directorates within MAS.[36] The figure below summarises the two-tier organisation structures of MAS.

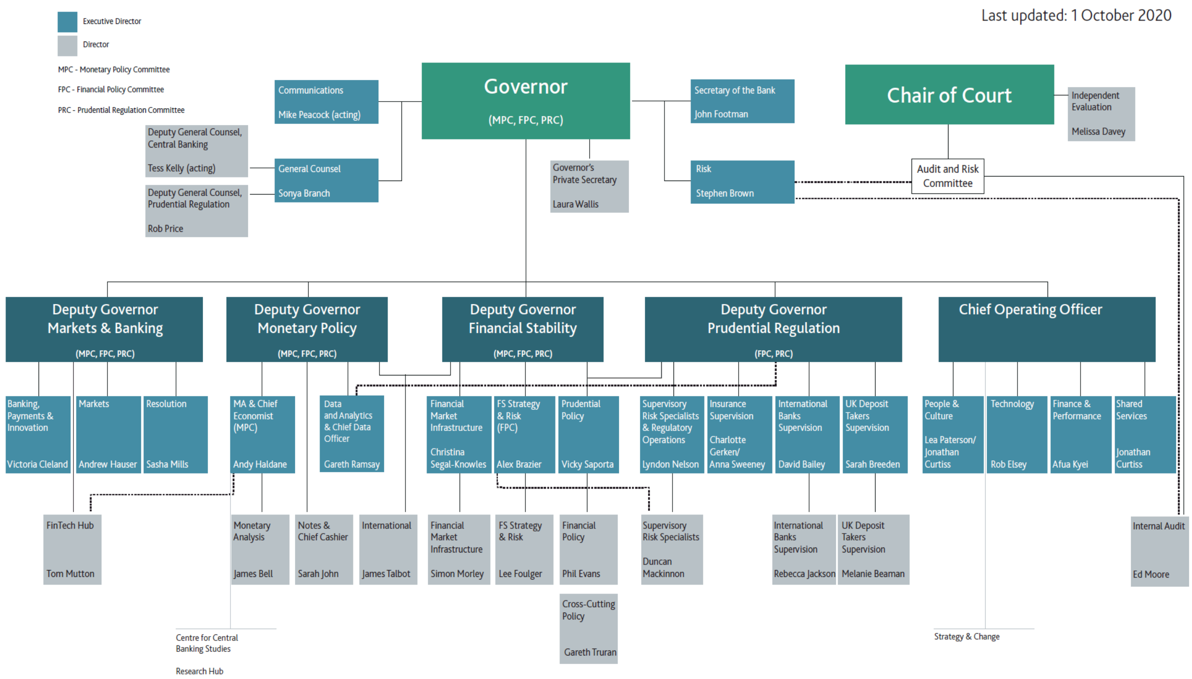
Figure 5.1: MAS's Organisational Structure



Source: MAS website

[35] MAS, 'Approach to Macroprudential Policy' (January 2019) 8 <https://www.mas.gov.sg/publications/monographs-or-information-paper/2019/mas-approach-to-macroprudential-policy> accessed 24 May 2020.
[36] MSD consists of 20 staff under the Financial Supervision Group. MSD is reporting to the Assistant Managing Director responsible for Policy, Risk and Surveillance. See: FSB, 'Peer Review of Singapore: Review Report' (February 2018) 9 < https://www.fsb.org/2018/02/peer-review-of-singapore/> accessed 20 July 2020.

Figure 5.2: The Bank of England's Organisation Structure



Source: BoE website

Although it had experienced significant organisational changes from the establishment of the single unified supervisor (the Financial Services Authority, FSA in 1997), during the era of the Tripartite regime, the BoE remained responsible for the financial stability goal. This was primarily seen through the operations of the Financial Stability Committee (FSC) since 1998, within the BoE's Court of Directors and the establishment of the Financial Stability Directorate (FSD) led by an Executive Director within the management structure of the BoE.[37] The 1998 FSC was mainly assigned to coordinate the BoE's financial stability operations within the Tripartite Standing Committee. Before establishing the FPC, the previous Labour government had re-created the FSC as a sub-committee of the Court through the Banking Act 2009. However, unlike the FPC, the FSC was rather short-lived and had no executive role, as it was only designed to make recommendations to Court about the BoE's financial stability strategy.[38]

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[37] The Bank of England, 'Annual Report 1998' (19 May 1998) 55 < https://www.bankofengland.co.uk/annual-report/1998> accessed 19 August 2019.

[38] In June 2009, the FSC met for the first time also with tasks of providing advice on how the BoE should act in respect of an institution and use its stabilisation powers; monitoring the use of stabilisation powers and the exercise of the BoE's function in interbank payment systems. Until the establishment of the Interim FPC in June 2011, the FSC was also responsible to give its final approval of the FSR prior its publication. The overlapping status and

Overall, the reorganisation in the aftermath of the GFC in the UK was marked by abolishing the FSA and establishing the FPC, along with two new supervisory authorities replacing the single authority. To support the FPC tasks, the BoE established a new division within the FSD named the Macroprudential Strategy and Support Division (MSSD) to help to coordinate the FPC's works.[39] The MSSD has tasks in developing macroprudential policy framework; providing advice on policy strategy to the FPC; acting as the Secretariat to the FPC; communicating the FPC's decisions; and providing logistical support to the FPC. Besides, in February 2009, the Special Resolution Unit (SRU)—currently the Resolution Directorate—was also established under the structure of the FSD, to carry out the BoE's resolution responsibilities under the UK Special Resolution Regime (SRR).[40] As a management-level committee, today's FSD continues to be led by the Deputy Governor for Financial Stability.

Overall, after receiving its operational independence in monetary policy in 1998, the BoE was primarily observed to have its eye 'off the financial stability ball', as it was primarily occupied with inflation and the setting of interest rates.[41] Thus, the revival of financial stability responsibility along with the reorganisation resulted from the transfer of 1,185 former FSA staff to the PRA and the BoE in 2013 have created a significant change in the operational focus of the BoE.[42] Recently, the FPC experienced another change following the Act 2016 that transformed the status of the FPC from a sub-committee of the Court of Directors to become the statutory policy committee of the BoE—alongside the MPC and PRC—yet without any operational changes. Thus, the BoE is now directly responsible for the conduct of the FPC,

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responsibilities of the FSC and the interim FPC within the Court later led to the abolishment of the FSC through the FSA 2012 and replaced by the Financial System Advisory Committee (FSAC) that provides advice and monitors the performance of the BoE's financial stability functions not within the remit of the FPC.

[39] The MSSD also helps coordinate the BoE's contributions to the European Systemic Risk Board (ESRB). See: The Bank of England, 'Annual Report 2011' (6 July 2011) 22 <https://www.bankofengland.co.uk/annual-report/2011> accessed 19 August 2019.

[40] Established under the Banking Act 2009, and consisting of risk specialists and lawyers within the BoE, the SRU was mainly responsible for developing and coordinating the BoE's reponse to the resolution of individual institutions and to enhance the resolution regime in the UK. See: The Bank of England, 'Annual Report 2009' (18 May 2009) 12 < https://www.bankofengland.co.uk/annual-report/2009> accessed 19 August 2019.

[41] The supremacy of monetary policy within the conduct of the BoE prior to the GFC was widely acknowledged under the governorship of Lord Sir Mervyn King (2003–2013). Lord King is known for his 'strong and often inflexible character', particularly regarding the supremacy of monetary policy and the central role that the Monetary Analysis Directorate. See: Conaghan (n 41) 7; Forrest Capie and Geoffrey Wood, 'The Development of the Bank of England's Objectives: Evolution, Instruction or Reaction?', in Peter Conti-Brown and Rosa M. Lastra, *Research Handbook on Central Banking* (Edward Elgar 2018) 49.

[42] The Bank of England, 'Annual Report 2013' (4 June 2009) 24 < https://www.bankofengland.co.uk/annual-report/2013> accessed 19 August 2019.

while the Court of Directors evaluates its performance and procedures on an ongoing basis.[43] This change primarily aimed to establish a clear separation of the FPC's policy responsibility from management and oversight responsibilities vested in the Court.

V.III.b. ASSESSMENT II: Macroprudential Policymaking

Responding to the challenges that emerged from the concentration of too many functions within the structure of one institution, the IMF, the FSB and BIS acknowledged the benefits of assigning a macroprudential function to a dedicated committee within the central banks.[44] By assigning different committees with separate objectives and decision-making structures, the central bank may counter the risk of dual mandates in price and financial stability.[45] In the context of a macroprudential committee arrangement, it will also ensure an open discussion on the policy trade-offs and transparent use of powers assigned to the authority.[46] Compared to a regular department structure, a high-level committee arrangement offers a more transparent decision-making process that can become a platform for policy coordination and alignment between the representatives from different authorities of the FSN framework.[47] As the committee structure may have a better chance of enhancing inter-agency dialogue than a regular internal department, it can also provide excellent potential for consensus building. Moreover, as the macroprudential supervisor usually is not directly responsible for policy tools, this arrangement may also increase the legitimacy and support for macroprudential decisions. In responding to the build-up of systemic risk, this structure could also offer a faster decision-making process and better allocation of financial stability responsibilities between the FSN authorities.[48] Particularly through effective membership arrangement that fosters the involvement of all relevant authorities, a committee structure may also help address the

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[43] The Court may also arrange for specified functions of the Bank to be discharged by the FPC. See: The BoE Act 1998 s 9B (4), 9G (2).

[44] IMF, FSB, BIS (2011) emphasised the desirability of such committee arrangement in the situation where multiple authorities have been assigned with financial stability mandate, or where there is separation between bodies with decision-making and policy implementation powers. See: IMF (n 14); FSB, IMF and BIS, 'Macroprudential Policy Tools and Frameworks: Progress Report to G-20' (February 2011) 2 < https://www.imf.org/external/np/g20/pdf/021411.pdf> accessed 9 April 2020.

[45] Ibid, IMF, 35.

[46] Ibid 36.

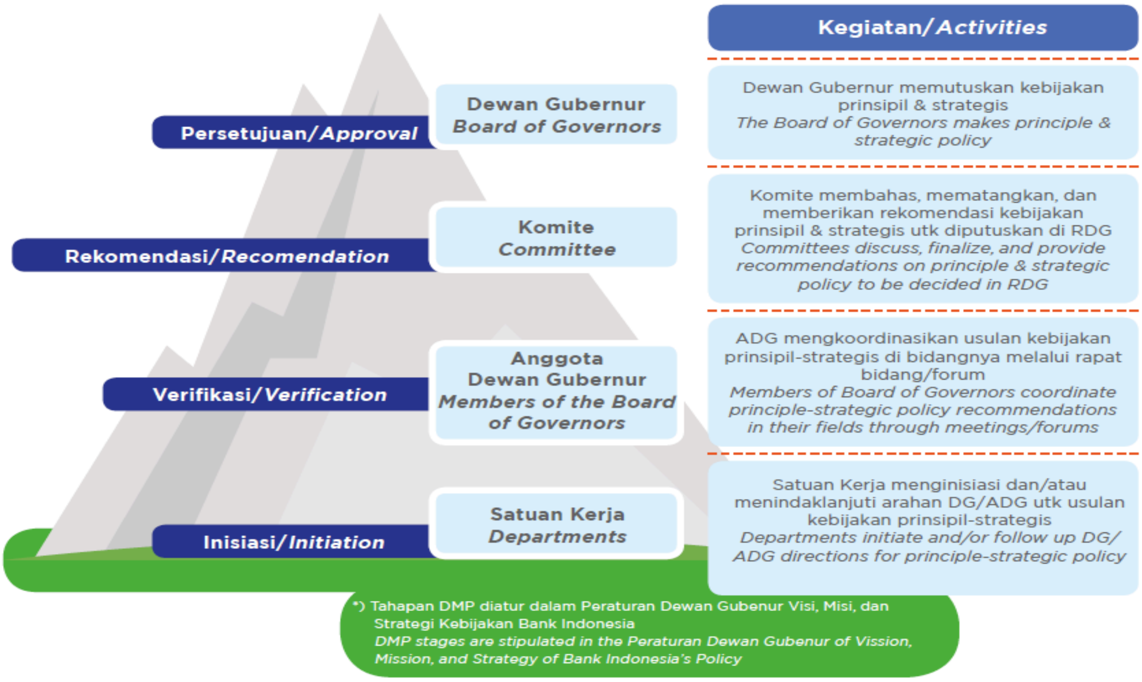
[47] However, Schoenmaker and Wierts (2011) point out that 'committee tend to be less effective in timely decision making'. See: Rosa Lastra,'Systemic Risk and Macroprudential Supervision', in Niamh Moloney, Eilis Ferran and Jennifer Payne (eds) *The Oxford Handbook of Financial Regulation* (Oxford University Press 2015) 327; Schoenmaker and Wierts (n 6) 9.

[48] Hoo-Kyu Rhu, 'Macroprudential Policy Framework' (2011) 60 BIS Papers 121 <http://www.bis.org/publ/bppdf/bispap60p.pdf> accessed 12 August 2020.

differences in perspectives and creating ownership of macroprudential decisions among the broader FSN authorities.

Thus, this research strongly underscores the importance of establishing separate high-level (board) and management levels of policy committees within the central bank, to better manage policy trade-offs at various levels of the central bank's divisions.[49]

Figure 5.3: Decision Making Process of BI



Source: BI, Annual Report, 2015, 163

Since its institutionalisation, the macroprudential policymaking processes in the UK, Malaysia, and Singapore have been closely coordinated with the government policies, especially the Ministry of Finance (MoF)/Treasury.[50] Although macroprudential policymaking in Indonesia

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[49] Archer (2009) defined three main categories of central bank decision-making, which are policy board, management board and supervisory board / committee. The last category that is mostly responsible as the internal oversight board for the central bank's performance is, however, excluded in this section, as the board is mostly absent from the policy decisions of the central bank, but only has the right to oversee the process of policymaking. In Indonesia (BI's Supervisory Board), UK (the Court of Directors of BoE), Malaysia (Board Audit Committee, Board Governance Committee and Board Risk Committee within Board of Directors of BNM), Singapore (Audit Committee, Risk Committee and Corporate Governance Advisory Committee). See: Central Bank Governance Group, 'Issues in the Governance of Central Banks' (May 2009) 79 <https://www.bis.org/publ/othp04.htm> accessed 12 April 2020.

[50] This is particularly apparent from the central bank mandates that are closely linked with the economic agendas of the government. The active involvement of the MoF and Treasury in the decision-making process of the CM,

is also coordinated under the crisis-management framework (the FSSC under the chairmanship of the MoF), BI's macroprudential policymaking process primarily takes place within its monthly BGM, in which the monetary and payment system policies are also formulated simultaneously. Compared to the other three countries, the macroprudential decision-making process in Indonesia is more centralised, as seen in figure 5.3, with the entire process taken within the internal structure of BI without involvement of the government or the MoF, except for the informal advice and communication conducted by the senior management and its personnel.

Currently, the monthly BGM is conducted to decide on BI's monetary policy stance and other principal and strategic policies, including macroprudential and policy mix—which also includes policies for the payment system, corporates and households' sectors.[51] Each policy departments holds its own meeting to discuss the principal policy recommendations and analysis to be submitted to the BGM. Besides this board-level decision-making process, BI also has a management level—the macroprudential policy committee, the FSSPC, that focuses on the operational aspects of macroprudential decisions and is responsible for formulating and submitting policy recommendations and system-wide assessment to the monthly BGM. The FSSPC—chaired by two Deputy Governors—consists of the Heads of Department from the MPD, FSSD, the Monetary Policy and Economy Department (MPED), and the Payment System Policy Department (PSPD).[52]

Although the formulation and implementation of BI's policy mix aims to ensure financial stability concern is fully considered in BI's broad strategic policies, the current structure for its policymaking nevertheless raises concern over the extent to which financial stability issues will be balanced with the central bank's single-mandate on price stability.[53] Further, without a structural reform in ensuring a more transparent process and diverse membership of other relevant FSN authorities and external experts, there is still a major unaddressed concern over

FSEC and FPC also signify this closer nature of coordination.

[51] The BGM is also conducted weekly, with aim of evaluating the implementation of monetary policy, financial stability, payment systems and deciding on other principle and strategic policies.

[52] Interview with Juda Agung, Executive Director of the Macroprudential Policy Department (MPD), Bank Indonesia (Jakarta, 13 April 2021).

[53] With a single objective, in the situation of conflicts of interest between different policy areas, BI will be most likely to lean toward monetary policy concerns. Although the implementation of BI's policy mix has been used in addressing the challenges created by the macro-financial interlinkages, there is a strong probability that macroprudential goal will be significantly undermined in the times of policy trade-offs with monetary policy.

BI's 'group think' problem in its financial stability decision-making process. Although two members of the Board of Governors are assigned as *ex officio* members for the Commissioner Board of the OJK and IDIC, within BI itself, however, there are no cross-memberships from other FSN authorities.[54] There is the possibility that one or more ministers representing the government may attend the monthly BGM, however, without having the right to vote and primarily present to provide a fiscal perspective of BI's monetary policy.[55]

As an agent and the banker for the Singaporean government, the members of MAS' Board of Directors primarily comprises active government ministers—particularly the Minister for Finance and Minister for Trade and Industry—who usually hold several ministerial positions. The Chairman—who is also the Minister-in-Charge for MAS—is selected and recommended directly by the Cabinet. Although it has similar status, as the financial adviser, agent, and banker for the Malaysian government, the membership of the BNM's Board of Directors is more diverse with some external members beside the country's ministers selected by the Head of state of Malaysia and the MoF in its composition.[56]

Within MAS, there is a clear separation for the strategic and the operational decision-making processes, with the CM solely responsible for the review and approval of the overall policy framework, whilst the formulation and conduct of policies are the primary responsibilities of the FSC at management level.[57] The MAS' Board of Directors also has no involvement in the operational and technical aspects of macroprudential and resolution functions, which mostly fall under the responsibilities of the Managing Director and its management-level policy committee.[58] With membership encompassing the senior management from the three directorates of financial supervision, monetary policy and economic policy, the FSC serves as a platform to share information and analyses on financial system risks, and to discuss issues

[54] By assigning its Ex-Officio Director members in OJK's and IDIC's board of commissioners, BI aims to ensure close coordination, cooperation, and harmonisation of policies between the three authorities. These ex-officio members will periodically submit principal and strategic policies related to the implementation of BI's mandate and the decisions of the other two authorities which will affect the function, tasks and authorities of BI. See: Bank Indonesia, Board of Governor Regulation 2015, No.17/5/PDG/2015.

[55] Bank Indonesia, 'Annual Report 2014' (December 2015) 119 <https://www.bi.go.id/en/publikasi/laporan/Pages/LKTBI-2014a.aspx> accessed 19 August 2020.

[56] The CBMA 2009 s 15(8) states the Governor and Deputy Governors shall devote the whole of their professional time to the service of the BNM and shall not occupy any other office or employment while holding the office.

[57] While the CM approves the policy framework in assessing the D-SIBs, at the management level, the FSC will designate the list of D-SIBs and set the policy measures to be implemented.

[58] In the resolution process, the approval of the Chairman (Minister-in-Charge) is only needed at the final procedural step in the use of resolution powers of MAS. See: FSB (n 36) 26.

related to macroprudential and financial stability within MAS.[59] The FSC is also responsible for selecting specific issues raised to the CM, particularly on issues that may be potentially sensitive or have economy-wide impacts.[60] It is also responsible for identifying the financial stability issues that may require non-MAS policy tools and the relevant department to interact with other authorities to facilitate cross-agency coordination.[61] Moreover, the MFSC discusses regulatory and supervisory matters related to regulated entities on a weekly basis, and may refer financial stability-related issues, -that include both microprudential and macroprudential policies- to the FSC for its approval. As the FSC's secretariat, the MSD is responsible for monitoring various indicators in assessing risks and vulnerabilities across the financial system.[62]

Table 5.3: The Membership Arrangements in Various Committees within MAS

MFSC	FSC	Chairman's Meeting	MIPM	FSCM
Deputy Managing Director of Financial Supervision	MAS Managing Director	Chairman (Minister-in-Charge)	Chairman (Minister-in-Charge)	MoF
Senior Management of Banking and Insurance	Senior Management of Financial Supervision	Deputy Chairman	Deputy Chairman	MAS
Capital Markets	Senior Management of Monetary Policy	Board Member (Minister for Finance) (Deputy Prime Minister)	Board Member (Minister for Finance) (Deputy Prime Minister)	
Policy, Risk and	Senior	Board Member	Board Member	

[59] Ibid, 10.
[60] Ibid, Box.1.
[61] Ibid, 10.
[62] Ibid, 2.

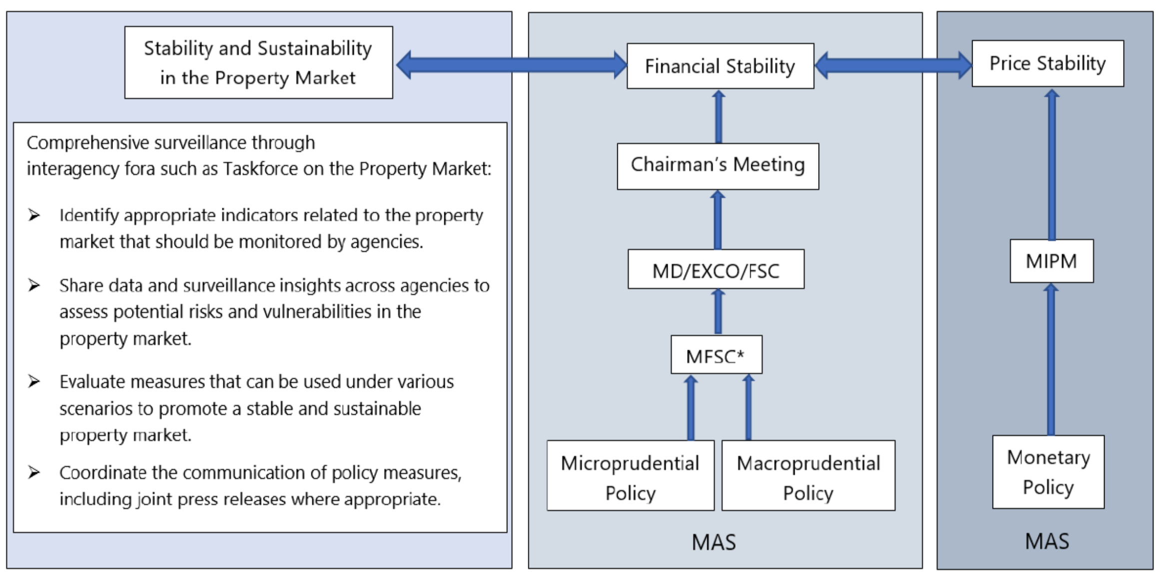
Surveillance	Management of Economic Policy			
Data Analytics Group		MAS Managing Director	MAS Managing Director	
General Counsel				

Source: Author's illustration

As demonstrated in figure 5.4 below, the fully-overlapping membership structure of the Monetary and Investment Policy Meeting (MIPM) and CM also further secures the information sharing and decision-making processes between the financial stability and monetary policy functions within MAS.[63] Although this arrangement may be similar to the decentralised decision-making within BI, having an overlapping membership yet two separate fora of MIPM–CM guarantees a clear separation between macroprudential and monetary decision-making process within MAS. Moreover, MAS' clear delineation on its strategic and operational policies further ensures that the formulation of each policy is conducted by different management policy committees, the FSC and the Economic Policy Group (EPG) for monetary policy.[64] Thus, the MIPM and CM will mostly review and give their seal of approval before the public communication and dissemination of the policies.

[63] Ibid, 9; Monetary Authority of Singapore, 'Macroprudential Policies: A Singapore Case Study', in the Bank for International Settlements, 'Macroprudential Frameworks, Implementation and Relationship with Other Policies' (94 BIS Papers 2017) 322 < https://www.bis.org/publ/bppdf/bispap94.htm> accessed 12 April 2019.
[64] MAS, 'How Does MAS Carry Out its Monetary Policy?' (MAS Website) < https://www.mas.gov.sg/monetary-policy/Singapores-Monetary-Policy-Framework/faqs/section-4> accessed 9 August 2021.

Figure 5.4: MAS's Decision-Making Fora



Source: MAS.
Note: *Matters with implications for financial stability will be appropriately referred up to Chairman's Meeting. MD stands for Managing Director, EXCO for Executive Committee, FSC for Management Financial Stability Committee, MFSC for Management Financial Supervision Committee, MIPM for Monetary and Investment Policy Meeting.

Source: IMF, 2019, FSAP – Macroprudential Policy, 9

In the case of Malaysia, both management- and board-level policy committees are chaired by the Governor of the BNM, who is legally responsible for decisions taken by BNM.[65] This is a contrast in comparison to the BoE, where even though the Governor is the chair for all three policy committees in monetary, macroprudential and microprudential, they generally have a modest influence over the voting and decision taken by the committee members.[66] Designed to further widen the scope of the macroprudential framework of the BNM, the FSEC has a broad membership structure consisting of the highest representatives from the FSN authorities and external members from private sectors.[67] Although both the Malaysian FSEC and the UK FPC

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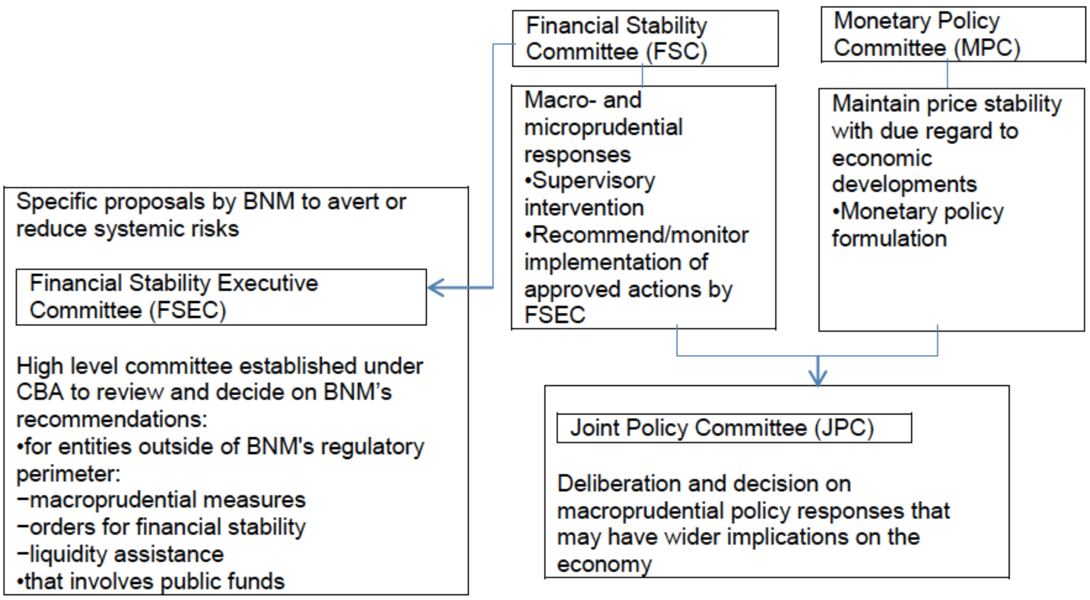
[65] Central Bank Governance Group (n 49) 85.
[66] This is quite the opposite of the perception of the US Federal Reserve (Fed), where it has often been believed that the Chairman's is the only vote that really matters. From its decision-making style, the BoE has been widely used as the prime example of an individualistic committee and highly democratic Monetary Policy Committee in its policymaking process. See: Alan S. Blinder, 'Monetary Policy by Committee: Why and How?' (2007) 23(1) European Journal of Political Economy 106, 111, 113 <https://ideas.repec.org/a/eee/poleco/v23y2007i1p106-123.html> accessed 18 April 2020; Henry W Chappell, Rob Roy McGregor and Todd A. Vermilyea, 'Power Sharing in Monetary Policy Committees: Evidence from the United Kingdom and Sweden' (2014) 46(4) Journal of Money, Credit and Banking < https://www.jstor.org/stable/42920145> accessed 18 June 2020.
[67] This membership can be broadened to include any relevant head of supervisory authority in which the BNM and the FSEC impose measure or order, or enter into arrangements for the purpose of financial stability, the head

include a Treasury representative, the Malaysian Secretary-General to the Treasury holds voting power within the FSEC. Moreover, with almost twice the amount of membership, the FPC is still lacking the representative of its deposit insurance authority, while the FSEC membership is also inclusive to the chair of the MDIC. As seen in figure 5.5, in Malaysia, besides the board and management level of macroprudential policy committees, there is another policy forum, the Joint Policy Committee (JPC) that bridges the coordination between financial stability and price stability concerns within the BNM policymaking. As an *ad hoc* joint forum, the JPC will be activated once either FSC or MPC escalates an issue that has implications on both monetary and financial stability. Moreover, the JPC also has a vital role in enhancing the alignment and deliberating the policy response on macroprudential decisions that may have broader impacts on the economy and monetary policy, such as the household indebtedness and developments in the property market.[68]

Figure 5.5: The BNM's Decision-Making Fora



Source: Lau, 'Macroprudential Surveillance and Policy Framework – Malaysia's Experience', 2015

of that authority shall be present at the FSEC meeting as a member. See: The CBMA 2009 s 37 (4) (5) (6).

[68] Since its first meeting on 7 September 2010, the JPC discussed several important issues including the credit conditions, threat of higher inflation resulted from rising global commodity prices, sustainability of household indebtedness, impacts of non-bank financial institutions in financing on the household sector and the resilience of households to income shocks. See: BNM (n 23) 49; Central Bank of Malaysia (n 26) 233; Bank Negara Malaysia, 'Annual Report 2012' (March 2013) 79 < https://www.bnm.gov.my/-/ar2012> accessed 12 August 2019.

Table 5.4: The Membership Arrangements in Various Committees within the BNM

The Board of Directors	**MPC**	**Financial Stability Executive Committee (FSEC)**	**FSC**
Governor of BNM	Governor of BNM	Governor of BNM	Governor of BNM
Deputy Governor I	Deputy Governor I	Deputy Governor I	Deputy Governor I
Deputy Governor II	Deputy Governor II	Secretary-General to the Treasury	Deputy Governor II
Secretary-General to the Treasury	Assistant Governor *(for Investment Operations and Financial Markets; Financial Market Development; Foreign Exchange Administration; Currency Management and Operations)*	Chairman of SC	Assistant Governor *(for Investment Operations and Financial Markets; Financial Market Development; Foreign Exchange Administration; Currency Management and Operations)*
Four to seven independent non-executive members	Assistant Governor *(for Economics; Monetary Policy; etc.)*	CEO of MDIC	Assistant Governor *(for Financial Surveillance; Prudential Financial Policy; Consumer and Market Conduct)*
	External Expert *(Academic/Scholar)*	External Expert *(Private Sector)*	Assistant Governor *(for Financial Development and Innovation; Payment Development; Islamic Banking and Takaful; Insurance Development)*
	External Expert *(Academic/Scholar)*	External Expert *(Private Sector)*	Assistant Governor *(for Payment Oversight; Financial Conglomerates Supervision; Banking Supervision)*

Source: The BNM Annual Report 2011

In the UK, the cross-membership arrangements of the FPC, the MPC, the PRC and the FCA are also designed to foster the cross-policy coordination and cooperation, with a view to maintaining financial stability. Through this arrangement, the FPC effectively benefits from direct insights of the MPC members on the macroeconomic developments and its interaction with the financial system.[69] In comparison to the other two BoE's Committees, in general the FPC's membership structure reflects a broader range of expertise that ensures the balanced policy interests and coordination.[70] Moreover, the presence of the Chief Executive of the FCA as a member of the FPC also further ensures the coordination between the micro-and macro-prudential decisions of the FPC, FCA and PRC, to be based on a 'collaborative, two-way exchange of information, advice and expertise' relationship.[71] Nevertheless, there are mounting concerns over the accumulation of financial stability powers and responsibilities within the structure of BoE that can lead to the potential 'house thinking' problem in the FPC's systemic risk assessment and decision-making process.[72]

In fact, in comparison to the BNM, BI and MAS, the macroprudential policymaking within the FPC has been balanced and properly weighed against different policy concerns outside the BoE's remits. In its policy deliberation and formulation, the FPC is bound to the 'stability of the graveyard clause' that obligates the committee to consider any adverse effects of its actions on financial institutions or activities and whether its effects are proportionated to the benefits.[73] Besides, for any responses and decisions made in mitigating the risk, the FPC is required to explain and include its reasonings for taking a particular action and the estimation of the costs and benefits of such responses on the FSR, record of meetings and policy statements. Additionally, the Treasury's annual remits and recommendations also further ensures the

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[69] The MPC, on the other hand, benefits from the advice of the FPC and alerts in the events of monetary policy threatening financial stability. See: Paul Tucker, Simon Hall, and Aashish Pattani, 'Macroprudential Policy at the Bank of England' (2013) Quarterly Bulletin Q3 196 <https://ssrn.com/abstract=2327434> accessed 21 May 2020; The FSA 2012 s 9C (1).
[70] The non-voting representative of Treasury at the FPC is also perceived to encourage FPC to act based on their best judgment. See: The BoE Act 1999 s 9B (1); IMF, 'United Kingdom : Financial Sector Assessment Program: Macroprudential Institutional Framework' (IMF Country Report No.16/160, June 2016) 9 <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/United-Kingdom-Financial-Sector-Assessment-Program-Macroprudential-Institutional-Framework-43971> accessed 21 August 2019.
[71] Richard Barwell, *Macroprudential Policy: Taming the Wild Gyrations of Credit Flows, Debt Stocks and Asset Prices* (Palgrave Macmillan 2013) 82.
[72] Ellis Ferran, 'The Re-organization of Financial Services Supervision in the UK: An Interim Progress Report' (2011) 49 University of Cambridge Faculty of Law Research Paper < http://dx.doi.org/10.2139/ssrn.1952705> accessed 10 March 2019.
[73] Tucker, Hall, and Pattani (n 69) 195.

FPC's policy responses are consistent to the overall Government's economic policy and supports the capacity of the financial sector to contribute to the growth of the economy in the medium or long-term period.[74]

Table 5.5: The Membership Arrangements in Various Committees within the BoE

The Court of Director	The FPC	The PRC	The MPC
The Governor	The Governor	The Governor	The Governor
The Deputy Governor for financial stability	The Deputy Governor for financial stability	The Deputy Governor for financial stability	The Deputy Governor for financial stability
The Deputy Governor for markets and banking	The Deputy Governor for markets and banking	The Deputy Governor for markets and banking	The Deputy Governor for markets and banking
The Deputy Governor for monetary policy	The Deputy Governor for monetary policy		The Deputy Governor for monetary policy
The Deputy Governor for prudential regulation	The Deputy Governor for prudential regulation	The Deputy Governor for prudential regulation	
Not more than nine non-executive directors	The Chief Executive of the FCA	The Chief Executive of the FCA	
	One member appointed by the Governor	One member appointed by the Governor	Chief Economist of the Bank appointed by the Governor
	Five members appointed by the Chancellor	At least six members appointed by the Chancellor	Four members appointed by the Chancellor
	A representative of the Treasury (non-voting)		
Five bank – not more than nine non-bank	Six bank – 1 FCA – 6 Treasury	Five bank – 1 FCA – at least 6 Treasury	Five bank – 4 Treasury

Source: Bank of England

[74] The BoE Act 1998 s 9C (4).

V.III.c ASSESSMENT III: The Extent of Powers Assigned to Macroprudential Authority

To avoid the institutional misalignments and bias towards inaction, it is important to ensure that macroprudential powers are well-aligned to the authority mandates and measured with strong degree of accountability.[75] To date, there are contesting views on what powers the macroprudential authority should have to support a robust institutional framework, particularly the strong ability and willingness of the authority to respond to emerging systemic risk. This research, however, focuses on four elemental powers selected to support the tasks and operation of macroprudential supervision. Three out of four powers listed are in line with the IMF recommendation on the primary categories of power assigned to the macroprudential framework, which are powers to make rules, collect information, supervise regulated entities, and enforce compliance with applicable rules.[76]

Table 5.6: Comparison for Macroprudential Powers in the UK, Malaysia, Singapore, and Indonesia

Authority	**FPC**	**FSSPC**	**FSSPC**	**FSEC**
A. System-wide Information Collection and Aggregation	No	Yes	Yes	Yes
B. System-wide Surveillance	No	Yes	Yes	Yes
B.I. Direct Supervision & Examination	No	Yes	Yes	Yes
B. II. Macro-based Stress Test	Yes	Yes	Yes	Yes
C. Early warning/risk communicating	Yes	Yes	Yes	Yes
D. Rule Making power on Instruments	Yes	Yes	Yes	Yes

[75] In such absence, there is a need to further balance the misalignments with more informal coordination between authorities. See: Nier 2012 (n 15) 198.
[76] IMF(a) (n 2).

D.I. Recommendations	Yes	No	Yes	Yes
D.II. Directions	Yes	No	Yes	Yes

Source: Author's illustration

V.III.c.i. System-wide Information Collection and Aggregation Power (Information Power)

In identifying and assessing the systemic risk and formulating the appropriate policy response, the supervisor needs to hold the explicit power to access and collect all necessary information and data, both directly from the market participants and the relevant responsible authorities.[77] The elusive nature of financial innovation and systemic risk, altogether with the high possibility of its source migrating rapidly to different sectors and activities, further advanced the need for macroprudential information collection power to be extended to all parts of financial system, including the potential extension to the unsupervised sectors.[78]

The MAS and the BNM are particularly well-equipped with the explicit statutory power to collect information from all relevant authorities and institutions in the jurisdictions. Under the CBMA 2009, for purposes necessary for financial stability, the BNM may request any information or document relating to the activities, financing, accounts, transactions, customer accounts, or any other information of such persons from any other authority when it considers necessary, to identify the risk in a timely fashion.[79] The BNM's information-aggregation power also covers the ability to request information from any Government agencies, and the capacity to order any person outside any other supervision or oversight to submit the information required by the BNM.[80] In the case of Singapore, whenever it considers it necessary for the public interest, MAS, through the FSC, also enjoys a solid statutory power to collect relevant information from any financial institutions.[81] Overall, MAS information-collection power is

[77] Because not all countries established a shared statutory mandate in financial stability for their FSN authorities, it is commonly the case that the existing legislation restricts the full disclosure and share of information with other authorities. See: Ibid, 12.
[78] The close relationship between the macroeconomic and financial sectors broadens the need for necessary information from the real economic sectors, including the household and SME sectors. See: Ibid, 13, 28.
[79] The CBMA 2009 s 30(1).
[80] Ibid, s 30(1) & 30(2).
[81] The MAS Act s 27(1).

extensively broad, particularly as it is also supplemented with regular constructive dialogues and supervisory returns with industry, commercial sources and regular / *ad hoc* surveys.[82]

Within the BoE, the FPC does not hold any supervisory capacity to collect information from the markets and institutions directly.[83] The Committee meets quarterly in assessing the inputs from the information and data, supervisory insights gathered by the PRA, the economic outlook analysis from the BoE, and the market intelligence and surveillance from the FCA.[84] The FSA 2012 particularly ensures the FPC's access to data and information through the statutory power granted to the BoE, in directing the FCA and the PRA to provide or produce specified information or documents required to support its financial stability objective, in which the FPC is mandated to.[85] At the request of the FPC and the BoE, the PRA may exercise its 'financial stability information power', in which it can collect information beyond its authorised firms, such as managers of UK-related investment funds, service providers critical to authorised entities, and other entities essential for financial stability as prescribed by the Treasury.[86] The memberships of the Deputy Governor for Prudential Regulation (PRA) and the CEO of the FCA within the FPC also further ensure the FPC's vital access to relevant resources and expertise from both regulators. Therefore, despite the lack of direct information aggregation

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[82] MAS also collects more granular data on the household balance sheet through its monthly Housing Loan Profile Survey, account-level information on borrowers' profiles and loan characteristics for new housing loans. Besides, MAS also uses quarterly data of the household sector from the Department of Statistics. See: IMF, 'Singapore: Financial Sector Assessment Program: Technical Note Macroprudential Policy' (Country Report No.19/227, July 2019) 6, 14 < https://www.imf.org/en/Publications/CR/Issues/2019/07/15/Singapore-Financial-Sector-Assessment-Program-Technical-Note-Macroprudential-Policy-47111> accessed 21 May 2020.
[83] There is a concern that despite of the power of the FPC to issue direction to the PRA, in the end it will be the decision of the PRA to decide on the timetable to respond to such directions. See: Conaghan (n 41) 272.
[84] Overall, the PRA's supervisory judgments and intelligence, as well as information gathered from on-site inspections are essential for the success of systemic risk identification by the FPC. The expertise and access to information hold by the FCA, particularly on the poor ethics and performance which could be linked to the risk-taking behaviors, are also equally important for operating the Committee. The FCA's expertise might also be required to provide the Committee with the investigation of performance of any market for financial services and any breach of the Competition Act 1998 in financial services. See: FSB, 'Peer Review of the United Kingdom' (September 2013) 20 < https://www.fsb.org/2013/09/r_130910/> accessed 12 June 2020; IMF (n 70) 22; Iris H-Y Chiu, 'Macroprudential Supervision: Critically Examining the Developments in the UK, EU and Internationally' (2012) 6(3) Law and Financial Markets Review 191 <https://doi.org/10.5235/175214412800650563> accessed 19 August 2019; Barwell (n 71) 82.
[85] It is important to note that the collection of information and documents relevant for financial stability matters is granted to the BoE instead of the FPC. See: The FSA 2012 s 9Y (1) (2).
[86] This power, exercised by the PRA at the request of the FPC and the BoE, is to support the exercise of its functions in financial stability objective; or when the PRA considers such information might be relevant to the stability of one or more aspects of the UK financial system. See: The FSMA 2000 s 165A (2)-(3).

power, the FPC has a broad statutory authority to reach all relevant information and data from all parts of the UK financial system.[87]

The OJK Act 2011 has, in effect, left BI's power, as previously specified in the CBA 1999 Art 28(1) in obligating the bank to submit reports and information to be unclear and still need to be specified in the near future for the purpose of macroprudential supervision. Currently, only the BI Regulation 2014/No.16 Art 7 provides BI with a legal basis for obligating banks to supply data and information to conduct financial system surveillance. Even though the FSSD's current operation suggests its high degree of confidence in the BI's ability to collect and aggregate system-wide information, BI still needs an explicit power that secures its access to information and data in times of policy conflicts and crisis.[88]

Overall, guaranteed by a new integrated reporting portal released by BI, OJK and IDIC in 2020—not yet operationalised—BI's information-collection power in banking sectors is secured.[89] Besides, there is also regular exchange of the data and information on SIBs with OJK, and the regular coordination in implementing the join stress-tests for banks with BI's top-down and OJK's bottom-up approaches.[90] Moreover, the FSSD also benefits from its broad scope of responsibilities in conducting the supervision and surveillance for the monetary and payment system policies that help secure the information and data from the macroeconomic and payment sectors—including households and SMEs.[91] The current Macroprudential and Microprudential Coordination Forum (MMCF) established between BI and OJK has also

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[87] Ibid, s 165A (3); and The Banking Act 2009 s 250 as amended by the FSA 2012.

[88] Budiatmaka (FSSD Executive Director) argues that the current information aggregation on the banking sector handled by the FSSD is fully functioning, as it is supported by a weekly and monthly online banking reporting system, built decades ago, that is still followed by banks. Budiatmaka also emphasises the importance of the close coordination with OJK through FMMC and the new platform of Integrated reporting together with IDIC and OJK. Interview with Y. Budiatmaka, Executive Director of the Financial System Surveillance Department (FSSD), Bank Indonesia (Jakarta, 9 April 2021).

[89] The OJK Act Art 43 specifies the obligations of BI, OJK and IDIC to establish and maintain an integrated means for information exchange. This data-sharing portal is in particular a significant development in ensuring the effectiveness of oversight in Indonesia and supporting the crisis mitigation and resolution process by IDIC. Furthermore, through this portal, banking institutions no longer need to send separate reports to the three authorities in nine separate mechanisms. Thus, it enhances the exchange of data while at the same time increase the efficiency banking supervision by minimising the redundancy of information and data received from banking sectors. See: Bank Indonesia, 'The Accountability Report of Bank Indonesia to the House of Representative and Government Quarter III 2013' (November 2013) 80 <https://www.bi.go.id/id/publikasi/laporan/Pages/lapDPRtrw313.aspx> accessed 20 August 2020.

[90] The FSSC Act 2016 Art 17.

[91] This is also further supported by the position of the SMEs Development and Consumer Protection Department within the FSSPC, that further provides the FSSD with a more comprehensive assessment of the interlinkages between the corporate and household sectors to the macro-financial sector.

become an important forum for sharing of information between the two authorities at both high and technical levels.[92]

By comparison, BI has the least specified and explicit information power, and one which has not yet clearly established any statutory legislation, while the other three authorities have much more explicit powers in collecting the information and data from almost all institutions and relevant authorities in their jurisdictions. Undoubtedly, as the macroprudential supervisor, BI will largely benefit from the establishment of a clear information collection mechanism and an explicit power in its statutory legislation, that guarantees its access to all data and information relevant for the purpose of system-wide risk assessment and monitoring.

V.III.c.ii. System-wide Surveillance Power

Overall, a wide scope of surveillance framework will effectively strengthen the macroprudential authority's pre-emptive risk mitigation response. Through the exercise of surveillance power, the supervisor uses the information collected and aggregated to assess the build-up of systemic risk closely, and further decide on necessary appropriate actions that need to be taken.[93] Rather than refer to the 'supervision power' as broadly identified by the IMF, this research will focus on more specific surveillance power assigned to a macroprudential supervisor.[94] The surveillance power used in this analysis refers to the power exercised by the supervisor in conducting more intensive and closer observation—including activities such as direct supervision, on-site examination and macro-stress-testing—in responding to the systemic-risk monitoring and assessments.[95] Using the system-wide surveillance power, the

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[92] The Macroprudential and Microprudential Coordination Forum is conducted between the MPD and the Department of Supervision and Crisis Management Development of OJK. The forum is established under the MoU between BI and OJK in October 2013, that specifies the framework for both authorities' coordination, including the sharing of supervisory information and macroprudential surveillance between the two.

[93] Sukarela Batunanggar, 'Comparison of Problem Bank Identification, Intervention and Resolution in the SEACEN Countries' (2008) South East Asian Central Banks (SEACEN) Research and Training Centre 80 < https://ideas.repec.org/b/sea/rstudy/rp73.html> accessed 16 June 2020.

[94] For the purpose of this research, the supervision will be used more broadly as overall oversight of the system on a continual basis. The IMF (2013) generally refers to the supervision power exercised by both microprudential and macroprudential authorities, without differentiations made for its use. However, this research argues that unlike the microprudential supervision that aims to ensure the prudential practices applied by individual institutions, the macroprudential surveillance power is targeting the monitoring of financial system and identification of risk building up in the system, that conducted through the macro-based stress testing. See: IMF(a)(b) (n 2); Philip Rawlings, Andromachi Georgosouli and Costanza Russo, 'Regulation of Financial Services: Aims and Methods' (2014) Queen Mary University of London 42 < https://www.qmul.ac.uk/ccls/media/ccls/docs/research/020-Report.pdf> accessed 19 September 2019; Dalvinder Singh, Banking Regulation of UK and US Financial Markets (Ashgate Publishing Limited 2007) 47.

[95] The on-site examination will be ad hoc and used to confirm the result of the surveillance and the implementation

supervisor can respond by directly examining the SIFIs and specific sectors or markets where the build-up of risk is taking place.

As the macroprudential authority, all four central banks have the power to conduct stress tests and other system-wide assessments. Overall, the BNM and MAS have more extensive powers and face almost no legal or institutional impediments in conducting the system-wide surveillance. Among the four, only the FPC has no authority to directly supervise the SIFIs and relevant financial sectors in response to the emergence of systemic risk. Unlike the other three authorities, the FPC is established without macroprudential operational responsibilities, but instead semi-hard rulemaking power to impose directions to the relevant authorities to conduct the surveillance measures for systemic risk assessment. For the first time in December 2014, the BoE, under the guidance of the FPC and the PRA, has started to undertake regular stress testing of the UK banking system, which results are used to support the policy interventions and supervisory actions of both authorities.[96] In detecting the build-up of systemic risk, the FPC uses a broad range of core indicators in its stress-tests scenarios which are regularly reviewed and published to public.[97] Besides, the FPC is also regularly conducting the Systemic Risk Survey series, the CBEST tests on the cyber resilience in the financial system,[98] and annual assessment of risks coming from non-bank financial institutions, markets and infrastructure.[99]

Taking the role of both microprudential and macroprudential supervisor helps the BNM's supervisory approach to consistently assess the risks arising across the set of supervised

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of the prudential rules, but mostly used to supply information. See: Ibid, Singh 47; IMF (n 14) 3.

[96] In 2014, the FPC has also worked through the FCA in requiring lenders to apply a stressed affordability test, and the PRC in limiting high loan-to-income ratio loans by banks and building societies. See: Bank of England, 'Stress Testing the UK Banking System: 2019 Guidance for Participating Banks and Building Societies' (March 2019) <https://www.bankofengland.co.uk/news/2019/march/key-elements-of-the-2019-stress-test> accessed on 10 January 2021.

[97] This set of indicators aims to provide the Committee with some guidance in the use of the tools falling under its powers more or less to address the time-dimension risks. These core indicators are mostly applied on the tools which the Committee has direction powers over, but has less indicator-coverage for the risks that are addressed using the recommendation powers. See: Ibid.

[98] In examining the cyber resilience of the UK financial system as a whole, the FPC carries out the CBEST, that tests the financial institutions' defences and their ability to detect and respond to external cyber-attacks. See: Bank of England, 'Financial Sector Continuity', < https://www.bankofengland.co.uk/financial-stability/financial-sector-continuity> accessed 10 August 2021.

[99] Bank of England, 'Systemic Risk Survey Results – 2019 H1' (July 2019) <https://www.bankofengland.co.uk/systemic-risk-survey/2019/2019-h1> accessed on 10 January 2021.

institutions in a more integrated and structured manner.[100] The CBMA 2009 assigns the BNM with an authority enforced as a legal obligation to support its *ex-ante* surveillance powers for timely systemic-risk identification in the interest of financial stability.[101] Overall, the BNM's macroprudential surveillance tasks are administered by the FSD that is responsible for identifying vulnerabilities at both the domestic and international level.[102] In incorporating the micro-and macroprudential perspectives, the FSD conducts on-site supervision, extensive regulatory reporting, off-site monitoring, and deliberation of macro stress-tests' results.[103] Moreover, the establishment of the FSEC also further enhances the scope of the BNM surveillance power to cover all non-regulated institutions and markets within its financial system.[104]

Within MAS, the FSC's surveillance power and systemic risk assessment primarily focus on four main sectors of banks, corporates and households, non-bank sectors, and the external sector. Through the stress-tests and sensitivity analyses conducted on SIFIs by the MFSC, MAS receives a regular assessment of potential systemic risk.[105] In Singapore, the result of its industry's bottom-up stress tests will be complemented by its top-down annual industry-wide stress tests (IWST) that have been conducted since 2003, and its findings will be then shared within the MAS, especially between the MFSC, the FSC and other supervisory and policy departments.[106] Unique in its conduct of surveillance, MAS uses both formal and informal channels to obtain relevant information, such as regulatory and supervisory returns, survey data and commercial sources, while also actively seeking feedback from the market practitioners

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[100] In general, the FSAP summarised that Malaysia has a 'well-developed risk focused regulatory and supervisory regime'. See: IMF, 'Malaysia: Detailed Assessment of Basel Core Principles for Effective Banking Supervision' (Country Report No.13/56, March 2013) 82 <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Malaysia-Publication-of-Financial-Sector-Assessment-Program-Documentation-Detailed-40373> accessed 17 August 2019.
[101] The CBMA 2009 s 31.
[102] The FSD is also responsible to calibrate the methodologies used by the BNM by facilitating collaboration with other authorities over both financial stability issues at the domestic and international levels. See: BNM (n 23) 52.
[103] IMF (n 100) 17.
[104] The CBMA 2009 s 38 (1) a.
[105] MAS uses these bottom-up stress tests as a pre-emptive supervisory tool in encouraging financial institutions to identify vulnerabilities and develop risk-mitigation plans. The bottom-up stress tests are conducted by the participating institutions using the common prescribed stress scenarios and associated stress parameters communicated by MAS. The authority also conducts sensitivity analyses to examine the potential impact of targeted shocks on corporate and household sectors. See: MAS (n 35) 13,15.
[106] However, the FSB recommends the MAS to expand its modelling capabilities on stress-testing and assessment of the impacts of macroprudential measures on a more granular level. See: FSB (n 36) 22.

and the public.[107] In the forms of 'policy co-creation' and 'two-way consultation process', MAS could builds strong policy relations and informal engagement between MAS managements and the institutions it supervises.[108] This approach has been acclaimed to make MAS' supervision as effective in promoting better understanding and supports from its industry sectors. The close collaborative approach adopted will also be exceptionally beneficial in times of crisis, as it can leverage the industry's knowledge and expertise to shorten the process of regulatory intervention and provide a more responsive supervisory response, while at the same time fostering regulatory ownership among its private sector.[109]

In conducting its macroprudential surveillance, BI has the authority to directly monitor financial system components, including the SIBs, financial conglomerates, the real sectors (corporations and households), financial system infrastructure and macroeconomic conditions.[110] Using Dynamic Systemic Risk Surveillance analysis, BI focuses on the

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[107] These regulatory returns are also expected to close the data gaps for systemic risk analysis related to interbank and bank-to-non-banking financial institutions linkages; and help improving risk monitoring of banks' currency, interest rate and credit exposures. The authority is also actively seeking the intelligence information from dialogue with industry, other domestic and foreign authorities, as well as international organisations. In addition, MAS is also working together with other authorities in obtaining data from unregulated entities that fall outside its regulatory perimeter. See: MAS (n 35) 13; IMF (n 82) 6, 14; Francis Mok, 'Chapter 32 Singapore', in Jan Putnis (ed), *The Banking Regulation Review* (12th, The Law Reviews 2019) 481; Jun Jie Woo, 'The Politics of Policymaking: Policy Co-Creation in Singapore's Financial Sector' (2019) 42(2) Policy Studies 11 < https://doi.org/10.1080/01442872.2019.1634185> accessed 25 May 2020.

[108] The authority aims to incorporate market realities and industry practices in its regulatory practices, while at the same time anticipating problems, minimising the unintended consequences and promoting better understanding and support among industry. See: MAS, 'Objectives and Principles of Financial Sector Oversight in Singapore'(April 2004, revised in September 2015) <https://www.mas.gov.sg/publications/monographs-or-information-paper/2004/objectives-and-principles-of-financial-sector-oversight-in-singapore> accessed 21 March 2020; Jun Jie Woo, 'Beyond the Neoliberal Orthodoxy: Alternative Financial Policy Regimes in Asia's Financial Centres' (2015) 9(3) Critical Policy Studies 297-316 < https://doi.org/10.1080/19460171.2015.1005110> accessed 21 March 2020.

[109] Olga Mikheeva and Piret Tonurist, 'Co-Creation for the Reduction of Uncertainty in Financial Governance: The Case of Monetary Authority of Singapore', (2019) 19(2) The Estonian Journal of Administrative Culture and Digital Governance 74 < 10.32994/hk.v19i2.199> accessed 21 May 2020; Hwee Kwan Chow and Sai Fan Pei, 'Financial Sector in Singapore', in Ulrich Volz, Peter J. Morgan, and Naoyuki Yoshino (eds), *Routledge Handbook of Banking and Finance in Asia* (1st, Routledge 2018) 168.

[110] To date, from the interview conducted, the FSSD of BI acclaimed that BI macroprudential surveillance and supervision is largely benefiting from BI's multiple roles in the monetary, macroeconomic and payment system sectors. The direct interlinkages between the corporate and household sectors to the macro-financial sector in Indonesia also push more interaction and cooperation between BI and the Ministry of Cooperatives and SMEs, which signed an MoU in 2017. This can be seen through the regular use of macroprudential policy tools, such as LFR and LTC, and BI's policy mix in SMEs sectors in Indonesia. See: Bank Indonesia, The Regulation of Central Bank on Macroprudential Regulation and Supervision 2014, No.16/11/PBI/2014 (BI Regulation on Macroprudential Regulation and Supervision 2014) Art 8; Bank Indonesia, 'Annual Report 2015' (July 2016) 87 < https://www.bi.go.id/en/publikasi/laporan/Pages/LKTBI-2015.aspx> accessed 19 August 2020; Bank Indonesia, '2017 Economic Report on Indonesia' (June 2018) 141 < https://www.bi.go.id/en/publikasi/laporan/Pages/LPI_2017.aspx> accessed 10 August 2019.

macroeconomy and financial interlinkages through off-site surveillance and on-site examination of SIBs in the country.[111] The OJK Act 2011 also ensures the authority of BI to carry out the direct examination of SIBs in case-specific information and surveillance when needed, and after giving written notification to the OJK.[112]

In light of the articles 7 and 69 of the OJK Act 2011—that transferred BI's previous function in regulating and supervising the banking sector to OJK—BI has implicitly been left with the authority to regulate banking sectors on the context of macroprudential supervision.[113] As the CBA 1999 has yet to be amended, overall, the statutory surveillance power of BI is still poorly defined. To date, it is only the BI Regulation 2014/No.16 Art 5 that provides BI with the authority to conduct the surveillance of the financial system and the examination of banks and other financial institutions related to the banking sector. Hence, there is still a supervisory gap in BI broader systemic risk assessment and surveillance powers in non-banking financial sectors in Indonesia. With the absence of direct surveillance power, currently, BI largely relies on the MMCF to give its informal advice and recommendation to OJK on the potential systemic risk emergence outside the banking sector.[114]

V.III.c.iii. Risk Communicating Power

As the systemic supervisor, the macroprudential authority typically holds power to communicate the emergence of systemic risk and activate the early warnings through the

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[111] The conduction of on-site examinations aims to strengthen off-site surveillance results and identify idiosyncratic risks with the potential to emerge as systemic risks. The off-site surveillance of BI is conducted through the assessment of the solvency and liquidity stress tests; the bank industry rating; and the implementation of BI regulation on prudential rules among the institutions. See: Bank Indonesia, 'The Accountability Report of Bank Indonesia to the House of Representative and Government Quarter III 2019' (December 2019) 90 < https://www.bi.go.id/id/publikasi/laporan/Pages/LaptriDPR_0319.aspx> accessed 20 August 2020; Bank Indonesia, 'The Accountability Report of Bank Indonesia to the House of Representative and Government Quarter IV 2019' (March 2020) 92 < https://www.bi.go.id/id/publikasi/laporan/Pages/LaptriDPR_0419.aspx#> accessed 20 August 2020; Bank Indonesia, 'Annual Report 2017' (May 2018) 58 < https://www.bi.go.id/id/publikasi/laporan/Pages/LKTBI-2017.aspx> accessed 19 August 2020.

[112] It is also provided that BI does not provide the assessment on health level of the bank and its result of examination report is submitted to OJK within one month of the issuance. This information and data also cannot be used as the official bank examination report to be published. See: The OJK Act 2011 Art 40.

[113] The explanatory notes for the Article 7 of the OJK Act states: '…the scope of the macroprudential regulation and supervision is the duty and authority of BI.' Meanwhile the explanatory notes for Article 69(1) of the OJK Act states that the microprudential regulatory and supervisory duties of BI are transferred to OJK, while its macroprudential matters still reside within BI authority. See: The OJK Act 2011 Art 7, 69 and Elucidation to the OJK Act 2011 Art 7 and 69.

[114] Interview with Budiatmaka, Executive Director of the Financial System Surveillance Department (FSSD), Bank Indonesia (Jakarta, 9 April 2021); Interview with Juda Agung, Executive Director of the Macroprudential Policy Department (MPD), Bank Indonesia (Jakarta, 13 April 2021).

publication of the Financial Stability Report (FSR), official speeches and press releases. In practice, the mindful use of risk communication power will be essential for the effectiveness of systemic risk warnings. Too frequent use of false risk warnings will affect the credibility of the supervisor and the effectiveness of the warning. More importantly, the use of risk communication will also need to be guaranteed with other macroprudential powers and coordinated with other supervisory authorities. Even though the supervisor successfully identifies the risk and communicates such a threat to the markets, without having the capacity to implement policy tools and coordinate with other authorities to impose appropriate response, the effectiveness of this communication power will remain relatively uncertain. Thus, the clarity and strategies used in risk communication for macroprudential purposes are essential in determining the effectiveness of macroprudential policy measures and the supervisory framework.

All four macroprudential authorities assessed in this research hold the main power to issue the FSRs and the quarterly statements and monthly reports on the risk assessment, overall resilience of the system, and the decisions it takes to preserve the stability. While both the FPC and BI are publishing two reports per calendar year, MAS and the BNM mainly depend on their annual FSRs publication. However, in complementing its annual Financial Stability and Payment Systems Report (FSPSR)—circulated since 2007—the BNM also publishes a Biannual Financial Stability Review to give a more up-to-date assessment of current and potential risks to the financial stability;[115] a monthly statistical bulletin that covers the developments of Malaysian monetary, banking, capital markets, insurances and takaful and macroeconomic sectors,[116] and a quarterly bulletin that covers the international and domestic economic surveys.[117] In communicating its risk assessments, since 2004, MAS also complements its annual Financial Stability Reviews with close engagements with industry and other less formal communication tools—such as industry consultation, workshops, and meetings.[118]

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[115] Bank Negara Malaysia, 'Financial Stability Review – Second Half 2019' <https://www.bnm.gov.my/o/annual-report/fsr-overview.html> accessed on 6 March 2021.
[116] Bank Negara Malaysia, 'Publications, 'Monthly Highlights and Statistics', <https://www.bnm.gov.my/mthly-highlights-statistics> accessed on 6 March 2021.
[117] Bank Negara Malaysia, 'Publications, Quarterly Bulletin', <https://www.bnm.gov.my/web/guest/quarterly-bulletin-2020> accessed on 6 March 2021.
[118] The industry workshop is designed to discuss key trends, aggregate stress-test results, and sector-wide issues

Through the FSRs, the FPC communicates its view on the outlook for the stability of the system, the assessment of the key market developments, the strengths and weaknesses of the system, and the updates on necessary progress of the direction given.[119] As part of its accountability and to enhance public understanding of its roles, the FPC also publishes policy statements in explaining its direction-making powers, the exercise of its direction and recommendations, policy trade-offs, and the assessment of the costs and benefits of its actions.[120] The transparent reporting through its regular record of meetings and policy statements generally promotes the FPC's consistency and the predictability of its mitigative actions.[121] While the FPC releases its bi-monthly record of meetings, BI publishes the records of its monthly BGM's meeting to communicate its risk assessment regularly. Besides all this, BI also publishes the Indonesia Financial System Statistic (IFSS) used to support its systemic risk assessment and the formulation of macroprudential policies.

V.III.c.iv Rulemaking Power

The rulemaking power referred in this research encompasses the ability to make and enforce rules applicable to market participants, and the power to directly affect the general policies of relevant authorities by making recommendations or/and giving directions for the purpose of macroprudential supervision. The IMF emphasised that the rulemaking power should not only specify the statutory instruments assigned to the macroprudential authority, but it should also include the possibility of exercising discretion on how the authority uses such instruments.[122] In general, most of the macroprudential rulemaking power may only be imposed on a specified class of financial institutions or sector, and may not be directed toward a specific regulated

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and risks that may need to be monitored closely by the banks. The industry consultation is conducted before macroprudential policy measures are implemented. Other communication tools used by MAS are the press conference and the press releases on the rationale and considerations in implementing certain macroprudential measures taken by the authority and other authorities involved. See: IMF (n 82) 9; FSB (n 36) 14 Box 2.

[119] The FPC has to include the summary of its discussion on taking decisions on the CCyB in its Record of Meeting and the implementation of the CCyB in the biannual FSR. See: The FSA 2012 s 9W (3)-(4), (6), 9U.

[120] The policy statements are used by the FPC to communicate a set of core indicators used, and decisions on the exercise of the tools over which it has given direction, including the decision not to act. The explanation should contain the reasons why a decision to exercise power is taken and why the exercise of power is compatible with the duties of the Committee under the FSA 2012 s 9C and 9F. See: FSA 2012 s 9S.

[121] The FPC Code of Conduct aims to guarantee that in reaching its decision, the FPC should ensure a range of arguments are taken into consideration. Members are free to explain their own position on the policy, however, they should still respect the consensus decision and the effectiveness of the agreed policy. The result of this decision will need to be explained through a record of meetings that include the assessment and judgment used in deciding the use of power, and how the decision to exercise such powers are compatible with the FPC's objectives and general duties.

[122] IMF(a) (n 2) 10 – 11, 14.

institution or market. Overall, the far-reaching and intrusive powers held by the BNM and MAS as the principal and integrated supervisor have provided both authorities with much broader rulemaking power compared to the ones assigned to BI and the BoE. However, to date, the BoE's FPC has the most optimum rulemaking power which accountability can be measured, while at the same time still foster market compliance and coordination with other authorities.

As the highest decision-making committee within the BNM, the FSC has the direct power over a class, category or any persons engaging in financial intermediation to specify measures to contribute to the systemic resilience or limit the accumulation of any risk to financial stability. It can also issue a writing order to take measures considered as 'necessary or appropriate' to avert or reduce any risk to financial stability.[123] The BNM's measure or order is also being enforced as a legal obligation, in which the failure to comply will be regarded as an offence and will be convicted with a fine (not more than ten million ringgit or imprisonment not exceeding ten years or to both).[124] Further, in the interest of financial stability, the BNM may also give advice or make recommendations to any supervisory authority on the implications of any written law, policies or measures proposed by such authority; or on appropriate measures or safeguards to take for the purpose of promoting financial stability.[125] The BNM also enjoys statutory protection from any charges imposed from any civil proceeding against its exercise of power, including the resolution actions, in connection with the financial stability matter.[126]

For all other measures relevant to financial institutions outside the purview of the BNM, the FSC will be able to submit a proposal on relevant macroprudential measures to be imposed based on the approval of the FSEC.[127] Through the chairmanship of the BNM's Governor, the FSEC also effectively widens the scope of the BNM rulemaking power to all parts of financial system and real economy sectors. The broad membership coverage of the FSEC has also further enhanced the legitimacy of the BNM rulemaking imposed through the FSEC that effectively promotes the credibility of its decisions.

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[123] The CBMA 2009 s 31(1).
[124] Such a person will have a chance to make representation right after the BNM issued its order. See: Ibid, s 31 (9).
[125] Ibid, s 41.
[126] Ibid, s 39.
[127] Ibid, s 38 (2).

Based on public interest, MAS may exercise its power to make recommendations directly to financial institutions, and issue direction for obtaining information and making recommendations.[128] As the country's single authority, under any circumstances, MAS also exercises extensive power to issue guidelines, impose conditions of operation, and revoke the license of financial institutions.[129] In general, MAS can enforce such orders in which any financial institutions that fail or refuse to comply with such direction will be guilty of an offence and convicted with a fine (not exceeding US$20,000).[130] Further, no legal action or other legal proceedings can be imposed on MAS and all its employees or any person appointed, approved or directed by MAS in their performance of any of MAS's functions or duties.[131] In implementing macroprudential policies, MAS also actively adopts a whole-of-government approach in employing the set of policy tools that fall outside its control.[132] For instance, in addressing the risk coming from the property market, the MAS has formed an inter-agency taskforce with representatives from the Ministry of Finance, the Ministry of National Development, and statutory boards under these ministries.[133] This interagency taskforce has become an essential platform for regular sharing of data and surveillance insights across the three authorities.

Despite its lack of direct information collection and surveillance powers on financial institutions, the FPC effectively exercises extensive rulemaking powers in making recommendations and giving directions to relevant authorities in the UK, including to the HM Treasury on the perimeter of its regulation, and the adjustment of macroprudential toolkit and its power to give direction.[134] In its implementation, the FPC uses broad recommendation

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[128] The MAS Act s 27(1).
[129] Ibid, s 28(4)(5).
[130] Ibid, s 27(4).
[131] Ibid, s 22.
[132] IMF (n 82) 15.
[133] Ibid, 15; IMF, 'Singapore: Financial System Stability Assessment' (Country Report No. 19/224, July 2019) 40 < https://www.imf.org/en/Publications/CR/Issues/2019/07/15/Singapore-Financial-System-Stability-Assessment-47108> accessed 21 July 2020.
[134] The recommendation which may be given by the FPC to Treasury must fall under its exercise of power on: the macroprudential measures, the regulated activities under the FSMA 2000 s 22(1) or (1A), the designation of activities requiring prudential regulation by the PRA, the activities in which the FCA may make product intervention rules, or on more persons who may be required by the PRC to provide information. See: The FSA 2012 s 9P (2); HM Treasury, 'Remit and Recommendations for the Financial Policy Committee' (29 October 2018) < https://www.bankofengland.co.uk/letter/2018/remit-for-the-fpc-2018> accessed 29 August 2019; IMF, 'United Kingdom: Financial System Stability Assessment' (Country Report No. 16/167, June 2016) 5, 11 < https://www.imf.org/en/Publications/CR/Issues/2016/12/31/United-Kingdom-Financial-Sector-Assessment-Program-Financial-System-Stability-Assessment-43978> accessed 21 July 2020.

powers to manage liquidity and structural risks, especially from the SIFIs. The FPC may also make recommendations to the BoE about its provision of financial assistance to financial institutions and the exercise of its functions on payment systems, settlement systems and clearinghouses. Regarding the FCA and the PRA, the FPC's recommendations should be given only on the exercise of their statutory functions and to all regulated persons, or regulated persons of a specified description, but not to a specified regulated person.[135] In the exercise of this power, the FPC may also specify its 'comply or explain' recommendations—that can only be directed toward the PRA and the FCA—which would require the regulators to comply or otherwise explain to the FPC and the public about why they are not doing so.[136] From February 2016, members of the FPC are also indemnified by the BoE against personal civil liability arising from the carrying out or purported carrying out of their functions.[137]

Another rulemaking power held by the FPC is the ability to give direction over the PRA and the FCA relevant to all regulated persons or regulated persons of a specified description under the remit of both authorities.[138] This power aims to ensure that the FPC can make essential and prompt macroprudential decisions, important for maintaining the system's stability without risk facing delay and policy conflicts. However, due to its prescriptive nature, the use of direction over the PRA and the FCA is only restricted to specific tools set out by the Treasury, that cover tools targeting the risks that emerge from excessive leverage and credit growth.[139] The use of these tools is primarily reinforced by 'guided discretion', in which the FPC uses the set of core indicators and judgement on all available information to make its decision.[140]

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[135] The recommendation may not specifically be directed to a particular financial institution or under Parts 1 to 3 (Special Resolution Regime, Bank Insolvency and Bank Administration) of the Banking Act 2009 in relation to a particular institution. See: The FSA 2012 s 9Q (3) (2).

[136] The FCA or the PRA must as soon as reasonably practicable employ / proceed with the recommendation; or notify and explain the reasons for its decision if it does not accept the recommendation. The authorities are also required to provide the Committee with one or more reports on how it is complying or has complied with the direction. See: Ibid.

[137] This is also granted to all members of the Court of Directors, the MPC and the PRC. See: The Bank of England, 'Annual Report 2020' (18 June 2020) 5 < https://www.bankofengland.co.uk/annual-report/2020> accessed 11 August 2020.

[138] The direction given may not require the FCA and the PRA to do anything beyond its powers and may not require its provisions to be implemented by specified means or within a specified period. See: The FSA s 9H (4).

[139] These measures should be first prescribed by the Treasury and laid before and approved by resolution of each House of Parliament. The Treasury holds a central role in prescribing the macroprudential measures that can be directed by the FPC to the FCA, and the PRC based on the FSA 2012 s 9L. To date, the FPC has used its power of direction over tools such as capital requirements for residential and commercial property exposures; sectoral capital requirements for intra-financial sector exposures; limits on LTV ratios and DTI ratios, the countercyclical capital buffer rate. See: The FSA 2012 s 9H (2) (a), 2B (5), 9L; IMF (n 134) 27.

[140] Ibid, IMF, 27-28.

Through these tools, the FPC also holds direct power to adjust the capital requirements and level of CCyBs and sectoral capital requirements (SCRs) held by the UK firms.[141]

Compared with the other three cases, the macroprudential rulemaking power assigned to BI is still less defined in the CBA 1999. With the stalled amendment of the CBA 1999, to date, BI authority over the prescription of macroprudential regulations and supervision on the banking sector is mostly based on the interpretation of the OJK Act 2011 elucidations on Art 7 and 69.[142] Further under the BI Regulation 2014/No.16, BI also attempts to specify its authority over the power to impose rules, regulations and administrative sanctions directly on banks and other financial institutions based on the results of its macroprudential supervision; and to communicate the recommendations resulted from its macroprudential supervision to other relevant authorities.[143] Under this regulation, BI also specifies its authority over the exercise of macroprudential instruments tools.[144]

Currently, there is no legal basis established for BI to give recommendations or directions to other authorities in Indonesia, except for giving informal advice and recommendations, and making relational approaches in influencing other authorities within the context of institutional coordination fora, such as the MMCF with OJK and the FSSC at the national level.[145] Thus the BI exercise of policy mix since 2011 is the only way for BI to directly address systemic risk and to expand the extent of its regulatory coverage to the real sectors and payment system in

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[141] These tools are applied to banks, building societies and larger investment firms, based on the increasing threats in the system. In normal times, UK banks are required by the FPC to hold a CCyB of 2% of UK risk-weighted assets, and in times of an economic shock emerging, the FPC can release the CCyB to 0%. To provide sufficient time for meeting this requirement, firms will have up to 12 months to comply with the increased CCyB level. See: Mark Carney, 'The Grand Unifying Theory (and Practice) of Macroprudential Policy' (Bank of England Speech, University College London, 5 March 2020) 26 <https://www.bankofengland.co.uk/speech/2020/mark-carney-speech-at-university-college-london> accessed 1 June 2020; The Bank of England, 'Financial Stability Report' (December 2019) <https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2019/december-2019.pdf> accessed 12 April 2021.

[142] These elucidations emphasise that control and supervision other than matters specified under OJK authority shall remain in BI. Interview with Rosalia Suci, Executive Director of Legal Affairs Department, Bank Indonesia, (Jakarta, 17 April 2021).

[143] It also has the power to impose administrative sanctions to banks for non-compliance in provision of data and information as well as application of BI's directions. See: BI Regulation on Macroprudential Regulation and Supervision 2014 Art 12(1)(2), 13.

[144] Ibid, Art 3: 'Power to use instruments aims for: a. strengthens capital buffers and prevent excessive leverage; b. manages intermediary functions and control credit risk, liquidity risk, exchange risk and interest rate risk; c. limits exposure concentration; d. strengthens financial infrastructure; and/or e. enhance efficiency of financial system and financial access.'

[145] Interview with Rosalia Suci, Executive Director of Legal Affairs Department, Bank Indonesia, (Jakarta, 17 April 2021); Interview with Y. Budiatmaka, Executive Director of the Financial System Surveillance Department (FSSD), Bank Indonesia (Jakarta, 9 April 2021).

the country. Although not specifically targeted to address the financial stability challenges, the policy mix—which comprises interest rate, exchange rate, capital flow management, and macroprudential elements—can help balance the policy trade-offs and conflicts between the three sectors within BI. However, without strong mandates in the conduct of macroprudential supervision and the achievement of financial stability, the direction of BI's policy mix will be uneven toward concerns over price stability.

V.III.d. ASSESSMENT IV: The Mechanism for Inter-Agency Coordination under the Macroprudential Framework

The close coordination between macroprudential supervisor and other authorities is essential in ensuring the effective sharing of information and alignment of policy responses in the mitigation of systemic risk and times of crises. The failure of the UK Tripartite arrangement, as revealed in the wake of the Northern Rock failure in 2007, provides important lessons on the need for designing the inter-agency coordination with a robust legal framework and clear separation of responsibilities between different authorities.[146] The MoU of Tripartite arrangement that was supposed to establish clear separation of responsibilities between the BoE, the FSA and HM Treasury was also proven to fail in clearly defining the role and operationalisation of the LoLR function of the BoE.[147]

In fact, building an effective inter-agency coordination is not only challenging, but also susceptible to fundamental conflicts of interests between different policy goals, and often the vested interests of the policy actors themselves. The embezzlement case involving the Deputy Governors of BI and the misleading supervisory information submitted to the FSSC during the handling of the Bank Century (BC) bailout in 2007 demonstrate the vulnerability in inter-agency coordination.[148]

Relevant to the macroprudential coordination, this chapter consolidates six main legal mechanisms— as seen in figure 5.6 that arranged based on the strength of the legal basis— used in building inter-agency coordination in the four case studies. It emphasises that although

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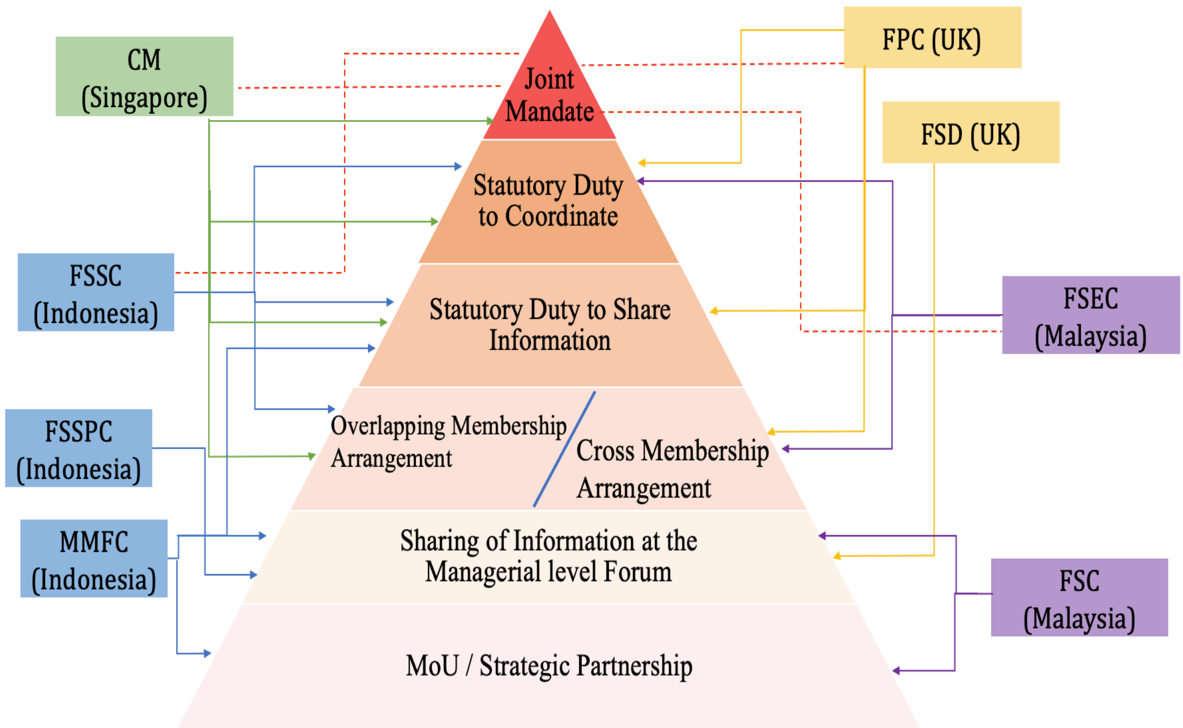
[146] See Chapter I, section I.III.d.; Chapter IV, Case Study I.
[147] Singh (n 94); Dalvinder Singh, 'UK Approach to Financial Crisis Management' (2010) 16 Warwick School of Law Research Paper < https://dx.doi.org/10.2139/ssrn.1650559> accessed 14 June 2020.
[148] See Chapter I, section I.III.d.; Chapter IV, Case Study II.

the use of MoUs and Executive Decrees can help establish a shared understanding and a more transparent share of responsibility among different authorities,[149] it cannot be compared to the legal certainty created by assigning a joint mandate for financial stability in primary legislations.

Figure 5.6: Legal Arrangement for the Four Macroprudential Coordination Arrangement



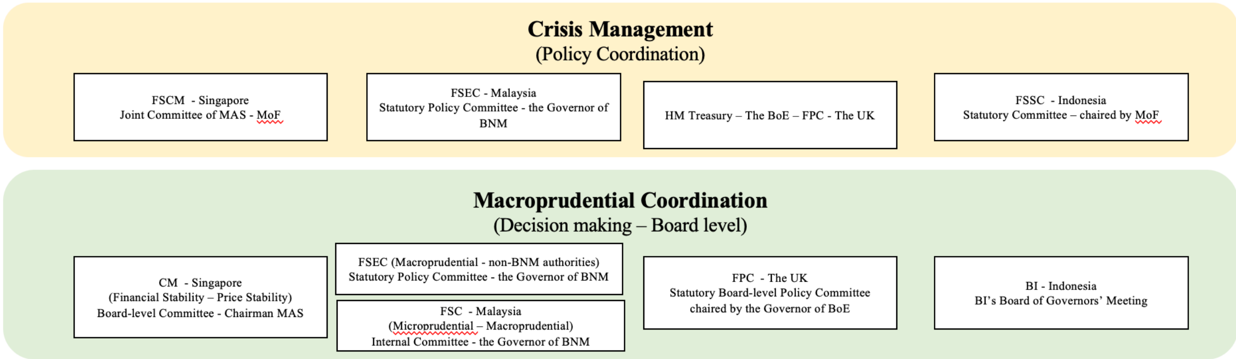
Source: Author's illustration

In limiting and mitigating the build-up of systemic risk, macroprudential supervision is particularly reliant on coordination with other supervisory authorities, especially through its sharing information and joint policy response. As the missing link complements the microprudential supervision and monetary policy, macroprudential supervision is expected to add another layer of supervision after the microprudential framework and inter-agency coordination, before activating the crisis management framework once systemic risk materialises. Following the international adoption of the macroprudential framework, ideally, each country will have two mechanisms for coordination on financial stability matters: the *ex-*

[149] IMF(a) (n 2) 5.

ante macroprudential framework and the *ex-post* crisis management framework.[150] Figure below summarises the two mechanisms in the four case studies.

Figure 5.7: Two Coordination Mechanisms in Financial Stability



Source: Author's illustration

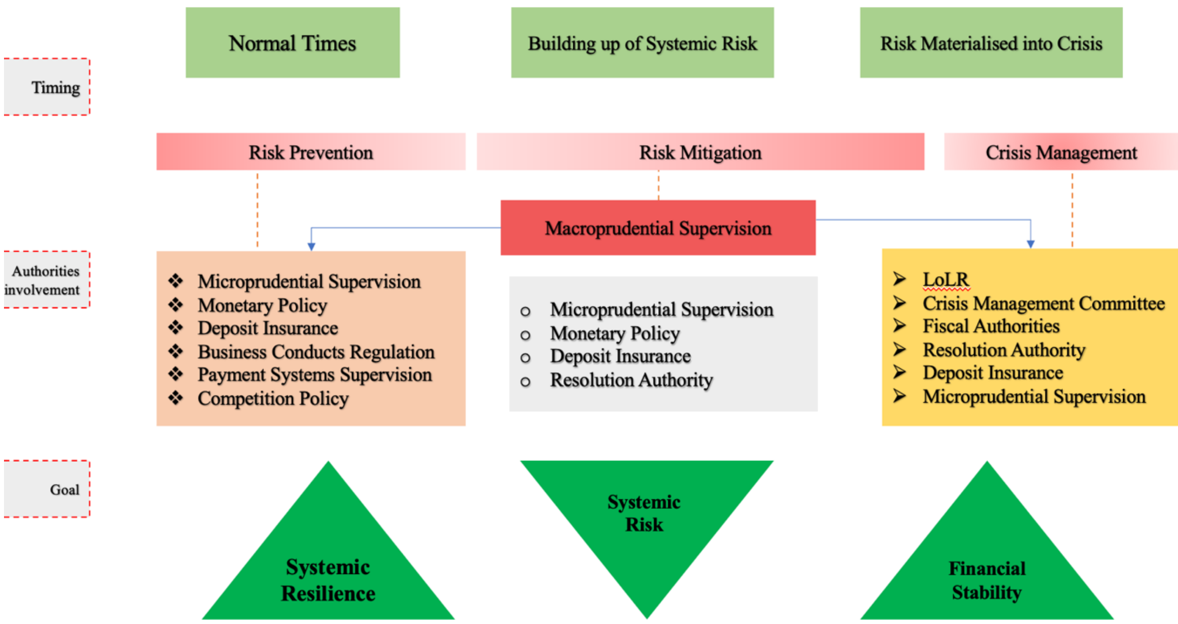
Overall, the effectiveness of macroprudential coordination arrangement is also imperative to support the effective use of the its policy measures and supervisory powers addressed earlier.[151] The IMF identified four ways to ensure close coordination in risk assessment/prevention and risk mitigation stage, through (i) resolving any legal impediments to the sharing of supervisory data, (ii) fostering the involvement of relevant supervisory agencies in the decision-making process, in particular through the membership arrangement, (iii) establishing shared financial stability objectives which could also reduce conflict of interest, foster engagement, and increase compliance with macroprudential recommendations, and (iv) overlapping membership between monetary and macroprudential decision-making bodies.[152]

[150] Erlend W. Nier and others, 'Institutional Models for Macroprudential Policy' (2011) 11/18 IMF Staff Discussion Note 19 <https://www.elibrary.imf.org/view/journals/006/2011/018/article-A001-en.xml> accessed 7 April 2018.

[151] Instead of placing coordination as a power that can be assigned to a macroprudential supervisor, this research argues that all macroprudential supervision should have its own coordination arrangement which will ensure the prompt and effective use of macroprudential powers, such as information aggregation, rulemaking and general supervisory powers. All powers suggested by this thesis can be effectively executed when they are also supported by effective coordination with the relevant authorities.

[152] IMF (n 14) 38.

Figure 5.8: Macroprudential Supervisory Coordination



Source: Author's illustration

V.III.d.i Systemic Risk Prevention / Systemic Risk Assessment

The ability to aggregate and obtain information from other authorities and directly from the market participants will be significant for ensuring the thorough assessment and identification of systemic risk build-up by the supervisor. Overall, the four macroprudential authorities have in placed robust systemic risk prevention scheme that is effectively built upon sharing of information and coordination between relevant supervisory authorities and the deposit insurance authorities. However, only in the case of Indonesia has the *ex-ante* risk prevention operationally overlapped somewhat in the monitoring and maintainance of financial stability with its *ex-post* scheme chaired by the MoF.

In Malaysia, the coordination between different policy sectors to prevent the build-up of systemic risk is conducted through two levels of committee coordination, through the management level of the FSC and the inter-departmental level of the JPC, both chaired by the Governor of BNM. As an internal forum for microprudential and macroprudential supervision, the FSC is effectively managing the policy coordination and understanding between two policy sectors to achieve its financial stability goal. As a high-level internal policy committee, the FSC meets four times a year to review financial stability developments, and monitor and take actions against risks to financial stability at both systemic and institutional levels.[153] The JPC has also been playing important role in enhancing the policy discussion and coordination between the financial stability and the broader economic concerns within the BNM.

Besides having the power to obtain and share any information with other authorities it considers necessary for financial stability, the BNM is also closely coordinated with the SC and MDIC in regularly conducting its macroprudential surveillance, policy consultation and coordination of supervisory process as respectively ensured under the Operational Framework for Financial Crisis Management and Resolution, and the Strategic Alliance Agreement (SAA). While the BNM and the SC have a close day-to-day coordination in co-regulating the Malaysian investment banks, the MDIC is also dependence on financial information and on-site examination reports shared and provided by the BNM.[154] Overall, there is a strong culture of collaboration between the three authorities on major initiatives, sharing of information and coordination arrangement relevant for the risk prevention scheme in the country.[155]

In Singapore, despite the multiplicity of roles assigned to MAS, the authority effectively delivers high performance and reliability on its supervisory operations.[156] The systemic risk prevention scheme in Singapore is structured under the integrated macroprudential, microprudential and monetary policies of MAS, which ensures close coordination and communication among different policy areas in identifying and assessing the systemic risk. At the management level, the assessment of systemic risk and formulation of macroprudential policies by the FSC are structured under the arrangement that supports sharing of information and policy coordination between senior management from three main MAS departments (financial supervision, monetary policy, and economic policy). The FSC is also actively communicating and interacting with other government authorities, particularly the MoF, to discuss the emerging macroeconomic and financial stabilities issues, and collaborate on crisis

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[153] Bank Negara Malaysia, 'Annual Report 2019' (April 2020) 12 < https://www.bnm.gov.my/o/annual-report/index.html> accessed 12 August 2019.

[154] Under the MDIC Act 2011 s 98, the FSC is also responsible to make decision on the non-viability of a financial institution and issue a notification to the MDIC to start the resolution process.

[155] In general, the BNM also has a full statutory authority to cooperate and coordinate its policy measures with any supervisory authorities, including foreign authorities, for the purpose of promoting financial stability. See: The CBMA 2009 s 40.

[156] IMF (2013) even acknowledges that the current's Singapore regulation and supervision are among the best in the world. See: IMF (n 133) 21.

management preparations.[157] Besides this, the SDIC and MAS have also signed an MoU on information sharing and coordination on deposit insurance payout.[158]

Similar to Singapore, in the UK, the concentration of supervisory responsibilities under the purview of the BoE has helped ensuring a close coordination between the monetary, macroprudential and microprudential policies in the assessment of the systemic risk in the UK.[159] However, the UK arrangement has placed more emphasis on the importance of having a separate policy committee for each monetary, macroprudential and microprudential function, but with cross-membership arrangements between the three. This structure is deemed as essential to avoid the problem of groupthink—or conversely, the creation of silos in the structure of the BoE. By promoting interactions between different policy views in its decision-making process, the BoE's cross-membership arrangement also aims to balance policy trade-offs and foster understandings between its different policy functions.[160] The FPC and MPC are mainly required to include reflections on how each one's policy actions and decisions affect the another, which should be presented in any policy statements, records of meetings, and the FSR by the FPC and Monetary Policy Reports by MPC.[161]

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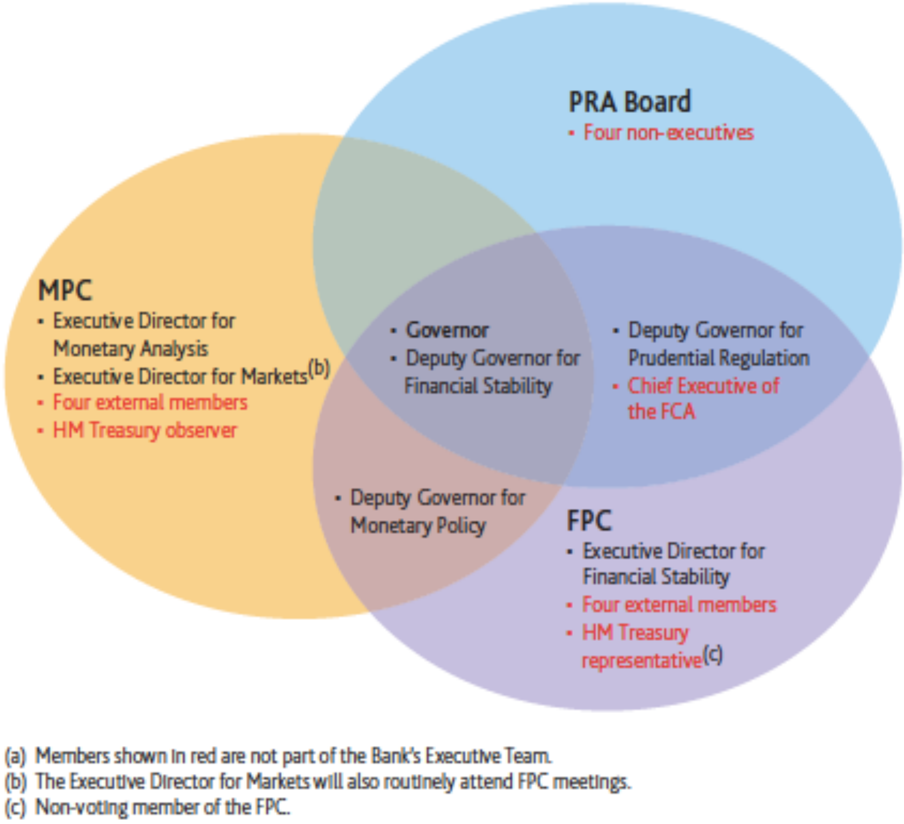
[157] Most of the collaborations and cooperation between MoF and the MAS are taking place at the level of the FSC.
[158] However, the IMF recommends updating this MoU in order to provide the SDIC with earlier access to supervisory warnings. See: IMF (n 82) 29.
[159] Tucker, Hall, and Pattani (n 69) 196.
[160] The cross-membership is particularly important for operating the FPC, which can effectively facilitate the sharing of information and analysis between the Deputy Governors from each policy and the Chief Executive of the FCA. See: Treasury Committee (n 9) para 121; FSB, 'Peer Review of the United Kingdom' (September 2013) 20 < https://www.fsb.org/2013/09/r_130910/> accessed 12 June 2020; Tamarah Shakir and Matthew Tong, 'The Interaction of the FPC and the MPC' (2014) IV Bank of England Quarterly Bulletin 404 < https://www.bankofengland.co.uk/quarterly-bulletin/2014/q4/the-interaction-of-the-fpc-and-the-mpc> accessed 12 April 2020.
[161] HM Treasury, 'Remit and Recommendations for the Financial Policy Committee' (29 October 2018) < https://www.bankofengland.co.uk/letter/2018/remit-for-the-fpc-2018> accessed 29 August 2019.

Figure 5.9: The Cross-Membership within the Bank of England's Structure



Source: Hall, Pattani and Tucker, 2013

Moreover, the coordination between the FPC and microprudential regulators, the FCA and PRA, is also secured through various mechanisms that ensure the sharing of information, the alignment of mandates and objectives in financial stability, and cross-membership arrangements. The PRA's general objective in promoting the safety and soundness of financial institutions is also designed with the statutory requirement of avoiding any adverse effect on the financial stability—while the FCA's integrity objective also includes the protection and improvement of the soundness, stability and resilience of the financial system in the UK.[162] This alignment of policy objectives between the three authorities will benefit the coordination by reducing conflicts, fostering engagement, and increasing compliance with the FPC's recommendations.[163] Additionally, as the designated authorities in setting the rules and overseeing the FSCS, the PRA's and FCA's close policy coordination with the FPC will also

[162] IMF (n 70) 10.
[163] Ibid.

further secure the close exchange of information and coordination in the preparation of deposit insurance scheme and resolution process between the four authorities. [164]

The systemic risk prevention coordination under BI is primarily secured through the OJK Act 2011 Art 43, that obligates BI, OJK and IDIC to develop and maintain close coordination and sharing of information. To date, the three authorities have built close coordination through mechanisms such as the MoUs and the Integrated Reporting portal on the banking sector.[165] Additionally, the MMCF was launched in November 2014 as a coordination forum at the high-level and departmental level of BI and OJK, primarily to facilitate discussion on principal and strategic issues that occur in the operational coordination between the two authorities. This forum provides BI not only with information sharing on financial institutions, but also OJK's macro-surveillance, annual joint stress tests, joint special examination on SIBs, and Joint Research and surveys results, which are used to supply policy assessments and recommendations for both BI's BGM and OJK's Board of Commissioner's Meetings.[166]

Besides the MMCF, the risk prevention coordination in Indonesia is primarily conducted within the crisis-management mechanism under the FSSC framework, chaired by the Minister of Finance. With the broad mandate of the FSSC also includes the monitoring and maintenance of financial stability, the Indonesian crisis-management framework has overlapping responsibilities with macroprudential risk prevention and the mitigation coordination of BI.[167] The FSSC also has the statutory power to impose a legally binding requirement on BI, OJK

[164] Both authorities are also required to regularly discuss the FSCS approach and performance of its responsibilities, including its management plans and budget, as well as the risks that the FSCS identified toward the delivery of the PRA proposed priorities. See: The Bank of England – Prudential Regulation Authority and Financial Services Compensation Scheme, 'Memorandum of Understanding between the Bank of England and the Financial Services Compensation Scheme Ltd' (September 2019) para 12 – 13.
[165] In terms of coordination and information sharing between BI and OJK, there is also an MoU signed in January 2013 that enables the data sharing during this period of transition to accelerate the preparation for OJK's establishment. Later in that year, another MoU was also signed in October which covers the macroprudential and microprudential coordination framework; data / information system management; use of BI assets; and the transfer of BI staff to OJK. This MoU also provides a framework for macroprudential coordination between both authorities. See: FSB, 'Peer Review of Indonesia' (February 2014) 16-17 <https://www.fsb.org/2014/02/r_140228/> accessed 12 June 2020.
[166] In 2015, there was also a Reporting System and Information Exchange Coordinating Forum (FKPISP) between OJK and BI to exchange information and enhance the management of reporting system. In 2015, both authorities also signed a Joint Letter in attempt to increase the coordination on the development and management of Debtor Information System, which ended at the end of 2017, but as from 1 January 2018, the Financial Information Services System managed by OJK was fully operated. See: BI 2015 (n 110) 111-112; Bank Indonesia 2017 (n 111) 59.
[167] The FSSC Act 2016 Art 5(a).

and IDIC to share their assessments of the financial system and potential systemic risk in its quarterly meetings. Under the FSSC framework, each member can raise a warning on the emergence of systemic risk, based on its assessment, and summon a FSSC meeting.[168] The FSSC also has the statutory authority to determine the criteria and indicators in the evaluation of financial stability, and conduct an assessment of financial stability conditions based on the advice of its members.

V.III.d.ii Systemic Risk Mitigation

Once the macroprudential supervisor has identified systemic risk, a decision needs to be made on what action is necessary to mitigate risk, and to ensure the system can absorb rather than amplify the shock. However, the identification of the systemic risk emergence is not always clear and may depend largely on the supervisor's judgement and the policymaker's risk tolerance.[169] In the process of risk mitigation, macroprudential coordination will depend on the effective sharing of information with other supervisory authorities, the policy coordination in formulating appropriate responses, and the management of potential trade-offs and conflicts of interests between different policy sectors.

Although BI currently exercises power to formulate and directly implement the macroprudential policy tools on the market participants, it does not have an explicit authority in coordinating inter-agency actions. As specified under the BI Regulation 2014/No.16, BI may only communicate its recommendations resulting from macroprudential supervision to other relevant authorities, without any binding rules.[170] Thus, its scope of authority in responding to emerging risk is relatively more limited, compared to the other three macroprudential authorities. Without the power to impose any recommendations and directions on OJK and IDIC, BI can only rely on the FSSC framework in coordinating the necessary measures and

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[168] Although the FSSC Act 2016 specifies only two levels of financial stability, normal and crisis condition, the four member authorities also adopted four-stage classification of the assessment for each crisis management protocol adopted based on the FSSC Act. These are 'stable' (green), 'caution' (yellow), 'alert' (pink), and 'incipient crisis' (red). The changing of these warning statuses will be mostly discussed in the FSSC meeting and can be used to initiate FSSC meeting. See: Warjiyo (n 34) 195.

[169] Cheng Hoon Lim and others, 'The Macroprudential Framework: Policy Responsiveness and Institutional Arrangements' (2013) 13/166 IMF Working Paper 5 <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/The-Macroprudential-Framework-Policy-Responsiveness-and-Institutional-Arrangements-40789> accessed 19 August 2019.

[170] BI Regulation on Macroprudential Regulation and Supervision 2014 Art 12(2).

policy actions to mitigate an emerging systemic risk.[171] The FSSC Act 2016 Art 16(1)(2) specifies that, as part of its crisis prevention scheme, each member of FSSC shall monitor and maintain the financial system stability according to its respective duties and authorities, as well as the crisis-management protocols of each member. In each of the FSSC meetings, these monitoring and maintenance results will be presented and discussed to formulate policy recommendations for all members, following their respective duties within financial stability.

There are, however, significant operational risks for BI macroprudential function in depending solely on the FSSC framework for coordinating the risk mitigation response.[172] Firstly, with a mandate for mitigating the systemic crisis, the FSSC may only take appropriate actions when all members agree on the situation, and once the President approves its assessment of the Republic of Indonesia. There is a strong possibility that the FSSC meeting will end in a deadlock between the OJK and BI, as the macro- and micro- prudential policy views may not share the same judgement and concerns over the build-up of systemic vulnerabilities.[173] The FSSC mechanism is thus incompatible to solve the potential conflict of interests between macroprudential–microprudential policy goals—that is most likely to occur at this stage—and may further delay the policy response and the FSSC's decision-making process in general.

Secondly, the FSSC framework is designed to acknowledge the solvency and liquidity problem faced by banks, but *not* the time and cross-structural dimensions of systemic risk that emerge from pro-cyclicality and cross-linkages between financial sectors under the macroprudential definition. Therefore, unless all the system-wide assessment and monitoring results submitted by BI to the meeting are acknowledged fully by all FSSC members, such dimensions of systemic risk may instead be left unmonitored. As the last case scenario, BI will be most likely to rely on its policy mix in responding to the emergence of systemic risk from the aspect of macroprudential, monetary and payment system policies. In mitigating risk that emerges from

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[171] From the interview with Head of Legal Affairs Department, Suci foresees that in the context of Indonesia, such powers to impose recommendations or directions to other authorities is unlikely to be pursued by the government. In its operations, the FSSC exercises the statutory power in determining measures to be coordinated by its members in the prevention of financial crisis, in which the mitigation of systemic risk will be classified in it. See: Interview with Rosalia Suci, Executive Director of Legal Affairs Department, Bank Indonesia, (Jakarta, 17 April 2021); The FSSC Act 2016 Art 6(E).

[172] The establishment of the FSSC created more confusion and doubt over the real function of BI, as the FSSC holds better powers in coordinating inter-agency forum discussion and sharing of information. This confusion was also appeared in the FSAP report 2010.

[173] See the discussion in Chapter III, section III.V.a.

other financial sectors, BI can only rely on its informal advice and relational approach to OJK within the MMCF fora to coordinate and address the concerns, which can be theoretically challenging due to their inherent conflict of interests.[174] The gap in coordinating the risk mitigation framework in Indonesia may instead risk the unilateral response of BI as being inadequate to address the multidimensional aspect of systemic risk, and could eventually reduce the incentives to respond promptly to the systemic risk before it materialises into a system-wide crisis.

As a comparison, the coordination between microprudential–macroprudential on risk mitigation in the UK, Malaysia, and Singapore is generally secured by the proximity of the institutional structures between the two policy functions. This is even more the case for MAS, as it has the most integrated structure for all relevant functions of financial stability as well as the monetary policy. Thus, any coordination, potential trade-offs and conflicts of interests are addressed within its organisational structure. In identifying the emergence of systemic risk, however, the consolidation of MAS' supervisory roles may create unintended consequence in the negligence of risk that emerges in the sector outside the policy priority of MAS staff. As there is no other supervisory authority that can provide a different perspective and policy input for MAS, there is a high risk of group thinking within MAS's risk mitigative responses. Additionally, the Singaporean deposit insurer, SDIC, has no roles in the policymaking and only a mandate as the pay-box plus insurer with the implicit mandate in financial stability.[175]

The coordination in mitigating the emergence of risk in the UK has been appropriately arranged under its statutory laws, with the central roles played by the BoE in which the monetary policy, micro and macroprudential supervision, and resolution authority resided. Overall, the mechanism established to mitigate such risk has been optimised within the FPC, with its close

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[174] Based on Interview with FSSD, MPD and Legal Department. The coordination resulted from the 2013 MoU BI–OJK, which was later amended on 27 April 2018, only covers the coordination and cooperation at the technical levels between the authorities; the sharing of information and management of banking reporting system; the use of documents and data between two authorities; and the management of BI's staff that transferred to OJK. See: Bank Indonesia, 'Annual Report 2018' (May 2019) 88 <https://www.bi.go.id/en/publikasi/laporan/Pages/LKTBI-2018.aspx> accessed 19 August 2020; Bank Indonesia, 'Memorandum of Understanding on Cooperation and Coordination in Supporting the Implementation of Bank Indonesia and Financial Services Authority Responsibilities' *(Keputusan Bersama tentang Kerjasama dan Koordinasi dalam rangka Mendukung Pelaksanaan Tugas Bank Indonesia dan Otoritas Jasa Keuangan)* (18 October 2013, No.15/39/DKom, No.S-288/MS.12/2013) <https://www.bi.go.id/id/ruang-media/siaran-pers/Pages/sp_153913_dkom.aspx> accessed 19 April 2020.

[175] See Chapter IV, Case Study IV.

coordination with the HM Treasury, which also regularly updates its policy remits and powers. Further, the cross-memberships shared between the FPC, the PRC, the MPC, and the FCA may also minimise the potential conflicts and trade-offs raised in the systemic risk mitigation. Moreover, in taking a firmer action to address the conflict of interests and policy trade-offs, the FPC is also fully equipped with rulemaking power to give directions to the relevant authorities. Even though the UK Government expects a more frequent use of the power to make recommendations as the primary means used by the FPC, the ability to give direction is still essential for addressing the policy trade-offs that may arise between macroprudential objectives and other policy objectives, and facilitating a prompt policy response when action is urgently required.[176] By giving direction over specific policy tools, the FPC generally channels the legitimate responsibilities to contribute to the safeguard of financial stability of the UK. Therefore, more decisive, and timelier action can be taken by the PRA and FCA.

On the other hand, systemic-risk mitigation under the Malaysian macroprudential supervision has mostly been effectively managed through the chairmanship of the BNM Governor at all relevant policy committees in the country, including the high-level national committee, the FSEC. Within its organisation, the BNM has an optimal structure in managing potential policy conflicts and trade-offs in its mitigative response. It has a forum for discussing the micro and macroprudential concerns at the level of the FSC and then the JPC, in which both financial stability and price stability concerns raised at the level of the FSC and the MPC are discussed and coordinated. Encompassing the memberships of the FSC and MPC, the JPC plays a vital role in ensuring policies deliberated and taken by the two committees are consistent and well-coordinated one to another in mitigating the systemic risk. Moreover, at the national level, the FSEC that encompasses the memberships of the highest representatives from the SC, the MDIC, the Treasury, and any relevant authorities, also effectively broadens the scope of the macroprudential mitigative response of the BNM.[177] Not only able to effectively manage the various policy interests between its members, the FSEC will also ensure strong incentives and the ability of the BNM to take action and impose its measures on any financial sectors in the country. The CBMA 2009 s 40(1) particularly provides the BNM with ability to enter into agreement with any other authorities outside the scope of the FSEC to coordinate its financial

[176] The FSMA 2000 s 3(i).
[177] The CBMA 2009 s 37 (4) (5) (6).

stability. Thus, overall, the availability of these various frameworks under the leadership of the BNM creates robust inter-agency coordination in dealing with the emergence of systemic risk in Malaysia.

V.III.d.ii Crisis Management

Once the systemic risk identified by the supervisor materialises into a systemic crisis, and requires broader coordinated policy responses from FSN authorities, the macroprudential framework will require close coordination with the crisis-management framework. At this stage, the expertise and information held by the macroprudential supervisor becomes even more critical for understanding the macro-financial linkages, and preventing potential amplification and spillover of crises into the broader sector of the economy.

In the UK, the BoE is currently responsible for operating a crisis-management scheme.[178] That said, any decision that involves public funds will require close coordination with the Treasury—in which the BoE has to give notification of material risk to public funds in relations to the potential crisis.[179] In managing the crisis, the Treasury is provided with the power of direction to the BoE when public funds are at risk.[180] These powers of direction include directing the BoE to conduct special support operations for the financial system as a whole; to provide LoLR facility to firms that not judged as solvent and viable by the BOE or other than those proposed by the BoE; and to implement a particular SRR stabilisation option.[181] In regard to the macroprudential framework, the Treasury may not use its directions towards policy and supervisory decisions made by the FPC.[182]

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[178] HM Treasury, 'Memorandum of Understanding on Resolution Planning and Financial Crisis Management' (October 2017) para 4.
[179] This included the provision of ELA; the use of any stabilisation power that might have implications for public funds; liquidity support via the Resolution Liquidity Framework (RLF); and the exercise of the Temporary Public Ownership stabilisation option. See: Ibid; the FSA 2012 s 58(1).
[180] However, the direction power of the Treasury can only be exercised after notification is received from the BoE on the risk imposed on the public funds; and when the Chancellor is sure that the direction is either a necessary response to the threat or when financial assistance has been provided, that necessary to protect the public interests. See: HM Treasury (n 178) para 44; the FSA 2012 s 58,61; the Banking Act 2009.
[181] Overall, these additional powers of direction exercised by the Treasury demonstrate a significant upgrade of the UK crisis-management framework from its previous Tripartite arrangement in dealing with the Northern Rock failure in 2017. See: Ibid, MoU, para 46.
[182] Overall, this power of direction cannot be directed to (1) supervisory decisions taken by the PRA or by the rest of the BoE in its regulation of systemic post-trade infrastructure; (2) policy decisions made by the MPC and FPC; and (3) changes to the BoE's published framework for providing liquidity support to the financial system. See: Ibid, para 46.

As the macroprudential supervisor, the FPC will be closely involved in the BoE's decision-making for crisis-management purposes. While the PRA will be the primary authority that 'pulls the trigger' in placing a failing bank into special resolutions managed by the BoE, the FPC's expertise on the system-wide assessment will be invaluable in supporting the BoE's both resolution and LoLR functions. Within the BoE, the clear legal and structural separation for reporting lines and decision-making between its supervisory function (by the PRA) and resolution function (by the Resolution Directorate) are established to ensure the prevention of the conflict of interests between the two BoE's responsibilities.[183] The effective arrangement and implementation of the BoE's resolution regime—particularly on institutions that pose the greatest risk to the system—will ultimately reduce the probability and costs of financial crises, which is part of systemic concern of the FPC.

The coordination in crisis management in Indonesia has been ensured through regular conduct of national simulations in crisis prevention and management by the FSSC, and simulations conducted by each of its members.[184] In its capacity within the monetary, macroprudential and payment system policies, BI may request an emergency meeting if its crisis-management protocol assessment indicates the presence of a systemic problem by providing the result of the assessment and relevant data, information and judgement.[185] However, the FSSC crisis-management mechanism is still relatively complicated, and poses a risk of significant delays in the decision-making process and policy responses toward a quickly deteriorating situation in the financial system. Even though any members of the FSSC can launch an emergency meeting to assess the situation, the FSSC decisions and final judgement need to be taken through a consensus, to decide whether all members are sharing the same judgment over the crisis situation in the country.[186] Furthermore, even after consensus is reached on the presence

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[183] The BoE is under legal obligation to establish and maintain structural separation between its supervision and resolution functions. While the PRA will lead the 'going-concern' supervision against the individual failures, the Resolution Directorate will lead the orderly resolution regime for the 'gone-concern' supervision. See: Article 4.7 of the Capital Requirements Directive; Article 3.3 of the Recovery and Resolution Directive; Independent Evaluation Office, 'Evaluation of the Bank of England's Resolution Arrangements: Banks, Building Societies and Major Investment Firms' (June 2018) <https://www.bankofengland.co.uk/report/2018/independent-evaluation-office-report-evaluation-of-the-boes-resolution-arrangements> accessed 21 April 2020.
[184] The 2018 Simulation aimed to test the settlement mechanism for liquidity issues and solvency of banks excluding systemic banks. Meanwhile in 2019, the FSSC implemented the National Crisis Simulation with a focus on testing the effectiveness of coordination between BI and IDIC in the licensing of intermediary banks as one of the resolutions instruments and coupled with BI Payment System's resolution process. See: Bank Indonesia (n 174) 88; Bank Indonesia (n 153) 69.
[185] The FSSC Act 2016, Art 32(1)(2)(3)(4).
[186] In the resubmission of the decision adopted by majority vote. See: Ibid, Art 11.

of crisis, the FSSC has to submit a recommendation to the President of Indonesia to authorise its recommendations on the mitigative measures to be taken, including the activation of the Banking Restructuring Programme and the bail-in tool.[187] It is only after the declaration of a national crisis by the President, BI's Board of Governors may establish a crisis centre, chaired by one of its members to monitor and coordinate the crisis response in its capacity as systemic authority.[188] This long procedural process of determining and mitigating crisis in Indonesia may easily create a delay in response, risk of political influence, and conflicts of interest, that eventually render policy actions taken as too little, too late, to contain the materialisation of systemic risk in the real economic sector.

In Malaysia, the statutory committee FSEC is the designated authority responsible for the crisis management framework, and any decisions involving the use of public funds. In dealing with financial risk and achieving financial stability, the FSEC has far-reaching authority to further broaden the BNM's liquidity assistance to any financial institution outside its oversight or any other supervisory authority in Malaysia, and overseas subsidiaries and branches of Malaysian financial institution.[189] As it is also responsible for deciding on macroprudential measures for entities outside the BNM purview, the FSEC is effectively acting as another macroprudential forum in Malaysia. Thus, while the Malaysian macroprudential and crisis-management frameworks are not institutionally separated, the use of the FSEC as an additional forum for the macroprudential framework is somewhat limited, due to the various existing macroprudential policy committees established within the BNM. Moreover, unlike the FSSC (Indonesia), the crisis-management committee in Malaysia is chaired and situated closely to the BNM structure.

Thus, in its operations, the FSEC is largely similar to the integrated framework in Singapore. Effectively the primary supervisory authority, the BNM holds sole authority in determining whether an institution is viable, and thus can unilaterally activate ELA measures.[190] As the macroprudential management committee, the FSC also actively involves in the formulation the resolution actions, including notifying and coordinating with the MDIC on its resolution

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[187] The President can reject such recommendations, and, in this case, the mitigation of financial problems will only be carried by members in accordance with its respective duties and authorities. See: Ibid, Art 32 (8)(9), 33, 38 (1).
[188] Warjiyo (n 34) 195.
[189] The CBMA 2009 s 32 (1) (a)(b), (2).
[190] For the institutions outside its supervision, the lending operation requires the approval of the FSEC.

actions.[191] Further, outside the FSEC, the MDIC and the BNM have also built strong coordination in handling banking failure and overall resolution process as administered in the SAA since 2006 that lately updated in 2012—in incorporating the MDIC enhanced powers under the MDIC Act 2011. Under the BNM–SC's Operational Framework, the supervisory intervention and resolution process in Malaysia are also further coordinated.

During crisis management in Singapore, the concentration of supervisory functions, powers, and system-wide information within MAS will facilitate strong policy coordination between different policy sectors.[192] This concentration also ensures effective policy coordination in dealing with crisis through integrated response from the macroprudential, monetary and emergency liquidity provision of the MAS. Once the crisis escalates, a higher level of inter-agency committee, the Financial Stability Coordinating Meeting (FSCM), will be activated. Overall, in Singapore, the MoF will undertake specific roles only when there is potential use of public resources. As the primary authority in Singapore, MAS is also able to actively exercise its whole-of-government approach that ensures the coordination and sharing of information from all other policy sectors outside its remits.

V.IV. CONCLUSION

This chapter has critically compared the operationalisation of macroprudential supervision, institutional arrangements, and inter-agency policy interactions in the four macroprudential frameworks. Using the mixed methodologies of the functional comparative analysis, the case study and the doctrinal analysis on the legal structure and institutional arrangement of macroprudential supervision in the four case studies, this chapter highlights the distinctive features in each design and operationalisation of the macroprudential framework.

Acting as the missing link between monetary policy and microprudential supervision in safeguarding macroeconomic stability, the macroprudential framework faces a constant need to interact closely with both policy sectors. Nevertheless, this does not eliminate the need for close coordination and policy interactions with other FSN authorities. This chapter

[191] Once the FSC has assessed and decided on the unviability of a financial institution, the MDIC can assume control to resolve the failed institution. The FSA 2013 Art 160 and 194 specify the impossibility of voluntary winding up without the prior written approval of the BNM. As a result, it is only the BNM that is able to decide for the resolution of the financial institutions.
[192] IMF (n 82) 10.

demonstrates that the principal role played by the central bank has not automatically removed the challenges to the operations of macroprudential supervision. Although the integration of various financial-stability powers within one organisational structure will ensure close information sharing and coordination between policy goals, there is still the need for separation of decision-making processes, and accountability between different policy functions of the central banks. In the absence of such separation, conflicts of interests and policy trade-offs within the operation of macroprudential supervision will become more difficult to resolve. Therefore, the allocation of macroprudential supervision into the central bank, with various financial stability functions, further underscores the importance of robust legal and institutional arrangements.

The comparative analysis of the four countries demonstrates that having a clear mandate and objective is vital for macroprudential supervision accountability; however, it will not by itself ensure a robust framework for its operations. In order to ensure a strong capacity for monitoring and assessing the systemic risk build-up, and promptly taking mitigative actions, it has become essential to ensure a robust policymaking structure and appropriate powers of the macroprudential supervision. Through such design, the authority can have strong incentives to manage the operational challenges inherent within the conduct of macroprudential supervision. As an integral task of macroprudential supervision, the success in managing policy trade-offs and conflicts of interest in mitigating the build-up of systemic risk will largely be determined by (i) the access to data and information, (ii) the composition of the authorities involved in the macroprudential decision-making process, (iii) a clear separation of decision-making processes between different policy functions of the central banks, (iv) robust inter-agency coordination, (v) the institutional proximity of macro-and micro-prudential authorities, (vi) coordination with the Ministry of Finance, and (vii) the extent of rule-making powers assigned to the authority.

From the comparisons made, it becomes apparent that Indonesia has an inferior legal structure, and undistinguished institutional arrangement for its macroprudential supervisory framework compared to the UK, Malaysia, and Singapore. The separation of microprudential supervision from the organisation of BI is the first structural factor that weakens its macroprudential supervisory framework, compared to the other three authorities. Secondly, the lack of diversity of stakeholders in BI macroprudential decision-making structure sets the framework further apart from its peers, and significantly affects the transparency of its processes. Thirdly, the overlapping mandates between the FSSC in monitoring and maintaining financial stability, and

BI macroprudential tasks in limiting and mitigating the systemic risk further obscure Indonesia's inter-agency framework. Lastly, the absence of rule-making powers in making recommendations and giving directions for the purpose of macroprudential supervision further increases BI co-dependency with the FSSC framework, which has an inadequate mechanism in mitigating the systemic-risk challenges.

CHAPTER VI

FINAL OBSERVATIONS, SUMMARY OF FINDINGS, AND RECOMMENDATIONS

VI.I. INTRODUCTION

Over the last decade, the IMF has developed and published a series of guidelines in setting out the design and operationalisation of macroprudential frameworks worldwide.[1] The IMF has also increased the regularity of its Financial Sector Assessment Program (FSAP) by mandating it as a mandatory part of Article IV surveillance for jurisdictions with systematically important financial sectors.[2] The assessment of the macroprudential framework and policies within the FSAP primarily focuses on the four areas of each country's systemic risk-monitoring tools, the role of significantly important financial institutions (SIFIs), gaps in systemic risk monitoring, and the institutional responsibilities of central banks and other supervisory agencies.[3] Borrowing the terminologies used by the IMF in determining the institutional arrangement for the macroprudential framework, this chapter draws the thesis's final observations and assessments of the four macroprudential supervisors on their willingness and ability to respond to systemic risk.

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[1] IMF, 'Macroprudential Policy: An Organizing Framework' (March 2011); IMF(a), 'Implementing Macroprudential Policy – Selected Legal Issues' (June 2013); IMF(b), 'Key Aspects of Macroprudential Policy' (June 2013); IMF, FSB, BIS, 'Elements of Effective Macroprudential Policies: Lessons from International Experience' (August 2016); IMF, 'Staff Guidance Note on Macroprudential Policy' (December 2014) 38 < https://www.imf.org/en/Publications/Policy-Papers/Issues/2016/12/31/Staff-Guidance-Note-on-Macroprudential-Policy-PP4925> accessed 8 April 2018.

[2] In the aftermath of the 2008 GFC, the FSAP has been made a mandatory part of the Article IV Surveillance for 25 member countries with systemically important financial sectors. Through this decision, the IMF surveillance approach to financial sector is conducted on risk-based approach to the global financial sector surveillance. In 2013, the IMF's Executive Board decided to expand the mandatory assessment to 29 jurisdictions, in which the UK and Singapore are listed. For all other jurisdictions, the IMF's FSAP is continued on a voluntary basis. See: Ibid, IMF 2014; IMF, 'Review of the Financial Sector Assessment Program: Further Adaptation to the Post Crisis Era' (September 2014) < https://www.imf.org/external/np/pp/eng/2014/081814.pdf> accessed 21 April 2020.

[3] Overall, the FSAP has the scope of coverage to include the assessment of systemic risk, institutional setup, discussion of tools, and multilateral aspects of macroprudential policy. See: Ibid, IMF, Review, 15, 'Box.2 Coverage of Macroprudential Policy (MaPP) Issues in FSAPs'.

Deriving mainly from the four assessments made in the previous chapter, section II summarises the final observations on the willingness and ability of the four macroprudential supervisors. Section III presents the overall summary findings of the thesis. In section IV, seven policy recommendations are drawn for the macroprudential supervisory reforms in Indonesia, with regards to the legal structure, organisational capacity, and institutional arrangement aspects. Lastly, future challenges for the implementation of a macroprudential supervisory framework and the scope for future research are outlined in the section V and VI respectively.

VI.II. FINAL OBSERVATIONS

The macroprudential reforms in the United Kingdom, Singapore, Malaysia, and Indonesia have been primarily centred on the allocation of macroprudential functions into the central banks' organisational structure. Although an international consensus has emphasised the central bank's critical role in the macroprudential framework, such an arrangement does not automatically eliminate the inherent challenges in the design and operation of macroprudential supervision. On the contrary, it further underlines the need for an effective institutional arrangement and robust legal structure to accommodate the central bank in managing its numerous different responsibilities and ensuring the balance of trade-offs with the policy goals of other authorities. This research attests that there is no ideal or superior model for macroprudential supervisory arrangement. Even with the benefits of the central bank's principal role, this research demonstrates that domestic peculiarities, such as the political economy, political and legal culture, emerge as determinant factors of the effectiveness of macroprudential supervision. Furthermore, this research observes that each of its case studies is characterised by the existing relational complexities and local peculiarities—mainly from the institutional, independence, and accountability aspects of each central bank—that strongly affect the operational challenges faced by central banks with macroprudential supervisory function.

The current underdevelopment in macroprudential legal and institutional structures in Indonesia is primarily the manifestation of the legislators and government's low level of political will to enhance the institutional capacity of BI. This low political support and willingness can be further traced back to the governance issues and embezzlement scandal faced by BI in the handling of the Bank Century bailout in 2007 that led to the deterioration of institutional trusts and coordination between BI and the MoF. After the enactments of two major statutory laws establishing the microprudential authority (OJK) in 2011, and the crisis management committee (FSSC) in 2016, to date, there are still various conflicting ideas on the direction that needs to be pursued for the amendment of the CBA No.23/1999. The current draft bill submitted to the House of Representatives even demonstrates several attempts to downsize BI legitimacy as an independent monetary authority, by establishing the Monetary Board chaired by the MoF, replacing BI's Board of Governors Meeting (BGM).[4] In the UK, the nationwide public attention on the apparent coordination failures of the tripartite authority and supervisory approach adopted by the FSA has, instead, led to strong political incentive and willingness to dismantle the regime and return the financial supervisory function to the BoE. Thus, in contrast to BI, the BoE has primarily benefited from the 2008 GFC. On the other hand, as bankers and agents to the government of Malaysia and Singapore, the BNM and MAS enjoy relatively stable political support, and experience minimum disruptions to their institutional and legal arrangements, in the wake of macroprudential supervisory reforms. Although the UK Treasury holds significant influence in guiding the FPC's policies and exercise of its functions, unlike the BNM and MAS, the FPC may reject the Treasury's recommendations by providing written explanation published to public under the 'comply or explain' mechanism.[5]

Through a closer observation on the operationalisation of macroprudential supervision, it can be seen that the inherent conflicts of interests and policy trade-offs in macroprudential decision-making can easily outweigh the benefit of allocating the function to the central bank structure. The comparison between the four countries underlines the need for a well-defined separation in the decision-making processes and management of tasks between different policy functions of the central banks. The combination of these inherent macroprudential policy trade-offs, and the multiple policy objectives pursued by the four central banks, has made the arrangement of policy committees both preferable and desirable to ensure a separate decision-making arrangement for each policy function. Without a clear institutional separation for the decision-making of monetary and macroprudential policies within BI's BGM, the accountability and transparency on the policy trade-offs and management of conflicts between the two policy functions are comparatively obscure. The lack of diversity of views and inputs

[4] The 2020 Bill proposal by the MoF and Government that was withdrawn as the result of negative reactions from the markets.
[5] However, the FPC is still required to explain and publish the reasons for disregarding such recommendations. The Treasury can also make recommendations relevant to the BoE's financial stability objective, and matters which the FPC should have regard to in the exercise of its functions. See: FSA 2012 s 9E (3)(4); HM Treasury, *A New Approach to Financial Regulation: The Blueprint for Reform* (Cm 8083 2011) para 2.12.

in the BI macroprudential decision-making process, without the involvement and representations of other authorities, further separates the institutional arrangement of macroprudential supervision in Indonesia from the other three countries. The FPC and the FSEC are exhibiting ideal arrangements for the macroprudential policy committee to foster more effective inter-agency coordination and transparent decision-making, through a cross-membership arrangement between various important stakeholders in the FSN framework.[6] Although the Malaysian FSEC is also a *de jure* crisis management committee, the leading role of the BNM Governor and its close institutional coordination with the FSC has made the FSEC the last-resort forum to resolve the policy trade-offs and conflicts in systemic risk mitigation.

In summary of the assessments presented in the previous chapter, the following two sub-sections conclude the central bank's willingness and ability to act for each of the four countries covered in this thesis.

VI.II.a. Willingness to Act

The task to 'take the punch bowl away when the party gets going' is a highly unpopular political action, as it is taken during the upswing times when the macroeconomics factors seem thriving and expectations for market returns are high. Not only may such action easily create a political backlash, but the wisdom of such a decision may not easily be proven, due to the inherent uncertainty and complexity in assessing systemic risk and predicting financial crises. This concern over the uncertainty of the evaluation provokes supervisor concern about creating a false alarm that can damage credibility. Nevertheless, while the failures to react and correctly measure the risk will immediately be visible through the materialisation of systemic risk, the success of macroprudential measures is relatively hard to measure in the short term. Thus, the nature of macroprudential measures and actions can be politically unpopular, and particularly costly for an elected government with short-term objectives in winning elections and public supports. As a result, in translating its assessments into actual policy measures and prompt actions, the macroprudential supervisor faces strong supervisory forbearance and bias toward

[6] Nier et al. (2011) added that cross-membership on the decision-making body and financial stability mandates among different authorities could help to create greater ownership of decisions and engagement between various authorities. See: Erlend W. Nier and others, 'Institutional Models for Macroprudential Policy' (2011) 11/18 IMF Staff Discussion Note 18 <https://www.elibrary.imf.org/view/journals/006/2011/018/article-A001-en.xml> accessed 7 April 2018.

inaction. Fundamentally, macroprudential supervision requires strong incentives and confidence to take the right actions at the correct time.

Overall, there are three sources of inaction bias in macroprudential policy actions: first, the limited understanding and experience of systemic risk and, by extension, the uncertainties of systemic risk enhance the burden of proof for policy actions; second, there are no incentives for taking concrete measures (institutional environment), and the absence of an explicit mandate; and finally, behavioural biases that have hindered firm policy action, such as disaster myopia, confirmation bias and cognitive dissonance.[7] A clear statutory mandate and well-defined objectives are increasingly essential to help to counter these biases, which simultaneously strengthen the legitimacy of macroprudential policy action.[8] Additionally, the robust decision-making structure and inter-agency coordination are also deemed to foster a strong willingness to take macroprudential actions.

To date, the absence of a financial stability mandate and an explicit macroprudential statutory objective within BI has not practically proven to restrain the performance and operation of BI in conducting macroprudential supervision. Currently, BI can impose and control the macroprudential measures in the country, and faces no major challenges in maintaining close coordination with the microprudential and deposit insurance authorities. However, the overarching statutory mandates and responsibilities of the crisis management committee (the FSSC) in the monitoring and maintenance of financial stability (the FSSC Act 2016 Art 3(1)) that overlap with macroprudential responsibilities may complicate systemic-risk prevention and mitigation schemes, and eventually reduce the incentive of BI to take prompt actions. Further, there is a high probability that in the formulation and implementation of BI's policy mix, its single mandate in price stability will be disproportionately prioritised, once macroprudential concern conflicts with monetary goals. Without a clearly defined mandate for financial stability, the probability of managing trade-offs between multiple policy functions of BI is hindered. In the case of Indonesia, the relatively high likelihood is that BI becomes less proactive in responding to the systemic risk build-up during the upswing time, when liquidity and capital seem to be abundant. On the other hand, the FPC, MAS and the BNM generally

[7] Aerdt Houben, Rob Nijskens and Mark Teunissen (eds), 'Putting Macroprudential Policy to Work' (2014) 12(7) DeNederlandche Bank (DNB) Occasional Studies 12-13 < https://www.dnb.nl/media/nifovret/201410_nr-_7_-2014-_putting_macroprudential_policy_to_work.pdf> accessed 12 August 2018.
[8] IMF, 2014 (n 1) 34.

have more explicit mandates to protect and promote financial stability that supports government economic policies.[9] The proximity of microprudential and macroprudential functions within the structure of the three authorities also further enhances closer coordination and alignment between the goal of mitigation of systemic risk, and the safety and soundness of individual institutions in accumulatively safeguarding financial stability. Although these three authorities enjoy closer coordination and more robust policy support from their close relations with the government, the probability of short-term political interests and involvements in the policymaking process are higher. To certain extent, this may instead reduce the independence of macroprudential authority and increase the potential policy delays in its operations.

The complexity of the task in assessing and addressing systemic risk makes it essential to ensure the exposure of macroprudential decision-makers to different viewpoints from various policy areas and sectors. A clear separation of the decision-making process for each of the central banks' policy functions and the representations of the relevant supervisory authorities in the macroprudential committee is thus essential to mitigate such concerns. The board-level committees of the FPC (UK) and the FSEC (Malaysia) have the most optimal macroprudential cross-membership arrangements, allowing close coordination and a more transparent decision-making process in responding to systemic risk. Conceptually, the cross-membership arrangement is able to encourage more diversity and an exchange of different views from different perspectives—therefore, it can be beneficial in dealing with uncertainty and making discretionary judgements on situations. On the other hand, the macroprudential supervisory framework in Indonesia is less likely to be successful in managing the potential policy trade-offs and conflicts between macroprudential-microprudential objectives and price–financial stability goals, as a result of its single-mandate in price stability and a centralised decision-making process. In consequence, the delays in the macroprudential policymaking process in responding to systemic risk are more likely to happen. In contrast to BI's centralised decision-making process, MAS's structure facilitates a more transparent decision-making process in managing potential policy trade-offs and conflicts of interest, as there is a clear separation of the CM in deciding on financial stability matters, and the MIPM in formulating monetary policies.[10]

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[9] The CBMA 2009 s 5 (1) (2), the MAS Act s (4) (1), the BoE Act 1998 s 11.

[10] However, in 2018, the FSB peer review proposed that Singapore specifies the responsibility of the CM for

VI.II.b. Ability to Act

Like any other public authority, the ability of the macroprudential supervisor to act is primarily determined by the extent of powers assigned under its authority. A clear mandate and objective will be insufficient to ensure prompt policy actions in mitigating systemic risk if the powers delegated to the authority are inadequate in supporting its ability to make decisions and deal with the trade-offs with other policy goals.[11] The operations of the macroprudential supervisor need to be ensured with adequate access to necessary information, and the ability to impose system-wide surveillance, communicate the emergence of risk and eventually formulate and enforce decisions. However, a macroprudential framework cannot operate in isolation—there is also a need for robust inter-agency coordination, that facilitates and supports the supervisor to effectively manage the potential policy conflicts and trade-offs in mitigating systemic risk.

The IMF emphasises the need for macroprudential powers that facilitate adjustments of approach and the regulatory perimeter in dealing with the complexity and linkages of systemic risk.[12] Specifically, it differentiates between hard (direct), semi-hard and soft types of macroprudential powers adopted across its member countries.[13] Based on this classification, the BNM and MAS have hard powers to control tools and specify measures to other authorities directly. With the aim of promoting financial stability (in the case of the BNM) and on the basis of public interest (in the case of MAS), their directions/orders are imposed as legal obligations, with a penalty for non-compliance,[14] whereas the FPC exercises semi-hard power that allows the committee to give directions and make formal recommendations with a comply or explain mechanism. Despite its absence in holding direct information and surveillance powers, the FPC exercises the statutory authority to direct the FCA and PRA to provide financial stability information beyond its purviews, to issue recommendations, and to request

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certain policies; and to allow MAS management to independently determine the conduct of all macroprudential policies. See: FSB, 'Peer Review of Singapore: Review Report' (February 2018) 22 <https://www.fsb.org/2018/02/peer-review-of-singapore/> accessed 20 July 2020.

[11] While a specific objective limits the scope of functions that an authority can take, a vague and insufficient scope of functions will hinder the achievement of such an objective and create reputational damage and loss of credibility to the authority.

[12] IMF(b) (n 1) 27.

[13] Hard (direct) power refers to the ability of macroprudential supervisor to directly control the calibration of specific macroprudential tools. Semi-hard power is when the macroprudential supervisor can only make formal recommendations with 'comply or explain' mechanisms for other authorities. Meanwhile, soft power refers to the ability of the supervisor to express an opinion, a warning, or a recommendation without the ability to impose any 'comply or explain' recommendations. See: Ibid.

[14] The CBMA 2009 s 28, 31, 40.

information from other authorities for the purposes of macroprudential and financial stability. On the other hand, BI merely exercises soft powers, in communicating its recommendations and urging policy actions without the ability to enforce such recommendations or specify directions for OJK and IDIC. To date, BI claims to face minimum operational challenges in conducting its macroprudential supervision and regulation due to the FSSC coordination, the MMFC and its close relational approach to the management of OJK.[15] However, in a situation where conflicts of interest and policy trade-offs occur, these arrangements and soft powers alone will be insufficient for effective macroprudential responses in mitigating the time and cross dimensions of systemic risk threats.

The second aspect supporting a strong ability to act is the degree of inter-agency coordination on the sharing of information and joint policy response for macroprudential supervisory purposes. Overall, the close institutional arrangements of macroprudential and microprudential supervision in the UK, Malaysia, and Singapore help ensure close policy coordination and effective management of trade-offs between microprudential and macroprudential goals. The complete separation of microprudential–macroprudential supervision in Indonesia, on the other hand, adds more organisational barriers and thus increases the challenge in its management of conflicts of interest and policy trade-offs. Bridging the policy differences and ensuring close coordination in sharing information will be more challenging for BI than the other three authorities. In combination with the absence of a well-defined statutory power to give direction and make recommendations to other authorities, BI's ability to act against the emergence of systemic risk primarily relies on the FSSC mechanism to coordinate its policy recommendations. Further, with the combination of a single mandate in price stability, the absence of a cross-membership arrangement in its decision-making structure and the overlapping mandates with the FSSC, the ability of BI to take prompt actions in mitigating systemic risk appears to be inferior to the other three authorities.

[15] Interview with Y. Budiatmaka, Executive Director of the Financial System Surveillance Department (FSSD), Bank Indonesia (Jakarta, 9 April 2021); Interview with Juda Agung, Executive Director of the Macroprudential Policy Department (MPD), Bank Indonesia (Jakarta, 13 April 2021); Interview with Rosalia Suci, Executive Director of Legal Affairs Department, Bank Indonesia, (Jakarta, 17 April 2021).

VI.III. SUMMARY OF FINDINGS

By building a profound conceptual framework for macroprudential supervision, this thesis has critically examined the essential role of the macroprudential framework in reconstructing financial stability post-GFC. The functional comparative assessment made by this research exposes the complexity inherent to the design and operationalisation of macroprudential supervision, in its attempts to enhance the system's resilience and limit the emergence of systemic risk. Overall, this thesis has raised two important research questions in acknowledgement of these challenges. In addition, and a third question revolving around lessons learned for the future design and operationalisation of macroprudential supervision in Indonesia has been posed.

The first research question of this thesis asked, 'how do the legal structure and institutional arrangement affect the macroprudential authority's ability and willingness to act?'. Incorporating each country's domestic peculiarities and other pre-existent factors, the legal and institutional aspects of the macroprudential framework were found to play essential roles in supporting the authority's ability to act in respond to the emergence of systemic risk. A well-designed legal structure for macroprudential supervision - ensured through clear mandates, a strong line of accountability, political independence, and adequate rule-making powers - will be essential in supporting the capacity of the authority to take action. A clearly defined institutional arrangement, on the other hand, further supports the ability to act and promotes both clear decision-making processes and effective inter-agency coordination between macroprudential supervisor and different FSN authorities.

However, the impacts of these two aspects on the willingness of macroprudential authority to take politically unpopular decisions are less straightforward. Fundamentally, the authority's willingness to take the right actions at the correct time will require well-defined legal and institutional arrangements, particularly a clearly defined mandate and robust decision-making structure. Yet without strong political support, the willingness to act may be easily hindered by the coordination challenges with the rest of the FSN authorities, especially the Ministry of Finance. This is particularly apparent in the case of Indonesia where the political willingness to support BI's macroprudential supervisory reform and organisational change proves less pronounced. Overall, the comparison between the four case studies has shown that the degree of political willingness is integral in determining the design of macroprudential institutional arrangements, the operationalisation of the countercyclical policy measures, and the effectiveness of the inter-agency coordination under the macroprudential framework.

This research further asserts that the allocation of macroprudential responsibility to central banks can be more advantageous than its allocation to other FSN authorities. However, without well-designed legal and institutional arrangements, the central bank will face even more significant operational challenges, that may imperil its financial stability, and the monetary and other policy goals it manages.

The second research question asked, 'what are the main factors that contribute to the success of macroprudential supervision in its management of policy trade-offs and conflicts of interest inherent in its tasks?'. Overall, the macroprudential authority's political skills and statutory rule-making powers will be the two essential factors in determining the promptness and success of macroprudential decisions in 'taking away the punch bowl when the party gets going'.[16] This thesis uncovers that the success in managing policy trade-offs and conflict of interests in mitigating the build-up of systemic risk will principally be determined by (i) the access to data and information, (ii) the composition of the authorities involved in the macroprudential decision-making process, (iii) a clear separation of decision-making processes between different policy functions of the central banks, (iv) robust inter-agency coordination, (v) institutional proximity of macro-and micro-prudential authorities, (vi) coordination with the Ministry of Finance, and (vii) the extent of rule-making powers assigned to the macroprudential authority.

Eventually, **the third research question** set forth by this thesis asked, 'what lessons can be generated from the functional comparative analysis of the UK, Malaysia, Singapore, and Indonesia that can help redesign the macroprudential?'. Drawing empirical lessons from the current macroprudential supervisory arrangements adopted by the four countries under study, there are several important lessons that can be generated for the consideration of Indonesian legislators and policymakers. Access to system-wide data and information is essential for the effectiveness of macroprudential operationalisation, from risk assessment and monitoring to risk mitigation and policy formulation. On the other hand, the composition of membership of FSN authorities included in the macroprudential decision-making committee is relevant for the

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[16] William McChesney Martin (October 19, 1955) Chairman of the Federal Reserve from 1951 to 1970.

sharing of system-wide information. The cross-membership arrangement offers many advantages in ensuring close policy communication and coordination for more effective management of policy conflicts and trade-off needs. The institutional proximity between the macroprudential and microprudential authorities can also generate advantages of quick access to supervisory tools and information, as well as the reduction of organisational friction, and disagreement over systemic-risk-mitigative actions. The macroprudential membership arrangement and shared financial stability objectives may also help enhance the sense of ownership of macroprudential decisions. These alignments foster engagement and compliance with macroprudential recommendations, and, by extension, reduce potential conflicts of interest. As a last resort instrument, assigning the supervisor with explicit rule-making powers to make recommendations and give directions to other authorities for the purpose of macroprudential supervision may further help prevent the risk of policy delay and supervisory forbearance.

Lastly, while the central bank's autonomy in conducting monetary policy is uncontested, there is a need to redefine the balance of institutional independence and close coordination between central bank and government, particularly the Ministry of Finance or Treasury, in the context of the macroprudential supervisory framework. This is particularly crucial for the systemic risk mitigation process and crisis management framework which both rely on tight-knit policy coordination between the government and the central bank. Undeniably, the increasing complexity and size of the financial system, alongside of the magnitude of the impacts of systemic crises have created a broader concern over the financial capacity of the central banks to single-handedly mitigate the emergence of systemic risk and preserve the market confidence during times of distress.

Zooming out from the originally specified research questions, several reflections emerge.

The adoption of the macroprudential framework marks a vital paradigm shift in the development of financial regulation and supervision to attain a better understanding of the nature of systemic risk and improve the financial system's resilience. As the fast development of financial innovation places the system in a continuous state of flux, the nature of the interactions between financial markets and the resulting systemic instability are also constantly changing. As a result, understanding the complexity and interconnectedness of the modern financial system will be key for macroprudential supervision to untangle the build-up of systemic risk, and identify the fault lines along which shocks propagate.

Within this research, the central bank's principal role as macroprudential supervisor is observed to be one of the determining factors in the evolution of modern central banks' roles in safeguarding financial stability in the post-GFC era. It has become more apparent that the accumulation of responsibilities in the hands of central bankers demand for heightened accountability and transparency within the authority's decision-making process. Thus, this thesis reemphasises the importance of a clear separation of decision-making processes between different policy functions of the central banks - mainly between monetary and macroprudential policies - to effectively manage the risk of reputational damage, groupthink, and moral hazard. It asserts that the involvement of the rest of the FSN authorities in the macroprudential decision-making process is meant to ensure the legitimacy of macroprudential decisions, encourage more effective policy coordination, and generate a more comprehensive macro-finance analysis at system-wide level.

Although the macroprudential supervisor is not responsible for the overall coordination of the FSN framework, the authority has a huge interest in ensuring effective coordination between these authorities, especially with regard to the resolution and crisis-management frameworks. This thesis asserts that to be effective, macroprudential supervision will require a fully functioning FSN framework. Meanwhile, effective macroprudential supervision will further enhance the consistency and quality of policy coordination between authorities, particularly in times of crisis. Effectively, the inter-agency coordination built under the macroprudential supervisory framework creates an additional layer of policy coordination, to respond to the emergence of systemic risk prior to its materialisation into a full-blown financial crisis, and the activation of a crisis-management framework. Even when a crisis occurs, the macroprudential framework continues to play an essential role in providing system-wide expertise and information critical to determine its macro-financial linkages and potential spillover effects. Overall, the inter-agency coordination under the macroprudential framework is primarily ensured through regular sharing of data and information; involvement and membership of various relevant authorities in the decision-making process; and explicit rule-making power in giving directions and recommendations to relevant authorities.

VI.IV. POLICY RECOMMENDATIONS FOR INDONESIA

From assessing the current macroprudential supervisory arrangements adopted in Malaysia, the UK, Indonesia, and Singapore, four primary weaknesses within Indonesia's current arrangement can be identified. First, the absence of a well-defined financial stability mandate and statutory objective in macroprudential supervision demonstrate the need for legal reform on the Central Bank Act No. 23/ 1999 (CBA 1999), that was last amended in 2009. The significant institutional changes in the Indonesian FSN arrangement, as the result of the establishment of the OJK and the FSSC, further raise the need for the amendment of the CBA and the improvement of BI institutional arrangements. Second, as a central bank with multiple policy functions, there is no clear separation of the decision-making process for each of the policy functions of BI. Furthermore, there is no possibility of involvement of OJK and IDIC in its macroprudential policymaking process.[17] Third, unlike the other three macroprudential authorities, BI only exercises soft powers in communicating and urging policy actions to OJK and IDIC, to support the achievement of macroprudential supervisory goals. There is also no coordination forum established to manage the policy conflicts and trade-offs between the authorities in mitigating systemic risk. Lastly, as the crisis management committee, the FSSC has a moderately broad mandate in monitoring and maintaining financial stability, mitigating financial system crises, and resolving systemic banking failures, both in normal and crisis situations. There are substantial overlaps between the FSSC's mandate in monitoring and maintaining financial stability and BI's role in preventing and mitigating the build-up of systemic risk, that could potentially create significant delays and complications in macroprudential supervisory actions in Indonesia. Against this background, this thesis draws seven policy recommendations for Indonesian legislators and government, to help improve the institutional arrangement and legal structure for macroprudential supervision of BI.

VI.III.a. Reforms in the Legal Structure

VI.III.a.i. Recommendation 1

Explicitly establish financial stability mandate and macroprudential supervisory responsibility in the primary legislation of Bank Indonesia

The introduction of an explicit statutory mandate in financial stability will ensure a more balanced operation of the BI policy mix, and enhance higher commitment in building coordination with other relevant FSN authorities. The implementation of the BI policy mix cannot be used as an alternative in accommodating the absence of BI's formal commitment to safeguarding financial stability. The absence of a financial stability mandate will significantly

[17] There is, however, the possibility of government minister(s)' attendance in the BGM without voting rights.

affect the incentive to manage policy trade-offs between price stability and financial stability concerns within BI's decision-making process. Furthermore, through the formal establishment of macroprudential responsibility in the CBA 1999, the potential problems that occur from the overlapping responsibilities between the macroprudential supervision and the crisis-management framework in Indonesia can be avoided. This can also ensure properly defined responsibilities between the two, and prevent policy delays in mitigating the emergence of systemic risk before it materialises into a system-wide crisis.

VI.III.a.ii. Recommendation 2

Expand BI's statutory information collection power to cover the non-banking financial institutions and financial conglomerates effectively

Due to the current challenges faced by OJK in effectively supervising the financial conglomerates in Indonesia, macroprudential reform should ensure better information-collection power for the group and its non-financial holding company. This consideration is also more pressing, as systemic risk can easily migrate and propagate to different financial sectors and activities. Therefore, the possibility of assigning BI with power to aggregate and collect any necessary information from any persons (regulated or unregulated entities) for the purpose of implementing the macroprudential supervision, or in the interest of financial stability, should be taken into consideration by legislators.[18] It is also essential to accompany this power with more stringent accountability and transparency requirements on the BI policymaking process, and the implementation of its macroprudential powers.

VI.III.a.iii. Recommendation 3

Assign BI with power to make recommendations and give directions to relevant authorities for the purpose of macroprudential supervision

As the macroprudential supervisor, BI has no legal power to coordinate joint policy actions and make recommendations or give directions to other authorities to support the achievement of its macroprudential objectives. To date, BI mostly depends on coordination under the crisis-management framework of the FSSC, to initiate a joint response toward the emergence of

[18] IMF(b) (n 1) 13.

systemic risk in Indonesia.[19] This arrangement, however, presents a high risk of policy delay due to the more complex decision-making process under the FSSC, in which financial stability problems will be discussed and decided through consensus building or a majority voting mechanism.[20] As different policy goals have distinctive and often conflicting policy objectives, the FSSC mechanism will impose significant delays in mitigating systemic risk, due to its inadequacy in managing and balancing different policy trade-offs. Moreover, the principal role held by the Minister of Finance as the chair of the FSSC will also further undermine the goal of mitigating the systemic risk, as the crisis management is primarily designed to focus on the use of taxpayers' money in dealing with systemic crisis. Thus, there is a high probability that in the situation where policy conflicts between microprudential and macroprudential supervisions fail to be resolved, the FSSC will only be able to take actions when the systemic risk has materialised into a full-blown systemic crisis.

Thus, there is a need to separate the macroprudential framework in mitigating the systemic risk from the crisis-management framework in Indonesia. The inherent conflicts of interest and policy trade-offs in the operation of macroprudential supervision needs to be appropriately managed through policy coordination, without risking policy delays and deadlock in the decision-making process. In this regard, the possibility of assigning BI with semi-hard powers to make 'comply or explain' recommendations or/and directions to mitigate systemic risk should be taken into consideration by Indonesian legislators.[21] Alongside the allocation of semi-hard powers, the transparency and accountability of the BI decision-making process should also be further enhanced through direct responsibility to the House of Representatives and the public in general, by publishing more thorough Minutes of Meeting and Policy Statements.[22]

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[19] The FSSC Act 2016 Art 9, 21 (5), 32(1).
[20] Ibid, Art 11.
[21] Even though the Department of Legal Affairs is quite pessimistic on this proposal, this recommendation has actually been proposed in the FSB report (2014) that recommended BI to hold power in issuing recommendations on macroprudential policy on a 'comply or explain' basis to OJK regarding prudential tools under OJK's authority. See: FSB, 'Peer Review of Indonesia' (February 2014) 16-17 < https://www.fsb.org/2014/02/r_140228/> accessed 12 June 2020.
[22] In line with IMF (2013) recommendations, the range of communication tools such as publication of a policy strategy, record of meetings and periodic reports can further help the general public to assess the performance of the authority in achieving its objectives. The current BI Records of Meetings have included the assessment and decision on the financial stability and payment system. However, the monthly records of the meeting could be made more detailed to enhance the transparency of the decision-making process and avoid the free-rider problem within the Board of Governor meeting. See: IMF(b) (n 1) 29.

VI.III.b. Reforms in BI's Internal Organisation

VI.III.b.i. Recommendation 4

Further enhance BI's macroprudential system-wide assessment and monitoring capacity

The current extent of responsibility placed on the FSSD is found to be overly broad, as it encompasses the conduct of supervision of the macroprudential, monetary and payment systems, the implementation and coordination of the crisis-management protocol, and the handling and monitoring of BI's LoLR function. Although such broad coverage can be beneficial for assessing the macro-financial linkages and facilitating better quality of system-wide assessment, BI macroprudential supervision will require narrower responsibilities with high quality of analytical skills and comprehensive access to the system-wide information. Overall, the responsibilities of FSSD can be made more specific in monitoring, assessing, and identifying the development of systemic risk and publication of the FSRs. BI should consider establishing a separate division or task group within the FSSD, that is responsible for evaluating crisis-management protocols, stress-testing and other forward-looking assessments.

VI.III.b.ii. Recommendation 5

Establish a statutory macroprudential board policy committee within BI that fosters closer policy coordination between BI, OJK, IDIC and the MoF

Indonesian legislators should consider establishing a high-level policy committee that can facilitate closer policy interaction and coordination between BI, the OJK, IDIC and the MoF to mitigate the country's systemic risk. The establishment of this policy committee can secure more effective sharing of information and policy coordination between authorities, that helps manage the potential conflicts of interest and policy trade-offs inherent in macroprudential policymaking. Its membership should encompass the external expertise, cross-membership arrangements from OJK and IDIC, and the non-voting membership of the MoF to further foster the transparency and legitimacy of macroprudential decision while also prevent the 'group thinking' problem. Although MoF involvement may increase the risk of government pressure and political intervention in the decision-making process for macroprudential supervision, the presence of its representatives can be beneficial.[23]

VI.III.c. Reforms in the Institutional Arrangements

VI.III.c.i. Recommendation 6

Strengthen BI – OJK Coordination Framework

The current coordination between micro-and macro- prudential supervision in Indonesia should be further enhanced to go beyond the departmental level of coordination, and cover coordination at the board level in its strategic decision-making process. This coordination framework can be primarily secured through the cross-membership arrangement of BI's macroprudential decision-making committee. Coordination can also be arranged through closer alignment of statutory objectives, creating a hierarchy of policy objectives or mandates, or the statutory duty to coordinate under the primary legislation. There is also a need to further define the coordination between the two authorities in the supervision of non-banking financial institutions and financial conglomerates.[24]

VI.III.c.ii. Recommendation 7

Adjust the crisis-management framework under the FSSC Act to establish more apparent separation from the responsibilities of macroprudential supervision

Currently, the FSSC is the only coordinating mechanism that exists within the financial safety-net framework in Indonesia. Coordinated by the Minister of Finance, the FSSC clarifies the responsibilities and coordinates the policy actions of the authorities involved in crisis prevention and management processes. However, the broad scope of the FSSC mandate to include monitoring and maintaining financial stability yet risks creating policy delays and complicating inter-agency coordination in preventing and mitigating the emergence of

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[23] Under its current arrangement, legislation has already granted the possibility of minister(s) to represent the government interest in BI's monthly BGM but without any voting rights. This arrangement should be maintained to avoid the potential danger of government intervention in BI's macroprudential decisions and separate the macroprudential mechanism with the crisis-management framework under the FSSC chaired by the Minister of Finance.
[24] Aligned with the recommendation of the last FSAP report in 2017. See: IMF, 'Indonesia: Financial System Stability Assessment' (Country Report 17/152, June 2017) 28 < https://www.imf.org/en/Publications/CR/Issues/2017/06/12/Indonesia-Financial-System-Stability-Assessment-Press-Release-and-Statement-by-the-Executive-44981> accessed 12 August 2019.

systemic risk.[25] Thus, this research argues that the reforms of macroprudential supervision in Indonesia should be conducted in conjunction with the reforms on the FSSC Act 2016, due to the overlapping mandates and responsibilities in *ex-ante* crisis prevention between the two frameworks. To enhance a more precise separation of responsibilities between the two frameworks, Indonesian legislators and government should strongly consider the recommendation to limit the scope of FSSC's mandates and responsibilities.[26]

VI.V. CHALLENGES AHEAD

To date, the exact interactions between monetary and macroprudential policies, and their impacts upon one another are still largely unknown. The extent of operational independence secured in central banks' monetary policy conduct has not been fully exercised in guaranteeing macroprudential supervision implementation by the authority. In addition, the clear lines separating the central bank's accountability in its policy and its supervisory conduct in achieving the goals of monetary and financial stability are still comparatively obscure. Thus, the central banks mandated with macroprudential supervisory function will face looming challenges that emerge from the indistinct separation of accountability and decision-making process for its monetary–macroprudential conducts.

As the application of countercyclical measures will mainly depend on the willingness of other FSN authorities to coordinate and support macroprudential decisions, strong political skill and position are essential for macroprudential authority. The growing public attention towards the unelectedness and lack of democratic accountability of central bankers could easily be used by certain vested interests to attack the political legitimacy and independence of macroprudential supervision. Without solid political support and public confidence, the willingness of macroprudential authority to take unpopular yet necessary actions to address systemic risk may be further imperilled. Although the extent of political and public pressures on the countercyclicality of macroprudential supervision is not yet able to be fully measured, there is a strong need to ensure the independence and ability of the supervisor to act, while at the same time secure a sufficient degree of political support. Redefining the degree of coordination and

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[25] The Committee was established with the main tasks of coordinating the monitoring and maintenance of financial stability, managing systemic financial crises, and mitigating problems occurring from systematically important banks (SIBs). See: The FSSC Act 2016 Art 5.
[26] This recommendation is also aligned with the FSAP 2017 recommendation. See: IMF (n 24) 28.

political-accountability linkages between the central bank and the Minister of Finance/Treasury—that acts as an extension of government power and is responsible for the use of taxpayers' funds—may be vital to support the macroprudential framework. This process will undoubtedly add more uncertainty and unknown factors to the institutional and governance aspects of modern central banking in the years to come.

VI.VI. SCOPE FOR FUTURE RESEARCH

This study has shown that despite of the overwhelming international supports to assign the central banks with macroprudential responsibility, the arrangement will not automatically guarantee the authority's success in managing and balancing the trade-offs and conflicts of interests inherent in macroprudential operationalisation. By critically examining the roles of the legal structure and institutional arrangements in the four case studies, this research paves the way for the future exploration of theoretical and empirical research on the modern central banking and its capacity as the macroprudential supervisor. The researcher identifies the prospective theoretical legal–institutional analysis of the macroprudential supervisory framework and central banking as important future research in the field.[27] Although there is a proliferating amount of research on the central bank's decision-making in monetary policy in the past two decades, generally, the study on the central bank's financial stability decision-making is still somewhat limited.[28] In comparison to the decision-making for monetary policy—in which votes primarily contain the decision to either increase or decrease the interest rates—the decision-making process for macroprudential decisions is far more complex, as it includes inherent trade-offs and conflicts that generally require the exercise of discretionary judgement on the situation. As the divergence of opinions between members of the macroprudential committee and with the FSN authorities, in general, can be vast and conflicting to one another, finding solutions between these dissensions will require the utmost political skill from the central bank's governor and senior management of the macroprudential

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[27] Amorello (2015) is among the first works focusing on the legal interaction between the macroprudential and monetary frameworks in the European case. See: Luca Amorello, *Macroprudential Banking Supervision and Monetary Policy: Legal Interaction in the European Union* (Palgrave Macmillan 2015) 4.

[28] Currently, the most significant works on the central bank decision-making process are the works of Binder (2007) and Sibert (2006). See: Alan S. Blinder, 'Monetary Policy by Committee: Why and How?' (2007) 23(1) European Journal of Political Economy 106, 111, 113 < https://ideas.repec.org/a/eee/poleco/v23y2007i1p106-123.html> accessed 18 April 2020; Anne Sibert, 'Central Banking by Committee' (2006) 9(2) International Finance 148 < https://doi.org/10.1111/j.1468-2362.2006.00180.x> accessed 21 April 2019.

policy committee. This will further push for more discussion on the independence and accountability of the central bank in the near future. In particular, more studies will be needed to analyse the coordination and relationship between the central banks and the Ministry of Finance or Treasury, that are expected to be an integral part of the modern central banking and financial stability discussions in the future.