

SYSTEMIC RISK AND MACROPRUDENTIAL SUPERVISION

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SUMMARY	1
I. INTRODUCTION	3
II. SYSTEMIC RISK IN THE AFTERMATH OF THE CRISIS	5
1. Financial Stability as a Global Public Good	8
2. Moral Hazard and ‘Too-big-to’ Problems	9
III. MACROPRUDENTIAL SUPERVISION	12
1. Definition and Evolution.....	12
2. The Macroprudential Policy Toolkit	15
3. Macroprudential Tools and Objectives	17
IV. INSTITUTIONAL ARRANGEMENTS FOR MACROPRUDENTIAL SUPERVISION.....	27
1. The International Perspective	28
2. Regional and Domestic Perspectives	30
3. Concluding Observation: Multilateral Macroprudential Coordination.....	38
BIBLIOGRAPHY	40
Abbreviations.....	49

SUMMARY

This chapter deals with the regulatory and institutional issues associated with the management of systemic risk and the concept of macroprudential supervision. From a methodological viewpoint, it relies upon a multi-level governance (MLG) approach, considering the domestic, regional, and international dimensions of systemic risk control.

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The chapter commences with a brief introduction outlining why macroprudential supervision has become so topical. Three additional sections follow. The second section considers the ‘paradigm shift’ in the management of systemic risk following the 2007-09 global financial crisis and the drivers behind the changes adopted. The third section addresses the trend towards macroprudential supervision and considers the definition of macroprudential policy, comparing its goals and objectives with those of other economic policies. It also presents some of the instruments that are generally included in the macroprudential policy toolkit. Though some of the instruments are relatively new, some other tools (perhaps with a different name and for a different policy objective) were applied in the past.¹ The fourth and final section discusses some of the institutional challenges for creating arrangements at the international, regional and domestic levels. It also covers some of the main legal and institutional issues that need to be taken into account in order to develop sound and robust institutional arrangements for macroprudential supervision across regions and jurisdictions.

¹ See generally Bholat, D, ‘Macro-prudential Policy: Historical Precedents and Possible Legal Pitfalls’ (2013) available at <http://www.lccge.bbk.ac.uk/news/seminar>.

I. INTRODUCTION

The 2007-09 global financial crisis challenged many pre-existing conceptions about systemic risk. One of these is the so-called ‘composition fallacy’² which contends that the safety and soundness of any financial system is the aggregate soundness of all its participating institutions.³ This fallacy assumed that if individual entities were robust, then the whole system would be resilient. This assumption proved to be misguided. Using an analogy with forest management, the safeguard of the health of the forest requires a different type of strategy than the safeguard of the health of each individual tree. Ecological considerations would also warn us against excessive reliance on a ‘static’ notion of stability; as Andromachi Georgosouli has pointed out⁴, the notion of

² Brunnermeier, M et. al., *The Fundamental Principles of Financial Regulation*, Centre for Economic Policy Research (CEPR) and International Center for Monetary and Banking Studies (ICMB), Geneva Reports on the World Economy 11 (June, 2009) 15.

³ Osiński J, Seal, K, and Hoogduin, L, ‘Macroprudential and Microprudential Policies: Toward Cohabitation’ (21 June 2013) International Monetary Fund (IMF), Monetary and Capital Markets Department, 6.

⁴Andromachi Georgosouli, in an unpublished manuscript entitled ‘Financial Resilience’ (cited with the permission of the author) addresses the problem of financial vulnerability shifting away from the financial stability metaphor towards a resilience-oriented scheme of regulation. She defines financial resilience as ‘adaptive capacity to change’, which ‘is measured in terms of one’s ability to learn, prepare and, where appropriate, cope and recover from future contingencies’. She concludes: ‘Compared to stability-focused regimes, resilience regulation is more consonant to the logic of a capitalist economy. This is because it focuses on the transition of the financial system from one state of being to the next rather than on the

systemic risk control requires an understanding of resilience as adaptability, thus a dynamic consideration.⁵

Systemic risks pose a threat to financial stability. And, as the crisis evidenced, these types of risks are not confined to the banking system: they can also affect securities and derivatives markets. Such was the case of international insurer, AIG, and investment banks such as Lehman Brothers and Bear Stearns. During the economic meltdown, systemic risks stemmed from non-bank institutions and from financial instruments that traditionally fell outside the regulatory perimeter. Furthermore, systemic risks are not bounded by jurisdictional frontiers; they have a tendency to spread across geographical borders. The dichotomy between global markets and institutions and national law and national policies is particularly acute in the management of systemic risk and in the design of adequate institutional solutions to deal with its negative spillover effects. The financial crisis signified an inflection point towards the adoption of a macro-prudential approach to financial supervision.

system's resistance and its capacity to bounce back to a perceived normality. While financial stability calls for policies that focus on the magnitude and level of contingency of destabilising episodes, financial resilience calls for policies that focus on the socio--structural implications of destabilising episodes irrespective of their magnitude and degree of contingency at a given point in time. Contrary to financial stability-driven systems of regulation, "resilience regulation" gives equal consideration to consumer resilience and systemic resilience and thus it is more likely to lead to more equitable management of financial vulnerability'. Her departure from the 'financial stability-centred view' that currently prevails in the literature provides a fresh approach to the current debate on the subject: Georgosouli, Andromachi, 'Financial Resilience' (2012) unpublished manuscript.

⁵ cf Taleb, N, *Antifragile: Things That Gain From Disorder* (2012).

II. SYSTEMIC RISK IN THE AFTERMATH OF THE CRISIS

The onslaught of the financial crisis has triggered a change in the way that financial supervisors tackle systemic risk. Some commentators argue that an economic downturn was unnecessary in order to understand the global interconnectedness and complexity of financial markets, participants and transactions.⁶ Nevertheless, the meltdown has underscored that systemic risk can have both a national and a transnational impact because of: ‘the inherent risks posed by large, multinational, interconnected financial institutions’.⁷

Hal Scott defines systemic risk as ‘the risk that a national, or the global, financial system will break down’.⁸ Systemic risk poses a threat to financial stability. Financial instability can have a knock-on effect on the real economy, sclerotizing growth. There is no consensus on the definition of financial stability.⁹ Instead it is construed as an

⁶ Golden, J, ‘The Courts, the Financial Crisis and Systemic Risk’ (2009) 4 *Capital Markets Law Journal* S141-S149.

⁷ Greene E, et al., ‘A Closer Look at “Too Big to Fail”’: National and International Approaches to Addressing the Risks of Large, Interconnected Financial Institutions’ (2010) 5 (2) *Capital Market Law Journal* 117-140, 118.

⁸ Scott, H, ‘Reducing Systemic Risk Through the Reform of Capital Regulation’ (2010) 13 (3) *Journal of International Economic Law* 763–778, 763.

⁹ In the so-called ‘*Ingves Report*’, the Bank for International Settlements (BIS) set out to establish a definition of financial stability that would assist in its operational implementation.

elusive and evolving concept.¹⁰ However, it is agreed that it ‘has become a common concern in the process of globalization as it is so directly linked with economic prosperity and human welfare’.¹¹

The absence of a clear-cut definition of financial stability entails that the ‘notion of financial stability is often discussed in terms of the concept of systemic risk and its sources’.¹² Systemic risk management—and consequently, macroprudential supervision—aims to contain the ‘build-up of systemic vulnerabilities over time’.¹³ The accumulation of such vulnerabilities can provoke a generalized reduction in asset values within a financial system. Crises of this nature can be termed *financial* or *capital* crises—as opposed to the notion of liquidity or *banking* crises.¹⁴ Financial crises imply widespread asset write-downs and write-offs in the balance sheets of financial and non-financial institutions across one or more jurisdictions. These asset devaluations stem from the systemic vulnerabilities that generate financial instability.

The report presents at least five different definitions of financial stability found in the recent literature: BIS, *Central Bank Governance and Financial Stability* (2011), 32.

¹⁰ Lastra, R, *Legal Foundations of International Monetary Stability* (2006).

¹¹ Weber, R, ‘Multilayered Governance in International Financial Regulation and Supervision’ (2010) *13 (3) Journal of International Economic Law*, 695.

¹² Galati G, and Moessner, R, ‘Macroprudential Policy – a Literature Review’ (February 2011), *BIS Working Papers No. 337*, available at: <http://www.bis.org/publ/work337.pdf>, 13.

¹³ International Monetary Fund (IMF), *Key Aspects of Macroprudential Policy* (2013), 7.

¹⁴ Lastra, R and Wood, G, ‘The Crisis of 2007-2009: Nature, Causes and Reactions’, (2010) *13(3) Journal of International Economic Law*, 534.

The renewed interest in systemic risk that resulted after the financial crisis has underlined the importance of Frank Knight's classic distinction between risk and uncertainty¹⁵ in relation to the informational asymmetries faced by market participants, regulators and supervisors.¹⁶ While the notion of 'risk proper' entails a quantity susceptible of measurement, Knightian uncertainty involves unquantifiable risk. Considerations regarding systemic risk should question the measurability of prospect scenarios. In particular, the contemporary definitions of systemic risk might conflate quantifiable contingencies and immeasurable ones.

Moreover, systemic risk has been categorized into two different time-based dimensions. Firstly, the *structural* dimension of systemic risk refers to the 'the distribution of risks across the financial sector'.¹⁷ This is a static or snapshot dimension, which considers the aggregate risk in any (set of) financial system(s) at a given point in time. On the other hand, there is a *cyclical* dimension that tracks the dynamic changes of systemic risk over time.¹⁸ The cyclical dimension looks at how risk varies over the economic cycle—that is, during booms and slumps, from peak to

¹⁵ Knight, F, *Risk, Uncertainty and Profit* (1921).

¹⁶ See Avgouleas, E, *Governance of Global Financial Markets: The Law, the Economics and the Politics* (2012) 104.

¹⁷ European Systemic Risk Board (ESRB), Recommendation of the European Systemic Risk Board on Intermediate Objectives and Instruments of Macroprudential Policy, ESRB/2013/1 2013/C170/01 (2013).

¹⁸ Elliott, D, et al., 'The History of Cyclical Macroprudential Policy in the United States', Finance and Economics Discussion Series Divisions of Research & Statistics and Monetary Affairs WP No. 2013-29 (2013).

trough. This distinction is useful for identifying which instruments from the macroprudential toolkit are fit for each time-dimension of systemic risk.¹⁹

1. Financial Stability as a Global Public Good

The interconnectedness of financial markets has rendered financial stability as a ‘national, regional and international goal’.²⁰ This makes it a global public good²¹ that ‘does not stop at national borders’.²² The public good nature of financial stability means that it is a potential source of market failure. Global financial stability combines the two elements of public goods: non-rivalry and non-exclusivity.²³ The non-rivalrous nature of financial stability means that its enjoyment by one jurisdiction will not reduce the amount available to another country. While its non-exclusive characteristic means that jurisdictions that invest heavily to attain it cannot exclude other states from enjoying some of its benefits. Conversely, the absence of stability-financial instability-can be symmetrically construed as a global public bad, which also shares the features of lacking rivalry and exclusion.

¹⁹ However, the ESRB considers that: ‘it is difficult to make a clear-cut distinction between the two dimensions given their close interlinkages’: ESRB, n 17 above.

²⁰ Lastra, R, ‘Systemic Risk, SIFIs and Financial Stability’ (2011) 6 (2) *Capital Markets Law Journal*, 198, 207.

²¹ Trachtman, J, ‘The International Law of Financial Crisis: Spillovers, Subsidiarity, Fragmentation and Cooperation’ (2010) 13 (3) *Journal of International Economic Law* 721.

²² Schoenmaker, D, ‘A New Financial Stability Framework for Europe’ (2008) 13(3) *The Financial Regulator*.

²³ Miceli, T, *The Economic Approach to Law* (2004), 32.

As with other public goods, public authorities are entrusted with the provision of financial stability. Some countries could have incentives to under-invest in achieving financial stability in order to free-ride on the investments made by other jurisdictions. This can lead to the potential underproduction of financial stability at a cross-border basis.²⁴

2. Moral Hazard and ‘Too-big-to’ Problems

The ‘too-big-to’ (TBT) set of problems (too-big-to-fail, too-complex-to-fail, too-interconnected-to-fail...) can be considered as an additional driver behind the latest shift in the supervisory paradigm. These TBT considerations, fuelled by moral hazard and implicit guarantees, posed and continue to pose a significant threat to global financial and economic stability. In addition, many countries harbour institutions that they cannot afford to bail out in the hypothetical case of their failure (too-big-to-save or TBTS).²⁵ These entities are not only commercial banks. The AIG bailout and the

²⁴ Trachman, n 21 above.

²⁵ Countries harbored these institutions both as home and as host States. The distinction between home/host states is relevant for the regulation and supervision of financial institutions and conglomerates. Many financial entities operate on a cross-border basis, while supervision and crisis management largely remain national tasks. Charles Goodhart and Rosa M. Lastra refer to this as the ‘cross border problem’: cf. Goodhart, C, and Lastra, R, ‘Border Problems’ (2010) 13(3) *Journal of International Economic Law* 705. Jay Lawrence Westbrook has also argued that bailing out SIFIs could even be financially troubling for more affluent jurisdictions like the US and the UK: Westbrook, J, ‘SIFIs and States’, (2013) 49 (2) *Texas International Law Journal*.

collapse of Lehman Brothers revealed that problems, crises or failures in nonbank institutions could also have systemic dimensions.

These eventualities gave renewed impetus to the challenge of developing a supervisory framework for dealing with the moral hazard posed by Systemically Important Financial Institutions (SIFIs).²⁶ The G20s Financial Stability Board (FSB) defined SIFIs as ‘financial institutions whose distress or disorderly failure, because of their size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity’.²⁷ SIFIs that pose a threat to global financial stability are referred to as global or G-SIFIs. On November 2011, the FSB issued an initial list of 29 G-SIFIs.²⁸ Moreover, on July 2013, the FSB published a list of Global Systemically Important Insurers (G-SIIs) and the policy measures that will apply to them.²⁹

²⁶ cf Financial Stability Board (FSB), Reducing the Moral Hazard Posed by Systemically Important Financial Institutions, (2010) Available at <http://www.financialstabilityboard.org/publications/r_101111a.pdf>.

²⁷ cf FSB, Policy Measures to Address Systemically Important Financial Institutions (4 November 2011) available at: <http://www.financialstabilityboard.org/publications/r_111104bb.pdf>.

²⁸ *ibid*, Annex (the irony being that the FSB’s designation of certain institutions as SIFIs may create the very problem it is trying to mitigate).

²⁹ FSB, Global Systemically Important Insurers (G-SIIs) and the Policy Measures that will Apply to Them (18 July 2013) available at: <http://www.financialstabilityboard.org/publications/r_130718.pdf>.

SIFIs and G-SIFIs resemble the baobab trees depicted in Antoine de Saint-Exupéry's classic book, *'The Little Prince'*. In the book's illustration the baobabs (inspired by the *Adansonia* genus of trees) are stifling and smothering the planet with the size of their roots and trunks. Like the baobabs, G-SIFIs have extended their nexus of activities across the globe, entrenching their roots across many jurisdictions.³⁰

The supervisory challenge posed by SIFIs is not exclusive to developed countries. There are many jurisdictions that host G-SIFIs. Many other countries have to deal with their own set of SIFIs. This reality prompted the BCBS to issue its *Framework for Dealing with Domestic Systemically Important Banks* or D-SIBs.³¹ The FSB also published its report on extending the G-SIFI Framework to D-SIBs.³² This underscores the idea that G-SIFIs and D-SIBs represent two complementary sides of the systemic risk problematic.

³⁰ cf Lastra, R, 'Inaugural Lecture: the Quest for International Financial Regulation' (23 March 2011) Queen Mary University London, available at: <http://www.law.qmul.ac.uk/events/podcasts/lastra2011/>.

³¹ Basel Committee on Banking Supervision, *A Framework for Dealing With Systemically Important Banks* (11 October 2012) available at: <http://www.bis.org/publ/bcbs233.htm>.

³² FSB, *G-SIFI Framework to Domestic Systemically Important Banks: Progress Report to G-20 Ministers and Governors* (16 April 2012). Available at: http://www.financialstabilityboard.org/publications/r_120420b.pdf.

III. MACROPRUDENTIAL SUPERVISION

1. Definition and Evolution

Before the crisis, risk-based supervision was mostly concerned with the safety and soundness of individual institutions (the concept of micro-prudential supervision).³³ After the crisis, the focus has shifted towards the robustness of the whole financial system. For example, the Basel Committee on Banking Supervision (BCBS) enhanced the scope of risk-based supervision in its *Core Principles for Effective Banking Supervision*. The new Core Principles have been widened in order to include: ‘the need for greater intensity and resources to deal effectively with systemically important banks; the importance of applying a system-wide, macro perspective to the microprudential supervision of banks to assist in identifying, analysing and taking pre-emptive action to address systemic risk; and the increasing focus on effective crisis management, recovery and resolution measures in reducing both the probability and impact of a bank failure’.³⁴ This system wide perspective is referred to as macroprudential supervision. The set of measures, tools and processes that financial regulators employ in order to achieve the aforementioned objectives is referred to as ‘macroprudential policy’.

‘Macroprudential’ policy has become one of the main features of the post-crisis

³³ See Lastra, R, ‘Defining Forward-looking Judgment-based Supervision’ (2013) 14 (3) *Journal of Banking Regulation* 221-227.

³⁴ Basel Committee on Banking Supervision, *Core Principles for Effective Banking Supervision*, (2012), 2. See also *ibid* *Core Principles* 8 and 9.

financial regulatory reform agenda.³⁵ Although a relatively recent phenomenon, it has already sparked many academic papers, high-level discussions and policy reports. This progress notwithstanding, macroprudential policy is still considered to be in its initial phase. Douglas Elliott considers that ‘(w)e are in the early days of macroprudential policy, akin perhaps to where monetary policy stood in the 1950s’.³⁶

The macroprudential perspective can be a murky concept to grasp, somewhere in between micro-prudential supervision and monetary policy. The contours are not always easy to demarcate. The European Systemic Risk Board (ESRB) states that: ‘(t)he ultimate objective of macro-prudential policy is to contribute to the safeguard of the stability of the financial system as a whole, including by strengthening the resilience of the financial system and decreasing the build-up of systemic risks, thereby ensuring a sustainable contribution of the financial sector to economic growth’.³⁷ Before the macroprudential paradigm shift, ‘the broader financial system was steered by a combination of monetary policy and microprudential regulation’.³⁸ With the onslaught of the crisis, the focus has now expanded to take into account the

³⁵ Galati and Moessner, n 12 above.

³⁶ Elliott, D, ‘Macroprudential Policy: Time to Start Experimenting’ *The Economist*, 4 June 2013. A similar view has been stated by Haldane, A, ‘Macroprudential Policies-When and How to Use Them’ (2013) available at: <http://www.imf.org/external/np/seminars/eng/2013/macro2/pdf/ah.pdf>.

³⁷ ESRB, n 17 above, Art. 1.

³⁸ Schoenmaker, D and Wierds, P, ‘Macroprudential Policy: The Need for a Coherent Policy Framework’ (2011) DSF Policy Paper Series Paper No. 13, 2.

bigger picture: the safety and soundness of the whole financial system as well as the global interconnectedness of systems and infrastructures across borders.

In order to conceptually clarify macroprudential supervision better, it can be useful to rely on the analogy provided by forest management: ‘Macro-prudential supervision is analogous to the oversight of the forest, whereas micro-prudential supervision is analogous to the oversight of individual trees’.³⁹ This illustration can resonate powerfully when considering that in order to preserve the forest, some individual trees might need to be sacrificed—or overseen with higher concern.

Macroprudential policy looks to provide a backstop for systemic risk containment within the perimeter of individual institutions. It must not be confused with forms of microprudential management, like consolidated supervision. In the latter, the focus is on the related entities within a financial group. While macroprudential supervision is concerned with the relationship between any individual institution (or financial group) and the safety and soundness of the system as a whole.

One of the major challenges of implementing systemic-wide supervision is adequate policy interaction between macroprudential policy and other economic policies. Additional levels of complexity arise when considering that micro and macroprudential supervision are not only limited to the commercial banking sector—but span across other financial subsectors (insurance, investment banking, shadow banking) on a domestic and transnational level.

³⁹ Lastra, n 20 above, 198.

2. The Macroprudential Policy Toolkit

The range of macroprudential regulation and supervision is broader than the traditional scope of microprudential regulation. As a result, the macroprudential toolkit includes a plethora of instruments. Some of these tools—like transaction taxes and central counterparty clearing (CCP)⁴⁰—are not even ‘*prudential*’ in nature. Others are recognizable. These devices have been borrowed from other areas of economic policy, such as: monetary, fiscal, competition policies and crisis management.⁴¹ This highlights the fact that even though the macroprudential perspective is fairly recent, the toolkit drawn so far comprises many familiar instruments from other policy areas.⁴²

The macroprudential policy menu needs to encompass tools for the whole financial system—including areas that fall outside the perimeter of the regulatory radar. The shadow banking sector, market infrastructures, market participants and financial

⁴⁰ Central counterparty (CCP) clearing refers to the interposition of the CCP between counterparties of the original trade thus, the CCP becoming buyer to the seller and seller to the buyer. This process of replacing the original contract with two equal and opposite transactions is referred to as ‘novation’ where the resulting two transactions are completely independent from each other. See generally Norman, P, *The Risk Controllers: Central Counterparty Clearing in Globalised Financial Markets*, (2011).

⁴¹ IMF, n 13 above, 8.

⁴² This could add confusion regarding the boundaries of macroprudential policy *vis-à-vis* other economic policy fields.

instruments can all pose a significant systemic threat to domestic and transnational financial stability.⁴³

The instruments also need to be effective and efficient. The ESRB states that effectiveness refers to how well each instrument mitigates systemic market failures while achieving its policy objective(s).⁴⁴ While the efficiency of any macroprudential tool has been defined as achieving the desired goals and objectives at a minimum cost. However, because macroprudential supervision is still in its initial implementation phase, the instruments will need adequate testing and calibration.

One of the main challenges in the design of an effective policy is the assessment and calibration of the various instruments in the macroprudential toolkit. This calibration implies not only using the instruments effectively and efficiently. It also means balancing countervailing tools for different economic policy objectives. Moreover, the regulatory dialectic cycle suggests that financial innovation and ‘loophole mining’ can create new sources of systemic risk build-up that will have to be addressed.⁴⁵

⁴³ The FSB has defined the ‘shadow banking system’ or ‘market-based’ financing system as ‘credit intermediation involving entities and activities (fully or partially) outside the regular banking system or non-bank credit intermediation in short’: FSB, Strengthening Oversight and Regulation of Shadow Banking Policy Framework for Strengthening Oversight and Regulation of Shadow Banking Entities (29 August 2013) available at: http://www.financialstabilityboard.org/publications/r_130829c.pdf.

⁴⁴ ESRB, n 17 above.

⁴⁵ Kane, E, ‘Accelerating Inflation, Technological Innovation, and the Decreasing Effectiveness of Banking Regulation’ (1981) 36 (2) *Journal of Finance*.cf: Kane, E ‘The

Downturns in the economic cycle are also likely to stir tensions between macro and microprudential policies. This means that the calibration of macroprudential tools is contingent to the overall economic cycle. Countercyclical⁴⁶ capital buffers are an example of this. This instrument consists of requiring financial institutions to set aside more capital during good times, in order to better withstand potential economic downturns.

3. Macroprudential Tools and Objectives

Macroprudential tools may be divided using the categories of systemic risk referred to earlier in the chapter, distinguishing between: *cyclical* and *structural* macroprudential tools.⁴⁷ Elliot et. al. have argued that in some cases, countries like the USA have long been using some of the identified instruments without having labelled them as ‘macroprudential’.⁴⁸

inevitability of Shadow Banking’, (2012) available at:
http://www.frbatlanta.org/documents/news/conferences/12fmc/12fmc_kane.pdf..

⁴⁶ cf 49, below.

⁴⁷ Schoenmaker and Wiertz, n 38 above, 2.

⁴⁸ Elliott et. al., n 18 above, 3. David Bholat of the Bank of England is conducting a similar type of research in the UK: Bholat, D, ‘Macro-prudential Policy: Historical Precedents and Possible Future Pitfalls’ (25 October 2013) Lecture at Birkbeck, University of London, London, UK.

Given the relative short history of macroprudential supervision as such (even if instruments in the toolkit have been used for decades before) the framework for using it in the pursuit of the financial stability objective is largely experimental, and relies to a large extent on ‘work in progress’. Many leading financial regulatory trendsetters, like the Financial Stability Board (FSB) and the International Monetary Fund (IMF), and domestic and regional macroprudential supervisors, like the Bank of England (BoE) and the ESRB, have set out to establish an adequate framework for measuring and making macroprudential policy operational.

A working paper written by IMF staff states that the macroprudential toolkit must contain three categories of instruments:

- (i) Instruments constructed to have an impact on the pro-cyclicality⁴⁹ of the financial system (e.g., countercyclical capital buffers) or on the contribution of a financial institution to systemic risk (e.g., Systemically Important Financial Institution surcharges);
- (b) Prudential instruments to address a build-up of systemic risk in specific segments of the market (such as loan-to-value ratios) and instruments aimed at constraining general or specific

⁴⁹ ‘Procyclical’ tools move together with the economic cycle. This means that they are directly or positively related to economic booms and busts. Conversely, ‘counter-cyclical’ tools and policies are negatively-or inversely- related with the economic cycle. The story of Joseph (present in the Bible and the Quran) serves as a good illustration in order to explain the concept of counter-cyclicality. As a countercyclical policy, Joseph recommended saving resources during seven years of economic prosperity in Egypt in order to endure the subsequent seven years of scarcity and famine.

leverage in nonfinancial sectors (such as debt-to-income ratios); and (iii) Tools to address systemic liquidity concerns.⁵⁰

The ESRB has set out a set five intermediate objectives that macroprudential policy should aim to achieve. These intermediate objectives are:

(1) Mitigating and preventing excessive credit growth and leverage; (2) Mitigating and preventing excessive maturity mismatch and market illiquidity; (3) Limit direct and indirect exposure concentrations; (4) Limit the systemic impact of misaligned incentives with a view to reducing moral hazard; and (5) Strengthening the resilience of financial infrastructures.⁵¹

The aforementioned intermediate objectives are seen as transitional steps towards achieving robust financial stability. The ESRB considers that: ‘identifying intermediate objectives makes macro-prudential policy more operational, transparent and accountable and provides an economic basis for the selection of instruments’.⁵²

Table 1 summarizes and presents the referred intermediate objectives and includes the matching policy instruments that have been identified by the ESRB – an indicative list comprising different categories – in order to tackle specific market failures that lead to financial instability. The ESRB recommends that instruments should be

⁵⁰ Osinski, Seal and Hoogduin, n 3 above, 25.

⁵¹ ESRB, n 17 above.

⁵² *ibid*, paragraph 4.

selected according to their efficiency and effectiveness. However, because of the incipient implementation of these devices on a systemic-wide scale, there is still limited evidence to evaluate their success or failure.

TABLE 1
Macroprudential Policy Intermediate Objectives, Selected
Instruments and Market Failure

Source: ESRB⁵³

Intermediate Objective	Underlying Market Failure (identified by the ESRB)	Selected Instruments
Mitigate and prevent excessive credit growth and leverage	<ul style="list-style-type: none"> • Credit crunch externalities: a sudden tightening of the conditions required to obtain a loan, resulting in a reduction of the availability of credit to the non-financial sector. • Endogenous risk-taking: incentives that during a boom generate excessive risk-taking and, in the case of banks, a 	<ul style="list-style-type: none"> • Countercyclical capital buffer • Sectorial capital requirements (including intra-financial system) • Macro-prudential leverage ratio • Loan-to-value requirements (LTV) • Loan-to-income/debt (service)-to-income requirements (LTI)

⁵³ ESRB, n 17 above.

	<p>deterioration of lending standards. Explanations for this include signalling competence, market pressures to boost returns, or strategic interaction between institutions.</p> <ul style="list-style-type: none"> • Risk illusion: collective underestimation of risk related to short-term memory and the infrequency of financial crises. • Bank runs: the withdrawal of wholesale or retail funding in case of actual or perceived insolvency. • Interconnectedness externalities: contagious consequences of uncertainty about events at an institution or within a market. 	
Mitigate and prevent	<ul style="list-style-type: none"> • Fire sales externalities: 	<ul style="list-style-type: none"> • Macro-prudential

<p>excessive maturity mismatch and market illiquidity</p>	<p>arise from the forced sale of assets due to excessive asset and liability mismatches. This may lead to a liquidity spiral whereby falling asset prices induce further sales, deleveraging and spillovers to financial institutions with similar asset classes.</p> <ul style="list-style-type: none"> • Bank runs. • Market illiquidity: the drying-up of interbank or capital markets resulting from a general loss of confidence or very pessimistic expectations. 	<p>adjustment to liquidity ratio (e.g. liquidity coverage ratio)</p> <ul style="list-style-type: none"> • Macro-prudential restrictions on funding sources (e.g. net stable funding ratio) • Macro-prudential unweighted limit to less stable funding (e.g. loan-to-deposit ratio) • Margin and haircut requirements
<p>Limit direct and indirect exposure concentrations</p>	<ul style="list-style-type: none"> • Interconnectedness externalities. • Fire sales externalities: (here) arise from the forced sale of assets at a dislocated price given the distribution of exposures within the financial 	<ul style="list-style-type: none"> • Large exposure restrictions • CCP clearing requirement

	system.	
Limit the systemic impact of misaligned incentives with a view to reducing moral hazard	<ul style="list-style-type: none"> • Moral hazard and ‘too big to fail’: excessive risk-taking due to expectations of a bailout due to the perceived system relevance of an individual institution. 	<ul style="list-style-type: none"> • SIFI capital surcharges
Strengthen the resilience of financial infrastructures	<ul style="list-style-type: none"> • Interconnectedness externalities • Fire sales externalities • Risk illusion • Incomplete contracts: compensation structures that provide incentives for risky behaviour. 	<ul style="list-style-type: none"> • Margin and haircut requirements on CCP clearing • Increased disclosure • Structural systemic risk buffer

To sum up, some of the main tools identified with macroprudential policy and supervision are:

- Countercyclical capital buffers (CCB)
- Sectorial capital requirements. This would include capital requirements for banking, securities intermediation and insurance.

- Macro-prudential leverage ratio. For all entities across sector, not just commercial banks.⁵⁴
- Loan-to-value requirements (LTV). LTV ratios represent the proportion between the value of a secured loan in comparison to the value of an asset used as security for said loan (i.e. the value of a mortgage in comparison to the value of the mortgaged asset). LTV ratios aim to reduce the exposure of lenders but they also tackle moral hazard on the borrowers' side, making them hold more 'skin-in-the-game' in order to create a disincentive for defaulting.
- Loan-to-income/debt (service)-to-income requirements (LTI). The LTI ratio measures a borrower's repayment capacity. It compares the borrower's scheduled debt service payments with his/her income. If payments represent a large portion (or exceed) the borrowers income, default might ensue.
- Macro-prudential adjustment to liquidity ratio (e.g. liquidity coverage ratio)
- Macro-prudential restrictions on funding sources (e.g. net stable funding ratio)
- Macro-prudential unweighted limit to less stable funding (e.g. loan-to-deposit ratio)
- Margin and haircut requirements⁵⁵
- SIFI capital surcharges. This means requiring more stringent capital requirements to SIFIs
- Margin and haircut requirements on CCP clearing

⁵⁴ Hal Scott remarks on how leading up to the crisis many US investment banks were overleveraged reaching leverage to capital ratios of 30 to 1. Scott, n 8 above, 765.

⁵⁵ In his comments to this chapter, Charles Goodhart pointed out that he found the dividing lines rather restrictive in that margin requirements, for example, could be used as an instrument for almost all the intermediate objectives.

- Increased disclosure
- Structural systemic risk buffer
- Large exposure restrictions
- CCP clearing requirements
- Deposit protection/ insurance

Additional instruments proposed by the IMF, include ‘Pigovian’ fiscal measures, such as the Financial Stability Contribution (FSC), aimed at providing funds for an effective resolution mechanism, and a Financial Activities Tax (FAT), ‘levied on the sum of the profits and remuneration of financial institutions, and paid to general revenue’.⁵⁶ In addition, competition policy measures - such as limits against sectorial concentration and merger control - can also be used with macroprudential objectives. These macroprudential tools can generate conflicting tensions with the goals traditionally associated with other overlapping economic policies. Consequently, trade-offs can exist between macroprudential policy and other economic programmes.

The IMF has also identified (in house and externally) two additional set of tools aimed at addressing the interconnectedness dimension of cross-sectional systemic risk. These set of tools are (i) network analysis and (ii) price-based measures.⁵⁷ By interconnectedness, the IMF staffs refer to the ‘complex webs of contract relationships across financial institutions’.⁵⁸

⁵⁶ IMF, A Fair and Substantial Contribution by the Financial Sector (2010).

⁵⁷ Arregui, N, et. al. ‘Addressing Interconnectedness: Concepts and Prudential Tools’ (2013) IMF Working Paper WP/13/199, 6.

⁵⁸ *ibid*, 4.

Network analysis consists of looking at the nexus of existing multilateral claims (links) between financial institutions (nodes). The main tools for network analysis identified by IMF staff are: 1) centrality analysis, 2) cluster analysis and 3) balance sheet simulation measures.⁵⁹ Centrality analysis looks at the existing patterns of linkages between nodes (financial institutions) to understand which of them are crucial to a particular financial system.⁶⁰ Cluster analysis compiles nodes that are closer to each other into subsets or ‘clusters’ with the aim of identifying vulnerable entities and ‘gatekeepers’ that can spread risk to other institutions. Balance sheet simulations are hypothetical assessments that assume financial failure in order to test how well institutional balance sheets perform.

On the other hand, price-based measures are defined as: ‘methodologies developed for the measurement of risk in portfolios of securities [that] have been adapted to the measurement of systemic risk for a “portfolio” of institutions’.⁶¹ One of the main distinctions between network analyses and price-based measures is that while the former tackle ‘direct bilateral exposures between institutions’, price based measures can also cover ‘indirect spillover channels’ across institutions.⁶² These tools involve sophisticated quantitative techniques.

⁵⁹ *ibid.*

⁶⁰ See Markose, S, ‘Systemic Risk Analytics: A Data Driven Multi-Agent Financial Network (MAFN) Approach’ (2013) *14 (3) Journal of Banking Regulation*.

⁶¹ *ibid.*, 7.

⁶² *ibid.*, 10.

Some of the main price-based measures that have been identified in the emerging literature include: CoVaR, distress spillovers, return spillovers, JPoD and CoPoD.⁶³ CoVaR is ‘the value at risk (VaR) of the financial system conditional on institutions being in distress’.⁶⁴ While VaR measures the individual risk of financial institutions, CoVaR aims to study how the risk of one institution affects another.⁶⁵ Return spillovers aim to gauge the contribution of one institution to systemic risk. While distress spillovers are an indicator of the systemic contribution of individual institutions, but during distressful times.⁶⁶ Moreover, Segoviano and Goodhart have developed a measure for calculating the conditional probabilities of distress (“CoPoD”) that estimates the probability that one institution experiences financial instability conditional on the distress of another entity. The joint probability of distress (“JPoD”) can also be calculated for multiple institutions.⁶⁷

IV. INSTITUTIONAL ARRANGEMENTS FOR MACROPRUDENTIAL SUPERVISION

⁶³ These measures are explained with great detail in the Appendix III of Arregui et. al., n 57 above, 51-53.

⁶⁴ Adrian, T, and Brunnermeier, M, ‘CoVaR’ (2011) Federal Reserve Bank of New York Staff Reports No. 348.

⁶⁵ *idem*

⁶⁶ see Chan-Lau, J, Mitra, S, and Ong, L, ‘Identifying Contagion Risk in the International Banking System: An Extreme Value Theory Approach’ (2012) International Journal of Finance and Economics, 17.

⁶⁷ See Goodhart, C, and Segoviano, M, ‘Banking Stability Measures’ (2009) IMF Working Paper No. WP/09/04.

The IMF has stated that in order to be effective, macroprudential policies require a ‘strong institutional framework’.⁶⁸ Because of the cross-border implications that systemic risks pose to global financial stability, the institutional arrangements need to cover the international, regional and national dimensions. The IMF calls this the *multilateral aspects* of macroprudential policy.⁶⁹ These dimensions justify the need for strong coordination and cooperation in the implementation of macroprudential policies as well as in cross-border systemic-wide financial supervision and orderly bank resolution schemes for G-SIFIs and D-SIBs. In turn, the main institutional arrangements that have been originated in the international and domestic perspectives are discussed.

1. The International Perspective

In November 2010, the G20 leaders called on the top financial regulatory standard setters to develop the macroprudential frameworks, requiring that ‘these frameworks should take into account national and regional arrangements’.⁷⁰ This statement evidences the importance of building sound regional and national institutional and policy structures for macroprudential supervision. The main forums leading these reforms at the global level are the FSB, the Basel Committee on Banking Supervision (BCBS) and the IMF.

⁶⁸ IMF, n 13 above, 27.

⁶⁹ *ibid*, p. 5.

⁷⁰ FSB, IMF and BIS, *Macroprudential Policy Tools and Frameworks: Progress Report to G20* (2011).

It still might be too early to adequately assess the effectiveness of these forums in paving the way towards systemic-wide supervision. The FSB is the newest —and probably—the least well known of these forums.⁷¹ Its membership includes central banks, finance ministries and also other international standard setters and international organisations, like the IMF, the IOSCO and the BCBS.⁷² Although its decisions are based on consensus, the limited participation of many emerging economies in its decision making process could undermine the effectiveness of its scope of influence. This can also give rise to democratic legitimacy concerns. Nonetheless, the FSB has led the way in the policy debate of important systemic policy areas, which include: SIFIs, GSIIIs, Shadow banking⁷³, TBTF⁷⁴ and information gaps.⁷⁵

The IMF has also become an important player in the macroprudential trend. The Fund has stated that it ‘can play a key role, through its bilateral and multilateral surveillance

⁷¹ See Schembri, L, ‘Born of Necessity and Built to Succeed: Why Canada and the World Need the Financial Stability Board’, speech by the Deputy Governor of the Bank of Canada (24 September 2013).

⁷² The full list is available at: http://www.financialstabilityboard.org/about/fsb_members.htm..

⁷³ See FSB, n 43 above.

⁷⁴ See FSB, Progress and Next Steps Towards Ending ‘Too-Big-To-Fail’ (2 September 2013) available at: http://www.financialstabilityboard.org/publications/r_130902.htm.

⁷⁵ The data gap initiative (DGI) is a ‘common data template for global systemically important banks to address key information gaps and to provide the authorities with a strong framework for globally assessing potential systemic risks’: FSB and IMF, The Financial Crisis and Information Gaps: Fourth Progress Report on the Implementation of the G-20 Data Gaps Initiative (September 2013) available at: http://www.financialstabilityboard.org/publications/r_131014.pdf.

and in collaboration with standard setters and country authorities, to help ensure the effective use of macroprudential policy for domestic and global stability'.⁷⁶ Although its scope has been traditionally focused purely on microprudential banking tools, the BCBS has also taken important steps in the transition towards a systemic wide approach to supervision. As mentioned before, the BCBS has widened the scope of its *Core Principles* and also developed rules for supervising D-SIBs.

2. Regional and Domestic Perspectives

Many high-level policy reports and academic papers address the key features that should underpin a robust domestic institutional structure for macroprudential supervision.⁷⁷ There is no one size fits all solution when it comes to adopting a macroprudential institutional arrangement. While some discussions exist regarding which institutions are better fitted to perform macroprudential oversight, there is some consensus on recommending that every country should build on its existing institutional framework, attending to its own country-specific circumstances.⁷⁸ Thus, emerging market economies should implement bespoke institutional frameworks that conform to their existing institutional conditions.

In a joint policy document, the IMF, the FSB and the BIS have stated that the main features for a robust institutional macroprudential arrangements should include: (i) a

⁷⁶ IMF, n 13 above, 5.

⁷⁷ See IMF, n 13 above. cf ESRB, n 17 above.

⁷⁸ FSB, IMF and BIS, n 70 above, 17.

clear legal mandate; (ii) appropriate powers and instruments; (iii) suitable accountability and transparency mechanisms; (iv) composition of the decision-making body; and (v) arrangements for domestic policy coordination.⁷⁹ In addition, the IMF has identified at least three models for establishing a robust institutional framework. Table 2 provides a summary of these models. The ideal model will depend on the legal and historical features of each country.

TABLE 2 Models for Macroprudential Institutional Arrangement <i>Source: IMF⁸⁰</i>	
Model 1. <u>Central bank.</u>	Macroprudential responsibilities are entrusted directly to the Central Bank (with the same governing body in charge of monetary policy and macro-prudential supervision)
Model 2. <u>Internal body within the central bank.</u>	Macroprudential responsibilities are assigned to a committee within the Central Bank which is separate from the committee entrusted with the conduct of

⁷⁹ *ibid*, 15.

⁸⁰ IMF, n 13 above, 30.

	monetary policy.
Model 3. External committee outside of the central bank.	The macroprudential functions are assigned to an institution outside of the Central Bank, with the participation of the latter and other institutions involved with systemic risk monitoring

The first model assigns macroprudential oversight to the central bank or monetary authority. The idea is that central bankers should lead in order to better coordinate monetary policy and other goals—like price stability—alongside the overarching systemic wide goal of financial stability. The shortcoming from this arrangement is that countervailing policy objectives and instruments could generate frictions. Some studies have pointed out the existence of possible tensions between macroprudential and monetary policies.⁸¹

The second model – a variation of the first – suggests an institutional arrangement that assigns macroprudential policy to a committee within the central bank separate from the committee entrusted with the conduct of monetary policy. This structure can offer the possibility of segregating macroprudential goals from other policy objectives. This is for example the model adopted in the UK with the establishment of

⁸¹ See Maddaloni, A, and Peydró J, ‘Monetary Policy, Macroprudential Policy and Banking Stability: Evidence from the Euro Area’ (2013) European Central Bank Macroprudential Research Network, Working Paper Series No. 1560, 25. cf Angelini, P, et. al., ‘Monetary and Macroprudential Policies’ (2012) European Central Bank Macroprudential Research Network, Working Paper Series No. 1449, 25.

the Financial Policy Committee within the Bank of England (separate from the Monetary Policy Committee) by the Financial Services Act 2012. The FPC has been charged with the main objective of ‘of identifying, monitoring and taking action to remove or reduce systemic risks with a view to protecting and enhancing the resilience of the UK financial system’.⁸²

The IMF, the FSB and the BIS state that: ‘the creation of such committees is most obviously desirable when multiple bodies have a financial stability mandate, or where there is separation between bodies with decision-making and policy implementation powers’.⁸³ In addition, committees also offer the possibility for collective decision-making and consensus building. Schoenmaker and Wiertz point out that ‘committees tend to be less effective in timely decision-making’⁸⁴ though they still favour committees over decision-making by a single individual.⁸⁵

Charles Goodhart, and also Luis Garicano and Rosa Lastra have recommended that the central bank should be in charge of macroprudential supervision⁸⁶ As regards the

⁸² See <http://www.bankofengland.co.uk/financialstability/pages/fpc/default.aspx>.

⁸³ FSB, IMF & BIS, n 70 above, 17.

⁸⁴ Schoenmaker and Wiertz, n 38 above, 9.

⁸⁵ By arguing that ‘Committee decision-making tends to be more balanced than decision-making by individuals’: *ibid*, 8.

⁸⁶ Goodhart, C, ‘The Changing Role of Central Banks’ (2010) *BIS Working Papers* No. 326, 30; Garicano L, and Lastra, R, ‘Towards a New Architecture for Financial Stability: Seven Principles’ (2010) *13(3) Journal of International Economic Law*, 612.

specific central banking organizational arrangement, a committee structure provides adequate balancing of its twin mandate (monetary stability and financial stability).

The third model proposes the creation of macroprudential oversight institutions located outside the central bank though generally with some participation by the central bank. This is for instance the model adopted by the Dodd-Frank Act 2010 with the creation of the Financial Stability Oversight Council.⁸⁷ ‘The emergence of councils for financial stability to undertake systemic risk control or macro-prudential supervision is a feature’ of on-going financial reforms.⁸⁸ The Dodd-Frank Act of 2010 gives the Financial Stability Oversight Council (FSOC) the power to entrust the Federal Reserve System with responsibility for the regulation of any firm that is deemed to be systemically according to criteria specified in the Act.

In the European Union (EU), the ESRB was established, acting on the recommendations of the De Larosière Report bearing in mind the different jurisdictional domains of the EU (the domain of the ESRB) and the Eurozone (for which the ECB has jurisdiction).⁸⁹ However, the advent of banking union risks making the ESRB irrelevant.

⁸⁷ See <http://www.treasury.gov/initiatives/fsoc/about/Pages/default.aspx>. The FSOC is made up of ten voting members and five nonvoting members.

⁸⁸ Lastra, n 20 above, 198.

⁸⁹ High-Level Group on Financial Supervision in the EU, Report on Financial Supervision in the EU (De Larosière report) (2009).

Banking union is a fundamental change in the institutional design for the pursuit of financial stability in Europe.⁹⁰ The first pillar of banking union is ‘single supervision’, with the establishment of the Single Supervisory Mechanism (SSM). ‘Single supervision’ in the context of banking union means European supervision (conferred upon the ECB) for credit institutions of eurozone Member States and of non-eurozone EU Member States that choose to become part of the SSM.⁹¹ The SSM aims to ensure that the EU’s policy relating to prudential supervision is applied in a ‘coherent and effective manner’ in all member states concerned⁹² and provides the conditionality required in the ESM Treaty for banks to be able to be recapitalized. The conferral of micro prudential supervisory and some macro prudential powers to the ECB (Article 5 of the SSM regulation) deeply alters the supervisory map in Europe.

The second pillar of banking union is ‘single resolution’, with a Single Resolution Mechanism (SRM)⁹³ - which should be aligned with the EU Bank Recovery and

⁹⁰ See Council Regulation (EU) No. 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions; and Regulation (EU) No 1022/2013 of the European Parliament and of the Council of 22 October 2013 amending Regulation (EU) No 1093/2010 establishing a European Supervisory Authority (European Banking Authority) as regards the conferral of specific tasks on the European Central Bank pursuant to Council Regulation (EU) No 1024/2013.

⁹¹ Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions. [2013] OJ L287/63, commonly referred to as SSM Regulation.

⁹² Council Regulation (EU) No. 1024/2013 of 15 October 2013, Recital 12. See generally Lastra, R, ‘Banking Union and Single Market: Conflict or Companionship?’ (2013) 36 (5) *Fordham International Law Journal*.

⁹³ The Proposal for a Regulation of the European Parliament and the Council establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the

Resolution Directive (BRRD)⁹⁴ - and a Single Resolution Fund. The third pillar is ‘common deposit protection’.⁹⁵ The jurisdictional area of banking union comprises

framework of a Single Resolution Mechanism & a Single Bank Resolution Fund and amending Regulation (EU) No 1093/2010 of the European Parliament and of the Council, COM(2013) 520 final (SRM Regulation) was published in July 2013 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0520:FIN:EN:PDF>).

The political agreement was reached by the Parliament and the Council in March 2014. The final text of the Regulation (EU) No .../2014 of the European Parliament and the Council establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Bank Resolution Fund and amending Regulation (EU) No 1093/2010 of the European Parliament and of the Council was adopted by the European Parliament on 15 April 2014. See <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+AMD+A7-2013-0478+002-002+DOC+WORD+V0//EN>. This is commonly referred to as the SRM Regulation.

⁹⁴ The BRRD was published in the OJ in June 2014. See Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council, OJ L 173, 12/06/2014, p. 190–348

⁹⁵ Although a single deposit guarantee scheme shall not be established for the time being (we will continue to rely upon the existing networks of national deposit guarantee schemes) a new Directive on Deposit Guarantee Schemes repealing Directive 94/19/EC was adopted by the Council and the European Parliament in April 2014. Directive 2014/49/EU of the European Parliament and of the Council of 16 April 2014 on Deposit Guarantee Schemes (recast), not yet published in the OJ, but published by the Council:

<http://register.consilium.europa.eu/doc/srv?l=EN&f=PE%2082%202014%20INIT>

the eurozone Member States and those other Member States that establish close cooperation arrangements.⁹⁶⁹⁷

Banking union is an incomplete edifice, since lender of last resort – ‘the elephant in the room’ – should have been the fourth pillar, and since the arrangements for macro prudential supervision have become cumbersome, with the ECB, ESRB and national authorities involved at different levels.

The transition towards establishing macroprudential oversight institutions has not been exclusive to the aforementioned leading jurisdictions. Countries like Chile, Mexico and Brazil have all established financial stability councils.⁹⁸ Other notable examples include South Africa, Korea and New Zealand.⁹⁹

⁹⁶ For an analysis of the uneasy coexistence between banking union and single market see Rosa Lastra, “Banking Union and Single Market: Conflict or Companionship?” *Fordham International Law Journal*, Vol. Volume 36, No. 5, 2013. See also Eilis Ferran, “European Banking Union and the EU Single Financial Market: More Differentiated Integration, or Disintegration?” (April 18, 2014). University of Cambridge Faculty of Law Research Paper No. 29/2014. Available at SSRN: <http://ssrn.com/abstract=2426580>.

⁹⁷ The so-called ‘SSM framework regulation’ was subsequently adopted on 16 April 2014. See Regulation (EU) No. 468/2014 of the European Central Bank of 16 April 2014, establishing the framework for cooperation within the Single Supervisory Mechanism between the European Central Bank and national competent authorities and with national designated authorities, OJ L141/1, 14.04.2014.

⁹⁸ In Chile, the *Consejo de Estabilidad Financiera* was created in October 2011. In turn, Mexico created the *Consejo de Estabilidad del Sistema Financiero (CESF)*. cf Lastra, R and Cedeno-Brea, E, ‘Latin American Financial Reforms’ (2013) working paper presented at the

3. Concluding Observation: Multilateral Macroprudential Coordination

Financial supervision and regulation are in a state of flux, nationally, supranationally_ and internationally. Establishing domestic and regional institutional frameworks for macroprudential policy is an important first step in the pursuit of financial stability. However, in order to be truly effective, these frameworks require that domestic supervisors cooperate and coordinate their policies at an international level.¹⁰⁰ Without adequate cooperation and coordination, the institutional frameworks can become futile, since systemic risk transcends geographic and institutional boundaries. A lack of collaboration could jeopardize the containment of cross-border negative spillovers.

Inter-jurisdictional cooperation and coordination are also necessary for the establishment of orderly resolution mechanisms that support financial stability. Bank resolution regimes are relevant to macroprudential policy because the failure of an institution can generate financial instability across borders.¹⁰¹ The role of coordination

92nd MOCOMILA- Committee on International Monetary Law of the International Law Association meeting.

⁹⁹ IMF, n 13 above, 46.

¹⁰⁰ Greene et. al, n 7 above,129.

¹⁰¹ The two main categories for the SRR (Special Resolution Regime) are the single point of entry (SPE) and the multiple point of entry (MPE). SPE implies ‘applying resolution powers to the top of a

and cooperation on a multi-level approach is essential. As stated by the IMF in a 2012 Global Financial Stability Report: ‘good management by financial institutions with cross-border activities, well-coordinated supervision of cross-border institutions, and transparent methods of dealing with distress are all components of healthy financial globalization’.¹⁰²

group by a single national resolution authority’ (a system which suits the bank holding company structure that is ubiquitous in the USA) while MPE entails ‘applying resolution tools to different parts of the group by two or more resolution authorities acting in a coordinated way’ (a system which suits the structure of many cross-border banking establishments in the EU). See Federal Deposit Insurance Corporation (FDIC) and the Bank of England, Resolving Globally Active, Systemically Important, Financial Institutions: A joint paper by the FDIC and the BoE (2012). See also: FSB, Consultative Document on Recovery and Resolution Planning: Making the Key Attributes Requirements Operational (2013) available at: www.financialstabilityboard.org/publications/r_121102.pdf.

¹⁰² IMF, Global Financial Stability Report Restoring Confidence and Progressing on Reforms, (October 2012), 112.

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Abbreviations

BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BoE	Bank of England
CCB	Countercyclical Capital Buffer
CCP	Central Counterparty Clearing
D-SIBs	Domestic Systemically Important Banks
ESRB	European Systemic Risk Board
EU	European Union
FSB	Financial Stability Board
FSC	Financial Stability Contribution
FSOC	Financial Stability Oversight Council
FPC	Financial Policy Committee
GFSR	Global Financial Stability Report
G-SIFI	Global Systemically Important Financial Institution
G-SII	Global systemically important insurer
G-20	Group of 20
LTV	Loan-to-value requirements
LTI	Loan-to-income/debt (service)-to-income requirements
USA	United States of America
UK	United Kingdom

