

Reinventing the Role of Central Banks in Financial Stability

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- Central banks have always played a significant role in promoting financial stability, especially in their capacity as lender of last resort. However, the 2007–09 global financial crisis has sparked a re-examination of this role.
- Central banks can contribute importantly to reducing the risk of financial stress and crises. Their efforts would be enhanced by coordinating with other domestic agencies within a well-articulated financial stability regime that incorporates micro- and macroprudential regulation and supervision and a clearly defined governance framework.
- Central banks are well positioned to identify, assess and communicate financial vulnerabilities and risks and engage in stress-testing activities with other prudential agencies because of their system-wide macro-financial perspective and understanding, their analytical capacity and their independent status.

Historically, the origins of many central banks, especially those established in the 20th century, can be traced to efforts to promote financial stability as a lender of last resort (LLR).¹ To take a significant example, the US Federal Reserve was initially created in 1914 to provide a central source of emergency liquidity, which was a policy gap revealed by the 1907 banking crisis. During the postwar period, however, central banks shifted their focus away from maintaining financial stability toward conducting monetary policy, with an emphasis on macroeconomic stability. The 2007–09 global financial crisis sparked a reassessment of central banks' roles, however, especially since it underlined that macroeconomic stability is necessary, but not sufficient, for financial stability (and vice versa).

Central banks are well placed to offer a systemic perspective to financial stability, given their macrofinancial focus. Efforts to incorporate a systemic perspective into financial regulation and supervision began in the aftermath of the Asian financial crisis (1997–98), which had macrofinancial origins.² The global financial crisis, however, greatly accelerated these developments, especially at the G20 level.³ The severe economic fallout from the crisis spurred a renewed focus on systemic risks to financial stability and

¹ See Bagehot (1873).

² Refer to Crockett (2000) for a discussion of the growing significance of financial stability in economic and financial policy at the turn of the century. Crockett also acknowledges that in understanding how to address financial stability, “the journey has probably just begun.”

³ See Lane (2013) for a discussion of the sizable macroeconomic impact of the crisis.

the development of financial policy frameworks. These frameworks chiefly enhanced global minimum standards for regulation and supervision to support the resilience of the financial system and seek to prevent or mitigate the buildup of financial imbalances or vulnerabilities. Regimes for financial system oversight at the national level are now being put in place to implement these global policies. Such regimes may need to be tailored to each jurisdiction's specific circumstances to achieve the desired prudential outcomes at the national level while still promoting global financial stability and global financial economic integration.

Central banks are playing a critical role in developing and implementing these new policy frameworks to reduce systemic risks to financial stability. Reinhart and Rogoff (2013, 48) suggest that “the pendulum is swinging back to place a greater weight on [its] initial mandate of financial stability.” While it remains to be seen how far the pendulum will swing, the role of central banks in promoting financial stability, especially in terms of financial crisis prevention, remains an active area of research and debate.

This article contributes to this discussion by synthesizing and building on the proceedings of a May 2016 workshop between policy officials and academics that was co-hosted by the Bank of Canada, the Centre for International Governance Innovation (CIGI), the Peterson Institute for International Economics (PIIE) and the International Monetary Fund (IMF).⁴ It provides a critical overview of the current thinking on the appropriate scope and functions of central banks in financial stability regimes and discusses how the role of central banks may continue to evolve.

The Pursuit of Financial Stability

The financial system plays a vital role in supporting the real economy by directing savings toward investment and by diversifying and hedging risk. An effective financial system contributes to strong rates of fixed capital formation and helps sustain employment and economic growth over the long run.

Systemic risk is the risk that the financial system as a whole becomes impaired and that the provision of critical financial services breaks down, with potentially serious consequences for the real economy. The experience leading up to the crisis and its aftermath highlighted that increasing financial vulnerabilities that lead to financial system instability can generate two broad types of costs to society: (i) the misallocation of resources during financial booms (leading to excess investment in one or more sectors, often housing, and to undue indebtedness and leverage) and (ii) the severe recessions caused and exacerbated by financial stress and crises.⁵

A financial stability policy regime that guards against these risks often involves a trade-off between the resilience of the system and its efficiency in supporting economic growth. Thus policies must balance the social costs of financial instability with the social benefits of a well-operating financial system.

The financial system is dynamic; new markets, instruments and institutions are constantly being developed. The majority of these innovations improve the efficiency of the financial system, but others—particularly those motivated by regulatory arbitrage—can create new and potentially destabilizing

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⁴ The joint workshop, “Re-Inventing the Role of Central Banks in Financial Stability” was held in Ottawa on 5 and 6 May 2016. An earlier version of Tucker (2016) was prepared for this conference.

⁵ See Tucker (2016).

financial vulnerabilities.⁶ It is difficult to distinguish *ex ante* the innovations that improve the efficiency of the financial system from those that create new vulnerabilities.⁷

The next section lays out a conceptual framework for a regime that aims to reinforce the resilience of the financial system to withstand shocks, ensure that appropriate mechanisms are in place to handle crises and achieve a more forward-looking approach to mitigating the misallocation of resources.

Defining a financial stability regime

Efforts to address systemic risk and build resilience in the financial system span several policy areas, including microprudential supervision and regulation, macroprudential policy, liquidity provision, and management of the national balance sheet and related policy domains, such as the exchange rate regime and tax policy. They therefore involve the co-operative work of governments, central banks and financial supervisory and regulatory authorities.⁸

Tucker (2016) elaborates on a regime for financial system resilience or, as it is called in this article, a “financial stability regime” consisting of five elements:

- (i) a clear definition of a “standard of resilience,”
- (ii) microprudential regulation and supervision,
- (iii) macroprudential surveillance,
- (iv) macroprudential regulation, and
- (v) crisis-management tools and policies.

Establishing an explicit “standard of resilience” for the financial system is a useful starting point for an operationally effective financial stability regime because it sets out the basic financial stability objective that the authorities must seek to achieve. At the core of this standard is a clear and explicit designation of that jurisdiction’s tolerance of risk for crises. The standard of resilience determines the appropriate *aggregate* balance of costs and benefits for the financial system. The jurisdiction’s tolerance for crises should ideally be established through democratic processes. The central bank, however, can inform these processes through its analysis. Furthermore, once the standard has been defined, the central bank’s analysis can contribute to two additional elements that are necessary to articulate it clearly to the general public: (i) mapping out the processes by which shocks are transmitted through the financial system and (ii) identifying the first-round losses from those shocks.⁹

⁶ Regulatory arbitrage occurs when financial system participants innovate primarily for the purpose of avoiding existing regulation, thereby creating regulatory gaps.

⁷ Of course, some efficiency-improving processes may also increase financial stability risks. Indeed, new financial instruments or markets that initially increase efficiency can mutate into more vulnerable forms, for example, commercial paper and (illiquid) asset-backed commercial paper.

⁸ Tucker (2016) envisions a framework for stability that consists of four regimes: an inter-temporal macroeconomic stability regime that prioritizes domestic monetary stability; a national balance-sheet-management regime that seeks to avoid debt overhang and other resource misallocation; a global macroeconomic balance-sheet regime that aims to improve the stability of current account balances to support a more efficient allocation of global savings and investment; and a financial stability regime, which is the focus of this paper.

⁹ It should be noted that an important—but missing—element of this standard is how the choices concerning the *allocation* of the costs and benefits of the financial system are made throughout the various segments of society. While this is a crucial consideration, it is also best left to be determined by elected policy-makers.

In this framework, the other four components of the financial stability regime constitute the policy tools to monitor, identify and respond to emerging risks and manage the resulting financial stress should these risks materialize. Given its systemic macrofinancial perspective and its LLR role, the central bank is best placed to contribute to the last three components of the regime.¹⁰ Historically, the central bank's role in financial stability has primarily been to manage financial stress as the LLR, but in recent decades this role has broadened to also include stress or crisis prevention.

◀ *Historically, central banks have played the role of lender of last resort, but that role has broadened to include stress or crisis prevention*

Macroprudential surveillance involves analysis of the *system* to identify key linkages and behavioural feedback loops among and between financial markets and financial intermediaries. In doing so, surveillance helps identify financial market participants who are engaging in risky behaviour or regulatory arbitrage (which Tucker [2016] describes as “hidden actions”) that are detrimental to system-wide stability and economic activity.

Macroprudential regulation involves developing specific policy measures and strategies to mitigate the buildup of imbalances that create excessive financial system stability risks, such as credit booms and resource misallocation, during periods of strong economic expansion.

The financial crisis revealed serious weaknesses in the microprudential framework in several jurisdictions. For instance, non-banks that engaged in various forms of highly leveraged credit intermediation were not effectively regulated and supervised. In addition, most jurisdictions did not have an effective macroprudential authority (a single agency or an inter-agency committee) that is both responsible for monitoring, identifying and responding to systemic risks *and* empowered to address these risks.¹¹

The final component of the financial stability regime—crisis management—becomes operative when the measures to identify or mitigate key emerging risks are inadequate or when the adopted standard for resilience is breached and a financial crisis ensues.

The financial stability governance framework

Although the arrangements described above clearly identify and distinguish the critical elements necessary for an effective financial stability regime, there is no one-size-fits-all approach to its governance. Indeed, the exact roles of government (including the ministry of finance), the central bank and prudential authorities will vary by jurisdiction as a result of the diverse institutional structures, legal frameworks and financial system characteristics. In practice, a variety of institutional configurations for pursuing financial stability have emerged. Limited experience to date suggests that the effectiveness of one regime over another is dependent on the context, with no one framework being ideal for all jurisdictions (Lombardi and Siklos 2016).

Ultimately, two elements are paramount for an effective financial stability regime, regardless of the specific institutional configuration. First, the agencies responsible for each of the functions of a regime must be assigned clear mandates and empowered with sufficient policy tools to implement

¹⁰ While effective microprudential regulation and supervision are critical to the success of the financial stability regime, there is no consensus on whether the central bank should be allocated microprudential, regulatory or supervisory responsibilities. See Goodhart (2000) and Nier et al. (2011) for an overview of this ongoing debate.

¹¹ Since 2009, G20 leaders and policy-makers have been developing and implementing a comprehensive program to reform regulation at the global level to address these stability issues across the financial system (Knight 2014 and 2015). Policy-makers have accelerated their efforts toward establishing responsible authorities as a result of pressures to ensure that accountability for financial stability is clearly allocated (Lombardi and Moschella 2016; Lombardi and Siklos 2016).

those mandates.¹² Failing to assign and delineate responsibilities for financial stability, including implementing a framework for macroprudential policy, will hinder a given regime's ability to pursue the financial stability objective and may also put the central bank in a difficult position since its role in promoting financial stability may not be well understood by the public.¹³ Second, multiple governments and agencies at the national and international levels have important and often complementary roles in promoting financial stability in the present international financial system because it is highly integrated across jurisdictions and spans a wide range of financial markets and institutions. Given this integration, and the opportunity for regulatory arbitrage, the various parties need to work together to monitor emerging vulnerabilities and to develop and consistently implement minimum global regulatory and supervisory standards. The next section highlights the characteristics and existing roles of central banks that make them well suited to play a vital role in the financial stability regime.

The Evolving Role of Central Banks

The pursuit of financial stability is at the very core of the mandates and functions of central banks. In particular, they have a natural role to play as LLR in response to financial stress, and they usually have broad responsibility for the oversight and operation of the payments and settlements infrastructure. In addition, central banks, given their macro perspective, are generally responsible for monitoring and reporting on systemic risks. Some central banks, such as the Bank of England or the US Federal Reserve Board, have broader prudential regulatory and supervisory responsibilities. As discussed below, financial stability concerns also factor into decision making since they relate to the objectives and effectiveness of monetary policy.¹⁴

Central banks are well placed to contribute importantly to the financial stability regime for several reasons. To start with, they have a system-wide perspective and consider macrofinancial linkages when analyzing business and financial cycles. Further, they have significant technical and modelling capacities associated with their macroeconomic stability objectives. There are also several operational features of central banks that further bolster their ability to contribute to the financial stability objective. For example, central banks acquire market intelligence through their conduct of financial market operations to implement monetary policy, to manage their balance sheets and, in some cases, to carry out foreign reserve and government financial transactions. Moreover, to the extent that they are independent from political pressures, central banks can arguably be more objective in undertaking risk analysis and making remedial policy recommendations. Finally, they are able to actively exchange information and consult with a wide range of public and private sector participants in the financial system on the monitoring and mitigation of financial vulnerabilities, and they often have the legal authority to acquire relevant data (Duffie 2016; He 2016; Mosser 2016).¹⁵

◀ *Central banks are well placed to contribute importantly to the financial stability regime*

¹² Clear mandates with sufficient accountability are necessary for reducing inaction bias when taking appropriate policy actions to pursue financial stability. Inaction bias is primarily driven by the fact that the costs of policy actions to mitigate the buildup of financial imbalances have negative short-term implications that are very visible, while the benefits of long-term economic gains from the maintenance of sustained financial stability are less easily perceived. Not implementing the necessary policy tools because they may increase the cost or decrease the availability of credit is an example of an inaction bias (Houben 2016).

¹³ See Goodfriend and King (2015) for an analysis of this type of circumstance with regard to the Swedish Riksbank from 2010 to 2015.

¹⁴ For a thorough discussion on the interaction between the price stability and financial stability mandates and the role of monetary policy in pursuing financial stability, see IMF (2015).

¹⁵ The collection and construction of data, however, are normally best left to other independent agencies.

That said, a central bank's reputation and credibility may be at risk should it be solely responsible (or perceived by the general public as being primarily responsible) for maintaining financial stability. In particular, central banks typically have authority over only a small set of tools for mitigating systemic vulnerabilities and risks and therefore should not be held accountable, in all instances, for inadequate defence against the buildup of financial imbalances. In addition, experience suggests that some financial systems may be particularly prone to instability and crises because of a lack of political will to establish an effective financial stability regime. Assigning sole responsibility for financial stability to a central bank in such circumstances could contribute to public dissatisfaction, which would erode central bank credibility more broadly (Johnson 2016) and thus undermine both financial and economic stability if not addressed.

Enhancing traditional roles

Central banks have traditionally played an important role in financial crisis management by acting as the LLR. After more than a century, the objectives and principles elaborated by Walter Bagehot remain at the core of the LLR function. But, the scope and application of the LLR function has evolved with the creation of new financial products and the development of new ways of originating financial instruments. Lessons from the financial crisis suggest that several possible extensions of the LLR function should be considered. Policy-makers should, for example, consider providing liquidity to a wider range of regulated financial institutions as well as to financial market infrastructures (FMIs) and against a broader range of collateral. Many central banks ended up creating new liquidity facilities during the crisis and have subsequently adjusted their policy frameworks to provide exceptional market-wide access to liquidity in times of severe stress.¹⁶ The Bank of Canada, for example, recently enhanced its LLR policies along the lines described above, requiring that financial institutions have a credible recovery and resolution framework to be eligible for emergency lending assistance (ELA) and by allowing designated FMIs to be eligible for ELA (Bank of Canada 2015). While the LLR capacity is a crucial component of the crisis-management regime, it remains exactly that—a policy of last resort.

Monetary policy—particularly its role in promoting financial stability—is another central bank responsibility that has been revisited based on the lessons learned from the financial crisis. The debate on the “lean versus clean” roles of monetary policy to manage financial vulnerabilities has been supplanted by a more nuanced approach. This approach argues that monetary policy is too blunt an instrument to mitigate these vulnerabilities alone. Instead, it should remain focused on achieving its inflation-target objective yet complement macroprudential policy in managing financial vulnerabilities by adjusting the horizon over which it achieves its inflation target.¹⁷ The Bank of Canada, for example, has adopted a risk-management approach to monetary policy decision making that incorporates both risks to inflation and risks to financial stability to achieve its primary inflation-target objective.¹⁸

◀ *The scope and application of the lender of last resort function has evolved with the creation of new financial products and the development of new ways of originating financial instruments*

¹⁶ Refer to BIS (2014) for a discussion on rethinking the design and application of LLR after the crisis.

¹⁷ Similarly, monetary policy should not be viewed as the last line of defence against financial stability risks but should be part of a comprehensive approach to mitigate financial vulnerabilities and reduce the risk of financial instability. See Schembri (2016).

¹⁸ See Poloz (2015).

Expanding communication and systemic risk analysis

As discussed earlier, most central banks are already responsible for monitoring systemic financial vulnerabilities and risks and communicating their assessments to other domestic agencies and the public. There are several ways that central banks can build on these activities and contribute more broadly to maintaining financial stability (beyond any microprudential responsibilities they may have). Specifically, as elaborated by Schembri (2016), central banks can

- (i) encourage prudence by borrowers and lenders by publishing financial vulnerability and risk assessments;
- (ii) enhance market discipline through increased transparency about financial vulnerabilities and risks, including the provision of relevant data, so that market participants can better price and manage risk;
- (iii) help strengthen financial regulation and supervision by participating in macro stress-testing exercises on the banking system and by analyzing the effectiveness and possible unintended consequences of regulations on the functioning of the financial system; and
- (iv) contribute to the development and implementation of macroprudential policies, including by analyzing the effects of such policies, investigating how financial innovation affects financial stability, and identifying regulatory arbitrage.

All of these functions are related to macroprudential surveillance. The first two are focused specifically on communicating vulnerability and risk assessments to strengthen self-discipline by increasing public awareness and reducing information externalities to financial market participants. The importance of communicating risk assessments, however, goes much deeper than simply increasing information on financial vulnerabilities and risks. Accountability for the accuracy of these assessments rises when risk assessments are made public, thereby increasing the incentive to improve the quality of data in a virtuous circle. Greater public awareness also helps generate support for implementing policies to mitigate financial stability (He 2016).

Publicly communicating risk assessments therefore plays a fundamental role in supporting the financial stability regime by ensuring that it is empowered to address the buildup of imbalances. For example, to try to leverage some of the benefits of greater communication, the European Central Bank (ECB) recently published its first biannual *Macroprudential Bulletin*, which is intended to raise the visibility of the ECB's macroprudential policy mandate, with the objectives of improving the transparency of its analysis and increasing knowledge of national and European macroprudential policies (Constâncio 2016a).

There are, however, several challenges to communicating risk assessments. To start with, clearly defining the objective of financial stability is a challenge because it is a long-term phenomenon whose costs and benefits are difficult to identify and quantify *ex ante*. Furthermore, it is difficult to communicate systemic risks in a way that is well understood by the public: financial system risk involves complex processes that must be translated into comprehensive, yet intuitive, risk profiles (Mosser 2016).

There are also several potential costs inherent in communicating risk to the public. First, the public and financial market participants might have unrealistic expectations about the central bank's ability to predict when risks will be realized. This is because these are unlikely tail events: vulnerabilities can persist for some time before a shock that triggers the realization of the related risk. Over time, the misalignment of the public's expectations with the central bank's capabilities could damage the institution's credibility. Second, the communication of risk could trigger the risk as a result of an excessive market reaction during times of high stress or risk aversion. Third, the confidentiality of the financial data of individual or small groups of institutions must be maintained (He 2016).

Roles in macroprudential policy

Central banks can play important roles in informing the development of micro- and macroprudential policy. Because they have the necessary system-wide perspective and technical capacity, as well as the institutional features listed at the beginning of this section, central banks are able to contribute significantly to developing and deploying macroprudential stress tests. Stress tests are an important tool for quantifying systemic risks, translating crisis scenarios into quantitative shocks, creating conditional forecasts and identifying fault lines to help prevent and manage future crises (He 2016).

Traditionally, financial stress testing has focused on whether individual institutions have enough capital and liquidity to withstand various economic and financial shocks. Macroprudential stress tests go beyond these individual assessments by considering banks' reactions to scenarios; two-way interaction between banks and the real economy; contagion effects among financial institutions (including non-banks), financial markets and financial infrastructure; and analysis of interactions with other non-financial sectors relevant for banks' risk management (Constâncio 2016b).

Macroprudential stress tests can also be used as an active surveillance tool within the financial stability regime because they go beyond static and largely qualitative assessments to construct quantifiable macroeconomic risk scenarios, with explicit triggers to determine the level of resilience that financial institutions must maintain. Stress tests can therefore be used to identify vulnerabilities and as a basis to inform policy discussions to address them. The fact that these stress tests are concerned with institutional resilience does, however, blur the line between micro- and macroprudential supervision. In this respect, Tucker (2016) suggests that "the enterprises of microprudential supervision and system-wide surveillance simply don't make sense—are incoherent—as stand-alone activities." Thus, all components of the stability regime should ideally be coordinated rather than operate independently.

The practical work of macroprudential regulation is a dynamic activity that consists of identifying and assessing these vulnerabilities and risks and taking the necessary mitigating actions. Tucker (2016), for example, suggests that the transmission of shocks and the realization of risks that generate losses could be in any phase of the financial cycle—whether normal, exuberant or depressed. In the exuberant stage, for example, when credit and leverage are increasing rapidly, stronger macroprudential regulation, including the implementation of the countercyclical capital buffers, is likely necessary to increase financial resilience and mitigate the buildup of financial imbalances.

◀ *All components of the financial stability regime should ideally be coordinated rather than operate independently*

Conclusion

The financial system is by its nature ever-changing. An effective financial stability regime must, therefore, be dynamic. It must combine vigilance with flexibility to identify, assess and respond to new vulnerabilities as they emerge. The regime should progress as understanding deepens on the interactions between the financial system and real economy, as analytical and modelling capabilities advance and as the quality of data improves. By working in tandem with other agencies, central banks can make important contributions to the stability regime, based on their system-wide macrofinancial perspective and their analytical capacity.

Because developing and implementing financial stability regimes remains a work in progress across jurisdictions, there are a number of priority areas for further research to better understand how to implement macroprudential policy and what role central banks should play in this process. First, it will be desirable to define as clearly as possible the standard of resilience in each jurisdiction. Second, to better understand the channels of financial and economic feedback, including contagion, the macroprudential policy framework should be extended by expanding the stress-testing framework beyond regulated banks to include other sectors of the financial system. Finally, more thinking is needed to develop effective co-operative approaches across public authorities to monitor, share information on and mitigate (or prevent) hidden actions, including financial innovation or mutation and regulatory arbitrage, especially cross-border.

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