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## EXECUTIVE SUMMARY

A number of countries are reviewing their institutional frameworks for financial stability so as to support the development of a macroprudential policy function. In some cases, this involves a rethink of the appropriate institutional boundaries between central banks and financial regulatory agencies, or the setting up of dedicated policymaking committees. In others, efforts are underway to enhance cooperation within the existing institutional structure.

Effective arrangements enabling the authorities to take preventive action are strongly desirable for all countries, emerging or advanced. This paper therefore lays out some basic guidance for the review of institutional arrangements supporting macroprudential policies. It identifies a distinct set of stylized institutional models, sets out criteria for assessing different models, examines their strengths and weaknesses, and explores ways to improve existing institutional setups.

Institutional arrangements will be shaped in no small part by country-specific circumstances, so that there can be no "one size fits all." The analysis nonetheless identifies those features of models that are desirable for effective macroprudential policymaking (Box 1). Among others, it finds that complex and fragmented institutional structures can create frictions in risk identification and mitigation that can reduce effectiveness of macroprudential policy. To ensure accountability for policy outcomes, moreover, it may often be desirable to identify a lead authority or policymaking committee and to vest it with the mandate and powers to conduct macroprudential policy. The central bank should play an important role, so as to harness its expertise in risk assessment and its incentives to mitigate systemic risk, as well as to ensure coordination with monetary policy. While participation of the treasury in the policy process is useful, a strong role can pose risks to the established autonomy of separate policy fields, such as monetary and microprudential policy, and lead to delay when policies are needed to constrain financial markets in good times. Separate arrangements for crisis prevention and crisis management will be useful in many cases.

More generally, for institutional arrangements to be conducive to effective mitigation of systemic risk they need to (i) support effective identification of risks through access to information and relevant expertise, (ii) provide incentives for the timely and effective use of policy tools, and (iii) ensure the cooperation across policies in a manner that preserves the autonomy of established policy functions.

While each of the assessed models has pros and cons, there are differences in their tally of strengths and weaknesses. Additional mechanisms can be introduced to compensate some of the weaknesses. In general, these will differ across models, but some mechanisms will be useful additions for several models and are likely to enhance effectiveness of macroprudential policy more broadly.

**Box 1. Key Desirables for Macroprudential Policy Arrangements**

***General***

1. The central bank should play an important role in macroprudential policymaking.
2. Complex and fragmented regulatory structures are unlikely to be conducive to successful mitigation of systemic risk and should therefore be avoided.
3. Participation of the treasury in the policy process is useful, but a leading role poses risks.
4. Systemic risk prevention and crisis management are different policy functions that should be supported by separate organizational arrangements.
5. Macroprudential policy frameworks should not become a vehicle to compromise the autonomy of other established policies.
6. Arrangements need to take account of country-specific circumstances.

***Provide for effective identification, analysis, and monitoring of systemic risk***

7. Mechanisms for effective sharing of all information needed to assess systemic risks should be in place.
8. At least one institution involved in assessing systemic risk should have access to all relevant data and information. It should be the one that disposes of the best existing expertise to assess systemic risk.
9. Mechanisms are needed to challenge dominant views of one institution.

***Provide for timely and effective use of macroprudential policy tools***

10. Institutional mechanisms should support willingness to act against the buildup of systemic risk and reduce the risk of delay in policy actions.
11. A lead macroprudential authority should be identified and be provided with a clear mandate and powers, in a manner that harnesses incentives of existing institutions to mitigate systemic risk.
12. The mandate needs to be matched by sufficient powers, including to initiate the use of prudential tools to address systemic risk. Mechanisms should be established to expand powers when needed.
13. The mandate should give primacy to the mitigation of systemic risk, but include secondary objectives to ensure that the policymaker takes into account costs and trade-offs.
14. To guard against overly restrictive or inadequate policy, proper accountability and transparency need to be put in place, without unduly compromising the effectiveness of macroprudential policy.

***Provide for effective coordination across policies to address systemic risk***

15. Institutional integration of financial regulatory functions within the central bank can support effective coordination of macroprudential policy with monetary as well as microprudential policy, but also requires safeguards.
16. Where institutional separation of policy decisions and control over policy tools cannot be avoided, the legal framework needs to assign formal powers to recommend or direct action of other policymakers.
17. Where there is distributed decision making among several agencies, establishing a coordinating committee is useful, but may not necessarily be sufficient to overcome collective action and accountability problems.

## I. INTRODUCTION

While greater financial integration and ever more dynamic and sophisticated financial markets have key benefits, they can become a threat to global economic and financial stability when effective macroprudential policy frameworks are absent or lacking at the national level. Effective arrangements enabling the authorities to take preventive action are therefore strongly desirable for all countries, emerging or advanced.[2]

Macroprudential policies are defined here as *those policies that use primarily prudential tools to limit systemic or system-wide financial risks*.[3] Whether or not macroprudential policy is a new policy function or a reorientation of prudential policy remains a subject of debate. What is clear is that macroprudential policy needs to be supported by the following three key elements: (i) information and resources, (ii) a mandate and a range of powers, and (iii) a framework to hold the policymaker accountable for the mitigation of systemic risk. The policy framework needs in addition ensure coordination across policies that have a bearing on systemic risk.

Drawing on recent trends in institutional arrangements (Box 2), this paper assesses stylized "models" underpinning the macroprudential policy function. Such models can best be understood as ways in which the elements required for a macroprudential policy function (information and resources, mandate and powers, and accountability) are assigned to—or distributed across—an institution, a dedicated policy committee, or a set of institutions. Since some of the powers and resources necessary for the exercise of a macroprudential policy function will typically be distributed across *existing* institutions, this raises the issue of how the model ensures cooperation of those institutions in risk assessment and risk mitigation.

A number of caveats are in order. First, the analysis throughout is conceptual, since dedicated macroprudential policy frameworks have only been developed recently or are emerging, limiting the scope of any empirical assessment. Second, macroprudential policy should not be viewed as a panacea, able to prevent all future crises. The recent experience shows that crises can be brought on by profligate fiscal policy or a lack of structural policies to stem an erosion of competitiveness. An effective macroprudential policy framework will not be able to substitute for sound policy in those other areas. And it needs to be complemented by strong microprudential supervision and an effective resolution framework that helps ensure that no single institution is "too important to fail."

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[2] This paper draws on an accompanying IMF Working Paper by the same authors (IMF WP 11/250). Only very few other papers have analyzed institutional arrangements for macroprudential policy. These include Borio (2009), CGFS (2010), Ingves (2011), Nier (2009, 2011), Nier and Tressel (2011), and Viñals (2011). See also IMF (2011b) on systemic risk measurement and Lim et al (2011) and Borio and Shim (2007) on macroprudential tools.

[3] This is in line with IMF (2011a) and FSB, IMF, and BIS (2011). Mitigation of systemic risk also requires use of tools outside of the prudential sphere, which need to be brought into the macroprudential framework.

**Box 2. Institutional Arrangements for Macroprudential Policies in the Aftermath of the Crisis: Recent Trends**

The financial crisis has led an increasing number of countries to review their institutional frameworks for financial stability so as to support the development of a macroprudential policy function. In some cases, this involves a rethink of the appropriate institutional boundaries between central banks and financial regulatory agencies, or the setting up of dedicated policymaking committees. In others, efforts are underway to enhance cooperation within the existing institutional structure.

In a number of advanced economies, in particular in Europe, countries are integrating prudential functions into the central bank. Typically, these countries have adopted some form of "twin peaks" model, as in the Netherlands, leaving conduct-of-business and securities market supervision as a responsibility of a separate agency (Belgium, France, the United Kingdom, and the United States). Ireland has opted for a stronger form of integration where all supervision of markets and institutions is conducted by the central bank. Moreover, a number of countries, including the United Kingdom and the United States are creating dedicated policy-making committees, such as the Financial Policy Committee (FPC), chaired by the Governor of the Bank of England, and the Financial Stability Oversight Council (FSOC), chaired by the United States Treasury.

In emerging market countries, changes in the institutional setup also typically feature a new macroprudential committee. In Chile, Mexico, and Turkey recently established committees are chaired by the Minister of Finance (Treasury). By contrast in Asia, Malaysia established a financial stability committee within the central bank structure, chaired by the central bank Governor in 2009—as did Thailand in 2008.

| *Mandate /<br>CB & financial supervision* | *CB or related committee* | *Committee headed by the government* |
|---|---|---|
| *More integration* | Belgium, Ireland, United Kingdom | France |
| *More separation* | - | - |
| *No change in integration* | Malaysia, Thailand | Chile, Mexico, Turkey, United States |

The rest of the paper is organized as follows. Section II singles out different stylized institutional models for macroprudential policies. Section III identifies key criteria for the effectiveness of institutional models that are then used to analyze strengths and weaknesses of these models. Section IV identifies mechanisms that can reduce weaknesses of specific models. Section V distills lessons and provides basic guidance for the design of macroprudential institutional setups.

## II. Institutional Models for Macroprudential Policy

Real life institutional models differ in a vast number of ways. In order to assess the strengths and weaknesses of existing arrangements this section develops a typology of stylized models that stresses a number of key dimensions along which models can differ. We identify five key distinguishing dimensions of real life models that are briefly described below.

- **Degree of institutional integration of central bank and financial regulatory functions.** Institutional integration affects the extent to which coordination of central bank and financial regulatory functions occur "under one roof" or across agencies. It also affects how much information is available within the central bank.

- **Ownership of macroprudential policy.** Ownership indicates which institution (or set of institutions) should be held accountable for limiting systemic risk. Ownership of the macroprudential mandate can rest with the (board of the) central bank or a policymaking committee *related* to the central bank. Alternatively, it can rest with an *independent* policymaking committee or be *shared* by multiple agencies. A committee related to the central bank differs from an independent committee in that the former is legally part of the central bank and chaired by its governor.

- **Role of the treasury.** The formal role of the treasury can be (i) *active*, if it plays a leading role in policymaking or coordinating committees; (ii) *passive*, if the treasury participates in such committees, but has no special role; or (iii) simply *nonexistent*. Where there is no committee, the treasury may sometimes have direct powers of direction, which also translates into an active role.

- **Institutional separation of policy decisions from control over policy instruments.** This arises when policy decision and policy implementation rest with different bodies or institutions. Separation of policy decisions and control over instruments is common when the mandate is given to a committee, or when there is no or only partial integration of supervisory functions within the central bank.

- **Existence of a separate body coordinating across policies to address systemic risk.** A separate coordinating committee is a feature of some of those models where the policy mandate is shared by multiple agencies. By definition, it is not needed when the mandate and the associated decision-making powers are assigned to a single body or a policymaking committee.

These dimensions allow us to capture the vast majority of arrangements that are in place or are being developed across countries in **seven models** (Table 1), which in turn form **three** broad **groups** of models that differ in the degree of institutional integration between central bank and regulatory agencies. For illustrative purposes, Table 1 also includes the European Systemic Risk Board (ESRB), which is the only existing example of a supranational institutional setup, but is not assessed in detail in this note.[4]

[4] The effectiveness of the ESRB is assessed in IMF (2011c) and Nier and Tressel (2011). The latter paper also offer a precursor of the seven national models proposed in this paper, as well as a brief discussion of their strengths and weaknesses, in the context of the overall arrangements in the EU.

## Table 1. Stylized Models for Macroprudential Policy

| **Features of the model/Model** | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** | **Model 7** | **Model R 1** |
|---|---|---|---|---|---|---|---|---|
| **1. Degree of institutional integration of central bank and supervisory agencies** | Full (at a central bank) | Partial | Partial | Partial | No | No (Partial*) | No | No |
| **2. Ownership of macroprudential policy mandate** | Central bank | Committee "related" to central bank | Independent committee | Central bank | Multiple agencies | Multiple agencies | Multiple agencies | Committee (multinational; regional) |
| **3. Role of MOF/ treasury/government.** | No (Active*) | Passive | Active | No | Passive | Active | No (Active*) | Passive (European Commission; Economic and Financial Committee) |
| **4. Separation of policy decisions and control over instruments** | No | In some areas | Yes | In some areas | No | No | No | Yes |
| **5. Existence of separate body coordinating across policies** | No | No | No (Yes*) | No | Yes | Yes (de facto**) | No | No |
| ***Examples of specific model countries/ regions*** | *Czech Republic*<br>*Ireland (new)*<br>*Singapore** | *Malaysia*<br>*Romania*<br>*Thailand*<br>*United Kingdom (new)* | *Brazil**<br>*France (new)*<br>*United States (new)* | *Belgium (new)*<br>*The Netherlands*<br>*Serbia* | *Australia* | *Canada*<br>*Chile*<br>*Hong Kong SAR**<br>*Korea***<br>*Lebanon*<br>*Mexico* | *Iceland*<br>*Peru*<br>*Switzerland* | *EU (ESRB)* |

## III. Assessment of Models

Our assessment of the prevailing and emerging institutional models for macroprudential policy proceeds in three steps. In this section, we first present a number of high-level requirements for an effective institutional model supporting macroprudential policy. We then assess the strengths and weaknesses of the models identified against these criteria, highlighting similarities and differences between models in this regard. We finally discuss mechanisms to address weaknesses, in Section IV below.

### A. Criteria for the Assessment of Strengths and Weaknesses

At the highest level, a desirable institutional model should be *conducive to effective mitigation of systemic risk*. This can be broken down into the following requirements that are important to ensure successful delivery of macroprudential policy. A model should provide for:

- Effective identification, analysis and monitoring of systemic risk, including through (a) assuring access to relevant information; and (b) using existing resources and expertise.

- Timely and effective use of macroprudential policy tools, by (a) creating strong mandate and powers; (b) enhancing ability and willingness to act; and (c) assuring appropriate accountability.

- Effective coordination in risk assessments and mitigation, so as to reduce gaps and overlaps in risk identification and mitigation, while preserving the autonomy of separate policy functions.

### B. Strengths and Weaknesses: Full Integration

The first model identified in Table 1 involves the full integration within the central bank of essentially all financial regulatory and supervisory functions. When, as in the new model introduced in Ireland, the central bank is given the objective to safeguard financial stability, the central bank also becomes the owner of macroprudential policy and its Board becomes the macroprudential decision maker. We start by summarizing the strengths of this model before turning to potential weaknesses.

Under full integration the management can assure a proper flow of information by putting in place incentives for proactive delivery of relevant prudential information to the decision maker (the Board) in ways that may be more difficult to achieve across institutional boundaries. Full integration also helps assure that use is made of existing expertise. Due to their existing roles in monetary policy, payment systems, and as lender of last resort, central banks have expertise in the analysis of systemic risks that can inform macroprudential policies (IMF 2011a). Central banks finally have important experience in communicating risks to the markets and the general public.

Full integration can also strengthen incentives. First, mandate and responsibility are clearly assigned to a single agency which can be held accountable for achieving its objectives. Second, the central bank has clear incentives to act, since failure to do so will affect its price stability goals or increase the likelihood of needing to act as a lender of last resort.[5] Third, central bank independence reduces the risk of delayed action due to political pressures or lobbying. As set out by Ingves (2011), macroprudential policy is a policy field where delegation of independent powers is desirable because: (i) it is subject to adverse political economy problems; (ii) it requires a high level of technical expertise; and (iii) it is subject to strong lobbying and rent seeking.[6]

The model has important strengths also in fostering coordination. First, coordination across objectives and functions (macroprudential, monetary, and microprudential) takes place within one organization rather than across organizations. This can increase effectiveness of decision making when there is a need to internalize trade-offs. Second, full integration can reduce mismatches between the reach of mandates and the reach of powers, because the decision maker has control over most of the relevant tools, including those available to a microprudential and a securities regulator. Full integration also means that risk warnings and messages are likely to be coherent. The central bank management can ensure that all officials speak with "one voice." Finally, policy decisions made by the Board of the central bank can be implemented by the same organization and do not come to compromise the operational autonomy of a separate agency. Such coordination is more difficult to achieve in models where influence to effect policy changes conflicts with the operational autonomy of separate regulators.

As regards risk identification, a drawback of the full integration model is that it lacks institutional mechanisms to challenge the "house views" formed within the one institution. Moreover, while full integration harnesses central bank incentives to act, it provides for few safeguards against overly aggressive use of macroprudential policy and concentrates a lot of powers in the hand of the central bank, especially when it also conducts monetary policy. Independent powers need therefore be subject to a precise mandate and strong accountability mechanisms, as discussed further below.

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[5] Goodhart and Schoenmaker (1995), and Nier (2009).

[6] Since macroprudential decisions will most directly affect the financial sector, rather than the economy as a whole, lobbying to preserve financial sector profits is a much stronger concern for macroprudential policy than it is for monetary policy. Igan and others (2009) analyze lobbying activity of mortgage lenders ahead of the crisis and provide suggestive evidence that the political influence of the financial industry had an influence on financial stability. Kroszner and Strahan (1999) show that special interests theory can explain the design and timing of bank deregulation in the United States.

While integration under one roof can improve coordination across monetary and financial regulatory functions, this can also create risks. For example, perceived failures in prudential policy can affect the credibility of the monetary policymaker, especially in the absence of clearly separate accountability frameworks for monetary and prudential action. And while integration of the markets and activities regulators ensures access to relevant data and control over policy instruments in these domains, it also means that the central bank inherits consumer and investor protection objectives and conduct of business functions which can distract attention from systemic risk objectives, especially in long periods of calm.

Finally, since policy decisions are taken by the Board of the central bank, the treasury will typically be excluded from policy discussions. This can entail costs when addressing systemic risk requires coordinated action by the government, such as when there is a need for legislation, e.g., to introduce new macroprudential powers or to expand the perimeter of regulation, or otherwise when fiscal and other policy measures are needed to complement prudential tools.

### C. Strengths and Weaknesses: Partial Integration

For the second group of models (models 2, 3 and 4) the underlying model of financial regulation is (a version) of *twin peaks*. This setup, originally pioneered by the Netherlands (introduced there in 2002), involves close institutional integration between the central bank and the prudential supervisor and regulator of potentially systemic financial institutions, such as banks, while the regulation of activities or "conduct" in retail and wholesale financial markets is institutionally separate from the central bank.

- In the new model proposed for the United Kingdom the new prudential agency is organized as a subsidiary of the Bank of England, while a new *Financial Conduct Authority (FCA)* will regulate the conduct of every authorized financial firm providing services to retail consumers and in wholesale markets, as well as regulated exchanges.

- In the United States, the Federal Reserve has become the supervisor of any systemically important holding company (bank or nonbank) and has been given powers to subject these firms to enhanced prudential standards,[7] with FSOC playing the role of designating such firms.[8] The regulation of activities in retail and wholesale

[7] Financial subsidiaries of these holding companies, such as banks, insurance companies and brokers continue to be supervised by specialized agencies, unless they are state-chartered members of the Federal Reserve System.

[8] This can be a useful device in countries where the number of banks is large (Nier, 2009). Designation can then focus the central bank's *supervisory* attention on those institutions that are individually systemically relevant. In addition the central bank may be given *regulatory* control over a larger set of institutions that are collectively

(continued)

financial markets continues to be conducted by a number of specialized agencies, including the new Consumer Board and the existing Securities and Exchange Commission.

- The new model introduced in Belgium, likewise establishes twin peaks, in a manner closely following the existing model in the Netherlands, and moving the structure away from separation between the National Bank of Belgium and the independent financial regulator.

Models in this group therefore retain a strong role of the central bank in systemic risk mitigation. In particular, the central bank retains access to relevant prudential data and strong control over prudential tools that can be employed to mitigate systemic risks. However, models in this group differ in a number of other respects that affects the assessment of strengths and weaknesses.

***The need to ensure cooperation by the conduct and securities regulator***

A potential downside of establishing the conduct and securities regulators outside the central bank is inadequate engagement and support of these regulators in systemic risk identification and mitigation. Access to information on securities market activity is less easily assured. In addition, the policymaker has no immediate control over tools that are in the gift of conduct and securities regulators when these may be needed to mitigate systemic risks.

An institutional "bridge" to the conduct and securities market regulators may be less important where financial markets are less developed and sophisticated, reducing the need for access to data on wholesale markets and exposures of key market participants. But the macroprudential authority may still need information on practices in retail markets and a degree of control over the activities of specialized non-bank lenders (shadow banks) that may be under the purview of the separate securities regulator.

The conduct and securities regulator(s) are therefore usefully represented on a policy-making committee—which may be related to the central bank (as in model 2) or independent (as in model 3). However, separation between decision making and control over instruments remains an issue even then and may need to be addressed by further mechanisms, as further explored in the next section.

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important in a manner that allows the central bank to calibrate countercyclical measures, such as a dynamic capital buffer.

***Committee related to the central bank***

An example of a dedicated committee related to the central bank is the new Financial Policy Committee (FPC) in the United Kingdom.[9] This setup is similar in a number of respects to models where the central bank Board is the macroprudential decision maker and it hence inherits a number of its key strengths and weaknesses. The model assigns responsibility for risk mitigation to a single body, which in this case is the central bank's macroprudential committee. Since this is a committee of the central bank as an organization, the incentive effects of assigning the mandate to the central bank are likely to come through. On the other hand, since decision making is in the hands of a single body, there is a considerable concentration of power, again requiring compensating mechanisms, as further discussed below.

There are also a number of differences that affect the assessment of strengths and weaknesses of this model, relative to decision making by the Board of the central bank. These mainly relate to the differences in the way coordination is achieved across policy fields.

- First, assigning the macroprudential policy mandate to a dedicated committee that has no role in monetary policy can help limit reputational risks, especially when the composition of the two committees differs and the accountability arrangements supporting different policy functions are clearly visible to outsiders (IMF, 2010).

- Second, a dedicated committee can allow for treasury participation. Since decision making is in the hands of a dedicated committee, rather than the Board of the central bank, the treasury is able to participate, without this undermining the independence of the monetary policy function or of the central bank as an organization. This can have benefits when cooperation by the treasury is needed to ensure mitigation of systemic risk, e.g., when effective mitigation of risks requires legislative change or use of tax instruments.

- Third, in principle a dedicated committee can come at the cost of reduced coordination with monetary policy, potentially leading to a suboptimal policy mix. In practice, the importance of this concern may be less when there is an appropriate degree of overlap in the composition of the two committees.[10]

[9] The Financial Policy Committee (FPC) will be chaired by the Governor, and assemble a number of other central bank officials as well as the head of the prudential authority (inside the central bank) and the head of the financial conduct authority (outside the central bank). It will come to sit alongside the existing Monetary Policy Committee (MPC).

[10] Tucker (2011)

### *Independent committee*

A key characteristic of an independent policymaking committee is that, while the central bank participates, overall responsibility for financial stability shifts away from the central bank and towards the committee. This has a number of implications.

- A more balanced committee structure mitigates the risk that the views and assessments of one institution will remain unchallenged. It may on the other hand create a greater risk that differences of view will persist, causing delay in taking action.

- A more balanced committee structure can also result in difficulties in establishing clear accountability. With a number of key players involved in macroprudential policy (central bank, committee, and treasury), there may be a greater risk that the public will not understand who is ultimately responsible for preventing crises.

- As regards coordination, an independent committee will tend to create greater separation between policy decision and control over tools, since this also pertains to tools in the gift of the central bank, requiring greater reliance on mechanisms to compensate for separation between decision and control over tools.

A second key difference is that the treasury tends to play a stronger role on the committee and hence as a macroprudential decision maker, again affecting the balance of benefits and costs.

- A potential advantage of a strong role of the treasury relative to the central bank is that the treasury can help garner political support for the actions of the committee. However, a stronger role of the treasury poses a risk that short-term political considerations prevail over the central bank's incentives to mitigate systemic risk.

- A strong role of the treasury also poses a risk that the operational autonomy of related policy fields is undermined. A strong role of the treasury can weaken the established operational autonomy of the prudential authority. [11] It can also undermine the central bank's operational independence in monetary policy, especially when the committee is meant to coordinate across all policy fields, including monetary policy, and where existing safeguards to protect monetary policy independence are weak.

[11] In principle, this is a lesser concern for models 1 and 2, since in these models the central bank governor chairs a committee whose decisions will often be implemented by the central bank supervision department, rather than by a separate agency.

### D. Strengths and Weaknesses: Separation

The third group of models (models 5, 6, and 7) is characterized by a much greater degree of institutional *separation* between the central bank and supervisory functions, where essentially all financial regulatory functions (other than payments oversight) are housed outside of the central bank.[12] These models also share the feature that identification and mitigation of systemic risk is a *multiagency* effort. While the central bank often leads risk identification in practice, each individual agency decides on and remains ultimately responsible for the use of those tools that are under its purview. There is "distributed decision making" rather than decision making by a central body or committee (Ingves, 2011).

A potential strength of these models is that they tend to keep each agency focused on their main objective. The central bank is focused on price stability, while the separate banking supervisor is focused on the safety and soundness of individual institutions. Achievement of both these objectives may in and of itself contribute to financial stability. [13] Separation of functions also facilitates the management of institutions, creates strong institutional cultures in these policy fields and ensures separate accountability for monetary and prudential policy. Moreover, there is little risk that any one institution becomes dominant and remains unchallenged in its identification of risks or assessment of the appropriate policy response. However, these models also face a number of challenges in ensuring effectiveness of macroprudential policy.

When multiple agencies are involved in risk assessment, this may create a situation where no one institution may have all information needed to analyze all interlinked aspects of systemic risk. In some countries, rivalry and turf issues impede the free flow of information. In others, there are legal obstacles to the sharing of sensitive information outside of the institution collecting the information.

A multiagency setup may also increase the risk of "gap"—risks remaining undetected or unaddressed, or uncoordinated "overlap." In particular, in countries where the prudential supervision of financial institutions is distributed among several agencies, there is a greater risk that individual firms or groups of firms grow in systemic importance without this being reflected in a tightening of the supervisory regime.[14] In general, wasteful or uncoordinated

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[12] In some countries conduct of business and securities market regulation are institutionally integrated with the prudential supervision of financial institutions, forming FSA-type agencies. In some countries, prudential and conduct supervision of institutions are integrated, while there is separation along sectoral lines (banking, insurance securities). Finally, conduct and securities supervision can be separate from the prudential regulator, e.g., Australia.

[13] Bordo and others (2011) examine the experience of Canada.

[14] The main example here is the previous model in the United States, where securities brokers were subject to a light-touch regime of supervision by the Securities and Exchange Commission (SEC), even as their systemic importance grew. See Bordo et al. (2011).

"overlap" is also more likely. In particular, "overlaps" may arise in communication. Each agency may develop their own communication strategy, emphasizing risk assessments arrived at in-house, potentially leading to conflicting messages in communication across agencies.

A collective responsibility for mitigation of systemic risk can dilute accountability and incentives. Even though each institution may have a mandate to use resources and tools in its purview to ensure mitigation of systemic risk, no one agency is fully responsible for the (crisis) outcome when the overall effort to mitigate systemic risk has been insufficient. In principle, separate agencies can cooperate to achieve the desired policy outcome; however, neither agency is fully responsible if such cooperation fails. This reduces the incentives on the part of all agencies to invest in systemic risk reduction through macroprudential policies (Nier, 2009).

- It is more difficult to combine the macroeconomic and markets expertise of the central bank and the institution-specific knowledge available within the prudential regulator, since such collaboration will require scarce resources being dedicated to common, rather than to institution-specific goals.[15]

- Disagreements between agencies can remain unresolved and lead to delay in taking the appropriate action. A case in point is the United Kingdom experience under the previous model, where despite concerns on the part of the Bank of England the existing prudential liquidity regime was tightened only after the crisis had struck.[16]

A multiagency setup can also result in a suboptimal policy mix. While the central bank has institutional incentives to ensure financial stability, it may have limited powers at its own disposal to achieve the objective. For example, central banks that have no control over prudential tools may make overly aggressive use of reserves requirements to address risks from strong credit growth, when a mix of prudential tools may be more efficient in that regard.

A key mechanism to address some of these weaknesses is the establishment of a coordinating committee, present in Models 5 and 6, but absent in Model 7. As is explained further in the next section, such a committee, often set out in an MOU, can facilitate the exchange of information between agencies and foster the engagement on the part of each agency with the shared goal of financial stability. However, a coordinating committee may not be able to fully address deep-rooted accountability and incentive problems that remain a concern for the effectiveness of this group of models.

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[15] A case in point is the experience in Ireland, where collaboration in drafting the Financial Stability report was stopped in 2005 (Honohan, 2010).

[16] See, for example, Large (2004), "Why We Should Worry about Liquidity," *Financial Times*, Nov 11.

## IV. Mechanisms to Address Weaknesses of Models

Even as the tally of strengths and weaknesses differs across models, the analysis suggests that each model has potential weaknesses. Some of these weaknesses can be addressed by additional mechanisms that can be introduced to strengthen the model. In general, since different models have different weaknesses, the appropriate compensating mechanisms will also differ. On the other hand, some mechanisms will be useful additions across several models and are likely to enhance effectiveness of macroprudential policy more broadly.

### A. Disciplining Independent Use of Strong Powers

Where strong and independent powers are assigned to a single agency or a single decision maker, there is a need for mechanisms to discipline the use of these powers. The main mechanisms to achieve such discipline are the mandate of the policymaker, the accountability framework established for macroprudential policy and the composition of the decision-making committee.

The legal mandate should open up and at the same time constrain discretionary use of macroprudential powers in order to ensure the policy-makers fully considers policy costs and trade-offs, such as a potential adverse effects of macroprudential policy on economic growth or the interests of stakeholders (IMF, 2011a and Nier, 2011). [17] The new (proposed) mandates of the authorities in Ireland, the United Kingdom, and the EU contain such secondary objectives, while specifying that mitigation of systemic risk is the primary objective of macroprudential policy.[18]

Strong transparency and accountability arrangements can compensate for a lack of internal "checks and balances," by allowing for scrutiny on the part of third parties, such as the parliament or the public. Since accountability for macroprudential policy cannot easily be tied to outcomes it needs instead to focus on processes (Ingves, 2011). This might include (i) an ex ante communication of the policymakers' overall strategy; (ii) a detailed communication of the deliberations that led to particular policy decisions; and (iii), an *ex post* assessment of the effectiveness of action taken.[19] Accountability and policy autonomy need to be carefully balanced, however, since accountability mechanisms can be used by interested parties to influence policy outcomes, reducing policy effectiveness.

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[17] For example, a secondary objective could be to ensure that macroprudential action does not unduly impair the capacity of the system to contribute to balanced growth.

[18] In general, it is useful to define objectives with respect to a specific policy function. Thus for example, where mitigation of systemic risk is the main objective of macroprudential policy, the main objective of monetary policy should remain price stability (IMF, 2010, and Nier, 2011).

[19] These elements are present in the new arrangements in Ireland and the United Kingdom.

Internal checks and balances can finally be enhanced by balancing the composition of a decision-making committee. The committee will usefully comprise supervisory agencies, including those that are not part of the central bank. In addition the committee can feature independent experts, as envisioned for the new arrangements in the United Kingdom. Alternatively, dedicated advisory committees can be created, such as the Scientific Advisory Committee to the ESRB.

### B. Compensating for Separation of Decisions from Control over Instruments

Where there is institutional separation of policy decisions from control over instruments, mechanisms are needed to ensure implementation. Effective mechanisms are difficult to design since they should at the same time respect the operational autonomy of those agencies that have direct control over policy instruments.

One possibility is to vest the macroprudential authority with *binding* powers over specific and well-defined macroprudential instruments that are carved out of the policy domain of a separate regulatory authority. In the United Kingdom such instruments will be defined by the Treasury and approved by Parliament. An example from the prudential sphere is the dynamic capital buffer. But instruments could also be created that are in the domain of securities regulators, such as margin requirements in repo markets.

An alternative mechanism is the power to issue *non-binding* "recommendations" to the separate authority, as established for the FPC in the United Kingdom, the FSOC in the United States, and the ESRB in the European Union. To increase compliance with such recommendations, they can be subject to a formal "act or explain" mechanism (e.g., in the European Union, United Kingdom, and United States). Publication of recommendations, as envisaged as a rule for recommendations issued by FSOC, are another powerful mechanism to ensure follow-up on the part of separate authorities. Just as important may be the membership on the decision-making bodies of agencies who are asked to implement decisions, since this will create greater ownership of decisions taken. Emphasizing financial stability in the mandate of the separate regulators (as in the United Kingdom for the separate the securities regulators) can also foster engagement and increase compliance with recommendations.

Non-binding recommendations can also be addressed to the legislative or executive and can be useful tools when effective mitigation of systemic risk requires a change in the law, for example to establish or strengthen regulatory and supervisory powers, or to expand the regulatory perimeter, as envisaged for the ESRB and FPC. Finally, the macroprudential framework needs to enable policy coordination beyond the use of financial regulatory tools and extend its reach to fiscal, exchange rate, housing market and competition policy (IMF, 2011a). In these areas, once again, non-binding advice and recommendations can be useful tools, as in the new arrangements in Ireland.

### C. Reducing the Risk of Delayed Decision

In a number of models, a key risk is that decisions may be subject to delay. This risk is greater where the committee's membership is large or where the treasury occupies a strong role.

Careful design of voting arrangements can reduce the risk that no action is taken as a result of persistent disagreement between constituent agencies or political economy pressures. As a rule, such voting should be subject to a simple majority or a qualified majority rule rather than requiring unanimity among all constituent agencies. In addition it may be useful to ensure a strong voice of the central bank on the policy-making or coordinating committee. For example, in Mexico, the central bank has three voting seats on a committee of 10 (chaired by the treasury).

Clearly distinguishing the setup for macroprudential policy and that for crisis management can reduce the need for strong treasury involvement.[20] Treasury departments naturally play a strong role in crisis management, while their role in macroprudential policy comes with greater costs. Establishing a crisis management committee (chaired by the treasury) alongside the macroprudential committee (chaired by the central bank) is useful to realize differences in the benefits and costs of a strong role of the treasury across these policy functions (Nier, 2011).[21]

Another element can be the appropriate design of accountability mechanisms. In the United States, for example, both the FSOC and each of its members, including importantly the Federal Reserve, must testify before Congress that in their view *all agencies* have taken sufficient action to address systemic risk.

### D. Fostering Cooperation in Risk Assessment and Mitigation

A key weakness of a number of models is the potential lack of cooperation between agencies whose contribution is needed for successful macroprudential policy. Where there are multiple agencies it is generally desirable that each agency's objectives include the mitigation of systemic risk. This increases the chance of engagement and makes it more likely that a sufficient amount of resources is made available to support macroprudential policy. As set out above, where mitigation of systemic risk is a shared responsibility, establishment of a formal coordinating committee, can foster cooperation. Such a coordinating committee can

[20] There may need to be close coordination between both committees in crisis times, e.g., when there is a need to release countercyclical measures, such as dynamic capital buffers which would remain the responsibility of the macroprudential committee.

[21] To avoid crisis management and resolution functions becoming unduly politicized, involvement of the treasury in this policy area is usefully balanced by a role of independent agencies, such as the central bank or a separate resolution authority (Nier 2009 and 2011).

also be useful to address overlaps and gaps in risk identification and create a mutual understanding on which agency should tackle a problem that might otherwise fall between the cracks.

Formal arrangements that are set out in law and are more visible to the public can enhance these benefits. In particular, more formal arrangements may enable the issuance of public warnings on the part of the committee as well as recommendations to take action that are issued to constituent agencies, as in Mexico. This can foster effective use of macroprudential policy instruments even where such recommendations are not binding on the agency. For example, a constituent agency might have shied away from taking action for fear of industry opposition. In the presence of a recommendation on the part of the committee it may be easier for the agency to face this opposition.

For effective risk identification, it is important that all relevant data are available to all agencies, or otherwise to at least one agency that is in the lead in risk identification. One important mechanism to ensure data can be shared is to remove specific legal impediments that prohibit the sharing of information beyond organizational boundaries. In addition, it can be useful to establish a formal duty to make available all information needed to assess systemic risk. Alternatively, or in addition, the law can provide for the power on the part of the committee to request any information that may be available to separate agencies (as in the new the United Kingdom model). As a backstop, the committee (or constituent agencies) can be given powers to collect such information directly from firms. For example, the Office of Financial Research has broad powers to collect information even from firms that are not subject to formal regulation and supervision.

## V. Conclusion

Arrangements need to take account of local conditions, so that there can be no "one size fits all." In some countries, checks and balances are seen as vital to control abuses of powers by technocrats, including the central bank. Moreover, existing institutional arrangements for financial regulation and supervision are often deeply rooted in history and the choice of model may in addition be subject to legal and constitutional constraints.

While the choice of institutional arrangements for macroprudential policy must meet country-specific conditions, this does not imply that all institutional models are equally conducive to effective macroprudential policy. The analysis suggests that weaknesses can often be addressed by introducing additional safeguards or mechanisms. But equally, these mechanisms may not always be fully effective. Moreover, where arrangements are more informal they may be les resilient to changes in key people and the quality of personal relationships.

We therefore distill general and more specific lessons that can translate into basic guidance for those countries that are reviewing their existing frameworks. Some general lessons are as follows.

- *The central bank should play an important role in macroprudential policy,* so as to harness institutional incentives and expertise available at the central bank and to assure coordination with other central bank functions, including monetary policy, provision of liquidity, and payment systems oversight.

- *Complex and fragmented regulatory and supervisory structures are unlikely to be conducive to effective mitigation of risks to the system as a whole.* Fragmentation can reduce effectiveness of risk identification. Fragmentation can also introduce frictions due to the need for collective decision making and can reduce the chance that risk identification translates into forceful action.

- *Participation of the treasury is useful, but a dominant role poses important risks.* Participation of the treasury in macroprudential policy is useful to ensure a bridge to the legislature and ensure cooperation across a wider set of policy fields. However, a dominant role risks delay in taking macroprudential action in good times. A dominant role can also compromise the institutional independence of established policies, such as monetary and supervisory policy.

- *Systemic risk prevention and crisis management are different policy functions that should be supported by separate arrangements.* The treasury more naturally assumes a strong role in crisis management, even though independent agencies can usefully balance this role. To meet both demands it may be desirable in many cases to establish the macroprudential policy arrangements as separate from the crisis management framework.

To ensure effective identification, analysis and monitoring of systemic risk, more specific desirables are as follows.

- *Mechanism for effective sharing of information should be in place.* Availability of all data and information needed to assess systemic risks should be assured, by removing existing legal obstacles to the sharing of data, and by empowering the authorities to collect and centralize relevant data.

- *At least one institution involved in the analysis of systemic risk should be provided access to all available data and information.* Given the complex nature of evolving interactions within the financial system, partial analysis undertaken by multiple agencies cannot assure the same depth of assessment.

- *Existing expertise should be leveraged.* As the assessment of systemic risk involves complex analysis of the financial system as a whole and its interactions with the economy, in both domestic and international dimensions, central banks will often be well-placed to take the lead in risk assessment. However, mechanisms should be established to challenge dominant views of one institution.

In order to provide for timely and effective use of macroprudential policy tools the institutional setup should promote the following specific aspects.

- *The institutional arrangements should promote willingness to act and reduce the risk of delayed policy action.* The legal framework should establish a formal mandate and accountability for timely and effective macroprudential policy action.

- *The macroprudential mandate should be assigned to a single institution, body or decision-making committee that can be held accountable for meeting its objectives.* Establishing financial stability in the mandate of several institutions is useful to ensure collaboration with the main body or policy committee. However, distributing the macroprudential mandate across several bodies can lead to collective action problems that reduce accountability and incentives.

- *The mandate should be given to institutions whose other objectives are closely aligned with the objective of macroprudential policy* and for which the cost of inaction in terms of meeting the institution's other objective is high. As already highlighted, this argues for a strong role of the central bank, alongside other regulatory agencies, whereas the treasury's involvement should be more limited.

- *Mandates and accountability mechanisms should guard against overly restrictive macroprudential policy.* To constrain discretionary use of powers, the mandate may specify secondary objectives and should be flanked by strong accountability. Accountability mechanisms can include publication of a policy strategy, communication of decisions and *ex post* assessments of effectiveness. However, accountability mechanisms should be designed in a manner so as not to unduly compromise effectiveness of macroprudential policy.

In order to ensure effective coordination across policies without undermining the established autonomy of separate policy fields the following aspects are desirable.

- *Institutional integration of financial regulatory functions within the central bank can support effective coordination of macroprudential policy with monetary as well as microprudential policy, but also requires safeguards.* Separate accountability mechanisms for monetary and macroprudential policy are likely to be useful in many cases.

- *Where institutional separation of policy decisions and control over policy tools cannot be avoided,* mechanisms are needed to ensure powers to "direct" the action of constituent or other agencies while preserving their institutional autonomy. These can take the form of non-binding recommendations or binding directions with respect to specific macroprudential instruments.

- *Where decision-making powers are distributed among several agencies, establishing a coordinating committee is useful.* A coordinating committee can help the authorities to come to a shared appreciation of risks, establish consensus on the appropriate policy mix and to reduce overlaps and gaps. However, such a committee is not necessarily sufficient in overcoming the lack of overall accountability for policy outcomes in the presence of a "commons" problem.

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