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STAFF GUIDANCE NOTE ON MACROPRUDENTIAL POLICY

IMF staff regularly produces papers proposing new IMF policies, exploring options for reform, or reviewing existing IMF policies and operations. The following documents have been released:

- The **Staff Guidance Note on Macroprudential Policy**, prepared by IMF staff and completed on November 6, 2014.
- A **Staff Supplement** on Detailed Guidance on Instruments.
- A **Staff Supplement** on Considerations for Low Income Countries.

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STAFF GUIDANCE NOTE ON MACROPRUDENTIAL POLICY

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EXECUTIVE SUMMARY

This note provides guidance to facilitate the staff's advice on macroprudential policy in Fund surveillance. It elaborates on the principles set out in the "Key Aspects of Macroprudential Policy," taking into account the work of international standard setters as well as the evolving country experience with macroprudential policy.

The note addresses key issues in the staff's advice on the use of macroprudential policy tools:

- When should macroprudential tools be **activated** and **tightened**?
- What issues arise when **implementing** macroprudential tools?
- When and to what extent should macroprudential policy tools be **relaxed**?
- How should macroprudential policy be **communicated**?
- How can **leakages** of macroprudential policy tools be addressed?

It also offers guidance on how the operational advice should differ with **country-specific circumstances** and relate to **other policy settings**.

The note finally summarizes key principles for the staff's advice on the **institutional framework** for macroprudential policy.

While the material in the main note is intended as a "primer," the advice on potential tools needs to be shaped by the specific set of vulnerabilities prevailing in any given country. An accompanying note provides detailed guidance on the specific macroprudential tools that are available to address a given vulnerability, covering broad based tools, corporate sector tools, household sector tools, liquidity tools, and structural tools.

Further considerations for the advice in low income countries are also available under separate cover. MCM staff can be reached under [MCM Macropru Guidance](#) to answer further questions that may arise in country-specific contexts.

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Glossary

BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BoE	Bank of England
CCB	Countercyclical capital buffer
CDS	Credit default swap
CFM	Capital flow management measure
CGFS	Committee on the Global Financial System
CRD	Capital Requirements Directive
CRE	Commercial real estate
DSTI	Debt-service-to-income
EU	European Union
ESRB	European Systemic Risk Board
FSB	Financial Stability Board
FSSA	Financial System Stability Assessment
FX	Foreign exchange
GFSR	Global Financial Stability Report
ISD	Integrated Surveillance Decision
LTD	Loan-to-deposit
LTI	Loan-to-income
LTV	Loan-to-value
MoF	Ministry of Finance
NPLs	Nonperforming loans

INTRODUCTION

1. **Macroprudential policy is defined as the use of primarily prudential tools to limit systemic risk.**¹ A central element in this definition is the notion of systemic risk—the risk of disruptions to the provision of financial services that is caused by an impairment of all or parts of the financial system, and can cause serious negative consequences for the real economy.² By mitigating systemic risks, macroprudential policy aims ultimately to reduce the frequency and severity of financial crises.
2. **The case for macroprudential policy intervention stems from three sets of systemic externalities (IMF, 2013a).** These are: (i) the tendency of the financial system to amplify adverse aggregate shocks; (ii) macro-financial feedback mechanisms that can increase exposure to such adverse aggregate shocks, through, for example, the build-up in leverage or erosion of credit standards; and (iii) linkages within the financial system that increase the vulnerability of the system to idiosyncratic or aggregate shocks.
3. **Macroprudential policy therefore pursues three interlocking intermediate objectives or “tasks” (IMF, 2013a).** First, it seeks to increase the resilience of the financial system to aggregate shocks, by building buffers that help maintain the ability of the financial system to provide credit to the economy under adverse conditions. Second, it seeks to contain the build-up of systemic vulnerabilities over time, by reducing procyclical feedback between asset prices and credit, and containing unsustainable increases in leverage and volatile funding. Third, it seeks to control structural vulnerabilities within the financial system that arise through interlinkages and the critical role of individual intermediaries in key markets that can render individual institutions “too important to fail.”
4. **Staff advice on macroprudential policy should be designed to support domestic and global stability.** The basis for the staff’s advice flows from the Integrated Surveillance Decision (ISD), according to which the macroeconomic and macroeconomically relevant aspects of financial sector policies are always the subject of bilateral surveillance. Surveillance focuses on the impact of individual countries’ economic and financial policies on countries’ own domestic and balance of payment stability and the actual or potential spillover effects of individual countries’ policies on global stability.
5. **Staff should be aware of the positive spillovers of macroprudential policy, as well as the potential for negative cross-border effects.** Lack of macroprudential action to contain risks in one country can undermine domestic stability and increase the likelihood of crisis, imposing negative externalities on other countries (IMF, 2013a; Viñals and Nier, 2014). Effective macroprudential policies should therefore in principle be expected to have positive spillovers for

¹ See IMF (2011a) and [Financial Stability Board \(FSB\), IMF, and Bank for International Settlements \(BIS\), \(2011\)](#).

² See [IMF, FSB and BIS \(2009\)](#).

other countries. The implementation of some macroprudential actions can also result in negative cross-border impacts. In these cases, staff should analyze the outward spillovers from macroprudential policies in the context of Article IVs and, where relevant, recommend alternative policies that do not harm their domestic stability but could reduce these spillovers.

6. Staff advice should be mindful of established principles on how macroprudential policy fits within the overall policy framework (IMF, 2013a).

- **Macroprudential policy should complement other macroeconomic and financial sector policies.** For instance, where a monetary policy stance is appropriate to achieve price stability objectives, it can still have adverse side effects on financial stability. Macroprudential policy can then help ameliorate these effects (IMF, 2013a).
- **Macroprudential policy should not substitute for appropriate policies in other areas (IMF, 2011a; Viñals, 2011).** For instance, where financial vulnerabilities are fueled by real external or internal imbalances, macroeconomic and structural policies should be used to correct the underlying imbalances. Macroprudential policies should not be overburdened, or used inappropriately to avoid necessary policy adjustments in these other areas.
- **The policy frameworks for capital flow management measures (CFMs) and macroprudential policy can overlap (IMF, 2012a; IMF, 2013a).** CFMs are designed to limit capital flows, by affecting the scale or composition of these flows. Macroprudential measures are designed to limit systemic vulnerabilities, including vulnerabilities associated with capital inflows and exposure of the financial system to exchange rate shocks. To the extent that capital flows are the source of systemic financial risks, the tools used to address those risks can be seen as both CFMs and macroprudential measures. Using the two types of measures in combination requires an understanding of their relative effectiveness and interactions.³
- **The boundary between macroprudential and microprudential policy can be source of tension (IMF, 2013a).** Microprudential policy seeks to ensure the soundness of individual financial institutions. Macroprudential policies aim to contain systemic risks in the financial system as a whole, which microprudential policies fail to adequately address. The tools used by each overlap substantially, creating the potential for conflicts between these objectives. Appropriate institutional arrangements and the strengthening of financial stability objectives in the mandates of supervisory agencies can help manage these tensions (IMF, 2013a; IMF, 2013c).

7. Strong microprudential supervision is essential for macroprudential policy to be effective (IMF, 2013a). Strong supervision of individual institutions is essential both to ensure that macroprudential policymakers can draw on supervisory information in risk assessment and to ensure that the macroprudential policy stance adopted is effectively enforced across institutions. Moreover,

³ As set out in IMF (2012a), the Fund's institutional view on CFMs does not (and legally could not) alter members' rights and obligations under other international agreements. Rather conformity with obligations under other agreements would continue to be determined solely by the existing provisions of those agreements.

increased supervisory scrutiny is often a useful prior step to the tightening of macroprudential rules. Where supervisory and enforcement capacity is lacking, improvements in these areas must be a key priority for macroprudential policy to be effective.

8. Macroprudential policy cannot rely on rules, but must be based on a continuous assessment of evolving risks (IMF, 2013a). An advantage of a rules-based approach that ties policy settings to a pre-defined indicator is that it can overcome political economy challenges. However, since sources of systemic risk can shift and indicators cannot capture all information, macroprudential policy is generally better supported by “guided discretion,” where key indicators can help signal when adjustments might be appropriate, but the decision is based on judgment that takes account of all available information ([Swiss National Bank, 2014](#); [Bank of England \(BoE\), 2014](#); [IMF, 2013a](#)). Such judgment requires access to data and qualitative information, as well as the analytical capacity to assess systemic risks ([IMF, 2013a](#)). Simpler approaches, based on automatic stabilizers and measures geared primarily to improving resilience, can be more appropriate where the informational environment is poor or analytical capacity is weak.

9. For macroprudential policy to be effective, it needs to look beyond banks (IMF, 2013a). Macroprudential policy needs to be geared to contain systemic risk in the financial system as a whole ([IMF, 2011a](#)). Since banks are often the key providers of credit to the economy macroprudential policy will often seek to apply its policy levers to the banking system. However, as risks can migrate into the nonbank financial sector, including in response to regulatory constraints, macroprudential policy needs to consider risks that build up in firms or activities outside the banking system ([IMF, 2011a](#); [IMF, 2013a](#)). While expanding the perimeter of macroprudential action is important, it can face legal and operational challenges, including the need for heightened cooperation among supervisory agencies.

10. A strong institutional framework is essential for the effective conduct of macroprudential policy (IMF, 2013a). Macroprudential policy is subject to a range of biases that favor inaction or insufficiently timely and decisive action as risks are building up ([IMF, 2011a](#); [IMF, 2013a](#)). A strong institutional framework is required to counter opposition from the financial industry and political pressures, and establish the legitimacy and accountability of macroprudential policy. It needs to ensure the policymaker is given clear objectives and the necessary legal powers, and foster cooperation on the part of other supervisory and regulatory agencies.

11. This note provides guidance to facilitate the staff’s advice on macroprudential policy in Fund surveillance. The note is based on the principles set out in the “Key Aspects of Macroprudential Policy” paper. It takes into account empirical research, work by international standard setters, and country experiences with macroprudential policy. Cognizant of the practical challenges faced by country authorities in establishing effective macroprudential policy frameworks, and drawing on increasing experience in the IMF’s provision of macroprudential policy advice, the note distills key principles for such advice in Fund surveillance (Box 1).

12. The note first addresses key issues for the staff’s operational advice on the use of macroprudential policy tools (Section II):

- When should macroprudential measures be **activated** and **tightened**?
- What issues arise when **implementing** macroprudential tools?
- When and to what extent should macroprudential policy tools be **relaxed**?
- How should macroprudential policy be **communicated**?
- How can **leakages** of macroprudential policy tools be addressed?

It also offers guidance on how operational advice should differ depending on **country circumstances** and relate to **other policy settings** (Section III).

It finally summarizes principles for the staff’s advice on the **institutional framework** for macroprudential policy (Section IV).

Box 1. Key Issues for the Staff’s Advice

The staff’s operational advice should aim to map an analysis of vulnerabilities into recommendations on macroprudential policy measures (paragraphs 15–16). The staff’s advice on macroprudential policy needs to start with a comprehensive and rigorous analysis of systemic vulnerabilities. Drawing on the analysis of risks, the staff’s recommendations on policy tools should be well targeted to address material risks to financial stability.

As part of this analysis, staff should evaluate multiple indicators to assess the need for activation and tightening of measures (paragraphs 17–21). The evaluation of *core indicators* can be a useful starting point in considering the need for macroprudential measures. *Additional indicators* and further information should be analyzed to support a judgment on the extent of systemic risk.

- Where information to construct indicators is missing, staff should encourage the collection and sharing of the relevant data.
- Where multiple indicators point to the build-up of risks, there is a stronger case for the activation of new measures or the tightening of existing policy settings, even as policy recommendations should always be supported by in-depth analysis.
- Even where a crisis seems distant, staff should encourage the establishment of a macroprudential toolkit, so that tools can be activated when risks needed.

The staff’s advice on implementation of tools should aim to ensure the effective and efficient use of macroprudential policy (paragraphs 22–35). The staff should aim to ensure that the benefits are realized in a manner that promotes the effectiveness of the policy response and also considers costs from macroprudential actions, including *efficiency costs* for borrowers from a reduction in the provision of financial services; *adjustment costs* to the financial industry; and *costs to output growth*, potentially including across borders. Well-tailored design and a step-wise approach to the tightening of tools can help achieve benefits while avoiding costs.

A relaxation of time-varying tools can be justified when risks materialize or when they recede. (paragraphs 36–49). A relaxation of *time-varying tools* can be justified to help avoid a credit crunch that curtails credit for households and firms, thereby creating adverse feedback loops that further depress economic activity. However, a premature relaxation can reignite risks and should be avoided while any relaxation needs to respect prudential minima that can ensure an appropriate degree of resilience against future shocks. *Structural tools* aim mainly to increase resilience and will rarely need to be relaxed.

Box 1. Key Issues for the Staff's Advice (concluded)**Staff should advise the authorities to *communicate* clearly on macroprudential policy**

(**paragraphs 50–54**). Clear communication of policy intentions can help achieve effective transmission of macroprudential action, both when measures are taken and when they are relaxed. Important communications tools are a policy strategy that establishes predictability of action while retaining discretion, regular assessments of risk and impacts of measures taken, and records of the meetings of macroprudential policymakers.

Staff should assess the potential for *leakage* of macroprudential policy tools and advise on strategies to address such leakage (paragraphs 55–60).

In principle, both *domestic* leakages (to nonbanks) and *cross-border* leakage can be addressed by expanding the scope of macroprudential intervention, which may require domestic and international coordination. Staff should be aware that the scope for and practical challenges in addressing leakages can differ across macroprudential tools and adjust the advice accordingly.

Staff advice on macroprudential policy needs to take full account of country-specific circumstances (paragraphs 61–69).

The staff's advice on the approach to *time-varying tools* should take account of the availability of data and strength of supervisory capacity, the stock of private sector credit, the degree of economic diversification and the extent of a country's financial integration with the rest of the world. Where the financial system is large, interconnected, or concentrated, there is greater need for advice on *structural measures* to contain the resulting risks.

Staff advice should consider the appropriate policy mix to achieve macroeconomic and financial stability (paragraphs 70–75).

Where monetary policy is appropriately set to achieve price stability, macroprudential policies should be used to contain potential adverse side effects for financial stability. Structural and fiscal policies can also often reduce risks to financial stability, by reducing real imbalances and incentives to take undue risk, and staff should encourage action across these policy fields to avoid overburdening macroprudential policy.

Where an effective institutional framework is lacking, the staff should develop recommendations to strengthen the framework (paragraphs 76–89).

Where strong institutional arrangements are lacking this can pose material risks for both domestic and global stability. The staff will then need to recommend ways to strengthen the framework, so as to assure willingness to act, ability to act, as well as cooperation in risk assessment and mitigation, to ensure the conditions are in place for policy to be effective.

13. While the main note is intended as a “primer,” the advice on potential tools needs to be shaped by the specific set of vulnerabilities prevailing in any given country. An accompanying note provides more detailed guidance on using the macroprudential toolkit to address specific vulnerabilities. This material is meant to be used as a “hand-book” to inform staff on approaches to address issues arising in their policy discussions. Further considerations for the advice in low income countries are available in a separate note.

14. The notes are meant to foster a structured dialogue on macroprudential policy in Fund surveillance. They can equip the staff with an agenda for dialogue with the authorities, provide a structure to think through trade-offs and policy choices, and ensure fuller coverage of macroprudential policy in bilateral surveillance. While the notes can serve as a starting point for staff, they should not be used mechanically and cannot substitute for an in-depth analysis and engagement with the authorities that is critical to arrive at sound policy recommendations tailored to country circumstances. And even as the guidance attempts to prepare staff for such a dialogue,

still limited knowledge means that difficult judgments will often need to be made, especially when the impact of tools is uncertain.

15. The practice of macroprudential policy will evolve as country experiences accumulate, which will need to be reflected in regular revisions of this guidance note. An increasing number of countries are deploying macroprudential tools, and adapting them to new financial developments and risks. As experience accumulates, staff will gain insights, through dialogue with country authorities and from further research, which can then be reflected in updated advice. The present notes are therefore conceived as a living document that may be updated periodically and can be complemented by additional material as needed.

KEY ISSUES FOR THE OPERATIONAL ADVICE

A. When Should Macroprudential Tools be Activated and Tightened?

16. The staff's advice on macroprudential policy should start with a comprehensive and rigorous analysis of systemic vulnerabilities. To assess the build-up of risks over time ("time dimension"), this should consider (i) economy-wide vulnerabilities from an excessive growth in total credit; (ii) sectoral vulnerabilities arising from growing credit to the household sector; (iii) sectoral vulnerabilities from exposures to the corporate sector; and (iv) vulnerabilities from excessive maturity and foreign exchange (FX) mismatches within the financial sector. The analysis of vulnerabilities should also consider the potential for feedback between asset prices and credit. To assess structural risks within the financial system ("structural dimension"), the analysis should consider vulnerabilities from linkages within and across key classes of intermediaries and market infrastructures (Figure 1).⁴

How to map vulnerabilities to macroprudential policy tools?

17. Staff advice on the activation of macroprudential policy levers should aim to map an in-depth analysis of vulnerabilities into policy recommendations. Policy recommendations on macroprudential measures should be tailored to material sources of vulnerability, and consider the transmission mechanisms of various tools in addressing risks (as explored further in the detailed guidance).

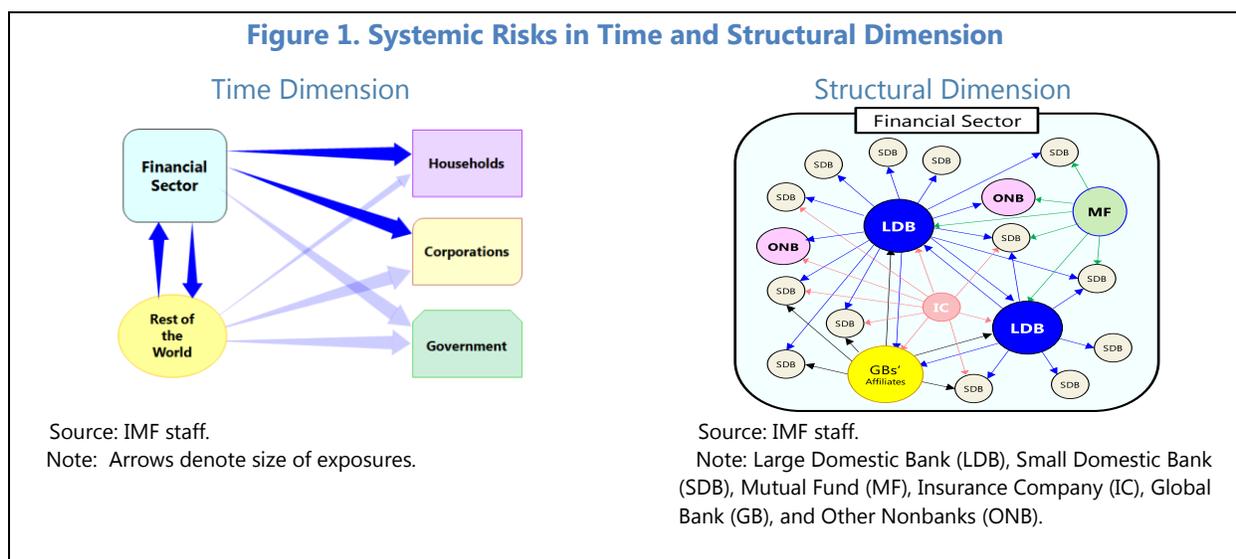
- Vulnerabilities from **credit booms** can be addressed by tools that affect all credit exposures of the banking system (*broad-based tools*). For example, countercyclical capital buffers (CCBs) and dynamic provisions affect the full range of bank activities. They increase the resilience of the

⁴ The "time dimension" refers to the build-up of systemic vulnerabilities over time. The structural dimension refers to structural risks within the financial system. While the concepts of time dimension and structural dimension are useful conceptually, risks in the two dimensions can be related. For instance, a boom in credit to the real economy increases risks over time, but is often accompanied by increases in wholesale funding, in turn increasing structural vulnerabilities from interconnectedness.

financial system and may also moderate the pro-cyclicality of credit. Where the pass-through of capital tools to lending rates and the volume of credit is weak, consideration can also be given to additional tools, potentially including caps on credit growth (Detailed Guidance: Broad-based tools).

- Where vulnerabilities arise from excessive credit to the **household sector** and procyclical feedback between credit and asset prices, a range of sectoral tools that target specific credit categories, and include sectoral capital requirements (risk weights), loan-to-value (LTV), and debt-service-to-income (DSTI) ratios, can address these risks in a targeted manner. These tools can also be adjusted and complemented by other tools that, for example, target heightened credit risks from mortgage lending in FX (Detailed Guidance: Household sector tools).
- Where systemic risks arise from increases in exposures to the **corporate sector**, such as from increases in corporate leverage, lending to commercial real estate (CRE) or from FX lending to the corporate sector, targeted sectoral tools, such as sectoral capital requirements (risk weights) and exposure caps, can be recommended to address these risks. To deal with risks from CRE lending, LTV limits can also be used (Detailed Guidance: Corporate sector tools).
- Increases in vulnerabilities of the financial system to **systemic liquidity and currency risks** can be addressed by liquidity tools, such as liquid asset buffers, stable funding requirements, and limits on open currency positions. By constraining bank funding to address systemic liquidity risk, liquidity tools can also have an impact in moderating credit booms. A range of tools can be employed to address systemic liquidity risks in the nonbank financial sector (Detailed Guidance: Liquidity tools).
- **Structural risks** of contagion transmitted through interlinkages within the financial system can be addressed by a range of tools, including capital and liquidity surcharges for systemically important institutions, and measures to control interlinkages in funding and derivatives markets (Detailed Guidance: Structural tools).

Figure 1. Systemic Risks in Time and Structural Dimension



Source: IMF staff.
 Note: Arrows denote size of exposures.

Source: IMF staff.
 Note: Large Domestic Bank (LDB), Small Domestic Bank (SDB), Mutual Fund (MF), Insurance Company (IC), Global Bank (GB), and Other Nonbanks (ONB).

Which indicators can signal the need for policy action?

18. For each type of vulnerability, staff should evaluate multiple indicators to assess the need to activate tools. These are divided into core and additional indicators (Table 1). Core indicators can be a useful starting point and can guide an initial judgment on the need for activation of tools. However, since the signaling performance of each of these indicators is imperfect, additional indicators should be used to assess the extent of systemic risk. Core and additional indicators for each type of vulnerability are explained further in the Detailed Guidance.

19. Where information to construct indicators is missing, staff should encourage the collection and sharing of the relevant data. While information to compute core indicators will be readily available to staff in most cases, this will not necessarily be the case for the additional indicators. Where the information is already available to the authorities, staff should encourage them to share the relevant data. Where the information is not available to the authorities, staff should encourage the authorities to close the data gap, by collecting the data and sharing them with the staff.

20. Staff should assess carefully whether the reading on indicators signals elevated risks. Staff should evaluate both the level and the evolution of indicators since a rapid increase would in general signal an increase in systemic risk. To assess the performance of indicators, staff can assess the behavior of indicators ahead of prior instances of financial stress for a given country, and perform empirical analysis for a peer group of countries. In a few cases, such as for the credit to GDP gap, thresholds have been estimated in cross-country research (see further Detailed Guidance: Broad-based tools). However, such thresholds should only be taken as indicative and should be tailored to country-specific circumstances.

21. The case for recommending macroprudential measures is stronger when indicators paint a homogenous picture of rising systemic risk.

- When all or most of the indicators are “flashing red,” this would in general provide a strong case for recommending measures, even as such advice should not be mechanical, but based on judgment that takes into account all available information and country circumstances.
- When some indicators are flashing “red” and others “green,” the case for macroprudential measures is weaker and consideration should also be given to alternative policy actions. For instance, when housing prices are elevated, but mortgage lending is subdued, this can point to supply constraints in housing markets that may need to be addressed by structural measures, or arise from cash demand, which can be countered by quasi-macroprudential tools, such as stamp duties.
- When most indicators are flashing “yellow,” the staff should recommend a gradual approach to the activation of risk mitigating measures. The intensification of supervisory scrutiny, and the issuance of supervisory guidance (such as on leveraged loans in the United States (U.S.), see April 2014 Global Financial Stability Report (GFSR) [Chapter 1](#)) can be useful steps before macroprudential tools are activated. Where there is a predefined range of variation, such as for

the CCB, there can also be a partial activation of the tool (see Detailed Guidance: Broad-based tools).

Table 1. Signals Indicating the Need for Macroprudential Measures⁵

Instruments	Core indicators	Additional indicators
Broad-based (Capital) tools	<ul style="list-style-type: none"> • Credit/GDP gap 	<ul style="list-style-type: none"> • Growth in credit/GDP • Credit growth • Asset price deviations from long-term trends • Under-pricing of risk in financial markets (low volatility/spreads) • DSTI ratios • Leverage on individual loans or at the asset level • Increasing wholesale funding ratio (noncore funding) • Weakening exports and resulting current account deficits
Household tools	<ul style="list-style-type: none"> • Household loan growth • Increasing house prices (nominal and real growth) • House price-to-rent and house price-to-disposable income ratios • Increasing share of household loans to total credit 	<ul style="list-style-type: none"> • Increasing house prices by region and by types of properties • Deteriorating lending standards • High LTV ratio • High loan-to-income (LTI) ratio • High DSTI ratio • Share of FX loans and interest only loans
Corporate tools	<ul style="list-style-type: none"> • Corporate loan growth • Increasing share of corporate loans to total credit • Increasing commercial property prices • Increasing commercial real estate credit. • Increasing share of FX loans 	<ul style="list-style-type: none"> • Increasing corporate leverage (debt to equity ratio) • Corporate credit gap • Increasing debt-service ratio • Deteriorating lending standards • Average DSTIs on commercial real estate loans • Average LTVs on commercial real estate loans • Share of FX loans and extent of natural hedges
Liquidity tools	<ul style="list-style-type: none"> • Increasing loan-to-deposit (LTD) ratio • Increasing share of noncore funding to total liabilities 	<ul style="list-style-type: none"> • Decreasing share of liquid assets • Worsening maturity mismatches • Increasing securities issuance • Increasing unsecured funding • Increasing FX positions • Increasing gross capital inflows

Source: IMF staff.

⁵ This table focuses on the assessment of risks in the time dimension only.

- When indicators are flashing “yellow” or “green,” the staff may encourage careful monitoring and, if not yet in place, the establishment of the legal and operational basis for action. Establishing the legal basis for action may take time, and may require prior political debate. Even where there is no immediate case for action, the staff should encourage the authorities to be prepared, by putting in place the legal and operational basis for the relevant tools, so that the authorities are in a position to take timely action when systemic risks increase (see also Section IV).

How to assess the need for policy action in the structural dimension?

22. To assess the need for action in the structural dimension, staff should follow three analytical steps (Detailed Guidance: Structural tools). In a first step, staff should analyze the composition of the financial system, using aggregate information for the financial sector and its subsectors, and information from sectoral flow of funds if available. This allows for an initial characterization of the financial network’s structure and helps identify which sectors may be important in assessing systemic linkages. Given the key role of banks in the provision of credit to the economy, the second step identifies systemically important banks and assesses the tools needed to improve their resilience (including enhanced supervision, measures to improve resolvability, and greater loss absorbency). Finally, in a third step, the analysis can be expanded to consider further tools to address structural risks and cover relevant nonbank financial institutions and market infrastructures that may pose systemic risk.

B. What Issues Arise when Implementing Macroprudential Tools?

23. The tightening of macroprudential policy levers has benefits as well as costs. The benefits, when tools are used effectively, flow from a reduction in the probability and severity of crisis thereby also reducing negative spillovers to other countries. These need to be weighed against potential costs: costs from the circumvention of macroprudential tools which could lead to other distortions; costs to borrowers from the reduced availability of financial services; the cost to the financial industry of adjusting to the macroprudential constraint; and potential costs to output growth, even though quantifying benefits and costs with precision is unlikely to be feasible for staff.⁶

How to assess the benefits of macroprudential tools?

24. The yardstick is effectiveness in achieving their objective. While the benefits of macroprudential policy for the ultimate objective (reduction in the probability and severity of crises) are hard to measure, effectiveness can be assessed against intermediate objectives. Tools that work in the time-dimension (such as the CCB, caps on LTV and DSTI ratios) have two objectives. One is to increase the resilience of the financial system as risks are building up. The other is to contain the procyclical feedback between credit and asset prices, and unsustainable increases in leverage that

⁶ Indeed, while the benefits of macroprudential policy accrue in the future, and are difficult to measure, costs are felt more immediately, potentially leading to biases in favor of inaction ([IMF \(2011a\)](#), [IMF, 2013a](#)).

lead to an overexposure to such risks. The main aim of structural tools, such as capital surcharges for systemically important institutions, is to increase the resilience of the financial system to shocks.

- All macroprudential tools are likely to help build resilience. For instance, a bigger capital buffer will make banks more resilient to solvency shocks, while liquidity tools increase resilience to liquidity stress. A tighter LTV ratio will increase borrowers' resilience to asset price corrections and will in turn protect banks from borrower default. And a tighter DSTI ratio can help maintain affordability of debt in the face of interest rate and income shocks and again bolsters resilience of banks.
- The effect of these tools on credit dynamics is likely to differ across tools ([IMF, 2013d](#)). The experience confirms that when capital buffers are increased in the face of strong demand for credit, credit growth may not slow markedly (e.g., in Israel, Sweden and Switzerland). Tools that work directly on the demand for credit (LTV and DSTI) are generally found more effective in curbing excessive credit dynamics (Detailed Guidance: Household sector tools). Moreover, tightening liquidity requirements to address systemic liquidity risk, e.g., introducing net stable funding or tightening reserve requirements, can also have an effect in slowing credit growth, although the precise effects are uncertain (Detailed Guidance: Liquidity tools). For all macroprudential tools that aim in part to counter excessive credit growth, effectiveness can be undermined by leakage (arbitrage) effects,⁷ or the strength of underlying drivers of credit growth, even though they likely will continue to be effective in increasing resilience.
- The main aim of structural tools, such as capital surcharges for systemically important institutions, is to increase the resilience of the financial system and reduce the likelihood of failure of these institutions. However, in assessing the effectiveness of such tools, policymakers here again need to figure in the potential for leakage, since if tools are tightened on the banking sector only activity tends to migrate to the nonbank sector. Beyond such circumvention, exogenous developments including global capital flows and evolving market structures can also undermine effectiveness.

25. Assessing these effects is not easy, especially in real time. Repeated stress testing of the system offers a way of assessing increases in resilience. An example is the Comprehensive Capital Analysis and Review program in the U.S. that subjects the largest banking groups to annual stress tests and holds these banks to capital requirements beyond the regulatory minima. Assessing the effects of macroprudential tools on systemic risk, including through their effects on credit dynamics, likewise, is not easy in real time, since these dynamics can be influenced by other factors, such as macroeconomic policy settings. Thus, as macroprudential policy measures are introduced and tightened, close surveillance of the key indicators that motivated their tightening, and other

⁷ Leakages refer to the migration of financial activity outside the scope of application and enforcement of the macroprudential tool, potentially undermining the objectives of the policy measures. The issue of how to assess and address leakages is discussed in a dedicated section below.

variables influencing them, is needed to assess the effect of these measures in constraining the build-up of risks.

How to promote the effective and efficient use of macroprudential tools?

26. Some circumstances call for the use of multiple tools to promote effectiveness and reduce leakage costs. The marginal benefit of tightening any one tool will eventually decrease due to increased distortions and incentives for circumvention ([Committee on the Global Financial System \(CGFS\), 2012](#); [IMF, 2013a](#)). The use of complementary tools can mitigate such effects, increasing the desired impact of macroprudential action. For instance, sectoral tools, such as LTV, LTI, and DSTI limits, can address the demand for credit and complement capital tools, such as the CCB, that act on the supply side, when a housing boom accompanies a broader credit boom, thus requiring a forceful and comprehensive policy response.⁸ Limits on LTV and DSTI can complement each other in dampening mortgage loan demand and increasing resilience to asset price and income shocks. In particular, as house prices increase, an LTV ratio cap may become less binding, while a DSTI or LTI cap can tie credit to household income. In addition, DSTI limits enhance the effectiveness of an LTV cap, by containing the use of unsecured loans to meet the minimum down payment. In a low interest rate environment, LTI limits or stressed DSTI ratios can complement LTV ratios in containing increases in household leverage. A thorough exploration of interactions between different tools is important, tailored to country-specific circumstances.

27. Efficiency considerations can also inform the design and sequencing of tools. While the selection and sequencing of instruments should depend on the nature and extent of the risk, to reduce the potential for distortions, it can generally be desirable to first introduce tools that work through prices, such as capital tools that affect bank's incentives to lend, before introducing quantitative constraints, such as LTV, LTI and DSTI limits. Caps on the exposure to particular types of borrowers, such as caps on the exposure to high LTV ratios (as in New Zealand), can strike a balance, since they do not prohibit, but only constrain the provision of such credit. Nonetheless, the staff should encourage the authorities to move beyond price-based tools to quantitative restrictions when the former have an insufficient effect on systemic risk (e.g., [Switzerland Financial System Stability Assessment \(FSSA\), 2014](#); [Sweden Staff Report, 2014](#)).

28. Staff should be aware of the trade-offs between efficiency and enforcement costs. More targeted measures will be more efficient in promoting financial stability, but may require more information and can be more difficult to enforce. For instance, measures to contain credit risks from lending in FX should ideally target credit to unhedged borrowers only, since a broader application will be less efficient. However, loan-by-loan data of the extent to which a borrower is hedged is often unavailable, creating challenges in enforcement. Similarly, LTV and DSTI ratios that distinguish between first time buyers and investors, or that differentiate by region (as in Korea) may be more

⁸ [Crowe and others \(2013\)](#) find that housing booms often coincide with broad-based credit booms (in just over half of the cases in their sample). Almost all the countries with "twin booms" in real estate and credit markets ended up suffering a financial crisis or a severe contraction in GDP.

efficient, but harder to enforce. Differentiation by region can also face legal constraints (as in Canada).

How to take account of adjustment costs for financial institutions?

29. Tools that impose minimum ratios on the balance sheet of intermediaries may create adjustment costs for financial firms that can be mitigated through phase-in, or a step-wise tightening. The Basel Committee on Banking Supervision (BCBS) recommends that authorities give a notice period of up to 12 months to provide banks time to meet a CCB requirement. Similarly the imposition of liquidity tools can require a phase-in or step-wise tightening. For example, [Korea](#) announced a ceiling on the LTD ratio in December 2009, which banks were expected to meet by the end of 2013 (subsequently brought forward to June 2012). An example of step-wise tightening is [New Zealand](#) where the minimum core funding ratio was initially set at 65 percent of total loans and advances in 2010, and raised in two steps in 2011 and 2013 to reach 75 percent.

30. Measures that aim to affect the flow of new lending or new funding should take immediate effect. Where such measures (e.g., an increase in risk-weights on new loans, a change in the maximum LTV ratio for new borrowers, or a marginal reserve requirement) are pre-announced too long in advance, this can lead to frontloading, as borrowers and banks rush to take action before the measure takes effect.⁹ Since banks do not face a need to adjust their existing balance sheet positions, a measure that targets the flow of new lending (or funding), can in general also be tightened more sharply. While a sharper tightening can exert a stronger influence on incentives, and thereby asset prices and volumes, care is nonetheless warranted in view of uncertainty on the strength of transmission and potential side effects on output.

How to assess potential costs to output growth?

31. Balance sheet tools are expected to have a relatively weak impact on output, even as the precise effects are uncertain. Research and experience suggests that tools that work on intermediary balance sheets, such as increased capital and provisioning requirements, increase resilience but will often have only weak effects on loan rates and the volume of credit ([IMF, 2013d](#); [BIS, 2010](#)). This implies that the effects on output are also generally expected to be weak. The effects can be greater when an aggressive tightening forces intermediaries to cut lending, or when tightening occurs in periods of financial stress, when it is more difficult for intermediaries to find equity or other stable funding. To avoid undesirably strong effects on output, it is important that balance sheet tools (such as capital buffers and liquidity requirements) are phased in gradually and well ahead of the emergence of financial stress.

⁹ This effect can be mitigated where the LTV constraint applies to refinancing, or typical maturities are short, so that borrowers expect to have to refinance their loans at tighter future ratios. In these cases an announcement of a plan to reduce LTV ratios can lead borrowers to internalize the future constraint.

32. The impact on output of tools that address the flow of new credit, such as LTV and DSTI, should in general be expected to be greater. Variation in LTV has been found to have meaningful effects on consumption and investment ([IMF, 2013d](#)). Such measures should therefore be tightened gradually, especially when the economy is weak and monetary policy is constrained, as in currency unions or by the zero lower bound and therefore less able to counter the side effects of macroprudential policy on output ([IMF, 2013d](#); [IMF, 2013a](#)). However, some of these costs may need to be born when risks are elevated and tightening has started late.

33. Uncertainty on the strength of transmission of macroprudential tools warrants a cautious and gradual approach to the tightening of tools. Such an approach can iterate between the tightening of measures and an assessment in real time of the strength of the effect of the tools. This can be aided by a continued monitoring of those indicators that triggered the activation or tightening of tools. It can also use a repeated stress testing of the system, to assess whether the measures have brought about the desired effect on resilience ([Wong and others, 2014](#)), or if further action is needed to bolster resilience (e.g., the U.S. approach to capital buffers, the April 2014 GFSR [Chapter 1](#)).

34. Where tools are applied at the level of international banking groups, output costs can also cross national borders. For a range of tools, any direct effect on output is likely to be confined to the domestic economy. This includes the CCB, which by construction applies only to domestic exposures, as well as LTV and DSTI, which only apply to domestic borrowers, even though a large effect on domestic demand can have second-round effects by affecting imports. Other tools, including liquidity tools and capital surcharges apply to all assets of international banking groups, irrespective of whether the exposure is to domestic or foreign borrowers. A tightening of these tools can therefore in principle lead to unintended deleveraging in both the local economy and across the border, and thereby affect output elsewhere. Such unintended effects are, in general, more likely when the tightening is ill-timed and occurs in periods of financial stress, since in those periods it will be more difficult for banks to find equity or other stable funding in markets. Staff should therefore advise such tools to be brought in and tightened in good times, and with sufficient phase-in, to avoid both local and cross-border deleveraging effects. Regional coordination mechanisms can also help assess the scope for and mitigate the extent of such spillovers ([IMF, 2013a](#); [Viñals and Nier, 2014](#)).

35. Staff's advice on these measures should be in line with the general principles that govern the analysis of spillovers from local policy actions. In line with the ISD, staff should discuss with the authorities the full range of spillovers from policies that may have a significant impact on global stability. Although members have no obligation to change policies as long as they promote their own stability, staff should recommend alternative policies (where available) that attain the same objective at reduced costs to other countries.

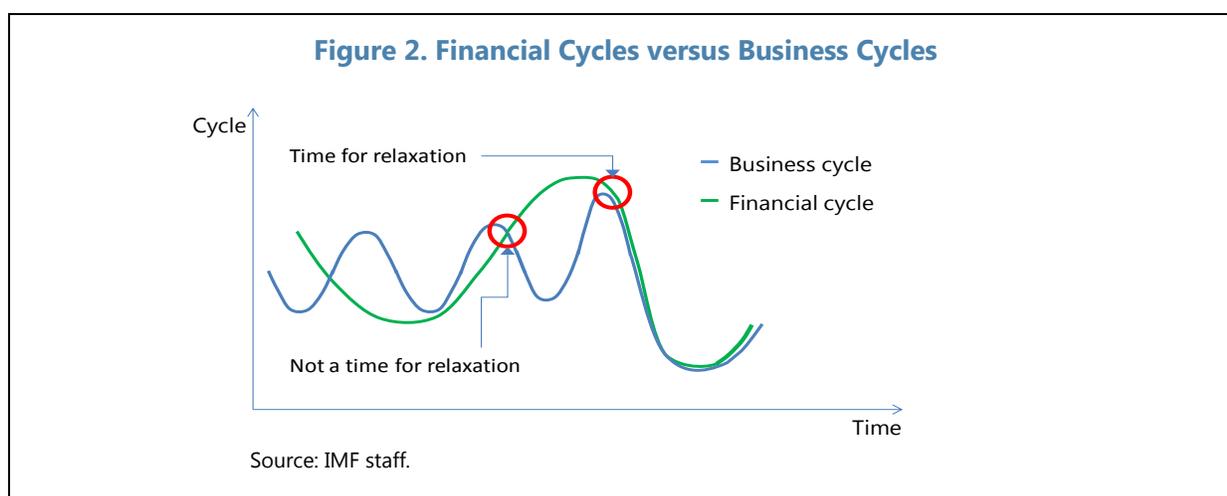
C. When Should Macroprudential Tools be Relaxed?

36. The approach to the relaxation of macroprudential instruments should start by considering the objective of macroprudential policy: to prevent a disruption to the provision of

credit that can have serious adverse effects on the real economy. Where buffers have been built-up, some of these buffers can then be relaxed in order to support the provision of credit when systemic risks materialize.

37. In general, a softening of aggregate demand is not sufficient to justify a relaxation of macroprudential tools. This follows from the principle that macroprudential policy should not be used to manage business cycles (IMF, 2013a).¹⁰ An economic downturn need not coincide with a downturn in the financial cycle. Indeed, the experience is that financial cycles are longer than business cycles and financial imbalances can keep growing through an episode of a cyclical downturn in aggregate demand (Drehmann and others, 2012) (Figure 2). Indeed, Drehmann and others (2010) find empirically that through more than half of the recessions in their sample, real credit growth stays positive.¹¹

38. A relaxation of macroprudential policy tools should be considered if systemic risk dissipates, or if it materializes and financial conditions tighten, especially when this threatens to drag down real economic activity with it. It should then aim to arrest the development of adverse feedback loops, where a tightening of financial conditions leads economic activity to drop. This is illustrated in Figure 2 when the business and financial cycles start moving in lock-step. In particular, such a relaxation can be justified to avoid a credit crunch that curtails credit for households and firms, depressing economic activity and feeding back into a deterioration of intermediary balance sheets and a further tightening of credit.



¹⁰ The terms credit cycle and financial cycle are used synonymously. While there is no universally accepted definition, the key notion underlying both terms is that financial crises are often preceded by a prolonged build-up of financial imbalances, as captured by credit aggregates and asset prices.

¹¹ The financial cycle can provide a useful conceptual framework for the advice on macroprudential policies in the time dimension. However, the evolution of risks may differ substantially across countries and time periods. The statistical and methodological challenges in identifying turning points in real time mean that the staff's advice needs to be grounded firmly in an analysis of systemic risk.

39. However, a relaxation in periods of stress can also face important trade-offs, requiring an in-depth analysis of the effect on financial conditions. In periods of financial stress, the macroprudential policymaker may want to relax those macroprudential constraints that impede the provision of credit to the economy, and which could exacerbate fire sale dynamics or a vicious feedback between deteriorating economic and financial conditions. At the same time, the relaxation of macroprudential constraints needs to maintain confidence and ensure an appropriate degree of resilience against future shocks. These tradeoffs will in general differ with the macroprudential tools being considered, and can also depend on the size of the available buffers (as further set out below).

40. The timing of relaxation of macroprudential measures needs to balance costs from relaxing them too early against the costs from relaxing too late. Where macroprudential tools are relaxed too early, this can fuel a further build-up of financial imbalances, while reducing the resilience of the system to future shocks ([CGFS, 2012](#)). Where macroprudential constraints are relaxed too late, they can in the interim become binding on borrowers and financial intermediaries, leading to a sharper procyclical slowdown of credit, asset prices and economic activity, ultimately worsening the health of the financial system. A weakening of balance sheets may in turn come to constrain policy space for a relaxation of tools, since maintaining resilience must then become the overriding concern for the macroprudential policymaker. This argues for a prompt release of macroprudential buffers when there are signs of incipient systemic financial stress ([Drehmann and others, 2010](#); [BCBS, 2010](#); [European Systemic Risk Board \(ESRB\), 2014](#)).

41. Macroprudential policy tools can also be relaxed when financial risks dissipate as a result of the effective application of such measures. A relaxation of macroprudential tools can be considered when they are thought to have served their purpose and come to unnecessarily constrain the provision of financial services, so that the costs of keeping them in place outweigh their benefits. When risks do not materialize and when surveillance indicates that systemic risk is receding, a gradual release of macroprudential buffers may be appropriate.

What indicators can help decide on loosening?

42. Indicators that can guide a decision to relax macroprudential constraints can differ from those useful for the activation and tightening phase. While slow-moving stock variables and ratios, such as the credit-gap, are useful surveillance tools for detecting the build-up of risks, and can also help assess whether risks are dissipating, market-based indicators and flow variables (such as credit growth and changes in default rates) are better at capturing the turning point in the financial cycle and at predicting an imminent materialization of systemic risk. The set of useful indicators can also differ across the sources of stress and the corresponding set of tools (Table 2).

- **Broad-based and sector-specific capital tools** (countercyclical buffers, provisions and risk weights) should be relaxed promptly when there is evidence that impending balance sheet stress leads to a pull-back in the provision of credit (see further Detailed Guidance: Broad-based tools). The objective of a relaxation of these tools is then to help ensure that capital can be used to absorb losses, rather than to meet the regulatory constraint, thereby avoiding a credit crunch. Staff's advice on the relaxation of capital tools should be guided by evidence that support such

a concern (Table 2). Indications would include: increases in market-based measures of financial stress, increases in lending spreads, sharply slowing credit growth, incipient increases in borrower default rates, and evidence that capital requirements are becoming an increasingly binding constraint on the provision of credit (as can be judged from credit conditions surveys).

Table 2. Signals Indicating Relaxation of Macroprudential Tools

Instruments	Indicators
Capital tools	High frequency indicators of balance sheet stress, such as increases in bank credit default swap (CDS) spreads; Increases in lending rates/ spreads; Slowing credit growth; Increasing default rates and nonperforming loans (NPLs)/arrears; Indication of worsening credit supply from lending surveys.
Household tools	Decreasing house prices; Decreasing real estate transactions; Increasing spreads on household loans; Decreasing prices of mortgage backed securities; Slowing net household loan growth (change in stock); Slowing growth of new household loans (flow); Increasing household NPLs/arrears.
Corporate tools	High frequency indicators, e.g., corporate CDS spreads, bond yields; Increases in lending rates/spreads; Decreasing corporate loan growth; Increasing corporate default rates/NPLs/arrears; Indication of worsening credit supply from lending surveys.
Liquidity tools	Increasing spread between interbank rate and policy/swap rate; Increasing funding costs in the wholesale market; Increased recourse to central bank liquidity windows; Swap rate of local currency against FX and FX implied volatility; Reversal of gross capital inflows.

Source: IMF staff.

- **Tools specific to the residential property market** (such as LTV and DSTI), should be relaxed when there are signs of increased frictions in housing markets that result in a spiral of falling house prices, falling mortgage credit, and increasing defaults and foreclosures, (see further Detailed Guidance: Household sector tools). In general, while a fall in house prices can be a useful early-warning indicator for the emergence of such frictions, a softening housing market alone is not a sufficient indicator for the relaxation of macroprudential tools, and staff should look for further evidence supporting the need for a relaxation of macroprudential tools (Table 2). Such further indications would include a sharp slowdown in mortgage credit and transactions, increases in spreads on mortgage credit, increases in default rates and foreclosures, and falling prices for securities backed by real estate loans.

- **Liquidity tools** should be relaxed when there are signs of systemic liquidity stress that may arise from a drop in the provision of funding to and within the financial sector, and which in turn may lead to fire sales of assets and a reduction of credit to the real economy (see further Detailed Guidance: Liquidity tools). Indicators include sharp increases in the price of wholesale and interbank funding, increases in the price of FX swap rates, withdrawals of deposits, increased access to central bank lending facilities and a reduction in the provision of credit to the economy (Table 2).

43. The decision to relax macroprudential buffers needs to be based to a considerable extent on judgment. This can draw on early-warning signs of impending distress, if available, but since these indicators cannot be expected to fully capture financial conditions, and may give rise to false alarms, judgment needs to play a major role, drawing on market intelligence, supervisory assessments and stress tests ([ESRB, 2014](#)). In such situations, uncertainty will be particularly high, increasing the need for intensive surveillance and judicious use of indicators.

How to take account of trade-offs in relaxation?

44. A relaxation of macroprudential tools needs to recognize the need to ensure the resilience of the system to future shocks. To mitigate the resulting trade-off, adequate buffers will need to be built up in good times, and their relaxation should not go beyond those levels that are considered safe through downturn conditions, thereby serving as a permanent floor.¹² This is also an area where tensions between macroprudential and microprudential perspectives can arise ([IMF, 2013a](#)). Staff should take this into account in their advice on the design of macroprudential tools ex ante. For instance,

- Staff should encourage a sufficient range of variation of the CCBs (beyond the commonly used benchmark of 2.5 percent of risk-weighted assets) and dynamic provisions, to create sufficient policy space for the relaxation phase (e.g., [Finland Staff Report 2014](#));
- Staff should encourage the authorities to define a maximum LTV and DSTI ratio that are considered safe in downturn conditions (perhaps around 85 percent and 45 percent, respectively).¹³ This can then provide policy space for a tightening of these measures, as risk are building up, and for a relaxation in periods of stress (Detailed Guidance: Household sector tools);

¹² These floors may be based on international minimum standards, or could be pre-agreed between macroprudential policymakers and microprudential authorities. Such agreements can then also help address potential conflicts between the microprudential perspective, which will focus on maintaining resilience, and the macroprudential perspective, which will be more aware of the trade-offs between maintaining resilience and supporting the provision of credit to the economy ([IMF, 2013a](#)).

¹³ These numbers are indicative only, drawing on the empirical observation that the average of maximum LTV and DSTI ratios across countries is around 80 and 40 percent respectively. See further Detailed Guidance: Household sector tools.

- Staff may want to encourage liquidity ratios to be calibrated more tightly to address systemic liquidity risk, in order to create policy space for a relaxation in a manner that respects prudential minima in downturns. This is relevant in particular for the net stable funding ratio, where the Basel calibration will, in any case, need to take full account of country-specific circumstances, and may therefore often need to be tighter than the Basel minimum ([Gobat and others, 2014](#)).

45. Tools can be relaxed more readily where the effect on resilience is small. For instance, where a relaxation of broad-based or sectoral capital tools is designed to be confined to new exposures, this has less of an effect on banks' resilience ([BoE, 2014](#)). Similarly, a relaxation of caps on LTV and DSTI ratios will by construction only affect new loans and refinancing, thereby preserving resilience for existing exposures. A relaxation of stamp duties can be useful to support the housing market and should be considered before relaxing LTV/DSTI, since a relaxation does not reduce the resilience of borrowers or banks ([Hong Kong SAR Staff Report, 2014](#)).

46. Whether any given tool should be relaxed depends on the extent to which it serves as an automatic stabilizer or even a permanent risk mitigating measure. In particular, tools that address risks in the structural dimension, and tools to address FX risks in the household and corporate sector will rarely need to be relaxed.

What influences the effectiveness of a relaxation of macroprudential tools?

47. The effect of a relaxation of tools on credit is likely to depend on circumstances and will need to be assessed in each case. In general, the effect of a relaxation of a tool on credit will be the stronger the more it acts a binding constraint on the provision of credit.

- For capital tools, constraints are more likely to be binding in bad times, when earnings are subdued and finding new equity is difficult ([IMF, 2013d](#)). However, market discipline may impose a tighter constraint when buffers are not regarded as sufficient to ensure resilience, thereby reducing the effect on credit of a relaxation of capital tools.
- For LTV and DSTI tools, the effects on mortgage credit will depend on the share of existing borrowers that is constrained by the effect of falling house prices on their ability to refinance at prevailing LTV ratios, and on the new demand for houses that can be unlocked by a relaxation of DSTI and LTV. It will also depend on the extent that banks will respond to changes in the cap.
- In the presence of liquidity stress, liquidity tools are likely to become binding and a relaxation of liquidity tools should then help sustain credit and avoid fire-sales in such periods. A relaxation can also accommodate investors' preference to shorten the maturity of funding provided to banks in stressed conditions and need therefore not entail a loss of confidence.

The existing empirical literature on the effect of a relaxation is surveyed in the Detailed Guidance for each type of tool and is not inconsistent with largely symmetric effects on credit of a relaxation and a tightening of macroprudential tools ([IMF, 2013d](#); [Jiménez and others, 2012](#); [Igan and Kang, 2011](#)).

However, since data on relaxation episodes is still relatively scant, these results should not be read as conclusive.

48. The sequencing of the policy response needs to be tailored to the source of incipient financial stress. For instance, where the outlook for corporate or household solvency weakens substantially without triggering liquidity stress, this would point to the relaxation of broad-based capital or housing related tools rather than liquidity tools. Conversely, where liquidity stresses emerge before there are signs of weakening domestic solvency this would point to a relaxation of liquidity tools rather than other tools. Indeed, where liquidity stresses arise from global shock to investor confidence, it may be appropriate to relax liquidity tools while at the same time increasing capital buffers, or tightening other macroprudential measures, in a bid to restore investor confidence. In such circumstances, other types of policy actions may also be needed, including provision of emergency liquidity assistance by the central bank, since easing of liquidity tools would not by itself typically be adequate to stabilize the situation.

49. To contain an incipient crisis, the relaxation of macroprudential policy tools may need to be supported by other policy action ([IMF, 2013a](#)). This can include monetary policy accommodation, including through an easing of collateral requirements and the provision of emergency liquidity by the central bank. It may also include steps to maintain confidence, such as stress testing of individual banks to demonstrate the ability of the system to withstand future shocks.

D. How Should Macroprudential Policy be Communicated?

50. In principle, staff should advise the authorities to communicate openly on macroprudential policy. Clear communication of policy intentions can improve transmission of macroprudential action, both when measures are taken and when they are relaxed ([IMF, 2013a](#); [Giese and others, 2013](#)). Communication can also promote public understanding of the need for macroprudential measures, counter biases in favor of inaction and enhance legitimacy and accountability of macroprudential policy. This can be achieved by setting out and maintaining a policy strategy, periodically publishing risk assessments, and publishing the records of policy meetings.

What are the benefits of a policy strategy?

51. Staff should encourage the authorities to develop a macroprudential policy strategy ([IMF, 2013a](#)). This should elaborate the objectives of macroprudential policy, explain the decision making process leading up to macroprudential action, and set out the expected transmission of macroprudential tools. Macroprudential policy does not lend itself to mechanical policy rules, and the potential for new data, analytical insights, and changes in the toolkit means that any policy strategy is likely to evolve, requiring that strategy to be updated from time to time. Publication of an ex ante strategy, with these caveats, nonetheless has several important benefits.

- It can foster public awareness of the objectives of macroprudential authorities and of the expected benefits of macroprudential tools. This can help macroprudential authorities establish themselves, create a constituency for financial stability, and promote the public’s acceptance of the need for macroprudential policy ([Domanski and Ng, 2011](#)).
- It can help counter biases in favor of inaction and improve accountability. Where the policy strategy identifies the indicators that will guide macroprudential action, this can establish a degree of commitment to tighten policy settings when indicators are signaling the need for such action ([Goodhart, 2011](#)), even if the decision to take action can never be mechanical and needs to be guided by judgment based on an in-depth analysis.
- It can prepare the market for a relaxation of macroprudential policy buffers. By setting out ex ante that buffers are there to be relaxed to avoid a disruption of credit, the macroprudential authority can condition the market to expect a relaxation of tools. This can reduce the potential for adverse confidence effects in instances when the tools can safely be relaxed.

What are the benefits of periodic risk assessments?

52. Staff should encourage the authorities to publish periodically their assessment of risks, as well as an ex post assessment of measures taken ([IMF, 2013a](#)). Periodic risk assessments should be comprehensive, but include an analysis of the most recent readings of the chosen set of indicators, in order to establish and maintain the authority’s *commitment* to take policy action. Publication of an ex post analysis of the effectiveness of macroprudential measures taken is useful to create a *measure of success* for macroprudential action, which can help build policy credibility. It can also create public support for additional measures where the conclusion is that existing measures have not achieved their objectives. Both risk assessments and assessments of effectiveness may form part of a (semi-annual) Financial Stability Report published by the central bank (as in the United Kingdom (U.K.)), or a periodic report published by the dedicated macroprudential authority (as in the U.S.).

What are benefits of a “record” of meetings?

53. Staff should encourage the authorities to publish a *record* of the meetings of macroprudential decision-makers and announce policy measures taken at the meeting. Publication of a record of meetings should establish transparency on issues discussed and clarity as regards the votes cast by members on policy decisions ([IMF, 2013a](#)). Such a record can help the authority establish a narrative that prepares the market and the public for macroprudential action. It can also signal to the market that macroprudential policy will be used unless there is a change in market behavior (expectations channel). Where such a threat is credible, this can in turn help to change market behavior and reduce the costs associated with the variation of macroprudential tools ([CGFS, 2012](#); [Giese and others, 2013](#)). To promote accountability, the record should identify the key decisions taken at the meeting. Where votes cast are identified this increases the chance that those opposing actions need to explain themselves when a crisis strikes.

54. However, the staff should not in general call for the publication of detailed *minutes*.

The macroprudential authority needs to retain discretion on the detail of the deliberations for three main reasons. First, where the deliberations amount to an early de facto announcement of new measures that affect the flow of credit, such as LTV, the release of this information can lead to unwelcome frontloading of activity. Second, the record needs to be conscious of the need to avoid adverse market reactions in periods of financial stress, and the authorities will want to be cautious about releasing institution-specific information. Third, the authorities may on occasion be conscious of the potential for a public or political backlash from revealing details of their deliberations. More generally, staff's advice should take into account the potential drawbacks of open communication as well as of ways of addressing them.¹⁴

E. How to Address Leakages of Macroprudential Policy Tools?

55. Staff should assess the potential for leakages of macroprudential policy tools and, where feasible, advise on strategies to address such leakages. Leakages refer to the migration of financial activity outside the scope of application and enforcement of the macroprudential tool, potentially undermining the objectives of the policy measures. Leakages can be *domestic*, where activity migrates to domestic providers of financial services that are outside the initial scope of application of macroprudential tools. Specifically, with measures often targeting banks, regulatory arbitrage can drive activity into the nonbank financial sector, highlighting the need for surveillance and macroprudential policy to cover this sector. Leakages can also be *cross-border*, where activity moves to foreign providers of financial services (branches or subsidiaries of foreign entities or foreign entities directly, potentially including nonbanks) that are outside of scope of enforcement of the national measures.

56. Staff and the authorities should assess the scope for leakages ex ante and monitor them ex post. Leakages can be rapid, thus IMF surveillance should assess this risk ex ante, and consider preemptive measures to avoid them. When macroprudential policy measures are introduced, the staff should also attempt to monitor the extent of leakages, based on data on nonbank activity (for domestic leakages), and on cross-border credit flows (for cross-border leakages), and advise on possible remedies in the light of the assessment.

57. The main strategies to address leakages amount to an expansion of the scope of application of macroprudential policy tools. In principle, the scope of macroprudential policy tools can be expanded to domestic nonbanks and connected entities, as well as to foreign providers of financial services, even though this can also present difficult legal and operational challenges, and may not always be feasible. The scope for and the practical challenges in addressing leakages differ across macroprudential tools.

¹⁴ For instance, a political or public backlash from the release of policy intentions can be avoided by a prior publication of a policy strategy that builds a constituency for financial stability and helps in establishing predictability of actions. In periods of stress, negative but clear and reliable information can often be better for confidence than positive but uncertain information ([Ekholm, 2012](#)).

How to contain leakages of broad-based and corporate sector tools?

58. Temporary increases in capital requirements, increases in sectoral risk weights and caps on credit growth can be subject to both domestic and cross-border leakages. Domestic leakages can occur through increases in lending by connected nonbank entities and need to be addressed by requirements to consolidate such activity. An example is increased provision of credit in Croatia by bank-affiliated leasing companies that was addressed by regulations that captured this activity within the scope of the macroprudential tool. Cross-border leakages pose major challenges for capital requirements and caps on credit growth, since they do not initially apply either to foreign branches or to the direct provision of credit from across the border. They are particularly acute for measures that aim to address excessive credit to the corporate sector, when local corporations are able to borrow directly from abroad and in international markets. Strategies to address these leakages can include reciprocity arrangements, greater host-control, CFMs and fiscal policy (Box 2).

How to contain circumvention of household sector tools?

59. For tools that constrain the availability of bank credit to households, such as LTV and DSTI limits, the main challenge is to address domestic leakage. In principle, borrower eligibility criteria can be applied to all *products* that are offered by any financial institution within a country and enforced on all regulated institutions by the relevant supervisory agencies, including on foreign branches as necessary ([BoE, 2011](#)). This will require the cooperation of separate supervisory agencies, where they exist, but can otherwise be straightforward. An example is Korea where LTV ratios have, since 2009 been applied to lending by nonbank financial institution that were already within the purview of the single regulatory agency. However, extending the tools to unregulated entities may require a prior step of expanding the licensing regime to such institutions. Finally, arbitrage can occur where government-provided insurance and securitization programs co-exist with private label securitization, but the latter is not subject to the same eligibility standards.¹⁵ To address this issue, staff may recommend the same standards for both private and public entities that securitize and/or guarantee mortgage backed securities. For instance, in Canada in 2008 the authorities mandated private mortgage insurers to follow the eligibility rules set for the government-owned mortgage insurer. Direct cross-border leakages are less likely for household loans, since foreign banks are often at a disadvantage in appraising local retail credits, and in collecting and realizing local collateral. The strategies set out in Box 2 may be considered where there is greater scope for cross-border leakages of household sector tools, such as in closely integrated regions.

¹⁵ For example, in the U.S., LTV limits on conforming mortgages for securitizations by Government Sponsored Entities sparked an increase in private label securitizations where the average LTV ratio was often much higher. A similar trend occurred in Canada before the crisis.

Box 2. Strategies to Address Cross-Border Leakages

- Reciprocity.** The reciprocity principle is a cornerstone of the Basel III agreement on the CCB. When the buffer is activated in one country, reciprocity requires supervisory authorities in all countries to apply the same buffer on their banks' exposures into the host country where the buffer is applied and as long as the buffer does not exceed 2.5 percent of risk-weighted assets (above which reciprocity is voluntary). Therefore, internationally active banks with exposures into various countries will face the CCB as a weighted average of the CCBs pertaining in all countries where they have exposures. In this way, the jurisdictional reciprocity will also preclude incentives to circumvent the CCB. For example, with reciprocity the branches of foreign banks will be treated in the same way as subsidiaries of foreign banks. In the European Union (EU), reciprocity for the CCB is enshrined in the Capital Requirements Directive (CRD). However, there is currently no international agreement that would mandate reciprocity for increases in sectoral risk weights for corporate exposures, where the scope for cross-border arbitrage may be greatest. Staff should encourage such agreements at the bilateral or regional level between countries and in regions that are highly financially integrated.¹
- Greater host control.** Countries can stipulate that where banks want to open or maintain a local affiliate, that this is incorporated as a subsidiary, rather than operating as a branch. This can ensure that the affiliate can be subject to local capital and other macroprudential regulation. Some countries (e.g., Brazil, Mexico, and New Zealand) encourage, or require, subsidiarization of local business units as a matter of course ([IMF SDN/11/04](#)) and a number of other countries are moving in this direction.² However, in some countries, such as members of the EU, legal constraints prevent host jurisdictions from converting branches to subsidiaries, since this is deemed contrary to a common market in financial services.³ Moreover, greater host control also has costs for the parent institutions, such as when capital and liquidity are required to be held in and 'ring-fenced' by the host country ([IMF, 2013a](#)). Staff's advice on these measures should be in line with the general principles that govern the analysis of spillovers from local policy actions. Staff should discuss with the authorities the full range of spillovers from policies when they may have a significant impact on global stability, consistent with the ISD. Although members have no obligation to change policies as long as they promote their own stability, staff should recommend alternative policies (where available) that attain the same objective at reduced costs to other countries.
- Capital flow management measures and fiscal policy.** When an inflow surge leads to a rapid increase in credit provided to local corporations by international nonbank investors and this contributes to systemic financial risks, then measures designed to limit these inflows (and therefore considered also to be CFMs) may be useful, provided they do not substitute for warranted macroeconomic adjustment and financial sector regulation, and do not divert flows in such a way as to exacerbate vulnerabilities in other segments of the economy ([IMF, 2012a](#)). An alternative to such measures is increased taxation of corporate sector profits that reduces the demand for corporate credit, as well as measures that correct the tax bias in favor of corporate debt ([IMF, 2013b](#)). Consideration can also be given to measures that penalize FX borrowing through changes of the corporate tax code.

¹ An expansion of reciprocity to sectoral capital requirements is under consideration among the Nordic countries, while the ESRB has called for reciprocity of FX measures across the EU.

² For instance, in the U.K., the Prudential Regulation Authority has recently published a consultation paper which suggests that non-EU international banks wishing to conduct retail banking in the U.K. may be forced to set up a U.K. subsidiary. The Reserve Bank of India has issued guidelines for foreign banks to open subsidiaries in India that would require all foreign branches to be converted into subsidiaries.

³ While responsibility for branch supervision rests with the home supervisor, Article 42(a) of the EU's CRD stipulates conditions under which the host may designate a branch operating in its jurisdiction as significant (i.e., systemically important). Designation of such a branch as significant improves the host's capacity to supervise the branch.

How to address leakages of liquidity tools?

60. Where liquidity tools are applied to the domestic banking system, maturity transformation can migrate to domestic nonbanks. Where sizable maturity transformation starts to occur in parts of the system that remain connected to the banking system (as with Asset Backed Commercial Paper conduits ahead of the crisis), such activity can be consolidated on the balance sheet of the core system, and thereby be subject to the scope of the liquidity tools. Liquidity tools can also be extended to nonbank providers of maturity transformation directly, even if this requires the cooperation of separate supervisory agencies (see further Detailed Guidance: Liquidity tools). An example is U.S. Money Market Mutual Funds where liquidity requirements have been tightened since the crisis. Finally, it is a long established international principle that regulatory authorities can apply liquidity requirements to both foreign subsidiaries and branches (Basel Concordat), reducing the scope for cross-border leakage of liquidity tools. Moreover, it is possible, in principle, for central banks to apply reserve requirements to nonbank financial companies (as in Turkey and Serbia), as well as foreign branches, again reducing the scope for cross-border leakages.

COUNTRY CHARACTERISTICS AND OTHER POLICY SETTINGS

A. How Should Country Characteristics Shape the Policy Advice?

61. Staff's advice on macroprudential policy needs to take full account of country circumstances. Staff's advice in the time dimension should reflect a wide range of factors, including (i) the availability of data and strength of supervisory capacity, (ii) the level of debt to GDP and pace of growth of credit, (iii) the country's economic structure, such as its degree of diversification, (iv) the degree of capital account openness and financial integration. The need for the staff's advice in the structural dimension will be determined by the size, structure and complexity of the financial system. While some of these factors will vary with a country's level of economic development, the distinction between low income, emerging and advanced economies is, in general, less useful as a starting point for the staff's advice.¹⁶ Further considerations for low income countries are set out in a dedicated note.

What country-characteristics can shape the approach to time-varying policies?

62. Lack of data and supervisory capacity can constrain macroprudential policy. Both the assessment of systemic vulnerabilities and the deployment of macroprudential tools can be hampered by lack of data and supervisory capacity. This applies to low income countries, where economic and financial data are often lacking and supervisory capacity tends to be weak, as well as to emerging and advanced economies, where data availability and supervisory capacity has not kept

¹⁶ Indeed, empirically, there is little correlation between a country's level of per capita income and the incidence of financial crises ([Reinhart and Rogoff, 2009](#)).

up with financial development and increasing cross-border financial integration. Staff will therefore often have to emphasize the need for improvements in these areas as a precondition for effective use of macroprudential policies. For instance, the effective enforcement of tools applied to borrowers, such as LTV and DSTI relies on a prior establishment of a credit register that allows the computation of these ratios at the borrower level. Where detailed information is missing or the supervisory environment is weak, there may also need to be a greater emphasis on permanent capital buffers to help increase resilience of the banking system to shocks.

63. Analysis of the ratio of credit to GDP should be a starting point in the staff's advice irrespective of a country's level of financial development. An expansion of credit can contribute to financial deepening and economic development. However, a rapid growth in credit relative to economic activity can signal the need to take action even when financial depth has started from a low level. The literature finds that systemic crises are usually preceded by a rapid growth in credit relative to GDP, and that this holds true across different levels of financial development ([Dell'Ariccia and others, 2012](#)). Specifically, the literature finds that the "credit to GDP gap," defined as the deviation in the ratio of credit to GDP from its long run trend, is the best *single* early-warning indicator of crises, signaling crises five to three years in advance.¹⁷ Importantly, this measure accounts for differences in the trend growth in credit to GDP, and therefore accommodates, in principle, the need for financial deepening (see further Detailed Guidance: Broad-based tools). While the initial BIS studies have tested this measure on samples of advanced economies, the more recent literature has confirmed its signaling properties also for emerging market economies ([ESRB, 2014](#); [Drehmann and Tsatsaronis, 2014](#)) for further considerations for low income countries see dedicated note). Nevertheless, the potential for Type I and Type II errors of any single early warning indicator means that it should be used as part of a broader assessment of systemic risks.¹⁸

64. The staff should take account of further country-specific factors in evaluating the systemic risk arising from increases in the ratio of credit to GDP. This should include factors that contribute to healthy financial deepening as well as those pointing to increased systemic risk (as discussed further in the dedicated note on low income countries).

- Improvements in the legal framework, such as reforms that enable greater mobilization of collateral; in lenders' information on borrowers, such as through establishment of a credit

¹⁷ The credit gap is the best single early warning indicator in the sense that it best balances the potential for Type I and Type II errors when compared to other potential indicators. See further [Drehmann and Tsatsaronis \(2014\)](#). However, the credit gap is not foolproof and should be combined with a range of additional indicators. Staff should also be aware of its statistical caveats that are reviewed in the Detailed Guidance: Broad-based tools and [Drehmann and Tsatsaronis \(2014\)](#).

¹⁸ See further Detailed Guidance: Broad-based tools. It is important to recognize that computation of the credit gap requires quarterly series of both credit aggregates and GDP of at least ten years. Where such series are unavailable the assessment should start with the other credit measures suggested in the Detailed Guidance: Broad-based tools, such as the annual growth in the ratio of credit to GDP.

register; and in the payment and market infrastructures supporting interbank markets, can improve access to credit and support a process of sound financial deepening.

- Where rapid credit growth is fuelled by financial and capital account liberalization, and is associated with increased competition, a deterioration of lending standards and increased use of wholesale funding, this can exacerbate the build-up of systemic risks and strengthens the case for macroprudential action.

65. Even where credit growth has slowed there can be a need for macroprudential action.

Where a prolonged credit boom has resulted in a high level of private sector indebtedness, possibly accompanied by asset price overvaluation, there may be a need for macroprudential action, even if credit growth has more recently slowed.¹⁹ A high level of household or corporate indebtedness can amplify the vulnerability of borrowers and the financial sector to income, interest rate and asset price shocks. This can justify the imposition of capital buffers to protect the financial system even where credit growth has slowed and the credit gap has closed. Other tools that target the resilience of borrowers and might induce a gradual deleveraging of the private sector (e.g., LTVs, LTIs, DSTIs) should also be considered.

66. A country's economic structure can shape the approach to macroprudential policy.

Where the financial and business cycles move in lockstep and are driven by volatile external factors, the macroprudential approach needs to emphasize establishing a high degree of resilience of the financial system, so it can withstand large negative shock to the economy and the repayment capacity of the nonfinancial private sector. This is particularly important for countries characterized by a low degree of economic diversification, with credit flowing into a small number of primary (e.g., agricultural) sectors, which exposes the economy and its financial system to external shocks from volatile commodity prices. Many low income countries fall into this category. Similarly, in resource-rich countries economic and financial cycles are often closely aligned and driven by volatile commodity prices ([IMF SDN/14/1](#)). This calls for a more rules-based approach to macroprudential policy that works through automatic stabilizers (e.g., dynamic provisioning regimes, and conservatively calibrated LTV and DSTI ratios), with calibration still guided by judgment. These can usefully be complemented by permanent capital buffers beyond the international minima which would be relaxed only in the event of a large external shock.²⁰ The creation of macroprudential policy buffers should be accompanied by the creation of fiscal buffers so as to allow for them to be used in the event of large adverse shocks to the economy ([IMF SDN/14/1](#)).

67. Capital account liberalization increases the need for macroprudential policy. As set out in [IMF \(2012a\)](#), full capital account liberalization is not an appropriate goal for all countries at all times, and where capital accounts are liberalized, this should proceed gradually and sequentially,

¹⁹ This situation has recently been relevant for a number of countries, including the Netherlands, New Zealand, and Sweden.

²⁰ An example is the "systemic risk buffer" that was introduced in the EU to address systemic risk from volatile economic conditions, and that is being adopted by Norway and a number of former accession countries.

starting with the liberalization of foreign direct investment and the lifting of controls on resident outflows. The liberalization of portfolio and banking inflows needs to be managed carefully, including through strong macroprudential policy to address a potential build-up of financial stability risks. In particular, the potential for a build-up of systemic risks from increases in short-term wholesale funding of the banking system and increased FX exposures for the corporate sector will need to be managed using liquidity and FX related macroprudential policy tools. More broadly, capital account liberalization can lead to a greater exposure to global financial conditions and reduction of monetary policy autonomy, and can require measures that counter increases in financial stability risks from low interest rates in major currencies and interest rate differentials to these rates.

68. Financial integration increases the scope for cross-border leakages of macroprudential policy, requiring a greater emphasis on strategies to address these leakages. A range of macroprudential tools (such as the CCB and sectoral capital tools) can increase the resilience of the domestic financial system to risks from rapid increases in credit to domestic borrowers. However, these measures will often lead to an unwelcome shift towards a provision of credit across borders. In countries or regions that are highly financially integrated, this puts a premium on strategies to address these leakages (see, e.g., [Norway Staff Report, 2014](#)). As set out in the separate section, these include reciprocity arrangements for macroprudential tools that are in use at the regional level. An alternative is the establishment of closer regulatory control for host authorities over foreign branches. Both these approaches aim to level the playing field between foreign and domestic providers of credit, by ensuring the same regulatory constraints are applied across all relevant providers of credit in the region. They should be combined with mechanisms to monitor risks and cross-border impacts of regulatory responses at the regional level. The ESRB and the Nordic-Baltic Macroprudential Forum are existing examples of such regional mechanisms.

What country-characteristics can inform the advice on policies in the structural dimension?

69. Where the financial system is large and interconnected there is greater need for structural measures to contain the resulting risks. Where financial system assets are large as a percentage of GDP, inter-linkages between institutions or asset concentration within institutions are likely to render individual institutions “too important to fail,” or even “too big to save.” Staff should then consider advising the introduction of capital surcharges on domestic systemically important institutions, in line with the Basel Guidance, as well as other measures to contain the likelihood and impact of failure of such institutions (see further Detailed Guidance: Structural tools). This can be even more important when such institutions operate across borders, in funding markets (e.g., the Icelandic banks), in credit markets (e.g., Nordic countries), or derivatives markets (e.g., AIG), since their failure can then have systemic cross-border spillovers. Greater emphasis on assessing inter-linkages and measures to contain the likelihood of knock-on defaults will also typically be warranted where the domestic system is complex, and characterized by cross-exposures in funding or derivatives markets between banks and nonbank institutions.

70. Structural measures may also be required in highly concentrated systems, even if interconnectedness is low. Even where the system is mainly bank-based and interbank markets are shallow, as in many emerging and low income countries, a concentrated banking system can give rise to a situation where most or all banks are systemically important for that economy. Given the objective of limiting systemic risk, macroprudential measures then have a role to play in containing these banks' risk of failure (supplementing enhanced supervision of these institutions) (e.g., Georgia FSSA, forthcoming).

B. How Does the Policy Advice Depend on Other Policy Settings?

71. The staff's advice should also take account of other macroeconomic policy settings.

The staff should take into account the prevailing monetary conditions, as well as other relevant policy settings, including fiscal, structural, and other financial sector policies, and advise on the policy mix that is best suited to achieve both financial and macroeconomic stability. Care is needed to ensure that macroprudential policy measures do not become a substitute for needed macroeconomic policy adjustment.

How should the advice take account of monetary policy settings?

72. Macroprudential measures may be needed to contain potential adverse effects for financial stability of the monetary policy stance (IMF, 2013a). When the economy is weak and inflation is subdued, an accommodative monetary policy that is appropriate to achieve price stability can result in a build-up of financial stability risks. It can lead to incipient feedback between asset prices and leverage that increases the vulnerability of borrowers to shocks to asset prices when monetary policy is subsequently tightened. It can also lead to an increasing prevalence of variable rate contracts that increase borrowers' exposure to interest rate risk. Where such developments are observed, tools are needed to contain the side effects of monetary policy on financial stability. In particular, if such developments are observed in real estate markets, it is important to counter unsustainable increases in asset prices relative to household income and an erosion of lending standards, including through tightening of LTV and/or LTI ratios and the application of (stressed) DSTI ratios (IMF, 2013d; Detailed Guidance: Household sector tools). To counter increased prevalence of interest-only mortgages and overstretched borrower balance sheets, the staff can also advise on the need to introduce maximum amortization periods for mortgage loans (as used in Canada, the Netherlands, Hong Kong SAR, and Singapore).

73. In small open and emerging economies, differentials between domestic and foreign policy rates can lead to an increase in FX and liquidity risks. Higher local interest rates compared to those on major currencies can lead to rapid increases in FX-denominated borrowing by households and corporations, and short-term FX borrowing by the financial system (as in some countries in central and eastern Europe ahead of the crisis and more recently in a range of emerging markets). Such developments can lead to increased credit risk, when domestic borrowers are unhedged and exposed to a depreciation of the local currency, and increased rollover risks for the financial system, even when its currency risks are hedged. Staff should investigate the need for macroprudential measures to contain these risks. For FX-induced credit risks, tools include higher

risk weights, tighter LTV and DSTI ratios for FX loans, and caps on the share of FX loans in total new loans. For liquidity risks, tools that penalize and lengthen the average maturity of FX wholesale funding could be used, such as differentiated reserve requirements and liquidity buffers applied by currency, core funding ratios and levies on FX wholesale funding (see further Detailed Guidance: Liquidity tools).

74. Particular challenges may arise in currency unions, such as the European Monetary Union ([IMF, 2013d](#)). When the policy rate is chosen at the center, the effective monetary policy stance and real interest rate can differ across countries in a union. This in turn can lead to a credit boom or an asset bubble in one country, but not in another. Macroprudential policies are then needed to address side effects of the monetary policy stance on financial stability at the national level. Moreover, to avoid cross-border arbitrage in the presence of a high degree of cross-border banking activity, these policies will need to be coordinated across members of the union.²¹

75. Similar considerations apply for currency pegs and currency boards. Under such exchange arrangements and with open capital accounts, the effective monetary policy stance results from policy decisions made elsewhere. In the absence of exchange rate flexibility, strong countercyclical fiscal policy is needed to manage aggregate demand, alongside macroprudential policy that addresses the risk of financial instability from credit booms and asset bubbles ([IMF SDN/14/1](#)).

How can other policies reduce the burden on macroprudential policy?

76. Given that macroprudential policy cannot be expected to work perfectly (due to leakages, and uncertain strength of effects), staff should explore potential changes in other policy setting to avoid overburdening macroprudential policy.

- **Where the monetary policy stance is inappropriately loose, tighter policy can reduce the burden on macroprudential policy to contain side effects from monetary policy.** When inappropriately loose monetary policy fuels a domestic demand boom and increases in systemic risk, a monetary tightening is called for. By contrast, where monetary policy is judged appropriately set to achieve output and price stability, macroprudential policies should be the first line of defense in addressing the side effects of monetary policy on financial stability. However, staff may also want to explore whether changes in the fiscal stance can improve the overall policy mix. For instance, greater fiscal support for the economy can reduce the need for long periods of low policy rates and alleviate the potential risks to financial stability posed by low rates (as noted in [U.S. Staff Report, 2014](#)).

²¹ In the euro area and wider EU, the ESRB is tasked with such a coordinating role, in concert also with the Single Supervisory Mechanism within the euro area, which is being given a “top-up” power as regards the tools established for national authorities by the Capital Requirements Directive and Regulation. This directive also establishes mandatory reciprocity in the application of the CCB across members of the EU.

- **When systemic vulnerabilities are driven by real external imbalances, appropriate fiscal and structural policies are needed to address these imbalances.** A widening current account deficit can contribute to the build-up of systemic risk, and be driven by structurally low domestic savings rates and an erosion of domestic competitiveness. These real imbalances should be addressed by appropriate fiscal policy settings and structural policies to boost savings and competitiveness. Macroprudential policy can complement, but should not substitute for the macroeconomic policies that are required to deliver these real adjustments.
- **Correcting tax biases in favor of debt financing can help reduce systemic risk.** Many countries provide relief for mortgage interest but do not (or only lightly) tax imputed rent, thereby contributing to household indebtedness. Similarly, corporate tax systems generally encourage the use of debt rather than equity finance, encouraging leverage for both nonfinancial and financial institutions. This creates a tension between macroprudential measures to reduce household, corporate and banking sector leverage and tax incentives that promote leverage. Correcting these biases can help reduce the burden on macroprudential policy ([IMF, 2013b](#)).
- **Adverse feedback between deteriorating sovereign and financial sector solvency should be countered by strong ex ante fiscal and resolution frameworks.** Macroprudential policy is ill-equipped to prevent or counter such feedback loops once they set in. Instead, a strong fiscal framework is needed to avoid excessive sovereign indebtedness, complemented by an effective resolution framework that is able to reduce fiscal outlays in the event of a systemic crisis.
- **Systemic liquidity risks arising in nonbank financial markets can require policy responses beyond the use of macroprudential tools.** In principle macroprudential intervention can be extended to nonbank financial intermediaries and activities, including money market mutual funds, other collective investment schemes, and securities lending markets, to reduce the risk of a run and fire sale externalities, even if the experience with such interventions is limited to date (see further Detailed Guidance: Liquidity tools). In developing and emerging markets, there can also be scope to develop local markets to increase resilience, e.g., by improving the ability of long-term institutional investors, such as insurance and pension funds, to absorb sudden changes in capital flows. There may also be a need to assess the ability of the government or the central bank to provide liquidity in times of stress (see further Detailed Guidance: Liquidity tools).

KEY PRINCIPLES FOR THE INSTITUTIONAL ADVICE

77. A strong institutional framework is essential to ensure that macroprudential policy can work effectively. The framework needs to assure *willingness to act* and counter biases for inaction or insufficiently timely action that can arise from difficulties in quantifying the benefits of macroprudential action, which are often exacerbated by lobbying by the financial industry and political pressures. A clear mandate can counter these biases and underpin the legitimacy of policy action, when surveillance points to elevated systemic risks. Equally important, the framework needs to foster the *ability to act* in the face of evolving systemic threats, by assuring access to information and an effective surveillance capacity, and assigning an appropriate range and reach of

macroprudential instruments to the macroprudential authority. It needs finally to promote *effective cooperation* in risk assessments and mitigation, in a manner that preserves the autonomy of separate policy functions ([IMF, 2013a](#); [IMF SDN/11/18](#); [IMF, 2013c](#)).

78. Where an institutional framework is lacking or is evidently deficient, this can pose material risks for both domestic and global stability ([IMF, 2013a](#)). In line with established principles, bilateral surveillance should cover such risks. In countries where a macroprudential framework has not yet been established, or where there is evidence that the framework is not effective in promoting the authorities' ability and willingness to act against systemic threats, the staff should develop recommendations on ways of strengthening the framework. Some of the key principles are set out below. In addition, the staff are advised to consult further analysis of mechanisms to address weaknesses of institutional frameworks, as set out in [IMF SDN/11/18](#) and [IMF \(2013c\)](#).

A. How Can the Framework Assure "Willingness to Act?"

79. To strengthen 'willingness to act,' it is important that the macroprudential mandate is assigned to a body or a committee. Where a clear assignment is lacking, collective action problems can lead to underinvestment in systemic risk identification and mitigation across agencies and reduce accountability, since no one is fully responsible for the crisis outcome.

80. It is desirable for the central bank to play an important role in macroprudential policy ([IMF, 2011a](#); [IMF SDN/11/18](#); [IMF, 2013a](#)). This can harness the expertise of the central bank in systemic risk identification and its incentives to ensure macroprudential policy is pursued effectively. It can foster policy coordination between macroprudential and monetary policy in a manner that preserves the independent pursuit of the latter. It can finally help shield macroprudential policymaking from political interference that can slow the deployment of tools or bias their use toward other objectives.

81. In practice, these two basic principles lead to the increasing prevalence of three models for macroprudential policymaking:

- **Model 1:** The macroprudential mandate is assigned to the central bank, with its Board or Governor making macroprudential decisions (as in the Czech Republic, Ireland, New Zealand, and Singapore). This model is natural in integrated arrangements where the central bank already concentrates the relevant regulatory and supervisory powers. Where supervisory and regulatory agencies are established outside the central bank the assignment of the mandate to the central bank is usefully complemented by coordination mechanisms, such as a coordination committee chaired by the central bank, and explicit powers assigned to the central bank to make recommendations to other regulatory bodies (as in Norway and Switzerland).
- **Model 2:** The macroprudential mandate is assigned to a dedicated committee within the central bank structure (as in the U.K. and in Malaysia). This setup can help counter the risk of dual mandates for the central bank, by creating dedicated objectives and decision-making structures

for monetary and macroprudential policy even as both policy functions are under the roof of the central bank (see further [IMF, 2013e](#)). It also allows for separate supervisory agencies and external experts to participate in the decision-making committee. This can foster an open discussion of trade-offs that brings to bear a range of perspectives and helps discipline the powers assigned to the central bank.

- **Model 3:** The macroprudential mandate is assigned to a committee outside the central bank, with the central bank participating on the macroprudential committee (as in Australia, France and the U.S.). This model can accommodate a stronger role of the Ministry of Finance (MoF). Participation of the MoF on the committee can be useful when changes in legislation are needed to expand the macroprudential toolkit or the regulatory perimeter and when cooperation of the fiscal authority is needed to mitigate systemic risk. Some of these benefits can alternatively be achieved by informal coordination arrangements, and the ability of the macroprudential authority to make soft recommendations to the MoF (see further below).

82. A dominant role of the MoF risks delaying macroprudential action and can compromise the independence of participating agencies, including the central bank and separate supervisory agencies ([IMF SDN/11/18](#), [IMF, 2013a](#)). Some of these risks can be countered by assigning the central bank the chairmanship on a macroprudential committee (as in Australia), a strong voice (as in Mexico) or a veto over policy decisions (as in Germany). It is desirable also to ensure a strong role of the central bank in providing its independent analysis to the committee (as in Germany).

83. A well-defined objective is essential to foster willingness to act. Setting out a clear objective in law can form the basis for a framework to hold the policymaker accountable for achieving its objective, thereby reducing the risk of inaction. A well-defined objective can also guard against the risk of abuse of macroprudential policy, and help counter pressures to use macroprudential policy as a substitute for policy action in other areas, such as fiscal and structural policy.

- The objective can articulate the scope of responsibilities of the macroprudential policymaker in both the time and structural dimension. For instance, it might specify that the policymaker should work to (i) maintain the overall resilience of the system; (ii) contain risks from unsustainable increases in credit and leverage; and (iii) contain structural risks from inter-linkages within the financial system.
- To help ensure that the macroprudential policymaker recognizes trade-offs in the pursuit of financial stability, it can be appropriate to specify secondary objectives, such as ensuring the financial system supports long-run economic growth, or protecting the interests of depositors. In this case, the primary objective needs to be given clear priority.

84. In addition to a well-defined objective, an accountability framework can include a range of communication tools. Such tools can help the public establish whether the authority is taking appropriate action to achieve its objective. They can also influence the effective conduct of

the macroprudential policymaker, by establishing its commitment and public accountability, thereby fostering the effective pursuit of the objective (see further the separate section).

85. Willingness to act can be enhanced by establishing dedicated financial stability units.

A dedicated financial stability unit or department can be charged with the analysis of systemic risks, the development and monitoring of core indicators appropriate for the country, and the preparation of proposals for policy responses for consideration by the macroprudential decision-makers. Such a unit is usefully established within the central bank to enable it to perform its key role in macroprudential policy. It can also be useful to establish working-level subcommittees to the main macroprudential committee, so as to prepare policy responses. Where the treasury plays an important role on the council an independent office within treasury can also be useful to support its work (such as the U.S. Office for Financial Research).

B. What Powers are Needed to Assure “Ability to Act?”

86. Since financial systems evolve with time, assessing and limiting systemic risk requires powers, in order to assure the “ability to act.” Powers are needed to ensure the policymaker can obtain information from other agencies and to fill data gaps (information powers); influence the activation and calibration of regulatory constraints (calibration powers); designate individual institutions as systemically important; and initiate changes in the regulatory perimeter to capture collectively important providers of credit and liquidity (designation powers) ([IMF, 2011a](#)).

87. The strength of such powers can vary, and be “hard (direct),” giving the policymaker direct control, “semi-hard,” enabling the policymaker to make formal recommendations to other agencies, coupled with a ‘comply or explain’ mechanism, or “soft,” enabling the policymaker to express an opinion, or a recommendation that is not subject to comply or explain. Each type of power can be useful and the effectiveness of the policy frameworks can benefit from a combination of these powers, even as soft powers alone are unlikely to be sufficient to ensure effectiveness of the framework ([IMF, 2013a](#)).

- **Hard powers avoid delay and other frictions in implementation that can arise when there is a need for cooperation by other policymakers.** They can be useful for tools that control the rapid build-up of risks in the time dimension (as in the U.K.), as well as for the designation of individual systemically important institutions (as in the U.S.). Direct powers can increase effectiveness of policy since they provide the macroprudential policymaker with a ‘stick’ that she can credibly threaten to use. Direct powers are useful also as a ‘back-up’ power, in the event that other agencies are unwilling or unable to act. An example is the back-up power on the part of the U.S. Office for Financial Research to collect information directly from firms.
- **The advantage of a power to recommend actions, coupled with a ‘comply or explain’ mechanism, is that it is broad.** Recommendations can be used to influence the whole range of regulatory actions that can be taken by other supervisory and regulatory agencies. The ‘comply or explain’ mechanism is important for effectiveness since it increases the chance of compliance and ensures transparency and public accountability as regards cooperation by other agencies.

When separate supervisory agencies can point to the recommendation by the macroprudential authority this can also strengthen their hand and help overcome industry opposition or political pressure.

- **Soft powers are useful to extend the influence of the macroprudential policymaker beyond prudential tools and the existing regulatory perimeter.** A soft recommendation is appropriate when the macroprudential policymaker addresses the legislature, to initiate the establishment of new macroprudential tools or changes in the legal framework to extend the regulatory perimeter. Soft powers can also be appropriate when effective mitigation of systemic risk requires cooperation beyond the regulatory authorities, such as on the part of the fiscal authorities to consider changes in the tax code that fuel the build-up of debt.

C. How Can the Framework Foster Cooperation in Risk Assessment and Mitigation?

88. A range of further mechanisms are needed to ensure cooperation in risk assessment and mitigation. First, legal impediments to the sharing of supervisory data will often need to be resolved. Second, involving the relevant supervisory and regulatory agencies in the decision-making process, such as by admitting these agencies to the macroprudential decision-making body, can help reconcile differences in perspectives and create ownership of decisions taken by a macroprudential committee. Third, it is useful to include financial stability objectives in the mandates of the separate regulators (as in the U.K. for the separate securities regulator). This can reduce conflicts, help foster engagement, and increase compliance with recommendations, by ensuring that powers assigned to these agencies can be used in the pursuit of financial stability ([IMF SDN/11/18](#); [IMF, 2013c](#)).²² Fourth, overlapping membership between the monetary and macroprudential decision-making bodies and the provision of common analysis to both committees (as in the U.K.) can foster coordination with monetary policy, in manner that avoids an erosion of monetary policy independence.

89. Policy coordination in crisis times requires dedicated arrangements that are distinct from the macroprudential policy framework ([IMF SDN/11/18](#)). Even though the relaxation of macroprudential tools can help contain crises, the management of financial crises may require policy action far beyond the use of prudential tools, including monetary easing and emergency liquidity assistance by the central bank, the effective resolution of failing banks by dedicated resolution or deposit insurance agencies, the activation and execution of contingency plans, and potentially public guarantees and capital support provided by the fiscal authorities.

²² Revisions made in the wake of the crisis to the Basel Core Principles now place a stronger emphasis on financial stability among the objectives of prudential supervisors, and call for a macroprudential perspective in supervision. Similarly, the revised Core Principles for securities regulators now require that the regulator should “have or contribute to a process to monitor, mitigate and manage systemic risk.”

90. Dedicated arrangements for crisis management require coordination of the macroprudential and crisis management functions. Dedicated arrangements can allow the treasury to assume a greater role in crisis management when the central bank is placed at the centre of macroprudential policy ([IMF, 2013a](#)). In the presence of dedicated arrangements for crisis management, coordination between macroprudential and other policies can in practice be achieved by overlapping membership, such that the key supervisory and regulatory agencies as well as the chair of the macroprudential body participate in the crisis management arrangements.

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