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Macroprudential policy tools and frameworks

Update to G20 Finance Ministers and Central Bank Governors

1. Introduction

The financial crisis has intensified the official sector's interest in strengthening the macroprudential orientation of current policy arrangements. At their meeting in Seoul in November 2010, G20 Leaders concluded that further work on macroprudential frameworks was a priority (see paragraph 41 of the Seoul Summit Document):

Further work on macro-prudential policy frameworks: In order to deal with systemic risks in the financial sector in a comprehensive manner and on an ongoing basis, we called on the FSB, IMF and BIS to do further work on macro-prudential policy frameworks, including tools to mitigate the impact of excessive capital flows, and update our Finance Ministers and Central Bank Governors at their next meeting. These frameworks should take into account national and regional arrangements. We look forward to a joint report which should elaborate on the progress achieved in identification of best practices, which will be the basis for establishing in the future international principles or guidelines on the design and implementation of the frameworks.

This update summarises the work underway internationally and nationally to develop effective macroprudential policies and frameworks, by drawing also on surveys conducted by the BIS (via the CGFS) and IMF. These efforts include regulatory reforms and the design of policy tools to strengthen the resilience of the financial system, as well as efforts at the national and regional level to develop fully-fledged macroprudential policy frameworks. An Annex discusses issues related to managing capital flows.

This note finds that major steps have already been taken. That said, further work is needed to address the remaining challenges in successfully implementing macroprudential policies and institutional frameworks, including:

- Design and collection of better information and data to support systemic risk identification and modelling;
- Design of techniques to identify and measure systemic risk that utilise this information and help inform the design of policies;
- Design of an effective macroprudential toolkit of powers and instruments, including the criteria for the choice and calibration of the instruments and methods to assess their effectiveness, as well as the respective merits of rules versus discretion; and

- Design of appropriate governance arrangements for the exercise of the macroprudential policy powers.

The FSB, BIS and IMF will provide an update on progresses in these areas to G20 Leaders at their November meeting.

2. Terminology and typology

The term “macroprudential” has become increasingly common in discussions of possible changes to regulatory and supervisory frameworks. However, different users have different ways of defining it. We define macroprudential policy as a policy that uses primarily prudential tools to limit systemic or system-wide financial risk, thereby limiting the incidence of disruptions in the provision of key financial services that can have serious consequences for the real economy, by

- dampening the build-up of financial imbalances and building defences that contain the speed and sharpness of subsequent downswings and their effects on the economy;
- identifying and addressing common exposures, risk concentrations, linkages and interdependencies that are sources of contagion and spillover risks that may jeopardise the functioning of the system as a whole.

The defining elements of macroprudential policy are the *objective* (limiting systemic or system-wide financial risk), the *scope of analysis* (the financial system as a whole and its interactions with the real economy), a *set of powers and instruments* and their *governance* (prudential tools and those specifically assigned to macroprudential authorities).

Macroprudential policy is a complement to *microprudential* policy and it interacts with other types of public policy that have an impact on financial stability. No matter how different policy mandates are structured, addressing financial stability and systemic risk is a common responsibility. Many policies could and should influence financial stability and systemic risk, but not all such policies should be considered macroprudential.

For what are typically regarded as non-prudential instruments to be considered part of the macroprudential policy toolkit, the instruments should: (i) target explicitly and specifically systemic risk; and (ii) be underpinned by the necessary governance arrangements for the institutional framework chosen to conduct macroprudential policy to ensure there is no slippage in their use (clear mandate, necessary degree of operational independence and accountability). Macroprudential policy complements but cannot substitute for sound microprudential and macroeconomic policies.

Macroprudential policies aim to address two dimensions of system-wide risk: first, the evolution of system-wide risk *over time* – the “time dimension;” and second, the distribution of risk in the financial system *at a given point in time* – the “cross-sectional dimension.”

The key issue in the time dimension is to mitigate or dampen financial system *procyclicality*, i.e., how financial system-wide risk can be amplified by interactions within the financial system and between the financial system and the real economy, sometimes leading to financial crises. In economic upswings, the financial system creates and tends to become overexposed to aggregate risk, via ample credit availability, rapid increases in asset prices, leverage and maturity mismatches. If the system has not built sufficient buffers in good times,

when the financial cycle turns, the downturn can induce widespread financial distress and be amplified by substantial deleveraging, reducing the provision of credit and key financial services to the economy. A specific focus here is how to put in place various forms of buffers that act countercyclically, thereby also possibly restraining the build-up of systemic risk.

The key issue in the cross-sectional dimension is to reduce systemic risk concentrations, which can arise from similar exposures across financial institutions (from assets, liabilities, dependence on common services) or because of the direct balance-sheet linkages among them (e.g., counterparty risk). A specific focus here is ensuring that protections at individual institutions are commensurate with their contribution to system-wide risk and containing spillovers from their failure.

Macroprudential policymaking requires monitoring system-wide risks in both dimensions.

3. Identifying and measuring systemic risk

Effective diagnosis of systemic risks is critical for macroprudential policymaking. The crisis highlighted deficiencies in the ability of authorities to identify and measure systemic risk. Improvements in financial statistics and in the analytical toolkit to assess the build-up of risks in the system as a whole are important elements of a stronger macroprudential framework.

A substantial programme of work is underway nationally and internationally to address important data gaps. Previous reports by the IMF staff and FSB Secretariat, with inputs from the BIS, CGFS, and a variety of other data users and statistical agencies, provided 20 recommendations to strengthen information and set out a detailed work programme to implement each of the recommendations.¹ A further update on progress will be provided to Finance Ministers and Governors in mid-2011. Within the overall programme, priorities are to provide better information on aspects where the absence of good information has proved very costly, and in particular: (i) the interlinkages between large, globally systemically important institutions; (ii) emerging concentrations of risk in terms of both exposures and funding dependencies to certain institutions, countries and financial sectors;² (iii) the transfer and ultimate holding of risk; (iv) system-wide leverage and maturity mismatches; and (v) international financial integration through cross-border banking and investment flows. Separately, the BIS and CGFS are pursuing improvements to the BIS' international banking statistics, which will help to better analyse the transmission of funding and other shocks across countries through the banking system.

Improved information in these areas will help the authorities to better understand the key interconnections within the financial system and to develop analytical tools to gauge the likelihood and impact of common reactions to shocks that can amplify financial market responses and precipitate severe system-wide stress. However, addressing information gaps will not be a one-off exercise. As systemic risk oversight is strengthened, and as financial markets continue to adapt and innovate in response to technological developments and

¹ 'The Financial Crisis and Information Gaps' October 2009, followed by 'The Financial Crisis and Information Gaps: progress report, action plans and timetables' May 2010.

² Better data on (i) and (ii) will enable authorities to answer questions such as: "Do large globally systemically important banks have growing risk concentrations to common obligors (such as AIG or Lehman Brothers during the crisis)?" "Are the links between banks and hedge funds intensifying?" and "How exposed are the different banking systems to a run on one of the largest Money Market Funds (such as the Reserve Primary Fund during the crisis)?"

regulatory initiatives, it is highly likely that new information gaps will emerge. Ensuring that statistical frameworks are adaptable and responsive to developments in financial markets will thus remain a policy priority.

Closing information gaps will help improve the analytical toolkit to assess system-wide risks. But already now, significant progress is being made and is being incorporated in structured assessments of vulnerabilities and regulatory initiatives. International efforts include those of the FSB Standing Committee for the Assessment of Vulnerabilities, the IMF's regular bilateral and multilateral surveillance, the IMF-FSB Early Warning Exercise presented twice yearly to senior policymakers, covering major systemic risks and adverse scenarios, and various workstreams at the BIS, notably the work of central bank experts that informs regular discussions among Governors. These efforts focus on the identification of common exposures, risk concentrations and interlinkages within and across financial systems, and on the build-up of macroeconomic and financial imbalances, both domestically and globally.

In the time dimension, the countercyclical capital buffer adopted in Basel III is a notable example of a new regulatory initiative that draws on advancements in the toolkit to measure systemic risk. The so-called buffer guide will form the starting point for discussions on when to activate the buffer in each national jurisdiction. The buffer guide signals increases in the countercyclical capital buffer if the credit-to-GDP ratio is rising significantly relative to its long-term trend. This captures the fact that many systemic crises are preceded by credit and asset price booms. However, it is recognised that no single variable can fully capture the complex dynamics of the financial cycle, thus requiring judgement when calibrating the buffer. This judgement will be supported by a broad range of simple indicators, which are already currently used in financial stability assessments, such as macroeconomic conditions, balance-sheet indicators and/or information from market prices.

Significant research is also underway to better model the interactions between the real economy and the financial sector. Some of these models have already been used to assess the macroeconomic impact of the regulatory reform underway.³ In addition, macroeconomic stress tests will also help to inform policymakers' judgement about the stage of the financial cycle. Building on earlier tools often developed as part of the IMF-World Bank Financial Sector Assessment Program (FSAP), current models are being enhanced to better capture feedback effects between financial institutions as well as financial institutions and the real economy.

In the cross-sectional dimension, the Basel Committee on Banking Supervision (BCBS) is developing a methodology for the identification of banks that are systemically important from a global perspective. As part of the overall identification process, benchmark indicators reflect robust measures of the different factors that drive systemic importance of financial firms: their size, the degree of their interconnectedness with other financial firms and the degree to which they provide specialised services for which there are few substitutes. They also include measures of the participation of the bank in international markets. The International Association of Insurance Supervisors (IAIS) has embarked on a similar exercise focusing on

³ Basel Committee on Banking Supervision (2010): *An assessment of the long-term economic impact of stronger capital and liquidity requirements*; and Basel Committee on Banking Supervision and Financial Stability Board (2010): *Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements*

the insurance sector.⁴ Finally, work is also underway on structural methodologies to identify systemic importance at the IMF, the BIS, national central banks and academia based on inputs capturing size, probabilities of failure, similarities in exposures and interconnectedness.

4. Policy tools in the time dimension

Since the crisis, key steps have been taken to address procyclicality. Some have been agreed or proposed at the international level; others have been adopted purely at the national level. Some are clearly macroprudential, in the sense of being prudential in character and targeting systemic risk specifically; others, while falling somewhat short of these strict criteria, have a significant impact on procyclicality. Several are in line with the FSF report submitted to the G20 Leaders in April 2009.⁵

(i) International level: Basel III

Basel III includes a number of provisions that should dampen procyclicality. In addition to steps taken to reduce the procyclicality of risk-weighted assets and hence of the minimum requirement (e.g., the use of stress parameters for the trading book), Basel III puts in place a specific macroprudential overlay in the form of a countercyclical capital buffer. The buffer is designed to be accumulated during periods when systemic risk builds up, as signalled for instance by excessive credit growth, and can be used without restrictions when risks materialise. It is thus structured to act as a stabiliser during both the expansion and contraction phases of the financial cycle. The build-up of the buffer is encouraged through restrictions on capital distributions. Authorities would then release the buffer based on incipient signs of strains, such as aggregate losses or tighter credit terms. In both cases, the exercise of judgment remains critical. The buffer applies to Common Equity Tier 1 (CET 1) and fully loss-absorbing capital and ranges from 0 to 2.5% of risk-weighted assets, though national authorities can implement a buffer in excess of 2.5% if deemed appropriate in their national context. Banks with credit exposures to several jurisdictions will need to hold a buffer that reflects the weighted average of a bank's domestic and international exposures. Importantly, the buffer is activated by the host authorities (i.e., the authorities where the exposures are located) and the arrangements contain reciprocity clauses. The home supervisory authority (ie the supervisor of the bank that has the exposures) has the option of imposing a higher buffer than the host authority for the same exposures but should not impose a lower one. This reciprocity agreement represents an important step towards achieving a better coordination between home and host authorities, in light of the (new) macroprudential orientation of prudential policy.

Next to the countercyclical capital buffer, other provisions of Basel III can help to dampen procyclicality, although they are not *exclusively* designed to address it. First, a permanent capital conservation buffer (2.5% CET 1 equity) allows banks to absorb losses without hitting the minimum, thereby lessening pressure to restrict credit. Dipping into it, however, will

⁴ The IAIS is also establishing a macroprudential policy and surveillance working group with a mandate to develop a macroprudential policy framework. This includes the development of a global macroprudential surveillance framework for systemic risks that may arise as a result of activities in the insurance sector or may be of concern for the insurance sector, such as those related to pandemics and common economic or market shocks.

⁵ See FSF "[Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System](#)", April 2009.

involve some costs, in the form of restrictions on capital distributions to shareholders. This will help to conserve capital, but could also make bank managers somewhat reluctant to draw on the buffer. The size of the capital conservation buffer was set partly based on a top-down assessment of loss experience during crisis, not just on the individual loss experience of banks. Second, the additional minimum leverage ratio and the new liquidity standards could help limit the build-up of financial imbalances during the expansion phase of the financial cycle. In particular, the leverage ratio provides an important backstop in cases where excessively optimistic point-in-time risk measures tend to shrink risk-weighted assets and required capital cushions.⁶

(ii) *International level: Margins and haircuts on securities used as collateral*

The CGFS has developed recommendations⁷ for ways to strengthen haircut-setting and margining practices to limit the build-up of leverage in good times and soften the system-wide effects during a market downturn. It has also explored measures involving countercyclical variations in margins and haircuts to dampen the procyclicality of leverage in securities financing markets and to soften the systemic impact of subsequent deleveraging

The recommendations aim to promote margining practices that are more stable across the cycle and calibrated to include periods of stressed market conditions, thereby reducing financial system procyclicality. Margining practices are defined broadly to include the haircuts applicable to funding collateral as well as the mark-to-market and collateral requirements applicable to over-the-counter (OTC) derivatives. These recommendations are being implemented, some in the Basel III accord, and also in various jurisdictions, such as those that are developing qualitative surveys of credit terms used in OTC derivatives markets to assess financing conditions.

(iii) *International level: Expected loss provisioning*

Accounting standards for loan loss provisioning, while not set to address procyclicality, can have a first-order impact on it. Both the International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) have issued exposure drafts for expected loss provisioning approaches that will facilitate earlier recognition of credit losses and thus help to dampen procyclicality. The Basel Committee has developed a concrete proposal (set out in a June 2010 comment letter) to operationalise the expected loss approach to provisioning proposed by the IASB. More recently, the IASB and the FASB have responded to requests by the G20 and FSB to reach a common solution that provides a more forward-looking approach to accounting for credit losses through a joint IASB-FASB exposure draft on a converged expected loss approach. Once the Boards' provisioning standards are finalised, the BCBS plans to issue guidance that will include principles for supervisory review processes to reinforce robust provisioning practices in ways that could mitigate procyclicality.

⁶ The BCBS has set a parallel-run period to understand the dynamics of the ratio and its interaction with risk-based capital ratios.

⁷ See "[The role of margin requirements and haircuts in procyclicality](#)", CGFS Paper no. 36, 2010.

(iv) National level: Addressing excessive credit or asset price increases

Quite independently of these new internationally agreed macroprudential standards, some countries have for some time used other prudential tools, both price- and quantity- based, to mitigate procyclicality. Among price based tools, countercyclical changes in risk weights on exposures to certain instruments, sectors, or markets (e.g., for foreign currency-denominated loans, consumer credit, real estate, the construction sector, or the stock market) have been used to protect the financial system against the build-up of credit risk during periods of excessive credit growth or asset price booms. In addition, quantity-based prudential tools have been adjusted countercyclically by imposing time-varying caps and limits on the demand of credit. Such limits can be calibrated with respect to aggregate credit or specific exposures, e.g., by sector. Examples include time-varying, discretionary caps on loan-to-value (LTV), debt-to-income, loan-to-income ratios, or criteria for loans' eligibility. Liquidity requirements on foreign currency exposures have also been introduced recently to limit excessive credit growth (such as in Korea).

(v) National level: Other instruments

In addition to the measures reviewed above, a number of tools that are not typically prudential in nature have been used or proposed as part of the macroprudential toolkit.

They take a variety of forms. In a number of countries tools often associated with monetary policy have been used to restrict credit expansion. These have included marginal reserves requirements on banks' funding, limits on the level or growth rate of aggregate credit or specific exposures, when used explicitly in a countercyclical fashion. In addition, proposals have been made for a levy on non-deposit liabilities that would mitigate externalities from excessive recourse to vulnerable wholesale funding and contain overly rapid asset growth during upswings.⁸

Some of these could in principle be considered part of the macroprudential toolkit. But that would require that: (i) they target explicitly and specifically systemic risk; and (ii) the chosen institutional framework is underpinned by the necessary governance arrangements to ensure there is no slippage in their use (clear definition of powers and mandate, necessary degree of operational independence and accountability).

5. Policy tools in the cross-sectional dimension

Policies in this dimension are under development at the international level, and national experience in this area remains limited.

(i) International level: Basel III

The first protection for the stability of the financial system is to enhance the resilience of each individual institution to adverse shocks; this should be expected to reduce spillovers from failures. Thus, the Basel III standards for increased bank capital and liquidity will provide a strong anchor for macroprudential policies. In addition, several provisions in Basel III help to address systemic risk and interconnectedness among (global) systemic institutions by mitigating the risks arising from firm-level exposures. These include: higher capital

⁸ IMF, *A Fair and Substantial Contribution by the Financial Sector*, 2010.

requirements for trading and derivative activities, complex securitization and off-balance-sheet exposures and capital incentives for banks to use central counterparties for OTC derivatives; liquidity requirements that better address the funding risks related to the excessive reliance on wholesale short term funding; and higher capital requirements for inter-financial sector exposures.

(ii) *International level: SIFI framework*

In November, the G20 endorsed the FSB's policy framework to address the moral hazard risks and externalities posed by Systemically Important Financial Institutions (SIFIs).⁹ The key policy objectives of the FSB SIFI framework are to (i) increase their loss absorption capacity to reduce the likelihood of their failure, to (ii) facilitate the orderly restructuring or unwinding of a failing SIFI to reduce the impact of its failure on the financial system; (iii) to intensify supervisory oversight for SIFIs; (iv) to strengthen core financial market infrastructures to reduce contagion risk from failure. The increase in the loss absorption capacity beyond the minimum agreed Basel III standards should reflect the greater risks these institutions pose to systemic stability, and their contribution to the build up of systemic risk. Standard setters are working to determine both the extent of greater loss absorption capacity needed as well as the type and combination of instruments to be used for this purpose. To lessen the impact of their failure on the rest of the system, thereby containing the risks posed by these institutions to overall financial stability, work is underway to: (i) set out the attributes and tools of effective national resolution regimes; (ii) develop co-operation agreements to facilitate cross-border resolution; and (iii) put in place mandatory recovery and resolution plans for Global SIFIs that includes assessments of, and removal of obstacles to, their resolvability. Effective resolution frameworks reduce moral hazard risk and ex ante risk taking behaviour and therefore support macroprudential objectives. Furthermore, through strengthening SIFI supervision, supervisors are expected to detect problems proactively, and intervene early to reduce the impact of potential stresses on financial system as a whole. (As for strengthening core financial market infrastructures, please see below.)

(iii) *International level: OTC derivatives infrastructure*

Another area of policy development that complements and reinforces the effectiveness of macroprudential policy aims at lowering contagion risks by strengthening the financial infrastructure underpinning over-the-counter derivatives markets. In September 2009, G20 Leaders committed to OTC derivatives market reforms to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse by end-2012. In November 2010, G20 Leaders endorsed the FSB recommendations designed to promote international consistency in implementing these commitments to standardisation, central clearing, organised platform trading, and reporting to trade repositories of OTC derivative transactions. The recommendations set deadlines to meet the G20's end-2012 commitments, and specify bodies to take the recommendations forward. The recommendations also identify a number of areas where monitoring will need to continue and exploration of additional measures is warranted.¹⁰

⁹ See FSB Report, "[Reducing the moral hazard posed by systemically important financial institutions](#)", October 2010.

¹⁰ For details, see FSB Report, "[Implementing OTC Derivatives Market Reforms](#)", October 2010.

The recommendations address the need to reinforce oversight and regulation of central counterparties (CCPs) and other core financial market infrastructure given their pivotal role in the financial system. This specific work is being taken forward jointly by the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO). Work to explore the scope for greater use of organised trading platforms, increased pre- and post-trade transparency, and reporting of all derivatives to trade repositories is being taken forward by IOSCO and other authorities, working in cooperation.

(iv) National level: Other instruments

Oversight of national payment settlement and clearing arrangements has long played a role in reducing systemic spillovers from the failure of individual firms. More recently, some countries have proposed or recently introduced structural measures to manage risk concentrations, notably restrictions on permissible activities of systemic institutions. For instance, in the United States, part of the Dodd-Frank Act known as the “Volcker Rule” prohibits insured depository institutions from engaging in proprietary trading. The Act also assigns new powers to the Federal Reserve to require divestment by firms subject to enhanced prudential standards under the Act of certain assets or businesses if their orderly resolution cannot be assured.

6. Remaining challenges

Efforts to strengthen system-wide oversight and macroprudential policy frameworks are taking place at national, regional, and international levels (Box 1). The conduct of effective macroprudential policy requires further progress on a number of fronts, from design and collection of data to support systemic risk identification and modelling, to techniques and analytical tools to assess systemic risk, to design of an effective macroprudential toolkit and its use within well specified institutional and governance arrangements.

Box 1. Surveys on Macroprudential Policy Institutional Arrangements and Frameworks

In November 2009, the Committee on the Global Financial System (CGFS) launched a project to examine conceptual issues that arise as macroprudential policy frameworks are developed and applied. The project included a survey of central banks’ conceptions of macroprudential policy and its various elements, and of the instruments that had been used in their jurisdictions for macroprudential purposes.

The CGFS survey suggests that macroprudentially motivated interventions have been fairly widely used. They have targeted a variety of problems arising from the financial system and financial behaviour, at both aggregated and highly sector-specific levels. Instruments such as caps on loan-to-value ratios in property lending have been used fairly often in response to property market exuberance, and seem to have shielded banking systems from severe property market downturns. A number of measures in emerging economies targeting excessive risk-taking or the build-up of vulnerabilities in property lending markets were seen as having been successful in protecting banking system resilience during property market cycles. To date, authorities have taken pragmatic approaches, based on judgmental and discretionary use of instruments already used for other, typically microprudential, purposes. The report concludes that in developing macroprudential policy frameworks further, the design choices open to authorities will depend on their economic and financial system structures, as well as prevailing law and market practices.¹

In mid-2010 the CGFS followed up on this stocktaking with an analysis of some practical matters in the design and conduct of macroprudential policies. This more recent work looks at the systemic risk

developments in key economies in the lead-up to the crisis, and examines how macroprudential authorities could have acted to reduce those risks, given what was known at the time. These case studies suggest that, in some areas, macroprudential authorities with suitable mandates could have intervened, for example with capital or liquidity requirements or restraints on particular kinds of risk-taking, to respond to some of the identified systemic risks. However, the case studies also show that other systemic risks, such as the growth of the shadow banking system and dependence on cross-currency funding, were either missed or not fully appreciated at the time. Overall, the CGFS concludes that there is clear scope for progress in the development of macroprudential policy and sets out priorities for the development of macroprudential policies, notably in the areas of systemic risk monitoring, including interlinkages between financial institutions and markets; the design of macroprudential instruments; international information-sharing; the institutional set-up of macroprudential policy and the related governance and accountability arrangements; and communication strategies.

The institutional arrangements for macroprudential policy are evolving in a number of countries, reflecting a refocusing on financial stability as a key policy objective and a greater appreciation of the need for a financial regulatory architecture that is conducive to attaining financial stability.

The IMF conducted a survey among some 60 member countries in late 2010 to take stock of existing analytical approaches to systemic risk identification and monitoring, the use of macroprudential tools, and the institutional setup for macroprudential policy. The results of the survey are currently being analysed and further detail will be available shortly. Most of the surveyed countries have an explicit financial stability mandate, and slightly less than half of them (most of which are from emerging market countries) have an explicit mandate for macroprudential policy. Plans to introduce a mandate for macroprudential policy are also widespread. A wide range of policy instruments are mentioned as being available for macroprudential policy—primarily prudential tools, but also instruments of fiscal, monetary and competition policies as well as capital controls. Efforts to introduce institutional arrangements for system-wide oversight and macroprudential policy are taking place in several countries, though the specific set-up can vary significantly. In line with the notion that central banks can bring strong expertise and incentives to the task of mitigating systemic risks,² the survey indicates that the central banks are given a financial stability mandate in most of the countries (90%) that responded to the survey.

The survey also confirms that the conduct of macroprudential policy often involves inter-agency coordination. As a way to institutionalize macroprudential policy coordination, a growing number of countries (44%) have in place or are establishing a financial stability committee or council. The committee or council can be given direct powers over specific macroprudential tools, as planned in the United Kingdom. It can alternatively or in addition be given some degree of control over actions taken by other (constituent) agencies. This can range from providing policy advice, making formal recommendations to taking direct decisions on policy actions. The committee or council can finally provide governance for specific macroprudential action taken by constituent agencies, as envisaged in the United States.

¹ See "[Macroprudential instruments and frameworks: a stocktaking of issues and experiences](#)", CGFS Papers, no. 38, 2010.

² IMF, *Central Banking: Lessons from the Crisis*, 2010.

The development of policy in several areas has still some way to go. In particular the design of national and regional institutional arrangements faces a number of challenges.

First, as the financial sector evolves rapidly, the specific sources and manifestations of systemic risk are subject to change. As a result, the conduct of macroprudential policy calls for continuous monitoring of a broad set of information, to identify systemically important institutions, markets, and infrastructures on an ongoing basis; and to capture firms that might be outside the perimeter of regulation and supervision, and new products created through

financial innovation. And authorities need to be able to respond flexibly to risks. Extending the perimeter of regulation is one option to expand the reach of policy and to lower the risk of regulatory arbitrage. In this respect, also, the unintended consequences of policy measures addressed at subsets of the financial system may need to be considered, including diversion of financial intermediation to the unregulated sector. The FSB is presently working to (i) clarify a working definition of the shadow banking system; (ii) set out potential approaches for a monitoring framework; and (iii) develop a range of options of possible additional regulatory measures.

Second, there is a need for continued work to identify the quantitative tools that are most useful to measure and monitor systemic risks, and to fill the key analytical gaps in this area, including possible adverse consequences of using some tools (e.g., administrative measures). Key priorities in this regard are the capacity to capture the main risks in a forward looking manner; robustness in assessing both the likelihood and impact of shocks; and ease of use (e.g., data availability) and interpretation for policy-making purposes.

Third, there is a need to put in place appropriate governance arrangements. Not least, since macroprudential policy involves managing tail risk (the incidence of a financial crisis), the benefit of taking an action becomes apparent only in the long run, while the costs will often be highly visible and felt immediately. This may lead to a strong bias in favour of inaction. This bias can be further exacerbated by lobbying on the part of financial institutions and by other political pressures. It puts a premium on governance arrangements for the chosen institutional framework that strengthen the policymaker's ability and willingness to act. Strong governance arrangements require: clear and specific mandates for the powers of macroprudential policy making; control over macroprudential instruments that are commensurate with those mandates; arrangements that safeguard the necessary operational independence; and provisions to ensure accountability, supported by transparency and clear communication of decisions and decision-making processes.

Fourth, the institutional set-up for macroprudential policy needs to support domestic policy dialogue among different authorities, as the range of instruments that can affect systemic risk extends beyond that which may be under the formal authority of the macroprudential body. The choice and implementation of appropriate instruments in a macroprudential framework needs to take into account their interaction with other key policy objectives and instruments, such as those governing microprudential, monetary, fiscal, competition policies, and policies to manage risks from capital inflows (see Annex). This issue requires arrangements that can deliver good communication among the various authorities and governance frameworks that clearly assign responsibilities and roles. Because of potential synergies and possible tensions between macroprudential and other public policies, the main challenge is how to set up a framework to support policy consistency across the authorities responsible for macroprudential and other policies. Solutions will need to be tailored to country-specific circumstances.

Finally, as the stability of the financial system often has regional and global dimensions, the multilateral aspects of macroprudential policy will need to be fully considered, including by ensuring that frameworks in individual countries are mutually consistent, while taking into account country-specific circumstances. One important question in this respect is what room for manoeuvre individual countries would have within the agreed international framework. This highlights the importance of information sharing and cooperation arrangements among

national and regional macroprudential bodies. The arrangements would reinforce the efficacy of global cooperation mechanisms, such as the FSB and the G20 Mutual Assessment Process as well as the IMF multilateral surveillance.

7. Conclusions and work going forward

The previous section has outlined the programme of work underway to fully develop and operationalise macroprudential policy frameworks. To support this work, in the coming months, the FSB, IMF and BIS will primarily focus on the following priorities:

- continuing to pursue the analytical challenges outlined above;
- continuing to distil from stocktaking exercises, surveys and contacts with national and regional authorities, the lessons for the development of policies and frameworks; and
- providing forums for authorities to learn from each other, to share perspectives and experiences in implementing macroprudential policies, and to enhance cooperation in their responses to systemic threats which pose material risks to the international financial system.

The three organisations will submit a joint progress report, outlining advances in the state of knowledge and covering both international and national developments, to G20 leaders at their November 2011 Summit.

Annex: Managing risks from capital inflows

Capital inflows are normally beneficial, but can at times pose challenges. In particular, macroeconomic imbalances and systemic vulnerabilities stemming from large inflows have long been of concern to policymakers. The macroeconomic effects of large inflows include overheating of the economy and appreciation of the currency, which can reduce competitiveness.

From a macroprudential perspective, the relevant concern is the contribution of capital inflows to the build-up of systemic vulnerabilities, by facilitating the build-up of imbalances in the financial and non-financial sector, unsustainable asset price booms, and financial sector distress as flows stop or reverse direction.

These issues are currently being examined in detail by the IMF, with a view to further developing guiding principles for the use of policies to manage capital flows, both from the perspective of individual countries and taking into account the multilateral dimension. Macroeconomic policies can be used to address the risks from large inflows.

If these policies are not sufficient, prudential tools and in some circumstances, also capital controls can be used.

Some prudential tools can reduce potential systemic risks associated with capital inflows without targeting inflows per se. These tools differ from capital controls in that they do not discriminate between residents and non-residents. One example is a countercyclical capital buffer linked to the build-up of credit, which could be triggered by a broad indicator of credit growth that captures both domestic and foreign provision of loans. A second example is caps on LTV and debt-to-income ratios, which would discourage an erosion of lending standards. In addition, a levy or charges on short-term wholesale funding could also potentially discourage overreliance on vulnerable wholesale funding, irrespective of whether that funding is sourced domestically or from abroad.

Macroprudential tools can also be used to reduce indirectly systemic risks in the non-financial sector associated with capital inflows. Korea's leverage cap on banks' off-balance sheet foreign exchange positions introduced in June 2010 aims to achieve this objective.

Capital controls are motivated by various considerations, both macroeconomic and financial. As such, they are not macroprudential instruments, although they could be if they specifically targeted systemic risk and were underpinned by strict governance arrangements that ensured no slippage in their use (see main text)

Given that policies to manage capital inflows can have significant international repercussions, the multilateral aspects of these prudential or capital control measures will need to be fully considered, along with their effectiveness. Some countries have subscribed to international instruments that limit their ability to use capital controls, but even those that have not will need to be aware of the broader implications of such measures for the international monetary and financial system, and reflect this in their policy governance.