Macroprudential policy: what we have learned and where we are going

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It is my great pleasure to be here today amongst a group of such distinguished research economists.

The renewed tensions in financial markets highlight the persistent fragility of the global economy, almost three years after the beginning of the crisis in the summer of 2007 and despite the unprecedented policy actions taken to support the economy. They also underscore the importance of maintaining a sound financial system, both to support economic growth and to allow the proper transmission of monetary policy through smoothly functioning financial markets. Looking forward, it is clear that the global recovery cannot be sustained without adequate policy actions devoted to long-term economic stability and a healthier financial system.

A healthier financial system lies at the heart of the efforts now under way to promote effective financial regulation. Much of this work is being conducted within the various international groups we host in Basel. A huge amount of work is under way at the Basel Committee on Banking Supervision to enhance the regulation of the banking sector.[1] This sits at the core of the broader agenda coordinated by the Financial Stability Board to promote effective financial sector policies.

A key element of this reform process is to strengthen the macroprudential orientation of regulation and supervision. Of course, macroprudential policy is more than the Basel Accord and its development. So, this evening, I would like to use the opportunity of this conference and take a step back to consider macroprudential policy from a broader perspective: to ask, in short, "What have we learned as policymakers and where are we going?"

The term "macroprudential" has become a true buzzword, yet it was little used before the crisis and its meaning remains elusive.[2] An article in our March Quarterly Report traced the term's origins to the late 1970s, in the context of work on international bank lending carried out by the Euro-currency Standing Committee at the BIS.[3]

[1] See Basel Committee on Banking Supervision, *Consultative proposals to strengthen the resilience of the banking sector*, Basel, December 2009.

[2] Though the use of the term dates back to the mid-1970s, increasingly precise analytical definitions, emphasising the contrast with microprudential policies, have been offered over the past 10 years. See C Borio, "Towards a macroprudential framework for financial supervision and regulation?", *BIS Working Papers*, no 128, February 2003.

[3] See P Clement, "The term 'macroprudential': origins and evolution", *BIS Quarterly Review*, March 2010.

In fact, a number of central banks have been applying macroprudential policies for some time without referring to them as such. This reminds me of the famous exchange between the philosophy master and Monsieur Jourdain in the Moliere play *The Bourgeois Gentleman*, where Monsieur Jourdain discovers the difference between "prose" and "verse" and exclaims, "I have been speaking prose all my life, and didn't even know it!"

The term "macroprudential" has risen from virtual obscurity to extraordinary prominence following the recent financial crisis. Over time, especially at the BIS, efforts have been made to clarify the meaning of the term. In this narrower sense, closer to its origin, the term refers to the use and calibration of *prudential* tools with the explicit objective of promoting the stability of the *financial system as a whole*, not just the individual institutions within it. Given the term's present prominence and the still limited state of knowledge, we suggest caution and tend to think that this narrow definition is the most appropriate to avoid spreading the concept too widely. We also need to be realistic in setting macroprudential objectives, so let me start with the experience accumulated so far.

1. The macroprudential experience

A major lesson of the financial crisis that started in 2007 is that we all failed to correctly interpret systemic risk, by which I mean the risk of financial system disruptions that can destabilise the macroeconomy. What was the failure? We failed to connect the dots. First, the full impact of interlinkages and common exposures across the financial system was not properly appreciated. Second, procyclicality was underestimated, that is, the financial system's tendency to amplify the ups and downs of the real economy. In both cases, the existing consensus was to overrate the capacity of markets to exert effective discipline and to self-correct. To deal with these dimensions of systemic risk, financial stability policies must integrate a broader system-wide perspective.[4]

Macroprudential policy can greatly help in this endeavour. In recent years, public authorities, including some central banks, have been regular practitioners of macroprudential policy, using a variety of tools to promote the resilience of the financial system as a whole. A working group reporting to the Committee on the Global Financial System (CGFS) has recently completed a comprehensive stocktaking of experience with macroprudential instruments and frameworks. That report shows that the practical applications of macroprudential policy can be wide-ranging and effective.[5]

In particular, experience suggests that pre-emptive prudential measures that seek to moderate credit and asset price booms can complement traditional monetary policy actions. This is an area where central banks in industrial countries can greatly benefit from experience in emerging markets, especially in Asia, where the active use of macroprudential instruments dates back to the 1990s. One reason may be that most central banks in emerging markets continue to be responsible for banking supervision. As such, they are prepared to be held accountable for using supervisory tools to maintain the stability of the financial system.

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4 The identification of these two dimensions goes back a decade to a speech by the then General Manager of the Bank for International Settlements, Andrew Crockett, before the International Conference of Banking Supervisors. See A Crockett, "Marrying the micro- and macroprudential dimensions of financial stability", *BIS Speeches*, 21 September 2000.

5 Committee on the Global Financial System, "Macroprudential instruments and frameworks: a stocktaking of issues and experiences", *CGFS Papers*, no 38, May 2010.

There is ample evidence that some of the measures adopted so far have proved effective. A good example is the use of loan-to-value regulation for real estate lending in Hong Kong SAR during the 1990s. Hong Kong has struggled with the aftermath of a housing bubble, but the policy reduced the growth of mortgage credit in response to housing price hikes, thereby leaving banks in a better position to survive the subsequent crash.[6] The Reserve Bank of India provided another example when it attached a higher capital weighting to claims on households in 2004, which was accompanied by a decline in the growth of such loans both absolutely and relative to total loans. The same central bank raised required provisions in the face of rapid credit growth.[7]

Asian experience with macroprudential tools: examples

Objective	Tools	Examples
Manage aggregate risk over time (ie procyclicality)	• Countercyclical capital buffers linked to credit growth • Countercyclical provisioning • Loan-to-value (LTV) ratios • Direct controls on lending to specific sectors	• China[1] • China, India • China, Hong Kong SAR, Korea, Singapore • Korea, Malaysia, the Philippines, Singapore
Manage aggregate risk at every point in time (ie systemic oversight)	• Capital surcharges for systemically important banks • Liquidity requirements / funding • Limits on currency mismatches • Loan-to-deposit requirements	• China, India, the Philippines, Singapore • India, Korea, the Philippines, Singapore • India, Malaysia, the Philippines • China, Korea

[1] Being considered.

Source: Committee on the Global Financial System.

A bit closer to us today, we have had the opportunity to observe a more rule-based tool, namely the dynamic provisioning for loan loss reserves which was introduced by the Bank of Spain in 2000. Under this system, banks must make provisions against credit growth according to historical loss information for different types of loans. Provisioning based on sector riskiness was intended to anticipate loss recognition across the cycle, and reduce the procyclicality of credit. Spain's current challenges show that stricter provisioning practices gave banks a greater cushion than they would otherwise have had, and kept their fragility from further deepening the downturn.

But before we conclude that policymakers have discovered the secret to successful macroprudential policy, it may be worth remembering that their actions have, in most cases, only mitigated financial excesses, even if they have increased systemic resilience. Moreover, these measures can sometimes have unintended consequences. For example, during Japan's credit and asset price boom of the 1980s, the Bank of Japan did restrict lending to the real estate sector towards the end of that decade, but this did little to slow the property lending boom. Instead, credit was routed through less regulated special housing finance companies and offshore dollar loans.

[6] See S Gerlach and W Peng, "Bank lending and property prices in Hong Kong", *Journal of Banking and Finance*, vol 29, issue 2, February 2005.

[7] See R McCauley, "Macroprudential policy in emerging markets", presentation at the Central Bank of Nigeria's 50th Anniversary International Conference, 4 May 2009.

So we need to carefully analyse and understand the effects of macroprudential approaches before drawing final policy conclusions on their use.

2. Lessons?

What are these lessons?

A first one is that macroprudential tools used in the past, particularly in Asia, have often tended to target particular sectors, for example housing or other household credit. This may explain in part their limited effect in pre-empting financial booms. In contrast, what is now being discussed internationally aims at a more far-reaching implementation of macroprudential policy. The new framework aims to strengthen the resilience of the broader financial system through the identification and mitigation of linkages and common exposures among all financial institutions and across sectors. An example of this approach is the capital surcharge under consideration by the Basel Committee that would be imposed in line with banks' contributions to systemic risk. The new framework also aims to mitigate procyclicality through the build-up and release of buffers for the financial sector as a whole, thus making banks more resilient when financial imbalances unwind.

A second lesson is that past policies have primarily relied on the discretionary use of macroprudential tools, ie based on ad hoc responses to perceived financial imbalances rather than on a clearly articulated framework.[8] In addition, what we are exploring today is how far rule-based mechanisms can work as part of a structured approach. As a first step, the Basel Committee's fixed capital conservation buffers have some countercyclical properties. As a second step, the Basel Committee is seeking to design time-varying capital buffers that can act as "automatic stabilisers", as just mentioned. Perhaps, with sufficiently advanced modelling capabilities, policymakers might link instrument settings to risk indicators that they would aim to keep within an acceptable range, rather as inflation forecasts are used in inflation targeting regimes.[9]

A third lesson is that financial stability is a multifaceted and elusive concept. It cannot be as precisely defined as, say, price stability, and this represents an obvious difference between macroprudential policy and monetary policy. That said, the experience of central banks in the field of monetary policy is worth noting. Most central banks have a clear strategy for pursuing an inflation objective or definition. In effect, they combine a long-term commitment to price stability with some discretion over the use of instruments, and the responsibility to communicate when there is a short-run deviation from the objective.[10] Similarly, when defining a macroprudential strategy, we should agree on a similar pragmatic approach based on a clear strategy and precisely defined information-based accountabilities.

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8 For instance, the strengthening of loan loss provisioning practices in Asia in the aftermath of the Asian financial crisis of the late 1990s was done largely via discretionary measures. See S Angklomkliew, J George and F Packer, "Issues and developments in loan loss provisioning: the case of Asia", *BIS Quarterly Review*, December 2009.

9 See R Barro, "Recent developments in the theory of rules versus discretion", *Economic Journal*, vol 95, 1985, supplement, pp 23–37; and F Kydland and E Prescott, "Rules rather than discretion: the inconsistency of optimal plans", *Journal of Political Economy,* no 85, June 1977, pp 473–91.

10 See B Bernanke, T Laubach, F Mishkin and A Posen, *Inflation targeting: lessons from the international experience*, Princeton University Press, 1999. See also T Laubach and A Posen, "Disciplined discretion: monetary targeting in Germany and Switzerland", *Princeton Essays in International Finance*, no 206, December 1997.

A fourth lesson is that central banks are naturally positioned to play a prominent role in macroprudential policies, and for several reasons. They are the only institutions able to provide almost unlimited system-wide liquidity at very short notice. They play an essential role in overseeing and ensuring the resilience of the payment and settlement infrastructure that is central to the modern financial system. They also devote considerable resources to analysing macroeconomic and financial trends. All in all, central banks are the ultimate guarantors of financial system stability.

Furthermore, central banks must have realistic financial stability objectives that are consistent with their primary monetary policy responsibilities. Central banks have a keen interest in taming credit and asset price cycles and in using macroprudential instruments for this purpose. Financial booms and busts undermine long-run price stability and stable economic growth. And, of course, a sound financial system is crucial to ensure the effectiveness of the monetary policy transmission mechanism that links the policy interest rate to term interbank rates, and to the broader money and credit markets.

To a significant extent, central banks already play the part of macroprudential policymakers. Historically, they have always had some kind of administrative authority to impose liquidity requirements on banks. And the global financial crisis has shed new light on the specific tools at the disposal of central banks with clear prudential implications. Moreover, the crisis has also shifted the debate about the locus of supervision in favour of central banks, so that they are likely to be more involved in prudential policies. In particular, central banks look better placed than other authorities to design and implement regulations that address risks that arise from the size, business model and interconnectedness of systemically important financial institutions. In any case, the complementarities between monetary policy and financial stability imply that the central bank would always be one prominent member of any multi-agency council or institutional arrangement that deals with a country's macroprudential responsibilities.

3. Where to from here?

The above comments suggest some promising avenues for future macroprudential policy, provided we remain pragmatic and do not raise too many expectations. Although these points are clearly interrelated, allow me to address a number of specific areas in sequence.

To start with the most fundamental point, we need to recognise that financial stability is a shared responsibility. No single authority can be considered as having sole charge of financial stability, since the decisions of the fiscal authorities, non-central bank financial supervisors and the competition authorities all affect financial stability. Particular attention should be paid to governance arrangements that preserve central bank independence, including financial independence.[11] Coordination is obviously easier to achieve if central banks are explicitly in charge of prudential supervision; but this does not obviate the need to clarify functions, responsibilities and powers. For central banks that are not directly in charge of supervision, it is all the more important to set up clear institutional arrangements which will enable them to influence the actions of the supervisory authority that controls prudential instruments.

Second, we need to clarify the financial stability objectives of macroprudential policy. We should recognise that financial stability is a multidimensional concept that needs to be further

[11] See "The great financial crisis: lessons for the design of central banks", speech by J Caruana, General Manager of the Bank for International Settlements, at the colloquium in honour of Lucas Papademos, ECB, Frankfurt, 20 May 2010.

investigated. We need economists to develop a menu of financial stability-related policy measures that are reliable enough to be commonly accepted. Some of the papers presented today and tomorrow will be helpful in this regard.[12]

Third, central banks need to adopt a strategy to guide their contribution to macroprudential policy. Whatever the source of their mandate for financial stability, they need to set realistic financial stability strategies that are consistent with their primary responsibility for price stability. This may not require new legislation, but it will require clarity of thinking and lucidity in communication about what central banks will do to promote financial stability. And central banks must have the powers and instruments to achieve their financial stability goals.

Strategies will need to be flexible: in fact, I suspect that the best way to conduct financial stability policy will depend on the characteristics of financial systems. For instance, the use of macroprudential tools is likely to be more common in economies with fixed exchange rates, such as Spain or Hong Kong, where the scope for monetary policy is limited. And casual empiricism suggests that interventions are also more frequent in bank-dominated financial systems, where the possibility for circumvention may be smaller.

In any case – and this is my fourth point – we need to foster accountability of central banks in their pursuit of financial stability. Financial stability actions are by their nature more political than monetary policy decisions. For instance, the recent unprecedented actions taken by central banks in response to the crisis have exposed them to financial and reputational risks, and, in some cases, have raised questions about the legality of such actions. So the wider the scope of macroprudential policy, the greater the scrutiny to which it will be subjected in the political process, and, indeed, by the public.

A fifth area is a solid ground of information and research on which central banks can base their financial stability strategy. They should first have a good command of microsupervisory data, implying that exchange of prudential information is essential. This may require extensive data sharing between agencies and the capacity to obtain information directly from financial firms. Central banks need information about the pre-crisis condition of individual banks in order to be able to provide liquidity at short notice and fulfil their lender of last resort role. They also need to know the scale of the risk-taking and maturity transformation of the largest banks.

At a more macro level, we must have adequate information to monitor systemic risk itself, and – what is more difficult – to promote early action in uncertain and controversial circumstances. We should improve measures that serve as guides for policy in both its time and cross-sectional dimensions. On the time dimension, the advance of theoretical and empirical research concerning the nature and causes of credit and asset price booms and busts will be crucial in formulating better policy. Some work, at the BIS and elsewhere, suggests that implied indicators based on simultaneous deviations of the credit-to-GDP ratio and asset prices from historical norms can signal financial distress years ahead with fair accuracy.[13] On the cross-sectional dimension, work is also ongoing to develop measures that can help to quantify the contribution of individual institutions to systemic risk. One example of such research will be presented by Mr Zhou tomorrow. The systemic importance of a financial institution cannot be determined by one parameter alone, such as size. The result of a BIS-FSB-IMF survey of 2009 suggests that systemic importance depends on at

[12] See also the survey by C Borio and M Drehmann, "Towards an operational framework for financial stability: 'fuzzy' measurement and its consequences", *BIS Working Papers*, June 2009.

[13] See C Borio and M Drehmann, "Assessing the risk of banking crises – revisited", *BIS Quarterly Review*, March 2009, pp 29–46.

least three factors: size, interconnectedness and substitutability.[14] Further investigation of the factors that underlie systemic risk and their interaction would greatly assist policymakers.

Finally, more research is also needed into the effectiveness of specific macroprudential policy instruments. Under what circumstances can the setting of instruments such as debt-to-income or loan-to-value ratios work best to improve financial resilience? How effective are countercyclical capital or provisioning requirements? How do these tools interact with more standard monetary policy instruments? And under what conditions might each specific measure be best implemented on a discretionary basis as opposed to through rules? In each case, rigorous empirical studies are necessary.

4. Building blocks of financial stability

Let us not forget that the promotion of financial stability requires a broader policy framework, based on mutually reinforcing building blocks, in which macroprudential policy is only a part.

The first building block consists of macroeconomic policies, both monetary and fiscal. I would like to spend some time here on how monetary policy can complement macroprudential policy. Certainly, it would be tempting to make a neat Tinbergian assignment in which we would assign a single policy instrument to each policy objective. In such a world, interest rate policy would be assigned to stabilise prices, while prudential policies would be dedicated to maintaining financial stability. Attractive as such simplicity may be, the approach would be flawed. In fact, the two objectives are interrelated and complementary, particularly over longer time horizons.

In the end, moreover, reasonable prudential policies may not suffice to maintain financial stability if they are not supported by monetary policy: raising credit standards will not effectively contain excessive leverage if very low interest rates are maintained for so long that they foment excessive risk-taking. Thus the use of prudential instruments to limit credit and asset price booms may be necessary but not always sufficient. For instance, the use of dynamic provisioning in Spain did increase resiliency, but it could not prevent the property boom, even if it mitigated it. Similarly, Asian countries have actively used measures related to property lending but the region is still characterised by quite large and frequent property price cycles. More generally, regulatory restrictions can be more easily arbitraged away than monetary policy actions, which have a more macroeconomic scope.[15] This is because short-term interest rates are the primary determinant of the cost of leverage and leverage exacerbates the extent and the ultimate cost of asset price booms. Moreover, there is a distinct risk-taking channel by which monetary policy decisions can affect the behaviour of financial agents. So monetary policy can usefully complement macroprudential policies in achieving their financial stability goal.[16] Indeed, the BIS has for many years called for the

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[14] See Bank for International Settlements, Financial Stability Board and International Monetary Fund, *Guidance to assess the systemic importance of financial institutions, markets, and instruments: initial considerations – background paper,* October 2009.

[15] One exception might be the case of foreign currency loans in eastern Europe. Efforts to curb such lending might be considered an example of macroprudential policy being used to support monetary policy.

[16] Concerns are often expressed about monetary policy diluting or compromising its price stability objective in the process of contributing to financial stability, but I think we sometimes make too much of the necessary adjustments in policy frameworks. The lengthening of monetary policy horizons beyond the two years commonly used should make it easier to incorporate longer-term financial stability threats into macroeconomic assessments, resulting in a more comprehensive evaluation of the balance of risks facing the economy. Several central banks have already moved in this direction.

use of monetary policy to help deal with credit and asset price booms, even where short-term inflation prospects appear well contained.

Fiscal authorities also have a role to play in financial stability. In terms of crisis management, huge public funds can be required during financial system solvency crises; furthermore, recent experience shows that major financial disruptions can lead to sizeable output losses with severe implications for public finances. In terms of crisis prevention, which really lies at the heart of macroprudential policies, fiscal authorities have an important role to play both in ensuring the long-term sustainability of public finances and in accumulating adequate fiscal buffers in good times.

The second building block consists of prudential (including macroprudential) policies. These should be implemented both at the microprudential level – to ensure that individual institutions are better capitalised, less leveraged, better able to manage risks, etc – and, as highlighted by this conference today, at the macroprudential level.

The third building block for financial stability is the institutional framework for effective enforcement of regulation and monitoring. Financial stability cannot be achieved without functional market discipline, effective monitoring, and adequate resolution regimes to deal with the failure of a given financial institution. In this respect, there are many public authorities that can usefully contribute to the promotion of financial stability. Let me simply mention, for instance, competition agencies and consumer protection agencies – as was particularly obvious in the recent US subprime bubble.

And the fourth building block, which spans the other three, is international cooperation, in terms of standard-setting, monitoring of fragilities, cross-border resolution regimes, etc. I guess my emphasis on international collaboration should not be surprising as I come from the BIS, whose mandate is to foster exactly this international monetary and financial cooperation!

So macroprudential policy is not enough. And the corollary is obvious: clear cooperation arrangements are needed among the various domestic and international authorities that have an interest in contributing to financial stability in a mutually reinforcing way.

5. Conclusion

Macroprudential policy today offers us tools and a new perspective to proactively address imbalances in our financial system. It represents an opportunity for all of those, at the Bank of Spain and elsewhere, who have been promoting more forward-looking prudential policies.

At the same time, let us recognise the risks of relying too heavily on macroprudential policies, particularly given our current state of knowledge. Let's continue doing the sort of financial and economic research that can make us more confident in our ability to measure systemic risk and to calibrate tools to address it, but let's not forget the power and role of interest rates to influence financial conditions.

Thank you very much for your attention and enjoy the dinner.