Macroprudential frameworks: experience, prospects and a way forward

Speech by Claudio Borio
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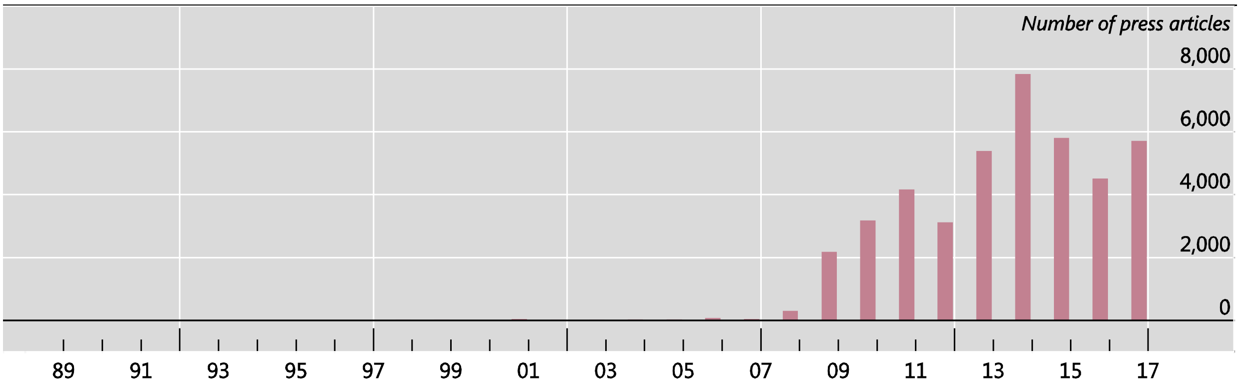
Good afternoon, ladies and gentlemen.

As Agustín mentioned, macroprudential frameworks have become a key new element of the post-crisis financial reforms designed to ensure financial stability. This is very welcome. As you know, while the concept of "macroprudential" regulation and supervision goes back to the 1970s and was refined in the early 2000s, it became popular only post-crisis, thanks in part to the support of the G20. Graph 1, tracing the increase in the number of press articles mentioning the term "macroprudential", underlines the point. There were hardly any articles before 2008 and they surged thereafter.

Growing popularity of the term "macroprudential" Graph 1



Source: Factiva.

In my remarks today, based on the Annual Report's special chapter, I would like to take stock of where we stand in the implementation of macroprudential frameworks and suggest a way forward. This is a particularly good time to do so: macroprudential measures can play a key role in supporting monetary policy along its normalisation path, enhancing its room for manoeuvre. The window of opportunity should not be missed.

A couple of clarifications before I start.

First, I will define macroprudential frameworks as the use of (primarily) prudential tools to target specifically systemic risk and mitigate its macroeconomic costs. Thus, the macroprudential approach to regulation and supervision differs from the more traditional microprudential one. The latter focuses on the assessment of the risks institutions face on a standalone basis, with little regard for the financial system as a whole or the macroeconomy.

Second, I will focus only on the so-called "time dimension" and leave out the "cross-sectional" (or structural) dimension. The time dimension addresses how systemic risk evolves over time. The key concept here is the "procyclicality" of the financial system, ie its tendency to amplify financial expansions and contractions, which in turn can amplify business fluctuations. The financial cycle is a reflection of such forces. By contrast, the cross-sectional dimension addresses how risk is distributed in the financial system at a given point in time. In particular, it focuses on common exposures and interlinkages. Think, for instance, of capital surcharges for global systemically important banks or of central counterparties

There are three takeaways from my presentation:

First, we should not underestimate the intellectual shift macroprudential frameworks have brought about in how to ensure financial stability. This shift is now taken for granted, but its influence goes way beyond regulation and supervision.

Second, substantial progress has been made, but more needs to be done. The best way forward is to combine ambition in implementation with realism as to what we should expect the frameworks can achieve on their own.

Finally, to ensure financial stability, and hence sustainable growth, macroprudential measures should be embedded in a more holistic macro-financial stability framework. This framework, in addition to prudential policies, involves also monetary, fiscal and even structural policies.

I will take each point in turn.

I – The intellectual shift

So, the intellectual shift first.

We now take it for granted; it has become, as it were, part of the furniture. But the conception of risk brought about by the macroprudential approach differs markedly from the one prevailing pre-crisis. Admittedly, this conception is an old one, but it had largely gone out of fashion during the heady atmosphere of the so-called Great Moderation.

At the time, it seemed obvious that "risk is low in a boom and high in a bust" (Graph 2, left-hand panel). But the macroprudential approach turned this dictum on its head, stating that "risk builds up in a boom and materialises in a bust" (same graph, right-hand panel). What we see in a bust or a recession is simply the result of what precedes it.

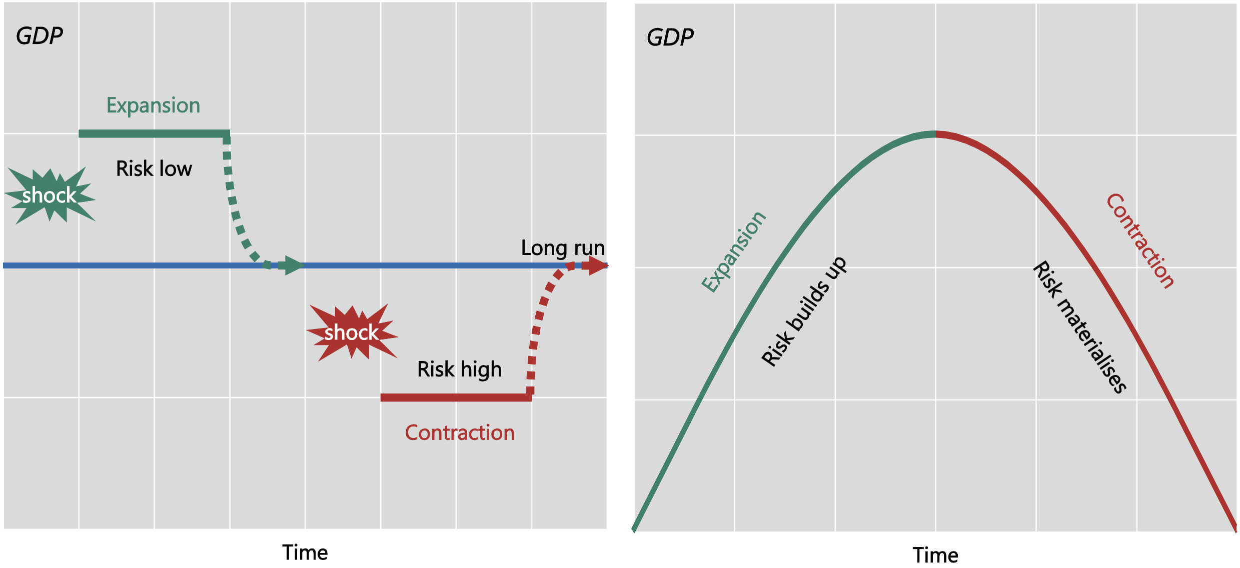
The notion prevailing at the time took root in the idea that the economy switched from states of expansion and contraction as a result of unforeseen ("exogenous") shocks, and then swiftly returned to equilibrium (Graph 2, left-hand panel). By contrast, the macroprudential conception saw the economy as evolving in response to self-reinforcing ("endogenous") forces that might take it away from equilibrium (same graph, right-hand panel). And it was the prevailing notion of the time that hindered the recognition of the risk build-up ahead of the Great Financial Crisis (GFC).

Two conceptions of risk

Graph 2

Prevailing pre-crisis

Macroprudential



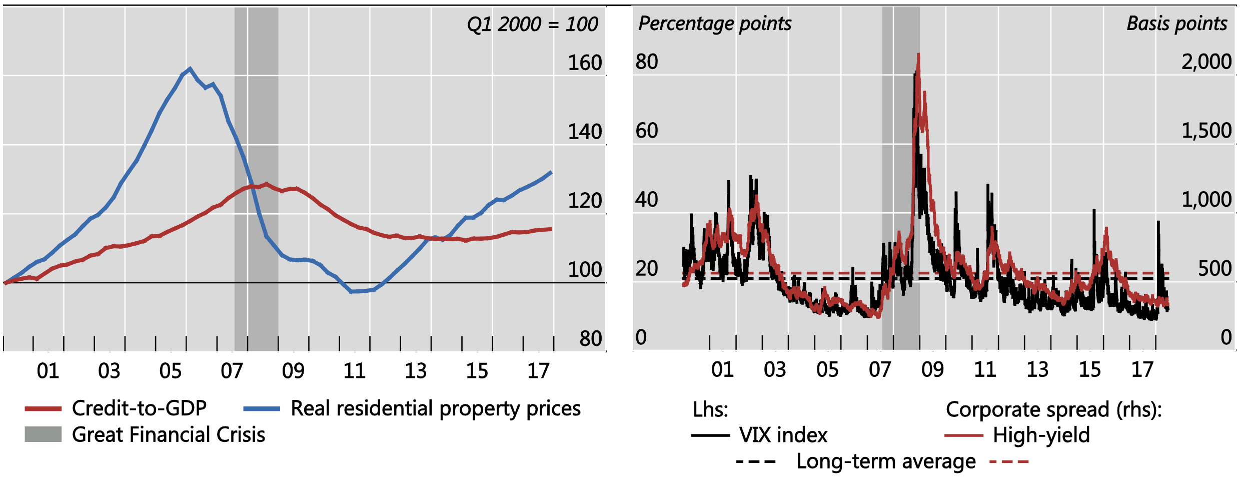
Source: BIS.

Now things have changed radically, very much informed by that experience (Graph 3). Unusually strong increases in credit and asset prices, ie a financial cycle boom, are taken as a sign of growing risk, not of a healthy expansion (left-hand panel). And highly compressed spreads and subdued volatility are taken as a sign of high risk-taking, not of low risk (right-hand panel).

Financial booms, low spreads and volatility are signs of high risk-taking

US example

Graph 3



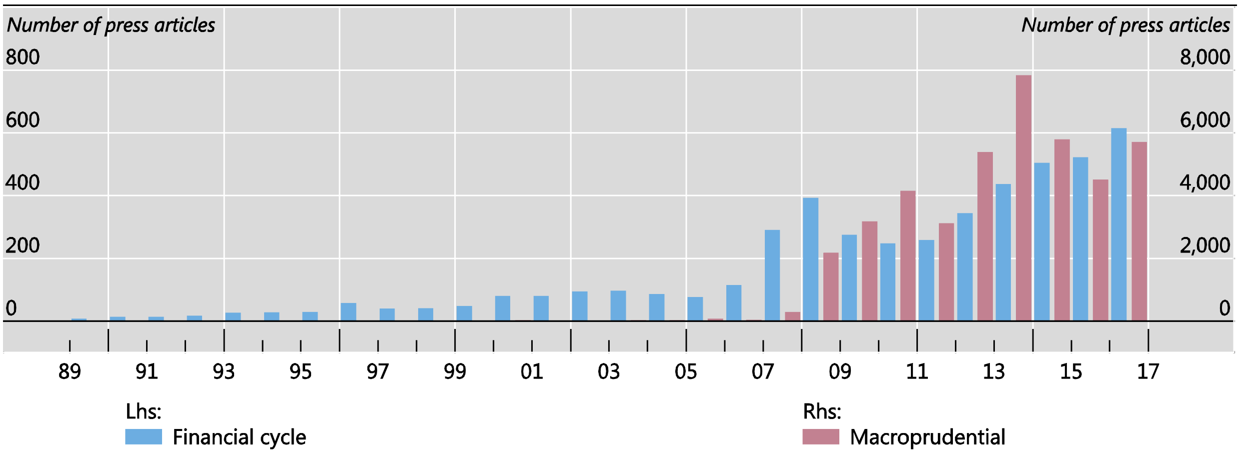
Sources: Bloomberg; ICE; national data: BIS calculations.

To be sure, one may legitimately wonder whether this fundamental intellectual shift has been sufficiently embedded in the current vintage of macroeconomic models. Personally, I doubt it: the issues are inherently complex. But it has definitely spread to other policymaking areas, not least monetary policy.

That all this is now taken for granted is simply testimony to how entrenched the intellectual shift has become. For instance, alongside the term "macroprudential", the term "financial cycle" has grown increasingly familiar. This is indicated in Graph 4, which traces the term's increasingly frequent appearance in the press (blue bars), largely mirroring the pattern for the term "macroprudential".

This intellectual shift is extremely welcome and probably the major gain.

Growing popularity of the terms "macroprudential" and "financial cycle" Graph 4



Source: Factiva.

II – Macroprudential frameworks: progress and outlook

Let me now turn to the assessment of the implementation of macroprudential frameworks.

Post-crisis, we have been gaining considerable experience with the frameworks, including with the identification of risks, the deployment of tools, the impact of the measures, and governance arrangements. In all of these areas, substantial progress has been made. I shall mention just a few points about each; you can read more about them in the chapter.

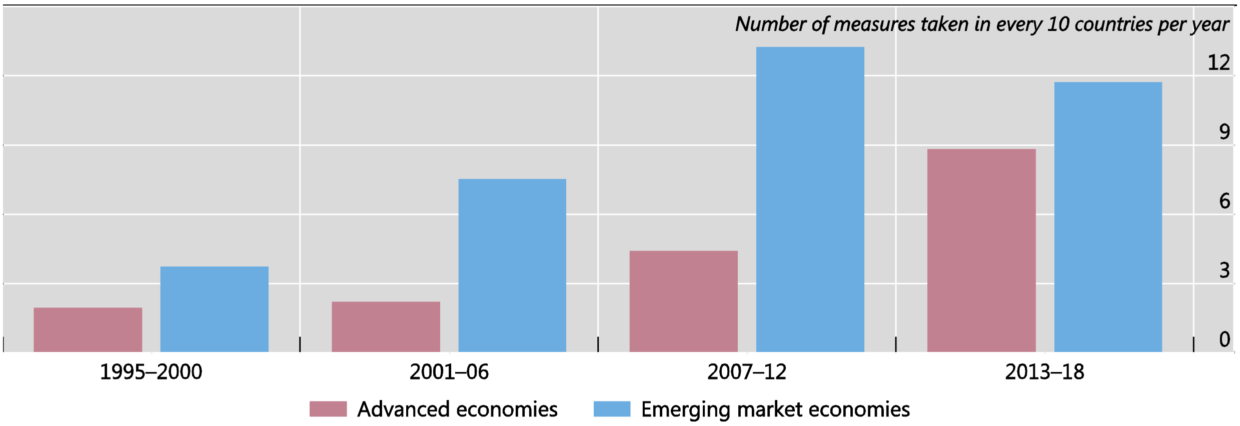
While identifying the build-up of risks remains a challenge, the authorities can now rely on a broad range of tools. These include: aggregate early warning indicators of possible stress a few years in advance, typically based on the notion of the financial cycle; banking system-wide (or financial system-wide) stress tests (so-called macro stress tests); and more qualitative analyses based on a wide array of information.

What are the key takeaways from the experience so far? One takeaway is that there is a need to regard the aggregate analysis only as a starting point for more refined and comprehensive assessments. These may, for instance, look at how debt burdens are distributed across the population of households and firms.

Another takeaway is that macro stress tests are helpful, but have their limitations. In fact, none of them identified the serious risks ahead of the GFC. Technical difficulties in capturing second-round effects loom large, not least as a result of the weaknesses of current macro models. Thus, if improperly used, macro stress tests could even foster a false sense of security. By contrast, they have proved much better as devices to enforce the required recapitalisation after a crisis. Moreover, stressing balance sheets has also been useful in calibrating tools, such as maximum loan-to-value ratios (LTVs) and debt service-to-income ratios (DSTIs).

Turning next to the deployment of tools, it has become clear that this is subject to a number of constraints, of a technical as well as a political economy nature. For instance, vulnerabilities build up only very slowly, so that there is a high risk of being seen as crying wolf and taking unnecessary measures. Similarly, the near-term costs are obvious, at least to some interest groups, while the long-term benefits, though very large, are hard to measure, even ex post. Still, while the risk of an "inaction bias" is real, it has not prevented the more frequent use of measures. This is shown in Graph 5. We see that the number of measures has tended to increase, especially in advanced economies, but that they are more frequently used in emerging market economies.

Macroprudential: growing use of measures over time Graph 5



Sources: BIS calculations; work done for the BIS Annual Economic Report 2018.

The impact of the tools varies. Naturally, most of them are very useful in building buffers and hence the financial system's resilience. That said, they differ in their ability to restrain the growth in credit and asset prices. In particular, maximum LTVs and DSTIs have proved to have a larger and more discernible effect than, say, countercyclical provisions or the countercyclical capital buffer.

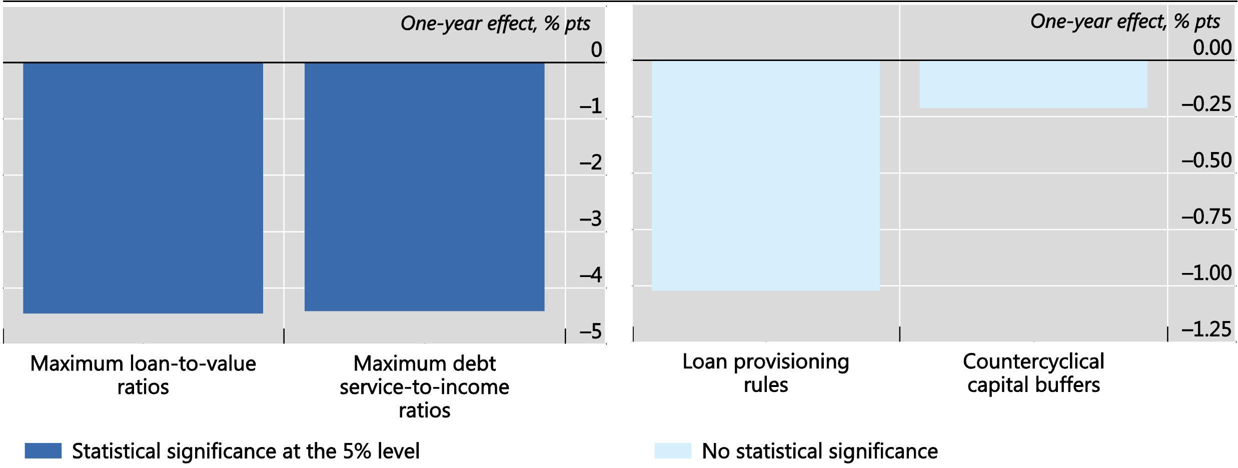
This is illustrated in Graph 6. The light blue bars for provisions and the countercyclical capital buffer indicate that their impact is not statistically significant. This result has been confirmed by policymakers' own assessment of their experience and contrasts with the impact of LTVs and DSTIs (dark blue bars). This is both economically and statistically significant.

In addition, macroprudential instruments in general have some limitations. Most of them apply only to the banking sector. They can leak, ie they are subject to regulatory arbitrage, both within and across countries, possibly pushing activity into the darker corners of the financial system. And, at least *as used so far*, they have not necessarily prevented the emergence of familiar signs of financial imbalances – for instance, in the form of outsize credit growth. This is illustrated in Graph 7, which indicates how the use of the tools (blue bars) did not prevent credit growth from exceeding long-term averages by a large margin (specifically, a highly positive credit-to-GDP gap, red line): the red line is above the dotted horizontal line, which refers to the ceiling for the activation of Basel III's countercyclical capital buffer.

From all this, I draw a number of implications concerning instruments. The analysis suggests that: it is desirable to better identify risks and calibrate macroprudential tools accordingly; to develop more tools that target the non-bank sector, such as asset managers and capital markets more generally; to consider implementing further mechanisms to address cross-country leakages, analogous to the reciprocity clauses of the countercyclical capital buffer; and to complement macroprudential measures with other policies. I will come back to this last point in a moment.

Impact of macroprudential measures on bank credit

Impact of tightening[1] Graph 6

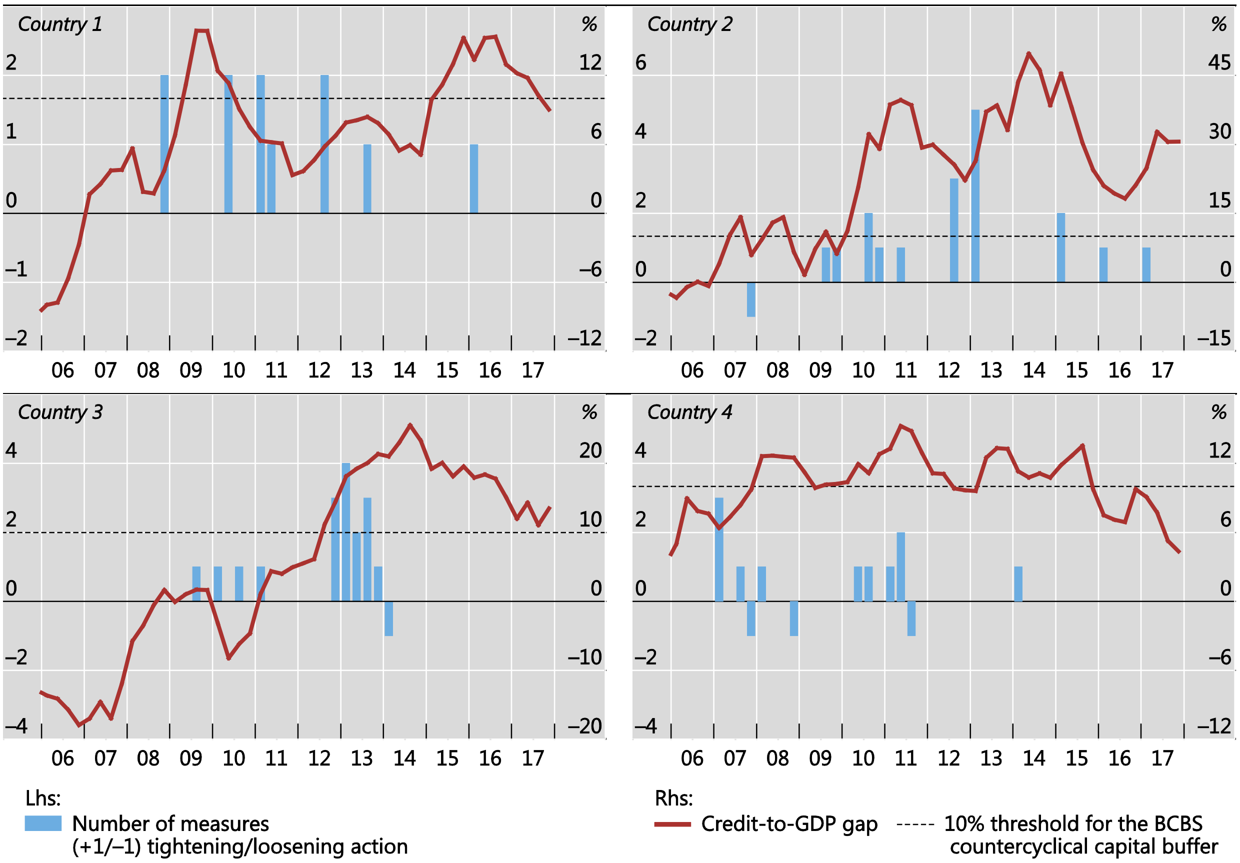


[1] For maximum loan-to-value ratios, maximum debt service-to-income ratios and loan provisioning, impact on housing credit growth; for countercyclical capital buffers, impact on bank credit growth.

Sources: BIS calculations; work done for the BIS Annual Economic Report 2018.

Some signs of financial imbalances even where measures are used actively

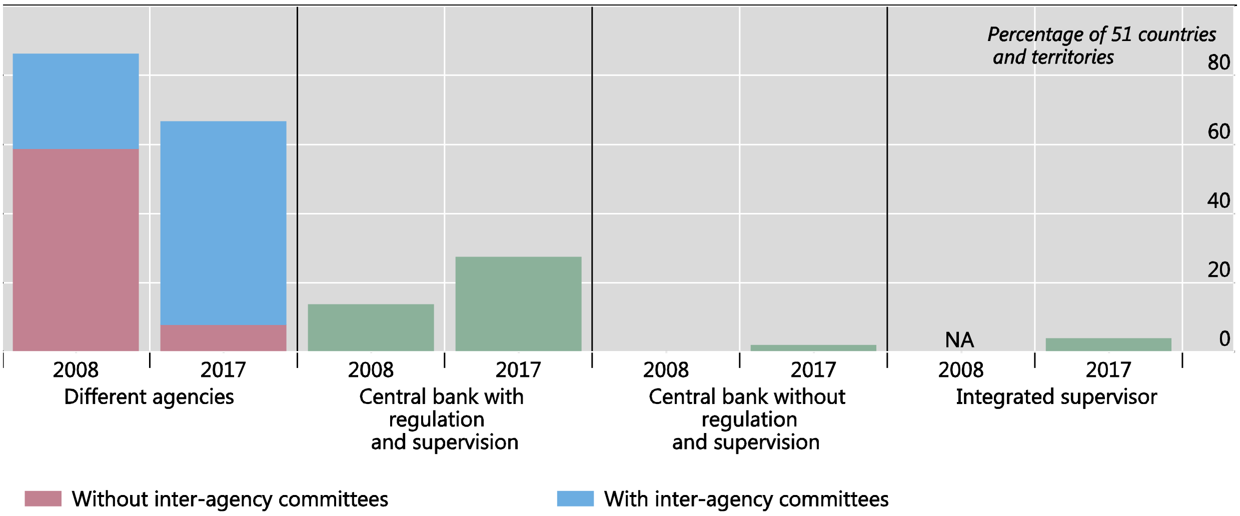
Graph 7



Sources: BIS; BIS calculations; work done for the BIS Annual Economic Report 2018.

Finally, what about governance arrangements? Experience indicates that there is no one-size-fits-all, as they vary a lot across countries. As Graph 8 shows, the most common arrangement is a committee bringing together various authorities (the blue segments of the two bars on the far left). The second most common is entrusting the central bank with responsibility for both the regulation and supervision of individual institutions and macroprudential measures (next set of bars from the left). In general, central banks play a prominent role, making them even more essential for financial stability.

Who is responsible for macroprudential frameworks? Graph 8



Source: BIS surveys.

So far, the experience with governance arrangements has been mixed. For instance, a BIS survey of central banks suggests that coordination through inter-agency committees has not always worked well.

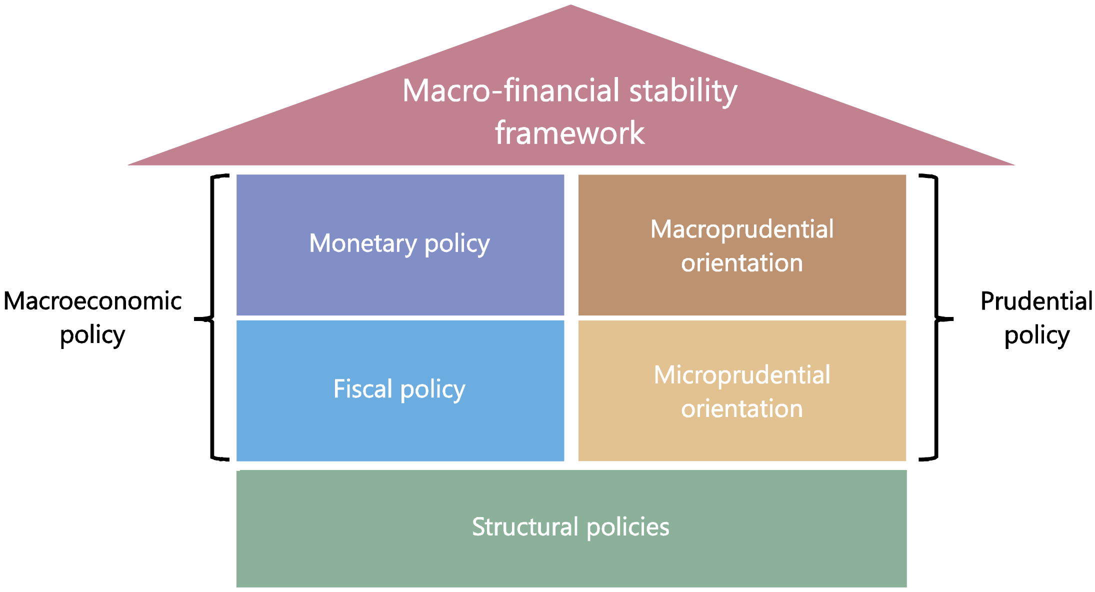
In passing, let me also note a point concerning the need for policymakers' autonomy in this area. My sense is that, in *crisis prevention*, as opposed to *crisis management*, the need for autonomy from the government has been underestimated. True, compared with an inflation-oriented monetary policy, the measures have more obvious distributional implications and the objective is fuzzier. But the lag between actions and effects on the ultimate goal is longer, and there is hardly any constituency against the inebriating feeling of getting richer during a boom. Thus, taking away the proverbial punchbowl is, if anything, even harder than in monetary policy.

My bottom line from all this? If we are to make further progress in implementing effective macroprudential frameworks, we need a pragmatic mix of ambition and realism. Ambition to develop tools further, to target them better, to overcome any inaction bias and, where needed, to coordinate internationally. Realism to understand the tools' and frameworks' limitations, and hence not to entertain overly optimistic expectations about what they can do on their own.

III – Towards a macro-financial stability framework

This naturally brings me to my last point: the need to embed macroprudential frameworks in a broader macro-financial stability framework. As illustrated in Graph 9, such a framework also involves other policies, including monetary, fiscal and even structural ones, underpinned by strong (microprudentially oriented) regulation and supervision of individual institutions.

Towards a macro-financial stability framework Graph 9



Source: BIS.

This should have two advantages. First, ensuring a more balanced policy mix, so as not to overburden macroprudential measures. And second, improving the chances of achieving lasting financial and macroeconomic stability and hence more sustainable growth.

The precise balance between the various policies is still subject to debate. More analysis is no doubt needed. Since we have already discussed the role of these policies in some detail in previous Annual Reports, here let me just mention a few key points for each.

The role of monetary policy is still quite controversial. It is generally agreed that monetary policy and macroprudential measures interact closely, that monetary policy can affect the build-up of financial imbalances – after all, it operates partly by influencing credit, asset prices and risk-taking – and that monetary policy can complement macroprudential measures because it can reduce leakages, since it is much more pervasive. But views about its role depend on the degree to which one considers macroprudential and microprudential measures sufficient to ensure stability as well as on assessments of any collateral damage that monetary policy may have.

Clearly, the room to use monetary policy increases once central banks' anti-inflation credibility is established. This is because, at a minimum, a more financial stability-oriented monetary policy requires a certain tolerance for deviations of inflation from objectives and a lengthening of the policy horizon.

Moreover, using monetary policy involves not only interest rates but also foreign exchange intervention. Just as with other macroprudential tools, leaning with foreign exchange intervention can help build up precautionary buffers in good times so as to run them down in bad times. And it may also help constrain the build-up of imbalances, at least as long as market participants do not perceive it as providing insurance.

The role of fiscal policy, too, is multifaceted. The tax code can be used to influence credit and asset prices. In particular, it would be very helpful to reduce the tax bias that typically favours debt over equity. In addition, it is important to ensure sufficient fiscal space to address any crises that might materialise: as we know, the sovereign's balance sheet is the ultimate backstop for the financial sector. Ensuring fiscal space requires full recognition of the flattering effect that financial booms have on the fiscal accounts, obscuring their underlying strength.

Finally, structural policies can help too. For instance, regulations that artificially constrain land supply can amplify property price booms and busts. And more generally, inflexible labour and product markets reduce an economy's resilience to macroeconomic downturns.

Conclusion

Let me sum up. Substantial progress has been made in implementing macroprudential frameworks. But challenges remain. And they will require action well beyond the bounds of the narrow macroprudential sphere itself.