

## MACROPRUDENTIAL POLICY: GOALS, CONFLICTS, AND OUTCOMES

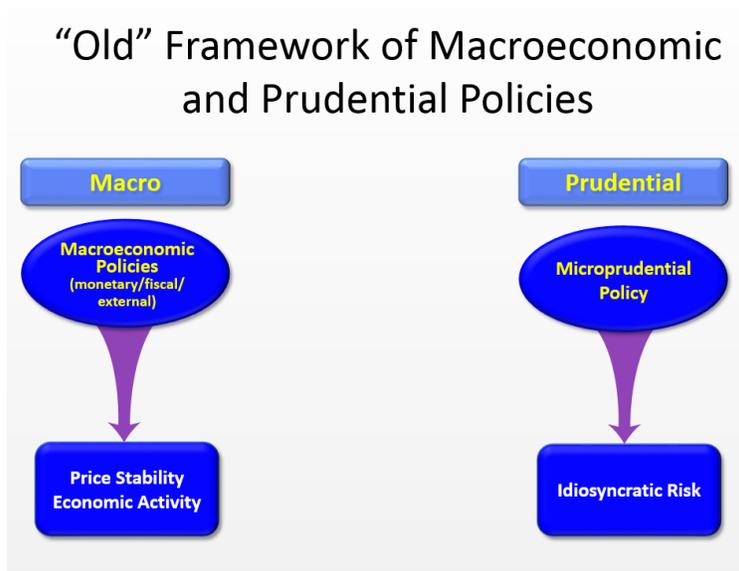
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**Federal Reserve Board**

Next Steps in Macprudential Policies conference  
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Columbia University

I will present a broad overview of macroprudential policies and the issues related to the theme of this session of the conference, "Goals, Conflicts, and Outcomes". My presentation is based on two papers, a review paper on what works in terms of macro-prudential policy tools, and a more specific paper documenting the use of macroprudential policies and investigating the effects of individual instruments.<sup>1</sup> But let me start with a disclaimer that the views expressed here are not the views of the Federal Reserve Board.

My starting point for talking about macroprudential policies is a comparison of where we were before the crisis in terms of macroeconomic and financial system management and what we are doing today. Before the crisis, we thought we had a fairly well-developed understanding of how we should manage the economy and the financial system. We had two pillars: monetary and fiscal policies for price and economic stability; and microprudential regulation and supervision for managing idiosyncratic risks facing financial institutions (Chart 1). Those two pillars were well accepted and considered sufficient. Of course, the global financial crisis proved us wrong in terms of financial stability.

Chart 1

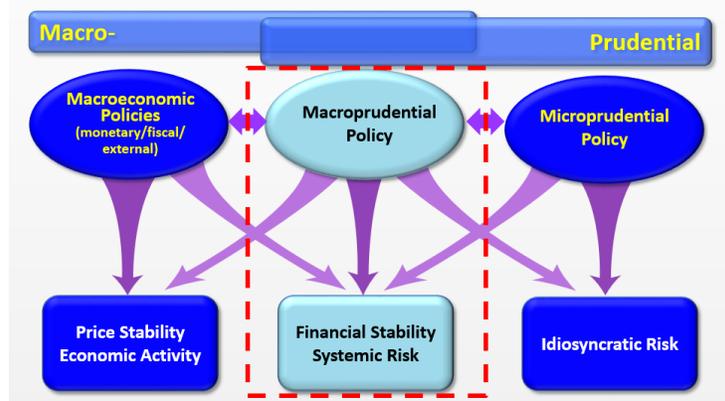


Now we have a more expanded paradigm, a broader view of how to manage the economy and the financial system. In acknowledgement of the crisis experience, we have inserted between the two pillars a third one: macroprudential policies aimed at financial stability (Chart 2). This new pillar is not just inserting an additional tool and objective. There are a lot of interactions of the new tools and objectives with existing ones that we have to worry about as the various arrows demonstrate. On the monetary side, we can have effects of interest rates on financial stability. We know some of these well, and I am going to talk about these later. And from the microprudential side, experience and analytics show that those tools can interact with macroprudential policies and in turn affect financial stability.

<sup>1</sup> Claessens, Stijn (2016). "An Overview of Macroprudential Policy Tools," *Annual Review of Financial Economics*, <http://www.annualreviews.org/doi/pdf/10.1146/annurev-financial-111914-041807>, and Cerutti, Eugenio, Stijn Claessens and Luc Laeven (2016). "The Use and Effectiveness of Macroprudential Policies: New Evidence," *Journal of Financial Stability*, <http://dx.doi.org/10.1016/j.jfs.2015.10.004>

Chart 2

## “New” Framework of Macroeconomic and Micro- and Macroprudential Policies



So when we think of the impact of macroprudential policies on financial stability, we cannot conduct this as a separate policy exercise. We must account for the interactions between the various policies because those are also going to affect the overall outcomes in terms of price and economic stability and financial stability. So the new paradigm unfortunately is not as clean and not as easy as we may have hoped when we first considered macroprudential policies. Which is why having this conference is so useful.

Before looking at the empirical evidence on the effectiveness of macroprudential policies, I want to remind everyone why macroprudential policies are needed. One reason is, of course, that finance is very procyclical. We have too many booms that also too often end up in busts; I will call them bad booms. This is what one can call the time series dimension of financial stability. It often runs through asset prices and leverage, such as in house prices and real estate lending, which risks we know very well from the global financial crisis. In addition, there are the cross-sectional elements, those more structural elements of the financial system, which can cause contagion due to interconnections and importantly are often driven by “too big to fail” financial institutions. Both dimensions can call for macroprudential policy tools. The two dimensions, time-series and cross-sectional, can coincide of course, and importantly will interact and probably amplify each other at certain points in time.

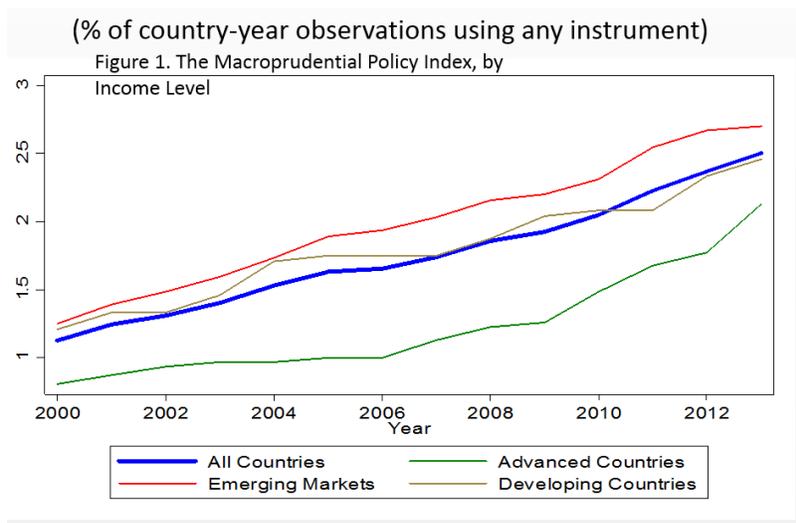
Important for the motivations for macroprudential policies is of course is that the monetary and fiscal policy tools and the microprudential tools that we have are not sufficient to deal with these procyclical and interconnection issues. And that’s why we are considering the macroprudential policy tool kit. But I want to stress that just because we have a financial cycle, just because we have interconnections, these phenomena are not sufficient justification for using macroprudential policy tools. For one, policymakers have to be sure that they have used the other tools properly, before jumping to the decision to use macroprudential policy tools. We should for example not use macroprudential policies as substitutes for monetary policy or microprudential policy tools. And second, macroprudential policies should not be used just to influence credit allocation or otherwise reduce the financial cycle and reconfigure the financial system. We should use them because we don’t want certain aspects of the financial cycle or the buildup of systemic risks, particularly those due to externalities or market failures.

At the same time, I do want to highlight that there can be other objectives and distortions that can sometimes justify macroprudential policy tools. It is useful to reflect for example here on the link between microprudential and macroprudential policies. Capital adequacy requirements for individual financial institutions – a key microprudential policy tool to achieve individual financial institutions’ safety and soundness objective – can lead to some procyclicality in the financial system. The justified microprudential policy can then be a reason to have also macroprudential policies. Another example, more in the sphere of distortions, is the deduction of interest payments from taxes which is quite common in many countries. But interest deductibility creates incentives for leverage and thereby can lead to systemic risk. Of course, if we could avoid policies that create

such distortions (like interest deductions), I believe that could help tame the financial cycle in a significant way. But we haven't tackled these problems yet, so in the meantime, macroprudential policies may have to do more.

Let's look next where we are in terms of actual use of macroprudential policies. This chart (Chart 3) gives a snapshot. It's an index of the use of macroprudential policy tools for a sample of countries, about 120 countries or so. The blue line is the average around the world. The lines for the subgroups, advanced countries, emerging markets and developing countries, are more or less parallel. So all countries are increasing their use of macroprudential policies. However, the more advanced countries, OECD countries, are behind the curve in some sense. They have less usage of macroprudential policy tools in the early 2000s, i.e., before the crisis, although since then they have tried to catch up a bit. Nonetheless emerging markets are ahead of advanced countries in the use of these tools.

Chart 3



Next is the question what kind of tools are being used, where I rely on the paper by Cerutti, Claessens and Laeven (2016) that summarizes this usage. I will not discuss stress tests, which is the topic of another session in the conference. Stress tests, which have been put in place in various countries, are useful for macroprudential objectives, but probably more important in terms of building buffers and resilience than necessarily in controlling behavior through formal disincentives. Rather I'm going to talk about the formal tools that are meant as disincentives.

In terms of tools, I would like to make the distinction between borrower-based and financial institution-based. The list (Chart 4) is familiar so I will not go through it in detail. But one can think of limits on the loan to value ratio (LTVs) as the main borrower-based macroprudential tool. Similarly, debt to income and other such restrictions limiting the amount that can be borrowed for real estate or for other purposes are called borrower-based. Among the borrower-based I would include activity-based macroprudential tools which can include margins, haircuts, and the like, applied financial transactions such as securities financing. There are now a plethora of financial institutions-based instruments, including counter-cyclical capital buffers, systemic and other surcharges to capital requirements, and the list goes on. It's quite long and at the same time it is well known, largely because many of these are microprudential based regulatory tools that are being adapted to a macroprudential context.

Chart 4

## What MAPs Exist, Are Being Used?

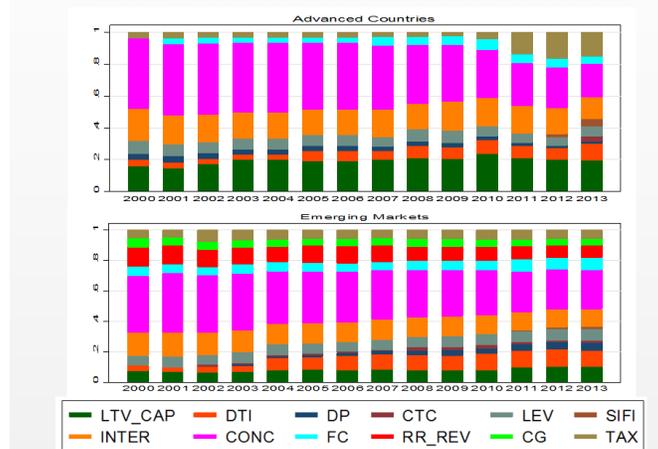
1. **Borrower- or activity-based**
  - i. Loan-to-Value Cap (LTV)
  - ii. Debt-to-Income Ratio (DTI)
  - iii. Margin/Haircuts (minimum, cyclical)
  - iv. Taxes/fees on turnover ("Tobin" taxes)
2. **Financial institutions-based**
  - i. Time-Varying/Dynamic Loan-Loss Provisioning
  - ii. Counter-Cyclical Capital Requirements, Leverage Ratio
  - iii. Capital Surcharges on SIFIs
  - iv. Limits on Exposures, Concentration
  - v. Limits on Foreign Lending
  - vi. Reserve Requirements
  - vii. Credit Growth Caps
  - viii. Levy/Tax on Financial institutions

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A more detailed view of which countries are using what macroprudential tools can be seen in Chart 5. While advanced economies were low in terms of the usage of macroprudential tools overall, when they use tools, they have tended to use borrower-based instruments (in green). Over time advanced countries have started to diversify, and we see now some advanced countries using a broader set of tools. Emerging markets have always used a wide array of macroprudential tools. One explanation is that emerging countries have immature financial systems and more distortions in their economies and financial systems in many ways, which can explain greater use of macroprudential tools.

Chart 5

## ACs Use More Borrower-based EMs Use A Broad Set of MAPs



Another explanation is the historical experience, particularly in East Asia and Latin America, with financial crises and their severe financial and macroeconomic after effects. Such experiences have made emerging markets more inclined to use these tools to reduce booms that may turn into bust. Note that booms in emerging markets have also more often been associated with large capital inflows, followed by sharp outflows. This is reflected in the details about the tools used. Emerging markets often use foreign exchange, reserves requirement, or other capital flow related tools to minimize the domestic impact on booms coming from international dimensions. In sum, while there are still quite large differences among countries, there is starting to be some convergence to a similar set of macroprudential tools internationally.

In terms of the effects of macroprudential tools reducing risk, Claessens (2015), provides a summary of the international evidence, which I will briefly discuss. I focus on the effects of macroprudential policies in terms of reducing the size of the boom. I will not summarize here their effects on mitigating the busts, but in many ways, macroprudential policy tools are very important for building buffers for the bust. I think the usefulness of macroprudential encouraged buffers are straightforward in the sense that if you do more to build buffers, you're going to get more benefits from buffers. In contrast, it is a lot more difficult to determine the incentive effects of these tools to reduce booms, particularly the bad booms. As I noted earlier, we don't want to kill any boom, we just want to kill the bad booms, so to speak.

Summarizing the literature on macroprudential tools to date, I would say that the borrower-based tools, and particularly those associated with real estate borrowing, e.g., limits on LTVs, are an important part of reducing the risks of bad booms. Cross country as well as individual country evidence suggest that LTVs and DTIs have been quite effective in reducing (bad) booms. That they work for the real estate is to be expected because they are very targeted tools. LTVs especially are hard to circumvent, for example, if you have some kind of a form of collateral registry, you cannot easily avoid it. At the same time, borrowing limits such as LTV have proven to be politically the most costly, or at least very costly. Going to congress or parliament and saying, 'well, you, the first time borrower, have to have a LTV of less than 75%', is likely to be unpopular everywhere. While LTVs may reduce procyclicality of lending, they may well interfere with other policy goals such as a drive for home ownership. In short, reducing real estate lending can be politically very difficult.

The financial institutions' based tools are more familiar (and perhaps less political). That may be a reason they have been used a little bit more recently, especially in advanced countries. At the same time, they are easier to circumvent, not so much because an individual institution can evade them, but evasion that occurs in markets through shadow banking and other new forms of financial intermediation that are not subject to these rules. We also, I think, know less about how they exactly affect incentives, particularly during asset booms, than we know about the borrower-based tools. And of course, these macroprudential policies are costly for financial intermediations, in terms of pressure on margins, profitability, capital, and franchise value.

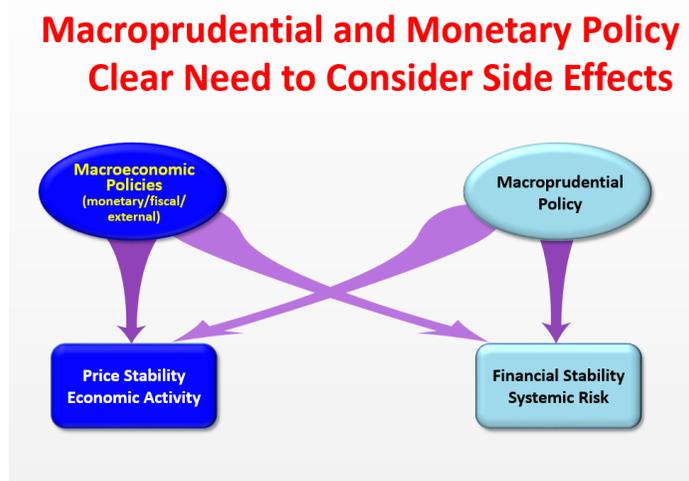
On the whole (and based largely on evidence from emerging markets), I would say that most of these tools have done more to temporarily cool booms than to necessarily stop them. Moreover, it has proven hard to sustain these tools for long periods of time. International experiences suggest that policymakers must lean against the wind for considerable periods of time and not give up when using macroprudential tools. For example, if you want to reduce house price and related real estate credit growth, policymakers should assume that they will need to use a variety of tools and to work at it for some time. Countries like Korea, Hong Kong and Singapore have shown here how hard it can be to reduce pressures. The use of dynamic provisioning to "get ahead" of credit losses has had a similar record. Spain is a good example here, and Jose Manuel Campa is going to present more about it. It was well designed, but proved not to be sufficient to fully reduce the boom or mitigate the bust there. In that sense, the macroprudential policies to date have often not be sufficient for the reducing booms and avoiding busts.

An important area of uncertainty is how little we know about the costs of macroprudential policy. We tend to assume that the benefits are large, which given the global financial crisis may be a safe assumption, but there are costs. Macroprudential policies are distorting, possibly adversely affecting outputs. They distort financial institution behavior and likely the workings of markets. In situations like today, when financial intermediaries already have been stressed, the direct cost of macroprudential policies is an important consideration. But one also can think of other costs. Macroprudential policies have the potential to backfire in many ways. There are risks to the regulatory authorities implementing these tools in that the tools may not fully deliver, with possibly related political economy consequences. And these risks are greater because there still are limited experiences and data on the effects of macroprudential policies, in contrast to longer experience with monetary and microprudential policies. As we gain more experiences with macroprudential tools and conduct additional research, we should become better informed on which tools provide the largest benefits relative to their costs, which should help mitigate some of these costs and risks.

Let me finish with the issue of conflicts between macroprudential and other policy tools, a question that was also raised for this panel. A key question is how to coordinate macroprudential policies with macroeconomic and notably monetary policies (chart 6). As I said earlier, it is clearly not so easy to think of these tools as

separate because there are many interactions between them. For example low interest rates are an important policy tool to stimulate economic growth, but can possibly adversely affect financial stability through increased risk taking. And this works in the opposite direction as well. If monetary policy has to raise interest rates post-crisis for macroeconomic reasons, as is often needed in emerging markets that may also create conflicts with financial stability. And in small, open economies, the coordination between macroprudential policies, monetary and exchange policies, and capital flows management policies – and their impacts on capital flows – are complex in general.

Chart 6



Still, the paradigm in a very simple world would be to say we can separate these policies quite well as long as the bulk of them work well. So if monetary policy is very effective on the macroeconomic side, and if macroprudential policy is effective on the financial stability side, then the two can probably be separated and we don't have to worry. Although there are interactions, these can be accounted if understood and well measured. Similar to fiscal and monetary management, one can separate the two policies as long as one takes those interactions into account in each other's conduct. In that case, the question of how to achieve coordination is not an issue. And, regardless, there will often be a complementarity between monetary and macroprudential policies, as when the phases of the business and financial cycles coincide.

The issue is when these policies don't work very well. On the macro-prudential side, that's an obvious concern, since we know we will not be able to target financial stability perfectly well, i.e., we will not be able to stop all bad booms perfectly. This means that monetary policy will from time to time have "to get into the cracks," as then FRB governor Jeremy Stein said in a speech a few years ago. Conversely, if monetary policy is very restricted, macroprudential policies may have to do more. One can think here of the close to zero interest rates many advanced countries are facing today, or of the currency union in Europe where Spain did not have its own independent monetary policy. In such circumstances, there will be cases in which the macroprudential arm will have to do a little bit more of the lifting to assure price and notably economic stability, so as to reduce the weight of the missing monetary policy arm.

Considering the interactions, I would say that institutional separation is still an acceptable paradigm, but then one would have to think clearly about the mandates, decision-making processes and procedures, and accountability governing the two policies. Since there are going to be areas of conflicts, if one does not sufficiently clarify these matters upfront, then it is more likely that one will have conflicts. The issue of possible conflict of interests relates to the issue of where one should put the macro-prudential policy decision functions (the implementation of tools could be delegated). It can be in the central bank, because then one would internalize the need for coordination between the two obviously. At the same time, combining can create other conflicts and make it more difficult to separate the two objectives, clearly communicate policy actions in relation to each, and be accountable on both of these issues. So it's not an obvious where institutionally the macroprudential policy function is best located. I think that it is again an issue that we probably need to research and discuss more.

On the whole, my review of the literature and experiences so far suggest that we're still in the early stage of the design of macroprudential policies. As such, the conference is a very good one and I would want to leave here with a call for more analysis. While there are many interesting research questions, one that particularly deserve more attention is the cost of macroprudential policies. While cost-benefit analysis of tools affecting financial stability, or financial intermediation more generally, is always hard, and I thus don't want to stress that concept per se, we do need to think more about costs. That cost question can be even a relative sense, where I mean trying to answer the question whether there are tools that can achieve the same outcome at lower costs. This will among others require investigating possible complementarities between various tools, e.g., can they work together, or are they substitutes, always or at some points in time? So there's a research agenda I think we'll have to pursue more as well as a policy agenda that we have to discuss more.