

Discussion

1. Piti Disyatat

The paper by Giovanni Dell'Ariccia provides a concise yet insightful review of the literature on the link between bank risk-taking and property prices. This is not a straightforward task since this link is not well developed, with only a handful of papers that directly deal with the issue at hand. As a result, the review must draw on several distinct fields of study to glean the relevant insights. In this respect, the paper does an excellent job in pulling together the key components from the theoretical and empirical literature on credit constraints, leverage cycles, asymmetric information and bubbles.

My comments are mostly suggestive, focusing on elements that are currently downplayed and which may usefully be included in the review. I also have some slight differences in emphasis in terms of the paper's policy prescription.

Starting with the discussion on bank risk-taking, it is important to be clear that the concern here is *excessive* risk-taking. Banks take risk as part and parcel of their business so risk itself is not the issue. In this respect, the paper could usefully lay down a precise notion of what constitutes excessive risk-taking. One working definition could be the degree to which banks take risks that are not compensated for by higher yields, that is, projects that *ex ante* have negative present value. This begs two key questions: (i) what motivates banks to take on excessive risk; and (ii) why was it allowed to happen?

With respect to the first question, the paper emphasises the macroeconomic backdrop and enablers of risk-taking and places relatively small emphasis on the underlying agency problem at the managerial level. The recent financial crisis has exposed a number of weaknesses in the compensation structure and corporate governance of financial institutions. As highlighted by Mehran, Morrison and Shapiro (2012), the unique feature of banks is the presence of a multiplicity of stakeholders (shareholders, insured and uninsured depositors, debt holders, subordinated debt holders, etc) and the complexity of their operations. This translates into a setting where stakeholders have less control than managers over the bank. In this situation, the incentive structure created by compensation arrangements plays a critical role in how much risk banks take on.

Evidence on compensation practices at US banks over 1996–2007 cited by Mehran *et al* (2012) indicates a structure that seems to favour short-term returns over the maintenance of long-term franchise value. For example, apart from the steady increase in reliance on cash compensation and bonuses, close to 50 per cent of options granted had a vesting schedule of less than a year. And once these options become vested, around half were exercised within a year. A by-product of such a compensation structure is the creation of a culture of risk in which risk-takers are accorded status and influence. The paper would do well to include a discussion of these issues in explaining bank risk-taking.

Moving on to the second question: why was risk-taking allowed to happen? Here one could think of three broad factors. The first is that excessive risk-taking was inadvertent. This may have reflected lax risk controls resulting from the opaque and complex nature of bank operations or, more importantly, overoptimism in judging future economic and asset price trajectories. Second, regulatory forbearance may have been at play to varying degrees. Certainly in the United States, political pressure in favour of 'affordable housing' mandates contributed to an environment in which housing credit was seen as a public good. Third, weak market discipline resulting from public safety nets and too-big-to-fail perceptions was likely to have contributed to an environment conducive to excessive risk-taking.

Personally, I am not convinced that market discipline can be relied on to keep risk-taking in check. If anything, experience suggests that market discipline works best when one would *not* like it to. That is, during crises banks that are perceived to be risky cannot obtain funding at almost any cost, exacerbating the systemic liquidity problem. At the same time, during normal times, market discipline seems to be such that highly profitable banks are rewarded with a good credit rating and easy access to funding. Given that high profits are often commensurate with high risks, prudent behaviour is simply not rewarded. The overall result of market discipline is then to boost markets in booms and intensify problems in busts.

Against this backdrop, the key question is what specific features of property markets make lending to that sector especially susceptible to excessive risk-taking. The key identifying feature is that property lending is heavily collateralised by the very asset that the borrowed funds are used to purchase. This can give rise to a sense of security and safety. In fact, banks often view mortgage lending as one of their safest activities. As long as property prices are not expected to fall dramatically, or at least not by as much as the amount of the down payment, banks will not worry so much about borrower default and the possibility of owning the underlying property. Thus in periods of sustained increases in property prices, banks may be tempted to neglect borrower characteristics in extending mortgage loans. The fact that real estate price increases tend to be persistent serves to reinforce such one-way price perceptions.

Turning to the policy prescription, overall, the paper seems to be quite guarded in discussing available policy options and, from a practical perspective, it would be helpful if the paper would come out more strongly one way or another in this regard. As it is, there are nevertheless things I agree with, things I disagree with, and issues that are left out but could be usefully added.

To start with the areas of agreement, the paper argues rightly that the aim of policy should be to address the underlying risks associated with rapid credit expansion rather than rising property or asset prices *per se*. This echoes the arguments forcefully made by White (2009) and need not be restated here. I also share the paper's generally positive perception regarding the potential of loan-to-value (LTV) limits to mitigate excessive risk-taking. Much of the regulatory reform efforts post-crisis have been focused on ways to increase banks' 'skin in the game'. In fact, many of the troubled banks had skin in the game, so much so that the losses overwhelmed them. Given the distortions in compensation structures discussed above, a more effective way to limit bank risk is to increase borrowers' own exposure. LTVs accomplish this and at the same time give banks more cushion on the downside. The experience of LTVs in Asia has also been generally positive (see, for example, Hong Kong Monetary Authority (2011)).

The key area of disagreement involves the paper's apparent argument that the role of monetary policy is limited. While the link between interest rates and asset price run-ups is indeed tenuous, it is hard to deny the critical role that monetary policy plays in influencing credit dynamics. After all, monetary policy sets the price of leverage. As the paper highlights, credit plays a crucial role in property price cycles and very much conditions the severity of the bust phase. Starting from the premise that monetary policy is a key determinant of credit growth, the relevant question is not whether monetary policy caused the boom or not – which inevitably leads to negative results given the many structural factors at play – but whether enough was done to restrain the boom. One should not look to monetary policy to prevent boom-bust cycles, just as one would not judge the worthiness of speed limits on the basis of whether all accidents are avoided or not. But it is important to make sure that monetary policy does its fair share in mitigating the amplitude of the cycle and, at the very least, abstains from fanning the boom.

I am also unconvinced by the argument that the combination of tame inflation and relatively small output gaps pre-crisis weakens the case for monetary policy action to contain credit growth since this would have led to large output losses. At its core, the goal of monetary policy is to foster sustainable economic growth. High inflation is a sign of overheating that threatens this goal and needs to be counteracted. But a credit boom also signifies potential overheating, in many instances even more so than does inflation. The growth sacrifice that comes from tightening policy to curb rapid credit growth is not any more superfluous than that associated with policy action to slow down inflation. Price stability is not an end in itself, but a means to achieving sustainable economic growth. Anything that threatens the latter and is amenable to monetary policy should elicit a response.

Moreover, it is important to keep in mind that prevailing output gap estimates are derived using inflation developments as the predominant indicator of overheating. The contribution of credit, and information about the financial cycle more broadly, are not considered. This can result in inaccurate assessment about the economy's sustainable output level and hence the perceived desirability of policy actions to moderate a credit boom. As illustrated in Borio, Disyatat and Juselius (forthcoming), incorporating information from credit growth into estimates of potential output yields significantly larger (positive) output gaps compared with standard measures in the run-up to the global financial crisis in a number of countries, including the United States and the United Kingdom. Based on such credit-adjusted output gaps, a stronger case for monetary action to counteract the credit expansion could have been made.

Finally, the discussion on policy options could be expanded to include a number of pertinent issues. First, a review of corporate governance reforms currently under consideration would be useful. In particular, suggestions have been made to amend bank compensation structures so that managers internalise the consequences of excessive risk-taking. Bolton, Mehran and Shapiro (2011), for example, propose tying part of a CEO's compensation to the bank's credit default swap spread. Leijonhufvud (2012) suggests remunerating executives in part with equity that carries double liability in case the institution becomes insolvent.

Second, the discussion on the implementation challenges of counter-cyclical rules could be extended. It has been noted that business cycle and credit cycles are not synchronised, with the latter tending to have much longer duration (Drehman, Borio and Tsatsaronis 2012). In this

context, calibration of counter-cyclical macroprudential tools may be difficult. Indeed, Repullo and Saurina (2012) show that deviations in the ratio of credit-to-GDP from trend can be negatively correlated with output growth, resulting in unintended changes in capital buffers under Basel III.

Third, the paper could usefully discuss possible synergies to be had from combining macroprudential tools. The variation of risk weights linked to LTV ratios, as has been done in Ireland and Thailand, represent examples. The use of various instruments in combination offers a way to mitigate the shortcomings specific to individual tools, potentially creating hybrid instruments with new properties that warrant further exploration.

References

Bolton P, H Mehran and J Shapiro (2011), 'Executive Compensation and Risk Taking', Federal Reserve Bank of New York Staff Report No 456.

Borio C, P Disyatat and M Juselius (forthcoming), 'Rethinking Potential Output: Embedding Information about the Financial Cycle', BIS Working Paper.

Drehman M, C Borio and K Tsatsaronis (2012), 'Characterising the Financial Cycle: Don't Lose Sight of the Medium Term!', BIS Working Paper No 380.

Hong Kong Monetary Authority (2011), 'Loan-To-Value Ratio as a Macroprudential Tool – Hong Kong SAR's Experience and Cross-Country Evidence', in *The Influence of External Factors on Monetary Policy Frameworks and Operations*, BIS Paper No 57, pp 163–178.

Leijonhufvud A (2012), 'The Economy's Mysterious Web of Contracts: The Origin of Financial Market Instability', *The International Economy*, Spring, pp 48–53.

Mehran H, A Morrison and J Shapiro (2012), 'Corporate Governance and Banks: What Have We Learned from the Financial Crisis?', in M Dewatripont and X Freixas (eds), *The Crisis Aftermath: New Regulatory Paradigms*, Centre for Economic Policy Research, London, pp 11–44.

Repullo R and J Saurina (2012), 'The Countercyclical Capital Buffer of Basel III: A Critical Assessment', in M Dewatripont and X Freixas (eds), *The Crisis Aftermath: New Regulatory Paradigms*, Centre for Economic Policy Research, London, pp 45–67.

White WR (2009), 'Should Monetary Policy "Lean or Clean"?', Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute Working Paper No 34.

2. General Discussion

The discussion began with comments on the difficulty of comparing the dynamic relationship between housing prices and inflation across countries as shown in Figure 4 of the paper. It was suggested that in different countries there are different treatments of the housing service flow of owner-occupied dwellings and, as a consequence, there will be different patterns of inflation and housing prices across countries. It was highlighted that the European Central Bank's harmonised index of consumer prices does not include owner-occupied housing service flows while the US consumer price index (CPI) does. Indeed, one participant said the weight of housing service flows in the US CPI was in excess of 20 per cent and, accordingly, these measurement differences between countries were non-trivial.

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The discussion then shifted towards whether or not owner-occupied housing service flows *should* be included in consumer price indices, with one participant suggesting these flows could be included using a user cost measure. They said this, in turn, links back to how housing prices are measured and highlights the importance of research such as Deng, Gyourko and Wu (this volume).

Against this background, another participant drew attention to their research for the United States showing that housing prices are a highly significant determinant of inflation in the long run. The paper's author, Giovanni Dell'Ariccia, agreed; however, Dr Dell'Ariccia noted that this finding is largely irrelevant for central banks, who are more concerned with two-to-three-year inflation forecasts. Notwithstanding this, he went on to say that low inflation was not a sufficient reason for central banks not to take action against unhealthy booms in housing prices. However, he emphasised that it is difficult to stop a boom in real estate prices and credit with monetary policy. To have any meaningful impact interest rates would have to be raised significantly with possibly very high costs to the real economy.

Abstracting from measurement issues, another participant argued that the coincidence of a real estate boom with low and stable inflation would be expected because low interest rates are always possible with low inflation rates, and low interest rates push banks to take more risk, particularly in the housing market.

On the link between real estate price cycles and bank behaviour, one participant expressed scepticism that banks, and indeed other corporates, could be disciplined by markets because the market incentivises leverage. It was noted that bank owners and managers effectively have a call option on their firms and the value of this option increases with volatility and the probability that the option will be 'in the money'. Moreover, it was argued that volatility and the probability of an option being in the money increases with leverage. Accordingly, the incentive to have a highly leveraged institution, particularly for banks, is a testing issue to face when trying to formulate regulation. In response, Dr Dell'Ariccia said he was sympathetic to the view that there should be rules on managerial compensation; however, he noted that before having an intrusion on private contacts one needs to see evidence of market failure. On the topic of market failure and the design of managerial compensation rules it was emphasised that one needed to distinguish between whether there was an inability of shareholders to discipline their managers or whether shareholders have the same conflict of interest as managers.

One participant also expressed scepticism about loan-to-value (LTV) ratios as a macroprudential policy tool. They said such tools could work in some systems but that they would never work in the United States or within systems where a ban on second lien mortgages cannot be enforced. Moreover, they said the problem of circumvention is difficult to prevent (for an example, see Kang (this volume)). In responding, Dr Dell'Ariccia said the jury is still out regarding the effectiveness of LTVs as a macroprudential tool and that it will be interesting to examine the incidence of circumvention as more countries adopt these tools.

Continuing on the theme of macroprudential tools, one participant said a challenge for central banks is convincing the public that such tools are effective policy instruments. They argued that central banks had convinced the public that interest rate adjustments were an effective policy instrument by positioning monetary policy beyond the political arena and thereby asserting its independence. Dr Dell'Ariccia agreed and said when you have an independent inflation target you

can demonstrate to the public the effectiveness of interest rate adjustments with counterfactual analysis (i.e. a policymaker can demonstrate that inflation would have been above the target if they had not previously increased interest rates). In contrast, if a policymaker is concerned with financial vulnerabilities and uses macroprudential tools, which have real costs to the economy, it is difficult to demonstrate their effectiveness with counterfactual analysis. This is the problem of taking the punchbowl away from the party, which is common to regulators and now to macroprudential regulation, he said.

More generally, another participant discussed what they referred to as the 'standard narrative' presented in the paper: that policymakers prior to the crisis took a benign neglect view about credit and asset price cycles. While the paper presented a few exceptions to this post-crisis narrative, the participant argued there were a lot more, including most of the countries represented at the Conference. The discussion proceeded by asking why some countries fitted the post-crisis narrative while others did not? The same participant suggested this was because, within some institutions, the prevailing view was that if the role of credit and asset price cycles cannot be incorporated into models dealing with inflation and the macroeconomic cycle (the contribution of Kiyotaki and Moore (1997) notwithstanding) then these factors do not have a role to play. By contrast, within other institutions such as the Reserve Bank of Australia, policymakers were more comfortable about responding to asset prices and credit booms even though it is difficult to incorporate these variables into standard models.

Reference

Kiyotaki N and J Moore (1997), 'Credit Cycles', *Journal of Political Economy*, 105(2), pp 211–248.

