

Discussion

1. James Yetman*

I'd like to thank the organisers for the opportunity to participate in this conference and discuss this very interesting topic. The background paper from the International Monetary Fund (IMF) that this presentation was based on – the 2015 IMF Staff Report on 'Monetary Policy and Financial Stability' (Habermeier *et al* 2015) – is an excellent summary of the arguments for and against using policy rates to lean against the wind of excessive financial growth. If I wanted to recommend one document to bring someone up to speed on the issues, this would probably be the one I would cite. It's balanced, nuanced and comprehensive.

The document contains a decision tree, and highlights the circumstances when leaning against the wind might be considered: when there are financial excesses that macroprudential measures would be ineffective against and the macroeconomic developments do not call for an interest rate rise, so that there is a trade-off between financial stability and price stability objectives.¹ Overall, the authors conclude that the answer to the question of whether interest rates should be used to lean against the wind is:

Based on our current knowledge, and in present circumstances, the answer is generally no. But, the door should remain open as our knowledge of the relationship between monetary policy and financial risks evolves and circumstances change (Habermeier *et al* 2015).

I don't have any strong objections to the background document, or the presentation today, so let me instead add another perspective on where we stand in the leaning against the wind debate. First, here's a definition of leaning against the wind: in the face of 'excessive' financial growth, raising interest rates more quickly than warranted by inflationary developments.

I like this definition because it's not symmetric, but focuses only on the use of monetary policy tools in the face of financial excess. That's because one way to think about leaning against the wind is that it's actually a call for symmetry. There is a strongly held view among some that monetary policy is already used in the case of financial weakness, beyond what can be justified by output and inflation, to cushion asset prices. In the US context, this has sometimes been referred to as the 'Greenspan put': you don't have to worry about asset prices falling too far because the central bank will come riding to the rescue and use monetary policy to put a floor under asset prices. In that context, one could view leaning against the wind as providing symmetry: reducing the need for worry about missing out on an asset price increase, since monetary policy will be used to step in to put a ceiling on financial markets if

* The views expressed here are those of the author and are not necessarily shared by the Bank for International Settlements. I thank, without implication, Eli Remolona, Boris Hofmann and Ilhyock Shim for helpful discussions.

1 The macroprudential measures could be ineffective because the excesses lie outside of the regulated financial system, where macroprudential measures have their strongest effects, or because the use of these measures would lead to the associated financial activities moving from the regulated to the unregulated parts of the financial sector.

things get too hot. But there are at least two ways to gain symmetry here: lean against the wind, or remove the Greenspan put.

So when does leaning against the wind make sense? I'd argue that there are three necessary and sufficient conditions:

- Interest rate increases are effective enough at curbing excessive financial growth, without being too effective at slowing real activity and inflation.
- The expected costs of excessive financial growth are high.
- There's no better tool for lowering excessive financial growth available.

There's some version of these embedded in any assessment of leaning against the wind, including in the IMF background paper. Put differently, the first condition essentially says that interest rates have the desired effect; the second that these effects are worth having; and the third that there's no better way of achieving the desired outcome. Together, they form a three-legged stool on which leaning against the wind rests. If any one of the three legs of the stool is removed, leaning against the wind is not optimal policy. Let's unpack them one at a time.

Interest rate increases are effective enough at curbing excessive financial growth, without being too effective at slowing real activity and inflation

This first requirement cannot be generally true, or central banks would have a very serious problem on their hands. If interest rates are good at influencing financial growth with little real consequence, then interest rates should be primarily viewed as a financial stability tool rather than a monetary policy tool. Then central banks would be in search of a new monetary policy tool instead (or maybe even a complete rethink of monetary policy frameworks would be required).

While I don't believe we're there yet, we could get there one day. For example, my colleague Boris Hofmann with his co-author Geert Peersman (Hofmann and Peersman 2017) suggest that interest rates have become much more effective at influencing credit and house prices over time, and less effective at influencing inflation. If this process were to continue, we would eventually get to a state where interest rates were no longer an effective monetary policy tool.

But, even if this first condition is not generally satisfied, it could hold sometimes. Consider a simple model of leveraged investment in a capital good, the returns on which are given by:

$$\pi = r + g - i(p - k)$$

where π is profit, r is the rent or revenue generated from the investment, g is the expected growth of the price of the capital good, i is the interest rate, p is the price paid for the capital, k is the amount that was invested, and therefore $p - k$ is the amount borrowed. Note that I'm taking these variables as given. It could be that expected growth of asset prices, g , cannot be justified based on fundamentals, as is likely to be the case with asset price bubbles.

Now, if investors care about the return on each unit of investment, this can be written as:

$$\frac{\pi}{k} = \left(\frac{r+g}{p} - i \right) l + i$$

where $l = p/k > 1$ is the leverage that the investor takes. To the degree that interest rates affect the returns per unit of investment, they are likely to be effective tools for influencing excessive investment. Given that:

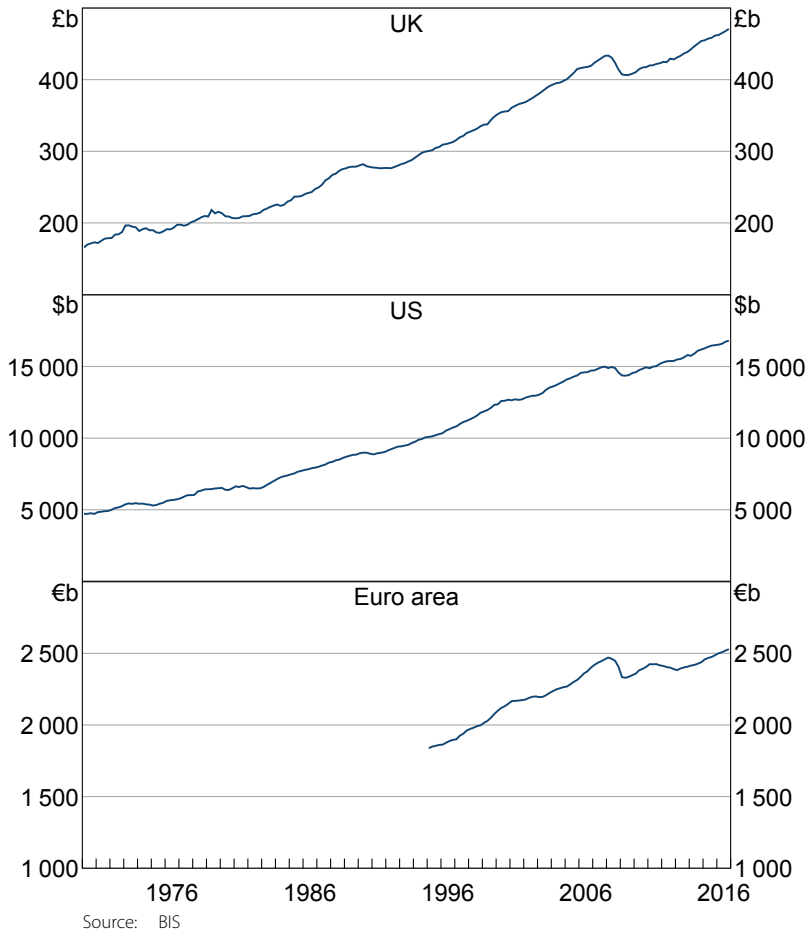
$$\frac{d\left(\frac{\pi}{k}\right)}{di} = (1-l) < 0$$

interest rate increases are likely to be most effective at dissuading leveraged investment when leverage is highest, which is exactly what we'd want if we wished to use interest rates in pursuit of financial stability objectives.

But there's a double-edged sword here, which we can think of in terms of the flow versus the stock of investment. In terms of flows, an increase in interest rates reduces the incentives for borrowing to finance new investment, which would help to reduce financial excess. This is the intended consequence. But there's also a large stock of leveraged investment out there and, depending on how it is funded, raising rates might help to bring about the very crisis that the central bank is trying to prevent. Put another way, before a central bank commenced leaning against the wind, it would be important to know how the existing capital stock has been financed, where any associated maturity mismatch lies within the financial system, and whether the associated entities can absorb the financial strain. I think this double-edged sword helps to explain the results reported in Dell'Ariccia *et al* (2015) and elsewhere that increased interest rates tend to reduce financial stability in the near term (when stock effects are likely to dominate), but increase financial stability over time, as flow effects accumulate.

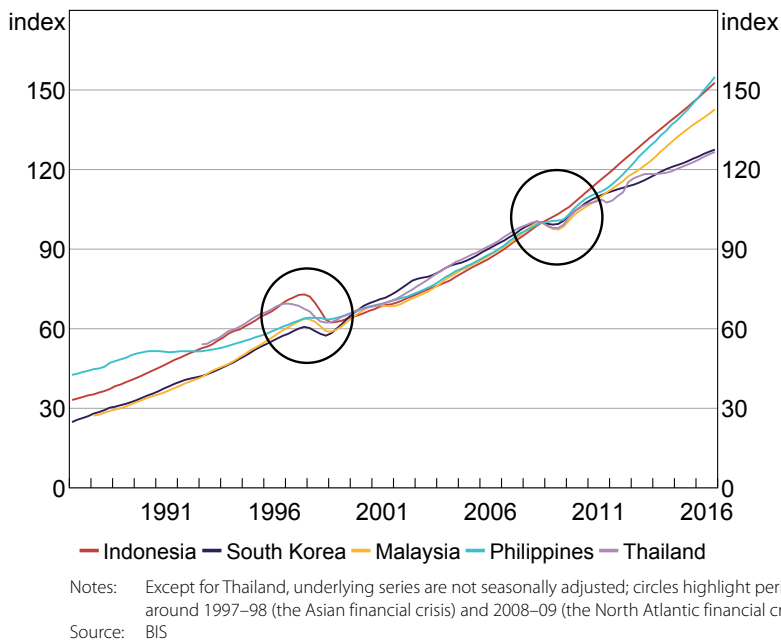
The expected costs of excessive financial growth are high

Prima facie evidence that the costs of excessive financial growth are high is very easy to find. A plot of real GDP for some of the most affected economies during the recent crisis (Figure 1) suggests that the crisis had a substantial effect, with a visible step down in both the level and the growth rate of real GDP around 2008–09 that is substantially larger than anything seen in other downturns in recent decades.

Figure 1: Real GDP Growth

Looking to economies closer to Australia, we see similar evidence for some of the hardest hit economies from the Asian financial crisis in 1997–98, in some cases with another smaller step down in 2008–09 (Figure 2).

Figure 2: Real GDP for Selected Asian Economies
Four-quarter moving average, 2008:Q4 = 100

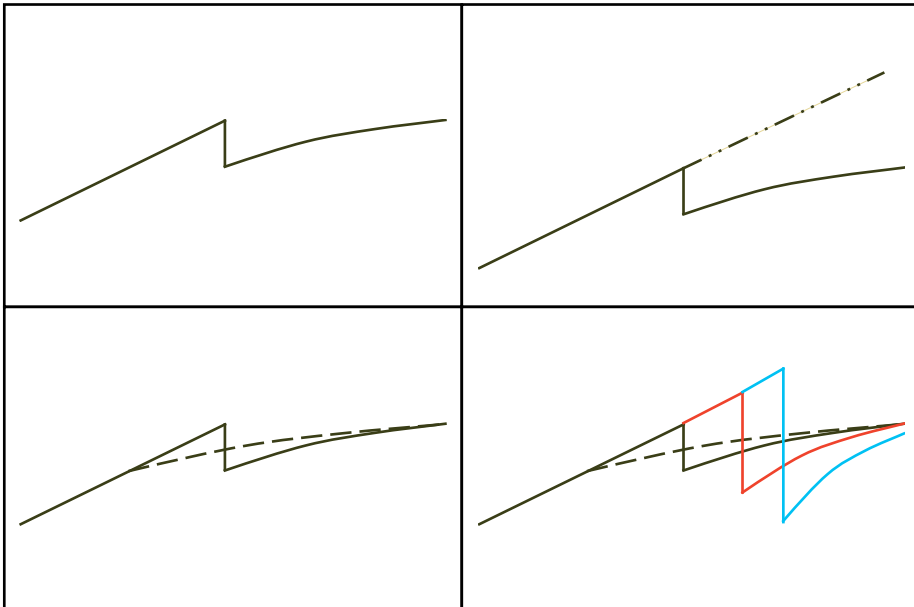


Assessing the costs (in terms of real GDP) requires taking a view of the right ‘counterfactual’ for output in the event that a crisis is averted. The top left-hand panel of Figure 3 displays a stylised representation of the effects of a crisis on real GDP consistent with the real-world data in the above figures. The dotted line in the top right-hand panel displays one possible counterfactual, assuming that, without a crisis, real output would have continued to follow its pre-crisis trend. In this case, the costs of a crisis are very large and increase over time. One way to think about the underlying economics here is that there is some limit on the growth rate of the economy, based on the full employment of limited factors of production. Excessive financial growth doesn’t increase the growth rate as much as it results in substitution, perhaps away from the services sector, where the need for capital is relatively low, to real estate and other capital-intensive sectors. A financial crisis then sees a substantial loss of wealth due to this malinvestment, with highly persistent, or even permanent, effects on output.

But there is another view of the counterfactual, which Piti Disyatat alluded to in his comments earlier in this conference, in which output before the crisis is artificially high as a result of financial excess. The bottom left-hand panel of Figure 3 illustrates this possibility: the dotted line is the underlying sustainable output growth path. This possibility has been labelled ‘finance-neutral’ potential output (Borio, Disyatat and Juselius 2013). In the stylised example in the figure, the crisis leads to a persistent deviation between output and potential, but one that ultimately disappears. In the case illustrated, financial crises may still be very costly,

but the costs are more akin to a very severe business cycle: there is no permanent cost from financial excess. On this basis, the incentives for leaning against the wind may be lower with finance-corrected output gaps than in the counterfactual where output would have followed the pre-crisis trend. Reality is quite possibly somewhere between these two cases, with severe business cycle-like effects as well as a permanent shift down in real activity.

Figure 3: Stylised Representations of the Effect of a Crisis on Real GDP and Possible Counterfactuals



Notes: The top right-hand panel represents the counterfactual where output would otherwise have grown at pre-crisis trend; the bottom left-hand panel represents a case where pre-crisis output was artificially high, fuelled by financial excess; the bottom right-hand panel shows the same scenario, but where the policy choice is between the different lines

In the case that excessive financial growth increases output above sustainable levels, the policymaker may be forced to choose between the different lines presented in the bottom right-hand panel of Figure 3: the trade-off is between either a smaller crisis sooner or a larger crisis later. In this view, once financial excesses start to build, a crisis of some magnitude becomes inevitable. This assumption may dramatically increase the calculated benefits from leaning against the wind to prevent the build-up of excesses in the first place or, failing that, burst the bubble sooner rather than later. Filardo and Rungcharoenkitkul (2016) provide a model consistent with this idea. They assume that once financial excesses start to build, the probability of a future crisis tends to increase over time, such that a crisis becomes almost impossible to prevent. In such a framework, leaning against the wind will tend to be desirable (especially in the absence of other policy tools), even when excesses are still minor. By contrast, a model in which financial excesses tend to mean-revert, rather than building over time, will weaken the case for leaning against the wind.

There's no better tool for lowering excessive financial growth available

On this one, I tend to be optimistic on the effectiveness of alternative, macroprudential tools, although the empirical evidence is still accumulating. The problem with financial excess is not typically with the price of credit itself, but instead with the rate at which the quantity of credit is expanding. If there are good ways to directly influence the quantity, then surely they're likely to be more effective, at lower cost, at reducing financial excesses than using policy rates, which are a blunt tool that may have many undesired side effects. Such tools include maximum loan-to-value ratios, limits on debt-service ratios, countercyclical capital buffers and higher capital standards more generally.

There is now a growing body of evidence that these tools serve as intended. For example, my colleagues have put together a detailed database of the use of macroprudential measures aimed at the housing market (Shim *et al* (2013); data available at <http://www.bis.org/publ/qtrpdf/r_qt1309i_appendix2.xls>). Kuttner and Shim (2016) use this database to assess the effectiveness of the different tools and find that debt service-to-income limits and housing-related taxes slow housing credit growth. There will undoubtedly be many more such studies in the coming years, as experience with the use of macroprudential tools increases.

There is also a need for theoretical work to establish the optimality of different tools under different modelling assumptions. To mention just one recent example, Alpanda, Cateau and Meh (2014) find that loan-to-value ratios dominate higher capital standards, which in turn dominate leaning against the wind in their model. It would be good to see similar work in a range of frameworks to illustrate just how robust their result is, and the modelling assumptions that it rests on.

It's important not to overstate the case for macroprudential tools. There are challenges to their use, not least that they may see excesses simply move from the regulated to the unregulated parts of the financial system. And macroprudential policies are often very unpopular politically, and may, in some cases, be beyond the mandate of the central bank. Furthermore, calibrating the necessary policy to achieve a desired response at this point requires some guesswork, although this will decrease with their ongoing use.

Another important factor to keep in mind with the use of macroprudential tools is what they can be used to achieve. Preventing an asset price bubble, or having a first-order effect on asset prices more generally, may be an unrealistic expectation of any such tools available to the central bank. But, suitably deployed, macroprudential tools may have a role to play in ensuring the preservation of the financial system in the event that an asset price bubble bursts.

Conclusion

To conclude, of the three conditions that I argued are necessary and sufficient for the use of leaning against the wind: i) interest rates are likely to be an especially effective tool at influencing financial excess when that excess is greatest, but can have the pernicious effect of driving up financial risks in the near term, given the stock of leveraged assets already in

existence; ii) recent experience suggests that the expected effects of financial excess are very high; and iii) macroprudential tools show promise at increasing financial stability at a lower cost than raising policy rates, although there is a need for more evidence. Looking at the three-legged stool, I find myself reaching a similar conclusion to Dell’Ariccia *et al* (in this volume).

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2. General Discussion

The discussion initially focused on whether the standard cost-benefit frameworks used to assess the merits of ‘leaning against the wind’ are adequate. One participant noted that the estimated benefits of leaning against the wind could be higher if non-standard measures, such as public debt, were included in the loss function alongside more standard measures, such as unemployment.

Another participant suggested that the binary view of financial crises taken in the cost-benefit analyses may be misleading. Financial imbalances tend to accumulate over time and, once they have built up, it may be too late to address them and, therefore, prevent a crisis. The standard cost-benefit framework ignores this path dependence and so can lead to misleading conclusions. The importance of path dependence was echoed by another participant, who argued that the build-up of debt in the United States before the financial crisis was an example of financial imbalances growing to a point where a crisis was inevitable. Giovanni Dell’Ariccia was sympathetic to these views. However, he argued that our ability to incorporate a more ‘continuous’ view of crises into the analysis is limited by well-known difficulties in constructing systematic measures of financial imbalances or crisis probabilities

in real time. Moreover, he noted that it could be politically difficult to implement policies to address future potential risks associated with a current build-up of financial imbalances, given that the benefits are far removed and are largely unobserved.

In response, several participants argued that standard cost-benefit exercises are valid and clearly show that the costs of leaning against the wind outweigh the benefits. One participant noted that this reflected the fact that interest rates are a poor instrument for addressing financial stability risks. Moreover, another participant suggested that central banks could be harming the economy by even indicating that they might consider leaning against the wind in the future, as it removes pressure from other public institutions to develop alternative policies to address financial stability.

Another key topic of discussion was whether the discourse around macroprudential tools, as well as the tools themselves, is focused on the correct metrics. One participant suggested that the emphasis on the quantity of lending, rather than the quality, is a shortcoming in the discourse. Another participant argued that discussions too often centre on households and household leverage, and that more consideration needs to be given to other sectors and metrics. In particular, they pointed to the financial crisis as having been caused by dislocations in funding markets. They argued that the introduction of liquidity coverage ratios is likely to have lowered banks' funding risk by forcing them to extend the maturities of their liabilities. However, more importance still needs to be placed on ensuring banks' funding is institutionally and geographically diverse.

There was also a more general discussion of some of the shortcomings of macroprudential tools. Several participants noted that these tools tend to address the symptoms not the underlying incentives. One participant noted that putting caps on leverage within the banking system does not fundamentally change the incentives to borrow. Instead, borrowers are likely to shift to the less heavily regulated non-bank sectors. Picking up on this theme, another participant noted that the use of macroprudential tools tends to be characterised by countries requiring round after round of tightening before finally focusing on the root causes, such as the tax code.

Another shortcoming that was discussed was timeliness. One participant pointed out that monetary policy, while blunt, is able to be implemented more quickly than more targeted regulatory measures. This was echoed by another participant who noted that such regulatory actions are more complex, and generally need to go through lengthy consultations and legislative processes. Nevertheless, they suggested that this concern could be alleviated somewhat by starting the process early, and by shifting to more rules-based approaches that need less consultation.

On the broader topic of the role of central banks in ensuring financial stability, many participants agreed that central banks should take an active role in supporting policies that promote financial stability, even if they don't actively lean against the wind. It was noted that the Reserve Bank has a long history of supporting the Australian Prudential Regulation Authority in both public and private fora and that this has been a contributing factor to Australia's relatively good outcomes in terms of financial stability.

