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First, let me thank the organisers for inviting me to the Conference. I have rather a soft spot for these conferences, and this year's one is a worthy addition to the series of interesting annual conferences run by the RBA since 1989.

This paper by Christopher Kent, Kylie Smith and James Holloway is an interesting paper on an important topic: what explains the widespread fall in the volatility of output growth across the OECD over the past couple of decades? Since there are some overlaps between it and the earlier paper by Steve Cecchetti, Alfonso Flores-Lagunes and Stefan Krause, I will take the opportunity to also comment on some aspects of that paper, when it seems appropriate to do so.

The main contribution of the paper by Kent *et al* is to attempt to provide structural explanations for the decline in output volatility. The main candidates on which the authors focus their attention are: product and labour market regulations; the role of fiscal and monetary policies; trade openness; and financial deepening.

In my comments, I will play to my comparative advantage and primarily discuss the roles of fiscal and monetary policies in contributing to the reduction in output volatility. At the end of my comments, however, I will also have a few words to say about the role of financial deepening.

Fiscal policy

Let me start then with the role of fiscal policy. The authors conclude that fiscal policy has not made a significant contribution to the decline in output volatility across the OECD over the past 30 years or so. That result rings true to me, but there are some qualifications to that statement that I think are worth registering.

Of course, seriously inappropriate fiscal policy can lead to financial crises, with profound implications for output volatility, not to mention output growth. But this is primarily an issue for developing economies – at least it has been up until now. International capital markets, rightly or wrongly, are much more forgiving of developed countries with quite high ratios of government debt to GDP than they are of developing countries with similar ratios of debt to GDP.

In developed countries, governments can build up quite high levels of government debt without any obvious implications for the stability of their real economies. Of course, high levels of government debt do raise risk premia somewhat, which crowds out private investment and reduces the potential growth rate of the economy. But the implications for output stability appear to be minor.

Turning to the shorter-run implications of fiscal policy, the automatic stabilisers do undoubtedly stabilise the real economy to some extent. As the authors note,

Australian Treasury; the views expressed are those of the author and should not be attributed to the Australian Treasury.

however, the size of the automatic stabilisers has probably not risen significantly over the past 30 years, and so they have probably not contributed to the fall in output volatility over this time.

On discretionary fiscal policy, the authors make the point that it is difficult in practice for fiscal policy to move quickly enough to be genuinely counter-cyclical. That is the conventional wisdom on discretionary fiscal policy, and I agree with it up to a point. But I think it is also possible to overstate the argument.

There are, it seems to me, important examples where discretionary fiscal expansion plays a useful role in supporting monetary policy. The United States in 2001 comes to mind. There appeared to be a genuine threat of a quite severe recession at the time, as well as the possibility of deflation. Discretionary fiscal expansion – along with aggressive monetary easing – reduced the likelihood of a severe recession, and probably thereby reduced output volatility at that time.

Or, to give another contemporary example, when the zero lower bound on interest rates binds, as it has in Japan for many years now, discretionary fiscal expansion is likely to have some role in guiding the economy back to its potential level of output.²

I don't want to oversell the benefits of counter-cyclical fiscal policy. Among other things, unwinding fiscal expansions is often not as straightforward as unwinding monetary expansions – and again the US experience comes to mind. But my point is that, even within the existing institutional arrangements, discretionary counter-cyclical fiscal policy does sometimes have a useful role to play in reducing the volatility of the real economy.

Monetary policy

Let me turn now to monetary policy.

In their cross-country econometrics, the authors use two measures to allow for the effects of monetary policy on output volatility. Their preferred measure is a 'direct structural measure'. It is a dummy variable which takes a value of 1 when the monetary policy regime is deemed to be strict on inflation and 0 otherwise. And the authors show that, for many specifications, significantly lower output volatility has been generated by monetary policy regimes that were strict on inflation than by those that were not.

In this context, it is interesting to contrast this paper's results with those presented earlier by Cecchetti. There are some interesting, and perhaps revealing, differences between them. Both provide definitions of monetary policy regimes that are, according to the econometrics, stabilising for the real economy – that is, that generate significantly lower output volatility, other things unchanged. But the key features of these stabilising monetary policy regimes are somewhat different in the two papers.

^{2.} See also O'Mara *et al* (1999) who provide evidence, for Australia and the OECD more generally, that discretionary fiscal policy was a net destabilising influence on the real economy over the period 1973–84, but a net stabilising influence over the period 1985–95.

In Kent *et al*, it is strict inflation control that defines membership of the stabilising monetary policy club, while in Cecchetti *et al*, it is inflation targeting.

So, for example, Kent *et al* classify Germany, Japan and Switzerland as having been members of the stabilising monetary policy club over the whole period since 1974, because all three of these countries are judged to have controlled inflation strictly over this time. By contrast, none of these countries are members of the stabilising monetary policy club as defined by Cecchetti *et al*, because none are, or ever have been, inflation targeters. (Cecchetti *et al* use the classification of Mishkin and Schmidt-Hebbel 2002 to determine membership of the inflation-targeting club.)

So it seems worth asking: which of these two characteristics of the monetary policy regime, strict inflation control or inflation targeting, should we expect to provide a better indication of the regime's capacity to stabilise the real economy in the future? In answering that question, I think I come down on the side of inflation targeting, rather than strict inflation control.

Let me explain how I come to that conclusion.

I have no doubt that, focusing on the decades since the great peacetime inflation of the 1970s, strict inflation control has been good policy. Countries that were stricter on controlling inflation over that whole period – (West) Germany obviously comes to mind – had better outcomes not only for inflation but also for the real economy, because they avoided entrenching expectations of high inflation in the community. And so countries that practiced strict inflation control over that period avoided both the worst excesses of those times as well as the savage recessions that re-established inflation control in those countries that had not been so strict on inflation in the first place.

Thinking to the future, however, the re-emergence of significant consumer price inflation is not the only undesirable possibility that central banks should seek to avoid. The possibility of inflation falling too low, or of outright deflation, also needs to be guarded against (both because of the zero lower bound on nominal interest rates, and because too-low inflation impedes relative real wage adjustment). Either of these possibilities, were they to eventuate, would likely be bad for the stability of the real economy, as well as for real growth.

Obviously, Japan has grappled with this problem over the past several years. But it may also be a problem for countries in the core of the euro area. These core countries are, after all, surrounded by a periphery of countries with faster trend productivity growth, and hence with higher trend inflation, courtesy of the single-currency area and the Balassa-Samuelson effect. An area-wide aim of achieving inflation rates below, but close to, 2 per cent over the medium term implies average inflation in the core countries of significantly below that. Along with their structural rigidities, it remains to be seen what are the implications of achieving such low average inflation rates for output stability in those core countries.

So, I would summarise this discussion as follows. With the benefit of hindsight – that most powerful of all our analytical tools – it is clear that strict inflation control served countries well when they were faced with the great peacetime inflation of

the 1970s. The econometrics in Kent *et al*, which finds that those countries that strictly controlled inflation had lower output volatility over the past few decades, rings true to me. Looking to the future, however, it seems to me that central banks that respond vigourously both when inflation threatens to be too low as well as too high, and also include the volatility of the real economy in their loss functions, are likely to deliver more stable real economic outcomes than regimes that do not do so. Of course, that means flexible inflation targeting rather than simply strict inflation control.

Financial deepening

Finally, a few words on financial deepening. Both Kent *et al* and Cecchetti *et al* include a measure of financial deepening, the ratio of private credit to GDP, in their regressions seeking to explain output volatility. They do, however, come to different conclusions, with Cecchetti *et al* finding that financial deepening is associated with significantly lower output volatility, while Kent *et al* find a much less robust role for financial deepening, and when they find a significant relationship it is in the opposite direction.

I will leave to others the task of resolving this difference. There is, however, an observation about financial deepening that I think is worth making. The return of credible low-inflation regimes and the low interest rates that go with them, combined with financial deregulation, has encouraged households in many OECD countries to significantly raise their gearing ratios – that is, their ratios of household debt to income.

Higher levels of household gearing presumably raise the vulnerability of the household sector, at least to some extent. And yet, as we have seen, these continally rising household gearing ratios have coincided with a significant fall in the volatility of the real economies in which these households live. Presumably the fall in the volatility of the real economy has also convinced many households that the risks involved in gearing up are lower than they used to be, which has also contributed to their willingness to do so. If the results of Cecchetti *et al* are right, there is a positive feedback loop here, with more financial deepening enabling households to better smooth their consumption which feeds back to a more stable real economy, and in turn encourages households to gear up further.

And judging by the continuing rise in household gearing ratios in many OECD countries over many years, this process does not seem to have run its course – indeed, future rises in gearing ratios in many OECD countries seem the most likely outcome. The question I have been pondering is whether this positive feedback loop (presuming that it is genuine), and the associated rising gearing of the household sector, should be a cause for concern. Is the rising gearing of the household sector a relatively benign development given the increased stability of the real economy, or might it become a source of instability in its own right in the years ahead?

I don't know the answer to that question, but I think it is one that will repay further thought.

References

Mishkin FS and K Schmidt-Hebbel (2002), 'A decade of inflation targeting in the world: what do we know and what do we need to know?', in N Loayza and R Soto (eds), *Inflation targeting: design, performance, challenges*, Central Bank of Chile, Santiago, pp 171–219.

O'Mara LP, SW Bartley, RN Ferry, RS Wright, MF Calder and J Douglas (1999), 'Some issues affecting the macroeconomic environment for the agricultural and resource sectors: the case of fiscal policy', *The Australian Journal of Agricultural and Resource Economics*, 43(2), pp 149–177.

General Discussion

An important issue raised in the discussion was the question of what form of volatility matters for welfare. Most economic analysis is conducted with seasonally adjusted data, suggesting that policy-makers are less concerned with quarterly volatility, and one participant therefore questioned whether volatility is only welfarereducing over some time horizon. Related to this, another participant highlighted that the assessment of Bob Gordon's paper – that inventory changes were of secondary importance for the decline in volatility – conflicted with the results of Cecchetti et al. They argued that this is most likely due to the difference in the frequency each examine; while Gordon's paper looks at the contribution of inventories at an annual frequency, Cecchetti et al examine the volatility of quarterly contributions. Others suggested that the question of the appropriate time frame over which to examine volatility can be somewhat addressed by looking at the predictability of output, rather than volatility per se, in line with David Wilcox's earlier comments on Robert Gordon's paper. However, Stephen Cecchetti cautioned that such a focus would struggle to separate the issue of reduced volatility from reduced real-time data revisions; he argued that while volatility may have declined, predictability may have decreased due to growing difficulty in measuring GDP. In a similar vein, it was noted that despite the decline in aggregate output volatility, volatility has increased in many industries over the past decade. On this point, one participant argued that financial liberalisation could reduce aggregate volatility but also increase firm-level volatility. This follows from the fact that financial liberalisation enables investors to construct their own diversified portfolio of companies, thereby reducing the need to form large conglomerates to diversify risk.

Mardi Dungey's comment – that the difference in the timing of persistence and volatility breaks across countries argues against attributing a significant role to changes in inventory management – also provoked much discussion. One participant responded by suggesting that these changes in inventory practices did not occur sharply nor at the same time across countries, while another added that there appear to have been differences in the pace at which changes in inventory management technology have been reflected in the data. More generally, it was noted that the timing of breaks identified by Cecchetti *et al* could not be considered precise, as it is really only possible to test for the impact of structural changes in reducing volatility when sizeable shocks occur, which tends to be infrequent.

A number of participants also raised the issue of whether the interaction between structural reforms has been important in reducing volatility. For example, it was argued that recent Australian experience suggested that labour market deregulation and increased monetary policy credibility have been *jointly* responsible for dampening the transmission of shocks throughout the economy. While not rejecting this suggestion, Christopher Kent noted that an interaction between these two variables is statistically insignificant. Another participant also noted that it is very difficult to separate the effect of the labour and product market regulation variables, because they are collinear.

One participant questioned whether either paper had appropriately distinguished between demand and output volatility. It was noted that both papers focus on the reduction in output volatility, but include some variables which are likely to affect demand volatility (for example, financial liberalisation) and some which are likely to affect output volatility (for example, labour and product market regulations). Furthermore, it was argued that an increase in demand volatility will not necessarily correlate with an increase in output volatility, if inventory changes smooth production. This point was conceded by Christopher Kent, although he added that variables such as labour and product market regulation may be linked with both demand and output volatility.

The evidence in Cecchetti *et al* relating financial liberalisation (specifically, the debt-to-income ratio) to consumption smoothing also stimulated a discussion about the likely impact of leverage on volatility. Some thought that a better way to approach this would be to look at the correlation between changes in credit and changes in output volatility. There was also support for David Gruen's comments that higher credit may potentially be associated with increased volatility of output if the increase in the debt-to-income ratio reflects the 'bring-forward' of consumption, rather than consumption smoothing. Another participant also remarked that this could be assessed by looking directly at the savings ratio, arguing that consumption-smoothing behaviour would be consistent with an increase in the volatility of the saving ratio.

There was some discussion about the difference in the findings of the two papers with regard to the influence of financial liberalisation, with Cecchetti *et al* arguing that financial liberalisation reduces output volatility, while Kent *et al* find it increases volatility. One participant suggested this difference could relate to the former paper focusing on a longer horizon than the latter, with liberalisation almost certain to be beneficial in the long term, but perhaps inducing volatility in the medium term. This was supported by others who suggested that the effect of financial liberalisation can be to reduce volatility at some times and increase it at others, which may explain the sensitivity of Kent *et al*'s results to the inclusion of particular countries.