

Policy Uncertainty from a Central Bank Perspective

Remarks delivered to the Macroeconomic Policy Meetings in Melbourne

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Great advances have been made since inflation targeting was first introduced over a quarter of a century ago. Central banks have developed more understanding of the need to communicate well and how best to do so. And sophisticated models have been developed to aid in the design and evaluation of monetary policy.¹

That said, the challenges to making good monetary policy remain as large as ever due to the pervasive role of uncertainty. Central banks still need to estimate unobservables such as the neutral interest rate or the output gap. And there will always be unforeseen and unforeseeable events, as the global financial crisis starkly reminded us.

While uncertainty has always been important for macroeconomics, Nick Bloom's research with his many co-authors has reinvigorated interest in the effect of uncertainty on macroeconomic behaviour. One of their most important contributions has been to develop frameworks that enable us to measure uncertainty, and help us to think about how and why uncertainty matters for macroeconomic outcomes.²

I will focus my comments on two broad questions: how do we think about and deal with uncertainty as policy-makers? And what can we learn from this burgeoning literature?

Bloom and his co-authors draw a distinction between economic uncertainty and economic policy uncertainty (Baker, Bloom & Davis, forthcoming). They argue that economic policy is a major source of economic uncertainty. Their argument is a provocative one, which I want to explore.

Figure 1 presents an economic uncertainty index for New Zealand using forecast disagreements constructed by my colleague Tugrul Vehbi.³ This New Zealand uncertainty index is plotted against the VIX index. The VIX is a widely used proxy of uncertainty that is constructed from US equity options. Figure 1 highlights that a mix of domestic and international events have contributed to uncertainty in New Zealand. Some of the increases

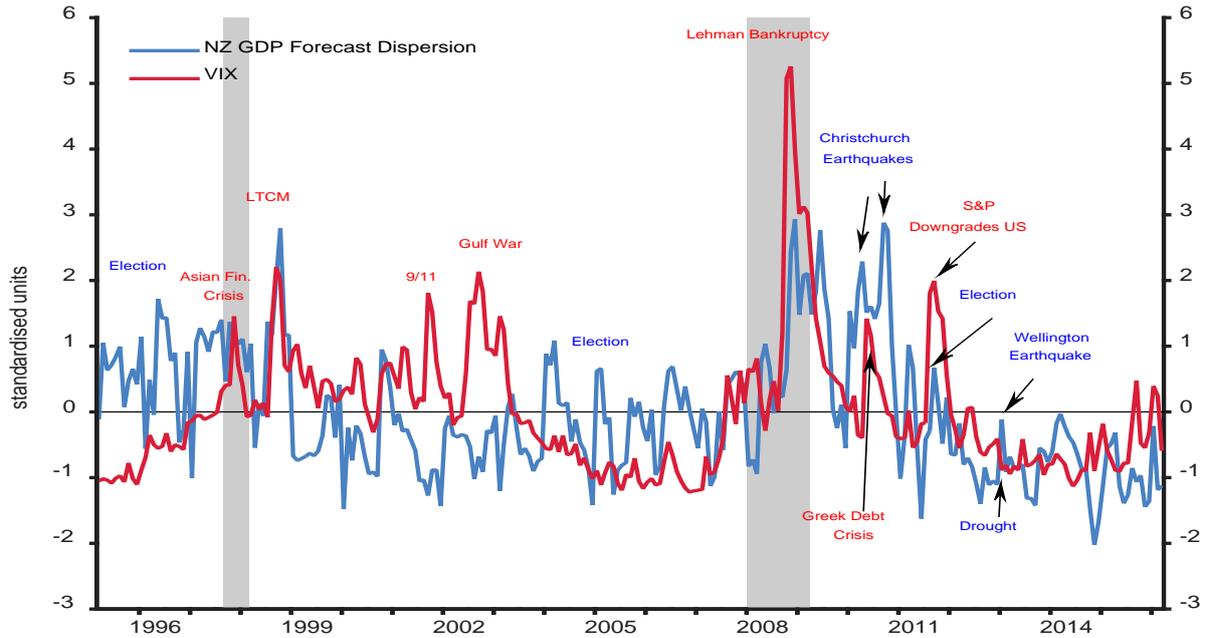
¹ The workhorse model for monetary policy analysis is the dynamic stochastic general equilibrium (DSGE) model. The Reserve Bank of New Zealand has developed and uses its own DSGE model, described in Kamber, McDonald, Sander and Theodoridis (2015), to aid in its understanding of and explain the consequences of recent developments in inflation and the real economy.

² See Bloom (2014) for a review.

³ There is a long tradition of constructing uncertainty indices using forecast disagreements (e.g. Zarnowitz & Lambros, 1987, Lahiri & Sheng, 2010). The presented uncertainty index for New Zealand is constructed using forecast disagreements from Consensus forecasts.

in uncertainty for New Zealand are associated with local events, such as droughts and the Canterbury earthquakes. Other increases coincide with offshore events such as the 9/11 attacks and the Lehman bankruptcy. In both cases, New Zealand economic policy clearly did not cause such events. That said, such events do propagate into uncertainty about our policy decisions because policy is endogenous to the state of the economy.

Figure 1



One can usefully decompose economic policy uncertainty into extrinsic and intrinsic components. Extrinsic uncertainty reflects external events, like the earthquakes and international developments that I mentioned earlier. Central banks clearly exercise little control over this form of uncertainty. The second component, intrinsic uncertainty, reflects uncertainty as to how we will respond to such external events, perhaps in part because of uncertainty about our objectives or because of unclear preferences over competing goals. This intrinsic uncertainty is probably closer to the economic policy uncertainty that Bloom and his co-authors are attempting to measure.

The possibility that policy decisions might contribute to macroeconomic uncertainty has long been recognised in monetary economics. Milton Friedman, for example, was an early advocate of k% money growth rules to mitigate macroeconomic volatility, and Lars Svensson

has suggested that inflation-targeting central banks should specify an explicit quadratic loss function providing relative weights on inflation and output gap stabilisation.⁴

I would like to emphasise that many elements of our monetary policy framework aim to reduce our contribution to uncertainty. Although not quite as explicit as Lars Svensson might like, the Reserve Bank has a clear inflation objective, and publishes a *Policy Targets Agreement* that highlights key considerations that influence monetary policy decisions. We also try to mitigate uncertainty by adjusting our policy interest rates by discrete amounts, according to a regular, preannounced schedule. Market participants know *when* decisions will be made and that policy will be adjusted by multiples of 25 basis points, though of course there will still be some degree of uncertainty as to whether we will raise or lower the Official Cash Rate, and by what degree.

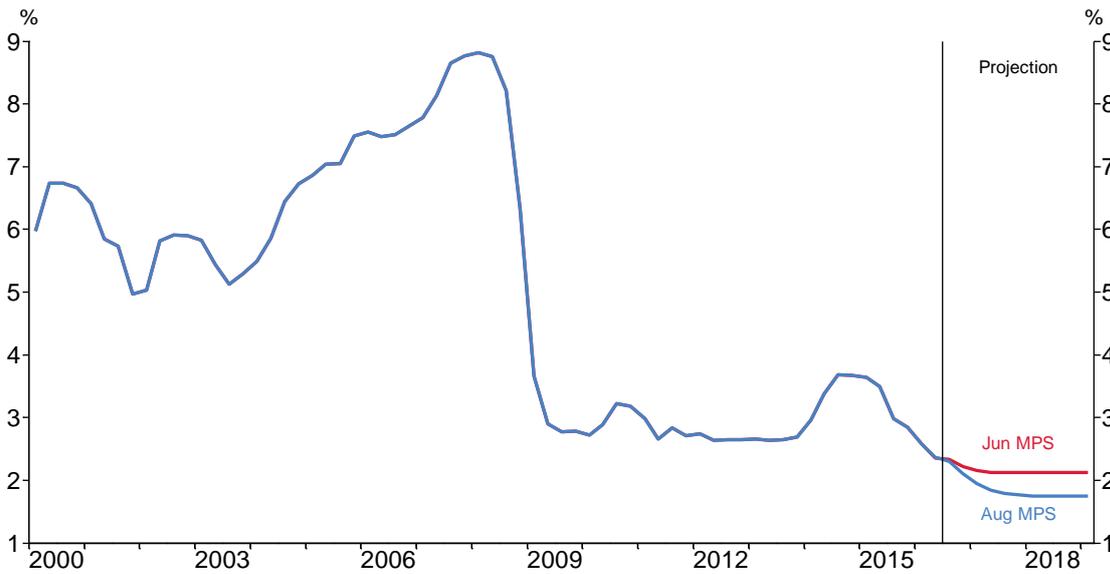
We constantly remind ourselves that economic relations can change and that previously sound empirical relationships can break down, potentially introducing considerable uncertainty about appropriate policy settings.

Unobservable concepts like neutral interest rates and the output gap are central to the implementation of policy. Our estimates of these quantities are frequently revised as new data arrive, and we constantly test our judgements and revise them in light of new information and new methods. This adaptive process is another way in which we cope with uncertainty.

We also try to manage intrinsic and extrinsic uncertainty through our public communication. Four times a year we summarise our view of the economy in our *Monetary Policy Statement*. As part of this process we publish forecast tracks for key variables, including interest rates. Figure 2, for example, shows our intended monetary policy actions with a forecast of the 90-day interest rates from our recent *August Statement*. We also use speeches to share our thinking about the economy. We aim to inform investors, consumers and financial market participants about the information at our disposal, and help them learn how we will respond to future surprises.

⁴ See Friedman (1960) and Svensson (2003).

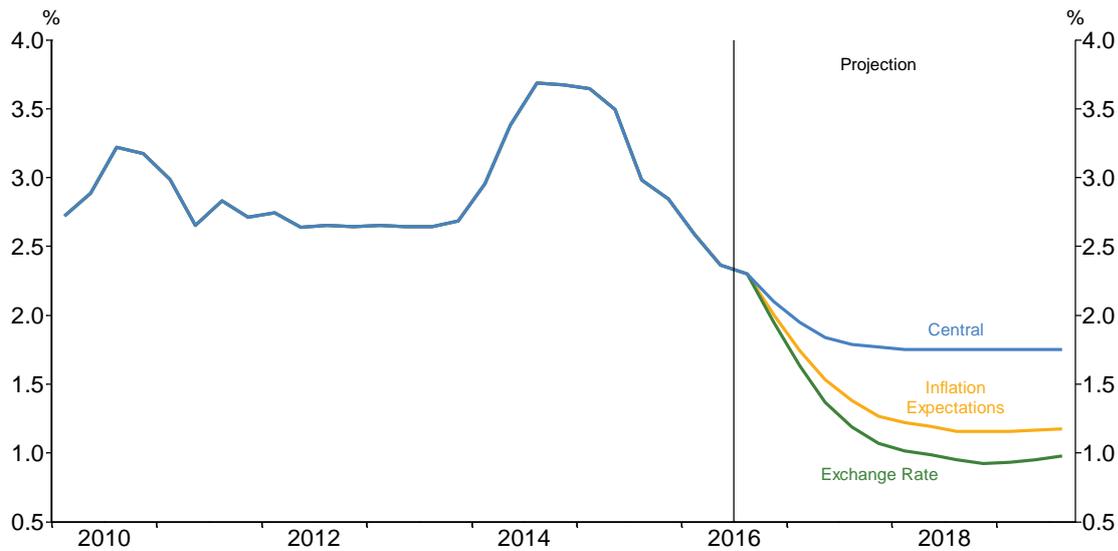
Figure 2



Sometimes, of course, it can be difficult to convey the competing concerns that motivate policy, and it can be difficult to specify how policies instituted by the Reserve Bank will affect the economy. A case in point being the macro-prudential policies, including loan-to-value ratios for house purchases, introduced by the Reserve Bank to mitigate expanding risks to financial stability. With little prior experience and with limited modelling guidance it was not clear *ex ante* how these policies would affect macroeconomic outcomes. These policies were a reasoned attempt to mitigate emerging risks and practical experience has meant uncertainty about the consequences of these policies has dissipated over time.

Communicating uncertainty is not without challenges. The economy is continuously hit with shocks and the range of possible future outcomes is large. In our *Statement*, we produce alternative scenarios to give a flavour of possible events that will cause us to deviate from our central projections. Figure 3 shows two scenarios in our recent *Statement*, one where the exchange rate remains elevated and another where inflation expectations decline further. We use this simple characterisation of uncertainty to make our communication clear and accessible. Communicating uncertainty is still a work-in-progress for many central banks, and we are no different. Perhaps in time, research may reveal better strategies to help communicate uncertainty.

Figure 3



What Insights Can We Draw?

Having shared my thoughts on how we think about uncertainty as policy-makers, let me change tack and identify two issues that experts on economic uncertainty can help us to explore. In particular, I would like to highlight two questions: how should we measure uncertainty? And as policy-makers how should we respond to those measurements?

Measuring uncertainty

The growing uncertainty research literature has put forward several promising alternatives (e.g. Baker, Bloom & Davis, forthcoming, Jurado, Ludvigson & Ng, 2015, Rossi, Sekhposyan &, Soupre, 2016). While each new offering is different from existing alternatives, all these measures are highly correlated. As a consumer of this analysis it would be helpful for researchers to establish which measures are superior, or at least the circumstances in which one measure might be preferred to its competitors.

Policy Response to Uncertainty

Knowing that changes in uncertainty matter for the economy is one thing, knowing how much is another issue altogether. Without precise answers on the quantitative impact of uncertainty it is unclear how much we should respond, and impossible for financial markets to anticipate our response. Developing quantitative measures of the consequences of uncertainty is an important step in reducing intrinsic uncertainty. At this workshop, it is pleasing to see several presentations that attempt to quantify the economic impact of uncertainty shocks. Indeed, the Reserve Bank is also presenting its own effort at modelling these quantitative impacts (Kamber et. al. 2016).

These are early days for the growing literature on uncertainty. I look forward to the insights provided by this workshop, and I hope that some of the questions I have posed prove useful in motivating future research.

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