
ARTICLES

Monetary policy in the last business cycle: some perspectives¹

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Monetary policy has an important, but limited, role to play in providing a reasonably stable backdrop for real economic activity. Against that standard, the flexible inflation targeting approach that has guided New Zealand's monetary policy for over 20 years served the country relatively well through some very testing times. The strength and length of the boom – and the associated increase in private debt and asset prices – surprised us, and most other economists. And just how tepid the recovery over the past three years has been is perhaps even more of a surprise.

Constant awareness of the top of the inflation target range meant that inflation was kept broadly in check during the boom and, once credit demand abated and resource pressures eased, official interest rates were able to be cut sharply, and kept very low for several years without jeopardising credibility. Monetary policy was able to adapt quite quickly to changing circumstances once those changes were recognised. But understanding quite what is going on is a particular challenge for forecasters and policymakers when things are happening that have not been seen before – that is so whatever the approach taken to monetary policy.

In a world of huge uncertainty, hindsight typically allows one to see where things might have been done differently. For example, during the expansion from 2001 onwards, interest rates should probably have been kept higher and raised sooner. What is less clear is how much different the cycle might have been if we had done that (and the Reserve Bank might have faced quite harsh criticism had it adopted such an approach).

Excesses and imbalances built up during the boom have probably contributed to the very weak recovery from the 2008/09 recession. But plausible alternative monetary policy stances during the boom years might have dampened the accumulation of debt only a little, and a tougher monetary stance earlier might have increased the already uncomfortable degree of pressure on the real exchange rate. The details of every country's experience differ, but the disappointing nature of the recoveries in numerous other advanced economies probably cautions against attributing too much to specific New Zealand monetary policy choices. And whether, for example, macro-prudential instruments can do much to dampen future large credit-financed booms remains an open question.

1 Introduction

The economic cycle from 1998 to 2011 was described in an article in the March 2012 *Bulletin* (Chetwin, 2012). This article looks at monetary policy and the challenges the Reserve Bank faced. Setting out some of the issues and challenges about this period should help to better understand the role monetary policy played and the impact of the choices that were made. We do not attempt to distill general lessons, but the way the past is understood inevitably influences the way contemporary challenges are approached.

2 Some important features of the period

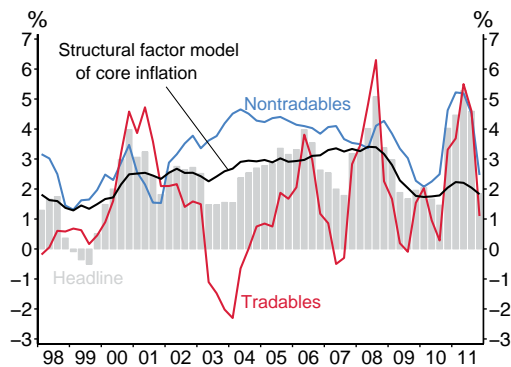
Consumer price inflation was kept in check

Monetary policy did the most important thing that was asked of it: CPI inflation, and expectations of future CPI inflation, were kept relatively low. The average rate of headline CPI inflation was 2.5 percent

Headline inflation fluctuated quite a lot. In 1999, for example, the headline inflation rate was negative for several quarters, and during the review period there were four separate occasions when headline inflation rose above 3 percent (figures 1 and 2).

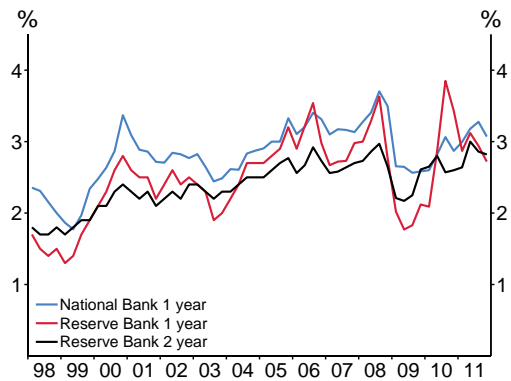
¹ The authors are grateful to a number of colleagues for helpful comments and conversations, especially Tim Ng, Bernard Hodgetts and Yuong Ha.

Figure 1
Annual CPI inflation measures



Source: Statistics New Zealand, RBNZ estimates.

Figure 2
Survey measures of inflation expectations



Sources: ANZ National Bank Ltd, RBNZ.

The inflation targeting approach to monetary policy has always been constructed to expect, and to expect to accommodate, significant fluctuations in headline inflation. There are lots of shocks, and relative price changes, that monetary policy should not try to offset. For example, the GST increase in 2010 lifted prices across the board.

Figure 1 shows that fluctuations in prices of tradable goods and services were the source of most of the variation in headline inflation, including three of the four episodes in which CPI inflation rose above 3 percent. In turn, two factors accounted for most of the swings in tradables inflation: oil prices and the exchange rate. World oil prices are, of course, beyond New Zealand's control – and rose very (and unexpectedly) rapidly during the last decade. The exchange rate tends to rise (fall) when New Zealand's economic conditions improve (worsen) relative to those abroad. All else equal, the relatively low exchange

rate in the first few years of the period held up tradables inflation, while in more recent years the exchange rate has tended to dampen tradables prices.

The inflation rate for non-tradable goods and services was much more persistent. Indicators of the core or persistent component of inflation (figure 1) averaged in the upper half of the target range and, if anything, trended gradually upwards during the boom. Core inflation was higher than we would have liked during the later boom years. As discussed later in this article, that was largely because we (and other forecasters) were slow to recognise just how much pressure on resources had built up, and were too ready to assume (and forecast) that prevailing interest rates would see those pressures abate. With different forecasts, it is likely that policy would have been set differently, and CPI inflation would have averaged a little lower.

Survey measures of inflation expectations – even the more medium-term 2 year ahead measure – typically rose a bit when headline inflation spiked, but they quickly fell again as the inflation spikes passed. The Reserve Bank typically set policy on the assumption that the spikes in headline inflation would not materially alter underlying wage and price-setting behaviour, but had to constantly check that this judgment remained appropriate. Over the period to about 2006, expectations of future inflation trended upwards, consistent with the increase in the target range in 2002, and the higher average inflation outcomes.

Financial conditions matter

The Reserve Bank sets the Official Cash Rate (OCR), the overnight rate we pay to financial institutions holding accounts with us. Financial institutions and markets stand between the Reserve Bank's actions and the behaviour of firms and households.

For example, when markets expect that the OCR will fall over the coming few years, as they typically do when monetary policy is tight, longer-term interest rates will be lower than the (overnight) OCR. In that sort of environment, mortgage borrowers tend to gravitate towards fixed rate mortgages with lower headline interest rates. Changing

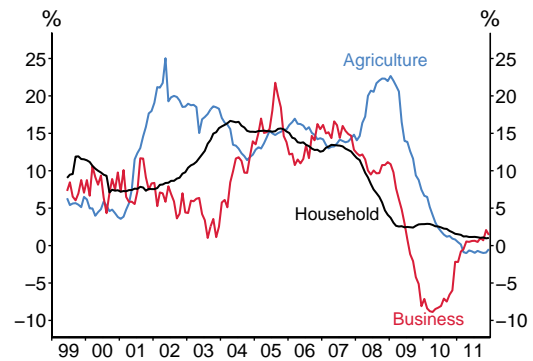
the OCR still changes borrowing costs for people taking on a new two year fixed mortgage, but only to the extent that the change in the OCR affects expectations about where the OCR will go over the next couple of years.

The state of competition in the banking industry also matters. When times are good and credit and asset prices are growing strongly, margins between lending and deposit rates tend to narrow (and lending standards might ease). In that climate, any given level of the OCR will exert less disinflationary pressure (lending rates will be lower) than might be the case in more normal times.

Borrowers and lenders both approached things differently late in the boom than they had been doing at, say, the end of the 1990s. Credit growth began to pick up in the early 2000s. As the credit boom reached its peak – at different times for different sectors (see figure 3) – lending margins were narrowing, offshore investors were keen to take advantage of New Zealand’s high interest rates, markets were pricing in future policy easing, and lending standards were easing to some extent. Lenders were eager to increase their loan books, and each wanted to at least maintain its market share. And rising asset values themselves affected both lenders’ and borrowers’ behaviour. From the lenders’ perspective, rising asset values made them more comfortable about the value of their collateral. From the borrowers’ side, rapidly rising property prices seemed to fuel expectations of continued strong asset price growth. To the extent that was so, any particular interest rate seemed less burdensome than it might have done when asset prices were more stable. All else equal, the OCR had to be pushed up more than otherwise to get the necessary traction.

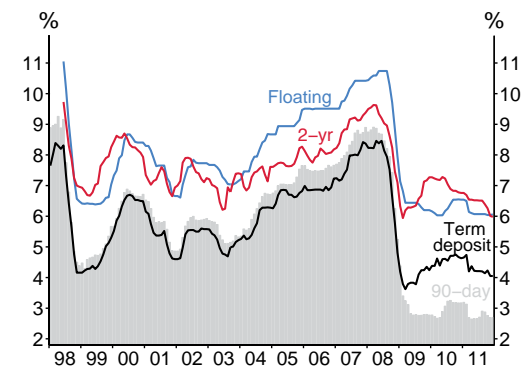
New Zealand banks had long had ready access to offshore funding and hedging markets. But at the height of our boom in particular, when global yields were quite low, there was a high appetite for assets appearing to offer higher yields, such as New Zealand dollar assets. That demand tended to lower medium-term interest rates in New Zealand a little (the expected future path of the OCR remained the main influence) and to push up the exchange rate.

Figure 3
Annual growth in financial sector lending*



*Claims by banks and non-bank lending institutions on residents. Source: RBNZ

Figure 4
Mortgage rates (new borrowers) and term deposit rates



Source: RBNZ

Since the crisis and recession, things have worked differently. For example, as another article in this issue highlights, bank funding costs have risen very substantially relative to the OCR. A combination of market and regulatory pressure meant banks needed to rely more heavily on long-term wholesale funding and retail funding. The OCR is no longer a reasonable proxy for a bank’s cost of funds, and in setting the OCR we have had to take the new (and variable) wedge between the two into account. Because of the increased funding margins, for example, the cuts in the OCR had to be particularly deep – 5.75 percentage points in 10 months from July 2008 (a greater cut than in other advanced economies) – to secure the desired reduction in retail interest rates (figure 4). Even then, at the height of the crisis additional measures (liquidity support and government guarantees) were targeted directly at ensuring that banks were confident in their access to funding.

Easy access to offshore wholesale funds is no longer something that can simply be taken for granted, in a way that it was in the decades prior to the crisis. Ebbs and flows in market access are now something the Reserve Bank needs to pay considerable attention to in setting the OCR. And in recent years, expectations of future asset price increases have dimmed considerably, reinforcing the downturn in credit demand.

Fiscal policy matters

Until about 2005, fiscal policy was playing a mildly contractionary role. The government accounts were moving into increasing structural surpluses, slightly easing pressure on monetary conditions. Then discretionary fiscal policy shifted and became strongly stimulatory for several years. Of course, by 2005-2008 the real exchange rate was already high, and there had already been several years of considerable pressure on resources (the output gap over that period is now estimated to have been around 3 percentage points of potential GDP).

Higher spending and tax cuts were reasonably well foreshadowed, so the Reserve Bank could take them into account in setting monetary policy. But that still meant the OCR had to be set higher than otherwise, to make room for the expansionary fiscal policy if a further increase in the rate of inflation was to be avoided. That, in turn, tended to push the exchange rate even higher.

The shift in fiscal policy meant that the structural surpluses started quickly shrinking and then turned into quite deep structural deficits (especially once allowance is made for the contribution of the unusually high terms of trade to government revenue). The progressive shift from surplus to deficit probably supported demand during the recession in 2008 and 2009 – at a time when interest rates were being cut deeply and the exchange rate was falling sharply. All else equal, however, large fiscal deficits have more recently probably been holding the exchange rate higher than it otherwise would have been. The planned shift back to surplus over the next few years should ease the pressure on the exchange rate a little.

In deciding fiscal policy, governments will always have a range of competing priorities. But adjustments to fiscal

policy need to take full account of the likely monetary policy implications, and the implications for economic imbalances. The government recently announced its intention to amend the Public Finance Act to include adding a reference formally requiring governments to consider the effects of their fiscal strategy on the broader economy. That recognises the importance, wherever possible, of consistency in macro-economic policy settings.

3 Flexible inflation targeting: managing risks to the policy objectives

Over the 20 or so years prior to the recent global recession, economic outcomes in many advanced countries had been surprisingly stable, more so than in earlier decades. The reasons for this so-called “great moderation” are not well understood, and the recent severe global recession has forced some rethinking. But whatever the full story, better and more transparent monetary policy regimes, focused on delivering a stable medium term rate of inflation, probably contributed.

Monetary policy has an important, but limited, role to play in providing a reasonably stable and predictable backdrop against which the real activity of the economy can take place. The best monetary policy in the world will not remove the underlying variability in the real economy (arising from things like technology changes, relative prices change, swings in migration that change population growth rates, changing attitudes to risk etc).

Uncertainty as a source of risk: forecasting activity and inflation pressure

Monetary policy takes considerable time to affect the economy (typically perhaps 12-24 months to have the bulk of the effect). In setting monetary policy we take a view on where the economy is right now (without full data) and what pressures on inflation are already in train. But we also try to take a view on how the economy and inflation pressures will develop over the next couple of years

(without very much data at all).

The Reserve Bank's record as a macroeconomic forecaster has been as good as any and better than most, including during the peak boom years of the most recent cycle.² But forecasters have simply not done that well. Forecasting is particularly difficult when unusual things are happening. That affects monetary policy, whether under an inflation targeting framework or some other framework.

The so-called output gap plays a key role in how central banks think about monetary policy. The output gap attempts to summarise the degree of excess demand (or supply) in the economy, but it is not a directly observable measure. The more excess demand there is, the higher the risk of an increase in the inflation rate. Figure 5 shows our forecasts and estimated outcomes for the output gap. It shows two main things.

First, throughout the peak years of the boom, however much pressure we thought there was on resources at the time a forecast was done, we expected that degree of pressure to abate quite quickly. And second, as the boom became increasingly prolonged, we increasingly (and

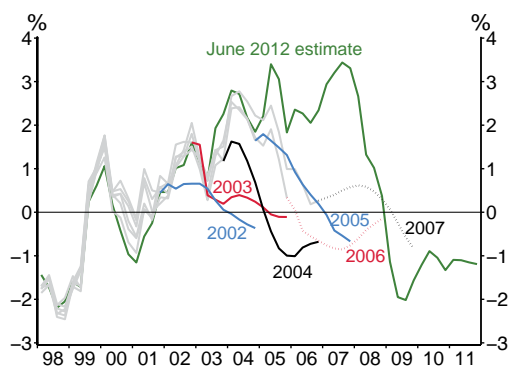
materially) underestimated how much excess demand and pressure on resources there was even at the time the forecast was done. For example, in mid 2007 we estimated that the output gap was less than 1 percent, whereas it now appears that it was more than 2 percent (rising to a peak around 3.5 percent).

What did we miss? Part of the story is that, with the benefit of hindsight, the sustainable potential growth rate during the boom years was lower than we had implicitly assumed. Internationally, many agencies have had to reassess their view of how much of the growth during those years was really sustainable.

But that was not the whole story. The rise in real house prices last decade was the largest in modern New Zealand history. It surprised forecasters in both its size and durability. The boom was initially triggered by the unexpected very large net inflows of migrants. Those inflows soon abated but the house price inflation did not. As the house price boom proceeded, our approach, and that of most forecasters, was to recognise the price increases that had already occurred, but to assume (and forecast) that real house prices would soon level off and perhaps begin to fall.

We also probably put less weight on the rate of credit growth than we should have done, or than we would do today. At a time when nominal GDP was rising at an average rate of around 6 percent per annum, growth in core private sector credit (to residents, excluding repos) progressively accelerated. Credit grew at 14 percent per annum in each of the last three years of the boom.

Figure 5
Output gap forecasts during the expansion:
estimates and “out-turns” *
(Percentage points of potential output)

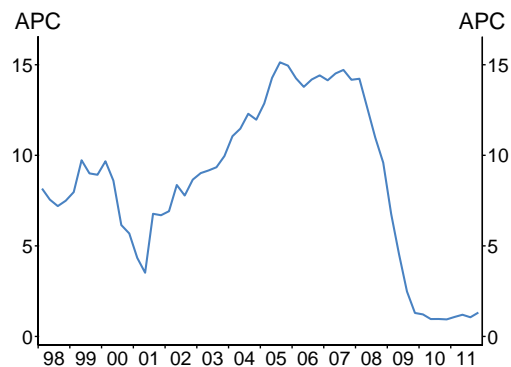


* The green line shows the estimate from June 2012 *Monetary Policy Statement* (i.e. how we now see historical resource pressures). Each coloured line shows the forecast over a three-year horizon from the June Statement of the given year. (Those forecasts follow on from pale-grey lines showing the contemporary estimate of the historical output gap.)

Source: Statistics New Zealand, RBNZ estimates.

² Reserve Bank of New Zealand (2007a) notes that the Reserve Bank's forecasting performance was generally better than the average of other forecasters, including consistently projecting stronger GDP and inflation, and tighter monetary conditions, than the average of market analysts from 2003-2007.

Figure 6
Private sector credit growth (to residents,
excluding repos)



Source: RBNZ

We were uncertain then, and remain uncertain now, quite what the steady state ratio of credit to GDP is, but such persistently strong credit growth should probably have been given more weight when thinking about how persistent the pressures on resources were likely to be.

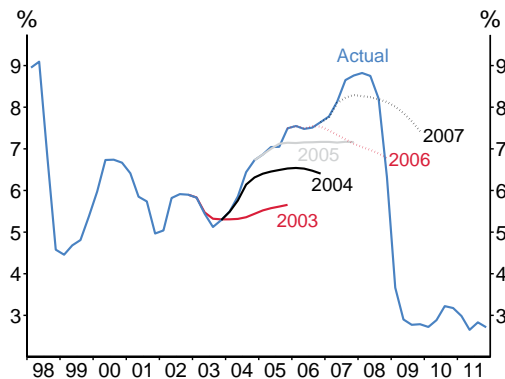
The sharp rise in international dairy prices from late 2006 took the industry and forecasters by surprise. The higher terms of trade boosted incomes and spending power and came just at a point in the cycle when we might otherwise have got on top of the growth in demand and checked the accumulation of inflation pressures. Throughout the decade surging oil prices also repeatedly surprised international analysts. With hindsight, that mattered mainly for headline inflation, but we were constantly conscious of the risk that much higher oil prices would act as a material drag on growth, as they had done in earlier decades.

Further, although we look back now on a recovery that ran from 1998 until the end of 2007, there were several periods of surprisingly low growth. In late 2005 and into 2006, for example, the incoming data suggested that monetary policy might have got the traction it needed. GDP growth slowed markedly and with signs that momentum was slowing, markets themselves became convinced that the boom was over and that the OCR would soon be on the way down again. As a result the exchange rate fell steeply for a period in early 2006. As it turned out, the drop in growth turned out to be just a pause. Growth and inflation pressure soon picked up once again.

What did it all mean for policy? The Reserve Bank publishes forward tracks of interest rates based on our macroeconomic forecasts that would, in our judgment, keep future inflation outcomes inside the target range. We did not think we would have to raise the policy rate by as much as was ultimately required (figure 7). The OCR was raised gradually from the start of 2004 because the boom was typically expected to end quite soon. There were several periods, notably in late 2004, and from the end of 2005 when we slowed the pace of rate rises and paused to watch whether further increases might be needed.

Making sense of what was going on in the economy was not just an issue for the boom years. Since the current recovery got under way we (and forecasters and markets)

Figure 7
90-day bank bill rates and Reserve Bank forecasts*



* Forecasts come from June *Monetary Policy Statements* of the given year.
Source: RBNZ

have tended to overestimate both GDP growth and where the OCR would need to be set. Forward tracks of the policy rate have been revised substantially downward in the face of a surprisingly tepid recovery. Across a range of developed countries, the recovery is proving to be much weaker than anything seen in the modern historical data, despite record low interest rates. The reasons are not yet fully clear, but probably have something to do with the overhang of public and private debt built up in many countries over the last decade.

Why New Zealand's real interest rates have typically been materially higher than those in other advanced economies remains puzzling. Whatever the actual reason, there has often been a hope and perhaps an expectation that the gap would close over time. Some hoped that having got through the first low-inflation cycle (and the associated strong credit growth and house price inflation) New Zealand might have been making that transition by around 2000. Credit growth and asset prices were quite subdued at the start of the decade.

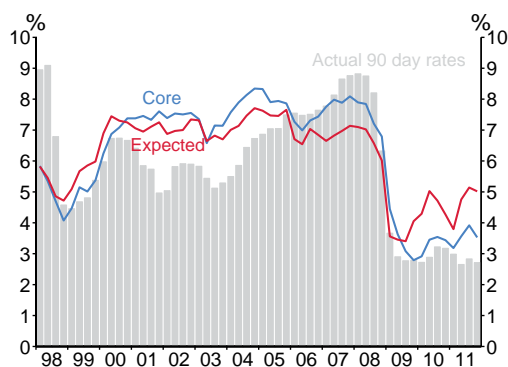
In the way we think about monetary policy, one of the key variables is the "neutral" rate of interest – the rate of interest consistent with keeping core inflation on target when the economy is operating at potential. The neutral rate will not necessarily be constant over time. The Reserve Bank substantially lowered its estimate of neutral real interest rates (by 75 basis points) in 2002 and 2003, reflecting a period when it seemed that less interest rate pressure was needed than previously to keep inflation in

check. The lower one's estimate of the neutral rate, the less stimulatory any actual interest rate will appear to be.

This change in thinking was probably partly responsible for us underestimating resource pressures during the boom. Uncertainty around the neutral rate of interest continues, compounded somewhat by the greater wedge that has developed since the crisis between short-term wholesale rates and the borrowing and lending rates facing firms and households. Our estimate of the neutral mortgage rate has been revised down since the crisis, but whether the adjustment was about right, or has been too large or small, will only become apparent with time.

One way of looking at New Zealand's monetary policy over the period is through the lens of a "Taylor rule". The Taylor rule is a very simple framework for thinking about where the policy interest rate should be set. A key input is an estimate of the neutral real interest rate. The policy rate should be above (below) the neutral rate if inflation is above (below) target and the output gap is positive (negative). No central bank ever sets monetary policy using just this little information, but Taylor rules have provided an informative way of thinking about how monetary policy has been set. It can be useful to think about why central banks have on occasion set policy rates very differently than a simple Taylor rule might have suggested.

Figure 8
90 day rates and real-time Taylor rule recommendations *



* The Taylor rule is calculated using the "classic" coefficients on the output gap and inflation suggested by Taylor (1993). The output gap for each quarter's Monetary Policy Statement is the estimate for that same quarter. The estimate of the neutral real interest rate is consistent with that used by the Reserve Bank in its forecasts. The "Core" line takes its inflation rate estimate from the Reserve Bank's sectoral factor model of core inflation; the "Expected" line takes its inflation rate from the 2-year ahead expectations measure in the Reserve Bank's Survey of expectations.

Source: Statistics New Zealand, RBNZ estimates

Figure 8 sets out some results from two versions of a Taylor rule for New Zealand, and compares them against the actual 90 day bank bill rate. These Taylor rules use the neutral real 90 day rate the Reserve Bank was using in its forecasting at the time, its contemporaneous estimates of the output gap, and two different measures of "underlying" inflation.

The results are striking. In particular they suggest that the OCR was set well away from the recommendations of the Taylor rule from around 2001 until around 2005. For the last few years of the boom, our monetary policy decisions were more consistent with what these Taylor rules would have recommended, at least using our contemporaneous output gap estimates. However, as already discussed there was considerably more pressure on domestic resources over 2005 to 2008 than we realised at the time. Slotting our current estimates of the output gap for that period into a Taylor rule (which is unable to see the future, and the global recession of 2008) would have called for a somewhat higher OCR still.

Challenges for monetary policy: interest rates and the exchange rate in a small, open economy

Monetary policy tends to be a little less controversial and generate fewer distributional concerns when New Zealand is in the same phase of the economic cycle, with similar pressure on resources, as other advanced economies. The wider world economy matters a lot for the New Zealand economy but the economic cycles are not always synchronised. In our period, New Zealand avoided the recession that the US experienced in 2001 and so when domestic demand began growing strongly it was from a base of already quite limited spare capacity.

Figure 9, overleaf, illustrates the point in a stylised way. Comparing the New Zealand output gap with an output gap estimate for other advanced economies suggests significantly greater pressure on resources in New Zealand. As a result, our interest rates needed to be raised more than in many other countries. Whereas policy rates in New Zealand had (briefly) been equal to those in the US in 2000, in more recent years (during the boom,

Box A

Developments in the Policy Targets Agreement

Under the Act, the Reserve Bank's primary function is to conduct monetary policy to achieve and maintain price stability. The Policy Targets Agreement (PTA) between the Minister of Finance and Governor specifies operational targets and outlines some shared principles for how to pursue that target. Significant changes were made to the PTA in 1999 and 2002.

When the review period began, the inflation target was 0 to 3 percent annual inflation in the CPI excluding credit services. That target was to be pursued 'in a sustainable, consistent and transparent manner', and in the face of any large, temporary events affecting inflation the Reserve Bank was to focus on general inflationary pressures.

In the December 1999 PTA a clause was added saying that in pursuing price stability, the Reserve Bank 'shall seek to avoid unnecessary instability in output, interest rates and the exchange rate'. The numerical inflation target remained 0 to 3 percent, though the target index was now the headline CPI because interest rates had been removed from the CPI credit services group.

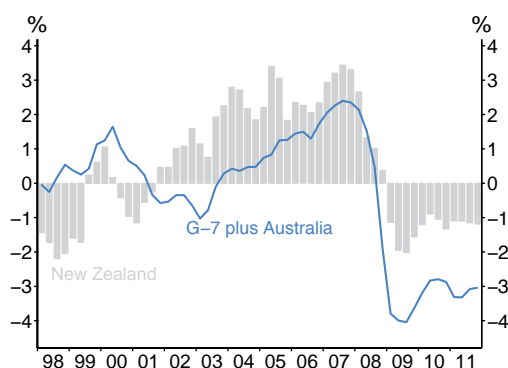
In September 2002, the inflation target was changed to 'future CPI inflation outcomes between 1 and 3 percent on average over the medium term'.

Quite what impact some of these changes had on the actual conduct of monetary policy is less clear. It is likely that the higher inflation target led to slightly higher average inflation outcomes over time. Coming at a time when a property market boom was just getting under way, the higher inflation target may have inadvertently slightly exaggerated the boom.

The impact of the other changes is also hard to quantify. That is partly because the shocks the Reserve Bank faced in the last decade or so were different to those in the previous decade, and partly because some wording changes simply capture the way in which the Reserve Bank had already been operating. However, it is likely that the changes created room for, and an expectation of, a little more flexibility than might have been exercised previously.

Simple statistics on average inflation and the variability of other indicators cannot shed much light on the question, because of the changing mix of influences on inflation before and after the PTA change. A more robust modeling exercise is beyond the scope of this article.

Figure 9
Output gaps



Source: Haver Analytics, Statistics New Zealand, RBNZ calculations

the bust, and the tepid recovery) that gap has been above 2 percentage points.

For any given set of forecasts for activity and inflation, there are also choices about how strongly monetary policy should react. From 1999, the Policy Targets Agreement (PTA) formalised a sense that, while focusing primarily on low inflation, we should seek to avoid **unnecessary** instability in output, interest rates and the exchange rate. Achieving and maintaining low inflation typically entails some **necessary** movements in other variables (interest rate adjustments, for example, are the prime tool for adjusting conditions to ensure that inflation remains on target).

The exchange rate dimension of this clause was a factor that stayed our hand at times during the boom. If cyclical pressures had been better aligned across

countries, it would probably have been easier to have raised the OCR by more, earlier, since more of the adjustment burden would then have fallen on domestic sectors (the principal source of demand pressures for much of the decade) and less on the exposed tradables sector.

The pressures on the tradables sector prompted the Reserve Bank and Treasury to look at whether other tools – referred to as supplementary stabilisation instruments – could help to ease demand pressures without the same undesired effects on the exchange rate. At the time none was judged feasible, suitable and likely to be effective and efficient (Reserve Bank of New Zealand, 2007b). More recent work at the Reserve Bank and internationally has been considering whether macro-prudential tools – whose primary focus is financial stability – might have anything to offer in dampening future large credit-fuelled expansions.³

During the tightening cycle it was typically assumed that the exchange rate pressures would be relatively short-lived, and hence best avoided if at all possible. In fact the real exchange rate has remained high (on average) since 2004. The unforeseen strength in New Zealand commodity prices has clearly played a large role. More generally, the exchange rate has gone through some large swings, but our research (McDonald, 2012) suggests that most of the swings can at least be explained in terms of swings in the economic fundamentals (for example, commodity prices, and the degree of pressure on resources in New Zealand relative to other countries). Explaining the fluctuations does not make them any more comfortable.

How to balance risks: dealing with the uncertain effects of extreme events

Economic events typically unfold quite gradually, and monetary policy can react as new data confirm or refute the forecast story. But during our period there were several events that prompted OCR cuts before we had any clear sense of how the economy might react – they were, in a sense, precautionary or insurance cuts.

The terrorist attacks in the United States on 11 September 2001 were the spur for two 50 basis point cuts.

In a climate of extreme uncertainty the Reserve Bank – like other central banks that reacted similarly – was concerned to limit the potentially large adverse effects on confidence and economic activity.

In a similar vein the Reserve Bank lowered the OCR by 50 bps to 2.5 percent in March last year. This was described as pre-emptive action to minimise the risk of a sustained shock to wider business and consumer confidence after the 22 February Canterbury earthquake.

In both cases business and consumer confidence measures fell – as expected – and then quickly rebounded. It is impossible to know what role the precautionary OCR adjustments themselves played because we do not know what would have happened without them. With the benefit of hindsight, both sets of moves look reasonable, but a case could be made that the 2001 cuts were reversed too slowly. In 2011, the July OCR review explicitly talked of reversing the insurance cut, but subsequently the deteriorating global situation led the Reserve Bank to conclude that an OCR of 2.5 percent was now warranted on substantive grounds, not just precautionary ones.

There has been more debate around the 75 bps of OCR cuts in 2003. Those cuts were prompted by a collection of potentially severe threats.⁴ The domestic background was mixed. The housing market was buoyant and credit was growing strongly (house price inflation was to be at its most rapid in late 2003), but this boom was not expected to continue. The exchange rate was rising, and overall pressure on resources was expected to ease (as figure 7 shows, the output gap was forecast to narrow and is still regarded as having narrowed).

The rationale for the OCR cuts was pretty clear. The more important question, perhaps, is about the speed with which those cuts were reversed once it became apparent that the domestic economy still had considerable momentum. These are difficult balancing acts: markets and the wider community do not welcome frequent changes in interest rates in opposite directions, but equally monetary policy needs to be responsive to changes in the data.

³ See, for example, Bollard, Hodgetts and Hannah (2011).

⁴ Measures of domestic confidence were weak, which was expected to mean the outlook would be sensitive to concerns about SARS, which the World Health Organisation had warned could have extremely serious global effects, to concerns about the impact of the invasion of Iraq, and to the prospect of a second year of drought and electricity shortages in New Zealand.

Flexibility: the trade-off over different horizons

Flexibility is an important dimension of modern monetary policy. But flexibility can work in both directions. The desire to avoid near-term unnecessary instability in output and the exchange rate influenced the 'insurance' cuts, and the pace of tightening through the peak years of the boom. As a result, the OCR was lower on average through the expansion than hindsight suggests might have been appropriate.

There might also have been an issue of how best to avoid unnecessary variability over the longer-term. What if, for example, monetary policy were to exacerbate the development of economic imbalances that are hard to address later, and that could unwind in economically costly ways. Bollard, Hodgetts and Hannah (2011) observe,

...we know that easy monetary policy, in the form of low interest rates, can interact with financial decisions by encouraging greater leverage. Whether monetary policy can moderate imbalances or lean against the dynamics of credit booms is a more complex question.

Applying this idea to the last expansion, the argument would be that a higher average policy rate could have limited the build-up of private sector leverage, property market activity, and exchange rate pressure and so sectoral imbalances. Once momentum and expectations of property price inflation built, it was harder for monetary policy to slow excessive growth in prices and demand, including in asset markets.

The relatively low interest rates over the first half of the decade probably exacerbated the credit and asset price boom, and the associated widening in the current account deficit. Less clear is how large a difference those policy choices might have made, given the population pressures, real income gains, and easy access to credit over the same period. Similarly, it is hard to determine how much any consequent additional growth in credit or asset prices will have contributed to the weak recovery in the last few years. A conventional argument prior to the global recession would have been that any domestic

debt excesses would, once the boom was exhausted, be met by lower interest rates, a lower exchange rate, and a reorientation of activity to the tradables sector. That had been the experience of other countries, and indeed of New Zealand in the 1990s, in the aftermath of the 1980s corporate credit boom. But, of course, an analysis of that sort does not deal with the case in which a large proportion of the world's advanced economies were all going through domestic credit booms at much the same time.

The same questions about the role of monetary policy in the credit and housing boom are arising in the United States without, as yet, any clear resolution. Given the degree of unease around the exchange rate pressures in the middle of the decade, it is likely that a materially tighter stance of monetary policy would have triggered quite intense criticism of the Reserve Bank. As it was, a parliamentary inquiry into monetary policy was established in 2007.

5 Towards some conclusions

Overall, New Zealand's 'flexible' approach to inflation targeting, similar to that now adopted in most other advanced countries, appears to have served us relatively well through a very turbulent and difficult-to-interpret period. The Reserve Bank was able to keep core inflation relatively low and stable. Inflation drifted uncomfortably close to, or beyond, the top of the target range on several occasions. But the target range served as a valuable bottom-line check on the other judgments and assumptions the Reserve Bank makes. Headline or core inflation outcomes persistently near or above the top of the range posed unavoidable questions, and helped ensure that, even with the inevitable misjudgments about various components of our models and forecasts, interest rates were raised enough to keep inflation in check. In a sense, that was one of the big differences between our experience of the last decade, and the international experience when inflation rose persistently to unacceptable levels in the 1970s

We – and other forecasters – have struggled to fully make sense of what was going on, both during the

Box B

The Reserve Bank Board's oversight of monetary policy

Under the Reserve Bank of New Zealand Act 1989 (the Act), the Board of Directors reviews the Reserve Bank's performance on behalf of the Minister of Finance. The assessment is based in part on having access to the papers and advice that inform the Reserve Bank's decisions. Since 2001, the Board's annual report on its assessment has been published. The Board's comments provide a useful perspective on the challenges that the Reserve Bank has faced in targeting inflation and on how successful the Reserve Bank has been in meeting its objectives.⁵

Among the matters for review are the Reserve Bank's performance in formulating and implementing monetary policy to maintain price stability, and the Governor's performance against the Policy Targets Agreement (PTA).

In its 2011 report (Reserve Bank of New Zealand Board of Directors, 2011) the Board looked back at a 20-year span of experience. The report said that,

Overall, the Board is satisfied that monetary policy has been implemented both in the past year and over the past two decades in a manner consistent with the requirements of successive PTAs and the Act.

The Board's commentary through our review period has found that the Reserve Bank operated in line with the PTA and that outcomes were consistent with those required by the Act and the PTA. In interpreting the PTA, the Board concurred with the Reserve Bank's treatment of the numerical inflation target, including the definition of 'medium term'. In 2005 the Board commented that a useful working definition of 'medium term' was a three-

year horizon, and in 2007, the Board was comfortable with the Reserve Bank treating the target as requiring inflation to be comfortably within the 1 to 3 percent range over the second half of a three year forecasting horizon.

In periods when inflation was outside the numerical range specified by the PTA, the Board noted that the drivers included transitory events as well as surprisingly strong domestic pressure. In these cases, the Board suggested that the Reserve Bank's approach was appropriate in focusing on the persistent, not the transitory, element of inflation, and in not attempting to rapidly bring inflation to below 3 percent. A stronger and more-rapid response would have worsened variability in other economic and financial variables.

That was particularly the case through the mid-2000s and into 2008. Strong pressure on productive capacity and strong international prices for commodities were at times visible, but there was a growing risk to the variability of activity from domestic imbalances and the threat of an international slowdown. In that context, the Board noted on several occasions that inflation expectations – an important determinant of the persistence of inflation – remained well anchored.

The Board also addressed questions of whether the Reserve Bank could have better foreseen coming events and responded further in advance. The 2006 and 2007 reports noted Reserve Bank research showing that the Reserve Bank's forecasts had generally been good. The forecasts had been more accurate than private sector consensus; and forecasters generally had missed predicting the sharp rise in oil prices from 2006 that drove the spike in headline inflation.

⁵ Since 2003 the Act has required that the Chairperson of the Board be a Non-executive Director. For the reports published in 2001, 2002 and 2003, responsibility for the reports was delegated by the Board to the Non-executive Directors' committee.

boom years and subsequently during the surprisingly tepid recovery. In particular, we probably materially underestimated what level of interest rates was consistent with New Zealand macroeconomic stability in the good times, and as a result appear to have set the OCR too low for several years from 2001. Setting the OCR is our responsibility, but few, if any, observers were consistently championing the case for higher interest rates during that period.

The big swings in the exchange rate and the high average exchange rate that has now prevailed for several years have caused considerable discomfort, shifting the balance between consumers and producers in ways that have not always seemed consistent with underlying competitiveness and sustainable growth in New Zealand's income. But commodity prices have also been relatively high, and quite volatile in recent years, and the relative strength of domestic demand pressures probably also contributed to the strength of the exchange rate.

Not many of the global or domestic imbalances that built up over recent years have yet fully unwound, and many stresses and risks remain. Against that backdrop it is still difficult to fully assess economic developments or the contribution of domestic monetary policy to them. This article is just one contribution. Internally, our own research agenda is partly focused on questions around how economic behaviour might have changed in recent years, and what, if anything, monetary policy needs to do differently. Other central banks and independent researchers are posing very similar questions, and we will also be closely monitoring their work.

References

Bollard, A, B Hodgetts and M Hannah (2011) 'Where we are going with macro and micro-prudential policies in New Zealand?' Speech to the Basel III Conference, Sydney, 25 March 2011, <http://www.rbnz.govt.nz/speeches/4327011.html>

Chetwin, W (2012) 'Business cycle review, 1998-2011', Reserve Bank of New Zealand *Bulletin*, 75(1), 14-27.

McDonald, C (2012), 'Kiwi drivers – the New Zealand dollar experience', *Reserve Bank of New Zealand Analytical Note AN 2012/02*

Reserve Bank of New Zealand (2007a) 'Supporting paper A2: A review of economic developments and monetary policy since 2000', Finance and Expenditure Committee inquiry into the future monetary policy framework: submission by the Reserve Bank of New Zealand, 36-65, <http://www.rbnz.govt.nz/monpol/about/3074316.html>

Reserve Bank of New Zealand (2007b) 'Supporting paper A6: Supplementary stabilisation instruments project and the Macroeconomic Policy Forum', Finance and Expenditure Committee inquiry into the future monetary policy framework: submission by the Reserve Bank of New Zealand, 84-86, <http://www.rbnz.govt.nz/monpol/about/3074316.html>

Reserve Bank of New Zealand Board of Directors (2001-2005) Reserve Bank Non-Executive Directors' annual reports

Reserve Bank of New Zealand Board of Directors (2006-2011) 'Board of Directors' report for the year ended 30 June', Reserve Bank of New Zealand *Annual Reports 2005/2006-2010/2011*

Taylor, J (1993) 'Discretion versus policy rules in practice' Carnegie-Rochester conference series on public policy, 39, 195-214