

The future of inflation targeting?

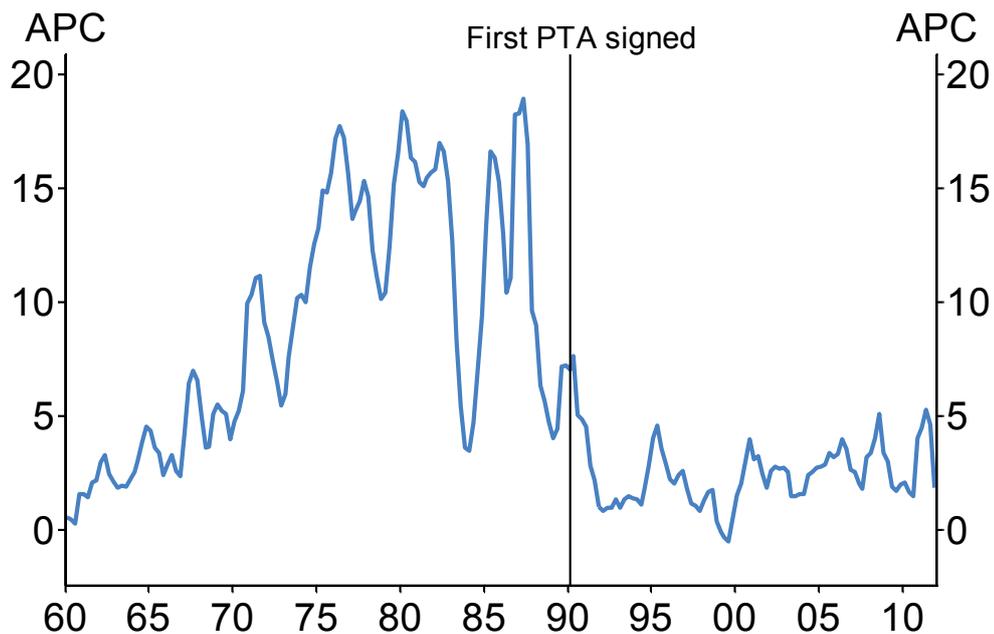
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Introduction

Inflation targeting as a monetary policy framework has been largely successful at keeping inflation in check in the many countries that have adopted it over the past 20 years or so.² Certainly the inflation performance in New Zealand has been far superior under the inflation targeting regime (figure 1).

I expect inflation targeting is very familiar to most people here, but let me briefly recap what that framework entails in the New Zealand context. Then I will use the most recent business cycle in New Zealand to illustrate how the framework coped with some very significant shocks to the New Zealand economy.

Figure 1
Headline CPI inflation



Note: APC : Annual Percent Change.

Source: Statistics New Zealand

¹ Assistant Governor, Reserve Bank of New Zealand.

² Roger, S (2009) "Inflation targeting at 20: achievements and challenges" IMF working paper, WP/09/236, October.

What inflation targeting looks like in New Zealand

Inflation targeting frameworks have a number of elements, including an explicit numerical target to be met over a defined time horizon, as well as typically specifying a process for how the central bank is to be held accountable for its monetary policy actions and how it is expected to communicate its monetary policy decisions.

In New Zealand, we aim to keep future consumer price inflation between 1 and 3 per cent on average over the medium term.³ Like many other central banks we have a range of publications we can use to provide our view of inflationary pressure and explain our monetary policy actions. The most prominent is the quarterly *Monetary Policy Statement*. Although the principles of inflation targeting are the same across countries, there are some differences in the details. For example, New Zealand has a different accountability structure in that we have a single decision maker rather than a committee for monetary policy decisions. We also differ to most central banks in that we publish an interest rate track that we think would be necessary to achieve our inflation target. These differences do not appear to have made a difference in the ability to achieve the inflation target.

How did the inflation targeting framework cope with the most recent business cycle in New Zealand?

The most recent business cycle in New Zealand was one of the longest and largest in the past 60 years.⁴ The Reserve Bank has been analysing this cycle to help assess its monetary policy. This analysis provides a useful case study on the use of inflation targeting in a small open economy like New Zealand's. An analysis of the drivers of the business cycle was published in the Bank's March *Bulletin* while a discussion of monetary policy over the business cycle will be published in the Bank's June *Bulletin* in a few weeks.

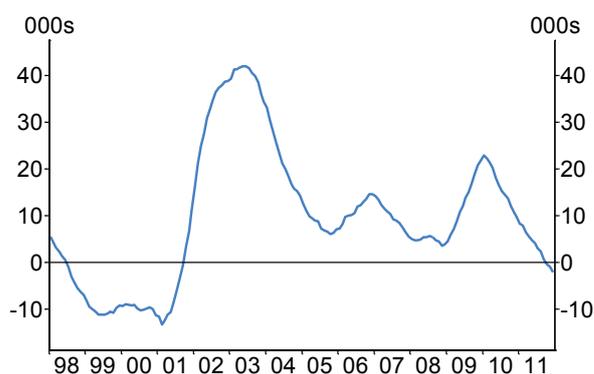
In summary, that analysis notes that the New Zealand's economy expanded from 1998 to 2007 and then had a six quarter recession in 2008–09. From 1998 to 2007, there were a number of significant shocks that determined the shape of the business cycle (figure 2). First, there was a strong and unexpected increase in population growth from net immigration in 2002–03. Second, there was a significant boost to the economy from a rising terms of trade from 2000, which accelerated late in the period. Third, oil prices roughly doubled from mid-2007 to mid-2008. Fourth, government spending rose rapidly from 2005. This came at a time of pre-existing excess demand in the economy.

³ In New Zealand, the inflation targeting framework is founded on the Reserve Bank Act 1989 (the Act) and the Policy Targets Agreement (PTA). The Act makes price stability the primary function of monetary policy and gives the Reserve Bank independence in operating monetary policy, subject to an agreement between the Minister of Finance and the Governor (the sole decision maker) specifying the functional target. The PTA defines price stability in the form of an inflation target, currently future annual CPI inflation "... between 1 per cent and 3 per cent on average over the medium term". The PTA says that in pursuing price stability monetary policy should "seek to avoid unnecessary instability in output, interest rates and the exchange rate".

⁴ For details of the dating for New Zealand's business cycles, see Hall, V B and C J McDermott (2009) "The New Zealand business cycle" *Econometric Theory*, 25, 1050–1069.

Figure 2

Net permanent and long-term migration



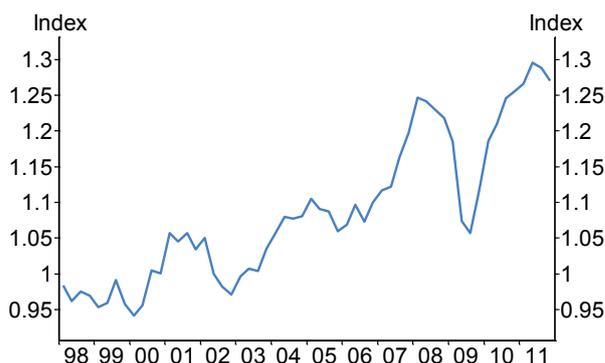
Source: Statistics New Zealand

Real Dubai oil prices (1998 prices)



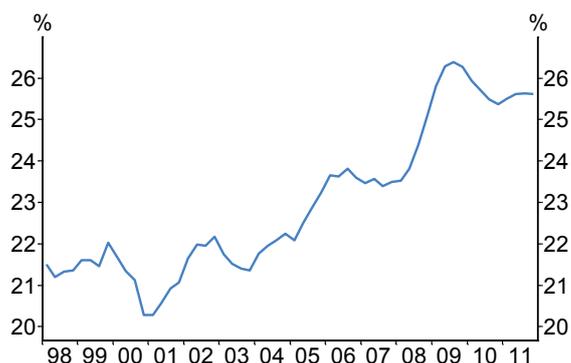
Source: Reuters, Haver Analytics, RBNZ calculation

Terms of trade



Source: Statistics New Zealand

Government spending (consumption plus investment, per cent of annual GDP)

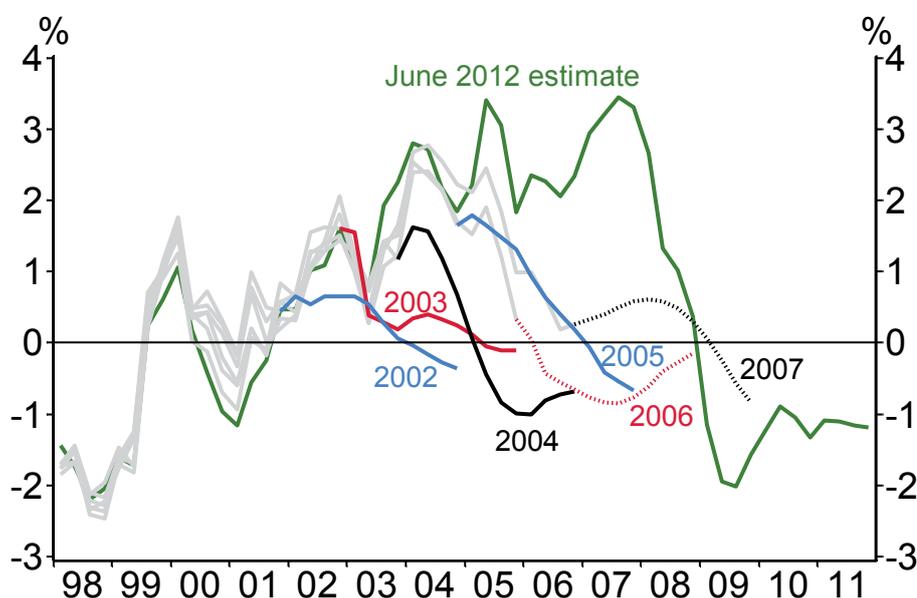


Source: Statistics New Zealand, RBNZ calculations

In setting monetary policy we had to take a view both on how these shocks would unfold and on how they might change the inflationary pressure in the economy, as summarised by our view of the output gap. As our forthcoming *Bulletin* article⁵ notes, throughout the recent boom we expected the output gap to dissipate rapidly. However, as it turned out the output gap remained positive for an extended period (figure 3).

⁵ Chetwin, W (2012) "Business cycle review, 1998–2011" Reserve Bank of New Zealand Bulletin 75(1), 14–27, and Chetwin, W and M Reddell (2012) "Monetary policy in the last business cycle: some perspectives" Reserve Bank of New Zealand Bulletin 75(2), forthcoming.

Figure 3
**Output gap estimates from
 June quarter Monetary Policy Statements
 (per cent of potential output)**



Source: Statistics New Zealand, RBNZ calculations

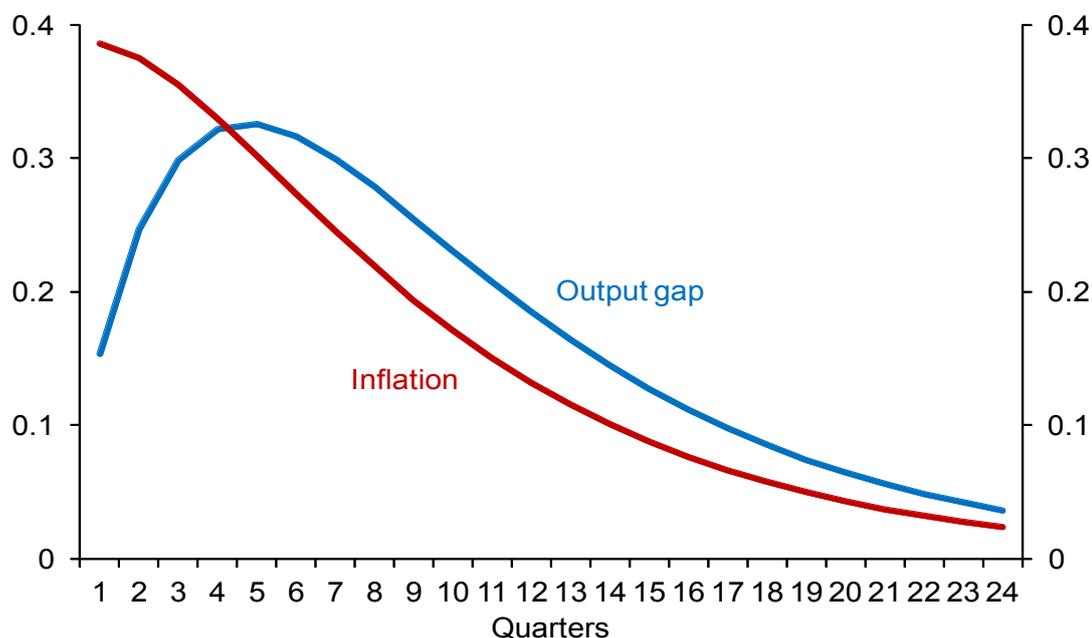
With an extended period of excess demand pressure, average inflation tracked in the upper half of our target zone. While the persistent component of inflation was higher than we would have ideally liked during the business cycle expansion, it did remain anchored within the target zone. That outcome was far superior to our experience of the 1970s when inflation was persistently at double-digit levels.

The difficulty of anticipating how long an inflationary shock will last is central to the forecasting process required for monetary policy. In many models that are used for monetary policy analysis, the output gap often quickly returns close to zero following a simple aggregate demand shock, and it is natural to think in those terms.⁶ However, the interaction of a persistent aggregate demand shock and inertia in the economy can considerably prolong the time for which the economy is in a state of excess demand pressure. Figure 4 illustrates this point by showing the response of an aggregate demand shock with a half-life of only two quarters in a stylised model of monetary policy with typical parameter settings. The point is that excess demand can remain material in the economy long after the underlying shock has gone.

⁶ Here I am referring to the New Keynesian style models as described in, for example, Woodford, M (2003) *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press; and Benes, J, A Binning, M Fukac, K Lees, T Matheson (2009) *K.I.T.T.: Kiwi Inflation Targeting Technology*, Reserve Bank of New Zealand.

Figure 4

Response of output gap and inflation to a persistent aggregate demand shock



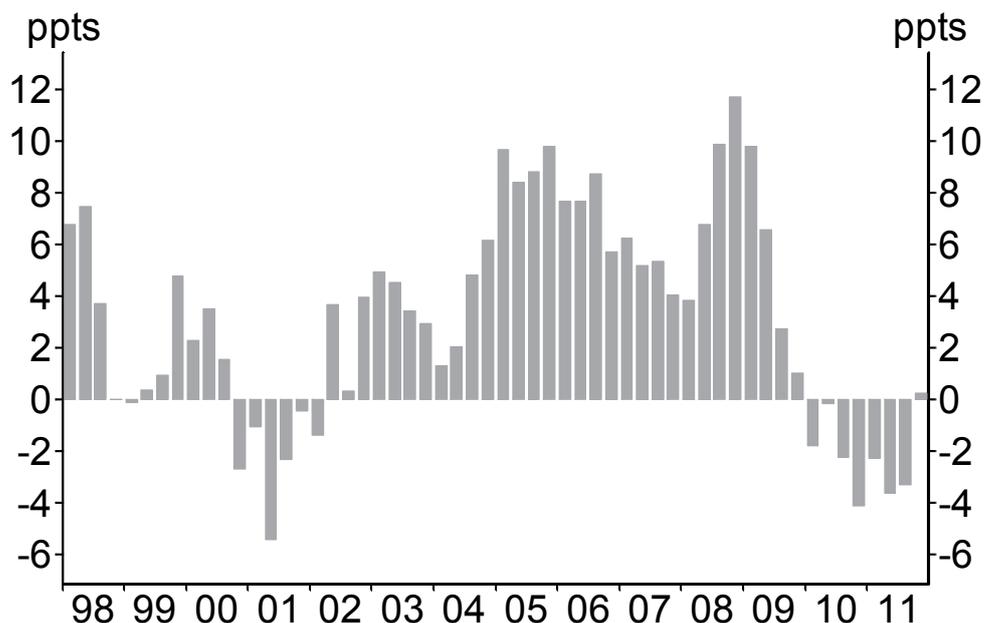
Source: RBNZ calculations

Of course, the shocks we face in the economy can be far more complicated than in this simple illustration. Three of the shocks shown in figure 2 delivered ongoing pressure to the economy. Even the relatively short-lived large inflow of migrants in 2002–03 had ongoing impacts. The housing stock cannot be increased as quickly as the changes in migrant flows. Consequently, house prices rose and, even after the boost to population subsided, continued to rise beyond all forecasters’ expectations. Higher house prices in turn stimulated a large construction boom which put further pressure on resources. Private sector credit started to expand well in excess of the nominal growth in the economy (figure 5). In line with conventional wisdom, we put relatively less weight on credit data than on interest rates.⁷ Had we had a higher weighting on credit growth data, our view of the persistence of pressure on resources would likely have been stronger much earlier in the boom.

⁷ The academic consensus on monetary policy used to be that there was no independent information for monetary formulation in money and credit numbers over and above that available in interest rates. See, for example, Gali, J (2008) *Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework*, Princeton University Press. While this view was never completely accepted at the Reserve Bank of New Zealand (Bollard, A (2005) “Housing debt, inflation and the exchange rate” Address to the Employers and Manufacturers Association (Northern) AGM), money and credit aggregates were never very prominent in the formulation of monetary policy. One of the processes we changed following the global financial crisis was to formally present information on monetary and credit aggregates to the Monetary Policy Committee to assist with the production of the Bank’s forecasting in its Monetary Policy Statement.

Figure 5

Excess of domestic credit growth over nominal GDP growth



Source: Statistics New Zealand, RBNZ calculations

Monetary policy in New Zealand is also complicated by exchange rate issues. In a small open economy the inflation target is a complement to a floating exchange rate regime. During the boom period, expectations of tight monetary policy to offset the excess demand pressure probably contributed to the persistently high exchange rate throughout the period, causing considerable discomfort and worries about the sustainability of parts of New Zealand's tradable sector.

After the global finance crisis, there are new challenges for monetary policy to deal with. The current recovery in the business cycle, both in New Zealand and in other advanced economies, is proving weaker than historical precedents. Our forecasting frameworks need to be expanded so we can examine possible sources of the disappointing recoveries, such as the impact of the overhang of public and private debt on the economy.

Inflation targeting works, and other lessons for the future

Despite the challenges and the ongoing shocks to the economy, monetary policy did what it was supposed to do: keep inflation low. The framework maintained the Reserve Bank's focus on the target, and the frequent publication of forecasts forced us to constantly update our views of the economy and the inflation pressure within it.

The Bank's analysis on the recent business cycle underscores that the inflation targeting framework is an effective way to conduct monetary policy under a range of testing circumstances and that the framework is a useful tool for future inflation control.

With low inflation and the credibility of inflation targeting came much lower volatility in the general level of prices. That is helpful for resource allocation, affecting longer-term performance, and for macroeconomic stability over the medium term. This credibility was very helpful when the global financial crisis hit. To help offset the very large negative shock,

the Bank started lowering interest rates even while annual inflation was above its 1 to 3 per cent target.

Of course, that is not to say the framework cannot be improved in any way. Over the course of the past 20 years or so the framework has evolved to reflect lessons learned and is likely to evolve further in response to new developments. In particular, our monitoring of monetary and credit information has increased in the wake of the global financial crisis. The Reserve Bank has also been looking into the effectiveness of some macroprudential instruments that may limit build-ups of problems in future periods of rapid credit growth.⁸

⁸ For details see Spencer (2012) "Prudential lessons from the Global Financial Crisis", Presentation to Financial Institutions of New Zealand 2012 Remuneration Forum, May.