RESERVE BANK OF NEW ZEALAND
TE PŪTEA MATUA

Inflation targeting in New Zealand: an experience in evolution

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Introduction

It is a pleasure to discuss an issue that is especially pertinent for the Reserve Bank of New Zealand at present – the evolution of central bank frameworks. As many of you will be aware, the New Zealand Government is in the process of changing our monetary policy framework, to add employment to our existing mandate of price stability and formalise a decision-making structure based on a committee. This would bring us closer to a framework like the one here in Australia, and in the United States of America.

This paper is in a section titled *Twenty Years of Inflation Targeting*, but in New Zealand it has actually been much closer to thirty. The RBNZ Act came into effect February 1990, making New Zealand the first country to formally adopt inflation targeting as we now know it.

New Zealand's experience has been one of evolution. As the Bank established its credibility – by which I mean it became clear that we could and *would* meet our price stability objective – we were able to develop a more flexible approach to inflation targeting, consistent with the literature and with developments in other inflation-targeting countries.

We are about to enter the next stage of that evolution. I believe this next step is indeed an evolution, which builds on the flexible approach we have been taking for some time, rather than a revolution. That said, it is still too early to determine precisely what effect the new framework will have on the implementation of monetary policy. The New Zealand framework has changed significantly over thirty years, reflecting lessons learned and the changing economic and political environment. And it is likely to continue to evolve as we are faced with new developments.

You may be very familiar with our pioneer's tale, and want me to cut to the chase – our move towards a dual mandate and formalised committee. But before I touch on where we are going, I want to provide you with some context – where we started, and where we have been.

The origins of inflation targeting: a need for credibility

As I have noted, inflation targeting as we now know it was pioneered in New Zealand.[1,2] Other countries had been pursuing disinflationary monetary policy since the late 1970s, and by the early 1980s most OECD countries were announcing some form of money or credit target in an attempt to convince public and markets that they were taking the challenge of controlling inflation seriously (Reddell, 1999). But the focus internationally was on these 'intermediate' targets – the quantity of money or credit – rather than targeting inflation itself. Intermediate targets were thought to be informative for monetary policy as they were

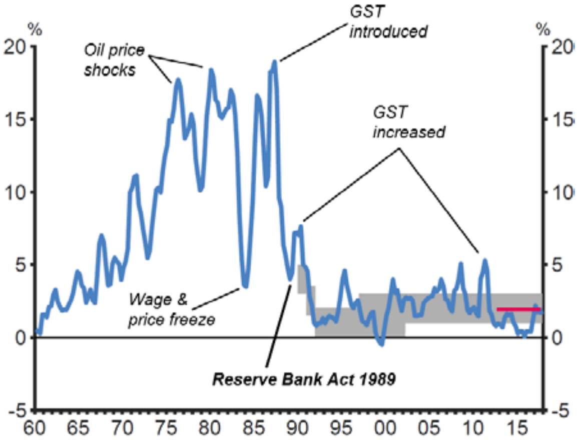
[1] Bernanke *et al*. (1999) provide a widely-cited definition of inflation targeting.

[2] Italy, Greece and Portugal all published single year targets for inflation at times during the early 1980s, and Sweden briefly operated a form of price level targeting in the 1930s. However, none of these provided a complete, sustained structure for inflation targeting of the kind now understood by the term. In the 1970s and 1980s, West Germany conducted monetary policy in a framework that closely resembled inflation targeting, although it was officially designated as money targeting (Bernanke and Mihov, 1996). In addition, in 1995 the Bundesbank itself drew a distinction between its approach and inflation-targeting, arguing at the time that inflation-targeting was the inferior approach.

susceptible to a degree of central bank control. However, the extent to which intermediate targets were connected to the objective of price stability was subject to debate.[3]

In the 1970s and 1980s, New Zealand had a very poor track record of price stability. Annual inflation had been around 10 to 15 percent since the early 1970s (figure 1), and was considerably higher than inflation in our main trading partners. A key driver of high inflation in New Zealand over this period was government spending, accommodated by generally loose monetary policy (Grimes, 1996). There had been episodes of tight monetary policy over this period. But successive governments had been unwilling to face the short-term costs to output and employment that disinflation brought with it, and had loosened policy again.

Figure 1: Annual CPI inflation (target range shaded)



Source: *Statistics New Zealand.*

Bringing high inflation under control was a key priority for the Labour Government that came into power in New Zealand in July 1984.[4] In 1986, the then Minister of Finance Roger Douglas invited officials to explore options for reforming the monetary policy framework, aiming to reduce the scope for political influence that had seen past attempts to control inflation fail so badly.

The framework that evolved over the next four years was the culmination of various strands of economic thought and the principles that were underpinning the wider reform of New Zealand's public sector at the time.[5,6] At its core, the framework that emerged provided the Bank with a means to establish credibility that we would bring inflation down and keep it there.

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[3] See for example Friedman (1984) and Friedman (1990).

[4] Then Reserve Bank Governor Spencer Russell (1984) discussed the new Government's commitment to bring inflation under control: "We have had periods of tight monetary policy in the past. But by backing off at the eleventh hour, money and credit growth rates have been allowed to expand excessively again and the benefits from the temporary period of tightness have been lost. The Government has made it clear this will not be the case again".

[5] Reddell (1999) contains a detailed discussion of the origins and early development of the inflation target; Grimes (1996) also provides a comprehensive summary of monetary policy developments within the wider reform environment.

[6] Don Brash, who was the first Governor of the inflation-targeting era, once said of the origins of inflation targeting in New Zealand "I will simply note that history can be surprisingly confusing, even for those who were there" (Brash, 1998).

And why does credibility matter? If policymakers are able to convince firms and workers that they will set policy to achieve the inflation target, this anchoring of inflation expectations makes it more likely that prices and wages will be set in a manner consistent with the target, even in the face of shocks to the economy. This naturally makes the target itself easier to achieve.

Picture the New Zealand inflation-targeting framework as a newly-planted tree. In the 1970s and 1980s, several seedlings of low inflation had been planted, but none took hold. The ground conditions – a highly regulated financial market and economy – were not conducive to growth, and the winds of politics kept blowing the seeds of low-inflation away before they had a chance to flourish.

By the mid-1980s, ground conditions were much improved. New Zealand had gone through a dramatic period of financial market reform in the nine months between July 1984 and March 1985. The float of the New Zealand dollar and the commitment of the government to fund the fiscal deficit via issuance of public debt to the private sector freed up the Bank to pursue domestic monetary policy (Kamber *et al.*, 2015). To ensure that inflation-targeting could establish credibility and take hold, four highly-related aspects of the framework were provided as stakes in the ground to support the new sapling.[7] These stakes were: operational independence; transparency; the single objective of price stability; and the Governor as sole decision maker, which I will now discuss in turn.

(i) Operational independence (RBNZ Act Section 13)

Firstly, operational independence. The Reserve Bank Act (1989) provided the Bank with its operational independence and its monetary policy objective.[8] It was heavily influenced by the literature on the time inconsistency of monetary policy and the experience during the 1970s and 1980s, in which successive governments had been unwilling to endure the short-term effects of disinflation for the longer-term gains of price stability.[9] The specific monetary policy target of the 1989 Act was to be publicly agreed in a Policy Targets Agreement (PTA) between the Minister of Finance and the Governor of the Reserve Bank. Prior to the late-1980s, Reserve Bank independence had been non-existent: the 1973 Amendment to the RBNZ Act had stated that the Bank was to "*give effect to the monetary policy of the*

[7] It is worth noting that the Act does not specify that there must be targets for *inflation* itself. The Act specifies only "policy targets for the carrying out by the Bank of its [price stability objective]", which leaves open the possibility of specifying targets such as nominal GDP consistent with medium-term price stability.

[8] Except as otherwise provided for in the Act: Section 12 allows for the Bank to be directed by the Governor-General to implement policy for a different economic objective than the one in Section 8, by Order in Council on the advice of the Minister. This Section was included primarily for use in times of emergency (such as wartime) and has never been used. Any temporary redirection of policy would be well publicised since Orders in Council must be published in the *New Zealand Gazette*. The Reserve Bank Act (1989) can be accessed at http://www.legislation.govt.nz/act/public/1989/0157/latest/DLM199364.html.

[9] The time inconsistency problem is that authorities have an incentive to promise low inflation in the future, but then renege in order to boost activity (in order to obtain more votes, for example). As firms and households begin to anticipate this behaviour, their expectations of inflation increase and so they set prices and demand wages accordingly. The economy then ends up in a worse position with higher inflation and (potentially) higher unemployment (see, for example, Barro and Gordon, 1983).

Government".[10] The RBNZ Act (1989) provided the Bank with credibility in meeting its objective by no longer being subject to concerns or incentives regarding the electoral cycle.

(ii) Transparency (RBNZ Act Section 15)

Monetary policy operates with significant lags and in an inherently uncertain environment, and therefore naturally requires a great deal of judgement and discretion. To ensure that operational independence was used appropriately, the Act also specified a high degree of transparency in how the Bank formulated policy. The Act requires the Bank to publish regular statements on its monetary policy decisions and for these to be laid before Parliament. The Governor's deliberations were also to be monitored and assessed by a Board consisting of members appointed by the Minister of Finance.

(iii) Single objective (RBNZ Act Section 8)

Providing the Bank with one objective, rather than a list of objectives – production, trade, full employment and price stability – as had been the case previously, made it more credible that the Bank could actually achieve its mandate. The Act states "*The primary function of the Bank is to formulate and implement monetary policy directed to the economic objective of achieving and maintaining stability in the general level of prices*." It acknowledged that price stability was the greatest contribution monetary policy could make to New Zealand's economic wellbeing. It recognised the limitations of monetary policy over the medium term, and provided the Bank, financial markets and wider public with a clear objective for policy. Moreover, the initial PTA clearly defined price stability with a numerical target band of 0 to 2 percent. This clear numerical target provided a nominal anchor against which the Governor's performance could be assessed and around which inflation expectations could converge.

(iv) Single decision maker (RBNZ Act Section 9)

The final stake in the ground was the assignment of authority and responsibility to an individual – the Governor. This 'single decision-maker' model was highly influenced by the principles underpinning the reform of the wider public sector at the time, which gave individual public sector managers the authority to manage but made them directly accountable for outputs (Reddell, 1999 and Sherwin, 1999). The employment contract between the Minister of Finance and the Governor evolved into the PTA. The legislation made it clear that the Governor could lose his or her job for "inadequate performance" in meeting these objectives.[11]

In summary, the inflation-targeting framework established in the late 1980s was planted under conditions that increased its likelihood of success. The four stakes of operational independence, transparency, the single objective of price stability, and the single decision-maker model provided essential support to a new framework, and encouraged it to take root and establish its credibility. And why have I taken you on this history lesson? To provide you with some context on the New Zealand framework, and to introduce some aspects of the framework that remain as critical today as they were in 1989, and some that are about to change. But I will come back to that shortly.

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[10] Graham and Smith (2012) provide a history of Reserve Bank of New Zealand independence.

[11] Donald Brash (2002) recalls the response of the Minister responsible for the Reserve Bank legislation to his initial surprise that the PTA would be between the Government and Governor, rather than the Government and the Bank "*We can't fire the whole Bank. Realistically, we can't even fire the whole Board. But we sure as hell can fire you!*"

The evolution of inflation targeting: increasingly flexible

Since being planted in the late-1980s, New Zealand's framework has evolved significantly. As pioneers, it was always unlikely that we could introduce a framework that got everything 'right' from the start, especially given that the environment in which policy operates has itself developed a lot over the years (Sherwin, 2000).

The evolution of the inflation-targeting framework in New Zealand can be characterised as one of increasing flexibility, consistent with the academic literature and with developments in other advanced economies. As our tree grew taller and its roots grew deeper – as we gained credibility by actually meeting our target, and anchored inflation expectations – we could be more confident that our tree could bend in the wind, without being uprooted.

What exactly do I mean by flexibility? Over the past three decades, monetary policymakers and academics have learned that there is a trade-off, not between inflation and output, but between the volatility of inflation and output. Monetary policy that is set to offset short-term movements in inflation away from target – referred to as 'strict' inflation targeting – will result in more volatility in output and other economic variables such as employment and the exchange rate.[12] As the Bank established its credibility in achieving its inflation target, we could allow some volatility in realised inflation in order to offset some volatility elsewhere in the economy. In practice, this means that interest rates have generally been adjusted more slowly. And in this sense, the Bank has increasingly paid regard to the wider economy despite having a consistent overall objective of price stability specified in the Act. This increasingly flexible approach has, however, been reflected in the evolving content of successive PTAs over the past thirty years.

The PTA – which you will remember provides the Bank with its specific target in meeting its overall objective – must be renegotiated with the Minister of Finance each time a Governor is appointed or reappointed, and has also tended to be updated on the formation of a new government. This process naturally lends itself to incremental adjustments, influenced by the economic and political environment at the time. Since 1990, there have been 13 PTAs, with some alterations more significant than others. The Reserve Bank of New Zealand has seen more changes to its target than most other inflation-targeting central banks, and the process of renegotiation also provides more opportunity for government direction than is the case in some other countries (Wadsworth, 2017).

In some ways, the number of changes has been less than ideal, as it has the potential to undermine the public's faith in the policy target. But since these changes have formalised things that we have learned in the process of operating policy, and reflected the underlying goals of the public via the political process, they have been entirely appropriate.

There are several highly-related dimensions of flexibility, and I will now take you through some key developments in New Zealand's inflation-targeting framework along these dimensions, which are summarised in table 1 below.

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[12] See for example Svensson (1997).

Table 1: Evolution of flexible inflation targeting in New Zealand 1990-2017

	Early to mid-1990s	Late 1990s & 2000s	2010s
Time to target	Initially, target to be achieved by a set date Dec 1990: Annual inflation to remain inside the target band, and the Bank to calculate and explain deviations due to shocks outside the Bank's control (explicit 'caveats')	Time to target implicitly lengthened; Bank to respond to general inflationary pressure List of shocks that could result in deviation from target became illustrative, rather than exhaustive 2002: medium-term focus made explicit	Explicit medium-term focus has remained
Secondary considerations		1999: Bank shall seek to avoid unnecessary instability in output, interest rates and the exchange rate	2012: Bank to have regard to the efficiency and soundness of the financial system; Bank to monitor asset prices Other secondary considerations (stability of output, interest rates and the exchange rate) have remained
Target definition	Initially, 0-2 percent 1996: 0-3 percent	2002: 1-3 percent	2012: 1-3 percent, with a focus on the 2 percent target midpoint

Early to mid-1990s

The initial inflation target of 0-2 percent originated primarily as a communications device – a way for Minister Roger Douglas to refocus expectations and convince the public that the anti-inflation drive would continue (Reddell, 1999).[13] Inflation was within the target by 1991, and stayed there until June 1995 when adverse weather pushed up the prices of fruit and vegetables and saw inflation increase to 2.2 percent.

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13 During a televised interview broadcast on 1 April 1988, Roger Douglas said that policy was to be directed to reducing inflation to "around zero to one percent" over the following couple of years. By the June 1988 RBNZ *Bulletin* the Bank felt confident enough to describe the ultimate goal as being "price stability by the 1990s" and that "in terms of the CPI, this objective is likely to be consistent with a small positive measured inflation rate, in the order of 0-2 percent, as a result of several problems in the construction of the index." (Reddell, 1988).

Over the next few years, inflation remained at the top of or marginally above the target range.
With hindsight, the Bank was slow to recognise the pace of acceleration of the economy in 1992/93, and relied on the transmission of policy via the exchange rate to a greater extent than was ideal given the structural changes we later learned were underway (RBNZ, 2000a). The Bank learned that keeping inflation within such a narrow range could likely only be achieved at the cost of undesirably high volatility in the real economy, and began talking about the target as something that we would constantly aim for rather than something we could – or should – deliver every quarter (Brash, 2002).

Since December 1990, PTAs had contained some allowance for actual inflation to deviate from target. These were in the form of explicit 'caveats' or 'principal shocks' recognised as being outside the Bank's control. We were required to calculate and publish the direct effect these had on inflation outcomes. In practice, we found it increasingly difficult to determine which items to include or exclude, and were exposed to (although never received much) criticism that we could manipulate the calculation in order to meet our objective.

In 1996, the target was widened to 0-3 percent, reflecting the new National/New Zealand First Coalition Government's preferences (RBNZ, 2000b). The Bank was comfortable with this widening as we felt it was unlikely to materially affect monetary policy credibility or adversely affect inflation expectations.[14] By allowing slightly more inflation variability it enabled policy to offset volatility in the real economy to a greater extent. The 1996 PTA also modified the explanation of the Bank's overall objective to be more explicit that price stability was the best contribution that monetary policy could make to economic growth and employment, rather than simply being an end in and of itself (RBNZ, 2000b).

Late 1990s and 2000s

As the Bank learned more about the transmission of monetary policy in the New Zealand economy during the 1990s, we put increasing weight on real economy channels and less on direct exchange rate effects (Brash, 1998). Specifically, we found that the pass-through of nominal exchange rate changes into local prices had become more muted over the 1990s. This meant that the slower part of the monetary policy transmission mechanism – via the real economy – was given even greater prominence in meeting our objective (RBNZ, 2000a). This change in emphasis effectively lengthened the horizon over which policy was formulated, which in itself encouraged less variability in interest rates, the exchange rate and output.

In 1999, the incoming Labour/Alliance Coalition Government initiated the modification of the PTA to state that "*In pursuing its price stability objective*, *the Bank*… *shall seek to avoid unnecessary instability in output, interest rates and the exchange rate*". The Bank viewed these changes as largely confirming the flexible approach we had been taking for most of the inflation-targeting period (RBNZ, 2000b). It reflected that several policy paths could be chosen in order to meet our inflation target, and the effect of these paths on the real

[14] Recent research by the Bank has found that the widening of the target did result in an increase in long-term inflation expectations, but that this increase was not statistically significant (Lewis and McDermott, 2016).

economy and other variables was influential in determining which path was ultimately selected (RBNZ, 2000c).

The changes were also a reflection of economic developments. The Bank initially underestimated the combined effect of the Asian financial crisis and the droughts that affected rural New Zealand in the summers of 1997/98 and 1998/99, which led to recession in New Zealand. We operate in an uncertain world, and monetary policy would never have been able to completely offset the effect of these shocks. Yet the way we implemented monetary policy over this period – via the Monetary Conditions Index (MCI),[15] which was introduced in mid-1997 – shaped the response in a way that probably contributed to the fall in output and added unnecessary interest rate volatility (RBNZ, 2000a). The Bank recognised this, and we replaced the MCI with the Official Cash Rate (OCR) as the instrument of monetary policy in March 1999. The MCI was a branch that we lopped off fairly quickly.

In May 2000, the Minister of Finance invited Professor Lars Svensson to review the operation of monetary policy in New Zealand. He found the framework to be "*entirely consistent with the best international practice of flexible inflation targeting, with a medium-term inflation target that avoids unnecessary variability in output, interest rates and the exchange rate*" (Svensson, 2000). He did recommend a move from the single-decision maker to committee model, but the Government chose not to support this recommendation at this time (see *Government's response to Monetary Policy Review*, 2001).

But during the early 2000s, concern continued to grow among politicians, industry representatives, commentators and the wider public that the economy's trend growth rate had been unnecessarily constrained by the performance of monetary policy (RBNZ, 2002). Those expressing concern suggested that this constraint resulted from a target that was too low and policy that was too aggressive. It was argued that these factors had resulted in interest rates that were too high on average, and in interest rates and the exchange rate being too volatile.

The Bank noted the long-held and internationally-accepted view that monetary policy was unlikely to have a large influence on the long-run performance of the economy, and that there was no evidence that policy in New Zealand was more aggressive than elsewhere. But we also had not found any clear evidence that trend inflation of 2 percent would produce better or worse outcomes for trend growth than trend inflation of 1.5 percent. In the end, the target (and therefore midpoint) was changed to 1-3 percent in the 2002 PTA. Recent Bank research has found that this change was accompanied by an immediate increase in long-run inflation expectations (Lewis and McDermott, 2016).

The 2002 PTA also made the medium-term focus of monetary policy explicit, and firmly embedded the flexible approach (see, for example, Hunt, 2004). It changed the target from "*12-monthly increases*" to "*future CPI inflation outcomes… on average over the medium term*". This medium-term focus has been an enduring feature of PTAs to this day. The Bank

[15] The MCI was a weighted summation of the exchange rate and short-term interest rate, with weights reflecting each variable's medium-term effect on aggregate demand and thus inflation. The MCI was used to identify the overall stance of monetary policy and to communicate the likely direction and extent of change in stance going forward.

has interpreted this target to mean that it should set policy in order for inflation to remain or settle comfortably within the target band in the latter half of a three-year horizon (Bollard and Ng, 2008).

During the mid-2000s, economic developments reignited concern about the monetary policy framework. Although New Zealand had been one of the faster-growing OECD economies since the early 1990s, this growth had been accompanied by the emergence of macroeconomic imbalances: a relatively large current account deficit, high house price inflation and household indebtedness, and a real exchange rate that had risen to levels sometimes regarded as unjustified by medium-term fundamentals (RBNZ, 2007b). In early 2007, the Government requested another inquiry into the monetary policy framework.

The Bank reiterated that there was no compelling evidence to suggest that these features had arisen from the design of the monetary policy framework. We recognised that with the benefit of hindsight, we had been slow to fully recognise the strength of demand and housing market pressure on inflation over the cycle. However, this was a feature of having to operate policy under uncertainty (RBNZ, 2007a and Chetwin and Reddell, 2012). We noted that solutions to New Zealand's imbalances were likely to lie in other policy domains, and suggested several 'supplementary stabilisation instruments'.[16] Following the review, the Government decided not to make any changes to the RBNZ Act or the PTA,[17] nor introduce any of the suggested instruments (see FEC, 2008 for the full report).

Monetary policy during the global financial crisis (GFC) of 2008/09 demonstrated the flexibility of the inflation targeting framework. Despite CPI inflation being driven well above the target band by higher oil prices over 2008, the Bank reduced the Official Cash Rate (OCR) by 575 basis points between June 2008 and June 2009. Our tree remained firmly planted, anchored by its roots of credibility, despite the largest global storm since the Great Depression. Longer-term inflation expectations remained within the target range, and the reduction in the OCR helped support the New Zealand economy at a time of global distress (see, for example, Chetwin, 2012).

2010s

The GFC led many central banks to focus more heavily on how financial system developments should be treated by monetary policy. The Bank had always monitored asset prices and taken them into account in both monetary and prudential policy (see Bollard, 2004), and the Reserve Bank Act had long contained a requirement for the Bank to have regard for financial stability when setting monetary policy. However, the 2012 PTA made this explicit by adding asset prices to the list of prices the Bank was directed to monitor, and including the requirement that the Bank "*have regard to the efficiency and soundness of the financial system*" (see Kendall and Ng, 2013).

[16] These included cyclical variations in migrant approvals, increasing the responsiveness of housing supply, measures to limit procyclicality in fiscal policy, and consideration of various aspects of the tax regime (RBNZ, 2007a and RBNZ, 2007b).

[17] The FEC (2008, p.16) report stated that "Continuity is an important part of this framework, providing the public with confidence in the framework's commitment to low and stable inflation. In view of the broad success of the framework, we do not recommend any change to the framework."

The Reserve Bank of New Zealand is unusual internationally, although not unique, in having both monetary policy and prudential responsibilities. In October 2013, the Bank introduced restrictions on high-LVR mortgage lending.[18] While these macroprudential tools were introduced for financial stability purposes, they clearly interact with monetary policy's goal of price stability – particularly given the strong relationship between house prices and domestic demand we have observed in previous economic cycles in New Zealand. Although they have different objectives, our macroprudential policies were complementary to monetary policy when first introduced; the LVR restrictions were acting to reduce growth in house prices at a time when the Bank expected inflationary pressures to build (see Williams, 2017a). But as the outlook for inflation weakened, the policies began to have opposing implications for the business cycle. The PTA is clear that monetary policy must have regard to financial stability but it does not – and probably cannot – specify exactly what trade-offs should be entertained. The optimal balance between price and financial stability remains an area of ongoing research in New Zealand and abroad.[19]

An explicit reference to the target midpoint was also incorporated into the 2012 PTA, so that it now read "*keep future CPI inflation outcomes between 1 per cent and 3 per cent on average over the medium term, with a focus on keeping future average inflation near the 2 per cent target midpoint*". This was motivated by the desire to anchor inflation expectations more firmly to 2 per cent, as they had been close to the upper end of the target band for most of the inflation targeting period (Kendall and Ng, 2013).

In recent years, inflation in New Zealand has been persistently low, as in many countries around the world. We have undertaken a great deal of research to better understand why this has been the case, and what characteristics of this expansion have differed from expansions before it (see Williams, 2017b, for a summary of this work). Some features have simply been revealed with the passage of time, and some reflect our evolving understanding of how the economy operates. But we have not found any features that imply that the framework itself should be revolutionised – that the Bank has been confronted with new developments is an unavoidable fact of life, not just monetary policy.[20]

Where to from here? The next stage in our evolution

Our increasingly flexible approach to inflation targeting outlined above has been made possible by the achievement and maintenance of credibility regarding our framework. There are two key aspects of the framework – two of our stakes in the ground – that remain as important today as they were in 1989. These are operational independence and transparency.[21]

Changes to the PTA have tended to reflect actual Bank practice at the time, but have also often been initiated by the government of the day. The Bank has seen several government reviews of its framework, often in response to macroeconomic developments. And this is

[18] See for example Rogers (2013) and Dunstan (2014).
[19] Kamber *et al*. (2015) note that while the importance of coordination depends on the magnitude of the externalities that each policy has on the other, how large these effects are is currently not well understood. Since the Bank is jointly responsible for both policies, these trade-offs should necessarily influence the settings of both monetary and macroprudential policies.
[20] See a speech I gave in 2017, on "The value of forecasting in an uncertain world" (McDermott, 2017).
[21] See Blinder (1998) for an excellent discussion of central bank independence and transparency.

how it should be – while operational independence *within* the framework is critical for credibility (and therefore effectiveness), the framework itself should be designed by the government to maximise the wellbeing of New Zealanders. Over the course of thirty years we believe the framework has served New Zealanders well – most of the graduates we have hired in recent years have never known anything other than low and stable inflation.

Transparency also remains a critical aspect of the framework. Being transparent about our assessment of the economy and our plan to meet our objective has an influence on expectations, and helps us achieve our objective. The Reserve Bank was the first central bank to publish its interest rate forecast, starting in 1997.[22] And crucially, transparency aids in the assessment of our actions, and allows us to be held to account.[23]

But what of the other supports, the single decision-maker and single objective?

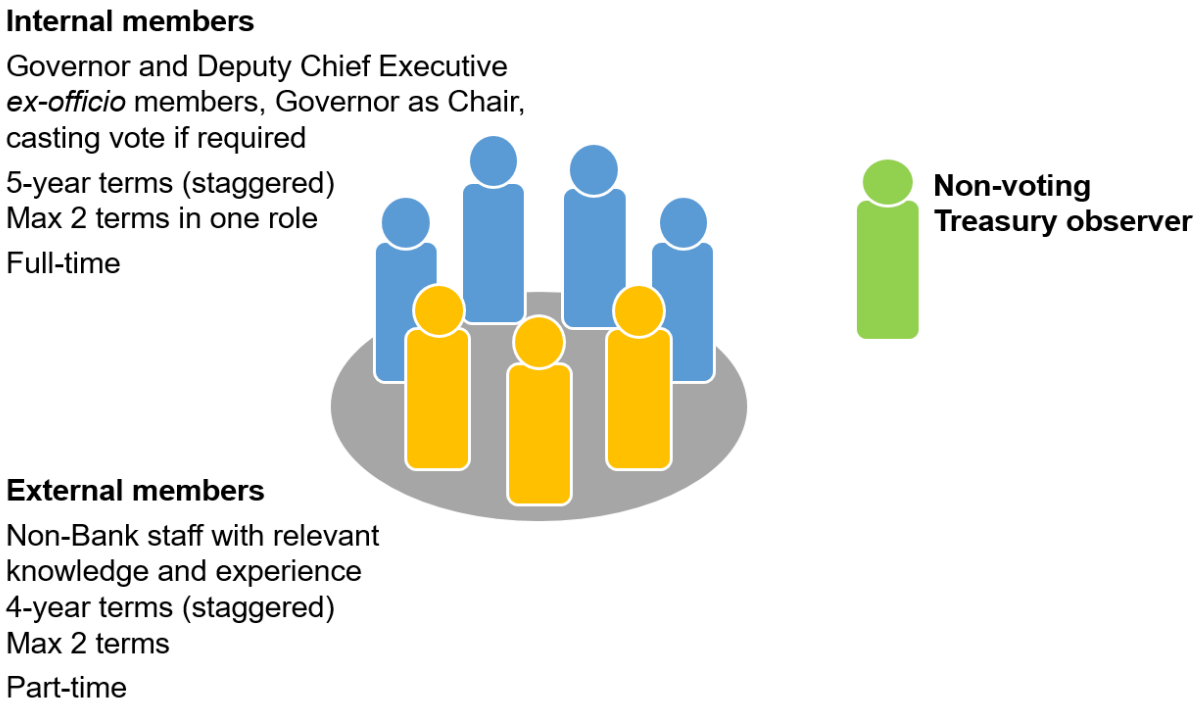
As I noted at the very start, these are the two aspects of the framework that the New Zealand Government is in the process of changing, to formalise a committee structure and add employment to our mandate. We agree that the single-decision maker model has become less relevant over time. In reality, Reserve Bank Governors have a long history of utilising advisory committees (Bollard *et al*., 2006). And in 2013, we established the Governing Committee that at the time consisted of the Governor (as Chair), two Deputy Governors and myself (as Assistant Governor). While the Governor retains the right of veto on decisions, and continues to have statutory responsibility for policy, the Committee members work together to test ideas and build consensus around the monetary policy decision (Wheeler, 2013 and Richardson, 2016). The flexibility of our approach to inflation targeting requires a great deal of judgement, and the use of a committee maximises the knowledge and experience of members individually and as a collective.

The Government will formalise a monetary policy committee (MPC) in the Act, and add members from outside the Bank, 'externals', onto the committee. The Act will allow the MPC to have between five and seven members, but there will be seven initially, and there will always be more internal than external members. All members will be nominated by the Reserve Bank Board, and appointed by the Minister of Finance. There will also be a non-voting observer from the New Zealand Treasury. Figure 2 illustrates the structure of the committee to be established in the Act.

[22] Dincer and Eichengreen (2014) found that New Zealand was one of the most transparent central banks in the world (third behind Sweden and the Czech Republic in 2014), although by their estimates we rank much lower on central bank independence. The authors base the transparency indices on public reports and communications by each central bank, and the independence indices on central bank law in each country.

[23] See Ford, Kendall and Richardson (2015) for more on the evaluation of monetary policy.

Figure 2: Monetary Policy Committee to be established in the Reserve Bank of New Zealand Act



Source:https://beehive.govt.nz/release/new-pta-requires-reserve-bank-consider-employment-alongside-price-stability-mandate

The MPC and Minister of Finance will agree a Charter setting out the approach to issues defined in the Act, including the approach to communications. Details of the first Charter are yet to be determined, but the Minister intends for the MPC to aim to reach decisions by consensus, and for non-attributed votes to be published where there is not consensus. The Minister also intends for non-attributed records of meetings to be published that reflect any differences of view among the MPC. We will no doubt explain these and other changes – and their potential implications for the setting and communicating of policy – as they are finalised.

Of course, the creation of a formal (or indeed informal) committee does not guarantee superior outcomes. How the MPC will operate in practice is also extremely important. Committees are more successful when they have processes in place that aim to minimise various human biases, such as the pressure to conform, confirmation bias, and a tendency to rely on the most recent events to a greater extent than is sometimes warranted.[24] The Bank will continue to ensure our internal processes aim to maximise the benefits that committees can provide.

And what of the move to a 'dual mandate'? The Bank has always had regard to developments in the labour market, and this has been encouraged by our increasingly flexible approach. We have a long history of meeting with businesses and organisations

[24] The movie *12 Angry Men* (1957, MGM) provides an excellent demonstration of how 'committees' (a jury in this case) should *not* behave, for example publicly revealing individual priors at the start of the meeting.

across the country, and we regularly assess the available labour market data and are committed to discussing labour market developments. So my current sense is that, to a large extent, the changes are a way of ensuring that the flexibility in our approach endures.

The exact wording of the full employment objective in the Act is yet to be determined. However, the PTA that Adrian Orr signed a few weeks ago on March 26th reflected the upcoming changes to the Act, and does not provide the Bank with a numerical target for full employment as it has with price stability. This is helpful, as 'maximum sustainable employment' cannot be fully captured by a single indicator.

Focusing too narrowly on one indicator, such as the unemployment rate, can be misleading. For example, a fall in the unemployment rate could be the result of an increased demand for labour – typically reflecting a strong economy – or the result of people dropping out of the labour force altogether because they are unable to find a job and have become discouraged. These different causes have very different implications for how the labour market is evolving and would therefore have very different implications for monetary policy. Specifying a numerical target for inflation but leaving the employment target as a qualitative objective is consistent with the practice here in Australia, and in the United States too. The Bank will continue to consider a wide range of labour market indicators when formulating policy, although we will communicate our assessment of and outlook for the labour market in more detail than we have in the past. And just as with inflation, our understanding of the labour market can always be improved as we are faced with new data, new developments, and as new research methods become available.

That said, there are widely-recognised limits to what monetary policy can do over the long run. We have some influence over the degree to which the unemployment rate, as just one example, deviates from its underlying trend. But ultimately that underlying trend is determined by factors outside of our ability to influence, that rely instead upon the age and skills of the population, the efficiency with which jobs are matched to available workers, and the nature of employment regulation.

Conclusion

I would like to conclude by reiterating that New Zealand's experience with inflation targeting has been one of evolution. The Reserve Bank Act (1989) provided the supports that enabled us to establish credibility in our intent to meet our objective of price stability. As we lowered inflation, and anchored expectations within the target range, we could implement an increasingly flexible approach to monetary policy that has been reflected in successive PTAs. This flexible approach means that we have long had regard to the real economy, including employment.

That the Bank has operational independence and is transparent in meeting our objective is as important for credibility today as it was in 1989. But the framework and the specific targets that we operate within and towards are for the public, via the political process, to determine. The Government is currently in the process of changing the framework, to assign monetary policy responsibility to a committee with external members and add employment to the Bank's current mandate of price stability.

I see the inclusion of (maximum sustainable) employment into our mandate as reinforcing the flexibility of inflation targeting. That said, it is still too early to determine what effect these changes will have on the conduct and communication of monetary policy. I expect that in five or ten years' time someone from the Reserve Bank of New Zealand will be back at a similar conference, to explain how it all went.

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