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Strategic Choices in Inflation Targeting: The New Zealand Experience

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The Reserve Bank of New Zealand Act of 1989, which established the independence of the Reserve Bank of New Zealand (RBNZ, New Zealand's central bank) and set the single objective of price stability for the country's monetary policy, came into force in 1990. The first Policy Targets Agreement (PTA) specifically defining the inflation target was signed in March of that year. However, in New Zealand the adoption of the concept and practice of inflation targeting, in the sense of an announced, numerical target, is dated from April 1988. Indeed, several years before that, in the middle of 1984, the government had made it clear that the achievement of low inflation was a key objective of its economic policy agenda.

In an operational sense, New Zealand's approach to monetary policy in the mid-1980s was encapsulated in two key initiatives. The first was the decision in March 1985 to move to a clean float of the New Zealand dollar. That has been sustained ever since, with no direct foreign exchange market intervention by the RBNZ over the subsequent 14 years. The second key decision was to adopt the principle that all of the government's funding requirements should be met in private markets, primarily through open tenders. With those two decisions, the major exogenous influences on the money base were removed. Those decisions also signaled the government's willingness to accept the markets' judgment with respect to the behavior of interest rates and the exchange rate, at least within very wide ranges.

Inflation Targeting in Concept

There is a tendency in some quarters to see inflation targeting as a complex solution, with the complexities arising from the perceived need for:

- a well-developed forecasting technology;
- certain specific forms of institutional structure, often including central bank independence;
- a sound and well-developed financial sector; and
- well-developed measures of inflation.

In fact, New Zealand scored rather poorly on each of those characteristics when the serious attack on inflation was first launched. Forecasting systems were not particularly sophisticated, as the existing econometric models had essentially been rendered redundant by the extensive structural reform then under way in New Zealand. The RBNZ Act was not passed until about five years after the country had embarked on the disinflationary process. New Zealand's financial sector in the second half of the 1980s was far from sound and stable, with one significant collapse and a couple of near misses. And inflation measures were far from ideal—and in some respects they remain so.

The essence of inflation targeting seems to boil down to the following:

- Decide what level of inflation is appropriate to the economy.
- Ensure that there is political acceptance of that objective, however defined.
- Set monetary policy with the intention of meeting that inflation target and keeping inflation low thereafter.

The rest is essentially of second-order importance, albeit with plenty of scope for complication and distraction.

The New Zealand Context

The comprehensiveness of New Zealand's policy reforms over the period since 1984 provides an important backdrop to any assessment of the effectiveness of the inflation targeting regime. Inflation targeting was not introduced in isolation. Rather, it was introduced in the midst of a process that involved substantial industry deregulation (including that of the financial sector); privatization and corporatization within the state enterprise sector; tariff and border protection reforms; sweeping tax reforms; labor market reforms; removal of industry subsidies; the complete removal of all capital controls and the subsequent free float of the exchange rate; and rigorous and comprehensive fiscal reform.¹

¹See Brash (1996) for a review of the New Zealand reform process.

Many of these reforms contributed to the process of breaking down “institutionalized” inflation, as embodied in the indexation of wages and prices, a “cost plus” pricing mentality, and a crawling peg for the exchange rate. However, some reforms conspired to slow the disinflation process, such as the introduction of a goods and services tax (GST; a comprehensive consumption tax in the style of a value-added tax) and the move to “user pays” principles for many government-provided services.

Much of the public sector reform process in New Zealand drew heavily on the principal-agent model. As applied to most government agencies, this model required that the principal (that is, the government, as represented by the relevant cabinet minister) and the agent (the chief executive of the government department in question) enter into a contract specifying the “outputs” to be produced and the nature of the department’s accountabilities to the minister. The origins of inflation targeting in New Zealand flowed more or less directly from the application of that model to the central bank.

The New Zealand Framework

The key features of the New Zealand framework are as follows:²

- A single objective for monetary policy, price stability, is enshrined in law.
- The RBNZ has effective independence to implement monetary policy as it judges necessary to meet its contracted target, without limitations on the techniques it may use, except that its choices “must have regard to the efficiency and soundness of the financial system.”
- The legislation recognizes that any choices on the trade-offs between monetary policy and other economic policy objectives are the prerogative of the elected government.
- The way in which such trade-offs are made is a matter of public record and therefore transparent to the community at large.
- Operational independence is accompanied by clear accountability for all decisions on monetary policy implementation. The governor of the RBNZ is solely responsible for monetary policy outcomes in terms of the target to which he or she agreed when accepting the position.

A committee of nonexecutive directors of the RBNZ’s governing board exists whose principal function is to monitor the governor’s performance in

²This section draws heavily on Nicholl and Archer (1992).

terms of the PTA. The committee has no involvement in monetary policy decisions but is required to review those decisions and to report its views periodically to the national treasurer. The committee may recommend the dismissal of the governor should it conclude that he or she is not diligently striving to meet the target assigned in the PTA.

The Framework in Practice

The institutional framework just described has been in place now for a decade, but it has evolved considerably over those years. In part, the new developments have reflected shifting circumstances: the task of maintaining price stability is different, and in some senses more difficult, than the task of disinflating. In part, there have been shifts in the RBNZ's thinking about key issues: in particular, its views on the relative roles of interest rates and exchange rates in monetary policy transmission have shifted. Also, the implementation structure has proved less than satisfactory at times and has been subject to change. As the implementation of inflation targeting has progressed, public acceptance of the price stability target has grown, and with that acceptance, inflation expectations appear to have become better anchored. That has allowed some latitude in policy implementation that was not available early in the process.

The international environment has changed as well: inflation pressures from abroad are not what they were a decade ago. That has an impact both on local inflation expectations and on the other external pressures that New Zealand faces. Finally, the RBNZ has learned from experience and from mistakes. No doubt, it will continue to learn from both.

The 1990 Model

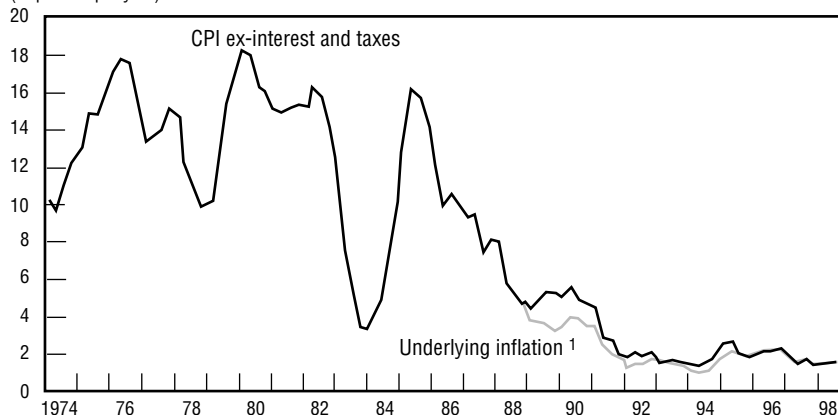
As already noted, the first PTA under the RBNZ Act was signed in March 1990. At the time, the consumer price index (CPI) was running at a little over 5 percent a year (Figure 1), and the economy was in recession. The PTA formally confirmed a target of 0–2 percent for the CPI, to be achieved by the year ending December 1992. That original PTA also established a number of “caveats” or exceptions to the target. These were interpreted as providing a capacity to look through the direct impact on the CPI arising from interest rate changes, significant movements in public sector charges, shifts in the GST and local government taxes, or significant movements in export or import prices.

In practice, these caveats were implemented through the preparation of a measure of underlying inflation that was “PTA consistent.” In other words, the underlying inflation measure was derived from the headline CPI measure cal-

Figure 1

New Zealand: Inflation as Measured by the Consumer Price Index, and Underlying Inflation

(In percent per year)



Source: Statistics New Zealand and Reserve Bank of New Zealand data.

¹ Underlying inflation is derived from the Statistics New Zealand CPI-All Groups series, adjusted by excluding the impact of interest rates, taxes, and other significant price shocks as provided for in the RBNZ policy targets agreement at the time.

culated by the government statisticians, but adjusted to take account of the exceptions listed above. This underlying inflation measure became the operational target.

Although the PTA does not require it, the RBNZ opted to publish an indicative trajectory for inflation, bridging the gap between the starting point of over 5 percent and the targeted rate of less than 2 percent. Accordingly, targets of 3–5 percent were set for 1990 and 1.5–3.5 percent for 1991. A change in government in the second half of 1990 led to an amended PTA being signed, which deferred the 0–2 percent target by one year.

During the initial phases of formal inflation targeting, the RBNZ tended to emphasize the importance of not breaching the target. In its public discussion of policy and in its policy reactions, the central bank tended to treat the inflation target as “hard-edged.” Indeed, the target was sometimes described as being bounded by electric fences: approach if you must, but do not touch! The hard edges were not necessarily a conscious part of the original design of the framework. Rather, they emerged once inflation had fallen to within the target range. They came to prominence in the context of an extensive public communications program aimed at convincing New Zealanders that the central bank was indeed serious about its inflation target and intended to adhere to it over the long haul.

The RBNZ has a long history of publishing its forecasts. Continuation of that policy seemed natural in the context of the new regime with its emphasis on transparency and accountability. The new regime brought an additional publication requirement in the form of twice-yearly Monetary Policy Statements. Since forecasts were already being published every six months, this allowed the RBNZ to move to alternating quarterly publication of projections and statements. The early statements tended to concentrate on explaining and interpreting the new framework and describing the RBNZ's policy reaction function: what indicators it was watching and how it might respond to movements in those indicators.

The 1999 Model

The PTA in effect as of this writing (May 1999) was signed in December 1997 and sets the inflation target in terms of the All Groups Consumers Price Index excluding Credit Services (CPIX), as published by Statistics New Zealand. The target is 12-monthly increases in the CPIX between zero and 3 percent. The PTA recognizes that significant temporary shocks can occur that mask the underlying trend in prices. The RBNZ is instructed to respond to such disturbances in a manner that prevents general inflationary pressures from emerging.

The PTA explicitly notes that there will be occasions when inflation outcomes deviate from the targeted range. On those occasions it requires the RBNZ to explain in its Monetary Policy Statements why such outcomes have occurred and the nature of its monetary policy response.

The edges of the target band have been softened compared with those in the original PTA. The RBNZ has moved away from any formal accounting of the various caveats embodied in its earlier underlying inflation measure. Instead, it has adopted a process of describing and accounting for, *ex post*, any shocks or exogenous influences on inflation and explaining how the central bank views these for the purposes of formulating policy.

In practice, as already noted, the monetary policy process revolves around a quarterly cycle centered on the production of comprehensive economic projections and their subsequent publication in the RBNZ's quarterly statements.³ The projection process identifies, with all the usual constraints, qualifiers, and limitations, the monetary conditions that will be necessary to maintain CPIX inflation at the midpoint of the 0–3 percent target band over the next two to

³Recent Monetary Policy Statements can be viewed on the RBNZ's World Wide Web site: <http://www.rbnz.govt.nz>.

three years. On that basis, the RBNZ announces its official cash rate (OCR), the interest rate that is the principal instrument of policy. The OCR is reviewed formally, but without the aid of a fully developed set of projections, approximately midway between each of the quarterly statements, giving eight possible reset points for the OCR each year.

In general, when looking at the stance of policy, the RBNZ is making an assessment about likely domestic price pressures six to eight quarters ahead. Today's policy settings are aimed at delivering an inflation rate in the middle part of the target range in that time frame. However, the RBNZ is also conscious that the starting point is uncertain. Important data series in New Zealand are slow to arrive and may be subject to revision. Thus, as much as one tries to look forward, the RBNZ knows that its attitude to current policy is likely to be heavily conditioned by emerging data on the recent past.

Lessons Learned

Bernanke and others (1999) identify a number of key operational issues that arise in the design and implementation of an inflation targeting regime. With the benefit of a decade of experience, how does the RBNZ think about some of those issues?

Which Measure of Inflation Should Be Used?

New Zealand opted for the price measure already most familiar to New Zealanders, namely, the CPI. The disadvantages of some aspects of the construction of the CPI were recognized, but none of the alternative measures of inflation were regarded as viable candidates.

Over the past couple of years the RBNZ has been working with Statistics New Zealand on a review of the CPI. The officially published measure used for purposes of the inflation target (the CPIX) excludes the interest rate component. In addition, alternative measures of inflation will soon be available that incorporate owner-occupied housing costs by imputing the cost of renting the same house rather than by the current "acquisitions" approach based on home purchase prices and mortgage interest rates.

Some effort has been devoted to exploring trend measures of inflation (Roger, 1995). Although some measures have been identified, such as weighted medians of the CPI components, that have attractive characteristics with respect to trend smoothing, none of these were adopted as the target measure, largely because of the perceived difficulties in gaining public understanding and acceptance. However, the CPIs of many countries carry a higher weighting for volatile elements such as food. In those cases, the identification of a re-

liable but more stable measure of trend inflation may be much more important for the successful implementation of inflation targeting.

What Numerical Value Should the Target Have?

The original 0–2 percent target in New Zealand reflected a generalized ambition to achieve something close to “true” price stability. At the time, there was a loose presumption that the measurement bias in the CPI could be on the order of 1 percentage point. The shift to a 0–3 percent target in 1996 was essentially politically driven. Donald Brash, the governor of the RBNZ, was not seeking such a change himself, even though inflation had slightly exceeded the 2 percent upper limit through the previous year. But there is reason to believe that the original target suffered to some degree from a public perception that it was too narrow to be fully credible. It is also fair to say that the RBNZ was, and remains, very comfortable with the extra latitude of the new target. The wider band is more consistent with what the central bank believes is achievable with a reasonable degree of reliability. It is also more consistent with a growing sense that a little additional inflation variability can be traded off against some increased stability in output and interest rates. This matter is discussed further below.

What Time Horizon Should Be Set?

The question of the appropriate policy horizon is essentially bound up with the nature of the chosen target and with the arrangements in place to ensure accountability. With a hard-edged target and rigorous accountability for outcomes relative to the target, the incentives facing the central bank lead it toward shorter horizons and more active manipulation of the policy instruments.

The RBNZ’s early horizons were around the one-year mark. That was broadly consistent with what the central bank felt its forecasting capacity to be. It was also consistent with the approach to implementation, which at the time put a good deal of emphasis on the direct price effects of exchange rate movements. More recently, more weight has been placed on interest rates and the indirect impact of the exchange rate on prices. It is now assumed, in the first instance and in the absence of evidence to the contrary, that shifts in the exchange rate are real rather than nominal in character and do not require an immediate interest rate response. The direct price consequences are therefore assumed to be transitory and, for that reason, best ignored. In this respect, New Zealand has moved in the direction of the Reserve Bank of Australia.

Consistent with that evolving view of the role of the exchange rate, the policy horizon was lengthened to between six and eight quarters. In doing so, the RBNZ acknowledges that the longer horizon leads directly to a greater risk that it will miss the target range more often. Work has recently been published

that looks at these questions directly (Drew and Orr, 1999). The RBNZ's stylized policy simulation work, summarized in Table 1, suggests that, with a band width of plus or minus 1.5 percent, given the RBNZ's standard six- to eight-quarter policy horizon, the probability that inflation outcomes will be within the band is 66 percent under the least active policy rule. This probability rises to 92 percent under the most active policy rule. With all the usual qualifications that should accompany analysis of this sort, one can conclude that:

- The narrower the target range, the more active monetary policy must be.
- More activism implies more variability in interest rates, the exchange rate, and output, and (up to a point) less variability in inflation.
- Lower inflation expectations and a wider target range allow for a longer policy horizon and less active monetary policy.

Should the Target Be Specified as a Point or as a Range?

The issues that arise in deciding between point and range are essentially the same as those in the debates over the width of the band and the policy horizon. By widening and softening the edges of the bands, the RBNZ has moved more in the direction of an Australian-style "thick point." It is felt that this is an option more readily contemplated now, with inflationary expectations becoming better anchored, than it could have been in the very early stages of New Zealand's inflation targeting experience.

Certainly, a disadvantage of the bands approach is the tendency to focus unwarranted attention on very small deviations from the target (2.99 percent inflation equals success, whereas 3.01 percent inflation equals failure). In that sense, the potential credibility gains from hard-edged bands dissipate as time passes and success in achieving and maintaining price stability grows.

Table 1. New Zealand: Probabilities of Successful Targeting Under Different Band Widths and Policy Reactions

Band width (percentage points)	Probability that inflation will lie within the band after six to eight quarters (percent)			
	Least active policy ¹	Less active policy	More active policy	Most active policy
± 1	50	70	64	75
± 1.5	66	82	90	92
± 2	80	93	97	98
± 3	95	99	99	99

Source: Drew and Orr (1999).

¹The policy reaction is made more active by increasing the size of the interest rate response to a deviation from the inflation target.

Transparency

Transparency is an integral part of the RBNZ's framework. The explicit and transparent commitment to price stability has undoubtedly brought focus to the task of monetary policy. The target is clear and has a high public profile. The RBNZ cannot escape difficult monetary policy decisions—indeed, it is obliged to confront them early.

Within political circles, the clarity and transparency of the framework appear to have modified the nature of the monetary policy debate. The proposition that New Zealand should aim for price stability, or some close approximation, has proved difficult to challenge politically. Instead, the political debate has tended to center around particular aspects of the framework—such as the specification of the target (for example, the appropriate band width and midpoint), or the different sectoral impacts of monetary policy—rather than on the desirability of maintaining a firm commitment to price stability.

For the public at large, the target is highly visible and readily monitored. The RBNZ has a comprehensive public information and outreach program that attempts to explain what monetary policy is about and why. The program encompasses the production of pamphlets, resource material for schools, speeches, articles, interviews, and a very active Internet site. The aims of the program lie primarily in influencing inflationary expectations, strengthening the credibility of the target, and through that, increasing the likelihood that the central bank will both achieve its target and minimize any social costs in doing so.

Accountability

As noted at the outset, the New Zealand framework grew out of the general application of the principal-agent model throughout the public sector. Clear specification of objectives and accountabilities is integral to that model. The New Zealand inflation targeting model apparently goes further than others in specifying the potential consequences for nonperformance under the target. That seems to be a helpful provision, as it reinforces the institutional incentives toward the achievement of price stability and, probably, the public's willingness to believe that the inflation target will be met.

An unusual aspect of the New Zealand framework is its assignment of decision-making authority and responsibility solely in the person of the governor. The purpose of that was made quite clear. It was intended to eliminate any ambiguity about where responsibility for the conduct of monetary policy rests, and in that way to sharpen the incentives for delivery of price stability. There seems little doubt that it has had that effect.

Implementation Structures

New Zealand's monetary policy implementation structures have proved less than satisfactory on occasion. In the early stages of the formal targeting regime, the RBNZ relied heavily on the direct price effects from changes in the exchange rate, using a form of variable exchange rate comfort zones. At times this was supplemented by references to the slope of the yield curve, and more recently target zones for a monetary conditions index have been announced. All of these arrangements were products of a historical attachment to a quantity-based implementation structure. The monetary policy instrument at the base of each was the quantity of "settlement cash" made available to the banking system.

Over the years, it became apparent that the relationship between the quantity of settlement cash made available to the banking system and prevailing monetary conditions was very elastic. For that reason, the settlement cash target ceased to be an effective policy instrument or a reliable policy signal. It was also apparent that the implementation structure being employed was encouraging an unhelpful degree of volatility in short-term interest rates and, in doing so, complicating the task of communicating the RBNZ's desired policy stance. Accordingly, in March 1999 the quantity-based implementation structure was abandoned in favor of a fairly conventional structure built around fixing the overnight interbank cash rate.

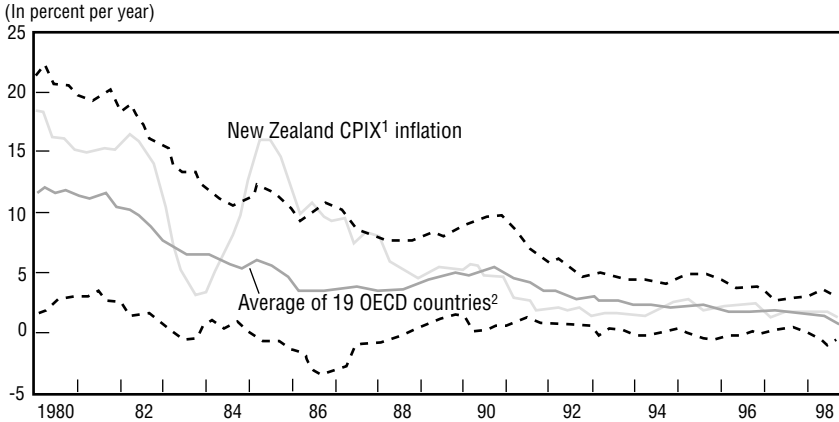
These arrangements are not central to the issue of inflation targeting, but it is worth noting in passing that there are important considerations embodied in the choice of an implementation structure, which can ease or complicate the conduct of monetary policy. The risk of a poorly specified implementation structure is that it will distract from the longer-term objectives of policy.

Assessing the New Zealand Experience

Inflation outcomes were consistent with the assigned target from 1991 to mid-1995, although some overshooting occurred through 1995 and 1996 before the target was adjusted. Perhaps a more relevant measure of success is New Zealand's inflation performance relative to that in other countries (Figure 2). On that basis, one can see that New Zealand has moved from being one of the worst performers among the industrial countries with respect to inflation to somewhere clearly in the middle of the pack. In terms of the objectives set for monetary policy under the 1989 act, that can only be described as a successful performance.

Judging how much of that improved performance can be ascribed to the particular inflation targeting regime that was adopted is a much harder task. One could assign great importance to the shifts in political priorities, to the

Figure 2
Inflation in New Zealand and Other Industrial Countries



Source: Brooke, Collins, and Smith (1998).
¹ All Groups Consumer Price Index Excluding Credit Services.
² Dashed lines represent 2 standard deviations above and below the average.

sweeping reforms that have occurred elsewhere in New Zealand’s macroeconomic and microeconomic policies, and to the shift in trading partners’ inflationary behavior. It could be argued, for instance, that the shift in political attitudes toward inflation was, ultimately, the only change that really mattered. One could also reasonably argue that the key changes came with the decisions to float the exchange rate and to commit to market financing of the government’s fiscal deficits.

To accept those arguments, however, would miss some important points. Certainly, the political will to adopt a price stability target was an essential prerequisite to any serious attack on institutionalized inflation. However, the inflation targeting regime has given that initial political commitment a degree of durability that transcends the influence of the particular set of politicians in power in 1989, when the RBNZ Act became law. Incentives were shifted from an acceptance of inflation arising from the usual time-inconsistent influences toward a more robust resistance to any future reemergence of inflationary tendencies.

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