
Supporting Paper A1

Monetary policy framework and goals

Introduction and overview

This paper briefly reviews the evolution of New Zealand's monetary policy framework since the passage of the Reserve Bank Act in 1989. The Act provides a robust institutional framework for maintaining price stability. In conjunction with the inflation targeting approach developed here, and widely copied in other countries, we have a monetary policy regime firmly within the international mainstream.

The Policy Target Agreements (PTA) required under the Act have evolved gradually over the past 17 years. More recent PTAs included more explicit language around a more flexible approach to monetary policy than the earlier PTAs did. This includes the requirement that the Reserve Bank seek to avoid unnecessary volatility in the real economy and exchange and interest rates when implementing policy. Flexibility is important and appropriate, but there are limits to how far it can be pushed without undermining effective control of inflation.

We do not recommend changes to the formal policy framework. However, we are constantly seeking to improve our assessment of emerging inflation pressures and, to the extent that this can be done in a volatile and uncertain world, the way in which policy is conducted can be further enhanced over time. Moreover, the effectiveness of monetary policy could be enhanced through the use of additional policy instruments or economic policies that better support monetary policy. And, finally, concluding that the framework is sound does not mean that monetary policy can avoid unpalatable outcomes – real exchange rates will fluctuate, and small economies in a globalising world will

face considerable volatility at times.

There have been calls in some quarters to broaden the policy targets for monetary policy to include real sector objectives such as the promotion of external trade, growth or full employment. In the Reserve Bank's view, consistent with the international evidence, monetary policy is not well suited to directly pursuing these important real economy objectives. Rather its best contribution to macroeconomic wellbeing is likely to be made by maintaining stable prices.

There has also been some suggestion that New Zealand should seek to emulate the rather different approach of the Monetary Authority of Singapore (MAS). For reasons we will outline below, we do not believe that this model could be successfully replicated in New Zealand, or other similar economies.

The task of monetary policy

Monetary policy is what the Reserve Bank does to stabilise the general level of prices. We do it by setting the Official Cash Rate (OCR) which affects spending, economic activity, and inflation pressures through a variety of channels. The OCR is adjusted periodically to keep the future medium-term path of inflation within an agreed target range (currently 1 to 3 percent on average over the medium term).

In general, pursuing a price stability target can be expected to assist in stabilising the real economic cycle. Interest rates will usually be lower than normal, providing some stimulus, when resources are underemployed, and

interest rates will typically be higher than normal, leaning against spending, when resources have become scarce and the pace of spending growth exceeds the capacity of the economy to respond in a non-inflationary way. Monetary policy can therefore help to avoid unnecessary volatility in the economy and should help to dampen the amplitude of the business cycle. However, economies and asset prices here and elsewhere will still fluctuate. A small open economy such as New Zealand's, which is exposed to the world economy and heavily dependent on commodity exports, will inevitably experience cycles. A considerable degree of variability is a fact of life, but New Zealand's real economy has become less variable since medium-term price stability was set as the goal for monetary policy.

The Reserve Bank of New Zealand Act

Since 1990, monetary policy in New Zealand has been governed by the Reserve Bank of New Zealand Act. This Act established price stability as the single objective for monetary policy and also set out a governance structure for the conduct of policy.¹ Under the Act, the Governor and the Minister of Finance are required to jointly agree published policy target(s) consistent with the objective of maintaining price stability. The Governor makes policy and operational decisions independently, but in accord with the PTA.²

A key motivation for the 1989 Act was a deep-seated concern about the damaging effects of high and variable inflation, which New Zealand had experienced for much of the period since the early 1970s. This high inflation environment had damaged New Zealand's economic performance as well as creating significant social inequities. Throughout much of this period, monetary policy had struggled to make an effective contribution to macroeconomic stability. This was partly due to the lack of a clear policy objective, the lack of effective policy instruments, and the absence of a

reasonable degree of central bank independence from the political process.³

The Act recognised that, without a clear focus on price stability and an independent central bank, monetary policy decision-making would tend to err toward producing higher inflation outcomes. In particular, it recognised that in the absence of an independent central bank with a clear mandate for low inflation, monetary policy decisions would typically be skewed in the direction of avoiding or deferring the up-front real economic costs of dampening or reducing inflation pressures in the hope that the medium-term inflationary consequences would not materialise.

The Act also recognised a growing consensus – both in New Zealand and overseas – that monetary policy has little or no long-term effect on “real” economic variables such as GDP or employment. Rather, the best contribution monetary policy can make to economic wellbeing is the maintenance of stable prices. Monetary policy can affect the economic cycle and have a temporary effect on real activity, but appears incapable of directly improving the economy's trend or potential growth rate. This consensus view recognises that an economy's growth potential is governed by factors outside the control of monetary policy, such as growth in its labour supply, productivity, resource endowment and so forth. It also recognises that, by maintaining low inflation, monetary policy will in most circumstances also help to stabilise the cycle in real output, since the inflation cycle and the business cycle are likely to be closely aligned.

While the Act sets out the economic objective and governance framework for monetary policy, the specific policy approach and the policy instrument(s) are not prescribed within the Act itself. All the Act requires is that the choice of policy approach be made explicit within the PTA.⁴ In practice, successive PTAs have required the direct pursuit

¹ Governance and accountability arrangements are discussed in some detail in supporting paper A11.

² Section 12 of the Act allows for the Reserve Bank to be directed, by Order-in-Council, to pursue economic objectives other than price stability but for a period limited to no more than 12 months at a time. This provision has not been used.

³ Under the previous Act, the Reserve Bank had simply been required to implement the monetary policy of the government of the day, which itself was not subject to any material statutory constraints.

⁴ It should be noted that, in practice successive PTAs have specified the policy target and operating approach, but not the specific instruments of monetary policy. For example, there is no mention of the OCR in the current PTA.

of inflation targets.⁵ The Reserve Bank of New Zealand was the first central bank to directly and publicly target inflation itself. This key aspect of our model has been widely copied by a range of developed economies.

The combination of features in the Act emphasising transparency, operational independence and accountability, has meant that the Act has become widely regarded as a watershed piece of legislation. The target for monetary policy is contracted between the Minister of Finance and the Governor and announced publicly. The Reserve Bank is required to report publicly at regular intervals on its progress in meeting the policy target as well as set out its intended policy actions. These arrangements ensure a high degree of transparency and “pre-commitment” to the policy target which, in turn, reinforces incentives on the Reserve Bank to achieve the target. Operational independence helps keep the day-to-day focus clearly on the medium-term goal. In addition to the discipline created by high levels of public transparency, the formal accountability mechanisms provide a further means through which the Reserve Bank’s performance can be, and is, constantly scrutinised.

Policy Targets Agreements

Under section 9 of the Act, a new PTA must be negotiated every time a Governor is appointed or re-appointed. There have been eight PTAs so far. The current agreement was signed by Dr Alan Bollard and Hon Michael Cullen on 24 May 2007. There has been a gradual evolution in successive PTAs with some important changes along the way.

The most important changes can be summarised as follows:

- A change in the target range from 0 to 2 percent to 0 to 3 percent in December 1996 and then to 1 to 3 percent on average over the medium term as from September 2002. The 1 to 3 percent target range is well within the international mainstream.

- A gradual softening in the required approach to price “shocks”, consistent with a more flexible approach to inflation targeting. The initial PTA required a renegotiation of the PTA in the event that inflation moved outside the target band and was very specific on the nature of those shocks. The current PTA requires the Reserve Bank to achieve the inflation target on average over the medium term and therefore directly acknowledges that actual inflation will deviate from the target range from time to time.
- The addition of the explicit requirement, since 1999, that the Reserve Bank seek to avoid unnecessary instability in output, interest rates and the exchange rate in the pursuit of price stability.

Most of these changes have sought to promote more flexibility in the way the Reserve Bank pursues price stability, and to improve public understanding of the degree of flexibility that has always shaped the Reserve Bank’s pursuit of the medium-term inflation target in the face of shocks. The desire to seek, wherever possible, to avoid creating unnecessary volatility in the economy when implementing monetary policy had been integral to the Reserve Bank’s thinking since the 1989 Act. Consequently, the Reserve Bank largely saw these changes to the PTA as making the need for flexibility more explicit rather than requiring a substantial change in approach.

The PTA signed in 2002 – which was retained in full when a new PTA was signed in May 2007 – requires the Reserve Bank to “keep future CPI inflation outcomes between 1 and 3 percent on average over the medium term”. The phrases “future” and “on average over the medium term” had not been used in previous PTAs, which had simply specified the target in terms of a numerical inflation range. In common with PTAs since 1999, the clause requiring the Reserve Bank to seek to avoid unnecessary instability in output, interest rates and the exchange rate was retained (as clause 4b).

The 2002/2007 PTAs recognise that inflation can potentially be undesirably low as well as too high, hence the exclusion of zero from the target range. Whilst it is not possible to draw firm conclusions about an “optimal” inflation target range, the lift in the target floor brought New Zealand’s inflation target in line with the predominant international approach, which is to adopt a target midpoint

⁵ It would, however, be possible for the PTA to adopt a target other than CPI inflation - such as, say an exchange rate or monetary growth target or a target for nominal GDP. However, this could be done only if such an alternative target was considered by both the Minister and the Governor to be consistent with achieving and maintaining price stability.

of 2 percent or a little higher. Moreover, the narrowing of the target range from 0 to 3 percent to 1 to 3 percent could be justified on the practical grounds that actual inflation had remained above the 0 to 1 percent zone since the inception of the 1989 Act. Hence, a 1 to 3 percent target, in principle, might have provided a more meaningful anchor. At the same time, the inclusion of the phrase “on average over the medium term” was a counter to any suggestion that a narrower target might lead to excessive precision or fine-tuning.

In its November 2002 *Monetary Policy Statement*, the Reserve Bank noted that the new PTA provided monetary policy with a little more flexibility than had previously been the case. We noted that the new formulation would allow the Reserve Bank to be more gradual in its monetary policy responses in some cases, which should help to avoid unnecessary instability in output, interest rates and the exchange rate. However, this extra flexibility was conditional. The new wording encouraged the Reserve Bank to “look through” one-off shocks to inflation. However, the Reserve Bank’s ability to treat these temporary fluctuations in inflation flexibly depends entirely on our confidence that those fluctuations will not lead to an ongoing inflation problem. That, in turn, depends on being confident that firms and households were not beginning to factor a permanently higher inflation rate into their own planning. If inflation looks likely to move well outside the target range, or persist outside the target range for a prolonged period, then monetary policy reactions might still need to be strongly assertive. Depending on the circumstances, the “medium term” during which inflation is brought back under control will not always be the same.

In interpreting the requirement to maintain future inflation within the range “on average over the medium-term”, the Reserve Bank has noted that it places most of its attention on the outlook for CPI inflation over the next three or so years. If the outlook for inflation over this period is inconsistent with the target range, then monetary policy will be adjusted. In normal circumstances, the Reserve Bank’s aim in setting the OCR will be to ensure that, in the absence of significant unforeseen events, inflation will be comfortably back within the target range in the latter half of that three-year period.

Monetary policy instruments

Since the Act was passed, the way monetary policy is implemented has evolved considerably. In the initial years following the Act, the Reserve Bank relied heavily on directly controlling the supply of liquidity to the banking system, buttressed by statements and threats of policy adjustments, in order to influence activity and prices. Since March 1999, policy has been implemented by setting an Official Cash Rate (OCR). A policy interest rate of this kind is used by many central banks.⁶ Over time, an overnight cash rate such as the OCR provides sufficient leverage over the general interest rate structure in the economy to affect economic activity and inflation.⁷

2000 Svensson Review

In 2000, the Government appointed Professor Lars Svensson, an international expert on monetary policy, to conduct an independent review of the operation of monetary policy (see Svensson (2001)). Professor Svensson concluded that the operational framework for monetary policy in place at the time was entirely consistent with the international best practice of flexible inflation targeting. However, he noted that the earlier period when the Reserve Bank had used a Monetary Conditions Index to guide the implementation of monetary policy had been a significant deviation from best practice. He offered some suggestions for marginal improvements to the current framework, which were mainly of a technical nature. Many of these suggestions have been adopted.

Professor Svensson found some weaknesses with the governance and accountability structures established by the 1989 Act and made a number of recommendations for change. A number of these were subsequently incorporated into a 2003 amendment to the Act. The most significant changes related to the membership of the Reserve Bank Board, whose prime responsibility is to monitor the Governor’s performance. Under the new arrangements, the Governor remains on the Board but ceases to be the chair.

⁶ Further details can be found in Nield (2006).

⁷ A discussion of the transmission channels through which changes in the OCR affect inflation can be found in Drew and Sethi (2007).

The chair must now be one of the non-executive directors, and the Deputy Governor(s) are no longer Board members. To maintain a reasonable number of Board members, the minimum number of non-executive directors was increased by one to five. The Act also formalised a practice that had already been adopted by requiring that the Board report annually and publicly to the Minister of Finance its assessment of the Reserve Bank's performance.

Professor Svensson had also recommended changing the Reserve Bank's decision-making structure from one where all monetary policy decisions were vested in the Governor to one where these decisions would be vested in a committee. Professor Svensson noted that the current single decision-making model was unusual internationally (although not unique) and, in some circumstances, could result in poorer monetary policy decisions than would be the case if decisions were being made by a group of individuals in a voting-type arrangement.

At the time, the Reserve Bank accepted that there were some risks inherent in a single decision-maker model and acknowledged some of the advantages of a committee structure. However, it also noted several disadvantages from moving to a voting committee. These included:

- The difficulty in finding and appointing suitably qualified (and un-conflicted) external members to sit on the decision making committee. The Reserve Bank considered this to be particularly problematic for a small country such as New Zealand.
- The increased complexity of communications under such an approach and the lack of a single "owner" for monetary policy decisions.
- The difficulties inherent in having both senior staff and the Governor voting formally on monetary policy outcomes.
- The difficulties in holding to account individual decision-makers of a voting committee.

These difficulties were acknowledged by the Government. In light of the problems identified with moving to a formal committee structure, the Reserve Bank undertook to look for ways to enhance the single decision-maker model to try and minimise its possible disadvantages. This included additional steps to ensure regular dialogue with the wider public and business sector. In addition,

members of the Official Cash Rate Advisory Group (OCRAG) – a group of senior staff and two external monetary policy advisors – provide advice to the Governor before each OCR decision. This approach helps to ensure that the Governor formally confronts a range of alternative viewpoints about the economy and recommendations about the OCR before each decision. The Reserve Bank began appointing external monetary policy advisors in 2001 as a direct response to the Svensson review.

The OCRAG approach, including the use of external advisors, provided a reasonable pragmatic balance. It retains the strengths of a single decision-maker model (in particular, clear lines of accountability) while using a disciplined process that enables many of the benefits of a formal committee approach to be realised.⁸ We are not promoting a change to current arrangements which we believe are working well. However, there is a fine line in this judgement and the merits of a possible move to a formal voting committee of some kind could be reconsidered at some stage.⁹

An assessment of the framework as it currently stands

Our assessment is that the Reserve Bank Act and the current PTA set out a framework for the Reserve Bank that provides for a monetary policy approach consistent with international best practice. This view does not rule out possible improvements in the actual conduct of policy nor does it exclude the possibility that the effectiveness of monetary policy could be further enhanced (eg through the use of additional policy instruments or through the adoption of other economic policies that might provide better support for monetary policy than is presently the case). However, it recognises that the clear focus of the policy framework on the maintenance of price stability remains appropriate. It

⁸ There is some literature suggesting that committees generally tend to make better decisions (eg Blinder and Morgan (2000)).

⁹ In many countries, the Treasury has some role as an observer (occasionally a formal participant) in the monetary policy decision-making process. That is not the case in New Zealand, but the Reserve Bank and the Treasury work very closely together with a strong and constructive relationship ensuring a good flow of information and alternative perspectives.

also recognises that the weight of evidence confirms that using monetary policy to try to pursue some other objective would lead to inferior economic outcomes.

The appropriateness of inflation targeting

The weight of international evidence and practice suggests that New Zealand's focus on maintaining low inflation through the use of a formal inflation target is appropriate. In recent years the number of countries adopting an inflation targeting approach to monetary policy has continued to increase. As of June 2007, formal inflation targeting had been adopted by 24 countries. Most, if not all, developed countries have either adopted formal inflation-targeting frameworks or now implicitly target low inflation in the case where formal frameworks are not in place (examples of the latter include the United States, Japan, and the euro-area).

The international evidence continues to point to the benefits of maintaining low and stable inflation, but as the Reserve Bank has noted previously, the empirics are inevitably limited in their ability to accurately distinguish the most appropriate inflation rate for a country. Moreover, since economic performance depends on much more than just monetary policy it remains difficult to demonstrate formally a clear link between low inflation and enhanced economic performance. Some countries with high rates of inflation, particularly some developing countries, have enjoyed high rates of economic growth. But for industrialised countries high inflation appears to impede economic performance.

In briefing papers prepared in 2002 by Brook and others the Reserve Bank provided a summary of empirical studies on the relationship between inflation and real economic growth to assess what inflation rate might be consistent with the fastest pace of growth. At very low rates of inflation, including inflation rates up to 3 percent, the growth rate seems to be independent of the inflation rate. But at higher rates of inflation, there is evidence that inflation does significant damage to growth. There is also some theoretical literature which cautions central banks against deflation, and therefore against including zero in an inflation target range. Brook et al note that there is, as yet, little data available with which to test this presumption. Overall, it appears that

average rates of inflation in New Zealand have been within the "optimal inflation range" suggested by the literature.

More generally, international data suggest that an approach to monetary policy focused first and foremost on keeping inflation pressures in check, has led to material improvement in economic performance. In particular, the variability of both inflation and GDP has diminished.

An examination of the individual inflation targets within each of the inflation-targeting countries suggests that New Zealand's current approach is entirely within the mainstream practice. Among developed economies with inflation targets the most common target midpoint is 2 percent inflation (as in New Zealand), but several (Australia, Norway, and Iceland) have a midpoint of 2.5 percent. The three largest developed economies (United States, Euro-area, and Japan) do not formally target inflation, though in none of those does it appear that the implicit inflation objective is above 2.5 percent (indeed, one key strand in the way the ECB articulates its objectives is an inflation rate below 2 percent). New Zealand's target is expressed as a range, not a midpoint. About half the inflation targeters do it that way while the other half emphasise a point target or the midpoint of a target range. Among those countries which publish a target

Table 1
A comparison of inflation targets

Country	Target (range or point)
Australia	2 to 3
Canada	2 +/- 1
Chile	3 +/- 1
Hungary	3.5 +/- 1
Iceland	2.5 +/- 1.5
South Korea	2.5 to 3.5
Mexico	3 +/- 1
New Zealand	1 to 3
Norway	2.5
Poland	2.5 +/- 1
Sweden	2 +/- 1
United Kingdom	2

range, the most common width is 2 percentage points (as in New Zealand).¹⁰

We believe the current PTA strikes a good balance: it allows an appropriate degree of flexibility while providing a medium-term discipline that helps keep inflation expectations broadly in check. (Medium-term expectations of inflation have settled in the upper half of the target range under the 1 to 3 percent target, and were also in the upper half of the previous 0 to 3 percent target range.) The PTA cannot sensibly specify rules, and trade-offs, for every eventuality. However, the PTA has provided a good basis for the Reserve Bank's analysis and decision-making, and – in conjunction with its approach to transparency – a good basis on which market participants can form their own judgements about likely future OCR developments. It also appears to us to have provided a good, and realistic, basis for the Reserve Bank's Board and Minister of Finance to participate in the conversations and assessments in which they hold the Reserve Bank to account.

One of the innovations in the 2002 PTA was the introduction of the wording that specified the target as something to be pursued "on average over the medium term". The way each country specifies its target is different – in part, New Zealand's has a different tone because of the formal link between the target and accountability of the Governor – but there is nothing in the way the target is currently expressed that is inconsistent with any patterns seen in other countries. Australia, for example, specifies its target as 2 to 3 percent inflation on average over the business cycle. Whether it is expressed or implied, each inflation-targeting central bank clearly has some sense of the medium-term in mind both in reaching its monetary policy decisions and in articulating its framework to the public and the markets. That means that each has in mind some notion of avoiding unnecessary instability in other areas, such as output, interest rates and the exchange rate.

One feature of the international experience that is of some relevance to us is the stability of inflation targets in other countries. Even allowing for the fact that New Zealand

was the first country to adopt inflation targets explicitly, we have experienced an unusual number of material changes in the target. The current PTA is the eighth in 17 years and, more significantly, the target range (range and implied midpoint) has been raised twice since price stability was first achieved in 1991. No other developed country has revised up its inflation target after achieving price stability. There is a risk that frequent changes to the target destabilise inflation expectations and/or undermine credibility in the resolve to maintain low inflation. We therefore believe that the hurdle for additional changes to the PTA needs to be set relatively high.

Section 4b of the PTA – avoiding unnecessary variability

Under section 4b of the PTA, the Reserve Bank is required to pursue price stability in a manner that avoids unnecessary variability in interest rates, exchange rates and output. Section 4b implicitly recognises that monetary policy that is poorly implemented (eg because it is implemented too slowly, too aggressively, or in a manner that is poorly communicated to financial markets and the general public) has the potential to create unhelpful volatility in the economy, that can damage economic performance.

The Reserve Bank puts significant effort into attempting to avoid unnecessary volatility when implementing monetary policy. We continue to make incremental improvements to our economic forecasting framework, including trying to better understand the inevitable lags between monetary policy changes, output and inflation. We are conscious that if we misunderstand these lags, we can exacerbate the economic cycle, thereby creating unnecessary volatility. We also try, as far as possible, to communicate our policy decisions as transparently as possible, so as to reduce uncertainty in financial markets and among the general public.

However, even if monetary policy successfully pursues low inflation in a stable, consistent and transparent manner, there is much variability in financial markets and the real economy that is both inevitable and unavoidable. Much of it occurs due to factors primarily unrelated to monetary

¹⁰ New Zealand's CPI is constructed in a fairly conventional fashion (measurement methodology is very similar to that used in Australia) suggesting that our 1 to 3 percent inflation target is no more or less onerous than in other countries.

policy, including fluctuations in the terms of trade, migration flows and so on. The Reserve Bank is extremely conscious of its obligations under clause 4b but recognises the limits to which monetary policy can actively smooth volatility.

Hunt (2004) notes that while interest rate and output volatility have reduced in recent years, this has not been matched by a reduction in the cyclical amplitude of New Zealand's exchange rate. The New Zealand dollar has continued to exhibit large swings in value.

In recent years, we have closely examined whether interest rates could be used to actively reduce volatility in the exchange rate, while still pursuing low inflation. There are two relevant forms of "volatility" here – short-term volatility and the longer-term cyclical swings in the exchange rate.

Could monetary policy be operated in way that would significantly reduce the cyclical swings in the exchange rate whilst simultaneously pursuing low inflation? We do not believe that this would be technically feasible. Since monetary policy has just one primary lever at its disposal (the OCR), attempts to smooth the exchange rate cycle under the current floating regime would at times require significant offsetting variations in the Official Cash Rate – often in the opposite direction to what would be required to maintain low inflation. This in turn would tend to add to volatility in both interest rates and real output. We do not believe it would be possible to pursue a credible inflation target in these circumstances. Nor do we believe that it would result in superior economic outcomes in the medium to longer term in particular.

What about the scope for reducing short-term volatility in the exchange rate? Using a model of the New Zealand economy, West (2003) concluded that attempting to reduce quarter-to-quarter exchange rate variance would result in significantly greater output, interest rate and inflation variance. West's results have been confirmed by Lees (2006).

The Reserve Bank's foreign exchange intervention arrangements offer a possible means of influencing the exchange rate and potentially modestly attenuating the peaks and troughs of the exchange rate cycle to a limited degree. These arrangements are discussed in supporting paper A9.

Should the objectives for monetary policy be broadened?

It is sometimes suggested that the Reserve Bank Act (and/or the PTA) needs to be broadened to require monetary policy to target more than just the achievement of low inflation. Objectives mentioned often include full employment or supporting stronger growth along with – or instead of – the maintenance of low inflation. These are important and worthwhile economic objectives. The key issue here, however, is whether monetary policy is technically suited to directly pursuing them.

As noted earlier, the international evidence suggests that the best contribution monetary policy can make to the macro-economic environment is to maintain a stable price level so that high and variable inflation does not damage the business environment. This, in turn, is likely to be the best contribution it can make to full employment or growth. The evidence and predominant international practice suggest that a gradual and measured monetary policy response in the pursuit of low inflation may help to avoid unnecessary instability in the real economy.

By contrast, there is no evidence that monetary policy can be used to directly stimulate real economic variables such as employment or output in the long run. Attempts to use it for this purpose ultimately end up creating higher inflation. The Reserve Bank therefore believes that calls to alter the policy targets to include direct real sector objectives would not enhance economic outcomes for New Zealand. Of course, there may be other economic policies that have a role to play in influencing these variables, which could usefully be explored.

Some have also suggested that monetary policy should be required to target or stabilise the exchange rate as well as pursue low inflation. It is not always clear what people have in mind when this suggestion is made – it could potentially involve moving to a fixed exchange rate regime (or currency peg) or attempting more "active" management of the exchange rate within the current floating exchange rate regime. Alternatively, it could entail New Zealand entering a fully-fledged currency union, in which case New Zealand would no longer adopt an independent monetary policy.

In giving the exchange rate a greater role, there are

two possible objectives. Firstly, a central bank can try to control the exchange rate in order to move it to a level that it considers will give better macroeconomic outcomes (eg higher exports). Secondly, it may use the exchange rate as an intermediate target as a way of keeping inflation on track. In the second case, there is no intrinsic attachment to a particular level of the exchange rate - it is just the rate that happens, for the time being, to be consistent with maintaining price stability.

The Reserve Bank has very limited ability to target the exchange rate using interest rates without creating additional volatility elsewhere in the economy. Volatility in the exchange rate – and especially cyclical extremes – can be damaging for the economy,¹¹ and current cyclical extremes are clearly putting considerable pressure on many firms. However, there are no easy alternatives. If, for example, we had set interest rates in recent years to, say, prevent the TWI moving more than, say 15 percent away from its long-run average, that would have come at considerable cost. Interest rates would have been set lower, which would have stimulated credit demand and domestic spending further, putting additional pressure on domestic costs and prices, worsening housing affordability, and in time seriously undermining the competitiveness of the tradables sector. Inflation would almost certainly have moved materially higher, perhaps to the sort of levels that start to do serious longer-term damage to growth prospects and further distort investment choices.

The Singapore model

Those advocating a greater role for the exchange rate sometimes cite the Singaporean experience. For more than 20 years, the Monetary Authority of Singapore (MAS) has loosely pegged its exchange rate, using it as an intermediate target to manage inflation. Over this period, Singapore has consistently achieved low and stable rates of inflation, while maintaining reasonable levels of stability in the Singapore dollar. However, there are important reasons why we do not believe this approach would work well for New Zealand. Indeed, at a technical level this use of the exchange rate as

an intermediate target is not too different to the way the Reserve Bank conducted policy in New Zealand in the late 1980s and the early 1990s, and large exchange cycles were not avoided then either.

For Singapore, external trade is a significantly greater share of the economy than is the case for New Zealand – exports (excluding re-exports) are about 70 percent of Singapore's GDP (the equivalent figure is about 30 percent for New Zealand). On the import side, of every dollar spent in Singapore, around 51 cents is spent on imports. This share is also significantly higher than in New Zealand. This high level of trade makes movements in the Singapore dollar an extremely powerful mechanism for affecting inflation. For example, it is estimated that a 1 percent appreciation in the exchange rate reduces inflation by twice as much as a 1 percentage point increase in interest rates.

New Zealand's tradables sector is much smaller than Singapore's and inflation in New Zealand is much less sensitive to the exchange rate. Over recent decades the rate of pass-through from imported goods' prices to retail prices has fallen markedly, thus reducing the direct effect of exchange rate fluctuations on inflation. As a result, relatively large movements in the exchange rate would be required to exert a significant impact on the CPI. This means that New Zealand's exchange rate is much less technically suitable as an intermediate target for monetary policy.

The tantalising contrast between Singapore's experience and New Zealand's has perhaps been most apparent in the last few years. Our exchange rate has risen sharply, while their real exchange rate has remained very stable without, to date, a major upsurge in inflation. Singapore has run current account surpluses for a number of years, and over this decade those surpluses have been rapidly increasing. Instead of allowing the exchange rate to appreciate, the Singaporean authorities have built a large and rapidly increasing stock of foreign reserves (now totalling about 100 percent of GDP).

This strategy cannot be pursued indefinitely, but what has surprised many observers is how long it has been able to be pursued. Large and rapidly increasing current account surpluses, driven from a booming export sector, would normally have been expected to boost consumption and investment spending quite markedly, generating inflationary pressures which would raise the real exchange rate even if the

¹¹ The issue is discussed at greater length in supporting paper A5.

nominal exchange rate was successfully pegged. Everything suggests that, faced with such a positive income shock in New Zealand, we would see exactly that sort of spending spree. Quite why it has not yet done so in Singapore is not that well understood, although the quite different savings culture and the more restrictive approach to private capital flows into and out of Singapore must be an important part of the explanation. Singapore has, over time, employed a variety of other means to help manage its exchange rate, including stringent limits on speculative positions, limits on the ability of domestic institutions to trade the Singapore dollar abroad, and moral suasion designed to stem capital flows. Singaporean interest rates are very low by international standards, reflecting the large accumulated net savings of firms, households, and the government sector.

In New Zealand, the exchange rate has been driven upwards mainly by the rest of the world's appetite for the interest rates required to keep buoyant domestic demand in check. Had we attempted to prevent the exchange rate rising by a very large-scale acquisition of foreign reserves (tens of billions of dollars to even begin to mimic the Singaporean practice) while holding the OCR at the sorts of levels needed to keep spending pressures in check, we would simply have been overwhelmed by inflows from abroad. Interest rates could not have been any lower than they have been, without seriously risking the outlook for inflation, while foreign investors could take advantage of those rates without anything like the exchange rate risk that they face when buying the New Zealand dollar at current levels.

Currency union

The adoption of a common currency with another country, most likely the adoption of the Australian dollar, is also one option sometimes raised as a response to the exchange rate pressures and cycles New Zealand has faced. Ultimately, a decision to adopt a common currency is usually primarily a political one, given the loss of monetary sovereignty that would be involved. The Reserve Bank does not have a view on whether New Zealand should or should not enter a currency union. We do continue to keep a watching

brief on developments in the currency union literature, the experience of actual currency unions, and the empirical evidence around the likely economic impact of a currency union between New Zealand and Australia. Experience with the European Monetary Union has focussed attention on the 'endogeneities' of currency areas, where a common currency can be the catalyst for further economic integration between member states. However, the jury is still out on this front. There has been some recent local research looking at how a common currency might influence the New Zealand economy, but the implications of this research remain inconclusive.

Regarding the possibility of New Zealand entering a currency union with Australia, the economic case for a currency union usually hinges on three key issues:

- the extent to which a currency union would enhance the country's international trade;
- the extent to which it would lower New Zealand's cost of capital; and
- the extent to which the loss of an independent monetary policy would reduce policy flexibility in the face of various economic shocks. This would depend largely on an assessment of the similarities and differences between the country against which the currency union is proposed.

Of course, exchange rate variability against the Australian dollar is already substantially lower than that against almost any of the other currencies that matter to New Zealand. Moreover, the Australian dollar itself is quite variable and so, even if New Zealand adopted the Australian dollar, we would secure only a limited degree of reduction in the fluctuations against other currencies such as the US dollar and the euro. Currency union could be expected to boost trade between the union partners, but it is no easy option in terms of macroeconomic management. Adopting the currency of a country with persistently lower interest rates would, for some considerable period, boost demand and domestic cost pressures in New Zealand, which over time would erode the competitiveness of the export sector. By removing one important instrument of economic adjustment, in the face of the sort of rare but severe adverse shocks all economies face from time to time, currency union would also expose us to additional longer-term risks. Hunt

Why not just cut interest rates dramatically?

Many observers have noted the scale of the recent international capital flows into New Zealand, attracted by the large gap between New Zealand interest rates and those in other countries (notably Japan). This foreign appetite for New Zealand interest rates has pushed the exchange rate up. The capital inflows have helped to finance the high local demand for credit and hence, in a sense, have supported the rapid increases in house prices.

This has led some to wonder whether there might not be an easy solution. Specifically, if the OCR was cut dramatically (by, say, 200 basis points at once) not only would the pressure on the exchange rate be relieved, but also, perhaps, funds would no longer be available to banks to finance continuing credit growth. If so, financing for the housing boom would be choked off and demand pressures would be relieved.

Attractive as the option might initially sound, we believe it would be a highly damaging route to take. It would certainly relieve pressure on the tradables sector for a time – as happened when the exchange rate fell sharply in 2006. But it would do so only by setting up an even more painful adjustment period later. General inflation pressures would intensify once interest rates were cut markedly and these would eventually need to be reversed.

This approach would improve nothing fundamental in the housing market. Lower interest rates would quickly lead to a marked increase in the demand for credit from households (and probably firms as well). And while lower interest rates would seriously curtail the retail Japanese investment inflows, these inflows would quite quickly be replaced by others. If the “large cut” strategy was adopted, most market participants would regard the much lower interest rates as being quite unsustainable (because nothing had been done to stem the demand for credit). Once the initial sharp fall in the exchange rate had occurred, a wide range of investors would be encouraged to shift their funds into New Zealand. They would expect to make money from a combination of still relatively high interest rates, and an eventual appreciation in the exchange rate. In some respects, we could expect to see a repeat of the experience of 2002/2003. During that period, when interest rate differentials to Japan were much lower than they are now, lending to households accelerated markedly.

(2005) contains a recent summary of the economic issues relevant to a currency union.

Our considered judgement is that there are no easy or costless ways by which the pressures the New Zealand economy has faced in the last few years could have been absorbed. Different models could have altered the path of the exchange rate in the short term, but only at the cost of exacerbating domestic cost and inflation pressures, worsening further housing affordability, and increasing the already rapid credit growth, in turn creating further longer-term risks to financial stability. This is not a comfortable conclusion for any of us, or one that we reach easily, but we believe it is supported by the overwhelming weight of evidence, here and abroad.

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