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Photography by Stephen A'Court

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## Editor's note

When assessing the strength of inflation pressures, most central banks employ core inflation indicators. These statistics are based on various adjustments to the headline Consumers Price Index (CPI) inflation rate (or whatever inflation measure the central bank is interested in) that remove the effects of temporary fluctuations. The general aim is to provide a better fix on the underlying trend in inflation. However, core inflation has always been a rather imprecise concept and there is little consensus on the best way to calculate it.

In the first article of this issue, Rachel Holden of the Economics Department considers the role of core inflation statistics and outlines a range of possible calculation methods. The article sets out some characteristics that a core inflation measure might ideally possess and then goes on to assess seven core inflation measures used at the Reserve Bank in light of these criteria. Whilst there are trade-offs involved, the article identifies three measures that appear to meet these criteria better than the others. It notes that the Bank intends to report regularly on these three measures in its future *Monetary Policy Statements* and publish them on our website.

Under the Reserve Bank's local-incorporation policy, systemically important banks are now required to incorporate locally to provide a degree of assurance that the Reserve Bank would have the ability to manage a failure affecting one of these banks. In the second article, Willy Chetwin of the Financial Stability Department provides an outline of this policy and the rationale for it. As Willy explains, local incorporation provides, among other things, a well-understood legal framework for the conduct of business in New Zealand and a local board to act in the best interests of the New Zealand bank.

In the third article, Loretta DeSourdy of the Financial Stability Department briefly discusses the Reserve Bank of New Zealand Amendment Act 2006, passed in October, which makes further amendments to the existing Reserve Bank Act passed in 1989. An amendment to the Reserve Bank Act in 2003 introduced measures designed to further strengthen the Reserve Bank's role in promoting a sound and efficient

financial system. The 2006 legislation is intended to provide greater assurance of cooperation between New Zealand and Australian regulators by imposing obligations on them to consult each other and to avoid actions that may have a detrimental effect on financial stability without unduly constraining their actions. Reciprocal legislation is being passed in Australia.

The fourth article, by Ian Nield of the Financial Stability Department, describes changes to the liquidity management regime that were implemented between July and October of this year. The changes involve a significant increase in the level of liquidity left in the payments system overnight. Ian explains the reasons for the changes and provides some initial observations on their impact.

Finally, this issue includes the Editors' summary of the policy forum held earlier this year to examine New Zealand's macroeconomic policy frameworks and consider whether alternative, possibly non-conventional, policy tools could be used to provide a smoother ride for the exposed sectors of the economy over the business cycle. The full conference proceedings and papers can be downloaded from <http://www.rbnz.govt.nz/research/workshops/12jun06/2837468.html>.

Another year has passed and I hope you have continued to find the *Bulletin* interesting and informative. On behalf of the Reserve Bank, I wish our readers the best for 2007.

Bernard Hodgetts

Editor

Reserve Bank of New Zealand *Bulletin*

PO Box 2498

Wellington 6001

Telephone 64 4 471 3781

Facsimile 64 4 473 1209

Email [hodgettsb@rbnz.govt.nz](mailto:hodgettsb@rbnz.govt.nz)



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## ARTICLES

# Measuring core inflation

Rachel Holden<sup>†</sup>

Under the Policy Targets Agreement, the Reserve Bank is required to keep future CPI inflation outcomes between 1 percent and 3 percent on average over the medium term. The headline CPI inflation rate provides some information on the strength of current and future inflation pressures, but can often be clouded by temporary fluctuations. Core inflation measures attempt to abstract from these temporary fluctuations to better inform us of the underlying trends in inflation. This article outlines a number of criteria that can be used to assess the relative merits of possible measures of core inflation. It then analyses a range of alternative core inflation measures against these criteria and draws some conclusions as to which measures might best serve as core inflation indicators in New Zealand.

## 1 Introduction

Inflation is commonly defined as the rate at which the general level of prices is increasing. However, the Consumers Price Index (CPI) measure of inflation will not always reflect the underlying trend increase (or decrease) in prices. This may be because a temporary shock (such as a sharp movement in oil prices or a change in indirect taxes) causes a significant short-term fluctuation in the CPI inflation rate, or because of limitations in the sampling methods used to construct the CPI. In addition, prices for some items in the CPI may be sampled infrequently (eg, at a single point in the quarter in question), which can make the measured price movement noisy.

Core inflation measures attempt to abstract from temporary shocks and measure the component of inflation that is likely to be sustained over time.<sup>1</sup> In order to help gauge inflation pressures, many central banks consider a variety of measures of 'core' (or 'underlying') inflation. Most central banks, or the statistical agency of the country in question, regularly publish a range of such measures.

The Reserve Bank looks at a number of core inflation measures, and reports some of these in its *Monetary Policy Statements (MPS)*. However, historically, the Reserve Bank's use of core inflation measures has been rather ad hoc. This article summarises recent work done by the Reserve Bank on core inflation measures for New Zealand.

The next section reviews different types of core inflation measures. Section 3 then discusses what properties we would wish to see in an ideal measure of core inflation, noting that there are tradeoffs involved.<sup>2</sup> Section 4 discusses potential core inflation measures for New Zealand and explains how each of these measures performs in terms of these properties. The article concludes by discussing how the Reserve Bank intends to use these core inflation measures, noting that they are just one of many tools used to analyse inflation pressures.

## 2 Measures of core inflation

The literature has put forward a variety of methods for deriving core inflation measures. Traditional methods include simply taking a moving average of measured inflation. More popular with central banks have been methods that down-weight or zero-weight some components of measured inflation. Such methods include trimmed means and weighted medians.

A trimmed mean is the weighted mean of the middle part of the ranked distribution of CPI component price movements, where each component is assigned its CPI weight. For example, the 10 percent trimmed mean is calculated by removing the highest and lowest 5 percent of the percentage price movements and then taking the weighted mean.

A weighted median is the percentage price movement of the component in the middle of the ranked distribution of

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<sup>†</sup> I would like to thank Shaun Vahey and Troy Matheson for their assistance with this project.

<sup>1</sup> However, there is no generally agreed definition of core inflation.

<sup>2</sup> Roberts (2005) provides a more in-depth discussion of core inflation measures and properties.

CPI component price movements, where each component is assigned its CPI weight.

Core inflation measures that permanently exclude particular components from the headline inflation rate have also been popular among central banks. An example is the 'CPI excluding food and energy, which is constructed by the Bureau of Labor Statistics in the US.

The use of core inflation measures differs across countries, with some central banks putting significant weight on core inflation measures, and others paying less attention to them. The Reserve Bank of Australia publishes a seasonally adjusted weighted median, a 30 percent trimmed mean, and a CPI excluding volatile items (fruit, vegetables and petrol) on its website.<sup>3</sup> The Bank of Canada and US Federal Reserve also look at exclusion measures of core inflation.<sup>4</sup>

The popularity of trimmed means, weighted medians and exclusion measures stems from their timeliness and the ease of computation. Exclusion measures are also reasonably easy to understand. However, all of these measures are difficult to justify theoretically. For example, theory gives no guidance on how much of a trim to take when constructing a trimmed mean measure. It is also difficult to justify the exclusion approach to measuring core inflation because there is no theory that says that the components excluded (such as food and energy) do not matter for inflation. Sustained increases in energy prices, for example, could become an integral part of a country's inflation process.

More recently, measures with stronger theoretical foundations have been developed. Quah and Vahey (1995) aimed to measure the component of inflation that "has no medium- to long-run impact on real output" (Quah and Vahey (1995), p1130). They did this by identifying disturbances that shift potential output (such as productivity shocks) using a Vector Autoregression (VAR) system. The influence of these shocks on measured inflation was then removed to give a core inflation measure. Since aggregate

demand can be quite volatile, the resulting core inflation series can often look bumpy.

Cogley's (2002) exponentially smoothed (ES) measure of core inflation is based on the theory of adaptive expectations and by construction, responds strongly to 'sustained' movements in the general price level (see box 1). However, since adaptive expectations are backward looking, the measure typically lags headline CPI.

The factor model is a relatively new way of estimating core inflation (see Forni, Reichlin and Veronese (2005) and Kapetanios (2004)). The factor model aims to use the common price variation within the components of the CPI to down-weight those components that do not reflect the general tendency of all CPI components – that is, those components whose price movements are not pervasive historically are down-weighted. Thus, the factor model measure removes the influence of the noisy (idiosyncratic) component of inflation. Unfortunately, because the estimated common component of inflation is essentially a weighted average of all the CPI component price movements – and the weights can be positive or negative – the factor model's estimates of core inflation have no easy interpretation.

## Box 1

### Calculation of the exponentially smoothed (ES) measure

The ES measure of core inflation can be written:

$$\mu_t = \phi \sum_j (1-\phi)^{t-j} \pi_{t-j}$$

where  $\mu_t$  is the ES measure at time  $t$ ,  $0 \leq \phi \leq 1$  is an adaptive expectations adjustment parameter which reflects the backward looking learning process, and  $\pi_{t-j}$  is measured inflation (usually CPI inflation) at time  $t-j$ .

Because  $0 \leq \phi \leq 1$ , the ES measure is a weighted mean of the lagged values of measured inflation, where the most recent outturn has the highest weight. Therefore, an ES measure should pick up movements in the mean of inflation and hence the component of inflation that is likely to be sustained over time.

<sup>3</sup> See [www.rba.gov.au/Statistics/measures\\_of\\_cpi.html](http://www.rba.gov.au/Statistics/measures_of_cpi.html)

<sup>4</sup> The Bank of Canada core measures are detailed at: [www.bankofcanada.ca/en/rates/indinf/cpi\\_def\\_en.html](http://www.bankofcanada.ca/en/rates/indinf/cpi_def_en.html). The US Federal Reserve reports their core inflation measures in their six-monthly Monetary Policy Report to Congress. This can be found on their website: [www.federalreserve.gov/boarddocs/hh/](http://www.federalreserve.gov/boarddocs/hh/)

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### 3 Characteristics of a core inflation measure

There has been extensive discussion in the literature around the characteristics that a measure of core inflation should exhibit.<sup>5</sup> Some of the key characteristics put forward are:

- a. simplicity;
- b. picking up persistent changes in inflation;
- c. leading or being coincident with measured inflation (ie, not lagging measured inflation);
- d. unbiased indication of measured inflation;
- e. smoothness (eg, having a low variance); and
- f. low prediction error for measured inflation.

Why would we want a core inflation measure to display these characteristics? The second characteristic (picking up persistent changes in inflation) follows directly from what we want a core inflation measure to be – a measure of the component of general price increase that is sustained over time. In addition, because we want a core inflation measure to abstract from temporary shocks, it should be smooth relative to measured (CPI) inflation, which is subject to short-term fluctuations.

Ideally, a core inflation measure should be an unbiased indicator of measured inflation. A core inflation measure that gave a biased indication of measured inflation would need to be mean-adjusted to be of any use. A core inflation measure should also, ideally, be a good predictor of measured inflation, because we want it to measure the rate at which the general level of prices is increasing.

We want a core inflation measure to give us timely information on the general rate of inflation. Therefore, a core inflation measure should at least be coincident with measured inflation. A core inflation measure that tended to lag movements in actual CPI inflation would not be particularly useful as an indicator of turning points in inflation pressures. Finally, it is desirable that a core inflation measure be reasonably simple. A simple core inflation measure will help maintain the central bank's credibility by being easy

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<sup>5</sup> Papers that discuss desirable characteristics of a core inflation measure include Roger (1997 and 1998), Wynne (1999), Dixon and Lim (2004), and Roberts (2005).

for the public to understand and for other organisations to replicate.

Note that there are trade-offs between some of these characteristics. For example, a very smooth core inflation measure may predict inflation badly. Therefore, an outright winner in terms of all of these characteristics is unlikely.

### 4 Potential core inflation measures for New Zealand

Until recently, core inflation measures used by the Reserve Bank have predominantly been variations of trimmed means, weighted medians and exclusion measures. Therefore, in general, the Reserve Bank's core inflation measures have not had a strong theoretical grounding. Our research efforts over the past year have focused on core inflation measures that have a stronger theoretical basis. A measure based on Cogley's (2002) ES measure and a factor model measure are two potential core inflation measures for New Zealand that may have stronger theoretical foundations.<sup>6</sup>

We have tested five core inflation measures already in use by the Reserve Bank along with an ES measure and factor model measure against some of the characteristics mentioned in section 3. Brief descriptions of these measures are in table 1, overleaf.

We compared each of the candidate core inflation measures against characteristics a to e above. We do not consider characteristic f (low prediction error) because this is typically just the converse of smoothness.

Unbiasedness and smoothness are discussed in terms of whether the measures have a similar mean to and a lower standard deviation (less variability) than CPI inflation over the 1992Q1 to 2006Q3 period.

How well a core inflation measure reflects persistent inflation pressures can be judged by looking at inflation over the past 15 years. Inflationary pressures increased sharply in 1994 as economic activity accelerated, and then ebbed away gradually over the next five years. Ideally, a core measure

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<sup>6</sup> We do not construct a VAR measure (based on Quah and Vahey (1995)), as our intention is to find core inflation measures based only on CPI data, rather than more model-based measures.

Table 1

Candidate core inflation measures

Core measure	Description
Weighted median CPI	The weighted median <u>quarterly</u> price movement of all the CPI components.
Trimmed mean CPI	The mean of the middle 90 percent of the ranked distribution of CPI <u>quarterly</u> price movements.
CPI ex. food, petrol and government charges	Food, petrol and government charges are permanently excluded from the CPI.
CPI ex. housing	Rents, home ownership, professional services, property maintenance services, and real estate services are permanently excluded from the CPI.
Non-tradables	Includes goods and services produced in New Zealand that face little or no direct foreign competition.
ES measure	Cogley's ES measure calculated using New Zealand CPI data.*
Factor model	The common component of inflation is estimated from all the CPI classes for which we have data going back to 1992Q1.**

\* We use a slightly different adaptive expectations adjustment parameter to Cogley's.

\*\* 96 of the 105 classes currently in the CPI are included (classes include, eg, meat and poultry, men's clothing, and life insurance). Note that Statistics New Zealand reduced the number of disaggregate CPI series that are made available to the public from more than 250 to 105 with the release of the 2006 regimen in September. While the analysis of the dynamic factor model of core inflation presented in Gianonne and Matheson (2006) is conducted with the 2002 regimen, the results remain robust when replicated using the 2006 regimen (using fewer CPI series).

should pick up this increase in inflation and then gradually decrease.

There was another marked inflationary impulse in the second half of 2000. However, the increase was relatively short-lived, with inflation falling back within the inflation target in the middle of 2001. As this 2000 inflationary spike was more transitory than the 1994 episode, a core inflation measure should ideally respond in a more muted fashion.

Related to the characteristic of picking up persistent inflation pressures is characteristic c. A core inflation measure may pick up persistent changes in inflation, but if it does this with some lag to CPI inflation, then the measure will not be particularly useful.

How the candidate cores perform

Four of the seven measures (the weighted median, CPI excluding food, petrol and government charges, CPI excluding housing, and non-tradables) perform badly in terms of the desired characteristics (see table 2). Although all four of these measures are simple to construct and understand, they have not done well at capturing persistent inflation movements, and in most cases have been biased and/or not smooth.

The other three measures (the trimmed mean, ES measure, and factor model) performed much better. In what follows, we discuss how each of these measures performed against characteristics a to e.

Table 2

Assessment of poor core inflation candidates\*

Core measure	Simple	Picks up persistent changes in inflation	Unbiased	Smooth
Weighted median	✓	Poor to average	✗	✓
CPI ex. food, petrol and government charges	✓	Poor	✓	✗
CPI ex. housing	✓	Poor	✗	✗
Non-tradables	✓	Poor	✗	✗

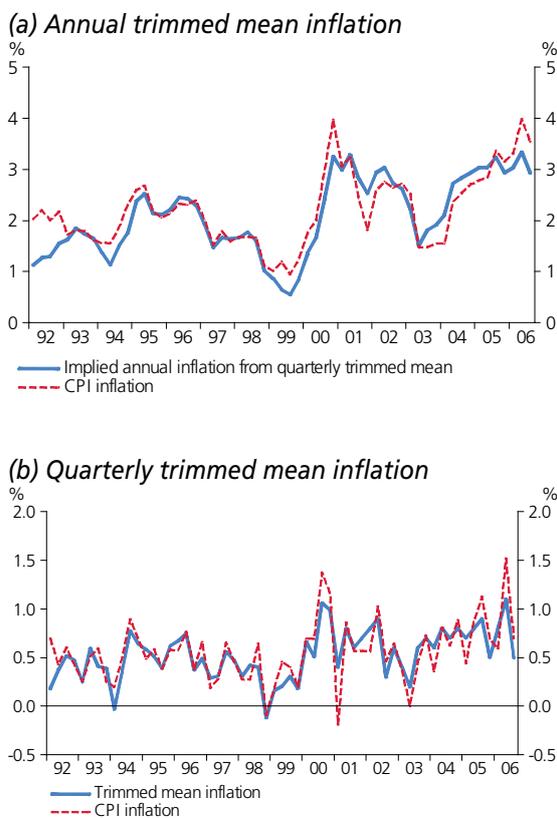
\* Characteristic c has not been included in this table because these measures often do not follow CPI inflation very closely, making it difficult to tell whether the measures lead, are coincident with, or lag CPI inflation.

### The trimmed mean (10 percent trim)

The trimmed mean is reasonably simple to construct and understand. It also appears to be an unbiased indicator of CPI inflation, with the time series mean very similar to CPI inflation. The standard deviation of the trimmed mean is very similar to the CPI standard deviation, suggesting that it fails to strip out sufficient transient components of inflation. Taking a greater trim may strip out more of the transient components of inflation. However, over the past four years, even a 30 percent trim has failed to remove substantial short-term noise.<sup>7</sup>

The trimmed mean was slightly slower to pick up in 1994 than headline CPI inflation and then followed CPI inflation down over the next five years. In 2000, the trimmed mean picked up at the same time as headline CPI inflation, and again tracked CPI inflation very closely.

**Figure 1**  
Trimmed mean inflation



<sup>7</sup> We focus on the 10 percent trim, as this is the trim the Reserve Bank has traditionally used. Statistics New Zealand now publishes a range of trims, but these are only available back to December 2001.

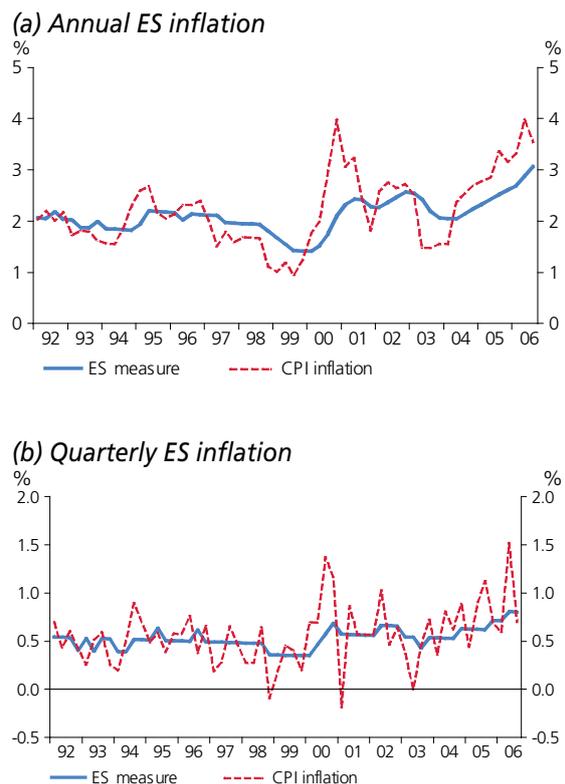
### The ES measure

The ES measure is significantly smoother than CPI inflation, having a standard deviation of quarterly movements about a third the size of the CPI equivalent. The ES measure is also unbiased, with a mean very close to the mean of CPI inflation.

The ES measure adjusted slowly to pick up the increases in inflation in both 1994 and 2000, as one might expect from a measure based on adaptive expectations. In the mid-1990s episode, the ES measure reflected the sustained inflationary pressures through the subsequent couple of years. For the 2000 inflation spike, which was more transitory (relative to the inflation target), the ES measure indicated little movement in core inflation. The ES measure is also reasonably easy to construct and understand.

The lagging nature of the ES measure is probably its main disadvantage. In constructing the ES measure, a parameter choice needs to be made that affects how smooth and backward looking the measure is. The parameter could be chosen to make the ES measure less backward looking, but this would also make the measure less smooth.

**Figure 2**  
ES inflation



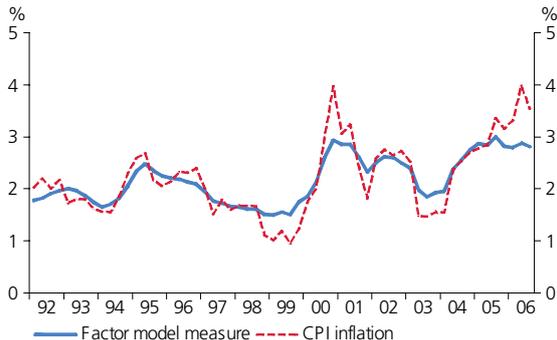
## The factor model

Like the ES measure, the factor model measure is significantly smoother than CPI inflation. However, the factor model measure performed better than the ES measure at reflecting persistent inflation pressures in 1994 and 2000. In 1994, the factor model measure increased with headline CPI inflation, but not by the same extent. The factor model measure then gradually fell over the next few years. The factor model measure also picked up gradually in 2000 and, once again, did not increase to the same extent as headline CPI.

The factor model measure appears to be unbiased. However, one concern in using the factor model measure is that it is not as easily understood by the public as the other measures.<sup>8</sup> The measure is technically demanding to construct, making it hard for other users to replicate.

Figure 3

### Factor model core inflation



## Summary of results

Table 3 ranks how the candidate core measures perform against each of the characteristics, where 1 is the best and 3 is the worst. In some cases, it is difficult to differentiate between the performance of two or three measures, so they are given equal rankings.

Clearly, none of the measures is an outright winner in terms of all the characteristics. Although the trimmed mean is simple and unbiased, it does not do well at picking up changes in persistent inflation and is not very smooth. The ES and factor model measures are better at picking up changes in persistent inflation (although the ES measure lags CPI inflation) and are much smoother. Determining which measure is the 'best' is somewhat subjective, as it depends on what characteristics are believed to be most important.

## 5 Conclusions

Core inflation measures can help inform us of the underlying trends in inflation. However, they are only one of many tools that can be used to analyse inflation. The Bank uses a range of other tools, such as models and indirect indicators of inflation, in conjunction with core inflation measures to get a better gauge of inflation pressures.

In light of our work on core inflation measures, we think it is sensible to narrow down our list of core inflation measures to some degree. To this end, we believe that the trimmed mean, ES, and factor model measures of core inflation form a good group of core inflation measures for the Reserve

Table 3

### Characteristics of core inflation candidates

Core measure	Simple	Picks up persistent changes in inflation	Leads or coincident	Unbiased	Smooth
Trimmed mean	1	3	1	1*	3
ES measure	1	2	3	1	1
Factor model	3	1	1	1	2

<sup>8</sup> In addition, unlike the other measures we have discussed, the factor model measure is subject to revision. More discussion of the revisions can be found in Giannone and Matheson (2006).

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Bank to focus on. However, the Reserve Bank does not intend to focus on a single measure or target any measure of core inflation.

At the time of writing (November 2006), these three measures of core inflation suggest that the underlying level of inflation is somewhere around 2.8 to 3.1 percent – near the top of the Reserve Bank’s 1 to 3 per cent target band.

From the December 2006 *MPS*, table 3.1 in Chapter 3 will include the ES and factor model measures discussed in this article. In addition, these measures will be made available on the Reserve Bank’s website ([www.rbnz.govt.nz](http://www.rbnz.govt.nz)) in the Statistics section and will be updated on the day of each CPI release.

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# The Reserve Bank's local-incorporation policy

Willy Chetwin<sup>†</sup>

Foreign-owned banks play an important role in New Zealand's financial system. This article discusses the Reserve Bank's local-incorporation policy, which is one of the key elements in the policy framework to minimise the risks and maximise the benefits of hosting foreign-owned banks. The article identifies some of the benefits and risks of hosting foreign-owned banks; it discusses the local-incorporation policy rules and how the policy fits into the wider set of rules affecting banks; and discusses how the policy promotes the soundness and efficiency of New Zealand's financial system, and avoids the damage to the financial system that could arise from the failure of a foreign-owned bank.

## 1 Introduction

Banks play a major role in New Zealand's financial system, mobilising the economy's resources and providing transactional services for customers at both retail and wholesale levels. Consequently, the soundness and efficiency of our financial system as a whole depend importantly on the prudent and efficient operation of banks.

Foreign-owned banks account for around 98 percent of assets in the New Zealand banking system, and their performance is clearly important to the soundness and efficiency of our financial system.<sup>1</sup> Against that background, several of the Reserve Bank's recent policy developments have sought to maximise the benefits of hosting foreign-owned banks while minimising the risks. The local-incorporation policy has been one such initiative, and is the topic of this article. Section 2 of the article discusses the benefits and risks arising from foreign ownership. Section 3 provides details about the content and requirements of the policy. Section 4 discusses the costs and benefits of the policy itself. Box 1 provides a brief history of the policy's development and implementation, including an outline of the events that led to Westpac's establishment of a locally incorporated bank in New Zealand. Section 5 concludes.

Part V of the Reserve Bank of New Zealand Act 1989 (the Act) gives the Reserve Bank of New Zealand its powers to register banks and perform prudential supervision of banks.

Section 68 of the Act states that those powers must be used for the purposes of:

- (a) promoting the maintenance of a sound and efficient financial system; or
- (b) avoiding significant damage to the financial system that could result from the failure of a registered bank.

To pursue those purposes, the Reserve Bank's supervisory regime comprises three pillars: market discipline, which involves creditors and financial markets monitoring banks; self-discipline, which involves banks and their decision makers responding to incentives to operate prudently and efficiently; and regulatory discipline, which comprises prudential rules set by the Reserve Bank. The regime's focus lies particularly on the first two of those pillars, consistent with the Reserve Bank's experience that market-based solutions, supplemented by regulatory prompting where appropriate, are often the best way of pursuing the section 68 objectives.<sup>2</sup>

New Zealand's banking system is heavily foreign-owned even when seen against the worldwide trend towards increased cross-border banking. Moreover, ownership of New Zealand's banks is concentrated heavily in one country: Australia. Australian-owned banks account for around 90 percent of assets held in our banking system. Further, each of New Zealand's four largest banks comprises a significant proportion of the global operations of their Australian-

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<sup>†</sup> I would like to thank Tim Ng, Steve Anderson and Adrian Orr for helpful comments on this article.

<sup>1</sup> In this article, the statistics on the composition of the New Zealand banking system refer to the situation as at 30 June 2006.

<sup>2</sup> Bollard (2005) summarises the nature of the three-pillar regime.

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incorporated owners.<sup>3</sup>

Foreign ownership therefore acts as a channel through which distress from abroad could spread to New Zealand. It also creates a risk that New Zealand banks might not always have the ability or incentives to act in ways consistent with promoting a robust and efficient New Zealand financial system. At the same time, foreign ownership can provide benefits in a number of ways. These risks and benefits are discussed in section 2 of this article.

The local-incorporation policy helps to maximise the rewards and limit the potential risks of having foreign-owned banks operating in New Zealand. It requires that foreign-owned banks with certain characteristics (outlined in section 3) must incorporate in New Zealand if they wish to operate in New Zealand.<sup>4</sup>

By means explained in this article, the local-incorporation policy helps to provide clarity and certainty about the financial position and operational robustness of the large, foreign-owned banks operating in New Zealand. It also promotes the capacity of those banks and their decisions makers, and the capacity of the Reserve Bank, to respond quickly and effectually to distress. In these ways, it contributes to the goals of promoting the soundness and efficiency of New Zealand's financial system, and avoiding the significant damage that could arise if a bank were to fail.

## 2 The benefits and risks of hosting foreign-owned banks

Foreign ownership of New Zealand banks can benefit New Zealand's financial system, but can also pose additional risks over and above those that arise with New Zealand-owned banks.<sup>5</sup> Many of those risks stem from the jurisdictional boundaries that lie between New Zealand and the countries of domicile of the foreign owners and related parties of New

Zealand banks. In the case of the four largest banks in New Zealand, these risks are of particular concern because each of those banks individually comprises a significant proportion of New Zealand's banking system.<sup>6</sup>

The Reserve Bank devises policy to best promote the rewards and minimise the risks of hosting foreign-owned banks. The local-incorporation policy is part of the framework for pursuing those ends. Identifying some of the important risks and benefits of hosting foreign-owned banks is thus the first step towards explaining the rationale for the local-incorporation policy.

Often-cited benefits for banks of having connections with foreign banking operations include the following:

- economies of scale and of scope;
- benefits from access to the expertise and technology present in foreign operations of the global company;
- benefits for funding costs from being linked with a global banking group that has a strong credit rating; and
- access to funding and operational support from related parties.

To the extent possible, any policy action should try to maximise those benefits while minimising any accompanying risks.

Some of the risks associated with foreign ownership are outlined below. They are discussed in further detail in section 4, in the discussion of the risk-mitigation effects of the local-incorporation policy.

- Prudential supervisors' objectives can differ between home and host countries. At the extreme, statutory obligations might require a home-country supervisor to take actions that could harm financial stability and efficiency in the host country, or vice versa.
- Some home countries have legislation giving home-country creditors a priority claim over a bank's assets. That could be to the detriment of foreign (host-country) creditors if the home-country creditors' priority claim extended to the assets generated by foreign (host-

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<sup>3</sup> Hull (2002) looks at the wider implications of foreign ownership of banks for New Zealand's financial stability.

<sup>4</sup> The local-incorporation policy allows such foreign-owned banks to operate a branch, subject to limits on the branch's size and retail-deposit-taking capacity, in addition to their locally incorporated subsidiary.

<sup>5</sup> Bollard (2004) and Woolford and Orr (2005) discuss issues raised by hosting foreign-owned banks and outline the Reserve Bank's response.

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<sup>6</sup> In the language of the local-incorporation policy, each is "systemically important" (section 3).

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country) branch operations. Creditors of such branches would thus find it difficult to assess, *ex ante*, their likely position in the event of a failure.

- Jurisdictional boundaries can make it legally and practically difficult for a host-country bank or regulator to enforce undertakings made by an offshore related party, or to challenge actions taken by such a party or by a home-country regulator. This would particularly be a problem if it were necessary to seek some enforcement or other action in a foreign court under foreign law.
- The interests of a foreign legal entity that owns a New Zealand bank, or of a home-country banking supervisor, might not always be the same as those of the New Zealand bank or of the Reserve Bank. If the owner or a home-country supervisor had powers to direct a New Zealand local banking operation, there would be a risk that such directions might not be in the best interests of the New Zealand operation and financial system.
- A troubled parent bank or offshore related party could affect the reputation, operating capacity or financial position of a New Zealand bank.

As well as promoting these benefits and minimising these risks, the Reserve Bank seeks to ensure that any new banking-policy development fits in with the wider supervisory regime to the extent possible. That includes supporting the effectiveness of market discipline and self-discipline which, as noted earlier, play important roles in the Reserve Bank's supervisory regime. New policy must also account for the particular features of New Zealand's banking-supervision rules and the rules applying in the home jurisdictions of New Zealand's existing foreign-owned banks, of which the most important is Australia.<sup>7</sup>

- New Zealand has no domestic creditor preference or deposit-insurance regime.
- Australian banking law says that if a bank in Australia were to fail, its assets in Australia would be available to meet its deposit liabilities in Australia in priority to

all of the bank's other liabilities.<sup>8</sup> That preference could capture assets derived from a New Zealand branch of the bank. While New Zealand law can attempt to offset that effect, it cannot do so with certainty of effect.

- New Zealand and Australian banking regulators are required to use their powers to promote their respective public-policy interests, which are not identical between the two countries.

### 3 A policy response: the local-incorporation policy

The details of the local-incorporation policy are contained in Reserve Bank of New Zealand (2006a). That document explains that the Reserve Bank,

*... seeks to ensure that a registered bank is in the ownership of entities or individuals who collectively have incentives to monitor its activities closely and to influence its behaviour in a way which will improve or maintain its soundness.*

Further,

*... there will need to be sufficient separation between the board of a bank and its owners to ensure that the board does not have an unfettered ability to act in the interest of the owners where those interests diverge from those of the bank.*

To achieve those ends, the local-incorporation policy applies to branches of overseas-owned banks. It states that,

*All applicants which fall within the following categories, or which are expected to fall within the following categories in the 5 years following registration, will be required to establish a locally incorporated entity rather than operate via a branch:*

- *Systemically important banks, that is banks whose New Zealand liabilities net of amounts due to related parties, exceed NZ\$10 billion.*

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<sup>7</sup> The local-incorporation policy addresses issues general to cross-border banking and does not single out particular countries for attention. Nevertheless, this article refers on a number of occasions to particular trans-Tasman issues because of the significant Australian ownership of New Zealand banks.

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<sup>8</sup> The [Australian] Banking Act 1959, section 13A(3). In practice, the reference to deposit liabilities in Australia is likely to refer to depositors and deposits in Australia. Reserve Bank of New Zealand (2004a) summarises some implications of home-country depositor preference for host-country creditors of a branch.

- Retail deposit takers incorporated in a jurisdiction that has legislation which gives deposits made, or credit conferred, in that jurisdiction a preferential claim in a winding up. Australia and the United States are examples of countries with such legislation.
- Retail deposit takers which do not provide adequate disclosure in the home jurisdiction.
- Applicants other than those listed above may also be required to incorporate locally if the Reserve Bank is not satisfied that supervisory arrangements (including disclosure arrangements) and market disciplines in the country of incorporation are inadequate.

Those rules mean that New Zealand's four largest banks, all of which are Australian-owned, must be incorporated in New Zealand because of their size.<sup>9</sup> Because of Australia's home-country depositor preference regime (discussed in section 2), those same four banks are also required to incorporate in New Zealand, given that they take retail deposits of more than NZD 200 million.<sup>10</sup>

At present, no other bank in the New Zealand system meets the local-incorporation policy's definition of systemic importance or crosses the thresholds relating to retail-deposit taking. Consequently, only the large four Australian-owned banks are currently required by the local-incorporation policy to be incorporated in New Zealand. These banks are:

- ANZ National Bank Limited (owned by Australia and New Zealand Banking Group Limited);
- ASB Bank Limited (owned by Commonwealth Bank of Australia);
- Bank of New Zealand (owned by National Australia Bank Limited); and

- Westpac New Zealand Limited (owned by Westpac Banking Corporation).

## 4 Benefits and costs of the local-incorporation policy

Previous sections have described the local-incorporation policy, its practical implications for banks' operations in New Zealand, and the problems that it seeks to address. That material underlies the discussion in this section, which considers some of the merits and costs of the policy itself.

### Why a local-incorporation requirement?

The main benefits of local incorporation come through the concomitant legal personality of the New Zealand bank and the presence of a local board of directors whose duties are specifically to the New Zealand bank.

Legal personality and separate local governance promote prudence and efficiency by strengthening the clarity of accountability that the bank and its decision makers have for the bank's performance. Clarity of accountability provides strong incentives to run the bank prudently and efficiently, and provides levers by which regulatory discipline can act on the bank and its decision makers.

As discussed below, strong governance and legal personality can help provide certainty about a bank's financial position and enhance the chances that any distress could be dealt with quickly and effectively. Importantly, they can help to ensure continued provision at all times of a bank's essential functions (such as those relating to the provision and circulation of liquidity in the financial system). Banks' customers and counterparties rely on the continued provision of those functions, and so their ongoing provision is required for the financial system to be robust and efficient.

Legal personality and separate local governance allow a New Zealand bank and its staff to act in the bank's own best interests, even where to do so might not best promote the interests of the New Zealand bank's parent bank. Were a bank to operate as a branch, there would be no separate local governance or legal personality, so situations could arise in which the staff of the New Zealand operation, or directors

<sup>9</sup> Alternatively, they could divert sufficient business away from their branch operations to keep those branch operations under the local-incorporation policy's size threshold.

<sup>10</sup> Reserve Bank of New Zealand (2006a) states that: 'For the purposes of these requirements a retail deposit taker is defined as a financial institution that has more than \$200 million in New Zealand retail deposits on its books. Retail deposits are defined as deposit liabilities held by natural persons, excluding liabilities with an outstanding balance of more than \$250,000'.

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of the legal entity of which the New Zealand branch is a part, would be required to act in the best interests of the legal entity as a whole, even if those actions were not in the interests of the New Zealand operation.

Section 131 of the Companies Act 1993 requires directors of a locally-incorporated company to act in the company's best interests when exercising their powers and performing their duties. Other sections of the Companies Act require directors to act prudently and diligently. Adding further emphasis to directors' incentives to govern effectively, the Reserve Bank requires directors of locally-incorporated banks to make attestations in a bank's published disclosure statements relating to the prudence of the bank's behaviour and to the bank's compliance with its conditions of registration. The Reserve Bank also requires that directors attest to the veracity and completeness of the content of disclosure statements.<sup>11</sup>

To reinforce the duties of local directors to a New Zealand-incorporated bank, the Reserve Bank also imposes conditions on locally-incorporated banks' registration requiring:

*That the bank's constitution does not include any provision permitting a director, when exercising powers or performing duties as a director, to act other than in what he or she believes is the best interests of the company (i.e. the bank). (Reserve Bank of New Zealand, 2006a)*

That seeks to avert the risk that a bank's constitution might be written so as to allow directors to act in the best interests of a holding company, even where doing so would be contrary to the interests of the New Zealand company.<sup>12</sup>

Added together, the rules outlined above mean that the directors and decision makers of a locally-incorporated bank have strong incentives to ensure that the bank adequately identifies, prices, allocates and manages the risks that it faces.<sup>13</sup> The rules also promote the capacity of directors to

act in the event of distress to prevent, or to minimise the damage done by, the failure of the bank. Governance of this nature contributes materially to the pursuit of the Reserve Bank's section 68 objectives.

The legal personality of a locally incorporated bank provides further benefits through the existence of a clear and legally enforceable boundary between the New Zealand bank and the global group of which it is a part. This boundary applies both to the operational aspects of the bank and to the ownership of the bank's assets, liabilities and capital (ie the bank's balance sheet).

The clear boundary around a bank's balance sheet provides greater clarity and certainty about the bank's performance and financial position. This helps markets to identify, manage and price the risk of dealing with the bank, and to allocate funds appropriately. It also underpins the accountability of the bank's decision-makers and directors. Clarity about the ownership of assets also helps reduce the risk that those assets could move between the bank and its related parties at less-than-fair value, if some other part of the global group were to experience difficulties.

Certainty about a bank's balance sheet is also important for preventing and managing episodes of distress. Greater certainty about the resources and obligations of the bank is important when determining the best remedial action for a banking supervisor or insolvency official to take when trying to minimise damage to the financial system.<sup>14</sup>

Balance-sheet separation means that the Reserve Bank can set prudential capital requirements (and other quantitative prudential requirements) for locally incorporated banks. Capital acts as a buffer against unexpected losses on a bank's portfolio. By contrast, a branch cannot hold its own capital, and so must depend on the capital adequacy of the legal entity of which the branch is a part. If the legal entity of which the branch is a part were overall experiencing difficulties, home-country regulatory objectives or creditor-protection rules could cause the entity's capital to be used

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<sup>11</sup> Reserve Bank of New Zealand (2005b) provides an overview of the Reserve Bank's disclosure and attestation requirements.

<sup>12</sup> Section 131 of the Companies Act provides for such allowances in constitutions to be effective in the absence of such a restriction on the content of constitutions.

<sup>13</sup> Hunter, Orr and White (2006) suggest that ". . . the preconditions for financial stability are met when all financial system risks are adequately identified, allocated, priced and managed".

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<sup>14</sup> Clarity about the financial position of a distressed bank helps decision-makers to assess, among other things: whether the bank could be sold to another party and recapitalised; how large a "haircut" to the bank's creditors would be needed to recapitalise the bank; and whether the provision of Reserve Bank liquidity support would be effective.

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to the advantage of the home-country operation or its creditors, even where to do so would be to the detriment of the New Zealand operation.

Legal personality is necessary for a bank to manage on its own behalf any outsourcing arrangements, and so for ensuring that the bank can continue to perform essential functions through difficult periods. With systemically important banks, an inability to continue providing and circulating liquidity will affect a large number of customers and counterparties, and so pose a material threat to the robustness of the financial system.

Legal personality allows the bank to contract on its own behalf more generally, and to pursue legal enforcement of contracts, including outsourcing agreements, on its own behalf (as might be required if the bank or a provider of outsourced services were to experience distress).<sup>15</sup> This supports the continuity of a bank's functionality should the bank or a service provider experience stress. Further, the duty of a locally incorporated bank's decision makers to act in the best interests of the New Zealand company at all times provides strong incentives to ensure that effectual arrangements are in place for backup means of service provision should the primary provider fail to deliver. In short, a locally incorporated bank is likely to be better able and more likely to manage outsourcing risk effectively than a branch would be.

Outsourcing risk can be particularly important when a foreign owner provides services to a New Zealand bank. A New Zealand-incorporated bank can, and would be expected to, devise a legally enforceable and commercially robust contract with its parent bank. A branch would be in a weaker position, having to rely on the willingness of the home-country operation to continue providing the service, and being unable to take legal action against its own head

office for enforced service provision.<sup>16</sup>

### **Policy thresholds: systemic-importance and retail-deposit-taking thresholds**

The costs of incorporating and of operating as a locally-incorporated bank (including, for example, maintaining a separate board of directors) are likely to be more burdensome to smaller banks than to systemically important banks. If local incorporation were required of all foreign-owned banks, that cost might deter foreign banks from establishing small New Zealand operations to test the desirability of longer-term and ultimately larger-scale operation in New Zealand. Entry and the threat of entry are desirable in general because they promote competition and efficiency, and entry by international banking operations in particular can provide additional access to offshore expertise and technology.

The local-incorporation policy therefore does not require all foreign banks with operations in New Zealand to incorporate locally.<sup>17</sup> Large banks can better absorb any costs associated with local incorporation. Prior to the policy's introduction, a number of the large banks now affected by the policy already operated in locally incorporated form. This suggests that operating in that form is not materially more costly for those large banks than operating solely through branches of their global groups, or at least that the benefits to those banks of incorporating in New Zealand exceed the costs.<sup>18</sup> At the same time, large banks individually pose greater risks to the financial system than do small banks. There is likely, therefore, to be greater risk-reduction value at smaller cost through requiring incorporation by large banks than through requiring incorporation by small banks.

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<sup>15</sup> By contrast, a New Zealand branch of a foreign-owned bank is legally part of a foreign legal entity, and so would have to rely on that legal entity to pursue enforcement of operational agreements. The foreign legal entity might be unable or unwilling to do so if it were dealing with wider group distress.

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<sup>16</sup> If the home-country operation or wider legal entity were in distress, it might need to cease service provision to a branch for the sake of the overall health of the wider legal entity. Similarly, a home-country regulator or statutory manager might be required to direct the legal entity to cease provision. A New Zealand-incorporated bank would be more likely to have in place contingency arrangements to ensure the continued availability of essential services.

<sup>17</sup> As discussed below, the local-incorporation policy requires incorporation of only a subset of smaller banks. That subset comprises retail-deposit-taking banks from jurisdictions with home-country depositor preference or with inadequate home-country disclosure (Reserve Bank of New Zealand, 2006a).

<sup>18</sup> Further, the policy allows a large bank to retain a small branch in addition to its locally incorporated operation. This allows for any efficiency benefits from undertaking wholesale banking business through a branch.

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Distress in a systemically important bank can harm the financial system through any of a number of channels. The larger the bank, the larger the number of creditors affected by a failure and so the greater the reduction in confidence and activity in the financial system. Similarly, even if a large bank remained solvent but was unable to make and receive payments, the liquidity and confidence of many customers and counterparties would be affected (including other banks and their customers and counterparties). The ability of banks and of the banking system to perform their roles effectively depends on markets maintaining confidence in them.

In addition to the distinction made between large and small banks, some small foreign-owned retail-deposit-taking banks can pose risks (discussed below) that make it desirable that they should incorporate in New Zealand. In particular, the local-incorporation policy limits retail-deposit taking by branches of banks with home-country depositor preference or inadequate home-country disclosure.

This limit for retail-deposit takers from such countries does not reflect any direct objective to protect depositors. Rather, it is aimed at the Reserve Bank's section 68 objectives, recognising the risk that perceived "unfair" adverse outcomes for retail depositors could harm financial-system efficiency, and that any loss in confidence could also detract from soundness.

For market discipline to be effective, creditors need to be able to understand a bank's financial position and the likely position of creditors in a failure. Where a bank is a branch of an entity incorporated in a jurisdiction with home-country depositor preference, the New Zealand branch's assets could be put towards the claims of home-country depositors in priority to New Zealand (and all other) creditors if the entity should fail.<sup>19</sup> Similarly, if a foreign bank with a New Zealand branch disclosed insufficient or poor-quality information about the group's business, New Zealand creditors would find it hard to assess the risk of dealing with the New Zealand branch and might consider any losses that they might incur upon failure to be 'unfair'.

These problems, which do not arise with locally incorporated

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<sup>19</sup> Reserve Bank of New Zealand (2004a) discusses the implications of home-country depositor preference for host-country creditors of a branch.

banks, would be particularly acute for retail depositors. Retail depositors tend to have less capacity than larger (wholesale) creditors to assess risk in the face of such complications. They are thus more likely to be surprised by an adverse outcome if such a bank were to fail, and to feel that insufficient information had been available to adequately assess and account for the risk. Retail depositors also tend to be less able to work around the surprise loss of liquidity or wealth stemming from an unexpected outcome, should a bank with such characteristics fail.<sup>20</sup>

In such circumstances, distress to a relatively small bank could cause liquidity problems and a loss in confidence for a relatively large number of small depositors. These liquidity problems would hinder their day-to-day activities more than might be the case if they could have understood and planned for that risk. Small creditors' confidence in banks in general could also, in turn, make the banking system more prone to runs by depositors. Consequently, it is possible that problems at a relatively small bank of this kind could harm the wider financial system.

### How the local-incorporation policy supports other prudential policies

As noted above, in recent years, the Reserve Bank has initiated a collection of work-streams to promote the effectiveness of banking supervision and failure management in a world of international banking.<sup>21</sup> In many instances, these complement, and are complemented by, the work being driven by the Trans-Tasman Council on Banking Supervision.<sup>22</sup> The Reserve Bank's work has included:

- addressing preparedness for trans-Tasman crisis management;<sup>23</sup>

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<sup>20</sup> Policy problems caused by allowing wholesale deposits in a branch are expected to be of a smaller order of magnitude than would be expected with retail depositors. Wholesale customers are likely to be in a better position to assess the adequacy of disclosure and risks involved in dealing with a bank, and to maintain arrangements to address those risks (such as multiple banking relationships) (Reserve Bank of New Zealand, 2006a).

<sup>21</sup> Bollard (2004 and 2005) discusses some of these work-streams.

<sup>22</sup> On the work of the Trans-Tasman Council on Banking Supervision, see, for example, DeSourdy (2006).

<sup>23</sup> Reserve Bank of New Zealand (2006e) summarises some of these developments.

- progress on frameworks for more-general regulatory cooperation between the Reserve Bank of New Zealand and the Australian Prudential Regulation Authority;<sup>24</sup>
- rules aimed at addressing the risk caused by banks' outsourcing; and
- policies promoting effective governance of New Zealand banking operations.<sup>25</sup>

The outsourcing policy and banks' governance both benefit from the effects of the local-incorporation policy, as does the Reserve Bank's capital-adequacy policy.

The Reserve Bank's outsourcing policy builds on the presence of a New Zealand board of directors and the existence of legal personality that are provided by the local-incorporation policy. As discussed above, legal personality and strong local governance help to manage the legal and practical risks associated with outsourcing.

Legal separation enables New Zealand-incorporated banks to hold capital on their own balance sheets above certain minimum levels, as required of locally incorporated banks under the Reserve Bank's capital-adequacy regime.<sup>26</sup> As well as providing the basis for medium-term growth of a bank, that capital acts as a buffer allowing the bank to remain solvent in the event of unexpected losses.

The separate legal personality, balance sheet and capital of locally incorporated banks help to protect them from the effects of distress in offshore related parties or parent banks. Because a branch's balance sheet is inextricably part of the balance sheet of a larger legal entity, the branch's success or failure is much more closely tied to the fortunes of the global bank. The local-incorporation policy thus helps to narrow this channel through which New Zealand's financial system can be harmed by macroeconomic and financial shocks

elsewhere in the world. In light of New Zealand's extensive links to the global economy through other channels, an extra buffer of this nature helps to mitigate the harm that might be done to our financial system (and so economy) in the face of offshore stresses.

## 5 Conclusions

The local-incorporation policy reflects the Reserve Bank's goal of maximising the benefits and minimising the risks of hosting foreign-owned banks. It does that by providing banks with strong local governance, legal personality and a legally distinct balance sheet.

Those characteristics promote prudent and efficient management of banks in normal times. The same characteristics help put banks, their decision makers and their supervisors in positions to react as quickly and effectively as possible to emerging stress. They can help to limit the extent to which problems experienced by a global bank will affect its New Zealand operation and so the New Zealand banking system. At the same time, the local-incorporation policy's requirements promote the existence of the conditions in which banks and their customers have the information and incentives to identify, price, allocate and manage the risks that they face.<sup>27</sup>

The local-incorporation policy provides a platform on which other policies can be built to promote good outcomes for New Zealand's financial system. Good governance is beneficial for the financial system in a range of ways. The Reserve Bank's outsourcing policy requires large banks to manage the risk stemming from outsourcing the performance of certain essential functions. In doing that, it takes advantage of the local governance and legal personality of large banks to ensure that they manage the risk of outsourcing without the Reserve Bank needing to impose prescriptive rules about how banks may arrange their businesses. When designing New Zealand regulation, and supervising banks, the Reserve Bank aims to ensure that our requirements are compatible with the rules of home-country regulators. The recent work

<sup>24</sup> Reserve Bank of New Zealand and Australian Prudential Regulation Authority (2003) and (2005) discuss arrangements for information sharing and for cooperation in implementing the Basel II capital-adequacy framework.

<sup>25</sup> See Reserve Bank of New Zealand (2006c) and (2006b). Bollard (2004) discusses the Reserve Bank's interest in promoting strong governance.

<sup>26</sup> Reserve Bank of New Zealand (2005a) summarises the Reserve Bank's existing capital adequacy framework. Yeh, Twaddle and Frith (2005) discusses the rationale for capital requirements and introduces the new 'Basel II' Capital Framework and the Reserve Bank's approach to implementing it.

<sup>27</sup> Hunter, Orr and White (2006) suggest that some general preconditions for financial stability are met when all financial system risks are being adequately identified, allocated, priced and managed.

## Box 1

### Policy development and implementation

Given the importance of the local-incorporation policy to the Reserve Bank's supervision of banks and the potential implications of the policy for affected banks, the development and implementation of the policy have stretched over several years and have been punctuated by an extensive consultation with banks. The policy was implemented in the second half of 2003 by introducing new conditions of registration for banks operating as branches of foreign-incorporated companies.

When the local-incorporation policy was introduced, Westpac Banking Corporation, an entity incorporated in Australia, was operating through a branch in New Zealand that exceeded both the local-incorporation policy's systemic-importance threshold and the policy's limit on retail-deposit taking by banks from a country with home-country depositor preference. Initially, Westpac Banking Corporation was not required to operate under the local-

on trans-Tasman regulatory cooperation contributes in this area to reducing some of the risks posed by hosting foreign-owned banks.<sup>28</sup> Nevertheless, jurisdictional boundaries and political boundaries remain, and in that context banking supervisors are very likely to continue to have domestically-focused objectives for which they must use their oversight and crisis-management powers. In such circumstances, the Reserve Bank's local-incorporation policy will remain valuable as a tool to help in promoting the maintenance of a sound and efficient financial system, and avoiding the significant damage to the financial system that could stem from a bank failure.

incorporation policy while it discussed with the Reserve Bank whether an alternative to local incorporation could satisfy the objectives of the local-incorporation policy.

Westpac proposed 'bolstering' its branch operation in ways that sought to mitigate the risks addressed by the local-incorporation policy. In late 2004, the Reserve Bank concluded that Westpac's proposal would not constitute an acceptable alternative to compliance with the policy, and therefore required that Westpac should operate in line with the local-incorporation policy.<sup>29</sup>

On 31 October 2006, Westpac New Zealand Limited was registered as a New Zealand-incorporated bank. Westpac New Zealand Limited is a New Zealand-incorporated subsidiary of Westpac Banking Corporation. On 1 November 2006, assets and liabilities were transferred from the books of Westpac Banking Corporation and vested in Westpac New Zealand Limited.<sup>30</sup>

All systemically important banks operating in New Zealand are now locally incorporated, in compliance with the local-incorporation policy.

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<sup>28</sup> See, for example, DeSourdy (2006) and Reserve Bank of New Zealand and Australian Prudential Regulation Authority (2003) and (2005). There has also been communication between the Reserve Bank and the Australian Prudential Regulation Authority about how the two countries might respond to a banking crisis.

<sup>29</sup> Reserve Bank of New Zealand (2004b), Westpac Banking Corporation (2004).

<sup>30</sup> Reserve Bank of New Zealand (2006d). Westpac Banking Corporation retains a branch in New Zealand, but that branch is limited in size and the nature of its business under the dual-registration rules of the local-incorporation policy.

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# The Reserve Bank of New Zealand Amendment Act 2006

Loretta DeSourdy<sup>†</sup>

This article discusses the Reserve Bank of New Zealand Amendment Act 2006, passed in October, which implements the Government's response to the recommendations of the Trans-Tasman Council on Banking Supervision. The Act amends part of the existing Act passed in 1989 and is being matched by equivalent legislation in Australia. The legislation provides greater assurance of cooperation between New Zealand and Australian regulators by imposing obligations on them to consult each other and to avoid actions that may have a detrimental effect on financial stability, without unduly constraining the actions of the regulators. There have also been some other minor amendments to the 1989 Act, which are also discussed in the article.

## 1 Introduction

Parliament passed new legislation amending the Reserve Bank of New Zealand Act 1989 (the Act) in October. The Reserve Bank of New Zealand Amendment Act 2006 (the Amendment Act) implements the Government's response to the recommendations of the Trans-Tasman Council on Banking Supervision (the Council) and also makes some minor amendments to the Act. The legislation has been matched by equivalent legislation in Australia.<sup>1</sup> The Australian and New Zealand legislation promotes trans-Tasman coordination of financial sector regulation, and represents an innovative approach to home-host banking supervision. Although the Amendment Act came into force on 1 November, the trans-Tasman provisions will be brought into force at in December by Order in Council so that their timing can coincide more closely with the Australian equivalent legislation. The Australian legislation was passed on 28 November 2006 and will come into force in December on the day it receives the Royal Assent.

Below we explain the work of the Council, examine what the trans-Tasman provisions in the Amendment Act will do and look briefly at the other amendments in the new legislation.

## 2 Origin of the legislation

The Trans-Tasman Council on Banking Supervision was

established by the Minister of Finance, the Hon Dr Michael Cullen, and the Australian Treasurer, the Hon Peter Costello, in February 2005 as a forum to progress trans-Tasman issues in banking regulation. The Council comprises representatives of the Australian and New Zealand Treasuries, the Reserve Banks of Australia and New Zealand and the Australia Prudential Regulation Authority (APRA).

The Council's mandate is to promote a joint approach to trans-Tasman banking supervision that delivers a seamless regulatory environment. Trans-Tasman coordination of financial sector regulation has been seen as an important part of the Government's Single Economic Market Agenda,<sup>2</sup> reflecting that the Australian and New Zealand banking markets are among the most highly interdependent in the world. Approximately 90 percent of New Zealand banking system assets are owned by Australian-owned banks and New Zealand banking assets represent approximately 15 percent of the total assets of Australian-owned banks. This interdependency makes the home-host relationship between Australia and New Zealand particularly important. Home-host relationships between supervisors allow for more effective cross-border supervision of banks with operations in more than one country. The Basel Core Principles for Effective Banking Supervision<sup>3</sup>, which are intended to provide

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<sup>†</sup> I would like to thank Tim Ng, Margaret Griffin and Nick McBride for helpful comments on this article.

<sup>1</sup> Known as The Financial Sector Legislation Amendment (Trans-Tasman Banking Supervision) Act 2006.

<sup>2</sup> A "single economic market" has been defined as "a geographic area comprising two or more countries in which there is no significant discrimination in the markets of each country arising from differences in the policies and regulations adopted by each country". See *Australian and New Zealand Competition and Consumer Protection Regimes*, Productivity Commission Research Report, 16 Dec 2004, p XII.

<sup>3</sup> Basel Committee on Banking Supervision, *Core Principles for Effective Banking Supervision*, Oct 2006, available at <http://www.bis.org>

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an internationally agreed set of minimum requirements for effective banking supervision, state that cross-border supervision requires cooperation and information exchange between the home and host supervisors.<sup>4</sup>

The Council's terms of reference require it to<sup>5</sup>:

- enhance cooperation on the supervision of trans-Tasman banks and information sharing between respective supervisors;
- promote and review regularly trans-Tasman crisis response preparedness relating to events that involve banks in both countries;
- guide the development of policy advice to both governments, underpinned by the principles of policy harmonisation, mutual recognition and trans-Tasman coordination; and
- report to Ministers on legislative changes that may be required to ensure APRA and the RBNZ can support each other in the performance of their current regulatory responsibilities at least regulatory cost.

In August 2005, the Council made its recommendations to Ministers on the legislative-changes part of the terms of reference. Earlier this year, the Minister of Finance and the Australian Treasurer announced that the Australian and New Zealand Governments had agreed to the legislative changes recommended by the Council. They described the proposed changes as comprising the following elements<sup>6</sup> :

- General provisions that require each regulator to support the other in fulfilling the other's statutory objectives and, wherever reasonably possible, to avoid actions that could have a detrimental effect on financial system stability in the other country.
- A specific reference to the definition of "detrimental actions" to actions that interfere with or prevent the provision of outsourced services to a related party in the

other country.

- A requirement that, where reasonably practical, the regulators consult each other before exercising a power that is likely to be detrimental to financial stability in the other's country.
- A requirement that an administrator or statutory manager advise the regulator if they have reasonable cause to believe that the proposed exercise of a function or power by them is likely to have a detrimental effect on financial stability in the other country.

The Amendment Act and the reciprocal Australian legislation are the result of these decisions. The provisions of the Amendment Act are examined below.

### 3 What the legislation does

The Amendment Act incorporates the Council's recommendations into the Reserve Bank of New Zealand Act. When looking at the benefits of the trans-Tasman provisions it is necessary to consider them along with the Australian equivalent legislation, the Financial Sector Legislation Amendment (Trans-Tasman Banking Supervision) Bill 2006. This is because the benefits to New Zealand will result from the enactment of the Australian legislation, while the amendments to the Reserve Bank of New Zealand Act impose duties on the Reserve Bank and a statutory manager appointed under the Act that will benefit Australia.

#### Trans-Tasman cooperation

The trans-Tasman amendments are in Part 5 of the Act, which covers the registration of banks and the prudential supervision of registered banks, including provisions dealing with the statutory management of a registered bank.

New section 68A deals with trans-Tasman cooperation and is the key section in the Amendment Act. It has two prongs. The first prong requires the Reserve Bank, when performing its prudential supervision functions or duties, or exercising powers under Part 5, to support prescribed Australian financial authorities in meeting their statutory responsibilities relating to prudential regulation and financial

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<sup>4</sup> Above, principle 25.

<sup>5</sup> Refer Media statement from Dr Michael Cullen, 'Solid progress in Cullen-Costello bilateral', 17 February 2005, [www.beehive.govt.nz](http://www.beehive.govt.nz)

<sup>6</sup> 'Ministers announce key achievements in the trans-Tasman single economic market agenda', Joint media statement by Hon Dr Michael Cullen with Australian Treasurer the Hon Peter Costello, 22 Feb 06, available at [www.beehive.govt.nz](http://www.beehive.govt.nz)

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system stability in Australia. This provision formalises the cooperation that already takes place between New Zealand and Australia and will facilitate the sharing of information and consultation. This will be particularly important during a time of crisis when national interests can diverge.

The expression “prescribed Australian financial authority” has been defined as meaning an Australian public authority prescribed by regulations made under section 68A. It will apply to APRA but the statute allows for flexibility. For the purposes of this article, we will refer to APRA rather than to prescribed Australian financial authorities.

The word “support” is intended to have its ordinary meaning. The clause in practice will require the Reserve Bank and APRA to support each other in ways such as providing and sharing information, cooperation on policy development, and coordination on matters of common interest, particularly crisis preparation and management<sup>7</sup>.

The second prong of new section 68A requires the Reserve Bank, again when exercising its prudential supervision powers, to “avoid any action that is likely to have a detrimental effect on financial system stability in Australia”. In accordance with the Council’s recommendation, this phrase is defined in the legislation as including “an action that prevents or interferes with any outsourcing arrangement”. “Outsourcing arrangement” is also defined and means “an arrangement for business, or functions relating to any business, of an authorised deposit-taking institution to be carried on by a person other than that authorised deposit-taking institution”. “Authorised deposit-taking institution” (commonly referred to as an ADI in Australia) is defined in the Amendment Act by reference to Australian legislation and refers to bodies corporate that have been authorised by APRA to carry on banking business. Included among ADIs are banks, building societies and credit unions.

The legislation requires that the Reserve Bank consult with, and consider the advice of, APRA prior to taking an action that the Reserve Bank has reasonable cause to believe is likely to have a detrimental effect on financial system stability

in Australia. The duty placed on the Reserve Bank is not absolute; it is confined to situations where the Reserve Bank considers it reasonably practicable in the circumstances, having regard to urgency or other similar constraints. This requirement and its Australian equivalent will be particularly important in a crisis situation, as this is when, in the absence of the legislative requirements, the risk of one regulator taking actions that undermine those of the other regulator is heightened, with potentially significant consequences for the stability of both financial systems. Despite their different legislative objectives, in normal circumstances, the respective interests of the Reserve Bank and APRA are well aligned. However, in times of crisis, these interests can diverge and the decisions taken by one regulator could have an adverse impact on the other jurisdiction. Examples of this could include the situation where the two regulators wish to take different actions in response to an impending crisis, eg, when a shock affects the two countries differently.

Outsourcing provides another practical example of where the interests of the regulators could be at variance. When the Council was given the task of considering legislative changes that were necessary to allow for greater cooperation between regulators, regulatory policy on outsourcing was an area that was identified where more cooperation between supervisors would be beneficial. Prudential regulators, including the Reserve Bank and APRA, have outsourcing policies<sup>8</sup> that provide some restrictions on outsourcing by registered banks. These policies are generally designed to ensure that the risks to a bank, and/or the wider financial system, from the failure of a service provider are able to be appropriately managed. Where the service provider is regulated by another regulator in another jurisdiction, that regulator’s duties and powers may cause it to intervene in a way that interferes with the provider’s performance, to the detriment of financial stability in the other jurisdiction.

The Amendment Act will require the Reserve Bank to consult with APRA before the Reserve Bank interferes with an outsourcing arrangement. The reciprocal Australian legislation will require APRA to do the same. This consultation

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<sup>7</sup> See Hansard, 19 October 2006, speech for second reading, the Reserve Bank of New Zealand Amendment Bill, Hon David Cunliffe, Minister of Immigration, on behalf of the Minister of Finance. Available at <http://www.parliament.govt.nz>

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<sup>8</sup> The Reserve Bank’s outsourcing policy is set out in BS11 in the Banking Supervision Handbook and is on the Reserve Bank’s website: <http://www.rbnz.govt.nz/finstab/banking/outsourcing/index.html>

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will increase the likelihood of the regulators taking into account the interests of the other's financial system and of them considering alternative actions. This will be particularly beneficial for New Zealand, as most of the outsourcing that has occurred between banks in the two countries has been from New Zealand banks to service providers, including parent banks, in Australia. The enactment of the Australian equivalent legislation will allow the Reserve Bank to better manage banks' current outsourcing practices and provide for a better balance between efficiency gains to banks and the protection of the financial system.

### **Statutory manager to avoid actions likely to have a detrimental effect**

New section 121A of the Amendment Act implements the Council's fourth recommendation and deals with statutory management<sup>9</sup>. It imposes a duty on the statutory manager to consult where the statutory manager has reasonable cause to believe that an action of theirs is likely to have a detrimental effect on financial system stability in Australia. In that situation, the statutory manager is required to notify the Reserve Bank as soon as practicable and to obtain the Reserve Bank's written consent before taking the action. The statutory manager may consult with APRA about whether an action is likely to have a detrimental effect on financial system stability in Australia. The Reserve Bank is required to provide details to APRA before granting written consent to the statutory manager in such a situation. Again, these duties are not absolute. The statutory manager is not required to notify the Reserve Bank and the Reserve Bank is not required to notify APRA where they are satisfied that it is not reasonably practicable to do so in the circumstances, having regard to urgency or other similar constraint.

### **Other amendments to the Act**

The Amendment Act also made some minor changes to the

Reserve Bank Act. These provisions came into force on 1 November. They:

- amend the definition of "financial institution" to clarify the Reserve Bank's ability to seek an Order in Council declaring a person to be a financial institution;
- update the provisions obliging the Reserve Bank to keep a register of banks so as to make the provisions more technologically neutral; and
- include directors of the Reserve Bank within the classes of persons entitled to protection from liability and a Crown indemnity when carrying out their functions under the Act.

## **4 Conclusion**

The Reserve Bank of New Zealand Amendment Act 2006 and the reciprocal Australian legislation represent a path-breaking advance in home-host supervisory cooperation. In his speech for the third reading of the bill, the Minister of Finance said that the legislation "draws a realistic balance between the desirability of trans-Tasman co-operation, and the independence and discretion of each prudential regulator, within international boundaries"<sup>10</sup>.

The legislation will provide greater assurance of cooperation between the regulators by imposing obligations on them to consult each other and to avoid actions that may have a detrimental effect on financial stability, without unduly constraining the actions of the regulators. The legislation should lower regulatory costs and enhance the maintenance of financial stability. It represents a significant step for the coordination of banking regulation on both sides of the Tasman.

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<sup>9</sup> A registered bank and any associated person of a registered bank may be placed into statutory management under Part 5 of the Reserve Bank of New Zealand Act. This is done pursuant to section 117 by the Governor-General by Order in Council, on the advice of the Minister given in accordance with a recommendation of the Bank. The grounds on which a registered bank may be declared to be subject to statutory management are set out in section 118.

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<sup>10</sup> See Hansard, 19 July 2006, available at <http://www.parliament.govt.nz>

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# Changes to the liquidity management regime

Ian Nield

In July 2006, the Reserve Bank commenced implementation of changes to its liquidity management regime. Under the existing regime, there had been increasing evidence of insufficient liquidity in the banking system at various times and some inefficiencies in the way in which it was provided. Under the new regime, there has been a significant increase in the level of cash left in the payment system overnight. This article details the motivation for the changes and the key features of the new regime and provides some initial observations of their impact. The article notes that the implementation of the new regime, which occurred over a four-month period, has been largely uneventful and that there have been few signs of stress since the Reserve Bank liquefied the system.

## 1 Introduction

This article provides details of the changes to the liquidity management regime that have taken place since June 2006. A previous *Bulletin* article<sup>1</sup> provided an overview of how the Reserve Bank conducted liquidity management at that time; readers are referred to that article for a detailed description.

In the 2004/05 *Annual Report*, the Reserve Bank announced that one of the Governor's priorities for the 2005/06 financial year was for the Bank to work to ensure that adequate liquidity was being provided to the banking system, with collateral requirements and risks being balanced appropriately between the Reserve Bank and the New Zealand banking sector.<sup>2</sup>

The method the Bank had used to provide liquidity to holders of accounts in the Exchange Settlement Account System (ESAS) had not been comprehensively reviewed for a number of years. Recent years had seen the Bank make a number of incremental changes to the methods it used to provide liquidity to the system, mainly in response to problems it had encountered, and as a result of other regime changes. These included the implementation of the Real Time Gross Settlement (RTGS) system, Official Cash Rate (OCR), and the New Zealand dollar's entry into Continuous Linked Settlement (CLS).

Subsequent to a comprehensive internal review in the latter half of 2005, the Bank issued a consultation document<sup>3</sup>

in March 2006. The document detailed the shortcomings of the system as it was then and a preferred regime for liquidity management. Following this, the new regime was introduced in July 2006.<sup>4</sup> This article summarises the motivations for the changes, the new framework and how it was implemented.<sup>5</sup>

## 2 Time to change

Prior to the changes in July 2006, the prevailing regime had been in existence since the introduction of the OCR in March 1999. In general terms, the main elements of the liquidity management framework were as follows:

- There was a \$20 million target for the cash left in the payment system overnight.
- ESAS participants raised cash each day by lodging securities with the Reserve Bank (predominantly government securities, but also limited quantities of private sector securities). This is known as the automated intra-day repurchase facility (Autorepo).
- Automated overnight rollover<sup>6</sup> of Autorepo as well as a manual overnight facility – the overnight reverse

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<sup>4</sup> The June implementation paper is available at <http://www.rbnz.govt.nz/finmarkets/2651623.pdf>

<sup>5</sup> For a detailed discussion of the new regime, readers are referred to the consultation and implementation papers. The regime and its implementation have also been discussed in the May 2006 and November 2006 editions of the Reserve Bank of New Zealand *Financial Stability Report*.

<sup>6</sup> Autorepo rollover was a facility where users of the Bank's intra-day cash facility could roll a transaction overnight using government security and limited amounts of bank and corporate paper. This facility was transacted at 30 basis points above the OCR.

<sup>1</sup> See Frazer J, (2004).

<sup>2</sup> Available on the RBNZ's website at <http://www.rbnz.govt.nz/about/whatwedo/0094054.html> – see p40.

<sup>3</sup> The March paper is available at <http://www.rbnz.govt.nz/finmarkets/liquiditymanagement/2468835.pdf>.

repurchase facility (ORRF).<sup>7</sup>

- Typically, daily open market tenders were used to inject (reverse repurchase using government securities) or withdraw (repurchase using government securities) cash
- Foreign exchange (fx) swaps were used to inject cash.

Incremental changes had been made over the intervening seven years. Most of these changes had been driven by the emergence of symptoms of stress either in the money markets or in the Bank's open market operations (OMOs). These symptoms suggested that insufficient liquidity was at times available to the banking system or that the liquidity that had been provided was injected in an inefficient manner.

Examples of these symptoms included delayed or 'just-in-time' payments between market participants and failed payments (albeit rare). There had also been an increase in the level of underbid OMOs to an unsatisfactory level. The use of the Bank's standing facilities at the end of the day had also increased, namely the ORRF and Autorepo rollover. The use of these facilities had increased as a result of the underbid OMOs and inefficiencies within the inter-bank cash market. Figure 1 below shows the use of these facilities increasing, especially within the 2005/06 financial year.

The Bank had also observed significant variations in the rate at which overnight cash was trading in different markets. Figure 2 highlights the rate at which overnight cash has traded in the fx swap market relative to the OCR since late 2004. The cost of overnight funding through the fx swap market has typically been above the OCR, at times by a considerable margin.

Figure 1  
Average volume of rolled Autorepo and ORRF

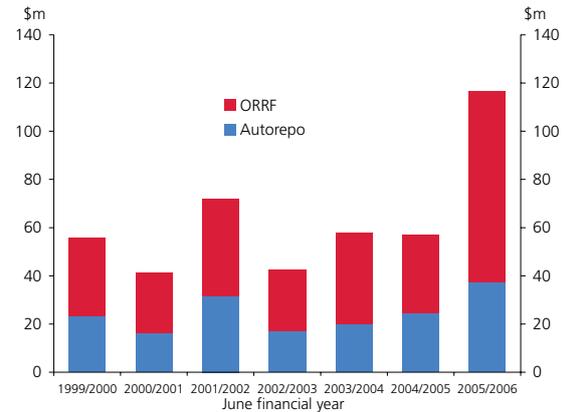
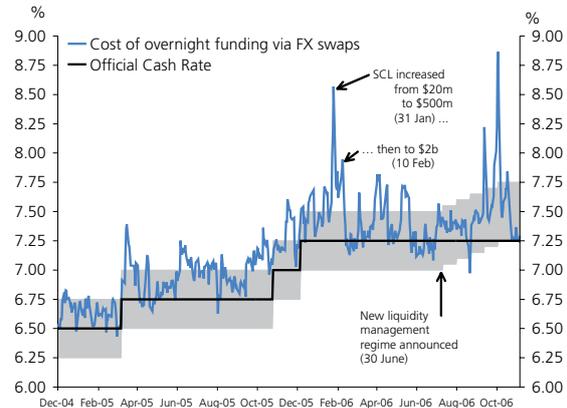


Figure 2  
The cost of funding via overnight fx swaps and the OCR



Evidence of underlying demand for an increase in intra-day liquidity was evident when the Bank temporarily allowed banks to pledge more bank paper (also known as bank bills) as collateral for intra-day loans. This measure had been undertaken to ease the introduction of the New Zealand dollar into Continuous Linked Settlement Bank's system and an associated decline in settlement and payment system problems during that period.<sup>8</sup>

There was also evidence of uncooperative behaviour in ESAS. Examples included hoarding collateral, and utilising non-government paper limits when the liquidity was not immediately required, which acted against the system working to its full potential.

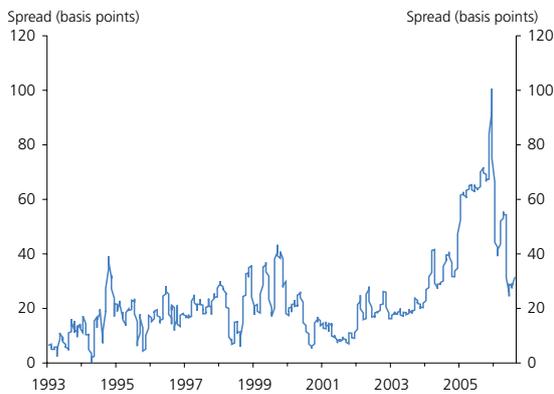
Finally, there had been a significant increase in the demand

<sup>7</sup> This facility allows the Bank's counterparties, who have signed an inter-day Master Repurchase Agreement, to borrow cash overnight using government securities as collateral. This facility was transacted at 25 basis points above the OCR. Since 5 October 2006, the ORRF rate has been 50 basis points above the OCR.

<sup>8</sup> See 'Box 2 – Continuous Linked Settlement Bank', October 2004 Reserve Bank of New Zealand *Financial Stability Report*.

for government securities (in particular Treasury bills) for use as collateral in ESAS, and for obtaining overnight or longer liquidity from the Bank. Higher demand, combined with a stable level of supply of government securities and a lack of alternative sources of collateral, had resulted in the prices of government securities increasing to historically high levels relative to their long-term average. Figure 3 shows the four-week moving average of the three-month bank bill/Treasury bill spread since 1993 and highlights the increased cost of holding Treasury bills since December 2004.

**Figure 3**  
**Three-month Treasury bill spread under bank bill**  
**(four-week moving average)**



For their part, market participants had been increasingly calling for the Bank to review the liquidity management regime and, in particular, for the Bank to accept more commercial bank debt as collateral in ESAS. These calls reflected participants' discomfort at the increasing costs of holding liquid assets to pledge as security to raise intra-day liquidity via Autorepo.

### 3 The new regime

#### Desirable characteristics

In light of these issues, the Bank identified a range of features that a preferred liquidity management regime would ideally display.

The regime should be scalable. It should readily cope with changes in the level of demand for liquidity, either over the cycle or in the long run, as the payment system grows and

when the number of market participants changes.

Regarding collateral, banks should be able to access sufficient liquidity from the Reserve Bank using collateral that is fairly valued, readily available, and naturally held by payment system participants (ie, the system should not in itself distort participants' asset allocation decisions). The supply of acceptable collateral to payment system participants should be flexible and responsive to demand, and not dependent upon exogenous factors such as changes in the Crown fiscal position. The supply of collateral should ideally be within control of the Reserve Bank so that the Bank is in a position to adjust the supply of liquidity in response to changes in the demand for liquidity. This would allow the Bank to respond effectively to changes in the requirement for liquidity, although such changes are likely to be infrequent.

In providing liquidity to banks, the Reserve Bank should not be routinely exposed to an undue amount of credit risk to banks that the Bank might otherwise supervise, or manage, in a failure situation. Having a financial exposure to the domestic banks becomes a potential conflict of interest for the Bank, as a prudential regulator, during times of financial stress.

The Reserve Bank's liquidity management operations should be in liquid markets and instruments. As previously noted, the Bank has often faced difficulties in its OMOs, especially when injecting cash via reverse repurchase at what it considered to be market rates. Operating in more liquid markets will enhance the Bank's ability to discover market rates.

Incentives should be in place to foster an environment where the commercial banks get liquidity from each other and deal with the Reserve Bank only when liquidity is not otherwise available in the market. The Bank's main role is to transact its own business and provide liquidity when it is not otherwise available through other sources (ie, other ESAS account holders).

Lastly, the Reserve Bank's operations should yield information and encourage the development of skills that will add to the Bank's role in promoting a stable and vibrant financial system. If the Bank is able to transact in more liquid money-market instruments than it has in the past, then this will

routinely provide a richer source of information on the operation of those markets, and assist the Bank in carrying out its payment-system oversight duties.

### The new regime — key features

After considering the alternatives, in March 2006, the Bank proposed moving to a fully cashed-up payment system. In such a system, the settlement cash level is set by the Reserve Bank from time to time, but driven by the medium-term demand revealed by payment system participants. The Bank expects that changes in the volume will be relatively infrequent, thus providing ESAS participants with some certainty over the supply of liquidity. This system was implemented from July to October 2006.

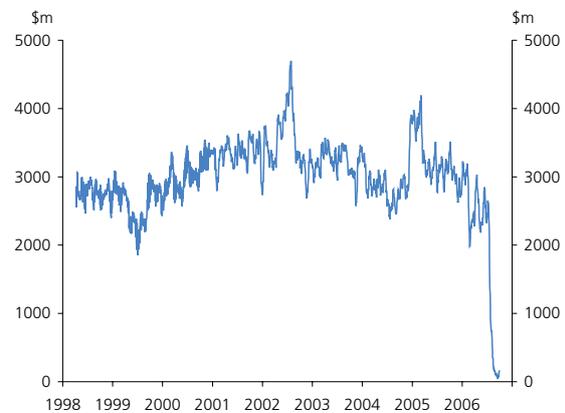
The Bank's work indicated that a level of around \$5-7 billion was likely to be appropriate. In particular, an examination of the historic and current size of liquid asset holdings by banks, and the sum of peak intra-day liquidity demands across all ESAS banks (ie, the sum of peak Autorepo demand for each ESAS participant on any given day), pointed to a requirement for around \$7 billion of settlement cash. In practice, this appears to be the case, with (as at November 2006) the level of settlement cash typically in the range \$7-7.5 billion. Typically, the peak daily liquidity raised in Autorepo was around \$3 billion, with occasional spikes of over \$5 billion. Figure 4 shows a moving average of peak Autorepo usage.

In outline, the new regime has the following characteristics:

- Compared with the old regime, a high level of cash – currently around \$7 billion versus \$20 million previously.
- The day-to-day balancing of Crown flows managed within a  $\pm$ \$500 million corridor around the target level.
- Changes in the target level of settlement cash balances considered by the Bank periodically and informed by a number of indicators of the observed demand, including: the efficient conduct of payments in ESAS, the level of usage of the Bank's standing facilities, the level and shape of the yield curve for maturities up to around a month, and the relative prices of money market

Figure 4

Peak ESAS system liquidity raised in the Autorepo facility (five-day moving average)



instruments. In general, the Bank aims to maintain a broadly stable level of liquidity in the system.

- As previously, the Bank remunerates overnight cash balances in the payment system. As described below, the rate paid is the same as the Bank's key policy rate (i.e., the OCR).
- There continues to be an ORRF (using government securities as collateral) but costing OCR+50 basis points as opposed to OCR+25 basis points previously (ie, preserving the 50 basis point corridor between overnight cash balances and borrowings).
- Intra-day Autorepo has been discontinued, thus removing the distinction between intra-day and overnight cash markets.
- The acceptance of bank bills and corporate paper as collateral as part of the Bank's normal domestic market operations has been discontinued.

### Benefits of the new regime

The new regime is scalable and flexible. The supply of settlement account balances can be easily changed and is under the control of the Bank. Further, the demand for settlement account balances is not likely to be as affected by other exogenous factors (eg, offshore demand for government securities or changes in the government fiscal position).

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Settlement account balances have become a natural part of payment system participants' balance sheets, as banks hold these balances as part of their liquidity and prudential holdings.

The price of Reserve Bank liquidity is fairly valued given that the Bank pays the OCR on settlement account balances. The OCR therefore provides a benchmark against which alternative money-market instruments, such as overnight fx swaps, can be priced. This allows the banks more choice in the liquidity instruments they hold on their balance sheets, which in turn allows banks to reduce the costs paid to generate liquidity.

The increased base level of settlement account balances in the system should better foster the development of an inter-bank cash market. In the presence of significant market liquidity, market participants should transact cash with each other at the end of the day in preference to using the Bank's standing facilities. Development of the inter-bank market is desirable to improve the distribution of cash between ESAS participants, leaving the Bank to concentrate on the provision of liquidity to the system as a whole. Greater development of the inter-bank cash market would improve the richness of this source of information for the Bank.

Finally, to support the above system, the Bank routinely operates with reference to more liquid money-market instruments than it has in the past. In the current climate of significant fiscal surpluses, fx swap rates provide the benchmark for liquidity management operations. The fx swaps market is deep and liquid in comparison to the repurchase and reverse repurchase markets. Operating more routinely in liquid markets provides a richer source of information to the Bank in its financial stability role.

### Impact on monetary policy

The new regime is a technical change to the way the payment system is liquefied – there is no impact on monetary policy. Since the introduction of the OCR, the actual quantum of cash left in the payment system overnight has not been relevant from a monetary policy perspective, provided that

the liquidity is supplied at a rate consistent with the OCR.<sup>9</sup>

Generally, the cost of raising funds relative to the OCR does not change under the new regime; but the cost of raising liquidity is de-coupled from the cost of holding acceptable security. By fully cashing up the payment system, and not relying on the lodgement of securities, payment system participants are no longer subject to the vagaries of supply and demand (and therefore price) of securities that are acceptable to the Reserve Bank.

## 4 A review of implementation

The Bank adopted a phased approach to implementation. The new regime was gradually introduced in four steps over a twelve-week period, commencing 3 July 2006. The four steps were as follows.

- The removal of commercial bank securities as eligible security in the Bank's liquidity operations on 13 July 2006. Treasury bills issued after 13 July 2006 were not eligible for use in the Reserve Bank's Autorepo facility; however, they continued to be eligible for use in the Reserve Bank's ORRF.
- Government bonds and corporate securities removed as eligible securities in the Bank's intra-day facility on 3 August 2006. Government bonds continued to be eligible securities in the ORRF.
- Interest paid on ESAS account balances was raised in increments of five basis points from OCR – 25 basis points to the OCR.
- Autorepo was discontinued on 5 October 2006.

Treasury bills continue to be eligible securities in the ORRF. The gradual reduction in the stock of eligible securities, combined with the increasing levels of cash in the system, resulted in Autorepo usage falling steadily over the period 13 July to 5 October. As can be seen in figure 4, only very modest levels of cash were raised each day in Autorepo in the month before access to Autorepo was closed.

From 3 July the Bank injected cash consistent with revealed

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<sup>9</sup> That this is so was heralded when the Reserve Bank moved to the OCR regime in 1999. See Reserve Bank (1999), especially pp 49-50.

demand as observed by the Bank. Subsequent to 5 October, when Autorepo was closed, the Bank has continued to inject cash as revealed by various indicators of demand, primarily the price of overnight money.

Since the Reserve Bank liquefied the payment system, there have been few signs of stress. The system appears to be functioning more smoothly than in the past few years, if not at anytime since the introduction of RTGS in 1998. Figure 5 depicts the cumulative transaction flow during the day for three periods within the past two years. As can be seen, the time of day when half the payments are completed is now up to two hours earlier than in the most stressed period. This is a significant improvement in payment flows.

The demand for cash has been in accord with the Bank's expectations. At the time of writing, the settlement cash level was in the region of \$7-7.5 billion. The capacity for ESAS participants to raise liquidity is better than any time since the September quarter of 2003; see figure 6.

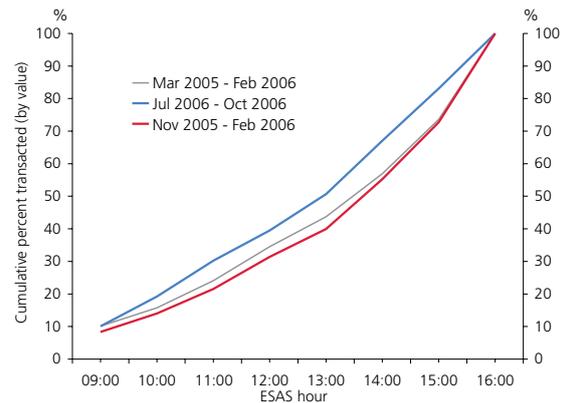
Previously, ESAS participants held in the region of \$6-7 billion of assets, which could be used to liquefy the payment system. Under the new arrangements, participants can select to use either outright cash, or lodge securities with the Reserve Bank to raise liquidity. In January and February 2006, the Bank increased the level of cash in the system to \$2 billion. As depicted in figure 6, since implementation commenced, the level of cash and repurchasable assets has risen a further \$1 billion to about \$8.4 billion. The injections of cash have all been at prices that are consistent with the OCR.

The improved liquidity has been reflected in several ways – in particular, the fall in the cost of funding through the overnight fx swap market. Subsequent to the volatility in the period immediately after the discontinuation of Autorepo, funding through the overnight fx swap market has fallen to close to the OCR (see figure 2).

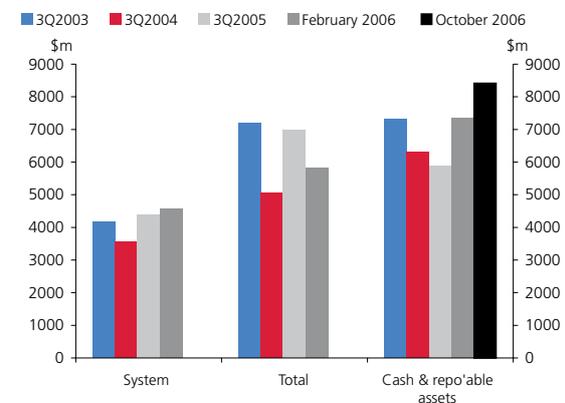
The interbank market has moved to settle transactions at about 10 basis points above the OCR. Previously, the majority of trades to bring accounts into balance were undertaken at the OCR. There now appears to be greater discrimination between unsecured and secured borrowing; but, as yet, there are too few observations to draw any conclusions.

To date, the transition to the new regime has been largely uneventful, although there have been some notable pressure points. All participants, including the Reserve Bank, are learning how to operate in the new environment. The Bank will continue to monitor the new regime closely and, as necessary, make adjustments.

**Figure 5**  
Wholesale payment flows through the day



**Figure 6**  
Capacity for system to raise or utilise cash<sup>10</sup>



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- Frazer J, (2004), "Liquidity management in the New Zealand banking system", Reserve Bank of New Zealand *Bulletin*, 67 (4), 2004.
- Reserve Bank, (1999), "Monetary policy implementation: changes to operating procedures", Reserve Bank of New Zealand *Bulletin*, 62 (1), 1999.

<sup>10</sup> 'System' is the peak of the cash raised in the system; 'Total' is the aggregate peak cash raised in the system by each bank; 'Cash and repurchasable assets' is the total of cash in the system and ESAS participants' holdings of government securities and eligible private sector securities'.

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# Testing stabilisation policy limits in a small open economy: Editors' summary of a macroeconomic policy forum

*Bob Buckle, The Treasury and Aaron Drew, Reserve Bank of New Zealand<sup>1</sup>*

In early 2006, at the request of the Reserve Bank of New Zealand and New Zealand Treasury, four international academic experts and practitioners in the macro economic policy arena visited New Zealand. Their brief was to critically examine New Zealand's macro economic policy framework and consider whether alternative, possibly non-conventional, policy tools might be used to provide a smoother ride for the externally exposed sectors of the economy over the business cycle. A conference was held in Wellington on June 2006 to present the findings of the visiting experts and a volume of the conference proceedings was published in October. The following is the overview chapter from the volume written by the Editors. The full volume can be downloaded from [www.rbnz.govt.nz](http://www.rbnz.govt.nz)

## 1 Macroeconomic issues motivating the conference

New Zealand has been one of the faster growing OECD economies since the early 1990s, driven by both strong employment and labour productivity gains. During the last five years, however, this growth was accompanied by the emergence of macroeconomic imbalances. While some of these imbalances are in common with several other relatively fast growing economies, including Australia and the United States, this does not mitigate concerns that the eventual process of adjustment might be both painful and prolonged.

The so-called imbalances have manifested themselves in a number of areas: CPI inflation has increased beyond the top end of the Reserve Bank's target band; the balance of payments Current Account Deficit (CAD) increased to over 9 per cent of GDP (one of the largest amongst developed economies); asset prices (notably house prices) increased rapidly; and household debt levels rose to historic highs.

While the term "imbalances" is commonly used to describe these macroeconomic outcomes, the term could in some instances be regarded as pejorative. For example, in an inter-temporal context, a CAD can be viewed as the consequence of a reshuffling of demand across time, which results in

differences in the levels of contemporaneous domestic demand and supply. Hence, while a CAD is sometimes described as a situation in which a country is "living beyond its means," in an inter-temporal sense a CAD is not necessarily inconsistent with life-time "means." Nevertheless, there are several legitimate reasons why these recent developments could be a concern.

One concern is that the economy may experience a "hard landing" if a normal cyclical downturn is amplified by a significant fall in asset prices. For example, the size of the CAD may have increased the likelihood of a sudden and disruptive exchange-rate adjustment to levels uncomfortably below historical averages. From a monetary policy point of view, this would be particularly unwelcome at the present juncture where inflation is already high. Alternatively, the sharp rise in household debt levels may have increased the vulnerability of the household sector to a fall in house prices, particularly if accompanied by a significant increase in unemployment levels. If large enough, in combination these shocks could potentially pose a systematic risk to the banking system, given the banks' reliance on foreign capital and their exposure to the household sector.

Another concern is that the imbalances may adversely impact productivity growth. New Zealand business cycles are characterised by variations in the relative growth of the tradable and non-tradable production sectors. The current cycle has been sustained by strong non-tradables growth, particularly in residential investment (a pattern that has been accentuated by large cyclical net migration swings). In contrast, growth in the tradables sector has been much

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<sup>1</sup> Bob Buckle is a Principal Advisor at The Treasury and Adjunct Professor of Economics, Victoria University of Wellington. Aaron Drew manages the research division in the Economics Department, Reserve Bank of New Zealand. The views expressed herein do not necessarily fully represent those of the Treasury or Reserve Bank of New Zealand.

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weaker, even though this sector tends to have higher trend productivity growth. Associated with this pattern, the New Zealand economy also experiences large exchange-rate swings over the cycle. These large swings may have adverse effects on investment and productivity, again particularly in the tradables sector.

One explanation for the large increase in New Zealand's CAD is that it reflects an unusual international distribution of savings. High excess savings in East Asia are flowing to economies where yields are higher, in part financing the growth in business and housing investment in New Zealand (and similarly Australia and the US). The redistribution of these savings through global financial markets has caused yields on long-term securities to converge across countries. This has reduced the level of real interest rates that New Zealand residents may have otherwise faced and has therefore contributed to domestic investment and consumption spending staying higher for longer.

This process of internationalisation of financial markets has given rise to a third concern, namely that the Reserve Bank of New Zealand now has less leverage over longer-term interest rates. In order to influence domestic inflation, the Bank may therefore have to rely more on short-term interest rate movements and, as a consequence, the exchange-rate channel. In these circumstances, more of the burden of adjustment may fall on the tradable goods sector, with the potential ramifications for productivity growth expressed above.

A final and closely related issue is that the imbalances reflect excess demand pressures in the economy more generally, and these could indicate that macro economic policy (encompassing both monetary and fiscal policy) settings have not been very effective over recent times in preventing the build up of these imbalances, therefore contributing to the risk of a costly adjustment phase.

In June 2006, The Treasury and the Reserve Bank of New Zealand co-hosted a Macroeconomic Policy Forum that brought together international and domestic experts to examine the policy issues relating to these recent New Zealand macroeconomic developments.

The overall assessment of the invited speakers and discussants at the Forum was that the essential elements of New Zealand's macroeconomic policy institutions are sound and remain appropriate. They also emphasised that changes in real exchange-rates and fluctuations in current account balances are often an essential part of the processes of adjusting to domestic and international shocks. Further, some expressed the view that recent international developments and the way they have impacted on New Zealand may have been unique. Hence, there was a general tone that there is no reason for New Zealand policy makers to panic. Participants at the Forum did not go so far to suggest, however, that policy makers in New Zealand can be complacent about the economic outlook, or that there are no policy areas that warrant further scrutiny.

The following section provides a high-level snapshot of the papers in this volume that were presented at the Forum in June. This snapshot focuses on some (but by no means all) of the policy suggestions that arose. This is followed by a summary of the panellists' comments. Finally, we offer our thoughts on policy areas that may warrant further attention.

## 2 Summary of papers

### Macroeconomic policy challenges: monetary policy

*Authored by Stephen Grenville (Lowy Institute),  
Discussion by Christopher Allsopp (University of  
Oxford)*

It is widely accepted that New Zealand's inflation targeting approach has become more 'flexible' as low inflation and inflation expectations have become embedded in the economy. Stephen Grenville reflects that the concerns over the stress placed on the externally exposed sectors of the economy in the recent cycle could be regarded as an extension of a flexible approach. However, he is doubtful whether monetary policy alone, with a conventional single instrument (the OCR), can reasonably be expected to address cyclical strains caused by sectoral imbalances. This would be especially so if recent international and financial developments have significantly shifted the transmission

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channel of monetary policy further towards the exchange-rate. This view is endorsed by Christopher Allsopp, who suggests that if, in principle, policy instruments or interventions can be found that are better targeted to the source of a sectoral shock, then institutional responsibility for this in almost all circumstances should lie with The Treasury. In his view, monetary policy should remain primarily focused on its price stability objective.

There are several policy areas, however, where Grenville thinks there may be scope to modestly reduce sectoral stresses. First, he suggests the RBNZ should be even more forthcoming in pointing out to the public when it thinks asset prices (e.g. the exchange-rate and house prices) are misaligned. Regarding currency misalignments, he proposes that the RBNZ should use foreign exchange intervention more systematically, in the spirit of the Reserve Bank of Australia's approach, to "lop the peaks and fill the troughs" of movements in the currency. This view is predicated on there being systematic arbitrage opportunities over the currency cycle, an assertion that Grenville makes but many other participants of the Forum disagreed with. Indeed, many considered that the RBNZ should not entertain intervening in currency markets at all.

In relation to the risks posed by a booming housing market, Grenville proposes that much more comprehensive data on housing loan exposures should be collected and given widespread and critical public coverage. Two specific policy suggestions are also offered. First, that the mortgage levy idea raised (and largely dismissed) in the recent SSI report produced by the RBNZ and New Zealand Treasury deserves further attention given its potential to curtail a housing led boom.<sup>2</sup> Second, that insurance for loans with loan-to-value ratios above 80% should be required (which is encouraged in Australia by the application of a higher capital requirement if this insurance is not in place). These suggestions on housing market measures merge into the arena of prudential policy. He sees these policies as modest measures to improve the chances that banks remain efficient financial intermediaries throughout the cycle, and in the face of low-probability

events such as a "sudden stop" of foreign funding sources. Further, more "speculative" prudential policy options are also offered.

### **Stabilisation policy in New Zealand:**

#### **Counting your blessings, one by one**

*Authored by Willem Buiter (London School of Economics),*

*Discussion by Pierre Siklos (Wilfrid Laurier University)*

Willem Buiter's main conclusions are that New Zealand's monetary and fiscal policy frameworks are fundamentally sound, and top of the international class. He nevertheless considers that some of New Zealand's inflation, business cycle and structural characteristics imply there is scope to improve the macroeconomic policy framework.

In the monetary policy area, Buiter is not convinced that recent international financial developments have reduced the effectiveness of monetary policy. His argument is that what is crucial is how changes in the OCR impact on long-term inflation expectations. He notes these expectations have remained relatively low, albeit with some sign of modest upward drift in the current cycle. Nevertheless, he suggests the effectiveness of monetary policy might be enhanced through several changes to the current framework. First, he advocates replacing the inflation target band with a point target. This suggestion, in some guise, found favour with many of the Forum participants. Second, he favours replacing the single-decision maker arrangement with a Monetary Policy Committee, along the lines of the Bank of England.<sup>3</sup> Third, Buiter advocates taking the "flexible" out of "flexible inflation targeting" and replacing it with lexicographic inflation targeting. Finally, Buiter is very critical of the Bank's foreign exchange intervention framework. He is sceptical that intervention can work to reduce exchange-rate volatility and suggests it raises the temptation to try and target both inflation and the nominal exchange-rate, a policy well known to be infeasible. All these suggestions are

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<sup>2</sup> Reserve Bank of New Zealand and The Treasury (2006), "Supplementary Stabilisation Instruments," April. Wellington. <http://www.treasury.govt.nz/ssip/>.

<sup>3</sup> This recommendation is not based on any particular concern with historical policy. Rather, he sees a Committee structure as reducing the risk of getting a "bad draw" for a Governor.

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broadly endorsed by Pierre Siklos, who further claims that intervention decisions linked to whether the exchange-rate departs excessively from fundamentals is confusing because of the lack of reliable evidence of the factors that determine “fundamentals.”

In the fiscal policy area, Buiters thinks there is scope for policy to make a larger contribution to cyclical stabilisation, both by increasing the effectiveness of the automatic fiscal stabilisers and, somewhat more speculatively, by more active use of discretionary fiscal policy. Regarding the former, Buiters proposes (a) broadening the GST base<sup>4</sup>, (b) taxing capital gains at the same rate as other income, and (c) index-linking income, corporate and capital gains taxes. To enable active discretionary fiscal policy, Buiters suggests the GST rate could be adjusted by raising during a boom and lowering in a downturn. He suggests designing a policy rule to guide variations in the GST rate and delegating this policy to an operationally independent GST Committee. Siklos is not in favour of this idea due to the “daunting” technical issues associated with implementing an effective counter-cyclical GST policy. Nor is he in favour of Buiters’s other proposals to enhance automatic fiscal stabilisers on the grounds that, while all these ideas may have some economic merit, they are not likely to be politically acceptable.

## **New Zealand’s monetary and exchange-rate policy in international comparison**

*Authored by Klaus Schmidt-Hebbel (Central Bank of Chile),*

*Discussion by John Edwards (HSBC)*

Klaus Schmidt-Hebbel utilises a range of cross-country empirical techniques to examine New Zealand’s macroeconomic outcomes and policy performance. The empirical work suggests that the strength and nature of the monetary policy transmission process in New Zealand is not significantly different to the group of comparable economies (Australia, Canada, Norway, Sweden and Chile). He also finds that the RBNZ has, on average, better met its inflation

target objective than most, and performance has improved between 1990-97 and 1998-2005. Nevertheless, he advocates a change in the PTA to incorporate a more precise horizon for the achievement of the inflation target. While John Edwards thinks policy makers can take considerable comfort from these findings, he raises the point that the results pertain to longer term average outcomes and do not negate the real difficulties faced by the RBNZ in the recent period and that the transmission mechanism did seem to take longer than usual. Edwards also notes that the improvement in performance that Schmidt-Hebbel identifies coincides with changes in the PTAs that permit the Bank more flexibility over the horizon in which it brings inflation back to the target range.

A concern often heard in New Zealand, as discussed in Section 1, is that its exchange-rate cycles are damaging for growth. Schmidt-Hebbel confronts this concern, first by reviewing the theoretical and empirical literature. This presents a mixed picture, with conclusions depending on modelling techniques and data samples (with the notable exception of “currency crisis” episodes). Second, he empirically examines whether New Zealand currency cycles have negatively impacted growth. The methodology is based on a recent study that shows currency misalignments can impact growth in an asymmetric way (i.e. significant over or under valuations retard growth, while mild under-valuations improve growth). Schmidt-Hebbel finds that currency misalignments in New Zealand have rarely entered and do not stay long in the “danger territory,” while mild pro-growth under-valuations are apparent. He concludes that real exchange-rate misalignments in New Zealand have not negatively impacted growth.

While not critical of the Bank’s foreign exchange intervention framework, Schmidt-Hebbel is sceptical that foreign exchange-rate intervention can do much to moderate the exchange-rate cycle. Moreover, his empirical analysis weakens the case for intervention even if it were effective. To assist monetary policy in the case of domestic-sourced shocks, he instead thinks policy makers should consider evaluating the scope for fiscal policy and financial policy instruments to play more prominent short-run stabilisation roles. His suggestions include: a Chilean-styled structural

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<sup>4</sup> By eliminating the exemptions for financial services and housing rentals, including the imputed consumption of housing services by owner-occupiers.

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balance rule; pro-cyclical tax rates or specific counter-cyclical spending measures; investing public savings abroad in assets that are negatively correlated to the New Zealand cycle; and issuing public debt indexed to commodity prices as insurance against “sudden stops.”

## External imbalances in New Zealand

*Authored by Sebastian Edwards (UCLA), discussion by William Cline (Institute for International Economics)*

The primary purpose of Sebastian Edward’s paper is to analyse the potential consequences of New Zealand’s balance of payments position. Specifically, he investigates the probability that New Zealand will undergo a costly adjustment, the proverbial hard landing, in the form of a “sudden stop” in capital flows and an abrupt and large reversal in the CAD.

Edwards identifies a number of characteristics of New Zealand’s external position that sets it apart from most other advanced countries. Notably, that the CAD is presently one of the largest in the OECD, and the most important contribution to the CAD tends to be the deficit on net investment income. This in turn reflects the fact that New Zealand’s net international investment position (NIIP) is one of the most negative amongst advanced countries (at around 90% of GDP). Given New Zealand’s close economic relationship with Australia, Edwards investigates how the trans-Tasman relationship affects New Zealand’s external balances. He shows that when trans-Tasman transactions are excluded, external balances are not as large. However, even after making the trans-Tasman adjustment, New Zealand’s present CAD is still almost double the size of what Edwards estimates to be sustainable. William Cline uses a similar approach to support the conclusion that the present position is unsustainable.

Do these facts imply New Zealand is at risk of a sudden stop? One perspective Edwards uses to address this question is the inter-temporal present value model of the current account, which posits that fluctuations in the current account are due to rational consumption-smoothing behaviours in the presence of macroeconomic shocks. Recent research

estimating this type of model on the New Zealand data does not reject consumption-smoothing behaviours. Edwards notes, however, that the recent deterioration in the external trade account is not consistent with the long-term solvency condition in these models, perhaps still implying that the external balance will have to go through a significant correction. Cline is more sceptical that recent behaviours represent optimal consumption smoothing, arguing that the rise in New Zealand’s CAD has been associated with a decline in household saving rather than with a surge in private investment, or as he puts it, a case of “absorption roughing.” Cline argues that New Zealanders are transferring absorption from the future to the present. In doing so, they are imposing an undue welfare burden on future generations and may therefore be politically unsustainable. In this respect, the large CAD and NIIP are a problem.

To quantify the risk of a sudden stop, Edwards utilises a cross-country data set to estimate a probit model of the determinants of the probability that a country will experience an abrupt current account reversal (defined as a reduction in the current account deficit of at least 3% of GDP in a one year period). The model is then applied to New Zealand for the early 2000s and then for 2005-06 when the CAD was larger. Edwards finds that abrupt reversal probabilities have increased, but remain modest. He concludes that the present external balances should not be a cause for great concern - the adjustment to the current account, when it does come, will likely be benign. William Cline is not so sanguine, largely basing his arguments on the implications of the simple arithmetic of sustainable external debt.

While Edwards proffers some suggestions for improving the conduct of monetary policy, Cline is sceptical that monetary policy can effectively change the savings and current account situation, principally because the impact of changes in the interest rate on the current account are likely to be ambiguous. Rather, Cline considers that policy should focus on maintaining or increasing the fiscal surplus and on policy-settings that affect incentives to both invest in and supply residential property, fund residential property through foreign investment, and incentives that impact on the willingness of foreigners to invest in New Zealand

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financial instruments. He also suggests that New Zealand policy makers agree on a ceiling NIIP and integrate a serious intention of staying within that limit.

### 3 Panellists comments

#### Val Koromzay (OECD)

Val Koromzay stresses that New Zealand's policy frameworks are sound and stand out favourably in international comparisons. He warns that in asking whether they could be adjusted to reduce volatility, such adjustment could come at the expense of losing what New Zealand presently has.

Koromzay agrees with Buiters' and Allsopp's views that among the tasks assigned to monetary policy, inflation control should have priority. He is not in favour of systematic intervention in currency markets, arguing it poses a serious risk to being able to sustain a clear, effective and credible communication strategy for monetary policy. Koromzay therefore sees little need to change the present monetary policy framework, and thinks there is little that monetary policy can do to moderate exchange-rate swings. Instead, to minimise the potential costs of volatility he advocates focusing on maximising the flexibility of product and labour markets.

Koromzay regards New Zealand's present financial supervision and regulatory framework as sound, and considers financial market supervision to be too important a matter to subject it to secondary, so called "macro-financial" considerations. He also sees few opportunities for fiscal policy to lean more strongly against macro fluctuations. In his view discretionary fiscal policy is not to be recommended; and stronger "automatic fiscal stabilisers" can only effectively be achieved by raising tax and spending, and these are decisions that should not be made on the basis of smoothing cycles. Koromzay does think, however, there is merit in considering an ex ante fiscal rule based on "normal" terms of trade that specifies how the budget will deal with revenue windfalls and shortfalls.

With regard to structural policies that may help lift national saving and reduce potential external vulnerability, Koromzay rejects suggestions to make foreign credit more expensive.

Nor does he think the international evidence supports tax incentives as an effective means of raising aggregate savings. Koromzay does agree with Buiters that increasing property taxes has merit, although the political-economy of such moves is daunting and would require "extra-ordinary political leadership."

#### Steve Dunaway (IMF)

Steve Dunaway suggests, like Koromzay, that some of the factors that lead to the large macroeconomic imbalances in New Zealand over the last five years are likely to have been one-off factors. Specifically, the strong inflow of foreign savings and possibly also the degree to which the New Zealand cycle was out of synch with the international cycle. He acknowledges international financial integration may mean that the way monetary policy impacts has changed, and policy makers will need to be alert to this change, but it does not mean that monetary policy is ineffective.

Dunaway is not persuaded by the arguments for greater emphasis on discretionary counter-cyclical fiscal policy. He does, however, think there is merit in some form of counter-cyclical fiscal rule of the types discussed by Klaus Schmidt-Hebbel and Val Koromzay. He argues a similar, though less explicit, approach is in fact already being practiced in New Zealand. Citing the example of the experience of the US during the late 1990s, unlike Koromzay, Dunaway thinks there is a place for financial regulatory and supervision policy to play a role in preventing excesses in the financial sector during economic expansions.

#### John McDermott (Victoria University of Wellington)

John McDermott sees no obvious missing instrument that would improve monetary policy performance. He does, however, agree that there may be scope for some marginal improvements and that is where the focus should be. He raises several specific issues.

McDermott disagrees with Buiters' analysis that plays down the importance of external terms-of-trade shocks to New Zealand. He suggests these are important given

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New Zealand's economic structure, and this structure means that the business cycle will be sensitive to changes in the terms of trade, as research has shown.

The structure of the New Zealand economy is, in McDermott's view, also relevant to the debate about foreign exchange intervention. He argues that empirical evidence suggests that the large real exchange-rate swings are fundamentally broadly determined by commodity price swings, in which case the exchange-rate plays a buffering role. Like others, he is concerned that direct intervention risks distracting attention from the core role of monetary policy.

McDermott is not in favour of introducing prudential instruments to complement monetary policy. He suggests the information required to do this efficiently is not adequate and it will introduce distortions to the credit market. Nor does he regard the CAD as a problem. Even though some of the recent growth in the deficit is due to consumption growth, a significant proportion is durables consumption which he suggests is a form of investment in a future stream of household services. That is, some of Cline's so-called "absorption roughing" is a form of investment.

## 4 Possible areas of future policy research

The key policy issues that arose in the Forum can be summarised under four broad topics: the role and conduct of monetary policy; the stabilisation role of fiscal policy; exchange-rate volatility and implications for the economy; and structural policies (including taxation structures) that may be impacting on housing demand and household savings. In what follows we suggest possible areas for future policy research under each of these topics.

### The role and conduct of monetary policy

A number of speakers at the Forum raised questions about monetary policy. There are five broad areas of investigation in this sphere:

- What has been the recent impact of monetary policy on the business cycle, and on exchange-rates?

- Inflation expectations have risen over the recent cycle. Is this simply a cyclical increase or is there evidence that inflation expectations have adjusted to a higher trend rate of expected inflation?
- Does the recent experience suggest there is a need to change any of the PTA parameters? Examples to consider might include:
  - (i) sharper specification of the medium-term time frame for targeting inflation;
  - (ii) the attention given, within an hierarchical structure, to the exchange-rate, interest rates and GDP volatility; and
  - (iii) consideration of whether the target inflation rate remains a band or instead is re-specified as a point target.
- Does the decision making structure for monetary policy matter in practice?
- Is there scope to more effectively communicate New Zealand economic conditions and monetary policy to international financial markets?

### The stabilisation role of fiscal policy

A debate running through the Forum revolved around the merits of more active fiscal stabilisation to complement the inflation targeting role of monetary policy. There are three issues for analysis under this theme:

- What has been the macroeconomic impact of fiscal policy over the business cycle? Has fiscal policy exacerbated or ameliorated cycles in GDP, interest rates, the exchange-rate and the current account?
- What are the merits and implications of a more active stabilisation role for fiscal policy, over and above the effect of automatic stabilisers? How should these short-run objectives be weighed up against long term sustainability and economic growth objectives?
- If there is evidence that fiscal policy has exacerbated the business cycle, or if there is a case for more activist fiscal policy, what type of institutional arrangements should be considered?

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## Exchange-rate volatility

A popular assumption is that exchange-rate volatility is costly and should be managed although, as Klaus Schmidt-Hebbel discusses, the economic case for this is far from obvious. Four broad areas of analysis could be undertaken to shed more clarity in this area:

- What do the stylised facts tell us about New Zealand exchange-rates and factors influencing the exchange-rates? What is the contribution of domestic policy (monetary and fiscal policy) versus other “suspects” such as commodity prices, growth differentials, and swings in international investor sentiment?
- Does the New Zealand exchange-rate buffer or amplify shocks? Are there any factors influencing the exchange-rate that systematically “amplify” movements in the exchange-rate, and if so, can policy do anything about this?
- What are the implications of exchange-rate cycles and volatility for longer-term productivity growth and the structure of the New Zealand economy? Are the effects asymmetric? Can costs be found at the micro-firm level if not in aggregate?
- Are there gaps in the range of financial market products available to New Zealand firms that may help them hedge against currency volatility? If so, is there a role for policy to help create a market for these types of products?

## Structural policy issues relating to residential investment

Although the brief of the Forum participants was to focus on policy options for smoothing the economic cycle, a number highlighted that the New Zealand cycle may be affected by underlying structural policies that give rise to low household savings rates and (possibly) a concentration of wealth in housing assets. Policy issues that may warrant further attention here include:

- To what extent are New Zealanders “overweight” in housing? Can taxation structures be altered to reduce any biases?

- Do the potential distortions in the structure of household balance sheets increase the vulnerability of households and the financial sector to adverse shifts in investor sentiment, interest rates and the exchange-rate? If so, are there any implications for prudential policies?
- Do flows in net migration exacerbate the residential investment cycle? Is it possible to improve the stability and/or predictability of migration flows? Can regulatory structures be improved to reduce the cost and timeliness of supply of residential property?
- Do taxation structures contribute to the ‘amplifier’ effects of housing demand over the cycle, generating a propensity for New Zealand households to pay relatively high real interest rates?

## 5. Concluding remarks

The recent business cycle in New Zealand has tested macroeconomic policy stabilisation limits. In part, this may have reflected an unusual confluence of shocks. Rising international commodity prices, including New Zealand’s agriculturally-based basket, are not normally seen in an environment of weak growth in the G7 economies. Long-term interest rates do not normally stay at historic lows when policy rates are rising. House prices do not usually increase at rates of plus 15 per cent per annum over a sustained period. However, the recent experience bears some resemblance to the cycle in the mid-1990s, where the exchange-rate also rose to levels well beyond its “fundamentals” as monetary policy leaned against similar domestically-sourced inflation pressures. And similar stresses were placed on the externally exposed sectors of the economy.

The purpose of the policy forum at which the papers in this volume were presented was to test the robustness of New Zealand’s macroeconomic policy frameworks and to evaluate opportunities to improve those frameworks. Although the overall conclusion that emerged from this forum was that the essential elements of New Zealand’s macroeconomic policy frameworks are fundamentally sound, there were also many questions asked and ideas raised that may warrant deeper investigation.

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The complex issues involved imply many of these questions have no straight forward answers. Trade-offs that are difficult to quantify with any degree of precision are inherent, for example, in policy suggestions to modify savings incentives or use fiscal policy more actively to stabilise the cycle. In addition, the implementation of many of the suggestions

would require careful consideration of their impact on existing institutional frameworks. Given these difficulties, perhaps the most scope for advancing understanding of the issues will derive from applying an inter-disciplinary approach to the questions, potentially involving several arms of Government.

### DISCUSSION PAPERS

DP2006/08

#### What do robust policies look like for open economy inflation targeters?

*Kirdan Lees, September 2006*

Typical New Keynesian open economy models suggest a limited response to the exchange rate. This paper examines the role of the open economy in determining robust rules when the central bank fears various model misspecification errors. The paper calibrates a hybrid New Keynesian model to broadly fit the economies of three archetypal open economy inflation targeters - Australia, Canada, and New Zealand - and seeks robust time-consistent policy. We find that policies robust to model misspecification react more aggressively to not only the exchange rate, but also inflation, the output gap and their associated shocks. This result generalizes to the context of a flexible inflation targeting central bank that cares about the volatility of the real exchange rate. However, when the central bank places only a small weight on interest rate smoothing and fears misspecification in only exchange rate determination, a more cautious policy is recommended for all but an exchange rate shock. It is also shown that the benefits of an exchange rate channel far outweigh the concomitant costs of uncertain exchange rate determination.

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## NEWS RELEASES

*24 August 2006*

### **Saint Kentigern College Wins Reserve Bank Economics Challenge**

Seventy-two schools, spanning the length of New Zealand from Springbank School in Kerikeri to Invercargill's Southland Girls' High School, entered this year's Reserve Bank Monetary Policy Challenge (MPC). Then teams from 43 schools met the challenge in regional competitions held in Auckland, Hamilton, Wellington, Christchurch and Dunedin.

Today, Auckland based Saint Kentigern College students Neeharika Chowdhary, Lisa Li, Han Chen, Tom Devereux and Jonathan Spence won the National Final of the MPC held at the Reserve Bank in Wellington.

Burnside High School (Christchurch) were placed second Hutt Valley High School (Wellington) were third, and John McGlashan College (Dunedin) and Hillcrest High School, (Hamilton) received distinction awards.

Grant Spencer, Head of Economics and Assistant Governor at the Reserve Bank and the Challenge's head judge, was impressed with the overall standard of the teams and their knowledge of economic concepts.

The MPC is designed to expand Year 11-13 economics students' understanding of monetary policy. Like economists working in the Reserve Bank, the teams analysed the economy and inflation forecasts. On the basis of this analysis they offered a mock-setting of the Reserve Bank's key interest rate, the Official Cash Rate (OCR).

The Challenge encourages the use of inquiry learning techniques and is designed to be an extension of the secondary school level economics curriculum. Grant Spencer commented: "The Challenge gets students thinking about how New Zealand's economy works, what influences it and the impacts of economic policy. It confronts students with the difficulties and considerations involved in a decision-making process."

Each team member that participated in the final received a \$50 book voucher and a certificate. Saint Kentigern College received \$2,812 in prize money. Second placed Burnside High School received \$1,620 and \$810 was awarded to Hutt Valley High School for third place.

The winning team has been invited back to the Reserve Bank to attend the September 2006 Monetary Policy Statement release; where they will witness an OCR announcement, first hand.

*30 August 2006*

### **RBNZ MPS and OCR dates for 2007**

The following is the Reserve Bank's schedule for the release of its quarterly Monetary Policy Statements and Official Cash Rate announcements for 2007. Each Monetary Policy Statement includes within it an OCR announcement, so, as usual, in total there will be eight OCR announcements during 2007. Each announcement will be made at 9.00 am on the day concerned.

25 January	OCR announcement
8 March	<i>Monetary Policy Statement</i>
26 April	OCR announcement
7 June	<i>Monetary Policy Statement</i>
26 July	OCR announcement
13 September	<i>Monetary Policy Statement</i>
25 October	OCR announcement
6 December	<i>Monetary Policy Statement</i>

The Reserve Bank reserves the right to make changes to this schedule, if required due to unexpected developments. In that unlikely event, the markets and the media will be given as much warning as possible.

*6 September 2006*

### **Reserve Bank museum opens**

The Reserve Bank Museum will be officially opened tonight by Peter Hillary, on behalf of Sir Edmund Hillary, the only living New Zealander portrayed on New Zealand's bank notes.

Situated on the ground floor of the Reserve Bank of New Zealand building in Wellington, the museum is the first of its kind, focussing on the New Zealand economy, the role of central banking, and the production of currency.

The museum is designed to inform people about the heritage of a unique New Zealand institution and how the economy works.

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The past and present economy is brought to life, through the use of information panels and a range of interactive displays. For the first time ever people can see the Bank's valuable collection of historic notes and coins.

It is open Monday to Friday, 9.30am to 4.00pm, except public holidays and on special occasions.

**8 September 2006**

### **September 2006 Reserve Bank *Bulletin* released**

The Reserve Bank today released the September 2006 issue of the Reserve Bank of New Zealand *Bulletin*.

To mark the opening of the Reserve Bank museum, the first article in the *Bulletin* looks at the events leading to the establishment of the Reserve Bank in August 1934. The article looks at the forces that culminated in the establishment of the Bank, which included the specific pressures created by the Great Depression, as well as a push by Britain to see its Dominions establish their own central banks.

The second article discusses some recent changes to the specification of the inflation process in the Bank's main policy model (known as the Forecasting and Policy System or FPS). The article explains how recent findings have been used to guide the redesign of the inflation system within FPS.

The final article compares the Bank's projections for key economic variables with forecasts made by other forecasters over the past three years. The article finds that the Bank's forecast performance over this period has been broadly comparable to that of other forecasters. However, in the case of inflation and short-term interest rates, the Bank's forecasts were slightly better than the average of other forecasts.

**11 September 2006**

### **It's time to get digging**

It's been over a month since the introduction of smaller, lighter coins. The Reserve Bank expects over 300 million of the old coins to be returned. Results so far are encouraging,

but with the old coins ceasing to be legal tender from 1 November, it's never too early to get digging.

Most of us have got used to the lighter and smaller 10, 20 and 50 cent coins that came into circulation at the end of July, and no one seems to really be missing those heavy old coins (especially the 50s!).

But while you may not want the old coins, the Reserve Bank does. To date just over 200 million old coins have found their way back to the Bank - mainly through people using them, or banking them. The old coins are sold to an overseas company which melts them down and sells reminted blank coins all around the world.

From 1 November, retailers need no longer accept the old coins as payment. However, the coins can always be redeemed at the Reserve Bank in Wellington. So if you don't want to be stuck with loads of old shrapnel, the time has come to rifle behind the couch cushions and do a sweep of the car glove box. You may want to put aside an afternoon - it's estimated the average household has an astonishing 185 old coins.

Since 1967 the Reserve Bank has issued more than a billion of the old 'silver' coins (which are actually a mix of copper and nickel). Based on what happened when the Euro was introduced, the Bank expects about 75 percent of coins stored at home and in purses and wallets to be returned.

To find out how many silver coins people use in their day-to-day activities, and how many silver coins are sitting in piggy banks and jam jars across New Zealand, the Reserve Bank commissioned the market research company ACNielsen to carry out some research. This helped estimate how many new coins needed to be minted and how many old coins were likely to be recovered.

After surveying more than a thousand households, the study estimated there are almost 250 million silver coins (weighing, should you be interested in the minutiae of such things, 1,584 tonnes) stored in the nation's homes. That's four times as many as we have in our purses and wallets to use each day, and 10 times as much as is held in banks. The average value of each household stash is slightly more than \$26 and totals \$35m nationwide.

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However, it is somewhat misleading to speak of an 'average' household because it appears some of us are coin hoarders and some of us definitely are not. An informal survey of 100 people found that just two households held a third of all the silver coins amassed - 5,000 between them.

And the ACNielsen study confirmed that 20 percent of the population have few if any coins stored, while at the other end of the scale, 20 percent have an average of 642 coins which represents almost 70 percent of the total.

The study also looked at how often people empty their store of coins and found that those of us who have only one or two coins lying around use them about once a week. However, those who had stored over 80 coins, only cleared their stash out once a year. Ten percent said they 'never' cleaned out their nest egg.

Of those who did regularly empty their stored coins, half spent them in a shop, almost 40 percent banked them, while the remainder did other things with the coins, like give them to the grandchildren or use them in vending machines, and 9 percent gave the stored coins to charity.

Then there's the case of the disappearing coins. Each year, about 25 million coins simply vanish. While we don't know for sure, the Reserve Bank suspects many of them go off-shore in the pockets and wallets of tourists.

So what do you do when you round up your old 185 silver coins? You can take them to a bank or you can use them. But remember that the Reserve Bank Act says you cannot pay completely in silver coin for anything over \$5, so don't try to be clever with a bucket-load of 50c coins to pay your speeding fine.

You only have a few weeks left to locate and use those old coins - there's never been a better time to sweep behind the couch!

**14 September 2006**

### **OCR unchanged at 7.25 percent**

The Official Cash Rate (OCR) will remain unchanged at 7.25 percent.

Reserve Bank Governor Alan Bollard said: "The New Zealand economy continues to show resilience. As reported in earlier statements, we have seen clear signs of easing activity and a rebalancing of demand from the domestic to the external sector since late last year. However, economic activity appears to have been stronger than expected through the first half of 2006, with the expansion of employment particularly surprising. Net exports and Government spending have contributed to the buoyancy in activity, while the easing in household consumption has been more moderate than projected. Similarly, while the housing market has slowed, it continues to exhibit momentum. We expect further dampening effects on demand from high oil prices and higher effective mortgage rates over the period ahead. But, even allowing for these effects, we see more inflation pressure than in earlier reviews.

"With overall resource pressures easing more gradually than forecast, annual inflation is not expected to fall below 3 percent until late 2007. Oil price increases and the depreciation of the exchange rate earlier in the year have pushed headline annual inflation to 4 percent in the June quarter. Inflation expectations have continued to drift upwards, influenced by the rising headline inflation numbers. While second-round flow-on effects have so far been limited, this remains a risk given the persistence of demand and labour market pressures. We assume that wages and prices are not unduly influenced by the short-term peak in headline inflation.

"Given the continued strength of medium-term inflation pressures, the outlook for monetary policy has become more finely balanced. With inflation now taking longer to move comfortably within the target band of the Policy Targets Agreement (PTA), there is little leeway to withstand further surprises to medium-term inflation pressures. In these circumstances, we are less confident that no further policy tightening will be required in this cycle. In this regard, we will want to be clearer about the economic situation and

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outlook. However, there is clearly no prospect of an OCR cut for some considerable time.”

*7 September 2006*

### **Decline in household savings rate remains a concern**

The Reserve Bank today released a paper entitled *Household Savings and Wealth in New Zealand*. The paper was prepared as background for a presentation by Reserve Bank Governor, Alan Bollard, to the New Zealand Institute of Finance Professionals in Wellington.

Despite much discussion on the subject of household savings and wealth in recent years, and a raft of data from recent surveys, there are still unanswered questions around this important topic. A key issue is why the household savings rate, as measured by Statistics New Zealand, has declined markedly over the past 20 years. This is an issue that the Reserve Bank has been devoting much of its research effort to recently.

The paper discusses a range of factors that may account for the decline in saving. There is the possibility that the measure of household income used to calculate savings is understated. Other factors include the influence of financial liberalisation in the 1980s, the strong labour market, demographic factors, the effects of various cash injections (such as migrant transfers) on the household sector, and the influence of sizeable increases in asset prices on spending.

While saving has declined, the net worth of the household sector - the value of household assets less liabilities - has increased dramatically, almost doubling since 2001. This increase in net worth has been dominated by large increases in the market value of the housing stock, which in turn have been driven by rising house prices. Many households appear to be relying on capital appreciation in order to accumulate wealth.

For many homeowners, the wealth associated with rising house prices is unrealised. However the evidence suggests that many households may view this increase in wealth as ‘in the bag’ and may have lowered their savings from current income as a result.

The paper notes that some households appear to have been actively withdrawing equity from housing either by selling properties or by borrowing more on properties that they own. This housing equity withdrawal may have fuelled consumption spending.

The Bank’s work to date indicates that significant housing equity withdrawal has occurred in the New Zealand economy in recent years, coinciding with a very strong housing market. Over the past four years, household equity withdrawal is estimated at around \$7 billion. Not all of this equity withdrawal is likely to have been spent, at least in the short term. A sizeable portion has probably been used to purchase financial assets, thereby having no immediate impact on consumption or savings. However, the conversion of housing equity into liquid assets makes it likely that a significant proportion of these funds are eventually spent.

The paper notes that recent borrowing to support higher asset prices has largely been financed from abroad. The rise in gross indebtedness creates potential vulnerabilities for both borrowers and lenders, even if the higher debt levels go hand in hand with higher asset prices. These risks relate to potential changes in interest rates or debt servicing ability, changes in the value of the security against which the lending is undertaken, and the continuing willingness of overseas parties to provide funds.

The ageing of the population could also present some challenges. As the population ages and more households attempt to realise wealth built up through capital gains, doing so will require that there be enough willing and able new buyers of these assets at current (or higher) prices. However, an increase in sellers as the baby-boomer generation retires over the next ten years coupled with fewer new entrants to the housing market could potentially apply some downward pressure to house prices.

The upshot of this analysis is that New Zealanders’ heavy reliance on house price appreciation to accumulate wealth carries risks. In general, policies aimed at encouraging a more diversified savings strategy on the part of households, and which reduce reliance on capital appreciation, seem sensible.

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**4 October 2006**

### **Reserve Bank releases Annual Report**

The Reserve Bank today released its 2005-2006 Annual Report. This covers the year to 30 June 2006, and includes the Board of Directors' Report on the Bank's performance.

Reserve Bank Governor Alan Bollard said the last year had been particularly challenging. Monetary policy had had to contend with more persistent oil price increases and stronger economic activity than anticipated. Domestic inflation pressures had remained strong during the year.

"Monetary policy has been clearly focused on ensuring inflation will return to within the 1 to 3 percent target band in the medium term," Dr Bollard said.

In banking supervision, the Bank continued to implement policies on key regulatory issues: outsourcing, the Basel II capital adequacy regime for banks, local incorporation and bank failure management. It participated in government reviews of regulation of non-bank financial institutions.

"We also addressed liquidity pressures in the settlement system by successfully introducing a new liquidity management regime," Dr Bollard said.

The Bank finalised preparations for the introduction of smaller, lighter 10, 20, and 50 cent coins on 31 July 2006.

A heritage museum was recently opened to the public, explaining the Bank's role in the New Zealand economy through an array of static and audio-visual media, as well as displaying unique and valuable banking artefacts.

"An Annual Report is inevitably about how an organisation has spent its resources," Dr Bollard added. The Bank spent a net \$35.9 million on activities covered by the Bank's Funding Agreement, which was 8 percent below the \$39 million in the Agreement. The Bank generated a surplus of \$253.9 million. A dividend of \$410.0 million will be paid to the Crown.

The Annual Report can be viewed on the Reserve Bank website ([www.rbnz.govt.nz](http://www.rbnz.govt.nz)).

**0 October 2006**

### **Dig out your old coins - three weeks to go**

With three weeks to go, the Reserve Bank and the Retailers Association are encouraging people to dig out their old 50, 20, 10 and 5 cent coins.

To date just over 270 million old coins have found their way back to the Reserve Bank - mainly through people using them, or banking them, said Reserve Bank Currency Manager, Brian Lang.

"But there are more out there. Since 1967 the Reserve Bank has issued more than a billion of the old 'silver' coins and it is estimated the average household had an astonishing 185 old coins before we introduced the new coins."

From 1 November 2006, the old 50, 20, 10 and 5 cent coins will no longer be legal tender, which means retailers do not have to accept them as payment for goods. "As part of the transition process, we are encouraging our members to stop giving out old coins as change," says John Albertson, Chief Executive of the New Zealand Retailers Association.

So if you don't want to be stuck with loads of old coin - there's never been a better time to empty your coin jars, sweep the car glove box and rummage behind the couch cushions.

**16 October 2006**

### **Reserve Bank and The Treasury release book**

The Reserve Bank of New Zealand and The Treasury released today a book entitled "Testing stabilisation policy limits in a small open economy". This book contains the proceedings of a conference held in Wellington on June 12th this year. The conference included keynote papers and policy reviews by overseas experts in monetary and fiscal policies, plus a panel discussion by experts from the International Monetary Fund, the Organisation for Economic Cooperation and Development and Victoria University of Wellington. The brief of these experts was to critically review New Zealand's macroeconomic policy frameworks and consider whether alternative, possibly non-conventional, policy tools might be needed to better manage inflation, the exchange rate and economic growth over the business cycle. Some of the

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issues discussed at the Forum were those reviewed in the Supplementary Stabilisation Instruments report released earlier in the year.

The conference took place in the context of the increasing macroeconomic imbalances that have emerged in New Zealand over the past few years. While some of these imbalances have also been seen in other relatively fast growing economies, including Australia and the United States, this does not mitigate concerns over the eventual process of adjustment and potential implications for longer-term growth.

The overall assessment of the invited speakers and discussants at the conference was that the essential elements of New Zealand's macroeconomic policy institutions are sound and remain appropriate. Suggestions offered to potentially improve macroeconomic policy frameworks were mainly incremental in nature. Some participants also emphasised that swings in exchange rates and fluctuations in current account balances are often an essential part of the processes of adjusting to domestic and international shocks. Further, some expressed the view that recent international developments and the way they have impacted on New Zealand may have been unique.

Conference participants did not suggest, however, that policy makers in New Zealand can be complacent about the economic outlook or the role of macroeconomic policies in supporting improved long term economic performance. In addition, there was a concern among some that the current configuration of structural policy settings may act to amplify the effects of some of the shocks that hit the economy and thus contribute to the build-up of imbalances and pressure on macroeconomic policy.

The conference discussion suggested several areas of policy that warrant further scrutiny, including issues to do with (i) the role and conduct of monetary policy, (ii) the stabilisation role of fiscal policy, (iii) exchange rate behaviour and potential effects on productivity and (iv) structural policies, particularly as they relate to savings and incentives to invest in residential housing.

The material in this volume provides much food for thought for policy makers in New Zealand, and indeed policy

makers in any small open economy charged with running independent policies in an increasingly integrated world.

#### *24 October 2006*

### **The end is nigh for old coins**

In one week - 1 November - the old 5, 10, 20 and 50 cent coins will no longer be legal tender, which means retailers need no longer accept them as payment for goods.

The Reserve Bank is encouraging people to dig out their old 50, 20, 10 and 5 cent coins and either use, bank or donate them.

So far, just over 280 million coins have been returned, but there are more out there, said Reserve Bank Currency Manager, Brian Lang. "Since 1967 the Reserve Bank has issued more than a billion of the old 'silver' coins."

"So if you don't want to be stuck with loads of old coin - there's never been a better time to empty your coin jars, sweep the car glove box and rummage behind the couch cushions", Mr Lang concluded.

#### *1 November 2006*

### **Westpac is now locally incorporated**

The Reserve Bank has registered Westpac New Zealand Limited as a registered bank. Westpac New Zealand Limited is a New Zealand incorporated subsidiary of Westpac Banking Corporation.

The establishment of Westpac New Zealand Limited means that, in line with the Reserve Bank local incorporation policy, all systemically important banks operating in New Zealand are now locally incorporated.

Until now Westpac's New Zealand business has been conducted by a branch of the Australian incorporated bank. Agreement was reached with Westpac in late 2004 to incorporate in New Zealand. Since then the Reserve Bank has worked closely with Westpac to assist the local incorporation process.

Westpac New Zealand Limited will conduct the retail banking business previously conducted by the New Zealand branch of Westpac Banking Corporation. The branch will continue

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to undertake wholesale banking business in New Zealand and will remain a registered bank.

Reserve Bank Governor Alan Bollard commented, local incorporation provides, among other things, a well-understood legal framework for the conduct of business in New Zealand and a local board to act in the best interests of the New Zealand bank.

Further details on the Reserve Bank's local incorporation policy are available in the Statement of Principles: Bank Registration and Supervision

*26 October 2006*

### **OCR unchanged at 7.25 percent**

The Official Cash Rate (OCR) will remain unchanged at 7.25 percent.

Since our September Monetary Policy Statement, there has been a significant improvement to the near-term inflation outlook, mainly as a result of the recent decline in oil prices. We expect lower fuel prices, together with the recent rebound in the exchange rate and Statistics New Zealand's reweighting of the CPI, to give an unusually low December quarter CPI increase. These are temporary factors, however, and, apart from the likely favourable impact on inflation expectations, they are not expected to impact materially on medium-term inflation.

Indicators of medium-term inflation pressures remain significant. Overall GDP growth in the second quarter was consistent with our September projections and the continued rebalancing of demand away from domestic spending towards exports. Continued strength in most of New Zealand's international markets and a return to a downward trending NZ dollar exchange rate should support this rebalancing. On the domestic side, however, the housing market remains resilient, supported by net inward migration and ongoing mortgage credit expansion at low interest margins. Further, we could see a pickup in household consumption in the third quarter as a result of the drop in petrol prices. On balance, inflation pressures appear to be abating gradually. But some indicators of resource pressures,

such as high capacity utilisation and a tight labour market, continue to signal caution.

Taking all of this into account, monetary policy pressure will need to be maintained for some time to bring inflation back sustainably within the 1-3 percent target band. In this regard, the policy outlook is little changed from our September statement. The balance of inflation risks remains skewed to the upside. Further monetary policy tightening cannot be ruled out, and any easing of policy remains a considerable way off.

*9 November 2006*

### **Low equity investment leaves New Zealand vulnerable**

New Zealanders' low investment in local businesses leaves the economy more vulnerable to shocks and constrains the country's growth prospects, Reserve Bank Governor Alan Bollard said today.

Speaking to the PricewaterhouseCoopers Annual Tax Conference in Auckland, Dr Bollard said New Zealand investors' preoccupation with housing assets has been at the expense of other assets normally found in household portfolios, such as equities.

The gap has been filled by foreign equity, which brings many development advantages for large businesses, but is less conducive to supporting start-ups and other small businesses. It has also left the economy more vulnerable.

Holdings of equity by New Zealand households are particularly low by OECD standards, with direct holdings of both domestic and foreign equities making up no more than about 4 percent of total assets.

"This limits high-growth, high-risk firms' access to growth capital, particularly important in a market where home bias is strong due to the inevitable uncertainties in assessing start-up / growth firms."

Instead, New Zealanders have spent heavily on investor housing - houses and apartments beyond their own homes - investments stimulated by expectations of exciting capital gains rather than exciting rental yields."

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This exposure to housing is being financed by increased mortgage debt from the banking system. The average New Zealand household's debt has risen from around 100 percent of disposable income to around 170 percent over the last five years, imposing a heavier mortgage-servicing burden.

"The typical household now commits about 13 percent of its disposable income to service debt. This makes these households much more vulnerable than they used to be to adverse events, such as increases in unemployment and rising interest rates. These debt servicing rates are significantly higher than in other OECD countries."

For the country overall, this preference for housing investment and debt has worsened the current account deficit and substantially increased net foreign claims on New Zealand. Our foreign debt means we are inevitably more exposed to changes in global interest rates or sudden shifts in the investment preferences of overseas investors. At times, this can make it more challenging to maintain price stability and avoid unwanted swings in economic activity. This pattern of household investment also impacts economic performance."

**15 November 2006**

### **Reserve Bank releases *Financial Stability Report***

The Reserve Bank today released its Financial Stability Report, a twice-yearly report that assesses the health of the New Zealand financial system. The report covers developments in financial institutions, foreign exchange and debt markets, and payments systems. It also comments on recent financial policy developments.

The Reserve Bank Governor, Dr Alan Bollard, commented: "Banks continue to appear well capitalised and continue to return strong profits. However, banks are competing in an aggressive manner, accepting lower margins and higher risk loans in their efforts to retain and grow market share in mortgage lending."

"With the household sector already saddled with considerable mortgage debt, any increased strain to service these debts, such as reduced incomes or higher interest

rates, and unexpected decline in house prices, would impact negatively on the quality of banks' balance sheets.

"The Reserve Bank will be watching such developments closely, in particular as it implements new capital standards for banks that aim to ensure they have a sufficient buffer against unexpected losses," he said.

Dr Bollard said that "the Bank continues to expect the New Zealand economy will rebalance through a gradual slowdown in domestic spending and a reduction in the current account deficit."

"However, New Zealanders continue to be heavy users of foreign savings to largely finance housing. This leaves us vulnerable to any change in global perceptions of New Zealand's credit worthiness. A turn for the worse in such perceptions would push New Zealand's longer-term interest rates up and possibly force a more rapid rebalancing in the current account deficit than is comfortable," he said.

"The New Zealand foreign exchange market is also experiencing a high level of foreign investor attention as global investors make use of New Zealand's interest rate differentials. Given the inherently cyclical nature of such flows, a shift in expected interest rates globally could lead to an outflow of speculator funds and volatility in the New Zealand dollar exchange rate."

Dr Bollard concluded by noting that legislation has recently been passed in New Zealand, and is progressing in Australia, that formalises each other having regard to trans-Tasman financial stability when implementing policy.

"The legislative changes represent a pioneering step in cross-border banking supervision. They draw a realistic balance between the desirability of trans-Tasman cooperation and the necessary independence of each prudential regulator within their national boundaries."

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7 December 2006

### OCR unchanged at 7.25 percent

The Official Cash Rate (OCR) will remain unchanged at 7.25 percent.

Reserve Bank Governor Alan Bollard said: "Medium-term inflation pressures remain persistent. While the short-term inflation outlook has improved, we are less optimistic about medium-term prospects. Economic activity has been stronger than expected, given the resilience in domestic demand, and medium-term inflation risks appear weighted to the upside.

"A welcome decline in oil prices has improved the near-term inflation outlook. As foreshadowed in our October OCR Review, we expect to see a very low December quarter CPI figure. Annual inflation could be as low as 2 percent next year, which should help to restrain inflation expectations and therefore give some assistance in containing medium-term inflation pressures.

"But household spending continues to show surprising resilience. The labour market remains very firm, with continued strong growth in incomes despite some easing in employment in the third quarter. There has been some improvement in business and consumer confidence. The housing market appears to have developed new momentum after slowing in the first half of the year. Houses are now selling as fast as at any time this year.

"Many exporters are feeling pressure from the high exchange rate which, if sustained, could threaten the ongoing rebalancing of the economy. However, primary exporters are getting significant relief from favourable world commodity prices, which are now expected to continue for longer as a result of global supply shortages.

"While overall medium-term inflation pressures have increased, the balance of risks also appears to be on the upside. The housing market could continue to defy predictions of a downturn, and domestic demand could be further boosted by a fiscal expansion over and above the stimulus that is already allowed for in our projections (based on the Government's 2006 Budget).

"Looking ahead, our projections and risk assessment suggest that a firmer monetary policy stance could still be required to maintain downward pressure on inflation in the medium term. Further tightening cannot therefore be ruled out. This will depend on economic outcomes and in particular the emerging trends in housing and domestic demand indicators. Any easing of policy must remain some considerable way off."

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## PUBLICATIONS

*Annual Report*  
*Financial Stability Report*

*Monetary Policy Statement*

Published in October each year.

Published six-monthly. A statement from the Bank on the stability of the financial system. First copy free.

Published quarterly. A statement from the Bank on the conduct of monetary policy. First copy free, subsequent copies \$12.00.

*Reserve Bank of New Zealand Statement of Intent, 2004–2007*

*Snakes and Ladders – a guide to risk for savers and investors*

*Testing stabilisation policy limits in a small open economy: proceedings from a macroeconomic policy forum*

### Recent Reserve Bank Discussion Papers

#### 2006

DP2006/01	Phillips curve forecasting in a small open economy Troy Matheson
DP2006/02	Forecasting substantial data revisions in the presence of model uncertainty Anthony Garratt, Gary Koop and Shaun P. Vahey
DP2006/03	A small New Keynesian model of the New Zealand economy Philip Liu
DP2006/04	Other stabilisation objectives within an inflation targeting regime: some stochastic simulation experiments James Twaddle, David Hargreaves and Tim Hampton
DP2006/05	Should monetary policy attempt to reduce exchange rate volatility in New Zealand? Dominick Stephens
DP2006/06	Family trusts: ownership, size and their impact on measures of wealth and home ownership Phil Briggs
DP2006/07	How costly is exchange rate stabilisation for an inflation targeter? The case of Australia Mark Crosby, Tim Kam and Kirdan Lees
DP2006/08	What do robust policies look like for open economy inflation targeters? Kirdan Lees

Full lists of Discussion Papers are available from Administration, Economics Department. Lists of the Working Papers and the Research Notes can also be obtained from the Economics Department.

### Pamphlets

*Explaining Currency*

*Central banking in New Zealand*

*This is the Reserve Bank*

*Your Bank's disclosure statement – what's in it for you?*

For further information, go to [www.rbnz.govt.nz](http://www.rbnz.govt.nz), or contact:

Knowledge Centre

Knowledge Services Group

Reserve Bank of New Zealand

2 The Terrace, P O Box 2498

WELLINGTON

Phone (04) 4722–029

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## Articles and speeches in recent issues of the Reserve Bank of New Zealand *Bulletin*

Vol. 68, No. 4, December 2005

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A fresh look at the merits of a currency union

Monetary policy and economic performance: the experience of New Zealand

### *Speech*

Imbalances in the New Zealand economy

Vol. 69, No. 1, March 2006

### *Articles*

Towards a framework for promoting financial stability in New Zealand

Changes in the inflation process in New Zealand

Analysis of revisions to quarterly GDP – a real-time database

Economic and financial chronology 2005

Vol. 69, No. 2, June 2006

### *Articles*

Confronting divergent interests in cross-country regulatory arrangements

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Major global developments in the new millennium

Supplementary stabilisation instruments: executive summary

Vol. 69, No. 3, September 2006

### *Articles*

The policy origins of the Reserve Bank of New Zealand

Modelling New Zealand inflation in a Phillips curve

An assessment of recent Reserve Bank forecasts