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Editor's Note

In recent issues of the *Bulletin*, we have broadened the range of subjects discussed, traversing a number of the Reserve Bank's functions, including aspects of the Bank's inner workings that rarely see the light of day. This is a pattern we plan to continue, in recognition that central banks have responsibilities that relate not only to the promotion of price stability, but also to a wider sphere of objectives, including the promotion of a sound and efficient financial system. And we see ourselves having some responsibility to promote greater public understanding on economic and financial issues, particularly in areas that relate to our functions as a central bank.

In the March 2002 issue of the *Bulletin*, we published an article on what is known as the "Taylor rule" – a relatively simple formula devised to explain monetary policy interest rate settings on the basis of the output gap and the extent to which actual inflation differs from the target inflation rate. We noted that the Taylor rule is merely one of a number of possible "monetary policy reaction functions" used by central banks as part of the process of forming a view on where interest rates should be set in order to curb inflationary pressures.

The first article in the June 2002 issue of the *Bulletin* continues this theme, by looking at the way the Reserve Bank's economic model determines an interest rate path for the purpose of economic projections. The article notes that one of the key components of all macroeconomic projections is the projected path for monetary policy – as reflected in the short-term interest rate. Until recently, virtually all projections published by central banks were based on the assumption of a constant nominal interest rate over the projection period, where the interest rate chosen was the interest rate prevailing at the time the projections were prepared. However, there is growing international interest in formulating different ways for describing the actions of monetary policy – so-called monetary policy reaction functions. There is also growing interest in macroeconomic projections that incorporate interest rate responses based on reaction functions. Projections that include interest rate paths drawn from such monetary policy reaction functions are referred to as *endogenous* interest rate projections, which means the projected interest rate is responding to projected movements in other variables within the model.

The Reserve Bank is unique in that we are currently the only central bank that prepares *and* publishes economic projections based on endogenous interest rates – an approach we adopted in 1997. The article outlines the reasons why we believe endogenous interest rate projections are preferable to a constant interest rate assumption and presents the policy reaction function in our model projections, along with the reasons for choosing this specification. The article also discusses how we use the projections in practice.

Although monetary policy is the Bank's main function, our other major area of responsibility is the promotion of financial stability. We do this in a number of ways, including through supervising banks, encouraging strong market disciplines in the financial system and fostering a robust payment system. Another important element in promoting financial stability is encouraging sound corporate governance and risk management in banks. No amount of supervision or regulation by a central bank or supervisory authority will succeed in promoting financial stability unless the people who run the banks and other financial institutions have a commitment to identifying, monitoring and managing their institution's risks. And that is why corporate governance, and the factors that influence it, is so important.

Our second article deals with this issue. It is an amended version of a paper prepared by the Reserve Bank for the Commonwealth Secretariat as a contribution to a technical assistance programme to strengthen corporate governance in the financial sectors of Commonwealth countries. The article deals with the subject of corporate governance in the financial sector and the relationship between corporate governance and the management of banking risks. It also summarises the Bank's approach to strengthening corporate governance in the New Zealand banking system, including the measures adopted in the Bank itself to maintain its own sound governance arrangements.

Continuing with the theme of financial stability, this issue of the *Bulletin* also contains the Bank's annual review of the state of the banking system, drawing on information disclosed by banks in their quarterly disclosure statements. The article notes that the relatively robust economic environment in New Zealand over the last 18 months or so, coupled with sound risk management practises by banks,

appear to have sheltered the banking industry from most of the ill effects of the international economic downturn. Reflecting this, the New Zealand banking industry performed well in 2001. The article notes that banks' after-tax profits increased and the industry remained in a strong financial position, not only in terms of credit ratings, but also in terms of asset quality, capital adequacy, and the management of exposures to key banking risks.

Our final article in this issue discusses the changing sources of and demand for credit since 1980. It updates the long-run series of household financial assets and liabilities introduced two years ago in the *Bulletin* and provides a more detailed breakdown of the long-term financial asset series. The article also presents a 20 year agriculture credit series and summarises other business sector borrowing. The data series reported in this article place current data in historical context and are intended to contribute to analytical work in a number of areas. We intend to prepare another article in the future to discuss policy and other implications arising from changes to the credit environment.

Finally, I would like to thank those readers of the *Bulletin* who responded to the survey we sent out in April this year.

We received a significant number of responses to the survey and obtained very helpful feedback from readers. We are currently processing the results of the survey and will then assess what, if any, changes we may make to the *Bulletin* to better meet the needs of our readers. We aim to report the survey results and our reaction to them in the September issue of the *Bulletin*.

One change we have already decided to make to the *Bulletin*, commencing with this issue, is to include a summary of recent *Discussion Papers* issued by the Bank. This was something that a number of our readers had suggested, and we view it as a useful way of alerting readers to the issues covered by our *Discussion Papers*. The summary of recent *Discussion Papers* is set out towards the end of this issue of the *Bulletin*.

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The role of the Reserve Bank's macro-model in the formation of interest rate projections¹

By Tim Hampton,² Economics Department

The Reserve Bank of New Zealand is relatively unique in that our macroeconomic projections include a variable nominal interest rate path over the projection period. This approach is different from the constant nominal interest rate assumption used by most other central banks. In New Zealand, the interest rate projection is produced using a combination of the Bank's core macroeconomic model and policy-maker judgement. The model increases projected short-term interest rates when inflation is projected to be persistently high relative to target, and lowers interest rates when inflation is projected to be persistently low relative to target. In this sense, model projections are referred to as endogenous interest rate projections.

This article explains the rationale for endogenous interest rate projections and why the Reserve Bank has adopted this approach.

1 Introduction

The Bank's submission to the Monetary Policy Review outlined a number of the reasons why we prepare and publish economic projections. One of the key components of all macroeconomic projections is the projected path for monetary policy – as reflected in the short-term interest rate. Until recently, virtually all projections published by central banks were based on the assumption of a constant nominal interest rate over the projection period, where the interest rate chosen was the interest rate prevailing at the time the projections were prepared. However, there is growing international interest in formulating different ways for describing the actions of monetary policy – so called monetary policy reaction functions. The Taylor Rule is one such example of a monetary policy reaction function.³ There is also growing interest in macroeconomic projections that incorporate

interest rate responses based on reaction functions.⁴ Projections that include interest rate paths drawn from such monetary policy reaction functions are referred to as *endogenous* interest rate projections, which means the projected interest rate is responding to projected movements in other macro variables within the model.

The Reserve Bank is unique in that we are currently the only central bank that prepares *and* publishes economic projections based on endogenous interest rates – an approach we adopted in 1997.

In section 2 of this paper we outline the reasons why we believe endogenous interest rate projections – projections that incorporate a presumed policy response to projected inflation – are marginally preferable to a constant interest rate assumption. Section 3 presents the policy reaction function at the heart of our model projections, along with the reasons for choosing this specification. Section 4 then discusses how we use the projections in practice – both in assisting the policy decision and in terms of informing the public about the rationale for a given policy decision. Section 5 concludes.

¹ An earlier version of this paper was presented at the European Central Bank workshop on “The role of policy rules in the conduct of monetary policy” in March 2002.

² I would like to thank Christie Smith, Leni Hunter, David Hargreaves and David Archer for comments.

³ See Plantier and Scrimgeour (2002) for a detailed description of the Taylor Rule.

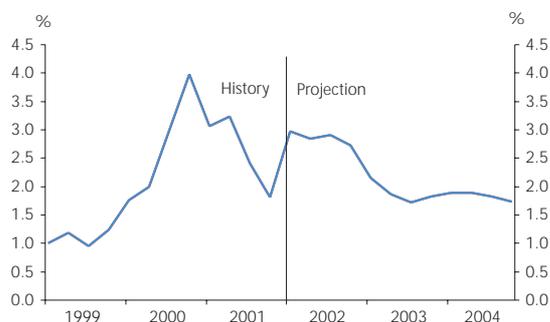
⁴ See Svensson (2001) for a more extensive discussion of rule-based policy responses.

2 Why endogenous policy projections are preferred

Before explaining the rationale for using an endogenous policy path in our projections, it is first useful briefly to explain how endogenous policy projections work in practice. Figures 1a and 1b plot the March 2002 projection for annual consumer price inflation and the 90 day interest rate respectively.⁵ At the time these projections were formed, the exchange rate was providing significant stimulus to the export sector, and the domestic economy was exhibiting growing inflationary pressures. As a result, annual inflation was threatening to breach the top of the target band, and the Bank believed that it was appropriate to start unwinding much of the stimulus that had been provided by the interest rate reductions observed during 2001.⁶ Consequently, the model projected that approximately a 125 basis point tightening in policy over the following eighteen month period would slow the domestic economy sufficiently to return inflation towards the centre of the target band.

Although a projection based on a constant interest rate assumption would look quite different from these endogenous projections, it would have provided similar information to the monetary policy decision-maker. For example, if nominal interest rates had been held constant in

Figure 1a
Annual consumer price inflation

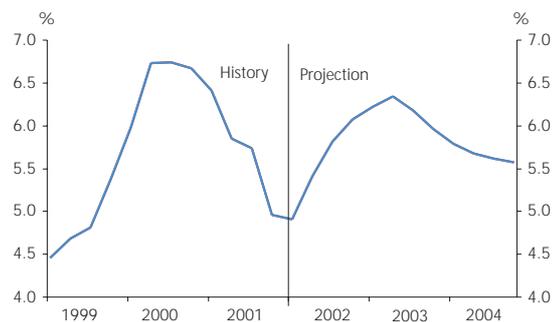


⁵ See the March 2002 *Monetary Policy Statement* for further discussion of these projections.

⁶ The current Policy Targets Agreement stipulates that the Bank is to maintain annual consumer price inflation in a 0 to 3 per cent range. A copy of the Policy Targets Agreement can be viewed at:

<http://www.rbnz.govt.nz/monpol/pta/index.html>.

Figure 1b
Endogenous nominal 90 day interest rate



the March 2002 projection above, inflation would have been projected to breach and remain above the 0 to 3 per cent target range. This would have prompted the Bank to raise interest rates. So, although the two approaches are different in some respects, they both provide similar information and can be considered to be alternative ways of processing the available data. However, by using a reaction function to determine interest rates, a possible magnitude (and indeed path) of the required interest rate response is suggested, not just a direction as under the constant interest rate projections.

In order to understand our preference for using an endogenous interest rate path, it is intuitive to refer to the period prior to our use of the endogenous policy reaction function. Up until 1997, the projections used in policy evaluation and in the Bank's publications were conventional constant interest rate projections. Interest rates and the exchange rate were generally held constant throughout the projection horizon at the values prevailing at the time the forecasts were prepared.

One problem we experienced with the constant interest rate assumption was the potential internal inconsistency that it afforded. To demonstrate, consider the situation where an assumption of constant interest and exchange rates resulted in a projection with inflation deviating outside the target range over the projection period. This raises a number of problems. First, it is not internally consistent to assume that an inflation-targeting central bank would allow such a deviation from target to persist. In practice, if a central bank thought that a breach would persist, it would likely respond by moving interest rates in such a manner to bring inflation back within the target range. Second, if the constant nominal

interest rate assumption was maintained, and the inflation rate was projected to change, this would result in a change in real interest rates. The movement in the real interest rate would reinforce the initial inflation movement and lead to potentially unstable or explosive paths for the projected nominal variables. Interestingly, central bank projections based on a constant interest rate policy (where the constant interest rate is the latest observed interest rate at the time the projections are formed) often show inflation near the target over the forecast horizon. One explanation why this could happen is that the forecast horizons (typically no longer than two years ahead) may not be sufficiently long to capture the full impact of assuming a constant nominal interest rate. A longer horizon would show the longer-term consequences of the constant interest rate assumption.

Third, it is not consistent to base a projection on a constant interest rate when other variables included in the projection (eg wages) already include an implicit expectation of future policy responses. These internal inconsistencies can be avoided by using an endogenous interest rate path.

Another advantage of using an endogenous interest rate assumption is that it assists in assessing the plausibility of the projections. Before each forecast round, the Governor and other Bank staff typically have prior opinions as to what range of policy settings would be plausibly appropriate to achieve the inflation target. If the projected nominal interest rate path produced by the model is significantly different from these priors, then the reasons for the discrepancies can be identified and discussed. After this discussion, if need be, the assumptions underlying the projection can be altered. Also, publishing the endogenous interest rate path enables financial market participants to evaluate the central bank's interest rate projections against those implied by financial market prices. This evaluation was not possible when our projections assumed a constant interest rate.

In New Zealand, estimating projections with endogenous interest rates was made easier with the advent of a new model in 1997, called the Forecasting and Policy System (FPS).⁷ FPS was designed to trace through the medium to

long-term implications of various events. Over long time horizons, one cannot ignore the implications of holding interest rates constant while inflation diverges. Consequently, it became necessary to incorporate time varying interest rate paths into our projections.

The Reserve Bank is unique in that we are the only central bank that publishes endogenous interest rate projections. A small number of central banks, including the Bank of Canada, produce projections based on endogenous interest rate paths for internal discussion, but those projections are not published. Conversely, some central banks, such as the Bank of England, publish their projections, but their projections are based on a constant nominal interest rate assumption.

One potential criticism associated with publishing endogenous interest rate projections is that the public may see them as a commitment to future policy settings. Section 4 discusses why the Bank believes that the way we present the projections to the public helps guard against this risk.

3 Determining the policy reaction function

Having decided to use an endogenous interest rate path in our model-based projections, specifying the appropriate reaction function for interest rates in the model was not straightforward.

One body of literature suggests a methodology for using the structure of the model to derive an 'optimal' reaction function – that is, a reaction function that best meets the policy-makers' objectives. However, such derived reaction functions are often complex and hence would prove difficult to communicate to the public. They are also subject to criticism on the grounds that an interest rate reaction function that is optimal in one model may not be optimal in other models.

On the other hand, there has been a large body of research demonstrating the efficacy of *simple* monetary policy reaction functions as an alternative to optimal policy rules. These reaction functions are simple in the sense that interest rates respond to only a few chosen variables, as opposed to the

⁷ See Black, Cassino, Drew, Hansen, Hunt, Rose and Scott (1997) and Reserve Bank of New Zealand (1997) for details on FPS.

optimal reaction function, which by their nature have interest rates responding to a much larger set of variables. A majority of the research into simple reaction functions suggests that reaction functions that respond to medium-term inflation deviations achieve better output and inflation outcomes than those reaction functions that focus on a shorter horizon.

Simple reaction functions that respond only to inflation and output variability typically produce volatile projection paths for the policy instrument. In practice, however, central banks tend to move interest rates in a series of small steps in the same direction, rather than taking the larger and more volatile changes that economic models suggest. There are a number of possible explanations for the gradual approach that central banks take in adjusting interest rates. These include uncertainty about the true state of the economy, an explicit concern for interest rate volatility, or a belief that a gradual approach to interest rate adjustments may allow a central bank to provide clearer guidance to financial markets, and consequently enhance the extent to which movements in the short-term policy rate feed through into longer-term interest rates, which influence economic behaviour.⁸ As a result, many monetary policy reaction functions include an interest rate smoothing component. This ‘smoother’ acts as a constraint as to how quickly projected interest rates can move each quarter.

This research into the desirable properties of simple reaction functions had not been completed in 1997 when the Bank decided to adopt an endogenous interest rate approach in forming our projections. Rather, the reaction function adopted at the time was based largely on two key ideas: a general understanding that it was inappropriate to target inflation at too short a horizon because it would induce unnecessary volatility in the real economy; and a broad approximation of how the Bank believed monetary policy operated in practice. Fortunately, the reaction function that the Bank started using back in 1997 was broadly consistent with most of the desirable properties outlined in the paragraph above. The reaction function is parameterised such that short-term interest rates respond to forecast deviations in annual inflation from target six to eight quarters in the future. Under this framework, the model increases

short-term interest rates when inflation is projected to persist above the mid-point of the target band six to eight quarters in the future, and lowers interest rates when inflation is projected to persist below the mid-point six to eight quarters in the future. The focus on the mid-point reflects the presumption that actual policy will aim to reduce the risk that surprise events will take inflation outside either the top or bottom of the inflation target band.

Deviations of output from its potential value do not appear explicitly in the reaction function used in FPS, unlike some reaction functions such as the Taylor Rule.⁹ This does not mean that there is no concern for output variance when formulating monetary policy. Rather, concerns for output variance are reflected implicitly in our monetary policy reaction function. By deliberately choosing a medium-term horizon of six to eight quarters, as opposed to a much shorter horizon, it means monetary policy responds to bring inflation back to the target gradually so as to avoid creating unnecessary volatility in output and interest rates. This is consistent with the Bank’s mandate in the Policy Targets Agreement, which specifies an inflation band rather than an exact target and also allows inflation to deviate outside the band in the event of one-off price shocks.

4 Forming projections and setting the OCR using endogenous policy

The projections are a key component of the information used to inform the actual setting of the Official Cash Rate (OCR), but they are by no means the only information. As we wrote in the November 2001 *Monetary Policy Statement* “the projection...is best treated as a benchmark against which to consider the risks and uncertainties relevant to our policy call.” As time goes by, some of these risks are realised, some are not, and new ones emerge. Hence, the projections do not dictate a given OCR path for the future. Further, it has been our experience that our observers – namely the public and financial market participants – also accept the conditionality of the projections and do not see them as being a constraint on OCR settings.

⁸ See Woodford (1999) for a full description of this idea.

⁹ See Plantier and Scrimgeour (2002).

The next two sub-sections briefly describe the projection formation process at the Bank, how policy decisions relate to the projections, and how we explain the rationale for policy decisions to the public.¹⁰

Forming projections

Whether projections are based on a constant or an endogenous interest rate profile, forming economic projections using an economic model is an iterative process. The projection process at the Reserve Bank is no exception. The first projection – the so-called ‘no-judgement’ projection – is formed by entering a combination of historical data and near-term forecasts¹¹ into FPS. However, the structure of FPS reflects average business cycle behaviour, and no two business cycles are alike. Hence, adjustments are required when the evidence suggests that the current cycle is different from the average economic cycle. To this end, the knowledge and experience of the Monetary Policy Committee (MPC), other Bank staff, and the Governor play an important role in adjusting the no-judgement projection to get a central projection that is more appropriate for the current circumstances.

Adjustments to the no-judgement projection can account for special circumstances and information that is not included in the model (for example, climatic conditions, bilateral exchange rate developments, and trading partner developments), and can incorporate circumstance-specific dynamics and known shocks. For example, one of the key judgements made during the November 2001 projection round was to make the post-September 11 forecast reduction in tourism income more persistent than the model suggested. Importantly, because FPS is a system of equations, this application of judgement may affect the projection paths of *all* endogenous variables in the model, rather than just those immediately affected by the adjusted assumption.

As noted in section 2, one of the benefits of basing projections on endogenous policy is that it helps one assess

the plausibility of different projections. If certain assumptions about the economy lead to an endogenous interest rate projection that is inconsistent with the prior views of Bank staff, this can mean one of two things. First, the prior views may be wrong, and may need to be revised; or the economic assumptions embodied in FPS about the economy and how it works may be wrong. If the latter is the reason for the difference, then the assumptions within the model should be revisited, another projection formed, and the resulting interest rate projection compared with prior views. If we find that we are applying the same judgement to the same elements of the model for a number of consecutive quarters, this may indicate the need for further research. On occasion, this research can suggest the need to alter the structure underlying the model's fundamental behaviour.

Considering projections produced under different assumptions – or ‘alternative scenarios’ – helps guide the judgement used in determining the central projection, and provides further guidance on the subsequent OCR decision. These alternative scenarios are presented to the Governor and the MPC during each forecast round. They can embody such things as alternative world growth forecasts, faster monetary policy transmission, or a more muted impact of import prices on consumer prices. Alternative scenarios are useful for emphasising that the central projection, while we see it as being more likely than the alternatives, is just one of many possible paths that the economy might take. Consequently, it highlights that policy is dependent on the assumptions one makes about the structure of the economy. The alternative scenarios can also serve a useful role in identifying and highlighting the risks that exist around the central scenario. Having these alternative scenarios based on endogenous policy is very useful for comparing alternative policy rate paths. In particular, they give an indication of the possible magnitude of any interest rate response required were the alternative circumstances to materialise.

Figures 2a and 2b plot the central and alternative projections that were published in the August 2001 *Monetary Policy Statement*.¹² The central projection was based on the world GDP growth assumption taken from the latest *Consensus* forecasts available at that time. However, the MPC believed

¹⁰ See Drew and Frith (1998) and Reserve Bank of New Zealand (2000) for a more detailed description of the projection formation process.

¹¹ Current and one quarter ahead forecasts for a number of variables are constructed using anecdotal evidence and indicator models.

¹² See the August 2001 *Monetary Policy Statement* for further discussion of these projections.

there was a significant risk of world growth turning out significantly weaker than allowed for. Hence, an alternative scenario with a weaker world outlook was also published. These graphs show that if the world output gap had fallen to around -1 per cent over the course of 2001, then FPS would have suggested that a further 100 basis points of easing would be required to achieve the inflation objective.

Figure 2a
World output gap
August 2001 projections

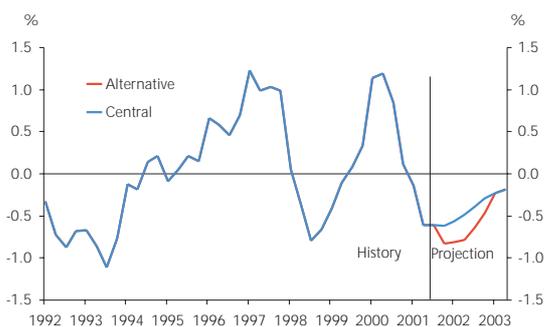
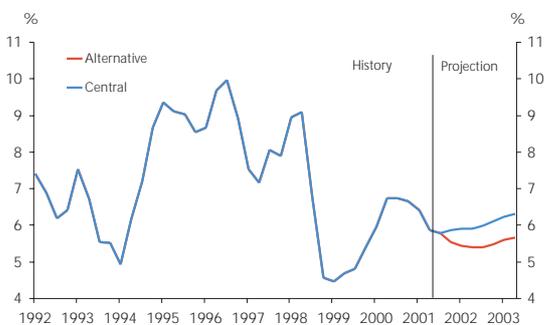


Figure 2b
Endogenous nominal 90 day interest rate
August 2001 projections



The policy decision

At the beginning of this section we stressed that the projections are used mainly as a benchmark for the OCR decision. Even though the Governor determines the final interest rate projection for publication, the OCR decision may still differ from the interest rate profile suggested in the central projection. The first reason why this might happen is the fact that the central projection does not necessarily take into account the balance of risks around that projection. As the Bank wrote in the press statement that accompanied the March 2001 *Monetary Policy Statement*: “the balance of risks was currently tipped marginally in favour of easing inflation pressures but it is by no means inevitable that today’s

reduction will be quickly followed by further reductions.”

In a more vivid example of taking account of risks not fully captured within the published projection, the Bank lowered the OCR 50 basis points shortly after the September 11 terrorist attacks. This reduction was to help counter the potential for a significant decline in world economic growth even though the likelihood of a severe global slowdown was relatively small.

A discrepancy may also exist between the central projection and the OCR decision because there is up to a two-week delay between when the published projections are finalised and when they are released with the announcement of the OCR decision. Consequently, there is occasionally significant new information available to influence the OCR decision that was not included in the construction of the central projection. However, the new information does not invalidate the use of the central projection. Rather, the central projection continues to act as a benchmark to which the Governor adds the new information – albeit less formally – to make the OCR decision.

If the OCR decision does deviate materially from the central projection, as it may do from time to time, then it is important that the public is informed of the reasoning for the deviation. If the reasons for the deviation are not articulated sufficiently well, there is the potential to undermine the benefits of the projection as a communication device.

The publication of alternative projections along with the central projection also helps to reduce the public’s focus on the central projection as a forecast. By occasionally publishing aspects of alternative scenarios, the Bank communicates some of the uncertainties that policy-makers face. In addition, the predominant risks that surround the central projection are discussed extensively in every *Monetary Policy Statement*. Both of these practices reinforce the important point that the central forecast is only one of a large number of potential outcomes for the economy, albeit the Bank’s central expectation.

Finally, over and above the benefits we see from publishing our projections, we believe having those projections based on an endogenous interest rate path assists us to explain the context of our policy decisions. As we wrote in the Bank’s submission to the *Independent Review of Monetary Policy*:

“In the context of the weight we give to the role of exposition in publishing policy projections, the issue of choosing between endogenous monetary policy or constant-policy-based projections becomes one of what best assists comprehension. To our mind, at the margin it is easier to explain our reasoning in terms of what interest rates might need to do in order to keep inflation on target, given the way we currently see the persistent pressures on inflation. On the other hand, it is a little harder to describe the future path in terms of a departure of inflation from target when we do not intend to let that departure happen.”¹³

5 Conclusion

Since 1997, the Reserve Bank has produced and published macroeconomic projections based on endogenous interest rate paths. This approach replaced the more traditional and more commonly used assumption of a constant nominal interest rate over the projection horizon. Reasons for the change included: 1) concerns about the potential internal inconsistency associated with a constant nominal interest rate assumption; 2) a view that basing the projections on endogenous varying interest rate paths helps in explaining the policy decision to the public; and 3) a view that an endogenous policy reaction function helps determine the plausibility of our projections.

The reaction function used to form the projections in the model is designed to respond to potential persistent deviations in annual (forecast) inflation from target at a horizon of six to eight quarters. While output does not appear explicitly in the reaction function used in the model, it does so implicitly. The way that we target inflation, as specified in the reaction function, makes projected output more stable than it would be if we were to use a more short-term focused reaction function.

The projections are an important ingredient in the policy decision-making process. However, they are not a constraint on or pre-commitment to current or future OCR settings. The Bank sets the OCR by reference to the model projections,

but also by reference to a broader assessment of the economy, taking into account a very wide range of economic and financial information and having regard to the views of the many people in the community to whom we talk as we prepare the OCR decision.

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¹³ Reserve Bank of New Zealand (2000).

Corporate governance in the financial sector

Geof Mortlock, Economics Department

This article is an amended version of a paper prepared by the Reserve Bank of New Zealand for the Commonwealth Secretariat as a contribution to a technical assistance programme to strengthen corporate governance in the financial sectors of Commonwealth countries. It deals with the subject of corporate governance in the financial sector and the relationship between corporate governance and the management of banking risks. The article also summarises the Reserve Bank's approach to strengthening corporate governance in the New Zealand banking system.

1 Introduction

Recent episodes of financial instability have highlighted the potential fragility of financial systems and the effect that financial instability can have on the wider economy. In recognition of this, much international attention is now being given to understanding the causes and dynamics of financial crises and to developing policy frameworks for promoting robust and efficient financial systems. An important part of this work relates to corporate governance arrangements and the role that these can play in encouraging sound risk management practices.

This article discusses the key ingredients required for effective corporate governance in the banking sector, drawing on international standards and best practice. It also provides a brief summary of the New Zealand approach to strengthening corporate governance in the banking sector. For the purpose of this article, corporate governance refers to the arrangements that companies, including banks, have in place for their internal governance, including in respect of the identification, monitoring and management of their risks. Although the article discusses corporate governance as it applies to any corporate entity, the principal focus of the article is on corporate governance within banks and other financial institutions.

2 Financial instability and inadequacies in corporate governance

The world has seen many episodes of financial instability in recent years. In some cases, such as in parts of Asia in 1997/98, this instability caused significant dislocation to the wider economy, with severe consequences for economic growth and welfare.

Financial instability is caused by many factors. These vary depending on the nature of a country's economy and the structure of its financial system. However, some common causal factors include:

- rapid financial sector liberalisation unsupported by measures to encourage prudent risk management in the financial sector;
- unsustainable macroeconomic policies, such as loose monetary policy and excessive fiscal spending – such policies can contribute to asset price volatility and a subsequent erosion of asset quality in the financial system;
- exchange rate arrangements that lack credibility, including unsustainable exchange rate pegs - this is particularly important where financial institutions and corporations have come to rely on an exchange rate peg and fail to hedge their currency risk, only to sustain currency losses when the peg collapses;
- poor transparency and accountability arrangements for economic and financial policies;
- excessive degrees of connected lending (lending to parent companies and associated parties) and lending under the direction of government;
- industry protection and policies that impede the efficient allocation of resources in the economy;
- poorly designed and implemented banking supervision and prudential regulation, including insufficient structures to ensure that banks maintain a prudent level of capital relative to their risks and have robust risk management systems, insufficient scrutiny of lending quality and exposure concentration, and inadequate measures to constrain connected or directed lending;

- inadequate financial disclosure arrangements, including poor quality accounting and auditing standards; and
- weak market disciplines in the banking and corporate sectors, which tend to reduce the incentives for high quality risk management by banks and other corporate entities.

Although poor quality macroeconomic policy and economic shocks often play a major part in contributing to financial instability, it is fair to say that inadequate risk management within banks and other financial institutions is the root cause of most episodes of financial system distress. And a frequent underlying cause of poor risk management is inadequate corporate governance in the corporate and financial sectors. Weak governance in the corporate sector increases the risk profile of borrowing companies and exposes banks and other lending institutions to a greater risk of loss than would otherwise be the case. Weaknesses in corporate governance arrangements in banks and other financial institutions reduce their capacity to identify, monitor and manage their business risks, and can result in poor quality lending practices and excessive risk-taking.

Particular weaknesses in corporate governance arrangements in a banking system context can include:

- inadequately qualified and experienced bank directors, and directors with significant conflicts of interest;
- insufficient understanding of the nature of banking risks by a bank's directors and senior management;
- inadequate representation of non-executive and independent directors on the board (ie directors unconnected to parties related to the bank);
- inadequate risk management systems, internal controls and internal audit arrangements;
- insufficient structures for ensuring appropriate scrutiny and management of conflicts of interest, including those arising in business dealings between banks and related parties;
- insufficient accountability of directors for the stewardship of their bank;
- inadequate oversight of senior managers by boards of directors, and poor quality financial and risk-related

reporting to the board; and

- insufficient rights for shareholders, including in respect of access to information and the ability to hold the board of directors to account.

Inadequate corporate governance is rarely attributable to any one factor; it generally results from a combination of factors. One of the more common underlying causes of poor corporate governance is insufficiently developed corporate governance law, including inadequate specification of directors' duties, insufficient clarity of the rights of shareholders and other stakeholders, and insufficient specification of the obligations for dealing with conflicts of interest. In addition, inadequate enforcement of corporate governance law – possibly as a result of poorly resourced judiciary and government authorities – can also impede the effectiveness of corporate governance.

Although inadequacies in the legal framework are often significant factors in weakening the effectiveness of corporate governance, a number of other considerations can also play an important role. These include inadequate development and promotion of a corporate governance culture by the relevant professional associations (such as a professional institute of directors or a banking industry association). At a more basic level, weaknesses in corporate governance in some countries can be attributable to a culture that attaches relatively little importance to the role of corporate law or to the observance of governance principles.

Excessively intrusive financial sector regulation and supervision also have the potential to weaken the incentives for effective corporate governance, by weakening market disciplines on banks and by diluting the responsibility of bank boards for overseeing the management of risks within banks. Similarly, poorly developed financial disclosure arrangements tend to weaken the incentives for the directors and senior management of banks to maintain sound corporate governance and risk management practices.

3 Promoting sound corporate governance

Given the effect that weak corporate governance and risk

management structures can have on the management of risks in the financial and corporate sectors, it is important that steps are taken to promote effective corporate governance.

Promoting effective corporate governance in the financial sector generally requires a number of measures to be taken. These include:

- the development of an effective legal framework that specifies the rights and obligations of a company, its directors, shareholders and other stakeholders, specifies disclosure requirements, and provides for effective enforcement of the law;
- the development of a corporate governance culture, including through the development of corporate governance principles by professional or industry associations;
- the creation of an environment that fosters effective market disciplines, and thereby creates the incentives for sound corporate governance;
- maintaining appropriate banking supervisory arrangements, focusing on (among other matters) encouraging the adoption of sound corporate governance practices;
- training and educational initiatives to build capacity in corporate governance; and
- leadership by example, including by central government and regulatory agencies in terms of their own internal governance and transparency practices.

A number of these points are elaborated on below.

Effective legal framework

One of the important underpinnings of corporate governance in the financial and corporate sectors is an effective set of corporate laws setting out the basic legal rights and obligations of corporate entities and those of their directors, officers and shareholders. The legal framework needs to be clear and accessible, and needs to strike an appropriate balance among the interests of the various parties involved.

The legal framework will vary from country to country depending on various factors, including institutional

arrangements and cultural factors, but in general, it could be expected to address such matters as:

- The powers and duties of directors, including: the obligations of directors in relation to setting the strategic direction of the company; obligations to ensure that the company's risks are being competently identified, measured, monitored and managed; and obligations to ensure that the affairs of the company are prudently managed.
- The need for directors to satisfy themselves that the bank or company is solvent (and likely to remain so) before making distributions to shareholders or otherwise taking on obligations.
- The rights and powers of shareholders, including rights in relation to voting and access to information on the company.
- Requirements for identifying and dealing with directors' conflicts of interest.
- The disclosure obligations of the company (including as to the preparation of financial statements, maintenance of accounting systems and audit arrangements). Company law could be expected to specify an obligation for directors to issue financial statements in relation to their company and the group of which it is part. In some countries, this obligation will mesh with a requirement for the financial statements to comply with particular disclosure standards, possibly including mandatory accounting standards, so as to encourage financial statements of high quality and comparability. In many countries, directors are held liable for ensuring that the company's financial statements and other disclosures are not false or misleading.

Corporate law also provides an important mechanism by which enforcement of corporate governance can be achieved. One of the functions of corporate law is to set out the penalties for non-compliance with corporate governance arrangements.

For enforcement to be effective, however, there is a need for more than an effective set of laws. There is also a need for a well-resourced government authority with the power and capacity to identify breaches of corporate law and a

legal system and judiciary capable of facilitating effective enforcement, including through civil claims. The government agencies responsible for enforcement and the judiciary need to be accountable for the exercise of their powers. Accordingly, structures to facilitate their accountability should be in place, including transparency arrangements with respect to the nature and performance of their responsibilities.

There is a balance to be struck as to the level of detail of corporate governance requirements contained in statutory law. There are risks of excessive inflexibility, and associated compliance and efficiency costs, if statutory law contains an excessive degree of prescription. The level of prescription will depend in large measure on the extent to which non-statutory frameworks operate to promote sound corporate governance. All else being equal, statutory law can be less prescriptive where sound corporate governance practices are fostered by the existence of strong market disciplines, competitive markets, a corporate governance culture, and robust financial disclosure requirements, among other factors. Conversely, if these environmental factors are not strongly present, then this may suggest the need for a greater degree of prescription of corporate governance requirements in the law.

Developing a corporate governance culture – the role of corporate governance principles

Another mechanism for promoting sound corporate governance in the financial sector is the encouragement of a corporate governance culture through codes of conduct and principles of good practice. The development of corporate governance principles can play a significant role in promoting greater awareness and adoption of sound corporate governance arrangements. Corporate governance principles may be developed by industry associations, institutes of directors, government authorities, or other bodies, such as stock exchanges.

At an international level, a number of agencies have promulgated principles on corporate governance that can assist governments and private agencies in designing their own corporate governance codes of practice. The OECD Principles on Corporate Governance, the principles developed

by the Commonwealth Association for Corporate Governance (CACG), the work developed by the World Bank and by regional forums such as APEC all provide guidance in these areas. The Basel Committee on Banking Supervision has also distilled some guidance on corporate governance as it applies to banking, in its paper *Enhancing Corporate Governance in Banking Organisations*.

Drawing on the work undertaken by the OECD, World Bank, CACG and the Basel Committee, a number of generic corporate governance principles can be identified, including the following:

- Directors should have the skills and experience necessary to perform their role effectively, and should have a sound understanding of the nature of the company's business and its risks.
- Directors should not accept a position on the board if they have conflicts of interest that would significantly compromise their ability to perform their duties.
- The strategic objectives of the company need to be clearly specified and the risk/return trade-offs need to be well understood and articulated.
- Directors need to satisfy themselves that the senior management team has the necessary skills and experience to perform its functions effectively, in the best interests of the company, and should ensure that there are structures in place for monitoring the performance of management.
- There should be a clear specification of rights for company shareholders, including rights relating to access to information, participation in general meetings, and the election of directors.
- There should be a clear specification of the powers, duties and obligations of directors, including the need for directors to act in good faith, with due diligence and skill, and in the best interests of the company.
- Directors should be obliged to satisfy themselves of the adequacy of their company's systems for identifying, monitoring and managing risks and that those systems are being applied effectively at all times. Effective internal audit arrangements, overseen by an Audit Committee of the board, should be maintained.

- The board should receive all the information they need in order to satisfy themselves that the company's affairs are being conducted in a manner consistent with the business objectives of the company and that all risks are being effectively managed.
- There should be structures to require a strong degree of accountability of directors to shareholders and other stakeholders of the company, and of management to directors. This includes the need for arrangements to facilitate effective communication with all categories of stakeholder, taking into account the information needs and rights of the stakeholders.
- The board should set key performance indicators for the chief executive and senior management team and establish a system for effectively monitoring performance.
- The board of directors should be subject to transparent rules governing conflicts of interest and related party lending, and board decisions in these areas should be disclosed.
- There should be robust financial disclosure and external auditing arrangements. In the context of banking, disclosure requirements need to be relatively specific, requiring regular public disclosure of a bank's financial performance, capital position, off-balance sheet positions, asset quality, risk exposures and risk management systems. Directors should be held to account for the veracity of disclosures.
- There should be structures in place to ensure that the company complies with all statutory and regulatory requirements.

The above principles are applicable to a wide range of corporate entities, and equally apply to banks. However, two specific features of banking suggest the need for a more intensive focus on corporate governance than might be necessary in some other sectors of the economy: their reliance on debt funding and the need to maintain the confidence of their creditors; and the complexity of their risks. These points are elaborated on below.

More than in most corporate entities, banks and many other types of financial institution are critically reliant on

maintaining the confidence of depositors and other creditors. The economic welfare, and indeed survival, of a bank is very much dependent on maintaining depositor and other counterparty confidence.

The importance of creditors to a bank's welfare suggests the need for a bank to have corporate governance and risk management arrangements that ensure that its creditors' interests are being well looked after. Among other factors, this suggests the need for directors and senior management to be attentive to the possible conflicts that might arise between the interests of the bank's shareholders and its creditors. In general, shareholders' interests are best served by maximising the long-term present value of the bank, although often there is a tendency to focus on augmenting the short-term profit of the bank rather than necessarily focusing on the longer-term position. Creditors' interests are best served by the bank taking a somewhat more cautious approach to the management of its risks, such that creditors can be assured that their funds will be available in full upon maturity or on demand.

In practice, these conflicts can be managed effectively by adopting appropriately cautious risk management strategies and by focusing on managing the bank's affairs for the long-term interests of the bank, rather than focusing on short-term financial objectives. However, directors and senior management need to be aware of the potential for conflicts of interest to occur between the interests of shareholders and those of creditors and to have structures in place to manage these conflicts effectively, including in respect of:

- the choice between adopting higher versus lower risk lending strategies;
- the choice between maximising short-term profit results versus longer term stability;
- the appropriate level of capitalisation of the bank; and
- the appropriate level of connected exposures (to the parent company, other shareholders, and associated parties) and distributions to shareholders.

The inclusion of some independent, non-executive directors on the board of a bank will assist in managing the conflicts between the interests of shareholders and the interests of the bank's creditors. In particular, directors that are not

connected with the parent entity or associated companies are likely to be better placed to identify potential conflicts between the shareholders and creditors' interests and to ensure that appropriate controls are in place to manage these conflicts. Independent, non-executive directors can also bring fresh perspectives and scrutiny to many aspects of a bank's business operations, including risk management systems, in ways that can supplement (and, if necessary, challenge) the views of senior management, executive directors and controlling shareholders.

Banks also differ from most other companies in terms of the complexity and range of their business risks, and the consequences if these risks are poorly managed. Banks face a wide range of risks, many of them complicated in nature, including credit risk, exposure concentration risk, connected exposure risk, interest rate risk, exchange rate risk, equity risk, legal risks, operational risks, defalcation risks, liquidity risks, reputation risks, payment system interface risks and business continuity risks. If these risks are poorly identified and managed, they expose the bank to the potential for financial collapse, particularly given the fact that most banks operate on a thin layer of capitalisation and have substantial maturity mismatches in their balance sheet. Therefore, banks need corporate governance structures that promote effective identification, monitoring and management of all material business risks. These structures may include:

- well developed and tested risk management systems and internal controls;
- training programmes for staff responsible for risk management, so that they have a well developed understanding and detailed technical knowledge of risks and the means by which they can be managed;
- training programmes for directors and senior management to enable them to have a sound understanding of the nature of the bank's business, the nature of the risks, the consequences of risks being inadequately managed, and an appreciation of the techniques for managing the risks effectively;
- robust internal audit procedures, with appropriate reporting lines to the CEO or directors, and with oversight by the Audit Committee of the board;

- a structure which requires regular reporting to senior management and the board on the nature and magnitude of the risks being carried by the bank and the structures in place to control these risks, including a regular assurance to the board that all risk management systems and internal controls are being properly applied at all times;
- structures to encourage bank directors to take responsibility for ensuring that their bank's risks are being effectively identified, monitored and managed, and that the systems in place to achieve this are operating effectively at all times;
- possibly requiring a bank's risk management systems and internal controls to be subject to periodic external review, and for the results of the review to be reported to the board.

Banks also need to comply with a large number of regulatory requirements, including prudential requirements, taxation rules, various reporting obligations and the like. There is therefore a need for the corporate governance framework to include systems for ensuring that all statutory and regulatory requirements are being complied with, and to highlight breaches if and when they occur.

High quality financial disclosure

An essential complement to sound corporate governance is the implementation of robust financial disclosure requirements for corporates and financial institutions. Financial disclosure is essential as a means of strengthening the accountability of directors and senior management and enhancing the incentives for risk management. It is also essential if market participants and observers – particularly the larger creditors of banks, financial news media, financial analysts and rating agencies – are to monitor the performance and soundness of financial institutions effectively and exercise appropriate disciplines on those institutions which do not perform well or fail to meet acceptable prudential standards. Financial disclosure is also essential if smaller creditors, including depositors of banks, are to have any chance of protecting their own interests, particularly in the absence of deposit insurance.

In recognition of the importance of financial disclosure, this issue is receiving considerable attention in various international forums. This includes the International Accounting Standards Committee (which has developed a set of international accounting standards), IOSCO (which is developing international disclosure standards for cross-border listing requirements), and the Basel Committee on Banking Supervision (which is developing transparency principles for application to banks). Moreover, the IMF and World Bank are placing greater emphasis on the need for countries to develop sound disclosure practices, as reflected in the broader focus of IMF Article IV consultations and the recently introduced Financial Sector Assessment Programme. The IMF/World Bank Reports on Observance of Standards and Codes (ROSC) is another process that may assist in encouraging the implementation of effective financial disclosure requirements.

Although the nature of financial disclosure and accounting standards will vary from country to country depending on institutional and legal arrangements, some broad principles can be identified. These are discussed below.

An effective set of disclosure requirements will need to be underpinned by robust accounting standards. These standards should desirably conform to international standards, although national modifications may well be appropriate. In particular, it is essential for accounting standards to set out meaningful frameworks for measuring credit exposures – preferably based on market values rather than on historic cost or other notional valuations. Accounting standards should also prescribe meaningful and reasonably specific rules for the recognition of income and expenses, for the recognition and classification of off-balance sheet exposures, and for the classification of assets and liabilities. In general, accounting standards should require the disclosure of financial information on the basis of economic substance rather than on the basis of accounting or legal contrivances.

Financial disclosures should be subject to rigorous external auditing requirements, based on a set of auditing guidelines promulgated by an appropriately qualified standard-setting body. External audit should be conducted by a fully independent auditor, whose business connections with their client should not be such as to compromise the auditor's objectivity and independence.

In some cases, banking supervisory authorities may supplement the standard auditing requirements with auditing requirements for unique application to banks. Modifications can sometimes include:

- a requirement for banks to undergo more frequent external audit than is normally required of public companies (eg six monthly or quarterly);
- a requirement that particular prudential disclosures are audited (in addition to the usual financial disclosures) – eg capital adequacy, exposure concentration, connected lending, market risk disclosures, etc;
- a requirement that a bank's risk management systems are periodically subject to external audit or some other external review, sometimes under the overview of the supervisory authority;
- a requirement that the appointment of a bank's auditor is subject to the approval of the supervisory authority;
- a requirement that the bank periodically change its auditor, in order to reduce the risk of "auditor capture";
- a requirement for the auditor to report to, or meet with, the supervisory authority; and
- a requirement obliging the auditor to report any concerns they may have to the supervisory authority.

As a general rule, disclosures of financial information are more useful if they are made with a reasonable degree of frequency – eg six monthly or quarterly.

Disclosure of financial and risk-related information by banks should generally be in respect of the bank and the consolidated group. In some cases, holding company disclosures may also be appropriate.

As a general rule, banks could be expected to disclose:

- capital, disaggregated by type of capital, and the percentage of capital relative to credit exposures, using the Basel Capital Accord as the measurement framework or a credible alternative;
- the bank's credit rating and any recent changes to the rating. It may also be appropriate in some cases to require disclosure of the parent entity's credit rating and any recent changes to its rating;

- comprehensive and detailed information on the balance sheet, income statement and off-balance sheet obligations;
- exposure concentration, in terms of exposures to individual counterparties or groups of associated counterparties relative to the bank's capital;
- exposures to particular economic sectors or industries;
- detailed information on asset quality, including the amount of non-performing and restructured loans and the level of specific provisioning in relation to such loans. Disclosure requirements should desirably provide guidance on the basis upon which asset quality is reported and provisioning is determined;
- information on market risk (ie interest rate risk, exchange rate risk and equity risk), desirably using the Basel Committee's market risk methodology or a credible alternative;
- information on related party exposures;
- information on the nature of a bank's funds management, securitisation and other fiduciary business, including details of funding provided by the bank to these business activities and the structures in place to limit contagion between the funds management activities and the core business of the bank;
- information on the bank's systems for managing its business risks, including information on the nature of its internal control systems, internal audit arrangements and any other arrangements it has for an external review of the adequacy of its risk management systems and internal controls; and
- disclosure of the names, qualifications and experience of directors and senior management.

An important element of a well designed disclosure regime is the accountability it can bring to the board of directors. This recognises the vital role which bank directors play in overseeing, and taking ultimate responsibility for, the prudent management of all of their bank's business risks. In order to sharpen the accountability of a bank's directors, banks and other financial institutions could usefully be required regularly

to disclose:

- the nature of any conflicts of interest that individual directors or senior managers may have;
- the board's rules for handling directors' and managers' conflicts of interests; and
- attestations signed by each director as to whether they are satisfied that the bank's risks are being adequately identified, monitored and controlled at all times.

For any disclosure regime to be effective, it must be enforced. Accordingly, there should be a competent authority charged with monitoring compliance with disclosure requirements and equipped with the powers to enforce compliance where appropriate. The authority should be subject to effective transparency and accountability structures.

There should be a prescribed set of penalties for non-compliance with disclosure requirements. Penalties for non-compliance should be clearly specified, and should apply not only to the financial institution itself, but also to its directors and other key officers. Penalties might include fines, imprisonment and civil liability (eg where directors or senior management may be held personally liable for creditors' losses where a bank fails, and creditors can establish that they had relied on disclosures issued by the bank and that these disclosures had been false or misleading).

In introducing a disclosure regime, it is also important to ensure that relevant audiences are well educated about the objectives of financial disclosure and the nature of the disclosure arrangements, so that they can make the most efficient use of financial disclosures. This might suggest providing explanatory material to financial journalists and analysts, and encouraging the financial news media to take a keen interest in the disclosures issued by banks and other financial institutions. And it might suggest the need for explanatory material to be provided to depositors, to assist them to interpret a bank's disclosures.

Strengthening market disciplines

It is increasingly being recognised that market disciplines play an important role in promoting financial system stability and in encouraging the maintenance of sound corporate governance and risk management practices. Banks are more

likely to be attentive to risk management in an environment where poor risk management and financial performance are penalised by the market, and strong risk management and financial performance are rewarded by the market. In the longer term, robust market disciplines are likely to enhance financial stability and efficiency by strengthening the incentives for the efficient management of risks and by weeding out poor performers.

Unfortunately, various government policies and interventions have dulled the effectiveness of market disciplines in many countries. These can include:

- government ownership of banks and corporates;
- government guarantees of banks and corporates or implicit government support arrangements;
- poorly designed deposit insurance arrangements (particularly where the limits on deposit insurance are set at a high level and where banks are either not charged for deposit insurance or where the charges take little or no account of a bank's risk profile and risk management capacity);
- responding to bank failures in ways that insulate depositors and other creditors, and sometimes even shareholders, from losses;
- uncompetitive financial markets; and
- poorly developed capital markets.

In order to strengthen market disciplines on the financial system and corporate sector, and thereby encourage the development of sound corporate governance practices, a number of policy options can be considered.

One of the ways of strengthening market disciplines in the banking system is by privatising state-owned banks. The privatisation of government-owned financial institutions offers a number of potential benefits. These include: reduced fiscal risk associated with government ownership of financial institutions, strengthened market disciplines on the institution in question, sharper incentives for sound risk management within the institution and the likelihood of more effective shareholder surveillance of corporate governance and risk management structures.

Another option for reducing moral hazard risks and strengthening market disciplines on the financial and corporate sectors is to remove or limit government guarantees or implicit support arrangements for individual banks. As with privatisation, however, the removal of government guarantees needs to occur at a time when the banking system is in a sound condition and when structures have been bedded down to promote robust risk management. Once this has been achieved, the removal of government guarantees and minimisation of implicit support arrangements will assist in sharpening the disciplines on the banking system and thereby encourage the maintenance of effective governance arrangements.

A further ingredient in promoting sound corporate governance via market disciplines is to encourage competitiveness within the financial sector, by increasing the contestability and competitiveness of financial markets. This can be done both by opening up the financial system to new participants (both domestic and overseas) and by promoting a competitively neutral regulatory framework, so that the "playing field" is relatively level. In particular, opening up the financial sector to foreign banks can assist in promoting a more competitive, innovative and mature financial sector and can enhance the development of a more robust corporate governance and risk management culture in the financial sector. International banks of high quality can bring an infusion of skills and experience in corporate governance and risk management, encouraging existing market participants to adopt improvements in their own systems.

However, it is important to ensure that liberalisation of the financial sector is accompanied by other measures to strengthen the financial system, so that increased competitiveness does not result in instability. For example, prior to opening up the banking system to new banks, it is essential to ensure that the banking system is subject to high quality disclosure and corporate governance requirements, effective banking supervision arrangements and other structures to promote effective risk management. It is also essential that the liberalisation process occurs in the context of a stable economic environment, where economic policies are effective in minimising asset price volatility, where there

are few regulatory distortions to relative prices, and where macroeconomic policy settings are sustainable and credible.

As noted above, inappropriately designed financial safety nets, including deposit insurance arrangements, can reduce the effectiveness of market disciplines on the banking system and reduce the incentives for effective corporate governance and risk management. This is particularly the case where financial safety nets are open-ended (with no cap on the amount of insurance) and risks are not adequately factored into the pricing of deposit insurance. An important challenge for governments is therefore to structure financial safety nets in ways that minimise moral hazard and strengthen market disciplines on financial institutions, while still ensuring that financial distress situations are effectively resolved.

It is equally important that, in responding to bank failures, central banks and regulatory agencies try to preserve disciplines on the failed bank, and its shareholders and creditors, so as to reinforce the incentives for sound corporate governance in survivor banks. This suggests the need to ensure that shareholders and subordinated creditors of the failed bank bear the full extent of losses attributable to them (rather than being "bailed out" by the government). To the extent practicable, it also suggests that there is benefit in ensuring that depositors and other senior unsecured creditors of a failed bank bear their fair share of losses.

Capital markets also have an important part to play in promoting sound corporate governance in the banking sector. Well developed equity and debt markets are likely to encourage the development of sound corporate governance and risk management practices through a number of channels. One such channel is through the imposition of stock exchange listing rules on market participants, including requirements relating to corporate governance and financial disclosure. These can assist in encouraging banks and other market participants to adopt and maintain high standards in their corporate governance arrangements.

Equity and debt markets also provide investors with a structured means of obtaining information on banks, making them better informed about the quality of banks' risk management and business strategies. In turn, this enables investors to reward well managed companies with relatively inexpensive pricing in the debt and equity markets, and to

penalise poorly managed companies with higher pricing (and, in the extreme, cutting off a company's access to market funding). Therefore, an important means of encouraging sound corporate governance and risk management practices in the banking and corporate sectors is to encourage the development of efficient capital markets.

Prudential regulation and supervision

Prudential supervision can also play an important role in encouraging the adoption of sound corporate governance arrangements in the banking sector. There are various ways this can be done, and the appropriate method will vary depending on, among other matters, the extent of market disciplines operating in the economy and financial system. Options can include requiring bank directors to review and attest to the adequacy of governance and risk management systems, requiring banks to maintain effective internal audit arrangements, and requiring a minimum number of non-executive and independent directors on the boards of banks. Some supervisors go further and directly review banks' corporate governance arrangements and/or require a bank's external auditors to review the corporate governance structures in the bank. Another option is for the supervisory authority to issue guidelines to banks on corporate governance arrangements and risk management systems, where the guidelines can sometimes be used as a framework for periodic assessments of the adequacy of a bank's corporate governance arrangements.

Although there may be circumstances where a supervisory authority needs to play an active role in encouraging banks to adopt robust corporate governance arrangements, particularly where there may be little infrastructure and market discipline to encourage sound governance practices, there are risks in the supervisory authority becoming too closely involved. It is important that the supervisory authority makes a clear distinction between its role and that of a bank's directors and senior management. The function of the supervisory authority is to promote structures to encourage banks to maintain sound corporate governance arrangements; it does not have responsibility for implementing and maintaining governance structures or for managing risks – these are the responsibilities of the bank's directors and senior management.

Leading by example

An important element in promoting sound corporate governance in the banking sector is through “leadership by example” within central government and regulatory agencies. The adoption of robust corporate governance practices in the banking system is likely to be greater where central government and the regulatory agencies responsible for the financial sector lead the way by maintaining effective governance, transparency and accountability arrangements within their own operations. This suggests the need for government, government agencies and regulatory bodies to be subject to (among other matters):

- transparent arrangements that require appointees to government agencies to be suitably qualified and experienced, such that they have the ability to perform their duties effectively;
- transparent and rigorous internal governance requirements, including measures to promote effective risk management, internal audit, and management of conflicts of interest;
- appropriate financial disclosure requirements, based on professional accounting standards;
- effective external audit requirements, where the audit arrangements comply with standard professional auditing principles; and
- an effective accountability framework, requiring disclosure of public policy objectives; clear assignment of responsibility and powers for the fulfilment of objectives; disclosure of performance; disclosure of remuneration arrangements; a structure for facilitating external monitoring of performance; and credible mechanisms for removing officials for non-performance.

The importance of central government and its agencies being subject to effective corporate governance, transparency and accountability arrangements is being increasingly recognised. The IMF and World Bank are encouraging the adoption and maintenance of sound public sector agency governance and accountability frameworks through various measures, including technical assistance programmes, seminars, and the Financial Sector Assessment Programme. As part of this process, the IMF has released two public policy transparency

standards: the Code of Good Practices on Transparency in Monetary and Financial Policies and the Code of Good Practices on Fiscal Transparency. Both of these standards set out general principles on the transparency of monetary, fiscal and financial regulation policies, encouraging the clear articulation of policy objectives, policy arrangements and performance. The code relating to monetary and financial policy also sets out basic principles for the governance and accountability of the agencies responsible for monetary policy and financial sector regulation.

4 Corporate governance in the banking sector – New Zealand’s approach

This section briefly summarises the approach taken by the Reserve Bank to the promotion of sound corporate governance in the New Zealand financial system.

Promoting sound corporate governance in registered banks

A fundamental component of New Zealand’s approach to the promotion of financial stability is the emphasis it places on the importance of corporate governance as a means of encouraging banks to effectively identify, monitor and manage their business risks. This approach recognises the critical role which directors have in overseeing the stewardship of their bank and in ensuring that the bank has a high quality management team and effective systems for managing risks.

Reflecting the importance attached to corporate governance, the banking supervision arrangements in New Zealand contain a number of policies designed to encourage sound corporate governance in the banking sector. These policies include:

- Comprehensive disclosure requirements for banks. All banks in New Zealand are required to publish comprehensive financial and risk-related disclosures on a quarterly basis, including information on a bank’s:
 - capital position, measured using the Basel Capital Accord;
 - concentration of credit exposures to individual

- counterparties;
 - related party exposures;
 - asset quality and provisioning;
 - interest rate, exchange rate and equity risks;
 - off-balance sheet exposures; and
 - fiduciary risks.
- Director attestations. Each bank disclosure statement is required to contain a number of attestations, signed by each director. These are intended to encourage directors to focus their attention on key risks within their bank and to be satisfied that these risks are being effectively managed. Directors are required to attest as to whether:
 - the bank has systems in place to monitor and control adequately the banking group's material risks, including credit risk, exposure concentration risk, interest rate risk, currency risk, equity risk, liquidity risk and other business risks, and whether those systems are being properly applied at all times;
 - all prudential requirements applicable to the bank in question are being complied with (such as requirements relating to minimum capital adequacy and exposures to related parties); and
 - exposures to related parties are in the best interests of the banking group.
 - Conflicts of interest. Banks are required to disclose directors' conflicts of interest and the policies in place for dealing with conflicts.
 - Directors' responsibility and liability. Each bank director is required to sign the bank's disclosure statement and certify that disclosures made are not false or misleading. If a disclosure statement is found to be false or misleading, directors are subject to potentially severe legal penalties, including substantial fines and imprisonment. In addition, directors may face unlimited personal liability for creditors' losses where creditors relied on a bank's disclosure statement that was false or misleading.
 - Composition of the board. Banks incorporated in New Zealand are required to have a minimum of two independent directors (who must also be independent

of any parent company or other related parties) and a non-executive chairperson. These requirements are intended to increase the board's capacity to exercise appropriate scrutiny over the performance of the management team. In addition, independent directors provide some assurance that the bank's dealings with its parent or other related parties are not in conflict with the interests of the bank in New Zealand.

The requirements imposed on bank directors complement and reinforce the standard duties applicable to company directors generally, as contained in the New Zealand Companies Act. This Act imposes a number of duties on directors, including a duty:

- not to allow the business of the company to be carried on in a manner likely to create a substantial risk of serious loss to the company's creditors;
- not to allow the company to incur an obligation unless the director believes, on reasonable grounds, that the company will be able to perform the obligation when it is required to do so; and
- to exercise the care, diligence and skill that a reasonable director would exercise in the same circumstances.

Complementing these requirements, New Zealand's approach to financial sector regulation also seeks to promote sound corporate governance in the financial sector by creating an environment conducive to robust market disciplines. This is achieved through a number of measures, including the promotion of a relatively open banking sector, a competitively neutral approach to regulation (enabling banks and non-banks to compete on largely equal terms), and the absence of deposit insurance. In addition, the Reserve Bank's approach to responding to a bank failure stresses the avoidance of a government-funded bail-out of the bank in question, and seeks to ensure that shareholders, subordinated creditors and senior creditors (including depositors) bear their fair share of losses.

Leading by example – corporate governance in the Reserve Bank

In addition to the measures taken to promote sound corporate governance in the commercial banking sector, the

Reserve Bank is also subject to a number of policies designed to promote a strong governance framework within the Bank. These include:

- A clear, publicly disclosed set of policy objectives and associated responsibilities. These are set out in the Reserve Bank of New Zealand Act 1989 and (in the case of the Bank's monetary policy objectives) in the Policy Targets Agreement between the Minister of Finance and Governor of the Reserve Bank. In addition, the Bank has issued numerous publications, aimed at different audiences, explaining its policy objectives in each of its core functions and the means by which the Bank seeks to achieve those objectives.
- A clear, publicly disclosed set of duties and accountabilities for the Governor. Again, these are specified in the Reserve Bank Act and in the Policy Targets Agreement.
- Clear specification of the role and duties of the Reserve Bank's board of directors. The Act specifies that the Board's principal responsibility is to monitor the performance of the Governor and the Bank in meeting the Bank's objectives. The Board also has the authority to give advice to the Governor and is empowered to recommend to the Minister of Finance that the Governor be dismissed in specified circumstances. A further responsibility of the Board's non-executive directors is to periodically recommend to the Minister of Finance the appointment (or reappointment) of the Governor. The Minister is not bound by the Board's recommendation, but is not able to appoint a person to the office of Governor without a recommendation from the Board.
- An obligation to report publicly, on a regular basis, on the Reserve Bank's performance in meeting its statutory objectives (particularly the achievement of price stability). The Bank does this in various forms, including in its *Monetary Policy Statements* (currently issued quarterly) and in its *Annual Report*. In addition, the Governor and other senior staff appear before Parliament's Finance and Expenditure Committee on several occasions during the year to respond to questions relating to the Bank's performance. Various publications issued by the Bank, including the *Bulletin*, also provide information on the

Bank's assessment of its performance and provide an opportunity for public scrutiny of its effectiveness in carrying out its functions.

- Clear disclosure of all regulatory requirements and policies promulgated by the Reserve Bank. The Bank is statutorily obliged to issue a *Statement of Principles*, setting out its approach to the registration and supervision of banks. This is publicly available, including on the Bank's web site. In addition, the Bank publicly discloses all banking supervision regulations, including the disclosure regulations applicable to registered banks.
- An obligation to issue an annual report and set of financial statements, independently audited, that comply with New Zealand's accounting standards and practices, including information on accounting policies, off-balance sheet commitments and contingent liabilities.
- A culture of comprehensive planning and budgeting, and internal and external accountability for expenditure and performance. The Bank also maintains comprehensive risk management and internal audit arrangements, including a risk-assessment unit with responsibility for assessing the full range of risks within the Bank.
- An obligation for the Bank's Governor and Deputy Chief Executive to sign publicly disclosed statements attesting to the maintenance of internal controls to promote the integrity and reliability of financial reporting.
- The Minister of Finance is empowered to appoint a person to audit the performance of the central bank in carrying out its functions.

Taken together, these requirements provide a robust framework for encouraging effective corporate governance and risk management in the Reserve Bank.

As a result of the independent review of monetary policy, conducted in late 2000/early 2001, some additional measures are being implemented to further strengthen the Bank's corporate governance. In particular, the Reserve Bank Act will be amended to provide for a non-executive chairman of the Bank's Board and for the removal of the Deputy Governor(s) from the Board. In addition, the Act will require the non-executive directors of the Board (ie all of the directors

other than the Governor) to issue a publicly disclosed annual report on their assessment of the Governor's and Bank's performance of the Bank's functions. In anticipation of this requirement, the Non-Executive Directors' Committee of the Board issued its first annual report in 2001, contained in the Bank's *Annual Report*.

In addition to these changes, the Bank has independently taken other initiatives to strengthen its governance arrangements in the last year or so in connection with its conduct of monetary policy. It has adopted a regular practice of engaging foreign monetary policy experts (usually from other central banks) to participate in the monetary policy decision-making process to provide a basis for peer review. This has proved to be a very effective way of seeking to ensure that the Bank's conduct of monetary policy is consistent with relevant international best practice and exposes the Governor and other senior staff to fresh perspectives from well seasoned monetary policy decision-makers.

The Bank has also appointed two external experts to participate in the monetary policy decision-making process on a regular basis. This provides the Governor with additional sources of advice to supplement the advice from staff and is another important mechanism for enhancing the Bank's decision-making and governance practices.

5 Conclusion

This article has argued that effective corporate governance and risk management practices are essential for the promotion of financial stability. The paper has identified a number of ways in which sound corporate governance and risk management practices in the banking system can be encouraged, including:

- the development of effective corporate law and the legal infrastructure to enforce it;
- measures to promote a corporate governance culture, including through the development of corporate governance principles;
- promoting high quality accounting and auditing standards, including effective enforcement of disclosure requirements, with an emphasis on holding directors to

account for the truth and fairness of disclosures issued by their bank;

- policies to strengthen the market disciplines on the banking system, including through the nature of bank ownership structures, opening up banking systems to reputable overseas banks and introducing competition to the financial system; and
- effective supervisory techniques to encourage the adoption and maintenance of sound corporate governance and risk management practices.

The article has also noted the importance of government agencies, including central banks, leading by example through the adoption of their own sound internal governance arrangements.

Developments in the New Zealand banking industry

Denys Bruce, Banking System Department

This article reviews developments in the New Zealand banking system for the year ending December 2001. Financial information extracted from registered banks' disclosure statements highlights a banking industry that is performing well and in a sound financial position. Banks' revenue sources have been subject to pressures from competition and funding constraints in recent years, but they have been able to offset those negative revenue influences through asset expansion, efficiency gains, diversification strategies, and the use of sound credit risk management techniques, so as to enable overall profitability to be maintained and enhanced.

1 Introduction

This article discusses recent developments in the New Zealand banking industry, placing these in the context of recent international economic developments. It comments on the financial performance of the industry, both in 2001, and for the five year period ending in 2001, using data published in registered banks' disclosure statements.

New Zealand banking system policy matters are not covered in this article, as the overview comments provided in last year's Bulletin article continue to highlight the substantive policy issues the Reserve Bank is currently addressing at this point in time. Future Bulletin articles will deal with individual policy issues as they are advanced on a case by case basis.

2 International economic environment

The international economy underwent a slowdown in 2001, with three of the world's most important economic engines, Europe, the USA, and Japan, concurrently undergoing economic decelerations. Periods of negative economic growth were suffered in all three regions during the year, although in Europe and the USA these were relatively short-lived, lasting only one quarter, with positive real economic growth still being reported on a year on year basis. In contrast, Japan's economic contraction was more persistent and real economic growth in 2001 was negative.

During the year the "technology bubble" in the United States also burst, which contributed to slowing down international

trade and transmitting its effects to other economies, especially Asia, where most countries, China being the main exception, also underwent material economic slowdowns. And the September 11 terrorist attacks exacerbated these difficulties, through their adverse impact on the tourism and aviation industries.

Although in Australia an economic slowdown was also reported in 2001, this slowdown was not as pronounced as it was in most regions, with GDP growth easing to 2.4 per cent in 2001, from 3.1 per cent in 2000. However, with export performance representing a key ingredient to its overall economic performance, Australia was not unaffected by the world economic out-turn, with the mining, tourism, and technology based industries in particular undergoing difficulties.

This economic environment reduced the credit quality of borrowers internationally and significantly increased corporate bond default rates, which more than doubled over rates prevailing in 2000. In dollar terms, the consequences of default were even greater, with the value of international corporate bonds on which default occurred more than quadrupling in 2001. Naturally, these difficulties in the international corporate bond markets had a parallel in the banking industry in the major economies in terms of the declining credit quality of borrowers. By way of example, in the United States, for the 8,080 commercial banks insured by the Federal Deposit Insurance Corporation, a generalised deterioration in counterparty credit quality resulted in a 44 per cent increase in provisioning for credit losses in 2001,

with the level of those provisions growing to 20 per cent of net interest income, up from 15 per cent in 2000.¹ Similarly, in Australia, the credit loss provisioning of the four major banks grew by 57 per cent on an aggregate basis, with these provisions constituting 12.0 per cent of the aggregate net interest income of these banks, up from 8.0 per cent in 2000.

As will be discussed later in this article, these adverse international conditions have not materially impacted on the financial health of the New Zealand banking industry.

3 Developments in the banking industry in New Zealand

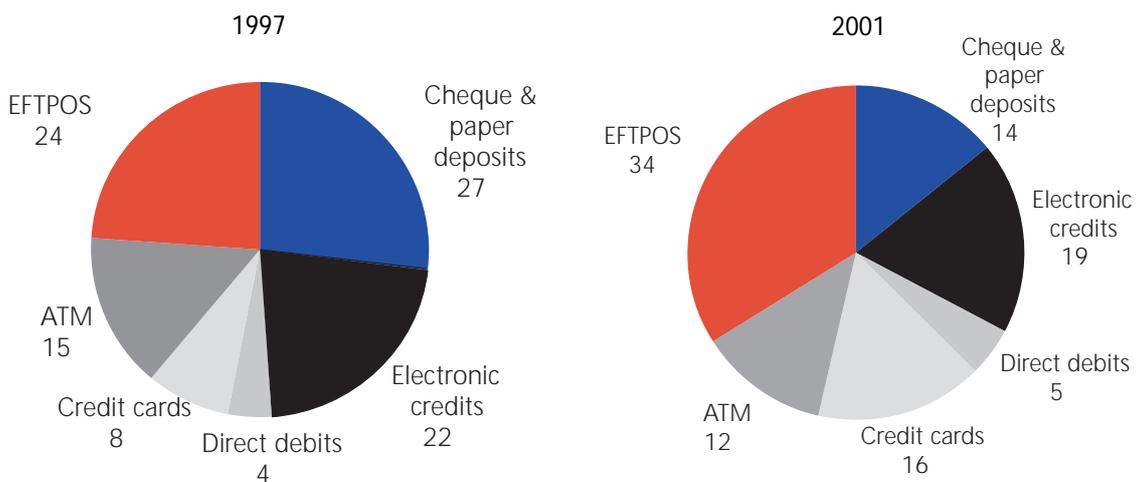
The number of registered banks in New Zealand declined from 18 as at 31 December 2000 to 17 as at 31 December 2001. In March 2001, BNP Paribas SA (formerly Banque Nationale de Paris SA), which had been registered as an overseas incorporated bank since March 1997, relinquished its bank registration as part of a rationalisation of the bank's operations worldwide. BNZ Finance Limited was voluntarily deregistered on 30 June 2001 to allow its operations to be amalgamated into those of its parent, Bank of New Zealand. Additionally, one new bank was registered on 29 November

2001, Kiwibank Limited, to allow it to test its systems and procedures in anticipation of opening for full business on 4 February 2002. A list of the registered banks as at 31 December 2001 is set out in appendix 1.

As in recent years, 2001 saw further evolution in the nature of payment methods in the banking industry, reflecting the continued uptake of technology. Figure 1 sets out the changes in usage in different payment methods between 1997 and 2001. The key trends highlighted in previous years have not changed, with continued rapid growth in credit cards and EFTPOS as payments methods,² and a further decline in the usage of cheques and other paper based payments methods, both by volume and as a percentage of total payments. Reasons for these changes include the customer convenience of transacting electronically, and the differential fee arrangements put in place by banks with respect to different payment methods, with the electronic based payments methods generally being associated with lower fee structures.

Although the number of ATM transactions has increased by 11 per cent over the year, as a percentage of total transactions the increase is not so pronounced. Nonetheless, as figure 2 shows, the total number of ATMs continues to grow rapidly, with 138 new ATMs being added in 2001, up 8.1 per cent

Figure 1
Payment methods - percentage of total transactions by volume



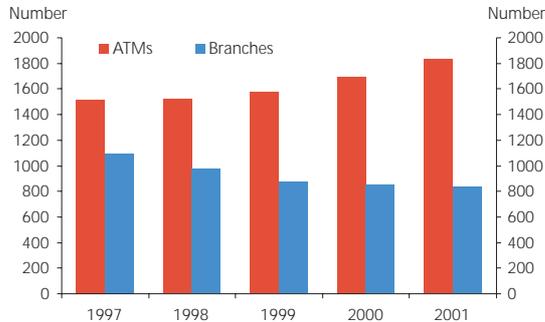
Note: Total number of transaction in 2001 was 1,597 million, and in 1997 was 1,258 million.

Source: New Zealand Bankers' Association

¹ These provisions are compared with net interest income because the interest rates charged on loans normally include an allowance to cover the credit risk assumed.

² Many credit card transactions are now EFTPOS initiated, and so to some extent there is an overlap in these two types of payment methods.

Figure 2
Number of automatic teller machines and branches



Source: New Zealand Bankers' Association

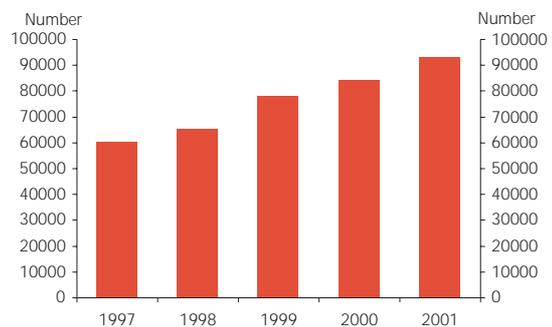
on 2000. At the same time the number of bank branches has declined by 17 or 2.0 per cent over the year. This decline was less than the 2.7 per cent decrease recorded in 2000, possibly indicating that the scope for any further material rationalisation of branch numbers amongst the existing banks is limited.

Although ATMs have been used to replace branches in instances where branches' underlying operations have not been profitable, there is also a direct relationship between the numbers of ATMs and the numbers of branches, given that ATMs are often placed outside or within branch premises in order to free up branch personnel to provide more complex or service-based financial services to customers. Many of the alternative transaction services, such as telephone and internet banking, are likely to play a similar role because, at least to date, they appear not to have been widely used to conduct more complex transactions, but rather for more "vanilla" functions. Also, customer choice tends to be viewed as a desirable marketing attribute in its own right, given that most customers will prefer to have the option of accessing a range of transaction methods, rather than rely on one system, so as to best tailor transaction methods to individual preferences and needs.

For all of these reasons, it seems unlikely that the branch numbers of the existing banks will decline substantially in the foreseeable future, but rather that they will continue to remain near current levels. Of course, this comment does not take into account the future impact of new bank entrants, such as Kiwibank Limited, on branch numbers.

In line with the growth in EFTPOS-based transactions, the number of EFTPOS terminals continues to rise (see figure 3). Similarly, internet banking is also growing rapidly, with the numbers of bank customers using this facility to conduct banking transactions reported to have doubled each year for the past two years, and with customer penetration reported to have reached 26 per cent in 2001, up from 15 per cent the previous year.³

Figure 3
Number of EFTPOS terminals



Source: New Zealand Bankers' Association

4 Financial performance of banks in New Zealand

The commentary in this section is based on data for the year to December 2001, compiled from registered bank disclosure statements. The data disclosed in the four quarterly disclosure statements have been aggregated where appropriate. Where there is more than one registered bank in a corporate group, totals have been adjusted to avoid double counting. Also, profits are calculated before the deduction of minority interests, which have been material in 2001, because this report focuses on system profitability as a whole, rather than on how profits are divided amongst the different classes of shareholders.

The economic environment prevailing in New Zealand in 2001 was relatively robust, despite the international economic slowdown described earlier. For the year ending December 2001, real economic activity in New Zealand (as measured

³ See the recently published report by KPMG, *Financial Institutions Survey 2002*, April 2002.

by GDP) grew by 2.9 per cent, which was up on the year 2000 growth rate of 2 per cent. The resilience of the New Zealand economy in 2001 to adverse international conditions can mainly be attributed to high commodity prices and low exchange rates supporting export revenues, and also to strong migration rates and a low interest rate environment maintaining consumer confidence and domestic demand.

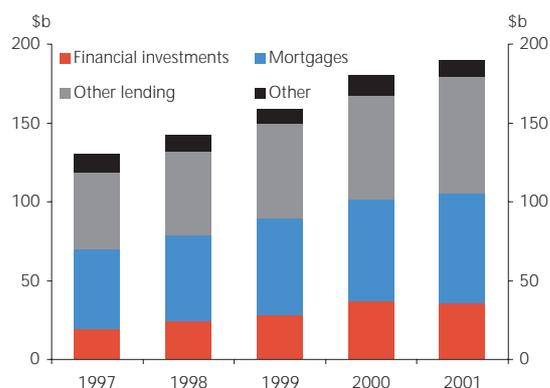
Reflecting the relative buoyancy of the domestic economy, the banking industry performed soundly in 2001 in terms of profitability and key prudential indicators such as capital adequacy and asset quality. Trends in these indicators will be described following a commentary on asset and liability movements, and profitability.

Assets and liabilities

As at 31 December 2001 the total assets of the banking system were \$189.6 billion, up by 5.3 per cent on 31 December 2000, but well down on the year on year growth rate achieved in 2000, when total assets grew by 13.6 per cent.⁴

Figure 4 shows growth in bank assets and changes in asset composition. The information shows that the deceleration in asset expansion in 2001 is due to declines in financial investments and other assets. Total lending growth of 9.5 per cent in 2001 has actually been stronger than the 7.7 per

Figure 4
Composition of assets



As at 31 December

⁴ However, growth in average quarterly assets over these two years has been more comparable (13.8 per cent in 2001 versus 13.3 per cent in 2000), with this effect being mainly due to a material decline in the balances of financial investments over the last quarter of 2001.

cent achieved in 2000, and is broadly comparable with the average growth rate obtained over the last five years, of about 10 per cent per annum.

Most of the loan growth in 2001 originated in the "other lending" category, comprising mainly business lending. This category grew by 12.1 per cent in 2001, compared to 9.9 per cent in 2000. In contrast, residential mortgage lending growth has been more subdued, growing by 6.8 per cent in 2001, slightly up on the 5.4 per cent growth rate achieved in 2000. The faster growth rate for business lending over mortgage lending has been a typical feature of lending patterns over the past five years, and has resulted in a fall in the proportion of residential mortgages to total lending, from 51 per cent in 1997, to 48 per cent in 2001.

A significant amount of the business lending growth in 2001 occurred in the agricultural, food manufacturing and property and business services industrial sectors, where strong lending growth rates were recorded. In particular, beef, lamb, and dairy prices remained at high levels for most of 2001, and in combination with relatively low exchange rates, produced favourable returns for farming in New Zealand.

However, expansion in overall business lending was constrained by the fact that lending to particular types of industries fell or did not evidence much growth at all in 2001. For example, prices for forestry products and hides and skins declined due to cyclical business patterns, and lending to these industries fell in line with those cycles. Similarly, lending growth to the retail and wholesale sectors, and to the hospitality/tourism industries, tended to be flat or negative over the year.

Figure 5 shows how the assets of the banking system are funded, in terms of the nature of the funding contributed by different types of investors. A key fact to note is that the proportion of bank funding contributed by individuals has declined significantly over the past five years, from 37 per cent of total assets in 1997 to 26 per cent in 2001. Most of the additional funding required to finance asset growth has been sourced from external wholesale sources (organisations), with the balance from owners, either in the form of equity, or related party funding. Over the five year period, funding from individuals (or the retail market), has only grown by \$3.9 billion (from \$45.7 billion in 1997 to

\$49.6 billion in 2001). In contrast, funding from organisations grew by \$41.9 billion (from \$51.1 billion in 1997 to \$93.0 billion in 2001).

The sluggish growth in retail-sourced funding most likely reflects the slow growth in household savings within the New Zealand economy. The attraction of alternative

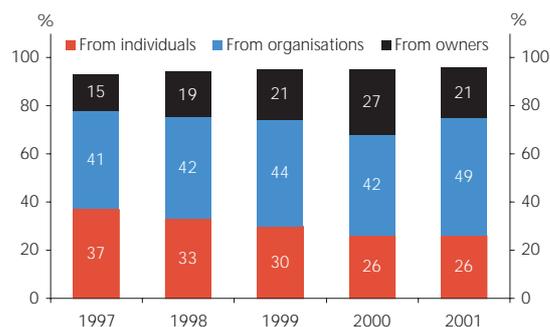
investment opportunities in areas such as managed funds, insurance bonds, the property markets, and the share market may also have contributed.

Profitability

Bank profitability in 2001 was relatively strong, with net profits before taxes growing by 23.0 per cent in relation to the same period one year earlier, and by 20.1 per cent on an after tax basis (refer table 1). For the locally incorporated banks, this profitability improvement translates into a return on average equity of 24.4 per cent, up from 23.8 per cent in 2000.

Of the items contributing to the dollar growth in pre-tax profits, the growth in net interest income is the most important, increasing by \$384 million (10.9 per cent) on the previous year, followed by growth in other income of \$124 million (5.8 per cent), and a decline in operating expenses of \$119 million (3.8 per cent). Impaired asset expenses made a negative contribution to the pre-tax profit, after a 50.4 per cent or \$64 million increase over the year.

Figure 5
Composition of funding



Note: Information for this graph has been extracted from half-year or end-of-year General Disclosure Statements. Therefore the data are either as at 30 September or 31 December. Items which do not perform a funding role have been excluded from the percentages in this graph.

Table 1
Aggregate income statement
\$ million

	1997	1998	1999	2000	2001
Net interest income	3,095	3,193	3,307	3,527	3,911
Less Impaired asset costs	88	201	144	127	191
<i>Equals</i>					
Net interest income after impaired asset expenses	3,007	2,992	3,163	3,400	3,720
Plus Other income	1,705	1,862	1,865	2,140	2,264
Less Operating expenses	3,158	2,982	2,944	3,106	2,987
<i>Equals</i>					
Profit before Abnormals	1,554	1,872	2,084	2,434	2,997
Plus/less Abnormals	74	-130	125	-7	-11
<i>Equals</i>					
Profit before tax	1,628	1,742	2,209	2,427	2,986
Less Tax	505	507	566	606	799
<i>Equals</i>					
Net Profit after tax	1,123	1,235	1,643	1,821	2,187

Table 2
Profitability as a percentage of average assets

	12 mths to 31/12/01	12 mths to 31/12/00	Change
Net interest income	2.05%	2.09%	(0.04%)
Impaired asset expenses	(0.10%)	(0.07%)	(+0.03%)
Other income	1.19%	1.27%	(0.08%)
Operating expenses	(1.57%)	(1.85%)	(-0.28%)
NPBT*	1.57%	1.44%	+0.13%
NPAT**	1.15%	1.08%	+0.07%

*Net profit before taxes

** Net profit after taxes

However, when the components of profits over the last two years are denominated in terms of a common yardstick for measurement - and the one which is normally employed in the industry is average total assets – then a different picture emerges (see table 2).

Banking system profitability has also been strong in average asset terms, growing by 0.13 percentage points on a before tax basis and by 0.07 percentage points on an after tax basis over the year to 31 December 2001. However, in contrast to the conclusions of the dollar contribution analysis above, the analysis of profits relative to average assets shows that the only item which has made a positive contribution to system profitability in 2001 is the decline in operating expenses. Net interest income's contribution is actually slightly negative, and similarly, the contribution of other income has also been negative. In comparison, the dollar fall in operating expenses translates into a solid contribution to the increase in profitability.

A discussion on developments with respect to net interest income and operating expenses is presented below. As for other income, this revenue stream suffered in 2001 due to pressures on money transfer fees and on loan fees and similar banking facility fees, which for some banks produced little dollar growth at all over the year. Competition, including the continuing consumer shift towards lower fee earning electronic payments methods, and slow growth in some banks' business lending, are the main causes of this trend. Growth in the profits derived from trading activities were variable across different banks, but for the system as a whole were also modest.

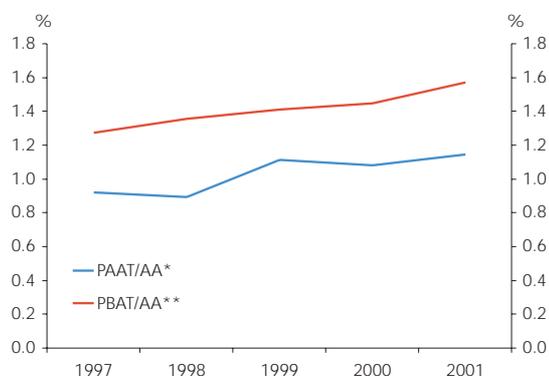
The dollar rise in impaired asset expenses was reasonably generalised across most banks. Several factors contributed to their increase, including new specific provisioning, direct write-offs of impaired assets, and increases in "dynamic" provisions, that is, general provisions based on statistical evaluations of the expected credit losses in the overall loan portfolio. Most importantly, the growth in impaired asset expenses is not material in terms of average assets, nor are these expenses material as a percentage of net interest income (4.9 per cent). As has been the case for a number of years, the impaired asset expense levels of New Zealand banks tend to be low vis-à-vis international levels, and this situation

has not changed in 2001, despite the large dollar increase in these expenses.

Longer term profitability

This section looks at the main factors influencing the underlying profitability of banks over the five year period ending 31 December 2001, with underlying profitability being viewed in terms of profitability before abnormal items and taxes.

Figure 6
Profitability as a percentage of average total assets



*Profit after abnormal items and taxes/average assets.

**Profit before abnormal items and taxes/average assets.

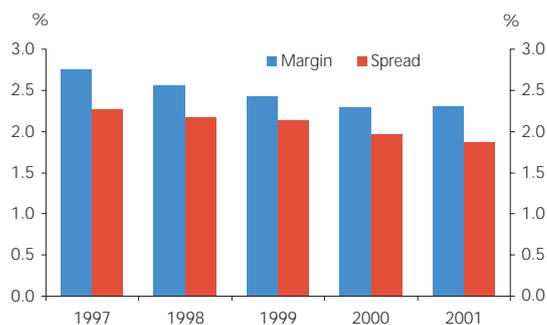
Figure 6 shows profitability measured as a percentage of average total assets, over the five years to December 2001. The figure shows that underlying banking system profitability has been gradually trending upwards. Over the five year period, this increase equates to a rise of 30 basis points on average total assets.

Net interest income and net interest margin

An important driver of bank profitability is net interest income relative to average assets. A key factor which affects the performance of this ratio over time is the net interest margin, or the ratio of net interest income to average interest-bearing assets. In turn, the latter ratio is influenced by a number of factors, the most important being the interest rate spread, or the difference between the average yield on interest-bearing assets, and the average cost of interest bearing funds.

Figure 7 shows how net interest margins and spreads have developed over the last five years. Margins have declined significantly over the period, from 2.75 per cent in 1997 to 2.29 per cent in 2001, a fall of 46 basis points, and this fall has mainly been driven by a similar decline in interest rate spreads, of 40 basis points.

Figure 7
Margins and spreads



Interest rate spreads are subject to strong competitive pressures, but also can be affected by compositional effects – that is, changes in the nature of interest-bearing liabilities and interest-bearing assets.

On the liability side, the mix of wholesale and retail funding is an especially important factor, because retail interest rates tend to be lower than those prevailing in the wholesale market, due to the higher costs associated with the provision of the retail distribution infrastructure. Over the five year period, wholesale markets have become an increasingly important source of funding relative to the retail market, with the result that there has been about a 10 per cent reduction in the proportion of interest-bearing funding sourced from the retail market. The impact of this change in funding mix on spreads will depend on market conditions and on the nature and term of the retail funding. However, it is likely that the change will have had a material impact on the contraction in spreads over the five year period.

Changes in the composition of lending and other interest-bearing assets are also likely to have played a role in the decline in spreads. In particular, an increasing proportion (about 4 per cent) of interest-bearing assets are now held in lower yielding financial investments, and there has been a corresponding reduction in the proportion of residential mortgages comprising interest-bearing assets.

Since spreads tend to reflect differences in credit quality across different market sectors, then changes in the industrial or sectoral mix of lending can also have an impact. For example, any increase in the proportion of business lending to major corporates is likely to reduce spreads, other things being equal, because the generally higher credit quality of these counterparties will result in finer loan pricing in that business segment compared to other business segments.

Against this background, the pressures placed on spreads by competition have been driving a trend towards ensuring that loan pricing adequately reflects the risk/return trade-offs inherent in lending relationships. The process generally involves designing credit risk management systems in such a manner as to ensure that the credit risk characteristics of different classes of counterparties, as well as the credit risk implications of various loan features and collateral arrangements, can be reliably and objectively understood and distinguished from each other (including in relation to the estimation of the expected and unexpected losses associated with different credit risk rankings). The implications for lending objectives are that the profitability of lending relationships tends to assume priority over volume growth and market share.

Of interest is the fact that the net interest margin in 2001 compared to 2000 has remained unchanged at 2.29 per cent. Given that a 9 basis point decline in spreads has occurred over the year, and that a small decline in the general level of interest rates in 2001 will have tended to reduce the benefits that banks receive on their non-interest-bearing funding, a fall in the margin might also have been expected. The reason the margin has not changed is largely due to a sizeable increase in the levels of non-interest-bearing funding in 2001, mainly attributable to the activities of one bank, which has lowered the average effective cost of funds of the overall banking system, offsetting the impact of the other influences. The growth in non-interest-bearing funding in 2001 is an unusual feature, and represents about a 3 per cent increase on the recent historic average ratio of non-interest-bearing funding to total funding.

The 46 basis point fall in net interest margins over the five year period has been the major factor influencing a 48 basis point fall in the ratio of net interest income to average assets.

Other factors affecting long term profitability

The other key factors affecting profitability have been a steady decline in other income and operating expenses, and the relatively low levels of impaired asset expenses of New Zealand banks.

Other income fell by 21 basis points as a percentage of average assets during the five years, reflecting much the same trends evidenced in 2001, especially the pressures placed on loan fees and money transfer fees by competition and the shift towards electronic payments methods. It is likely that these pressures would have generated a more significant decrease in other income had it not been for the offsetting impact of diversification strategies, such as the emphasis now placed on the distribution of funds management and insurance products, and the solid growth in trading income achieved over the five year period.

When the impact of the fall in other income is added to that of declining net interest income, together these factors account for a significant negative profitability impact of 69 basis points. Only through containing operating expenses and impaired asset expenses, while at the same time being able to grow assets significantly, have banks managed to improve profitability over the period – operating expenses relative to average assets fell by 1.02 percentage points over the five years, with changes in impaired asset expenses accounting for the final outcome of a 30 basis point rise in profitability before abnormal items and taxes.

In part the fall in operating expenses reflects economies of scale – in particular, loan sales and administration resource requirements do not bear a one-to-one linear relationship to growth in loan volumes. Some other reasons why significant operating efficiencies have been achieved over the past few years include the following:

- an increased rationalisation and specialisation of resources, for example, through outsourcing, rationalisation of branch numbers, and through the development of specialist lending units;
- the shift towards lower cost electronic delivery of basic banking services – that is, towards ATMs, EFTPOS, telephone banking, and internet banking;

- economies of scope – a greater range of products and services is now distributed through branch networks, in part because of the above shift; and
- productivity improvements, for example, through targeted deployment of modern technologies in internal administrative functions.

Finally, maintaining impaired asset expenses at relatively low levels over the past few years has made a significant contribution to overall bank profitability. As noted previously, the levels of impaired asset expenses of New Zealand banks in relation to international comparators, eg in relation to the US, European, and Australian banking industries, are very low, and were these expenses to rise to typical international levels,⁵ the profitability of New Zealand banks would be significantly reduced. New Zealand banks use relatively sophisticated credit risk management systems, although broader macroeconomic policy and performance is likely to have assisted in bringing about this result, by promoting the conditions necessary for a sound economic performance on the part of New Zealand companies, thus tending to strengthen their general creditworthiness, other things being equal.

To summarise on profitability, over the five year period under review, it would appear that banks have been able to make up for the negative revenue influences imposed by funding constraints and competition mainly through asset expansion, diversification strategies, the generation of operating efficiencies, and through the use of effective credit risk management techniques.

Asset quality

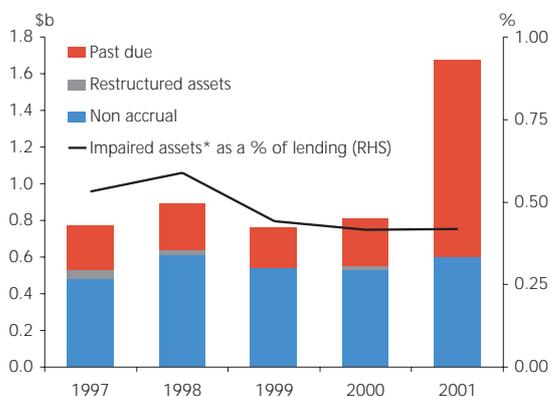
As noted previously, in 2001 the New Zealand economy performed strongly, despite a turbulent international environment. However, within this overall positive picture there were some negative features, particularly with respect to cyclical downturns in some industries, including tourism.

⁵ These levels can vary depending on the country, the type of bank involved, and the stage of the economic cycle. In normal times, a typical system ratio of impaired asset expenses to net interest income for countries in the regions mentioned above would be in the vicinity of 12 per cent, although for some the ratio can be significantly higher. In New Zealand, in 2001 this ratio was 4.9 per cent, and has averaged 4.4 per cent over the last 5 years.

In addition, the airline industry underwent some stress in the latter half of the year.

Figure 8 shows that, despite the potential for difficulties, total gross impaired assets within the banking system have not risen significantly over the past two years (by \$53.1 million or 9.7 per cent), and that more importantly, in relation to total gross loans and advances, they have remained stable at 0.42 per cent. At these levels, impaired assets are at historic lows, and they are also well below international levels - for most comparable countries, the ratio of gross impaired assets to total gross loans and advances rarely go below 1 per cent.

Figure 8
Asset quality



*Impaired assets = non-accrual plus restructured assets

The essence of an impaired asset is that it is one on which a bank expects to incur a credit loss, whether, as in the case of "non-accrual" assets, as a result of not being able to collect all monetary amounts owing, such as principal or interest, or, in the case of so-called "restructured assets", due to the opportunity cost associated with forgoing asset returns that could be obtained from an otherwise fully performing counterparty.

Another indicator of asset quality is that relating to the amount of assets which are described as "past due assets", that is, assets on which a credit loss is not expected to be incurred, but which are not fully performing in the sense that key loan terms and conditions, such as payments of interest and principal, have not been met within a reasonable time frame (defined as overdue by 90 days or more). Such assets may not be classified as impaired by banks because they may regard the counterparty's difficulties as being only temporary, or if not, the judgement may be made that the bank has more than sufficient collateral to cover all amounts

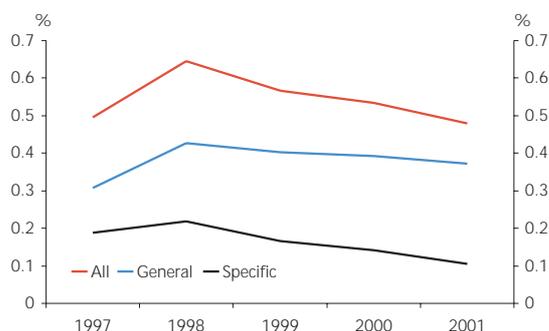
owing under the loan agreement (and therefore that no credit loss will be incurred on the exposure).

Figure 8 also shows the amount of past due assets over the past few years. The figure shows that total past due assets have increased significantly over the past year, by \$815.5 million or 314.9 per cent, and that the December 2001 year end figure of \$1.1 billion represents 0.75 per cent of total loans and advances, well up on the recent historic average of about 0.22 per cent. However, and most importantly, because these credit exposures are not classified as being impaired as at the end of 2001, then at that time banks have made the judgement that they will not incur losses on those exposures.

An issue is whether the increase in past due assets is restricted to assets in specific industries, or is indicative of a more generalised, material decline in the overall credit quality of banks' loan portfolios. Although it is difficult to draw firm conclusions on this issue, the evidence does not tend to support the latter position, especially in the context of the relatively low level of impaired asset expenses which have been charged to banks' profit and loss accounts in 2001. A sizeable proportion of the increase in impaired asset expenses relates to dynamic provisions, and because these provisions are statistically based (taking into account the risk attributes across the entire loan portfolio), changes in them can act as a leading indicator of declines in overall asset quality - suggesting that indeed some generalised asset quality deterioration has occurred. But again the increase in these provisions is not material in terms of average assets or in terms of net interest income, in part because the provisions are growing from a low base.

Figure 9 shows that levels of general provisions, specific provisions, and total provisions as a percentage of total loans within the system have been declining over the past few years, with the December 2001 data being at their lowest level for four years. These data also do not provide support for a material decline in overall asset quality. While not all banks carry a general provision for loan losses in their New Zealand books, but rather are covered by the general provisions held in the books of their parent or head office financial statements, other indicators, such as movements in specific provisioning, or information provided on the geographical allocations of statistically based general (dynamic) provisions, also point against such a conclusion.

Figure 9
Provisioning as a percentage of total gross loans



As at 31 December

Finally, the wider economic evidence of strong overall economic growth, with difficulties or slowdowns being isolated to certain specific industries, also does not lend support to the position that a generalised material decline in overall asset quality has taken place in 2001.

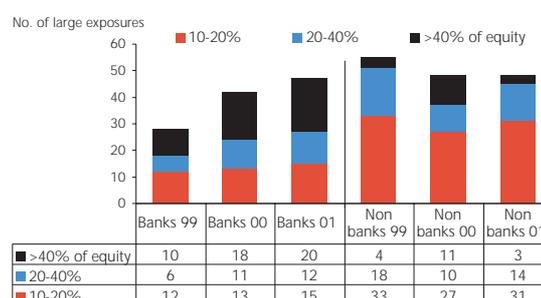
Large exposures

Banks are required to report large exposures to individual counterparties that exceed 10 per cent of a bank's equity, with the number of exposures to bank and non-bank counterparties being reported separately. This requirement applies to both locally incorporated banks and to overseas incorporated banks operating in New Zealand in branch form, as it is possible that those branches can have exposures which exceed 10 per cent of the overseas bank's equity (although given that these exposures are related to the global bank's equity, this is much less likely to be the case than it is for locally incorporated banks).

Figure 10 shows that the number of large exposures to non-banks (measured in relation to the banking groups' equity) have remained the same compared to the previous year's numbers, at 48 in total, but with a considerable fall in the number of those large exposures exceeding 40 per cent of equity, and a corresponding increase in the number within the lower exposure bands. It is likely that these movements largely reflect changes in different banks' strategies with respect to the corporate banking market, and the growing emphasis being placed by banks on the risk/return characteristics of such exposure concentrations.

There has been a small increase in the number of large inter-bank exposures, from 42 in 2000, to 47 in 2001, with the

Figure 10
Number of large exposures to bank and non-bank counterparties



As at 31 December

increase spread fairly evenly across exposure bands. This increase is mainly due to the change in the composition of banks which occurred in 2001, rather than because of any fundamental differences in the patterns in which these large inter-bank exposures occur.

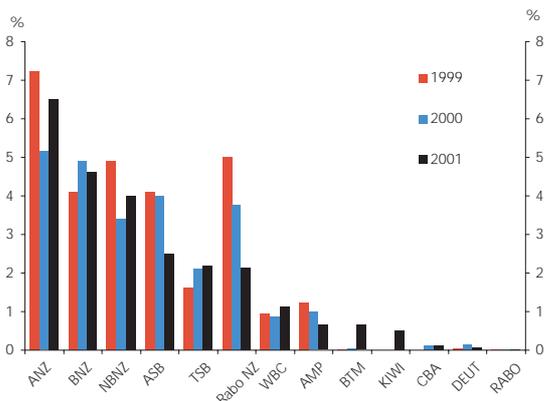
Finally, one important category of large exposures relates to the exposures of locally incorporated banking groups to their "connected persons". Connected persons mainly comprise persons who have control of, or are able to exercise significant influence over, the banking group, but they also include the related parties of those persons (other than the members of the banking group). Were these connected persons to get into difficulties, conflicts could arise between their interests and those of the registered bank. For this reason, exposures to connected persons are subject to limits, director attestations as to the arms-length nature of the exposures, and to a requirement for banks' boards of directors to comprise at least two independent directors. Over 2001, exposures to connected persons were maintained within the limits imposed by the Bank.

Market risk

Market risk disclosures are designed to give an indication of the potential exposure of a banking group to economic losses arising from changes in the value of all of a banking group's on-and off-balance sheet financial assets and liabilities, where those changes are driven by movements in market prices (interest rates, exchange rates, and equity prices). Banks are required to disclose exposures to these aspects of market risk on a quarterly basis, both in respect of balance date exposures, as well as in respect of peak exposures over the most recent quarter.

Banks' equity and foreign exchange exposures are negligible, with interest rate exposures being the most important, although even these exposures are relatively small, being typically in the region of 4 per cent to 5 per cent of equity. As shown in figure 11, no registered bank has had a significant exposure to interest rate risk over the three years shown.

Figure 11
Peak interest rate risk as a percentage of banking group equity



Note: See appendix 1 for full bank names

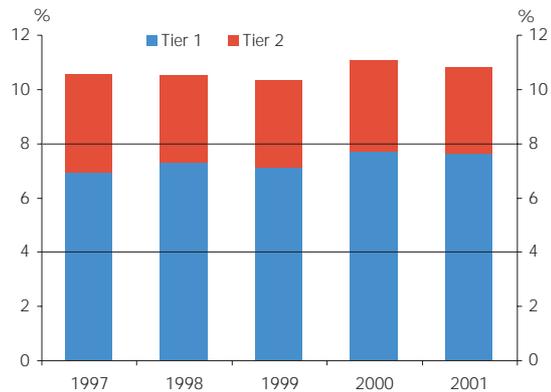
Capital adequacy and credit ratings

As a condition of registration, banks which are incorporated in New Zealand are required to maintain a minimum tier one capital ratio of 4 per cent of risk-weighted credit exposures and an overall 8 per cent total capital ratio. Branch banks are not required to maintain a capital requirement in New Zealand, as they are subject to capital ratio requirements on their global operations in their country of incorporation.

Figure 12 shows that the total capital position of the New Zealand banking system remains strong, with a tier 1 ratio of 7.6 per cent and a total capital ratio of 10.8 per cent as at 31 December 2001. Although the total capital ratio is slightly down on the 31 December 2000 level, it is still above the average ratio for the previous five years, of 10.5 per cent. Banks tend to maintain a buffer above the minimum ratios in order to cover exposure to risks not explicitly covered by the ratios, such as market risks, as well as to meet contingencies and the need to provide a base for further asset growth.

Figure 13 sets out the development of risk-weighted exposures over the past five years. Total risk weighted exposures grew by 6.1 per cent in 2001, following a 9.1 per

Figure 12
Capital adequacy

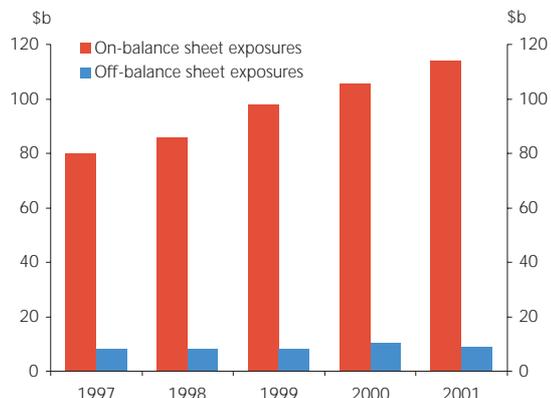


As at 31 December 2001

cent increase in 2000. All of this growth occurred in the on-balance sheet category of risk weighted exposures, which increased by 8.1 per cent over the year, in contrast to off-balance sheet risk-weighted exposures, which fell by 14.5 per cent over the same period. Off-balance sheet risk-weighted exposures constitute only 7.0 per cent of total risk-weighted exposures.

Another important indicator of financial strength is the credit ratings provided by ratings agencies. As was the case last

Figure 13
Risk-weighted exposures



As at 31 December

year, banks' credit ratings are indicative of a banking system that is financially very strong. As at December 2001 the number of registered banks having a credit rating of AA- or above was 12, an increase of one above the number a year earlier, although this increase was due to the registration of Kiwibank Limited on 29 November 2001, rather than because of any upgrades of the ratings of existing banks. A double A rating is the second highest in the rating scale and means that rating agencies judge these banks to have a very strong

capacity to pay interest and to repay principal in a timely manner.

5 Conclusion

The international economic environment in 2001 has been difficult, with a synchronised slowdown in the performance of the world's key economic drivers tending to reduce the overall credit quality of borrowers internationally. Yet despite the international economic slowdown, New Zealand's economy performed well, with real economic growth for the year to December 2001 at 2.9 per cent actually outstripping the growth rate for the previous year. There were some negative features to this performance however, with some industries undergoing cyclical downturns, or suffering as a result of the flow-on effects of the September 11 terrorist attacks.

New Zealand's robust economic environment and sound risk management by banks seem to have sheltered the banking industry from most of the ill effects of the international economic downturn. The New Zealand banking industry

performed well in 2001. After-tax profits increased and the industry remained in a strong financial position, not only in terms of credit ratings, but also in terms of asset quality, capital adequacy, and the management of exposures to key banking risks. Although there was an increase in past due assets, banks did not expect to incur credit risk losses on those exposures, nor is the increase otherwise indicative of a more generalised material decline in the overall asset quality of banks' loan portfolios.

The growth in profitability in 2001 is mainly attributable to ongoing asset expansion and a containment of banks' operating expenses, with net interest margins remaining stable, and other income coming under pressure from slow growth in fees and commissions. Over the five year period ending in December 2001, banks' profits have been subject to considerable pressure from competition and funding constraints, but through asset expansion, the generation of operating efficiencies, and the implementation of diversification strategies and sound credit risk management techniques, banks have been able to offset those pressures and maintain or enhance profitability.

Appendix 1

Registered banks as at 31 December 2001

New Zealand incorporated banks

<i>Registered bank</i>	<i>Owner</i>	<i>Abbreviation</i>
ANZ Banking Group (New Zealand) Ltd	Australia and New Zealand Banking Group Limited	ANZ
ASB Bank	Commonwealth Bank of Australia	ASB
Bank of New Zealand	National Australia Bank Limited	BNZ
Kiwibank Limited	New Zealand Post Limited	KIWI
The National Bank of New Zealand Limited	Lloyds TSB Group plc	NBNZ
Rabobank New Zealand Ltd	Rabobank Nederland	Rabo NZ
TSB Bank Limited	TSB Community Trust	TSB

Overseas incorporated banks

<i>Registered bank</i>	<i>Abbreviation</i>
ABN Amro Bank NV	ABN Amro
AMP Bank Limited	AMP
Bank of Tokyo-Mitsubishi (Australia) Limited	BTM
Citibank NA	CITI
Commonwealth Bank of Australia	CBA
Deutsche Bank A.G.	DEUT
Hong Kong and Shanghai Banking Corporation	HKSB
Kookmin Bank	KMIN
Rabobank Nederland	RABO
Westpac Banking Corporation	WBC

Developments in credit markets over two decades

Clive Thorp, Economics Department

Following financial market deregulation in the mid-eighties, the relative importance of sources of credit for the household, agriculture and business sectors changed markedly. This article examines the changing shape of the credit market for each sector since 1980, with a special focus on credit for agriculture. Changes in the relative size of these three main credit markets are traced from the time of deregulation, showing how fast credit to each sector has grown and the impact of their credit demands on the growth of private sector overseas debt to 2000.

1 Introduction

This article examines by sector the changing sources of and demand for credit since 1980, and links aspects of these changes to New Zealand's private sector overseas debt. It first updates the long-run series of household financial assets and liabilities introduced two years ago in the *Bulletin*¹ and provides a more detailed breakdown of the long-term financial asset series. Secondly, a twenty year agriculture credit series is presented, combining for the first time data from several sources to establish a long-term credit growth path for a sector of the economy currently increasing its borrowing at one of the fastest rates it has ever experienced. Next, business sector borrowing from domestic sources is derived as the residual from these two series. The evolution of credit demand from these three sectors is illustrated in aggregate, and through the changing institutional structure that has provided the funds. The term 'credit' is used to cover comprehensively all forms of debt of these sectors: loans, securities issued and any other non-equity instruments.

2 Household financial assets and liabilities

Household credit, in New Zealand and elsewhere, is perhaps the most widely discussed of the three major private credit sectors, and has been the subject of two previous *Bulletin* articles² in this series, in conjunction with household financial

assets and net wealth. In this article we focus principally on household liabilities, but comment briefly on household assets. The long-run series, first introduced two years ago, have been extended another year to December 2001.³ These series also now cover household financial asset and credit data more comprehensively. A new annual survey of managed funds has boosted measured household financial assets in managed funds by 8 per cent, and improved data are available on non-institutional financial assets.

An overview of household financial assets and liabilities is provided in table 1. The additional data from the new annual survey of managed funds and better information on fixed interest investments have caused an upwards revision in measured financial assets by around \$5 billion over the level published last year for 2000 (data have been backdated). Household financial assets grew in aggregate around 4 per cent over 2001, with the percentage ratio to disposable income remaining relatively constant. The principal feature of New Zealand's household financial asset data compared to many other OECD countries is its low ratio to disposable income, and its relatively slow growth over the past decade. By contrast, the level of the ratio of housing values to household disposable income is more in line with those of other countries.

Total household debt grew relatively slowly again in 2001, and in ratio terms is only marginally above the 114 per cent level at the end of 1999. Until then, the ratio of financial liabilities to household disposable income in New Zealand had risen very strongly for fifteen years, catching up to levels

¹ Thorp, C and B Ung (2000). This article describes in more detail the institutional composition of the aggregate series that is also presented in table 1 below.

² Ibid and Thorp, C and B Ung (2001). This article provides a breakdown of household liabilities by institution in table 4, page 18, relevant to table 1 below.

³ The data may be downloaded from the website. The link to them is from the June 2002 Reserve Bank of New Zealand *Bulletin* preface.

Table 1
Household financial assets and liabilities 1980 to 2001

as at December \$ billion	1980	1985	1990	1995	2000	2001
Financial assets						
Deposit-taking institutions	9	18	33	41	48	52
Other fixed interest assets	3	5	8	8	8	8
Life, super and managed funds	6	15	25	38	53	52
Direct equities	3	10	8	13	16	17
Total financial assets	21	48	74	101	124	129
<i>as a percentage of disposable income</i>	<i>144%</i>	<i>174%</i>	<i>168%</i>	<i>195%</i>	<i>195%</i>	<i>192%</i>
Total financial liabilities	7	14	28	46	73	79
<i>as a percentage of disposable income</i>	<i>49%</i>	<i>50%</i>	<i>64%</i>	<i>89%</i>	<i>115%</i>	<i>117%</i>
Net financial wealth	14	34	45	54	51	51
<i>as a percentage of disposable income</i>	<i>95%</i>	<i>125%</i>	<i>101%</i>	<i>105%</i>	<i>80%</i>	<i>75%</i>
Housing value	29	69	113	155	185	192
<i>as a percentage of disposable income</i>	<i>197%</i>	<i>253%</i>	<i>257%</i>	<i>300%</i>	<i>289%</i>	<i>285%</i>
Household net wealth	43	103	158	210	236	242
<i>As a percentage of disposable income</i>	<i>292%</i>	<i>377%</i>	<i>358%</i>	<i>406%</i>	<i>370%</i>	<i>360%</i>

Source: RBNZ, SNZ, NZIER

Excludes student loans. Totals may not add due to rounding.

the more indebted OECD household sectors had been at for a decade. Since 1999, the growth of household borrowing has slowed significantly. This performance contrasts with some other countries, such as the UK and Australia, where the household debt ratio has continued to grow over recent years. However, the downward trend in the net financial wealth ratio in New Zealand has continued. Until 2000, many other countries experienced a sharply rising trend in this ratio, driven particularly by rising equity values, while New Zealanders did not benefit from similar gains. Overall, the New Zealand net financial asset ratio is low, compared to many other OECD countries.

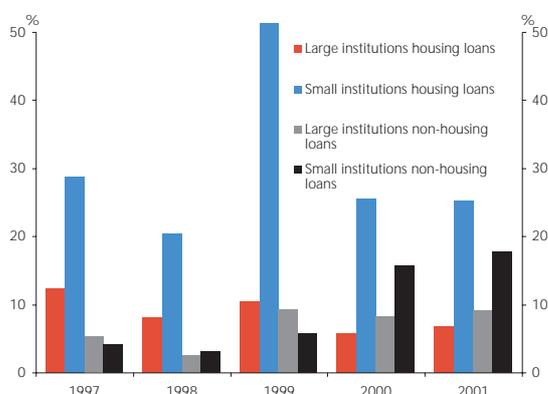
Analysis of trends in long-run data on New Zealand households' financial assets, liabilities and net wealth is instructive. However, international comparisons of these data categories, particularly of the composition of net wealth among real and net financial assets, need to be made with considerable care. Comparing trends among countries over time is likely to be the least reliable use of these data, but comparisons of levels require quite wide tolerances for institutional and measurement differences. New Zealand's comparative position has been illustrated in previous articles⁴ and the latest year's data and revisions do not alter the earlier

picture. However, for New Zealand, the 2001 annual data do reveal an interesting, albeit marginal, change in the institutional market for household funding and claims in recent years.

From December 1998, lending by 'mortgage managers' (small financial institutions offering residential mortgages that are funded by wholesale sources and subsequently securitised), began to increase, as more managers entered the market. So too did hire purchase and other forms of personal credit from non-banks. The smaller, mainly deposit-taking financial institutions and mortgage managers (surveyed only annually by the Bank) hold only a minor market share (just over 1 per cent) for housing loans, but have more than a 20 per cent share of non-housing personal lending. In the three years to 2001, their total household loan portfolios increased from 3 to 4 per cent of the loan value of the larger group surveyed monthly (over 95 per cent of which is loans from banks). The annual survey group gained 7 per cent of the increase in household borrowing in that period, compared to 3 per cent from 1995 to 1998. As figure 1 overleaf shows, annual rates of growth of their lending have been high.

⁴ Thorp C and B Ung (2000) and (2001).

Figure 1
Annual percentage rates of growth of household loans: large lenders compared to smaller lenders



Source: RBNZ

Data as at December

Since the second half of 1998, when a lower interest rate environment emerged, households increased their funding to smaller finance companies, savings institutions and contributory mortgage companies, as they sought greater returns on their savings than were being offered by banks. In the three years to December 2001, these smaller lending outlets have received about twice as much extra funding from the household sector as they have lent to it. For banks, by contrast, growth in household funding was only a little more than a quarter of the growth in household borrowing.

A significant proportion of the funding obtained by smaller financial institutions serving households in recent years has been lent for residential development purposes, principally for apartment buildings and other forms of multi-dwelling property, and more traditionally, on commercial property. A trend to apartment and townhouse living has led to developers seeking loans on criteria beyond those acceptable to banks, providing an expanding market for a second tier of financing.

3 Credit for agriculture

This article introduces a long-run series of loans outstanding to the agriculture sector, beginning in December 1980 and measured at annual intervals. It has its origins in a 1986 *Bulletin*⁵ overview of the credit market for agriculture from

⁵ 'The Rural Debt Problem', Reserve Bank of New Zealand *Bulletin*, Vol 49, No 10, 1986, pp 503-7.

1980 to 1985. The new annual data series is available on the website. Table 2 presents these data at five-year intervals, using the 1986 presentation format.⁶ Then, data for solicitors' trust funds, trust companies and all 'other' credit sources were based on estimates obtained from surveys undertaken by the Lincoln Agricultural Economics Research Unit.⁷ For these categories, estimates in subsequent years are based on other Bank research and notably, a 1998 survey of agriculture sector debt from the Ministry of Agriculture and Forestry.⁸ These data are almost entirely lending for farming – there is a very minor agriculture service industry component, and some borrowing may be for farmers' personal purposes, but well over 95 per cent of it will be for farms.

In the early eighties the sources of farm borrowing were quite varied, as table 2 illustrates (although the then government-owned and directed Rural Bank held 40 per cent of the institutional farm lending market). However, significant structural change has subsequently altered the picture markedly.

When structural change began after 1985, stock and station agents were 'farm supply' businesses and seasonal financiers, principally for the sheep and beef industry. The dominant stock and station agent, Wrightson, retained its financing arm until it was bought by a registered bank after 1995, but the relative size of the loan books of stock and station agents declined from 1990 onwards. Between 1985 and 1990, almost all the farm lending from finance company, building society and savings bank groups became part of bank portfolios through merger and bank registration.

From 1986, subsidised farm loan portfolios at the Rural Bank and other government lending sources were restructured, a

⁶ December data. Where data are not available at December, following March or June balance date data have been used.

⁷ Estimates from Farmer Opinion Surveys, Pryde (1978), Pryde and McCartin (1982-85), in Pryde and Bain, 'A review of agricultural credit in New Zealand', Lincoln Agricultural Economics Research Unit, Discussion Paper No 93, June 1985. Estimates from John Pryde for March 1985 were extended to December 1985 by the Bank.

⁸ 'National Survey of New Zealand Agricultural Sector Debt 1998', Wilkinson R and P Jarvis, Technical Paper 2000/16, June 2000.

Table 2
Credit for agriculture

as at December \$million	1980	1985	1990	1995	2000	2001
Stock and station agents	361	552	600	740		
Trading banks	459	961	<i>(memo item)</i>			
Private savings banks	37	8				
Trustee savings banks	67	149				
Finance companies	105	267				
Building societies	54	110				
Rural Bank	1242	2440				
Monthly agricultural credit series from 1990	2331	4620	5016	8925	12242	14367
<i>(The monthly series begins at 1990. Earlier annual data is not strictly comparable)</i>						
DFC	6	133	-	-	-	-
Department of Maori Affairs/Te Puni Kokiri	47	111	28	14	-	-
Department of Lands and Survey/Landcorp	126	252	29	9	12	12
Marginal Lands Board	32	-	-	-	-	-
Solicitors' trust funds (est)	250	550	450	250	150	150
Insurance companies	248	452	45	48	-	-
other small institutions/sources (est)	-	-	140	157	377	400
Annual agricultural credit series	3030	5990	5710	9400	12780	14930
Trust companies (est)	135	200	200	250	250	250
Other (estimated)						
Local body loans	38	35	-	-	-	-
Dairy companies	39	50	-	-	-	-
Other sources	68	80	-	-	-	-
Family loans	550	1300	-	-	-	-
Private sources	250	300	-	-	-	-
Other total	945	1765	2200	2000	1800	-
Total estimated agricultural credit	4110	7955	8110	11650	14830	-

Source: RBNZ, various

process that mainly involved debt forgiveness while removing interest rate subsidies. By 1990, debt write-offs had reduced total debt in the annual series by over \$700 million. The Rural Bank was privatised and registered as a bank during this period. Insurance companies were the other major source of institutional farm lending until deregulation, but subsequently reduced their activity. The monthly series in table 2 includes, from 1990, farm lending of insurance companies that later became part of registered bank portfolios, which accounts in part for the sharp reduction in insurance company lending between 1985 and 1990 in table 2. By 1990 over 80 per cent of the \$5 billion farm debt surveyed monthly by the Reserve Bank was held by registered banks or their subsidiaries. By 2000 almost all of the monthly series represented lending by registered banks.

Beyond the major farm loan sources in the monthly series, there is a group of much smaller financial institutions that

lend to farmers. This group includes several smaller stock and station agents, building societies and finance companies (the latter lend mainly for farm equipment). 'Trust companies' are the six trustee companies which operate under special legislation, some of which lend to farmers on mortgage.

Figures for solicitors' trust lending and from the lending sources grouped as 'other' in table 2 were obtained from *ad hoc* sample surveys in the eighties. Only one comprehensive sample survey has been conducted on a similar basis since, for the farming season ended 30 June 1998.⁹ Results from it imply that total farm loans outstanding from all these sources during the nineties may have been around \$2 billion. The major component by far is loans from family sources, which the 1998 survey suggests were likely to have accounted for more than 80 per cent of the 'other total' in 1995. Annual

⁹ *ibid*

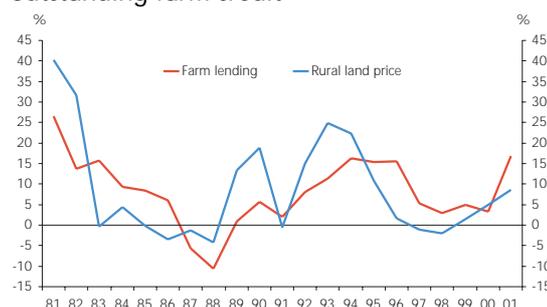
data on sheep and beef farm lending corroborate these overall proportions of family loans, but also show that few of them bear a commercial rate of interest. Because of the degree of estimation required and the special nature of family loans, the new annual farm lending series does not incorporate the 'other' loans in table 2.

In real terms, deflated by the CPI,¹⁰ outstanding farm debt at December 2000 appears to be only moderately higher than twenty years ago (table 3). Growth is least marked where the estimates for family loans and other sources are included in the assessment. The extraordinary feature of the table is the sharp fall in the real value of loans outstanding to agriculture between 1985 and 1990: by contrast business borrowing rose 47 per cent and household borrowing 36 per cent in real terms in this period. Government sector write-offs account for around \$1 billion of the fall in farm loans (in 2000 values): private sector losses would not have been nearly as significant. Between 1985 and 1990 the consumer price level increased over 50 per cent, while rural land prices rose a little over 20 per cent. Nominal farm loan levels in fact rose by around a third among mainstream lenders excluding the Rural Bank, whereas the increase including it was around 5 per cent.

Since December 2000 sheep and beef farming, and the dairy farm sector in particular, have begun to strongly increase investment following the conjunction of good growing conditions, better-than-average overseas prices and a competitive New Zealand dollar from the 1999 farm season onwards. The rate of growth of farm borrowing, which had averaged around 4 per cent for the four years to December 2000, accelerated sharply over the following year. By

December 2001 the rate of growth of farm lending was 17 per cent, and in the year to April 2002, had climbed to 22 per cent. Over 60 per cent of total farm borrowing is for the dairy industry, and in the last few years, as it has expanded strongly, dairy farming's share of new lending may have exceeded 70 per cent.

Figure 2
Annual rate of growth of rural land values and outstanding farm credit



Source: RBNZ, Quotable Value New Zealand

Data as at December

Figure 2 shows the pattern of rural land prices and farm loan growth over the past twenty years. In the nineties, the rise in rural land prices accelerated ahead of the rise in the rate of growth of lending. Loan growth rates 'ran on' after land price gains slowed, as more and more farms changed hands and the higher land (and associated product) prices both required and supported greater loan volumes. In 2001, loan volumes increased ahead of rural land prices, although this may be a short-term timing difference. It may also be related to the extension of dairy farming to traditional sheep farming areas, with herd expansion and new capital costs driving loan volumes more than land prices.

Table 3
Credit for agriculture
as at December

\$ billion, 2000 values	1980	1985	1990	1995	2000	2001
Monthly series from 1990	7.4	8.4	6.0	9.7	12.2	13.8
Per cent change		14%	-29%	62%	26%	13%
Annual agricultural credit series	9.6	10.9	6.8	10.2	12.8	14.4
Per cent change		14%	-38%	50%	25%	13%
Total estimated agricultural credit	13.0	14.4	9.7	12.6	14.8	na
Per cent change		11%	-33%	31%	17%	na

Source: RBNZ, various

¹⁰ The CPI has been used as a deflator uniformly across the credit sectors surveyed in this article. It is not the only possible deflator, but here has the merit of uniform application.

4 Business credit

Business credit (other than agriculture) obtained from domestic sources is shown in table 4. It highlights the rapid rise in the share of business lending provided by banks following deregulation. These data in aggregate do not reflect the full extent of business borrowing from New Zealand sources for two main reasons. From the early nineties, small businesses have increasingly been able to borrow from banks using housing as security, and the value of this lending not represented here may have been as much as \$5-6 billion by 2000. Secondly, loans from private sources and family loans are not captured, just as for agriculture. It is likely however that these informal sources do not represent too significant an omission.

'Government' sources of credit here are those where lending policy was directed closely by the government, and include the Reserve Bank, which lent to agriculture sector producer boards and marketing organisations, mainly the Dairy Board, during the eighties (these loans are consistently categorised as 'business'). The government both owned other financial institutions and, until 1985, through various devices, directed some of their lending and that of most other financial institutions. The distinction made here simply facilitates an institutional basis for comparison of sector credit sources.

Until phased out quickly from mid-1986, Reserve Bank loans represented around half the loans of the government sector to business. The Development Finance Corporation (DFC) was responsible for almost 30 per cent of government sector business credit in 1985, with total government sources then

collectively responsible for 20 per cent of business credit. Between 1985 and 1990, the introduction of the bank registration regime, in the context of the deregulation of financial markets, led to banking dominance of the credit market. Business credit from finance companies tended to migrate to bank portfolios, and major savings institutions registered as banks during the period. 'Banks' from 1990 include three major finance company subsidiaries.¹¹ In the five years to 1990, business credit provided by banks increased from nearly 40 per cent to almost 80 per cent of the business credit market.

Finance company lending to business in the eighties was significant, with their growth in this market in large measure a reflection of their ability to compete for funding outside of the controls applying to banks at the time. Their business lending was principally for plant and machinery, with transport equipment an important focus. In the nineties, finance company lending represented in table 4 was from numerous, relatively small companies, many continuing to specialise in finance for transport and business equipment, but with a growing property development orientation in the total loan book.

Apart from the Post Office Savings Bank (POSB), which was closely directed by the government, savings institutions in the eighties comprised trustee and private savings banks, building societies, the Public Service Investment Society (PSIS) and credit unions. Their legislation, or membership purpose, proscribed the amount of business lending undertaken - these institutions were intended primarily for personal savings and

Table 4
Business (excluding agriculture) sector credit from domestic sources

as at December \$ million	1980	1985	1990	1995	2000
<i>Institutional source of credit</i>					
Government	1200	2700	700	0	0
Banks	2600	5000	23000	30400	45200
Finance companies	600	2100	800	1300	2300
Savings institutions	200	600	300	400	900
Managed funds	800	1600	2800	3900	4400
<i>Non-institutional</i>	500	1000	1600	2900	4200
TOTAL	5800	13000	29100	3880	57000

Source: RBNZ

¹¹ These are UDC and AGC, as well as BNZ Finance, which became a registered bank in January 1991.

lending. With deregulation after 1985, most of the assets of savings institutions became, through merger and bank registration, bank lending. However, a number of building societies, credit unions and the PSIS remained outside the registered bank framework. Some of these institutions re-oriented their loan portfolios towards business lending, mostly related to the development of residential property and commercial property lending. Private sector bonds held by the Bonus Bonds trust are included in this category.

A small but growing source of business sector credit in the last decade has been from the managed funds industry. The term 'managed funds' encompasses life insurance, superannuation (including pension funds independently managed) and unit trust business, as many fund managers in New Zealand invest funds on behalf of clients with products originating in all three sectors. In the eighties the unit trust business was small, with traditional life offices managing the investments of life insurance policyholders and many pension funds. While business lending was undertaken by way of debenture and direct commercial lending, major sums were also secured by mortgage for farming and residential purposes. With deregulation, the funds management industry began to specialise, reducing direct lending and holding private sector securities to a larger extent. The greater part of managed fund business credit represented in table 4 in the nineties is in the form of private sector securities held in portfolio. However, most of the increase in business credit from managed funds since 1995 is accounted for by property syndication and commercial property lending by group investment funds and mortgage income trusts.

In the early eighties, apart from solicitors' trust funds and the contributory mortgage market, there was a very small non-institutional business credit market, with banks and finance companies providing by far the greatest proportion of business credit. "Non-institutional" in this context means funding to business directly from individuals, nowadays mostly by way of retail corporate bonds, with other direct lending (property-based borrowing through solicitors and contributory mortgage companies) relatively less important now than it was previously. Over a third of the corporate bond market is described as 'retail', implying non-institutional holding of the bonds. The rest of the corporate bonds on issue are assumed to be held in portfolio by the other credit sources shown in table 4.

To a significant degree, the growth in business credit in table 4 is distorted by inflation in the earlier periods. These data are more readily evaluated in table 5 in real terms, expressed in year 2000 prices (the deflator is the CPI).

Between 1985 and 1990 the deregulation that began in the middle of the eighties wrought a substantial transformation in institutional structures. The registration of savings institutions as banks, and the absorption of associated finance company lending into bank books, account for some of the major leap in business credit from banks between 1985 and 1990. However, the major component of the growth recorded following deregulation came from a surge in demand for finance from the business sector as the economy expanded rapidly until the sharemarket crash late in 1987, with banks readily able to fund borrowing following the removal of controls, and competing fiercely for customers.

Table 5
Business (excluding agriculture) sector credit from domestic sources, in real terms

as at December \$ million, 2000 values	1980	1985	1990	1995	2000
<i>Institutional source of credit</i>					
Government	3900	4900	900	0	0
Banks	8200	9000	27400	32900	45200
Finance companies	1800	3900	1000	1400	2300
Savings institutions	500	1200	300	500	900
Managed funds	2500	2900	3300	4200	4400
<i>Non-institutional</i>	1400	1700	1800	3100	4200
Total	18400	23600	34600	42100	57000

Source: RBNZ

There was a significant commercial property loan element in lending growth until 1987, when the October financial crisis and subsequent recession revealed the extent of over-building that had been undertaken.

The 140 per cent rise in the total stock of business credit in real terms from 1985 to 2000 compares with an increase of 35 per cent in real annual GDP over the period. More rapid growth in credit outstanding to business than in output is a relatively common feature of financial market developments in OECD countries over this period, although New Zealand's experience is more extreme than the average. There are features of the real economy and recording of business sector data that may explain some of this. As noted, the rapid growth in credit between 1985 and 1990 was to some extent a result of excessive property lending following deregulation and the removal of credit controls. During the latter half of the 1980s, the government privatised a number of large businesses. In establishing commercial gearing ratios, privatisations would have caused some of the increase in demand for bank lending. There is the possibility that some inter-institutional loans have not been netted between banks and other institutions, although that effect would not be large. Understanding these relationships in the New Zealand economy requires further work.

A striking feature of the current New Zealand business credit market is the share of total domestic business credit met by the banks – more than three-quarters in 2000. One reason is that most businesses in New Zealand are very small, so that a smaller share than in other developed countries finds it efficient or possible to issue securities as a means of obtaining credit. Even so, a major proportion of short-term commercial paper issued is held in bank portfolios. Moreover, managed funds are not major holders of commercial paper, in the way that they are in economies with deeper financial markets. As noted earlier, in aggregate New Zealanders have low levels of financial assets. They don't hold large quantities of retail corporate bonds directly. Managed funds in New Zealand have diversified their assets offshore to a greater degree than is normally found elsewhere: around 40 per cent of their funds are invested overseas. Institutional factors, such as the relatively low level of liquidity and limited availability of well-rated corporate bonds, may also be relevant in constraining the issuance of commercial paper.

Finally, businesses borrow directly offshore from various sources; for example, through parent companies, by issuing securities to international markets and from offshore banks. At December 2000, businesses had borrowed a net \$19 billion directly from overseas, an amount equivalent to over 40 per cent of the total borrowed from banks here. In the final section of this article we incorporate overseas borrowing in a framework that accounts for the relative size of the business and household credit sectors. There we show the extent to which banks have borrowed overseas to provide the domestic credit reviewed here.

5 Sector credit compared

The relationship between the size of the credit sectors and their rates of growth is instructive.

The relative size of the supply of domestic credit to the two major credit sectors has changed moderately over twenty

years, with the household sector overtaking the business sector. However these data undoubtedly overstate household borrowing from 1995 onwards, because of the tendency noted earlier for small business lending to be secured on residential mortgage.

Table 6
Credit by sector

as at December

\$ million	1980	1985	1990	1995	2000
Agriculture	3200	6200	5900	9600	13000
<i>share of total credit</i>	<i>20%</i>	<i>19%</i>	<i>9%</i>	<i>10%</i>	<i>9%</i>
Business	5800	13000	29100	38800	57000
<i>share of total credit</i>	<i>36%</i>	<i>40%</i>	<i>46%</i>	<i>41%</i>	<i>40%</i>
Total business credit	9000	19200	35000	48400	70000
<i>share of total credit</i>	<i>56%</i>	<i>59%</i>	<i>55%</i>	<i>51%</i>	<i>49%</i>
Households	7200	13600	28300	46200	73200
<i>share of total credit</i>	<i>44%</i>	<i>41%</i>	<i>45%</i>	<i>49%</i>	<i>51%</i>
Total credit	16200	32800	63300	94600	143200

Source: RBNZ

Table 7
Percentage share of total credit by source

as at December

Per cent	1980	1985	1990	1995	2000
Government (RBNZ, Rural Bank, GSF, NPF, DFC, Housing Corp, POSB, TPK, Landcorp)					
Agriculture	9	9	0	0	0
Business	8	8	1	0	0
Total business	17	17	1	0	0
Households	13	11	6	1	0
Banks (registered banks plus UDC and AGC from 1990)					
Agriculture	3	3	7	8	8
Business	16	15	36	32	32
Total business	19	18	43	41	40
Households	5	7	32	43	46
Savings institutions (savings banks, building societies, credit unions, Bonus Bonds, PSIS)					
Agriculture	1	1	0	0	0
Business	1	2	0	0	1
Total business	2	3	1	1	1
Households	12	9	1	1	1
Finance companies (includes stock and station agents)					
Agriculture	3	3	1	1	0
Business	4	7	1	1	2
Total business	6	9	2	2	2
Households	3	5	1	1	1
Life/managed funds (life companies, pension funds and managed funds)					
Agriculture	2	2	1	1	0
Business	5	5	4	4	3
Total business	7	7	5	5	3
Households	4	3	1	1	1
Non-institutional (solicitors' trust funds, contributory mortgage companies, corporate bonds, securitisation)					
Agriculture	2	2	1	0	0
Business	3	3	2	3	3
Total business	4	5	3	3	3
Households	8	6	3	2	2
Total	100	100	100	100	100

Source: RBNZ, various¹²

¹² Government Superannuation Fund (GSF), National Provident Fund (NPF), Housing Corporation of New Zealand (Housing Corp), Te Puni Kokiri (TPK)

Table 8
Real rate of growth of sector credit from domestic sources from 1985 base

Cumulative per cent growth from 1985	1990	1995	2000
Agriculture	-38	-8	15
Business	47	78	141
Total business credit	19	51	101
Households	36	103	196
Total credit	27	72	140

Source: RBNZ

Table 6 illustrates two main features of change in the sectoral allocation of credit. The first is the relative reduction of the demand for credit from the agriculture sector between 1985 and 1990. As shown earlier, in real terms there was a large fall in credit to the sector. But the extent of the growth in business and household credit between 1985 and 1990 played a major part in this reallocation. Deregulation promoted demand for credit from both these sectors at the same time as the new financial market freedoms enabled it to be met. The impact on institutions of these changes was dramatic, as shown in table 7.

Table 7 shows how lending to these three credit sectors is shared among the principal institutional sources of credit. Again, over the course of the past twenty years the changing institutional structure is highlighted. Controls in place until 1985 'compartmentalised' lending sources, with the government responsible for more than half the lending to agriculture and over 20 per cent of business lending by then. The removal of almost all controls from 1985 and the introduction of the registered bank regime were the principal drivers of the marked changes in credit sources shown from that year.

Finally, table 8 shows five-yearly rates of growth of credit obtained by each sector from domestic sources since 1985. Credit to households doubled in real terms from 1985 to 2000. Excluding agriculture, business borrowing grew more quickly than household borrowing to 1990, but was overtaken as growth in the economy resumed in the early nineties and the household sector began to borrow for housing at a rapid pace. Even so, over the period net growth in business credit from domestic sources was over 70 per cent of that of households.

These increases in credit represent the uses of funds obtained from financial institutions and non-institutional sources in

New Zealand. Businesses also borrow directly from overseas, and financial institutions, almost exclusively banks, obtain over a third of their funding from overseas to on-lend to the private sector. The final section of this article considers sector debt taking into account overseas borrowing, and the degree to which the household and business sectors provide funding in New Zealand to meet credit demands.

6 Sector credit and overseas debt

New Zealand has a high level of overseas debt, most of which is owed by the private sector. Gross private sector overseas debt at December 2001 was about 90 per cent of GDP, and net private sector debt over 50 per cent. From 1984, when controls on overseas borrowing were removed, private sector debt increased sharply. Households have high ratios of debt to disposable income, and relatively low levels of financial assets. The greater than two-fold increase in households' debt levels in relation to their income since 1985 has played a significant role in driving net overseas debt much higher than the modest levels prevailing under controls. Businesses (excluding agriculture) have also borrowed strongly since 1985, with debt sourced domestically increasing almost one and a half times in real terms while GDP, for example, increased by a little more than a third. This section uses the preceding data on household and business sector borrowing, together with information on the financial assets of these sectors, to show how their relative influence on measured overseas debt data has evolved between 1985 and 2000.

With the rapid transformation of the institutional landscape of financial markets in New Zealand in the late 1980s, banks were able readily to obtain funding from domestic and

Table 9
Sector borrowing and funding, and overseas debt

as at December \$ million	1985	2000	Change from 1985 to 2000
Business borrowing from:			
Banks	-5900	-57300	-51400
Other domestic financial sources	-13200	-12800	400
Directly overseas	-11000	-40800	-29800
Total	-30100	-110900	-80800
Business funding to:			
Banks	8100	42500	34400
Other domestic funding	2100	4000	1900
Directly overseas	0	19300	19300
Total	10200	65800	55600
Net business funding:			
Banks	2200	-14800	-17000
Other financial institutions	-11100	-8800	2300
Directly overseas	-11000	-21500	-10500
Total	-19900	-45100	-25200
Household borrowing from:			
Banks	-2400	-65700	-63300
Other domestic financial sources	-11200	-7500	3700
Total	-13600	-73200	-59600
Household funding to:			
Bank deposits	5000	40100	35100
Other domestic funding	32900	68300	35400
Total	37900	108400	70500
Net household funding:			
Bank net financial assets	2600	-25600	-28200
Other net financial assets	21700	60800	39100
Total	24300	35200	10900
Overseas debt			
Gross private sector overseas borrowing	-11000	-101200	-90200
Business sector direct overseas borrowing	-11000	-40800	-29800
Bank borrowing overseas	0	-60400	-60400
Bank lending overseas	0	17400	17400
Net overseas borrowing by banks	0	-43000	-43000
Net direct business overseas borrowing	-11000	-21500	-10500
Total net overseas private sector borrowing	-11000	-64500	-53500
<i>Illustrative allocation of total net overseas borrowing between household and business sectors</i>			
Net household funding/borrowing at banks	2600	-25600	-28200
Total net overseas household borrowing	0	-25600	-25600
<i>(Assume households' net funding deficit at banks is their share of banks' overseas borrowing)</i>			
Net business funding/borrowing at banks	2200	-17400	-19600
<i>(Business share of net overseas borrowing from banks is 17400 in 2000, the residual)</i>			
Net direct business overseas borrowing	-11000	-21500	-10500
Total net overseas business borrowing	-11000	-38900	-27900

Source: RBNZ, SNZ

Note: Values are rounded to the nearest \$100 million. Overseas debt data for 1985 are from the March 1986 SNZ long-term debt survey and Reserve Bank surveys and estimates.

overseas sources to satisfy rapidly growing domestic loan demand. They quickly became efficient at lending for housing and other personal purposes. A household sector that by most OECD standards a decade ago was 'under-borrowed', increased the ratio of its total borrowing to housing value from around 20 per cent in 1985 to about 40 per cent in 2000, a ratio that is in line with that of several OECD countries.

As this happened, households in the early nineties ceased to be net funders of banks, and became net borrowers. At the

margin, most growth in household financial assets was occurring in managed funds and through the direct purchase of equities. These outlets for household savings do not provide a source of funds for residential mortgages. In the latter half of the nineties in particular, managed funds increasingly diversified overseas the investment of the funds placed with them by households, to the point where 40 per cent of funds under management are now offshore. As has been shown earlier in the article, these funds are not

significant holders of either household or business sector debt.

Business borrowing from banks increased five-fold in real terms from 1985, as banks crowded out or took over other lenders, but larger businesses were also able freely to borrow directly overseas. By 2000, business sector net direct overseas borrowing was almost half as much as its borrowing from domestic banks. Much of the direct borrowing is by subsidiaries from overseas parent companies. Some is equity, in substance, with a loan from overseas made to a wholly-owned subsidiary in New Zealand, which in turn holds business equity. This exaggerates the amount of overseas business 'debt'. On the other hand, household sector debt, as we have seen, contains a significant component of small business debt, which might well offset this effect, were it 'correctly' recorded as business borrowing.

Table 9 presents household and business (including agriculture) domestic sector gross and net debt, and overseas debt measured by Statistics New Zealand (SNZ) in the International Investment Position (IIP). Its purpose is to link the domestic borrowing data to the IIP statement, and to show how a large component of net overseas debt (two thirds of it) is intermediated by banks. Banks borrow overseas and on-lend to both household and business borrowers. Households' influence on overseas debt is entirely through intermediation by banks, while businesses affect the position both by borrowing directly offshore, and indirectly (through banks). By adopting an allocation assumption (below) for debt intermediated by banks, table 9 suggests that since 1985, when New Zealand's capital market was fully opened, the household and business sectors have each been responsible for about half of the growth in net overseas debt.

Drawing on data for business and household borrowing from preceding sections, table 9 shows what proportion of their borrowing each sector has drawn from banks, and from all other financial institutions and non-institutional sources. These data are shown for 1985 and 2000, as well as the change in debt over the period, but the following illustrations are based on December 2000 data, rounded in the text to \$ billion (\$bn). For businesses, direct overseas debt is \$41bn, which when added to the sector's domestic borrowing, shows gross credit to the sector of \$111bn. Likewise, the deposits of businesses with banks of \$43bn and \$4bn with all other repositories are added to business sector lending overseas of \$19bn, to give a total of \$66bn of 'funding' by business.

Some of the business lending overseas is household financial assets in managed funds that invest in overseas bonds, but is recorded as business lending in the IIP.

Household funding of banks is based on the 'household' definition in Reserve Bank surveys. Significant sums placed indirectly in banks by households, such as the more than \$2 billion in solicitors' trust accounts, are included in the residual 'business' category. Most household funding (\$68bn) is not given to banks, and the total of household funding has risen \$71bn in the fifteen years to 2000.

Net business and household funding is obtained by subtracting each sector's borrowing from its funding data. For the business sector, in 2000 the net of its funding and borrowing is an overall deficit of \$45bn, with its deficit growing \$25bn from 1985 to 2000. Net household funding remains positive overall in 2000 at \$35bn, but households borrow much more from banks than they deposit there, for a deficit of \$26bn at banks. Excluding directly-held equities, households' net financial assets increased only \$11bn over the 15 years to 2000.

The link between these data and the overseas debt figures in table 9 is also illustrated using December 2000 values and net data. For completeness, the table first presents gross private sector overseas debt of \$101bn and its two main components, business (or 'corporate') and bank overseas borrowing. Next, bank borrowing overseas is netted against bank overseas lending to give a net bank overseas borrowing amount of \$43bn. Adding net direct business borrowing from overseas (\$22bn) to bank net borrowing gives total net private sector overseas borrowing of \$65bn. Over the period, net private sector overseas debt increased \$54bn.

Through the banks, both the household and business sectors are borrowing a share of the net \$43bn that banks have borrowed overseas to on-lend domestically. There is no one way of allocating this, nor any need to do so. Purely for illustration purposes, we have chosen to allocate bank overseas borrowing to each sector based on the idea that households' borrowing from banks could be expected to be funded by them. New Zealand's households have a \$26bn funding shortfall at banks in 2000. Using this allocation device, the \$26bn net borrowing by households from banks can be represented as households' net overseas borrowing. Business overseas borrowing through banks becomes the residual \$17bn. This allocation device results in about 60

per cent of net private sector debt being attributable to the business sector, and over 50 per cent of its growth since 1985.

Tracking the origins of household and business sector funding and debt to their representation in the overseas debt data does not amount to analysis of any of the underlying reasons why overseas debt is as high as it is. However, while it has been clear that a significant proportion of bank overseas borrowing has been for household purposes, providing an overview of all gross and net borrowing data for both the business and household sectors puts the latter's role in a broader context. This 'mapping' of household and business gross and net debt positions at 1985 and 2000 to the private sector overseas debt data is intended to lay out the balance sheet relationships that lead to the aggregate debt numbers published in the International Investment Position. The artificial allocation exercise illustrated above may serve to assist work on the more fundamental factors that lie behind these data.

In broad terms, it is clear that the gross financial assets of New Zealanders, as a proportion of their disposable income, are relatively low in comparison with other countries. While high, our household borrowing levels are in line with other 'high borrowing' nations such as the UK, US, Canada and Australia. However, these countries have higher household financial asset levels and thus greater net financial savings available for business borrowing. As New Zealand's overseas debt data show, our savings shortfall is made up from the savings of others, both intermediated by banks and borrowed directly by the business sector.

7 Conclusion

A well-worn adage suggests that if we wish to know where we are going, it is as well to know where we have been, and where we are now. The data series reported in this article establish a past for current data, and are intended to contribute to analytical work in a number of areas. We intend to prepare another article in the future to discuss some policy and other implications revealed in these data series. The household financial assets, liabilities and wealth series has now been updated for the second year, and this year greater experience with some components of the data has enabled

further disaggregation of these series. The annual agricultural credit series is published for the first time with this *Bulletin*, and its appearance seems timely in light of the current surge in borrowing in the sector. Tracing sector credit demand through changing institutional conditions in financial markets, as is done here over a twenty year span, provides a useful backdrop for consideration of policy outcomes in financial markets. Finally, unpicking the knot in the data between overseas borrowing, and domestic funding and borrowing, serves as another piece fitted in the savings jigsaw.

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RESERVE BANK DISCUSSION PAPERS

This section sets out the abstracts of recently issued Reserve Bank Discussion Papers. The Discussion Papers are available on the Reserve Bank web site and can be obtained in hard copy on request from the Reserve Bank.

DP2002/01

Extracting expectations of New Zealand's Official Cash Rate from the bank-risk yield curve

By Leo Krippner, March 2002

The hypothesis that a forward term-premium (FTP) exists between forward 1-day rates calculated from the New Zealand bank-risk yield curve and the corresponding ex-post Official Cash Rate (OCR) is tested by applying a single equation method for a cointegrated system to daily data from March 1999 to December 2001. The results indicate that the FTP is statistically significant for all forward horizons tested. The results also indicate that the estimates of the FTP appear to be an increasing function of the forward horizon, and the FTP may be tentatively represented as a simple monotonically-increasing analytical function. The model may be used in reverse to imply current ex-ante expectations of the OCR.

DP2002/02

Modelling the long-run real effective exchange rate of the New Zealand Dollar

By Ronald MacDonald, October 2001

The usefulness of the concept of an equilibrium exchange rate has been brought into sharp focus by the dramatic depreciation of the euro since its inception in 1999. Does this movement reflect a movement of the actual exchange rate relative to its equilibrium or has the equilibrium shifted relative to the perception of where the euro was in 1999? Similar kinds of questions have been asked about the behaviour of the New Zealand dollar since the latter part of 1999. To answer these kinds of questions it is necessary to have some measure of an equilibrium exchange rate and there are a plethora of alternative approaches available in the literature. In this paper we use the behavioural equilibrium exchange rate (BEER) approach of Clark and MacDonald (1999) to produce long-run equilibrium exchange rates for the effective real exchange rates of the New Zealand dollar. We demonstrate that a well founded measure of the equilibrium value of the dollar may be recovered from a

relatively small set of fundamental variables and that this can be used to produce an assessment of the dollar in terms of periods of misalignment.

DP2002/03

Monetary policy and inflation forecasting with and without the output gap

By Weshah Razzak, March 2002

Some observers have worried that under or over-estimating the output gap may unnecessarily induce tightening or loosening of monetary conditions, causing real fluctuations. To investigate the relationship between the output gap and inflation, we examine models of inflation that do and do not use the output gap. The Phillips curve, which relates inflation to real activity, is regarded as the maintained theory of inflation. Models of inflation without the output gap include the equation of exchange of the quantity theory of money, the real interest rate gap, and two versions of the model. Since none of these economic models are either totally wrong nor complete, it makes sense to diversify across models rather than relying on one model exclusively. The forecasts derived from different stable models can be combined through averaging, which offsets biases and reduces the forecast error variance. Such model diversification spreads the risks of errors (i.e., insurance about bad outcomes that arise from the reliance on a single model) and provides greater robustness for policy. This paper examines ten different models of inflation and estimates sixty-seven different specifications, some of which outperform others. Some explanatory variables like money and the real interest rate gap seem to provide more information about future inflation than does estimates of output gap.

DP2002/04

Extracting market expectations from option prices: an application to over-the-counter New Zealand dollar options

By Aron Gereben, April 2002

What are the odds of a large shift in the exchange rate? Is a large depreciation more likely than a large appreciation? This

paper uses over-the-counter New Zealand dollar/US dollar option prices to quantify market expectations of exchange rate uncertainty through measures based on risk-neutral probability distribution functions. Results suggest that the estimated probability distributions can provide important insights into market perceptions about exchange rate risk in the future. Econometric evidence indicates that the higher moments calculated from risk-neutral probability density functions can be used to explain the dynamic behaviour of the forward bias measured in the New Zealand dollar/US dollar exchange rate.

DP2002/05

**Foreign-owned banks: Implication for
New Zealand's financial stability**

By Leslie Hull, April 2002

Of the five major banks in New Zealand three are owned by Australian parent companies, one operates as the New Zealand branch of an Australian bank, and one has a British parent. Thus, bank ownership in New Zealand is foreign, but not very diversified. The literature on foreign bank ownership predominately focuses on developing countries and highlights the fact that large, diversified banks can enhance stability. New Zealand differs from the developing countries previously studied, as it is a developed country with foreign, but not necessarily diversified ownership. This paper explores the composition of bank ownership in New Zealand and the implications for financial stability. The paper begins with an analysis of the diversification of parent companies' assets and discusses the implications of institutional arrangements between parents and their subsidiaries for financial stability. Next, the degree of interdependence between Australia and New Zealand is analysed. Finally, the paper presents stylised implications of the structure of the market on bank behaviour during a time of crisis. The interaction of these three factors dictates the implications of foreign bank ownership on financial stability in New Zealand.

DP2002/06

**Estimating a Taylor Rule for New Zealand
with a time-varying neutral real rate**

*By L Christopher Plantier and Dean
Scrimgeour, May 2002*

Many critics of the Taylor rule claim that it is inferior to inflation forecast based (IFB) rules because it is not forward-looking, is not aggressive enough, and because of uncertainty surrounding the output gap. Nevertheless, the Taylor rule serves a constructive purpose because it abstracts from the Bank's macroeconomic model, FPS, and its performance is robust across various economic models. The Taylor rule thus provides a useful cross-check to the IFB rule, whose recommendations necessarily rely on a particular model structure, its dynamics and specific judgements over the forecast horizon. Additionally, this paper contends that any interest rate rule or model must account for the fall in the ex-ante real interest rate and the non-stationarity of short-term rates in New Zealand. We show how the neutral real interest rate (NRR) in the Taylor rule drifts downward since the second quarter of 1988, and explain why this presents additional real-time difficulties for the Taylor rule.

For the record: recent press releases

Monetary policy in a virtual economy

27 March 2002

The Reserve Bank today launched a web-based computer simulation game whereby the player fights inflation by controlling the interest rate in a virtual economy.

The game, aimed at senior high school economics students, has been developed as an educational resource designed to encourage understanding of monetary policy.

Access to the game, including instructions on how to play, is in the Education section on the Reserve Bank's website at www.rbnz.govt.nz.

The game works as a screen with four separate graphs: inflation, real output growth, real interest rates and nominal interest rates. The player's goal is to adjust interest rates so that inflation is within the 0 to 3 per cent band, causing a smiley face to appear. The face frowns when inflation goes out of the 0 to 3 per cent band. The virtual economy experiences shocks, causing a change in the inflation rate, to which the player must react by adjusting interest rates. To enhance the challenge further, the player can load a recession or boom, or several other scenarios into the virtual economy.

Reserve Bank Governor Don Brash commented, "I expect the game will be a useful resource for teachers and students. I particularly like the unpredictable nature of the game's virtual economy. In that respect, it's similar to the challenges I face in the real world."

The Reserve Bank of New Zealand's Monetary Policy Simulation game is an adaptation of a similar game available on the Swiss National Bank website.

Official Cash Rate increased to 5.25 per cent

17 April 2002

The Reserve Bank today raised the Official Cash Rate from 5.0 per cent to 5.25 per cent.

The Bank's Governor, Don Brash, commented that "Since the Bank's latest comprehensive review of the outlook for

inflation last month, things have on balance evolved very much as expected at that time.

"It is clear from December quarter GDP data that domestic demand has been growing strongly, and most information for the March quarter points in the same direction. Retail spending has been very strong, and house sales suggest a buoyant residential property market. Both business and consumer confidence continue to be high.

"The world economy too, though not nearly as buoyant on average as the New Zealand economy, appears to be continuing a gradual recovery.

"All in all, and given the outlook for inflation, a further moderate adjustment in the Official Cash Rate seems appropriate, Dr Brash concluded.

Brash resigns

26 April 2002

Reserve Bank Governor Don Brash today announced his resignation from the Bank, to take effect immediately.

Dr Brash said "I have been invited to seek nomination for the National Party as a candidate in the upcoming General Election, and I have decided to accept that invitation. I wish to stress that this decision is not motivated by any tension with the Minister of Finance or the Government.

"Working at the Bank has been a very great privilege. Now I am seeking to serve New Zealand in another way.

Dr Brash will hold a press conference at 11.00 am this morning at Turnbull House, in Bowen Street, Wellington.

RBNZ: business as usual

26 April 2002

Reserve Bank Deputy Chief Executive Rod Carr today said the Reserve Bank was continuing to carry out its normal functions like any other working day, this following Dr Brash's resignation this morning.

Dr Carr commented: "The Reserve Bank is carrying out its duties as normal. The Reserve Bank of New Zealand Act 1989 provides that the Deputy Chief Executive acts as the Governor for up to 28 days or until a person is appointed as Acting Governor or Governor.

"Next week, the Bank's Board of Directors will meet to consider their recommendation to the Treasurer as to the person who should assume the role of Acting Governor until a permanent Governor is appointed, and to begin the process for the appointment of a new Governor.

"Under section 40 of the Act, a Governor is appointed "by the Minister (the Treasurer) on the recommendation of the Board.

"A Policy Targets Agreement will need to be agreed between the new Governor and the Treasurer. Until then the current PTA still applies.

"In the meantime, the Reserve Bank remains committed to carry out its statutory functions in the normal way, Dr Carr concluded.

RBNZ Board begins process for finding new Governor

29 April 2002

The Board of the Reserve Bank today met to initiate procedures by which a new Governor will be appointed.

The chairman of the Non-Executive Directors Committee of the Board, Mr Bill Wilson said: "Under section 40 of the Act, a Governor is appointed 'by the Minister (the Treasurer) on the recommendation of the Board'. The Board has today initiated the process by which it will prepare its recommendation to the Treasurer.

"These procedures will, of course, be confidential. The Board's recommendation to the Minister will not be made public and any announcements will come from the Minister. I can, however, say that the post will be advertised, both within New Zealand and offshore.

"In terms of deadlines, the Act says that an appointment must be made within six months of the Treasurer appointing an Acting Governor.

"In the meantime, it is important to note that Dr Carr has assured me that the conduct of monetary policy is continuing as usual. Dr Carr has told me that the Act and the Policy Targets Agreement are sufficiently precise that for the Bank, in terms of monetary policy, nothing has changed. The Bank's next *Monetary Policy Statement* is scheduled for 15 May. Dr Carr has assured me that work on the preparation of that document is continuing uninterrupted, Mr Wilson concluded.

Monetary policy school competition

6 May 2002

The Reserve Bank today launched a competition for senior secondary school students whereby students become, in effect, central bankers and prepare advice on the Reserve Bank's interest-rate decisions.

The competition is called the Monetary Policy Challenge and will run in the third school term starting 15 July.

Each secondary school can enter one team only, with at least three, but no more than five members. Team members must elect one of their number as Governor.

Each team must prepare an interest rate-decision with a written explanation and must email or mail this to the Reserve Bank. Participants will also be required to make a 10-minute team presentation of their decision to a Reserve Bank economist at a venue in their region. Regional winners will compete in a final round, in September, in Wellington.

To help with their assessment of the economy and the outlook for inflation, Monetary Policy Challenge participants will have access to up-to-date economic data via a specially developed website - <http://www.rbnz.govt.nz/education/mpc/index.html>.

Rod Carr, who is acting as Reserve Bank Governor, commented "The Monetary Policy Challenge offers students a great opportunity to learn how the Reserve Bank makes monetary policy decisions. Participants will learn how interest rates affect inflation and what matters when making interest rate decisions.

A Monetary Policy Challenge information pack has been mailed to Economics teachers around the country.

New support provider for Austraclear/ ESAS

8 May 2002

The Reserve Bank today announced that it had awarded a three-year contract to Datacom Systems (Wellington) Ltd to provide support services to the New Zealand Austraclear and ESAS systems, commencing 1 January 2003.

Austraclear is a system operated by the Reserve Bank for clearing and settlement of high-value debt securities and equities. The Austraclear system has 230 members with total investments of approximately \$80 billion.

The Exchange Settlement Account System (ESAS) is a banking service provided by the Reserve Bank to institutions that need to make regular high-value payments with each other. All the current ESAS account holders are banks, though, in principle, membership is not restricted to banks. These transactions – around \$30 billion daily - are completed individually in real time. The actual systems are located in Wellington and are duplicated in Auckland to ensure that services can continue in the event of a regional disaster in Wellington.

In 2001, Austraclear Limited (a subsidiary of SFE Corporation Limited) which has been doing this work for the Reserve Bank, served notice that, following a change in strategic direction, it intended to stop providing support services for the Austraclear and ESAS applications past 31 December 2002.

Dr Rod Carr, who is acting as Governor, commented "We are pleased to be entering into this contract with Datacom. Of the various tenderers, Datacom particularly impressed us with their technical knowledge and their familiarity with supporting mission-critical payment systems.

Official Cash Rate increased to 5.5 per cent

15 May 2002

The Reserve Bank today increased the Official Cash Rate from 5.25 per cent to 5.5 per cent.

Reserve Bank Acting Governor Rod Carr commented "Demand conditions no longer warrant the degree of interest

rate stimulus that seemed necessary late last year. The economy's ability to meet increasing demand without pressure on costs, margins and therefore prices appears limited. Core inflation is still at the upper end of the 0 to 3 per cent target band, leaving little headroom for price pressures to accelerate from here on.

"Pressures on resources look likely to be maintained in the foreseeable future. New Zealand's population is expanding rapidly with the sharp turnaround in net migration. Migration is contributing more to strong household spending, residential construction and housing market activity than it is to the availability of labour. And a recovery in global demand – although fragile in some respects – is now underway with *Consensus Forecasts* rather more optimistic than earlier in the year.

"The influences on inflation are not all operating in the same direction. The exchange rate has been rising and international prices for some key exports, such as dairy products, have fallen sharply. These factors, if sustained, will reduce domestic activity to some degree and help to dampen inflation pressures in due course.

"On-balance, in the absence of some further withdrawal of monetary stimulus, these factors together would place additional pressure on the economy's already-stretched resources, producing a rise in inflation pressures. Accordingly, today's decision is a further step in the process of reducing the interest rate stimulus that we put in place last year, when the outlook for the economy looked decidedly weaker.

"At this point, it appears likely that further increases in interest rates will be required over the year ahead, possibly to a greater extent than we projected in March. However, as discussed further in this *Statement*, the outlook is always subject to uncertainty. We will continue to monitor the range of influences on the inflation outlook and make the necessary policy adjustments," Dr Carr concluded.

Some changes to the way RBNZ statistics are released

28 May 2002

Changes to financial data dissemination from 31 May 2002

When the regular monthly financial tables, C1 to C10, are posted on the Reserve Bank website this week at 3pm Friday 31 May, there will be a change to the dissemination procedure and to the format and content of some of the tables. To assist users to familiarise themselves with the changes in advance of the release of April data next week, the C1 to C10 tables are now available on the website, in their new formats, with data current to December 2001 from 1999. A note about the changes will be found at the head of the 'Monetary and financial statistics' web page listing the 'C' tables, and the new formats are accessible via a button at the top of each C table.

The procedural change being made is the withdrawal of release of the money and credit aggregates via Reuters. These data have for years been released simultaneously on the website in tables C1 and C2, and their duplication, in

abbreviated form via Reuters, no longer serves its original purpose.

Two main substantive changes are introduced with the changes to formats. They are:

- the presentation of a long-run ex-repo resident private sector credit series (PSCR ex-repo), labelled 'credit', at the core of the existing set of domestic and private sector credit series;
- the introduction of new monthly business and agriculture sector credit series from 1990, to complement the existing monthly household credit series.

Most of the changes attendant on the introduction of these revised and new series are found in the historical tables, available to download in Excel spreadsheets. The opportunity has been taken to calculate a greater range of derivative series, such as annual growth rates and net monthly changes, with the objective of making the data easier to use.

If more information on these changes is required beyond that in the explanatory notes accompanying the new formats, please contact Bun Ung or Clive Thorp.

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Published in October of each year

MONETARY POLICY STATEMENT

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