Financial Stability Report

October 2004

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The material in this report was finalised on 8 October 2004

This report and supporting data is also available on www.rbnz.govt.nz

ISSN 1176-7863

Foreword

This is the first of a series of reports that the Reserve Bank will be publishing every six months on the New Zealand financial system.

The financial system plays a critical role in the economy. Financial institutions and markets are at the centre of the processes that mobilise and allocate resources to investment. They also provide the liquidity needed for people and firms to be able to transact. A market economy could not work without a well-functioning financial system.

The financial system is also inherently vulnerable. It relies fundamentally on public confidence being maintained in the financial institutions and markets that make it up. That confidence is easily damaged by financial failures. Yet experience indicates that financial institutions can and do fail. In part, this stems from the fact that most financial institutions are exposed to complex and wide-ranging risks, are highly leveraged, and tend to 'borrow short and lend long'. Occasional small failures attributable to isolated events may not do too much damage to confidence, or disrupt the operation of the system. But failures of systemically important institutions can cause significant damage to the wider economy.

The Reserve Bank's prime responsibilities in relation to the financial system concern the supervision of registered banks. Specifically, the Bank is charged with monitoring and supervising registered banks for the purposes of promoting the soundness and efficiency of the financial system, and avoiding significant damage to the financial system that could result from the failure of a registered bank. This priority for the Reserve Bank reflects the fact that registered banks are the dominant lending institutions to both households and firms, and their deposit liabilities comprise the greatest part of the money stock used as a means of payment. Banks also provide the core mechanisms for making payments, such as EFTPOS and cheques. These roles place banks at the centre of the financial system. Hence, in our *Financial Stability Reports* there will always be a focus on the banking system.

In addition to this focus on banks, we envisage examining other components of the financial system as part of a wider surveillance role. That wider surveillance will include reviewing the domestic and international financial environment, with a view to identifying potential stresses and strains, as well as the various components of the financial system beyond the banks. The latter include non-bank institutions, and the financial markets, particularly the foreign exchange and bond markets.

1 Summary and assessment

The New Zealand financial system currently is stable and functioning effectively. This stability reflects a generally favourable macroeconomic environment, sound financial institutions, and well-functioning financial markets. The New Zealand economy has generated solid income growth for the past five years, which in turn has supported debt servicing capacities and asset values. These macroeconomic developments have underpinned the maintenance of financial stability through this period.

But there is always a risk of 'too much of a good thing'. Experience shows that episodes of financial instability often have their origins in long economic expansions, which can lead to unsustainable optimism and downplaying of risk. Low interest rates during the last three years have led households in New Zealand — and in many other developed economies — to increase their leverage. Some households may now be in a position where an unexpected and significant increase in interest rates, or a slowing in the growth of disposable income, would result in some financial strain. That could accentuate a cyclical downturn, and make for a more difficult financial environment for both firms and households, and indirectly, the financial institutions exposed to them.

Global imbalances have also mounted, reflected in particular in a large current account deficit for the United States (US). These imbalances highlight the uncertainties that always surround exchange rates and underscore the importance of exchange rate risk management, by both firms and financial institutions, for the maintenance of financial stability.

But our current assessment is that these risks are not large. The New Zealand banking system is financially robust, and our analysis indicates that it would be resilient to a wide range of unexpected events. Banks have been very profitable, and generally have strong and well-diversified asset portfolios.

At the same time, however, the New Zealand banking system has become more concentrated. The amalgamation of the ANZ and National Banks has resulted in a single bank that accounts for a third of the banking system, and four systemically important banks that are all owned from a single country (Australia). Those four banks account for 85 per cent of the New Zealand banking system's assets, and each is of a size, and plays such a central role in the New Zealand financial system, that closure in the event of failure would have significant adverse effects on the wider financial system and macroeconomy. This underscores the importance of policies that provide the Reserve Bank with the capacity to maintain those banks' operations should they come under serious financial stress.

Non-bank credit institutions have also been performing strongly, and growing rapidly across a range of markets, particularly in financing property development. A slowing of the economy, and in the property market in particular, could pose some difficulties for any institutions that have been assuming greater risk in funding speculative developments or in taking on unproven business.

New Zealand's core financial markets — the benchmark government bond market and the foreign exchange market — are small by international standards, but they have previously demonstrated a capacity to cope well with financial shocks and uncertainty. Currently, liquidity in these markets is broadly in line with that seen in recent years, suggesting ongoing resilience.

Alan Bollard

Governor

2 The economic and financial environment

The stability of the financial system depends principally on the institutions, structures, and governance arrangements that comprise it. Because the financial system also influences, and is influenced by, the wider economic environment, destabilising influences or shocks can come from without and within, and can interact to create a total influence greater than the sum of the parts. The focus of this section is the 'without', that is, the wider macroeconomic environment in which the New Zealand financial system operates.

Overall, we find the current environment to be conducive to maintaining financial stability in New Zealand. However, as always, there is the potential for disturbances to arise. For example, in recent years the household sectors of several countries — including New Zealand — have become more highly geared. This leaves them more vulnerable than usual to unexpected increases in interest rates or slowdowns in income growth.

In addition, a large imbalance between saving and investment in the US puts the US dollar at risk of further depreciation. In such an event, we could see further, possibly significant, upward pressure on the New Zealand dollar.

2.1 The international economic and financial position

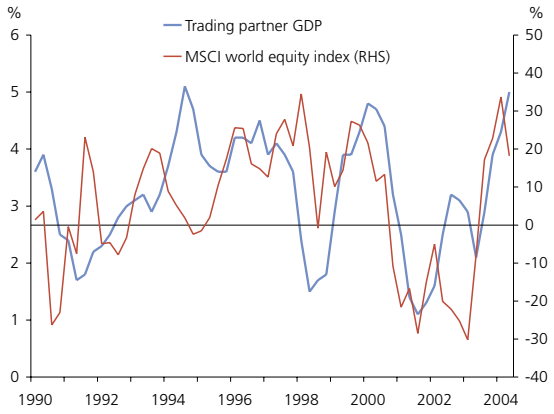
New Zealand is a small open economy that is well integrated into the global economy and financial markets. As a share of GDP, foreign financial assets and liabilities amount to about 60 per cent and 140 per cent of GDP respectively, and total trade — exports and imports combined — amounts to about two thirds of GDP. These external connections mean that the prices of our financial assets and currency are heavily subject to global influences. Moreover, most of our financial institutions are foreign-owned. Fourteen of our sixteen registered banks have foreign owners, as do the largest life and general insurance companies operating in New Zealand.

Australia and its financial system are particularly significant to New Zealand. International financial markets often view the two economies as being similar, although there are periods when we are seen as distinct, with different drivers. Both countries have large, albeit different, primary sectors, and there are strong business links between the two countries. Nearly half of the $65 billion of foreign direct investment in New Zealand is held by Australia, including ownership of New Zealand's four largest banks.

Global expansion is supporting financial stability

Current international economic and financial conditions are contributing to global financial stability. After a period of weakness, following the collapse of the 'tech bubble' in 2000–2001, the world economy has returned to around trend growth. This growth is supporting asset values and debt servicing capacities globally (figure 1).

Figure 1
World GDP and equity prices
(Annual percentage change)

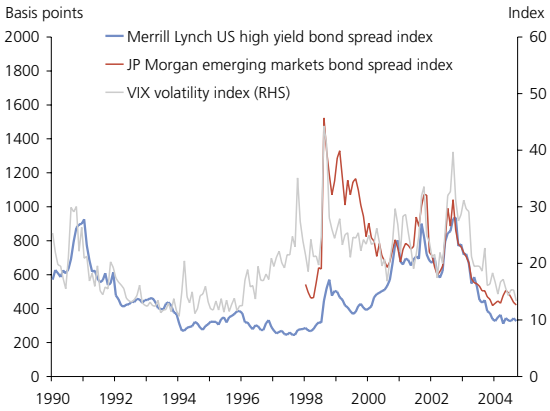


Trading partner GDP includes Australia, US, Japan, Canada, Euro area, UK, China, Hong Kong, Malaysia, Singapore, South Korea, and Taiwan.
Source: Datastream, Consensus Economics Inc., RBNZ calculations.

Although current high oil prices and some recent softer economic data in the US have raised some uncertainty about the robustness of the global recovery, the world economy is still viewed as being in an expansion phase. Risk aversion, as measured by the VIX (a measure of the volatility of the US equity market) and emerging market bond spreads, has fallen back from the levels seen over 2001/02. These indicators suggest that investors have become more confident about the global outlook (figure 2, overleaf).

Figure 2

Risk aversion indicators



Source: Datastream, Chicago Board Options Exchange.

A similarly positive picture is evident in Australia, which has enjoyed uninterrupted economic growth since 1992. Currently Australia is experiencing strength in consumer demand, its external terms of trade, and its equity market, as well as a historically low level of unemployment and solid yet contained wage growth. All of these bode well for household and business incomes, and debt servicing capacities. Interest rates are currently on hold but are expected by commentators to climb a bit further in this cycle.

This strong and consistent macroeconomic performance in Australia has been reflected in sustained financial stability, although there were some stresses in the Australian insurance sector in 2001/02, when the general insurer HIH failed and AMP incurred very substantial investment losses (largely in its UK investment arm). Meanwhile, the Australian banking system has maintained solid earnings throughout the last decade.[1]

But there are always risks

The international position just summarised will shape the expectations of participants in financial markets. From a financial stability standpoint, of course, consideration also needs to be given to 'what if' things develop differently from expected.

One possible, though currently unexpected, scenario is that global inflation becomes a problem. Recently global inflation has been very low. But inflation forecasts have been revised up over the last year due to the strengthening of global demand, and large increases in oil and commodity prices. Table 1 shows that inflation forecasts for 2004 have been revised up rather significantly, while those for 2005 have moved up only a little. As forecasters' attention turns more towards 2005, it is possible that there will be further upward revisions there also.

With most economies now in an expansion phase, central banks have been increasing interest rates. However, those increases have mostly been from very low levels and indications are that further rate increases are likely to be modest and gradual (figure 3). If the global inflation outlook were to become less benign, then larger interest rate increases could occur. In that case, borrowers with expectations of debt servicing costs being sustained at low or moderate levels could see those expectations dashed, and some consequential strain on their debt servicing capacities, as well as lower asset values.

Table 1

Consensus forecasts of inflation

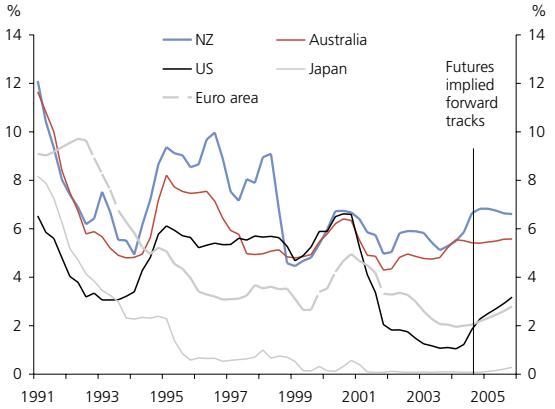
Date of forecast:	September 03		January 04		May 04		September 04	
For year:	2004	2005	2004	2005	2004	2005	2004	2005
US	1.8	-	1.6	2.1	2.2	2.1	2.7	2.4
Euro zone	1.5	-	1.7	1.7	1.8	1.6	2.1	1.8
Asia Pacific	0.4	-	0.7	0.9	0.9	1.0	1.2	1.2

Source: Consensus Economics Inc.

1 The Reserve Bank of Australia's September 2004 *Financial Stability Review* contains a full assessment of the Australian financial system. This document is available for download from: http://www.rba.gov.au/

Figure 3

Short-term interest rates



Source: Reuters, RBNZ.

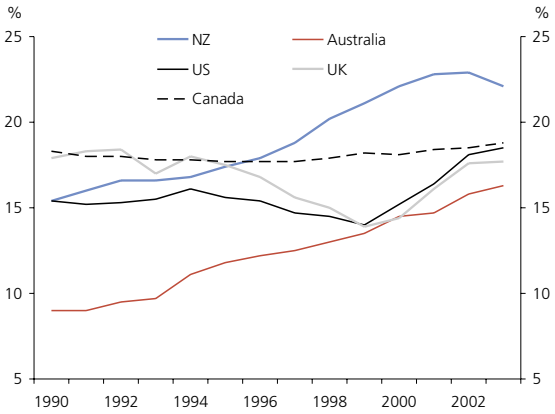
Households are more susceptible than historically

Household sectors in several countries could be more susceptible than usual to unexpectedly higher interest rates. In several countries, including the UK, Australia, parts of Europe, and to a lesser extent the US, as well as New Zealand, the household sector has become significantly more leveraged. Their ratios of household debt to assets have increased in the last few years (figure 4), notwithstanding rapid increases in house prices and hence in the value of households' housing assets (figure 5). This increase in household debt relative to assets has been particularly notable in Australia and New Zealand.

Household debt servicing burdens — the ratio of interest costs to disposable income — have not increased to the same extent, as interest rates have been lower

Figure 4

Household debt-to-asset ratios

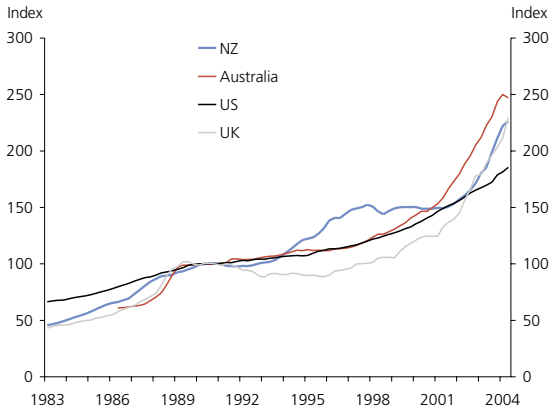


Source: RBNZ, Reserve Bank of Australia, UK Office for National Statistics, Bank of Canada, Bank for International Settlements.

Figure 5

House price indices

(1990 = 100)

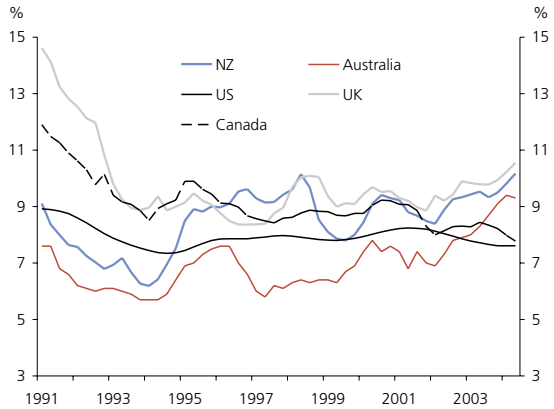


Source: Datastream, Quotable Value New Zealand.

(figure 6). But despite lower interest rates, neither have debt servicing burdens fallen, and in some countries are higher than they have been for the last decade. If interest rates were to rise significantly, and house prices were to fall significantly, household sectors could come under some strain. Such a development would see both measures of household leverage — debt to assets, and interest costs to disposable income — rise further from their already relatively elevated levels.

Figure 6

Household debt servicing-to-disposable income ratios



Source: Reserve Bank of Australia, Bank of England, Bank of Canada, US Bureau of Economic Analysis, RBNZ data and calculations.

Global imbalances have increased

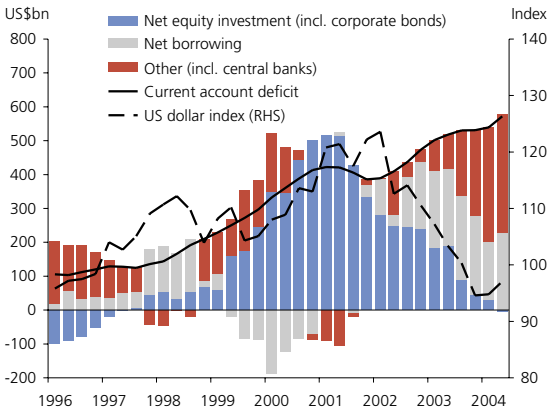
The US current account deficit is a major global imbalance. At over 5 per cent of GDP, it is the largest current account deficit in the modern history of the US. This imbalance reflects a shortfall of saving relative to investment. The main contributors to the low level of saving are the government, which is running a large fiscal deficit, and US households. The current imbalance is unlikely to be sustainable in the long term and, absent an increase in the US saving rate, adjustment most likely will occur through a weakening currency and/or higher real interest rates.

The US dollar has already depreciated significantly from its 2002 high but, at current levels, is no more than a little below its long-term average value. Further depreciation can be expected if, or when, the global willingness to finance the shortfall of saving in the US wanes.

Over the last two to three years, private financial inflows, especially of equity and direct investment, to the US have declined. At the same time purchases of US government securities, particularly by Asian central banks, have increased (figure 7). Asian central banks have been accumulating US dollar foreign exchange reserves as they have intervened in foreign exchange markets to reduce appreciation of their currencies against the US dollar. If in future they were to allow their currencies to appreciate, or were to invest more of their foreign exchange reserves[2] in, say, euro rather than in US dollars, the US dollar could fall to well below current levels. In that situation, the New Zealand dollar could appreciate substantially more against the US dollar.

Figure 7

The US current account deficit and its financing



Source: US Bureau of Economic Analysis, Bank of England.

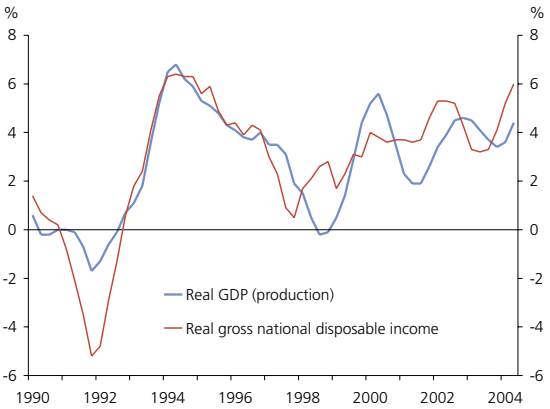
2.2 New Zealand

New Zealand has experienced strong GDP growth over the last four years and, despite very high oil prices, the external terms of trade for goods and services are currently higher than at any time in the last three decades. As a result, New Zealand's real gross national disposable income — a measure of the purchasing power of our GDP — is growing at a rate close to the peak in the mid-1990s (figure 8).

Figure 8

Real GDP and real gross national disposable income

(Annual average percentage change)



Real gross national disposable income is GDP adjusted for changes in our terms of trade, plus net investment income, plus net transfer payments.
Source: Statistics New Zealand.

Inflation was 2.4 per cent in the year to June, within the 1 to 3 per cent target range, but mounting inflationary pressures have led the Reserve Bank to increase the Official Cash Rate (OCR) over the course of 2004 from 5 per cent to 6.25 per cent. Financial markets have priced in at least one more 25 basis point increase by year end .[3]

2 At the end of 2003, Asian central banks accounted for a little over 60 per cent of the world's official foreign exchange reserves, according to BIS data.

3 See the Reserve Bank's September 2004 *Monetary Policy Statement* for a full assessment of New Zealand's macroeconomic, inflation, and monetary policy outlook.

The currency fell from its trade-weighted high of 69 in February ($0.70 USD). However, due to a weakening US dollar and rising New Zealand interest rates, the New Zealand dollar has regained some of its strength, appreciating around 11 per cent on a trade-weighted basis since mid-May. As indicated above, if the US dollar experiences further weakness, the New Zealand dollar could appreciate further, possibly significantly so. However, New Zealand, like the US, also has a large current account deficit and hence a large external financing requirement (currently 4.6 per cent of GDP compared with over 5 per cent of GDP for the US). This New Zealand imbalance might offset some of the upward pressure on the New Zealand dollar should the US dollar depreciate.[4]

New Zealand households are similar to their international counterparts

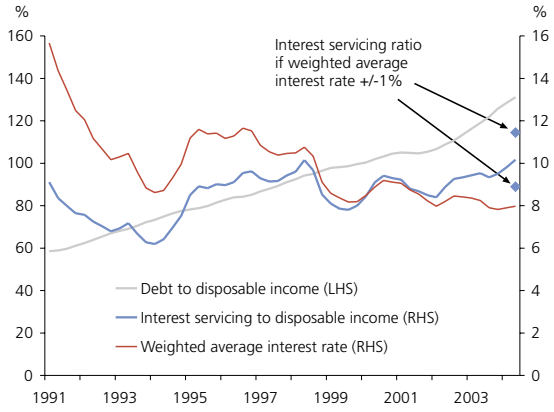
Financial developments in the New Zealand household sector have been similar to those described for other economies. Interest rates have been lower than during most of the 1990s, and households have increased their financial leverage (see figures 3 and 4). This increased leverage, together with good household income growth, and migration-boosted population growth, has been reflected in the very buoyant housing market, as well as strong retail spending.

As in other countries, this increase in household indebtedness has not resulted in a significant increase in the ratio of household interest costs to disposable income, owing to lower interest rates. But perhaps more to the point is that the strong increase in borrowing since 2001 has taken the servicing ratio above the 9 per cent average of the last ten years, to more than 10 per cent, at a time when interest rates have been low by historical standards. As an indication of the sensitivity of interest costs to the level of interest rates, a relatively small one percentage point increase in residential mortgage interest rates, all else equal, would see the servicing ratio rise further to about $11^{1}/_{2}$ per cent (figure 9).

Moreover, the aggregate data will understate the vulnerability of those households that are more indebted

Figure 9

Total household debt-to-income, interest servicing and weighted average interest rate



Source: RBNZ, Statistics New Zealand.

than average. Around half the owner-occupied homes in New Zealand are mortgage-free, and amongst the remainder there will be a range of situations. Some households will have only a small mortgage and a modest debt servicing burden, while others will be much more exposed. Financial strains would be most evident within the latter group if interest rates were to rise significantly, or income growth was to slow unexpectedly.

An increasing share of housing debt relates to residential rental investment properties. The number of private rental properties has risen from less than 20 per cent of urban privately-owned dwellings reported in the 1991 Census to over 25 per cent today.[5] These investments tend to be quite highly geared, and we estimate that around a third of the household debt for private dwellings is for rental properties, compared with less than a quarter in 1991.

Rental returns have not been the main driver of this development in the rental property market; on the contrary, average rents have not kept pace with the rate of increase in house prices, and yields on rental investment properties have fallen. This apparent imbalance between rents and house values could also be a source of strain on the finances of households that have leveraged up to fund rental investment properties, particularly if interest servicing costs rise by more than was anticipated when the investment was made.

4 The risks associated with New Zealand's external indebtedness are discussed on pages 11-12.

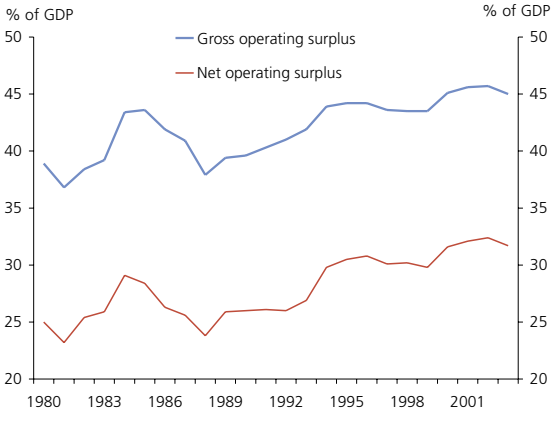
5 The rate of increase has accelerated since the last Census in 2001. Tenancy bond data from the Ministry of Housing show a marked increase in bond registrations over the past few years.

Against this background, the near-term outlook is for household finances to become more rather than less stretched. Interest servicing costs are edging up, and this can be expected to further slow the rate of increase in house prices. In this regard, the New Zealand housing market may follow that of Australia, which began to cool earlier this year. In the last six months, house prices have fallen a little in both Sydney and Melbourne, and rates of increase elsewhere in Australia have slowed notably. Recent data on house sales in New Zealand indicate that our housing market is slowing as well. The annualised rate of growth in lending for housing for the three months to August was less than 16 per cent, down a little from the December 2003 quarter peak of over 18 per cent.

The New Zealand business sector is financially robust

Lending to the business sector accounts for over 50 per cent of bank lending in New Zealand, and is most heavily concentrated in the primary sector, the property sector, and, to a lesser degree, the manufacturing sector. Currently, incomes across the business sector in aggregate are reasonably solid, reflecting the strong performance of the economy over the past five years (figure 10). Consistent with an expected slowing of the economy next year, business surveys show expectations of profits falling to a little below their recent highs.

Figure 10
Business operating surplus as a percentage of GDP

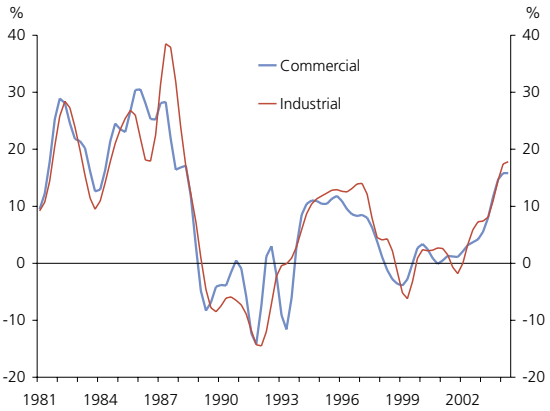


Source: Statistics New Zealand.

The strong appreciation of the New Zealand dollar from 2001 to 2004 has kept exporters' incomes contained, although in the agricultural sector there has been a strong positive offset from increasing world prices for agricultural products. Also, exporters more generally have benefited from forward exchange contracts put in place when the New Zealand dollar was very low. However, those contracts are running off, and our market contacts suggest that with the exchange rate at what they perceive to be a high level, exporters are now reluctant to hedge. This could mean that exporters would be quite vulnerable to further appreciation of the New Zealand dollar, in the context of further depreciation of the US dollar for example.

Commercial and industrial property prices have also been rising recently (figure 11). These price increases have been driven mainly by increased demand for commercial/industrial space, fuelled by the general strength of the economy. Changes in the way commercial development is undertaken, in particular pre-tenanting before building commences, also give us some comfort that these price rises do not signal the start of a commercial property bubble. Certainly, the recent performance of this sector has few of the characteristics of the 'bubble' behaviour of the 1980s.

Figure 11
Commercial and industrial property prices
(Annual percentage change)



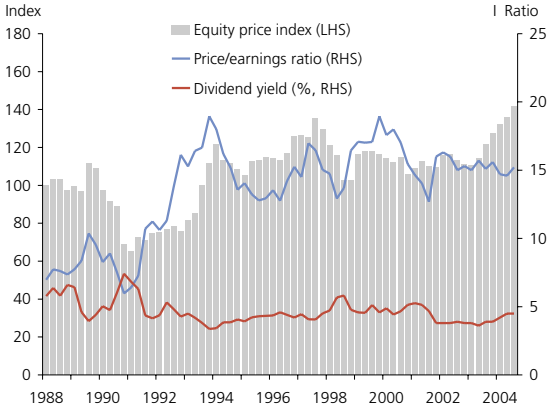
Source: Quotable Value New Zealand.

Also reflecting New Zealand's generally strong economic performance, the NZSX50 share market index has climbed by more than 50 per cent since early 2003. Price to earnings

(P/E) ratios and dividend yields have been quite stable, and by international standards do not appear excessive, suggesting equity valuations on the whole are reasonably justified (figure 12). Nonetheless, some analysts are taking account of the prospect of a softening economy next year, and are now describing the market as being 'fully valued'.

Figure 12

New Zealand equity market index, P/E ratio, and dividend yield



Source: Datastream, First New Zealand Capital.

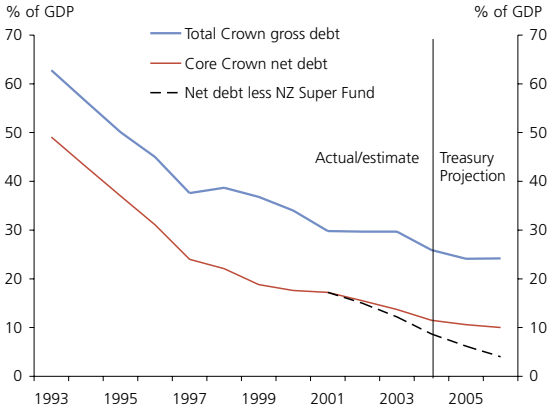
The government's finances are also very sound

Both in terms of the size of government debt and credit quality, New Zealand's public finances are very sound, and thus supportive of financial stability. New Zealand currently holds a Standard and Poor's sovereign rating of AAA/Stable for local currency denominated debt and AA+/Stable for foreign currency denominated debt. The Moody's rating is Aaa in both cases.

The government has run fiscal operating surpluses each year since 1994. These surpluses have financed most of the governments' investment outlays and have largely obviated the need for issuance of government debt, beyond that required to refinance retiring debt. As a result, gross government debt as a percentage of GDP currently is at the lowest level for at least 30 years. Taking into account the New Zealand Superannuation Fund (NZSF), net public debt is lower still, and is projected to fall further (figure 13).

Figure 13

Government debt as a percentage of GDP



Total Crown gross debt is the total borrowings, both sovereign guaranteed and non-sovereign guaranteed, of the total Crown. Core Crown debt is debt issued by the sovereign, ie, it excludes debt issued by State Owned Enterprises, Crown entities, etc.
Source: The Treasury.

But there remains a large current account deficit and substantial external debt

A nation's current account reflects the aggregate of the financial balances of its household, business, and government sectors. A deficit occurs when a country's outlays exceed its income or, equivalently, saving falls short of investment. A current account deficit is funded by raising capital from abroad, with the accumulated capital raisings being reflected in the net international investment position (IIP).

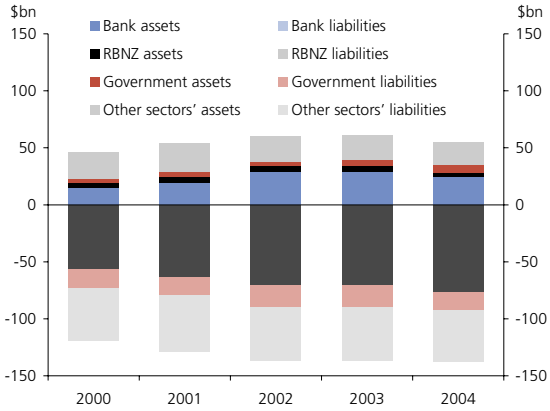
In New Zealand's case, saving has been less than investment for virtually all of the past three decades, and accumulated net obligations to the rest of the world amount to nearly 80 per cent of GDP. In recent years, the largest saving-investment shortfall has been in the household sector. The government has covered most of the financing of its investment from operating surpluses, and businesses have financed a significant share of their investment from retained earnings.

The New Zealand banking system has been instrumental in raising a significant share of the foreign capital required (figure 14). Banks' borrowings from overseas account for about half of the net IIP balance; most of the remainder consists of foreign direct investment.

At nearly 80 per cent of GDP, New Zealand's net international obligations are among the highest in the

Figure 14

New Zealand's external assets and liabilities



Source: Statistics New Zealand. As at 30 June.

developed world.[6] Whether or not this is a source of financial vulnerability depends on the willingness of foreign savers to continue to provide finance, and the price at, and form in which, they are prepared to provide it. This in turn depends on foreigners' assessments of the risks and returns. That said, foreign indebtedness is one of the indicators that rating agencies, investors, and others look at in assessing country risk. New Zealand is an AA+/Aaa rated country, and the mere fact that we are indebted does not, in itself, threaten this rating. What is important is what lies behind the indebtedness, and what mitigating factors there are.

A little less than half of New Zealand's international obligations are denominated in foreign currencies. Statistics New Zealand data suggest that nearly 90 per cent of this foreign currency-denominated external debt is hedged in some way, which is regarded as a high level of hedging.[7] Banks' disclosure statements indicate that the banking sector's foreign currency-denominated liabilities are almost completely hedged, implying that the unhedged foreign currency-denominated debt is spread across the corporate sector.

Foreign direct investment (FDI), which comprises essentially equity investment and accounts for about a third of the total foreign investment in New Zealand, tends to be relatively long term and immobile. Therefore, FDI is not subject to destabilising default risk. FDI in New Zealand remains substantial, but in recent years has accounted for a falling share of New Zealand's total external liabilities.

Currently, the strong position of the New Zealand economy — as outlined above and as reflected in the current strength of the banking system, which is discussed in the following section — provides a good underpinning for the large amount of capital that New Zealand has raised from abroad. However, it is also prudent to consider how that could change.

Fundamentally, the stability of New Zealand's external position depends on maintaining an ongoing capacity to service the obligations incurred. In turn, that requires good resource allocation to economic activities that generate the income from which the servicing costs can be met. That, obviously, is in part about maintenance of good economic policy overall, but is also about the quality of bank lending and the resilience of bank loan portfolios to shocks that could otherwise cause uncertainty about banks' abilities to meet their obligations.

New Zealand's small size and relative lack of economic diversification mean it could be quite exposed to unexpected events. This could be the case whether it be a shock specific to New Zealand, such as a breach in bio-security, or a more global event that caused a marked contraction in risk appetite in international capital markets. In these sorts of situations, we could expect foreign investors and lenders to sell New Zealand assets, driving yields higher and the exchange rate lower, and/or seek a higher risk premium for remaining invested in New Zealand. Any new financing, or re-financing, could also be expected to be on less favourable terms.

To test the resilience of the New Zealand banking system to these kinds of major shocks, we included such scenarios in a stress testing exercise undertaken last year, as input to a wide-ranging review of the New Zealand financial system by the IMF under its Financial Sector Assessment Programme (FSAP). The results of the stress tests are presented in section 5 of this *Report*, and the IMF's conclusions are reproduced in box 1 in section 3. Overall, the results indicated that the New Zealand banking system should be resilient to quite major shocks.

6 For more background on this issue see "An indebted people", *Reserve Bank of New Zealand Bulletin*, March 2002.

7 See Standard & Poor's September 2004 *Ratings Direct* report on New Zealand.

3 New Zealand's financial institutions

This section discusses the main financial institutions in the New Zealand financial system. The focus is on those entities that fund predominantly from deposits and invest mainly by way of loans. This category of institution comprises mainly the registered banks, but also includes finance companies, building societies, and credit unions. These institutions account for about 75 per cent of the assets of the financial system overall.[8] They perform the core functions of intermediation of funds (between depositors and borrowers), allocation of credit, and provision of payment services.

The banking system is currently assessed as being sound, on the basis of strong underlying profitability, high quality and generally well-diversified loan portfolios, low levels of unhedged exchange and interest rate risks, and strong parent banks. Reflecting this, all of the registered banks have long-term credit ratings of investment grade or above, with all the systemically important banks having relatively high ratings (AA- from Standard & Poor's).

At the same time, with the amalgamation of the ANZ and National Banks, the banking system has become more concentrated. The combined bank accounts for a third of the banking system, and the four systemically important banks are now all owned from a single country (Australia). Those four banks, which account for 85 per cent of the New Zealand banking system, are each of a size, and play such a central role in the New Zealand financial system, that closure in the event of failure would have significant adverse effects on the wider financial system and macroeconomy. Hence, while the current level of risk in the banking system is assessed as low, the increased concentration indicates that if problems were to emerge they could be more serious.

The non-bank deposit-taking institutions have also demonstrated quite strong performance in recent times, with a good level of profitability. While a small part of the lending market, they have grown quite rapidly, including in funding property development. However, a slowing of the economy, and in the property market in particular, could pose some difficulties for any institutions that have been assuming greater risk in funding more speculative developments or in taking on unproven business.

These assessments generally correspond with the conclusions of a review of the New Zealand financial system undertaken by the IMF in 2003 under the FSAP. The key conclusions drawn from that assessment are summarised in box 1 (p 22).

In this section our main focus is on the systemically important banks and their Australian parents, but we also review the New Zealand operations of the other banks, registered in New Zealand, and the non-bank deposit-taking and credit institutions.

3.1 The systemically important banks

Currently there are 16 banks registered in New Zealand (table 2, overleaf). The four systemically important banks, defined as having total liabilities (net of related party borrowing) of at least $10 billion, account for 85 per cent of banking system assets. A summary aggregate balance sheet for the systemically important banks over the last five years is shown in table 3, overleaf.

De-risking of balance sheets

The major change on the asset side of the aggregate balance sheet has been the growth in lending on residential mortgages, which increased by 17 per cent over the year ended 31 March 2004, compared to 7 per cent in the previous year. In one sense, the greater focus on housing loans has increased credit concentration in banks' balance sheets, but in another sense it has provided diversification. Housing loans are typically small relative to business and corporate loans, and households derive the income to service banks' housing loan portfolios from across all sectors of the economy, thus providing insulation from sector-specific shocks.

A shift in lending from companies to households may also have reduced banks' exposure to the risk of loan default overall because of behavioural differences between firms and households. Experience indicates that households,

8 The other main categories of financial institution are providers of insurance (life and general) and providers of investment management services. Future *Financial Stability Reports* will cover these categories of institution. See appendix tables A1 and A2 for a statistical overview of the financial system as a whole.

Table 2

Registered banks in New Zealand[9]

Full-service banks	Retail banks	Corporate/wholesale banks	'Niche' banks
ANZ National Bank*	Kiwibank	ABN AMRO Bank	Bank of Tokyo-Mitsubishi
ASB Bank*	St George Bank New Zealand	Citibank	Kookmin Bank
Bank of New Zealand*	TSB Bank	Commonwealth Bank of Australia (owner of ASB Bank)	Rabobank Nederland Rabobank New Zealand
Westpac Banking Corporation*		Deutsche Bank	
The Hongkong and Shanghai Banking Corporation			

* Systemically important banks.

Table 3

Aggregate balance sheet for the four systemically important banks

$ billion	2000	2001	2002	2003	2004
Assets					
Financial investments	16	24	21	23	20
Residential mortgage loans	58	62	67	72	84
Other lending	56	59	66	74	77
Other assets	8	14	8	10	15
Total assets	**138**	**159**	**162**	**178**	**196**
Equity and liabilities					
Equity	9	9	10	13	16
Wholesale and retail funding	123	141	145	155	169
Other liabilities	6	10	7	10	11
Total equity and liabilities	**138**	**159**	**162**	**178**	**196**

Source: Registered banks' disclosure statements. As at 31 March.

if faced with the prospect of defaulting on the mortgage over the family home, generally tend to curtail consumer spending and maintain mortgage payments, rather than risk the bank foreclosing.

This experience suggests that the credit risks facing New Zealand banks from the housing market, if triggered by, say, higher interest rates than households had expected, could be mainly indirect, via their lending to firms that supply the consumer market rather than from home loan losses. However, currently neither risk is seen as a cause for concern. The interest rate increases and economic slow-down projected in our most recent *Monetary Policy Statement* are moderate by historical standards – the economy is expected to continue growing, albeit not as fast as recently.

In taking this view we are cognisant of recent increases in lending by banks to households to finance rental investment. Apartments aside, residential rental properties are regarded by banks as of broadly similar risk to comparably-geared owner-occupied homes, at least where the landlord owns only one or two rental properties.[10]

According to our banking contacts, banks generally have maintained the long-standing practices of obtaining personal guarantees (where the rental property is owned by a company or trust) and, where possible, 'all obligations' mortgage security over both of the investor's owner-occupied and rental properties (meaning that the owner's equity in the former also secures debt in the latter). Nonetheless, in the currently competitive mortgage market the incidence of

9 ANZ Bank purchased National Bank on 1 December 2003, and the two banks legally merged on 26 June 2004 to become ANZ National Bank. As this *Report* was prepared using March 2004 disclosure statements, any specific information on ANZ and National relates to the two separate legal entities, in order to avoid double-counting.

10 Apartments represent less than 2 per cent of New Zealand's urban residential dwelling stock and most banks apply more conservative lending criteria to them. The vast majority of rental properties in New Zealand are detached dwellings (often in two to three 'flats') in residential suburbs of mixed tenancy.

these practices may have lessened. To the extent that this is the case, the relatively more rapid increase in bank lending for investment properties than for owner-occupied housing will have increased risk in banks' housing loan portfolios, although we assess the extent of any increase in risk as modest.

Support for these judgements on the riskiness of banks' housing loan portfolios is also provided by the stress tests undertaken for the FSAP. One of the scenarios adopted for that exercise was a 4 per cent fall in household disposable income and an increase in unemployment to 9 per cent, associated with a 20 per cent fall in house prices. The results, which are presented in more detail in section 5, indicated that the incidence of housing loan losses would dent banks' profits, but not to a degree that would materially undermine the strength of their balance sheets. The Australian Prudential Regulation Authority (APRA) conducted a similar stress test for the Australian banking system, and concluded that adverse developments in the housing market alone would be unlikely to cause major difficulties for the Australian financial system.

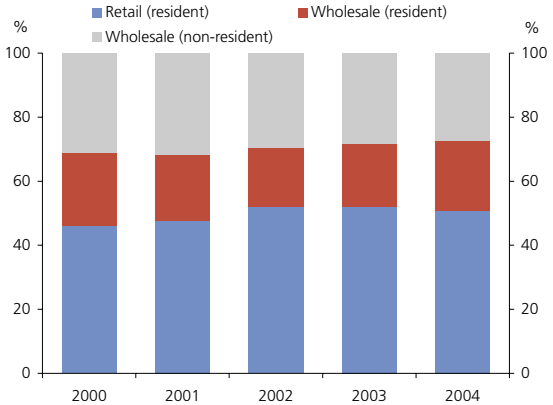
Continued reliance on wholesale market and offshore funding

For some years now, the systemically important banks have relied on wholesale markets, including offshore markets, for about half their funding (figure 15). The large amount of funding sourced from offshore stems in part from New Zealand banks being able to access international capital markets on favourable terms (with either explicit or implicit credit support from parent bank balance sheets), and in part from New Zealand's large external financing requirement.

Heavy reliance on wholesale funding makes the New Zealand banking system vulnerable to the sorts of shocks discussed in section 2. Wholesale funding, and in particular offshore wholesale funding, can be less stable than retail funding at times of financial uncertainty. Mitigating this vulnerability is the fact that all the systemically important banks have strong offshore (Australian) owners. In the event of a New Zealand-specific shock that did not also involve Australia, wholesale markets would likely derive a degree of comfort from the capacity of parents to provide support, if required.

Figure 15

Composition of funding for the systemically important banks



Source: RBNZ Standard Statistical Return. As at 30 June.

Capital remains steady

Banks' capital adequacy ratios have been steady in recent years, although they declined slightly over the year to March 2004. However, capital remains well in excess of the minimum regulatory requirement that banks maintain 4 per cent Tier one and 8 per cent total capital relative to risk-adjusted assets (figure 16).[11]

Figure 16

Capital adequacy ratios for locally-incorporated systemically important banks[12]

Source: Registered banks' disclosure statements. As at 31 March.

11 Tier 1 capital comprises mainly shareholders' funds and total capital comprises Tier 1 capital plus mainly subordinated debt and general provisions for doubtful debts. For a fuller explanation of our capital adequacy requirements, see "Capital adequacy ratios for banks — simplified explanation and example of calculation", available at http://www.rbnz.govt.nz/banking/Regulation/0091769.html

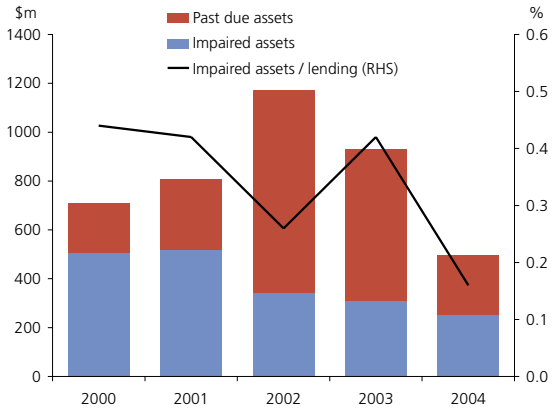
12 Westpac, being a branch in New Zealand, is not subject to a capital adequacy requirement on its New Zealand operations.

During the year, ANZ Bank in New Zealand received additional capital from its parent bank to finance the purchase of National Bank. However, this did not result in a net injection of regulatory capital into the banking system, but rather a payment to the previous owner of National Bank, in part for the existing capital of National Bank, and in part for goodwill, which is not recognised for regulatory capital purposes.

Asset quality is very good

Banks' capital is only as good as the assets in which it has been invested. In New Zealand, asset quality has been very strong. As at 31 March 2004, past due assets (loans with payments in arrears by more than 90 days, but not expected to result in any loss) were at low levels. Impaired assets (assets on which loss is expected) were also at similarly low levels (figure 17). These low levels of problem loans reflect the generally low risk nature of banks' lending in New Zealand — with over half that lending secured by mortgages over residential dwellings — as well as the buoyant economy.

Figure 17
Impaired and past due assets for systemically important banks

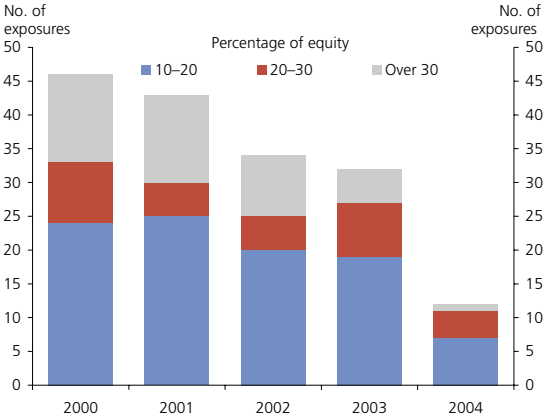


Source: Registered banks' disclosure statements. As at 31 March.

Fewer large corporate exposures

The size and number of a bank's individual large lending exposures a bank has is another indicator of risk. The smaller the size and number of large exposures, the less likely it is that a single exposure, or a few individual exposures, will seriously impair the bank. For the four systemically important banks, the number of their large exposures to corporate counterparties (measured for each bank in bands of 10 per cent of their own equity) has been falling during the last few years (figure 18).

Figure 18
Systemically important banks' large exposures to non-banks[13]



Source: Registered banks' disclosure statements. As at 31 March.

The declining trend in large exposures to corporate borrowers reflects the structural lending change away from corporate lending in favour of retail lending.[14] Also, the corporate appetite for borrowing appears to have lessened, and relatively more of that borrowing is now being done offshore.

Strong earnings performance

For the year ended 31 March 2004, aggregate profit after tax for the systemically important banks was $1.9 billion, which was a 22 per cent decrease on the previous year. An aggregate income statement for the systemically important banks over the last five years is shown in table 4, opposite.

13 Westpac is included in these data on the basis of its New Zealand exposures relative to the equity of the 'parent' bank.

14 The fall in the number of large exposures in 2004 is also partly due to the purchase of National Bank by ANZ. Large exposures are reported relative to the equity of the consolidated bank, so some exposures that were greater than 10 per cent of the individual banks' equity base s are less than 10 per cent of the combined group's equity base.

Table 4

Aggregate income statement for the systemically important banks

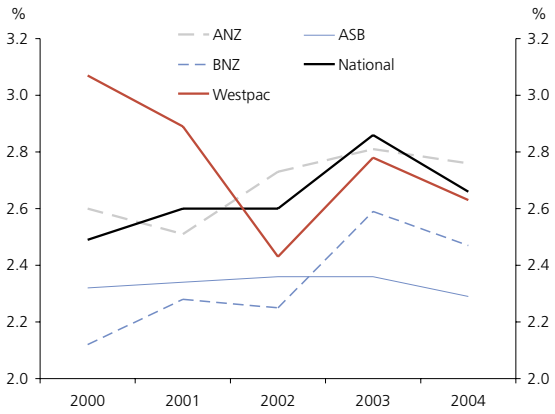
$ million	2000	2001	2002	2003	2004
Net interest income	3102	3379	3495	4207	4412
Impaired asset costs	-146	-95	-181	-123	-641
Other income	1754	1955	2081	2091	2175
Operating expenses	-2692	-2808	-2694	-2890	-3200
Profit before abnormals	2019	2431	2702	3285	2747
Abnormals	17	-7	47	144	1
Profit before tax	2036	2424	2749	3429	2748
Tax	-525	-641	-720	-977	-857
Net profit after tax	1511	1782	2029	2452	1891

Source: Registered banks' disclosure statements. For the year ended 31 March.

For the year ended 31 March 2004, interest margins (defined as net interest income divided by average interest earning assets) declined slightly (figure 19), and fee income has shown modest growth. Overall the weighted average return on assets for the systemically important banks as a group was 1.0 per cent (figure 20). However, taking account of one-off factors that lowered 2004 results,[15] the underlying return on assets for most banks will have been closer to around the 1.2 per cent achieved in 2000–2002. This is a high rate of return relative to the traditional standard of 1 per cent return on average assets taken as representing 'good' performance, and somewhat higher than the corresponding returns earned by their Australian parents (table 5, overleaf).

Figure 19

Interest margins for the systemically important banks



Source: Registered banks' disclosure statements. Year ended 31 March.

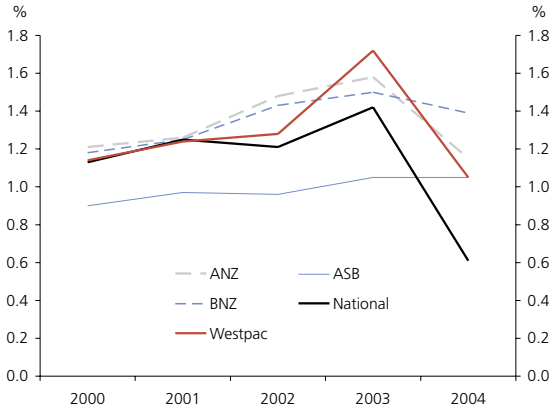
Cost ratios

Cost savings have been made by banks through efficiency improvements in systems and processes, and closure of uneconomic branches. The cost-to-income ratios of the systemically important banks have shown a declining trend, with the increase in 2004 by National Bank and ANZ Bank being related to acquisition of the former by the latter (figure 21, overleaf).

The scope for further cost savings without a negative impact on customer service may be limited. In addition, there is always a balance to be struck between trying to

Figure 20

Net profit after tax as a percentage of average total assets



Source: Registered banks' disclosure statements. Year ended 31 March.

15 These included accounting policy changes that increased the general provisions for doubtful debts of National Bank and Westpac, and costs associated with the purchase of National Bank by ANZ. In the previous year aggregate net profit after tax was boosted by some one-off profits, from the sale by ANZ of a funds management subsidiary, and by Westpac of its finance company subsidiary, AGC.

Table 5

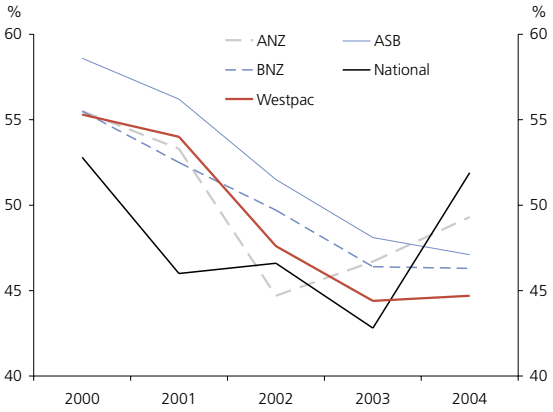
Australian parent banks

As at latest balance date	ANZ	CBA	NAB	Westpac
Total assets (A$ billion)	305	195	395	221
Net profit after tax (A$ million)	2572	2348	3947	2183
Return on average assets (%)	0.9	1.2	1.0	1.0
Return on equity (%)	12.6	18.6	14.6	18.0
Impaired assets/total lending (%)	0.2	0.8	0.5	0.4
Total capital adequacy ratio (%)	10.2	11.1	9.3	10.5
Credit rating (Standard & Poor's)	AA-	AA-	AA-	AA-

Source: Banks' annual reports. These figures are for the global consolidated bank.

Figure 21

Cost to income ratios of the systemically important banks



Source: Registered banks' disclosure statements. Year ended 31 March.

achieve cost savings through administrative streamlining, on the one hand, while also seeking to ensure that operational risk (the risk of mistakes, operational policy breaches, and fraud within banks) is well managed. Future profit growth is more likely to come from increasing income rather than further reducing costs.

Tax payments have been under scrutiny

The Inland Revenue Department has been reviewing banks' income tax, and in particular the tax implications of certain categories of structured finance transactions. Some banks have indicated publicly that additional tax could be assessed, and that on a 'worst case' basis, the amounts involved in total could be in the vicinity of $1 billion. However, the banks have also indicated that they believe that they have been fully meeting their tax obligations, and that they will contest additional assessments. This means that there may be uncertainty for a number of years about whether and if so how much additional tax liability will actually crystallise.

Meanwhile, the Government has indicated that it will change tax laws that have made certain structured finance transactions tax-advantageous for banks. On enactment, it can be expected that banks' income tax expense as a proportion of profits will increase relative to the recent past.

3.2 Australian parents of New Zealand's systemically important banks

All of the systemically important banks in New Zealand are Australian owned. One (Westpac) operates in New Zealand as a branch,[16] and three are New Zealand incorporated subsidiaries. Their financial reputations are dependent on the financial health and reputations of their Australian parents. Table 5 sets out some summary information in respect of those Australian parent banks.

The Reserve Bank of Australia's (RBA) September 2004 *Financial Stability Review* contains a comprehensive analysis of the Australian financial system. The RBA's overall assessment of the Australian financial system is that it is in sound condition, with low levels of impaired assets and with capital comfortably in excess of minimum regulatory requirements. In the opinion of the RBA the overall riskiness of the banks' residential mortgage lending portfolio is likely to have increased over recent years, but it is unlikely that

16 We are currently working with Westpac to determine how it can meet our requirement that systemically important banks be incorporated in New Zealand. See also section 4.1.

developments in the housing market alone could cause major difficulties for the Australian banks.

The RBA comments that it expects rates of credit growth to moderate in the future; that interest margins will be further compressed; and that these developments are likely to result in slower growth in banks' earnings. A more normal (higher) rate of bad debt expenses could also put pressure on profitability. Overall, the RBA is of the view that Australian banks are currently well placed to ride through economic and financial shocks with a relatively low risk of any significant damage. That being so, we assess the risk of damage being transmitted to the New Zealand financial system by financial problems in the Australian parent banks to be low.

3.3 Other New Zealand registered banks

Although the other, non-systemically important, New Zealand registered banks have relatively small operations, they perform an important role. They provide diversity and specialisation, and their presence adds competitive pressures that benefit all users of banking services.

These other banks, in aggregate, have not grown their balance sheets since 2001 (table 6), although within this aggregate, some individual banks have grown significantly while others have contracted. Profitability has also been uneven, although in the last two years it has been stronger, and in line with that for the systemically-important banks.

The relatively small size of these banks means that they would not be a source of systemic instability if one were to fail. But an exit of one or more would matter for the financial system to the extent that there would be a lessening of (actual or potential) competition, or reduced service to a market niche.

3.4 Non-bank financial institutions

The main non-bank deposit-taking and credit institutions are finance companies, building societies, general financiers, and credit unions. As at December 2003, total assets of the members of this group surveyed by the Reserve Bank were over $15 billion, about 7 per cent of the size of registered banks.

The generally small size of these institutions, and the group's small size in aggregate relative to the banking system, suggests that financial distress or failure within the group poses a relatively small risk to the stability of the financial system overall. Nonetheless, widespread and severe financial distress in the group could weaken domestic and international confidence in the New Zealand financial system. Also, the non-bank deposit and credit institutions, like the non-systemically important banks, play a valuable role in the financial system, as sources of competition and as significant providers of financial services in particular market niches, for example in consumer finance. For these reasons we maintain oversight of the sector, although this does not involve us in regulating or supervising the individual institutions.[17]

Table 6

Other New Zealand registered banks' operations in New Zealand

As at 31 March	2000	2001	2002	2003	2004
Total assets ($ billion)	26	35	32	31	32
Total lending ($ billion)	16	28	24	22	23
Net after tax profit ($ million)	198	139	315	429	424
Return on average assets (%)	0.94	0.49	0.97	1.38	1.40
Impaired assets/total lending (%)	0.22	1.76	1.75	1.37	0.27

Source: Registered banks' disclosure statements.

17 The regulatory regime for non-bank institutions that raise funds from the public is provided by the Securities Act and Regulations. A summary of the regime as it applies to these institutions is included in "New Zealand's financial sector regulation", *Reserve Bank of New Zealand Bulletin*, December 2003.

Some history

In the mid-1980s, the time of deregulation of the financial sector, the four trading banks and their subsidiaries supplied around 30 per cent of the total amount of credit provided to the New Zealand economy from all domestic sources. The next decade saw savings banks, building societies, and finance companies consolidate and a number of new registered banks, including from the ranks of the non-bank institutions. By 1998, there were 19 registered banks in New Zealand with a share of total domestic credit of about 85 per cent.[18]

From around 1998, the non-bank deposit and credit institutions began to grow faster than registered banks. This change began as they exploited niche markets unattractive to banks, mainly serving households. But from 2001 their growth accelerated further, in tandem with strong growth in the domestic economy at that time.

A number of other factors also contributed to this growth. These included the development of securitisation of consumer and vehicle loans as a means of tapping wholesale market funding, at a time when the tendency of banks was not to focus so much on these categories of lending. Increased demand for housing (fuelled in part by higher net immigration) and consumer durables, and strong growth in new vehicle registrations have also played a part. In addition, as banks embarked on rationalisation plans, former bankers provided a core of experienced staff for growing non-bank institutions. In the property development market, banks found it useful to have a 'second-tier' finance company take subordinated loan positions on the larger residential apartment developments that began to proliferate from 2000.

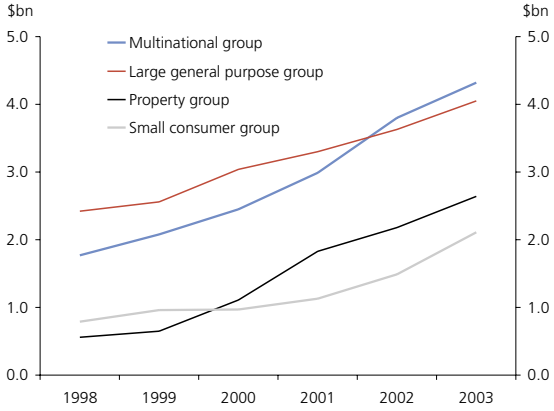
This group of non-bank financial institutions covers a wide spectrum in terms of their size, the markets they lend to, and the sources of their funding. However, those for which balance sheet data are collected by the Bank can be broadly grouped as follows:

1. 'Multinational': This group comprises more than 20 institutions, almost all foreign-owned. All members of the group fund from domestic and offshore wholesale markets, rather than from households. They provide mainly consumer and vehicle finance and 'vendor' finance for business products.
2. 'Large general purpose': This group comprises five relatively large institutions, including the Southland Building Society and the Public Service Investment Society (PSIS). They obtain three quarters of their funding from the household sector, to which they extend almost 60 per cent of their loans.
3. 'Property finance': These companies lend mainly for property development, bridging and investment, and rely almost entirely on household sector funding. There are more than 10 institutions in this group.
4. 'Small consumer financiers': Over 25 smaller finance companies (and a few building societies) with about 90 per cent of their liabilities to households, and lending mainly for purposes such as car and retail goods purchase. There are also 60 credit unions operating in this sector, but with total assets around $400 million, they are not surveyed by the Reserve Bank or included in these data.

Figures 22 to 24, below and opposite, illustrate the significant growth of these four groups of non-bank institutions since 1998, with the standout feature being the rapid growth in property lending by the property finance group.

Figure 22

Non-bank funding

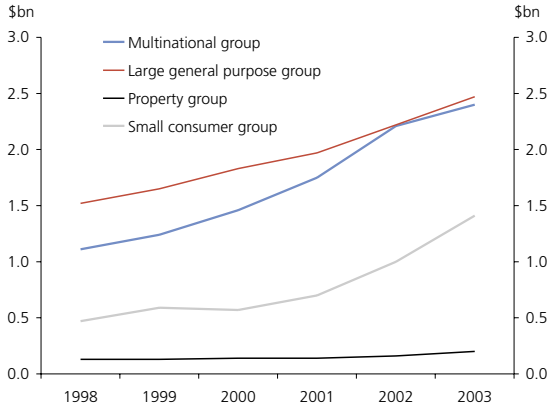


Source: RBNZ. As at 31 December.

18 The other major development was the withdrawal of government from credit provision (mainly for housing and farming). For further background, see "Developments in credit markets over two decades", *Reserve Bank of New Zealand Bulletin*, June 2002.

Figure 23

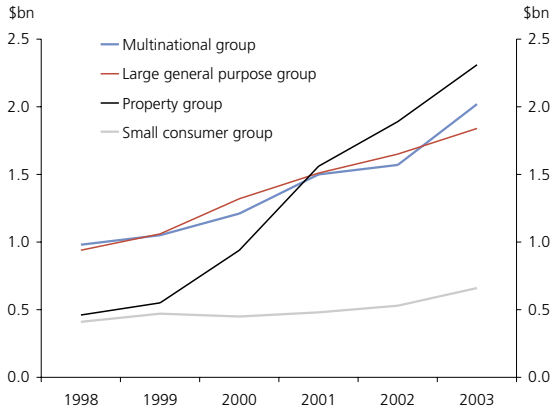
Non-bank loans to household sector



Source: RBNZ. As at 31 December.

Figure 24

Non-bank loans to other sectors



Source: RBNZ. As at 31 December.

Rapid growth in lending

Despite recording growth in excess of 15 per cent on average over the past five years (compared to banks at less than 10 per cent), the non-bank deposit and credit institution sector overall remains relatively small — and proportionately smaller than the counterpart sector in Australia. Much of the growth recorded will have stemmed from these institutions having been responsive and flexible in meeting market demands, reinforcing the valuable role they play in the financial system.

However, experience shows that rapid growth in lending can foreshadow declining credit standards and hence increased risk. If the economy slows next year, as is projected, that could provide a litmus test of the extent to which the growth recorded by this sector reflects sustainable expansion in its role as a provider of business, consumer, and property finance, and the extent to which the growth has been achieved by taking on additional risk.

The sector's rapid growth over the past five years has been facilitated by the ready availability of funding from households, some of whom, in a low interest rate environment, have sought higher-yielding and longer-term fixed interest investments than those offered by banks. For some households it will have been difficult to assess the appropriate return for the terms and risks attached to their funding. In a recent discussion paper on disclosure by finance companies, the Securities Commission has noted the concerns of some commentators about whether the interest rates offered by finance companies accurately reflect the risk that the investor assumes.[19] Some investors may find, after the fact, that the risks inherent in their investments have not been adequately compensated.

Given the diverse character of the institutions in the non-bank sector, if any stresses in this sector were to arise we would not expect them to be generalised. For example, the multinational group comprises mainly investment grade-rated companies (BBB and above) and should be relatively well-insulated from any slow down in the New Zealand economy. Also, the more numerous 'small consumer' group of companies have predominantly consumer, car, and hire purchase loans on their books, with relatively low loan concentration. This commonplace business is not likely to be a source of significant instability, although some of these generally very small institutions may have taken on less proven business.

Property development is an area that, traditionally, has been more risky, and property financiers' credit quality and risk management skills are usually only put to the test as property development cycles slow. Where developments have been financed conservatively — for example, on the basis of strong pre-tenanting arrangements, or contracts to purchase — financiers should experience few stresses.

19 "Disclosure by Finance Companies", a discussion paper, Securities Commission: www.sec-com.govt.nz/publications/documents/disclosure/index.shtml

But a down-turn in the property market could pose some difficulties for any financiers that have financed property development on a more speculative and/or subordinated basis, with possible consequent loss for investors.

Box 1
Key findings of the FSAP assessment by the IMF[20]

The IMF's review of the New Zealand financial system was focussed mainly on the banking system and banking supervision, but also covered non-bank institutions and the securities markets. The main conclusions drawn by the IMF team are summarised below.

- The five (now four) foreign-owned banks that dominate the financial system are profitable and well capitalised. For these institutions, the discipline of New Zealand's market-based disclosure regime is supplemented by active home country supervision.
- The foreign exchange market has allowed the private sector to manage its foreign exchange risks and secure cover from a diverse set of counterparties under a wide range of market conditions. Foreign exchange hedging is widespread.
- Stress tests show resilience in the banking sector, consistent with the sector's high levels of capital and profits. Significant exchange rate swings and house price declines could be absorbed by all big banks. Dynamic stress test scenarios involving shocks to agriculture and to external funding costs show more persistent effects on bank profits, but do not raise systemic concerns.
- Banking supervision is based on disclosure and market discipline, with the sole objective of ensuring systemic stability. The supervisory regime employs limited prudential requirements, with no active on-site role for supervisors. The benefits of this regime include low compliance costs, greater flexibility for financial institutions, an enhanced role for market discipline, and reduced moral hazard risks. The ongoing strength of the financial system has reduced concerns about the lack of an active supervisory component.
- The absence of a depositor-protection mandate, along with the foreign ownership of all systemically important banks, may pose unique challenges for the Reserve Bank if a financial crisis were to occur. Outsourcing of New Zealand bank operating systems to parent institutions and Australian depositor preference law may complicate crisis management. These risks have been recognised and control measures are being analysed. Efforts underway to improve cooperation with the Australian authorities are welcome.
- Non-bank financial institutions, while not systemically important, are also profitable. Overseas regulators provide additional supervision for a handful of the largest non-bank institutions, which account for around half of the assets of the sector.
- Securities markets are relatively small, with trading and ownership concentrated offshore. Restructuring of the New Zealand Stock Exchange (NZX) and reforms in regulation have strengthened the regulatory framework, but some gaps remain that may delay early detection and enforcement actions against improper conduct.

20 From IMF (2004), "New Zealand — Financial System Stability Assessment", available at www.imf.org/external/pubs/ft/scr/2004/cr04126.pdf

4 Recent developments in banking regulation and supervision

It has been a busy year in the Financial Stability Department of the Reserve Bank, with a number of developments in our banking regulation and supervision, as well as joint work with New Zealand and Australian officials on how trans-Tasman regulation and supervision could be enhanced.

The first part of this section discusses the key policy developments in banking supervision. The second part discusses some work in progress on the trans-Tasman dimension of banking supervision. The third part outlines other work currently underway that is examining the financial system's contribution to growth and economic development, and whether different domestic and trans-Tasman regulatory arrangements would enhance that contribution.

4.1 Key policy developments

The Reserve Bank's banking supervision powers are exercised for the purposes of promoting the maintenance of a sound and efficient financial system, or avoiding significant damage to the financial system that could result from the failure of a registered bank. This responsibility, importantly, includes avoiding significant damage to the New Zealand financial system should a systemically important bank experience serious financial stress. The high, and increased, degree of bank and country-of-ownership concentration in the New Zealand banking system underscores the latter responsibility, and has been one of the factors behind recent policy developments. These include:

Local incorporation policy: This policy requires systemically important banks (and some categories of retail deposit-taking banks) to be incorporated in New Zealand. The failure of a bank incorporated in New Zealand would be more manageable than in the case of a branch of an overseas bank, because there would be more legally certain and rapid access to the assets and liabilities of the New Zealand bank. Local incorporation also facilitates more effective governance, given that a locally incorporated bank has a local board of directors with a duty to act in the best interests of the New Zealand bank. In addition, local incorporation facilitates more meaningful and complete disclosure of the affairs of the bank in New Zealand. Currently all but one of the systemically important banks in New Zealand are locally incorporated. We are working with the other bank (Westpac) to determine how it can meet our requirements.

Outsourcing: Outsourcing by banks of key functions, either to a third party or to a foreign parent bank, can create risks for a bank if the outsourcing provider is unable to provide the outsourced services. The New Zealand financial system could also be significantly damaged if, because of outsourcing, the board or a statutory manager of a systemically important bank were unable to control the management and/or systems of a bank on a standalone basis in a crisis. For example, in a situation where the parent bank is under serious financial stress, or has failed, the subsidiary in New Zealand would also be under acute pressure and may need to be managed on a standalone basis, depending on what measures were being taken to resolve the parent's affairs. As provided for by recent amendments to the Reserve Bank Act (see page 24), we are implementing a policy to manage outsourcing risk.

Crisis management preparedness: The Reserve Bank is working to develop a range of options for managing a bank crisis, including having the capacity to sell, re-capitalise, or, if needed, to liquidate a bank in serious distress. Policies on the provision of emergency liquidity support to banks are also being reviewed. Complementing this work, the Reserve Bank is enhancing its own preparedness to quickly assess and implement the crisis management option most appropriate to a particular situation.

Bank disclosure requirements: The disclosure requirements for banks are being updated to cater for early adoption of International Accounting Standards (IAS) from 2005, and to align requirements with recent banking supervision policy changes. Bank disclosures are important because they encourage banks to adopt sound risk management practices, and because they provide bank stakeholders with relevant and timely information so that they can manage the risks they face in transacting with a bank. The Reserve Bank has also been working with the Institute of Chartered Accountants to ensure that the

New Zealand versions of the IASs that are most relevant to financial institutions are of a high standard.

Bank capital requirements: The Reserve Bank will be revising its capital requirements for banks as a result of the Basel Committee on Banking Supervision's revised international Accord on bank capital requirements (known as 'Basel II'). In deciding how to implement the new Accord in New Zealand, a key aim will be to maintain an adequate level of capital in New Zealand banks. There will also be a focus on coordinating New Zealand implementation with implementation in Australia by the Australian banking regulator, the Australian Prudential Regulation Authority (APRA).

The Reserve Bank of New Zealand Amendment Act 2003: Following changes to its powers contained in the Reserve Bank of New Zealand Amendment Act 2003, the Bank introduced some new and modified requirements for the registration and supervision of registered banks in mid-2004.[21] These related to the criteria for bank registration, approvals required for a change of bank ownership, and for the appointment of bank directors and senior managers, and foreign supervisor access to information held by New Zealand-registered banks. The Amendment Act also extended the Reserve Bank's ability to require banks to engage a third party to review aspects of their operations. We are currently developing the policy and procedures for operationalising this supervisory mechanism.

4.2 Enhancing trans-Tasman regulation and supervision

Earlier this year, a working party of officials from the New Zealand and Australian Treasuries, the New Zealand and Australian Reserve Banks and APRA undertook a series of discussions to investigate possible options to further integrate the New Zealand and Australian banking regulation regimes.[22]

Home-host supervision

We undertake our banking supervision roles and responsibilities within a framework of 'home-host' supervision, as enshrined in the Basel Concordat, an internationally agreed framework for the supervision by national authorities of multinational banks. The Concordat emphasises the general responsibility of home country authorities to supervise banks' worldwide consolidated activities, as well as the host country's responsibility to supervise foreign bank establishments in their territories as individual institutions.

APRA is the home supervisor in the case of New Zealand banks that are Australian-owned. As such, APRA supervises not only the Australian bank in Australia, but also the global group on a consolidated basis.

The Reserve Bank of New Zealand is the host supervisor of the Australian-owned banks. Our primary responsibility is for the bank in New Zealand, on a stand-alone basis. Hence, we focus on the capital adequacy, risk management, corporate form, governance, and stand-alone operating capability of these banks within New Zealand. We are also interested in the health of foreign parent banks because a parent bank's financial condition can strongly affect the New Zealand bank. Reflecting these overlapping roles and responsibilities, the Reserve Bank and APRA have a Memorandum of Understanding on information sharing between the two institutions.[23] The Reserve Bank is also the home supervisor for the New Zealand-owned banks.

Enhancing home-host supervision

One outcome of the trans-Tasman discussions is that we are working on a model of integration that builds on the current national regulatory frameworks. Under this 'home-host' model, we will seek to harmonise regulatory rules where appropriate, and to strengthen arrangements for information sharing and coordination with the Australian authorities to improve the capability of the Reserve Banks to manage a crisis or failure situation. In particular, we are currently working to enhance the trans-Tasman home-host relationship in the following areas:

21 For a discussion of the Amendment Act, see "The Reserve Bank of New Zealand Amendment Act 2003", *Reserve Bank of New Zealand Bulletin*, March 2004.

22 In early July, a report was submitted to the Minister of Finance entitled "Development of a Framework for Closer Integration in Banking Supervision".

23 See http://www.rbnz.govt.nz/banking/supervision/0137035.html for more information.

Information sharing: We are looking at more extensive and regular information sharing with APRA on banks operating in New Zealand that have an Australian parent. Better information sharing facilitates better supervision by ensuring that both regulators are well-informed about events affecting the banks they supervise, and should help avoid duplication in the collection of information by supervisors. We also plan to explore whether there may be opportunities where our proposed use of independent reviews could be usefully coordinated with APRA's own monitoring and surveillance.

Coordinating policy development: We will continue to seek to avoid unnecessary conflicts in the specification of regulations for New Zealand banks with those issued by APRA for the global banking group. This should help to minimise banks' compliance costs. To this end, we plan to work where appropriate with APRA on policy development for banks operating in New Zealand, including closer consultation on policy proposals. This does not mean that some rules will not differ from those applied to the parent, as there will be times when — in order to reflect New Zealand circumstances or to best protect New Zealand interests — there will need to be different regulations. However, the aim is that this should be the exception, not the rule. In this context, we are already liaising on how the new Capital Accord (Basel II) can be most effectively implemented.

Coordination in crisis management: Given the close linkages between the New Zealand and Australian banking systems, we see coordination with APRA and the RBA as an important element in responding effectively to financial distress affecting trans-Tasman banks. Particular issues we will be considering to help enhance crisis management coordination and cooperation include:

- establishing clear understandings regarding the roles, responsibilities, powers, and arrangements among New Zealand and Australian government agencies for responding to stress in a bank operating in both New Zealand and Australia;
- clarifying uncertainties that arise from differences in national banking laws;
- taking account of the need for trans-Tasman co-ordination in strengthening our own preparedness for responding to a banking crisis; and
- considering the cross-border issues and implications that could arise in relation to our role as lender of last resort to the New Zealand financial system.

Our role as host supervisor in one of the most open banking systems in the world means that coordination and cooperation with foreign regulators is important. In pursuing the matters listed above over the next year, we will be seeking to develop home-host arrangements for the supervision of Australian-owned banks operating in New Zealand that are fully effective and robust.

4.3 Review of major financial institutions

The joint trans-Tasman working party's initial investigation also usefully highlighted areas for further work before other changes to the current regulatory and institutional framework for banking could be considered. The issues identified as needing to be addressed, in order to determine the most appropriate level and form of trans-Tasman bank regulatory integration for New Zealand, included:

- the appropriate balance of policy objectives for prudential supervision;
- the need to maintain New Zealand influence over prudential policy development;
- the need to maintain the appropriate New Zealand capacity to manage a banking crisis;
- maintaining contestability and competitive neutrality in New Zealand's banking system;
- tax and fiscal burden sharing considerations; and
- the impact of closer integration of banking regulation on wider legislation, institutions, and financial activities.

To take the thinking further, The Treasury, Reserve Bank, and the Ministry of Economic Development have formed a working group to review the regulation of New Zealand's major financial institutions.[24] The review will include recommendations on how regulation can best support the contribution of financial institutions to growth while maintaining system stability, and whether different institutional arrangements, including domestic or trans-Tasman alternatives, could improve the contribution of

24 See http://www.rbnz.govt.nz/banking/supervision/0158458.html for more information.

financial institutions to economic growth in New Zealand while maintaining system stability. In particular, the working group will assess:

- the financial system's contribution to growth and economic development, and how well the regulation of major financial institutions in New Zealand contributes to this;
- whether changes, if any, may be warranted to improve the effectiveness and efficiency of regulation in delivering on those outcomes;
- whether different domestic institutional arrangements for the regulation of major financial institutions would contribute to a better outcome for New Zealand in terms of the provision of financial services and the stability of the wider financial system; and
- whether the provision of financial services or regulation in New Zealand would be enhanced through a joint trans-Tasman approach, while still protecting the interests of New Zealand.

The New Zealand working group will provide a progress report to the Minister of Finance prior to his next meeting with the Australian Treasurer on single economic market issues, currently scheduled for early 2005.

5 Stress testing the New Zealand banking system

One of our key inputs to the Financial Sector Assessment Programme (FSAP) review by the IMF was a stress test of New Zealand's banking system. Stress testing aims to assess the ability of the banking system to absorb losses that may arise under a set of extreme, but plausible, macroeconomic shocks. The exercise involved the five systemically important banks at the time: ANZ, ASB, BNZ, National Bank, and Westpac. We provided the banks with information on a set of hypothetical financial and economic shocks, and asked them to estimate the impacts on their income and balance sheets.

5.1 Specification of the stress tests

We chose the shock scenarios using past experience and stress tests performed in other countries as a guide, but with a focus on areas of interest in the New Zealand economy. Table 7 (overleaf) describes the shocks and the key assumptions, with a brief review of their historical or international context.

The first set of shocks tested banks' exposure to market risk, that is, large movements in interest rates and exchange rates. The shocks were assumed to happen over one day, so that the banks would not have time to adjust their portfolios in order to minimise the impact. These stress tests were partial, in that they were limited to establishing the extent of losses (or gains) from banks' interest rate and exchange rate exposures.

The second set of shocks related to credit risk in three key areas of the economy: the dairy industry, the housing market, and the commercial property market. Again, these tests were partial, in that the shocks were assumed to have no effects beyond the direct effect on borrowers' ability to service their existing bank debts, and on the adequacy of banks' security cover should defaults occur.

The third set of shocks involved more complex macroeconomic disturbances. The first shock simulated an outbreak of foot-and-mouth disease (FMD) in the North Island. The second scenario assumed that offshore investors became concerned about the economic and financial outlook for New Zealand, and demanded substantially higher interest rates for additional lending to domestic borrowers.

We simulated the economic impact of the latter two scenarios by entering the key assumptions (as listed in table 7) into FPS, the Reserve Bank's macroeconomic forecasting and policy model. The model produced paths for a range of economic variables over a four-year time frame, which incorporated the second-round effects on economic activity and inflation (and the implied monetary policy response). These scenarios provide a more complete picture than the earlier, first-round only shocks, although they are not fully comprehensive in that they do not take full account of confidence effects on households' spending patterns or on banks' lending behaviour.

5.2 Results

The following charts show the assessed impact of the stress tests on bank profits, relative to pre-tax profits for the year ended March 2003 (the base year). The bars represent the 'highest' and 'lowest' results, and the dots show the weighted average for the five banks. Profits are expressed relative to the base year; so, for example, a reading of -10 per cent indicates that pre-tax profits for the five banks would be 10 per cent lower than in the base year.

Category 1 shocks: Market risk

The market risk shocks were assessed in two ways: based on a typical level of exposure during the March 2003 quarter (figure 25, overleaf), and on the maximum positions that each bank can hold based on their internal limits (figure 26, overleaf).

Table 7

Stress test scenarios

Category	Shock	Scenario	Context
Market risk shocks	1	A 30 per cent depreciation of the New Zealand dollar.	Since the float in 1985, the New Zealand dollar has been through cycles of over 40 per cent, albeit over periods of two or more years.
	2	A 30 per cent appreciation of the New Zealand dollar.	
	3	A 300 basis point increase in interest rates across the New Zealand yield curve.	Between 1985 and 1987, short-term interest rates occasionally moved by 300 basis points or more in a month. Interest rates have been more stable since, particularly since the introduction of the OCR in 1999.
	4	A 300 basis point increase in the long end of the New Zealand yield curve, short rates unchanged.	
Credit risk events	1	A decline in the average dairy payout to $2.50/kg of milk solids for two years.	The average payout in current dollars since 1973 has been $4.59/kg. In 1990 the figure was $2.92/kg.
	2	A 20 per cent decline in house prices, with unemployment rising to 9 per cent, and households' real disposable income falling by 4 per cent.	House prices fell 5.4 per cent in 1998. Unemployment reached about 11 per cent in 1992.
	3	A 20 per cent fall in commercial property prices, combined with a 20 per cent fall in corporate earnings.	Commercial property prices fell 27 per cent from 1988 to 1993; several property investment companies became insolvent.
Complex macro-economic shock scenarios	1	A foot-and-mouth disease (FMD) outbreak, confined to the North Island, resulting in: • Dairy exports being halted for six weeks; meat exports down by 80 per cent for a year after the outbreak. • An immediate 20 per cent fall in the New Zealand dollar. • An immediate reduction in the 90-day bank bill rate to 2.5 per cent.	This scenario was informed by the FMD outbreak in the UK in 2001; simulations performed in Australia and Canada; and work done by a government working group on the potential impact of an outbreak in New Zealand. (1)
	2	An increase in the cost of offshore funding, resulting in: • An immediate 40 per cent fall in the New Zealand dollar. • Interest rates immediately rising to 18–20 per cent across the New Zealand yield curve, and returning to more normal levels only over several years.	This scenario shares aspects with the capital market crises encountered by East Asian economies in 1997/98, although is not as severe as the circumstances faced by the most affected countries. It was also informed by the Reserve Bank's work on dysfunctional foreign exchange markets. (2)

(1) This scenario was based on the simulation exercise presented in the joint Reserve Bank–Treasury information paper "The macroeconomic impacts of a foot-and-mouth disease outbreak: an information paper for Department of the Prime Minister and Cabinet", available at http://www.rbnz.govt.nz/research/0130346_2.pdf

(2) See www.rbnz.govt.nz/foreignreserves/intervention/index.html for briefing materials in this topic.

Figure 25

Market shocks as a percentage of base year profits (typical exposures)

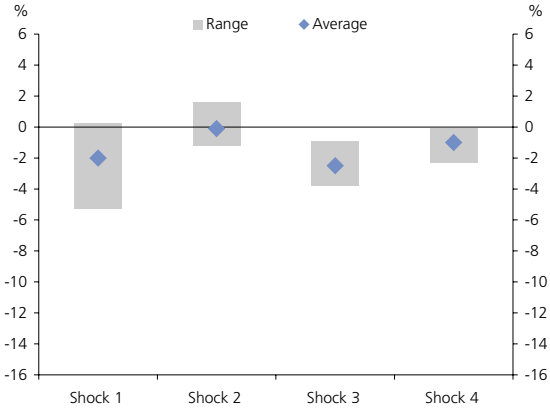
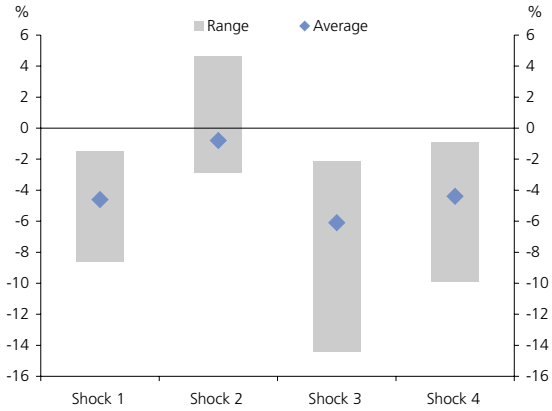


Figure 26

Market shocks as a percentage of base-year profits (maximum exposures)



The average impact based on typical exposures was very small — between 0.1 and 2.5 per cent of base-year profits. The impact based on maximum exposures was naturally larger, but still small, with the largest estimated impact around 14 per cent of base-year profits. Banks were occasionally positioned to benefit from a shock, such as in the case of the sharp rise in the exchange rate (shock 2). This is not necessarily a better outcome, since if the shock went in the opposite direction the bank would have incurred a loss.

The results of the market risk stress tests were in line with expectations, and were consistent with the banks' disclosures of their 'value at risk' — the tail-end of the distribution of expected losses — on their interest rate and exchange rate exposures. New Zealand banks generally hedge most of their market risk, through either financial derivatives or offsetting cash flows. Interest rate exposures tend to be larger than exchange rate exposures, but both are well managed. As long as the counterparties to hedge contracts perform — a reasonable assumption, since counterparties are usually highly-rated financial institutions — there is little scope for direct losses from large movements in interest rates or exchange rates.

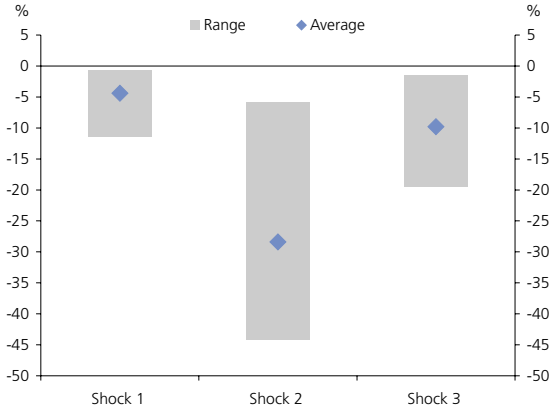
Category 2 shocks: Specific credit risk events

Figure 27 shows the cumulative impact of the dairy, housing, and commercial property shocks after three years, as a percentage of base-year profits. In these scenarios, the impact is largely through defaults on loans to customers in the affected sectors.

The fall in the dairy payout (shock 1) had a small impact, with a narrow range of results across the individual banks. The banks noted that the default rate for dairy loans has been very low in the past, even during economic downturns. Dairy farmers have scope to delay some expenses, such as maintenance, if their income from milk production falls.

Figure 27

Credit shocks as a percentage of base year profits



The duration of the shock was important in this case. The banks considered that a lower payout for two years, followed by a recovery, would be a typical downturn and not a cause for major financial stress in the dairy sector. A longer or permanent downturn would likely lead to lower rural land prices and a gradual decline in the dairy industry, with more farm loan defaults and consequential losses.

The shock to the household sector (shock 2) had a more substantial impact, with average loan losses equivalent to 28 per cent of base-year profits, and 44 per cent of base-year profits in the most affected case. Since house prices had risen by almost 20 per cent in the two years prior to the exercise, defaults were mostly confined to loans made in the previous two years, and mostly for investment properties. The wider range of results for this shock was largely a reflection of the banks' differing assumptions about the need for mortgagee sales. The exposure to residential property, as a proportion of total lending, was fairly similar across the five banks.

The average impact of the commercial property shock (shock 3) was around 10 per cent of base-year profits, with a maximum impact of around 19 per cent. The results are mild compared to the impact of the fall in commercial property values in the late 1980s, although the falls in values at that time, especially for central city properties, were larger than assumed in the stress test.

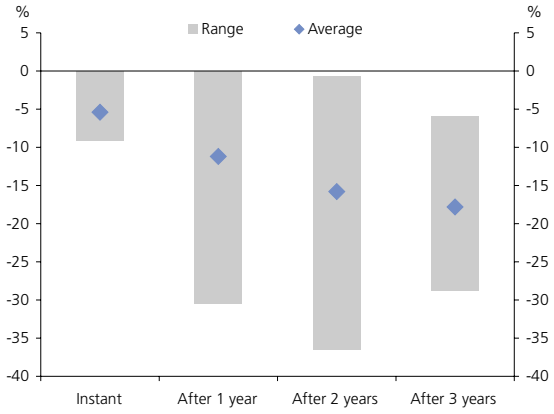
Perhaps the most significant factor behind the difference in the stress test results compared with the late 1980s experience is that bank lending to the property sector is more conservative today. Lending tends to be based more on an assessment of the property's income earning potential, as reflected in, for example, the strength of rental income flows and, in the case of property developments, the extent to which tenancies have been secured prior to construction commencing.

Category 3 shock: Foot-and-mouth outbreak

Figure 28 shows the assumed impact of a foot-and-mouth outbreak after one day (the 'instant' impact), and the cumulative impact over the next three years. The instant impact is important in this scenario (and in the next one) because interest rates and the exchange rate were assumed to adjust sharply from the outset.

The total impact on banks' profits after three years was assessed at about 18 per cent of base-year profits. Meat producers were expected to experience severe income losses in this scenario, but only for a year or so following the outbreak. With the loss of income being only short-term, and new farm loans generally being limited to 60-65 per cent of farm and livestock values, debt servicing costs were likely to remain manageable. The banks also noted that the fall in the exchange rate would boost the unaffected tradable sectors, softening the impact of the loss of farming income on the wider economy.

Figure 28
Foot-and-mouth shock as a percentage of base year profits



It is important to note that these results are based on a scenario where the outbreak was assumed to be short-lived and well contained. We chose this scenario for practical reasons: an uncontrolled outbreak would be too ambiguous and difficult to model, and as a result the banks' estimates of the impact would probably not be meaningful. Suffice to say, a more severe outbreak could lead to greater losses and place more strain on banks' balance sheets.

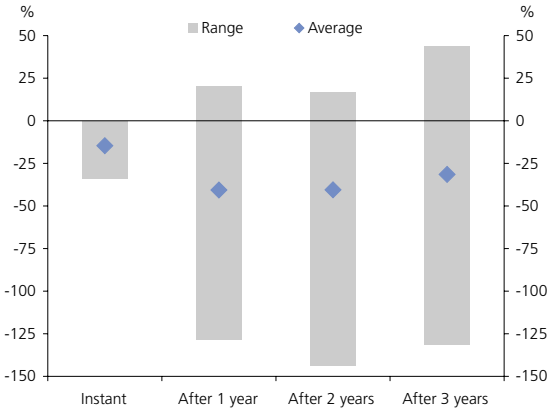
On the other hand, the results highlight that even severe shocks, if temporary and buffered by exchange rate depreciation, can be reasonably manageable. This underscores the added value of conducting stress tests in a comprehensive modelling framework, compared with analysing just the direct effects as in the first two categories of stress tests outlined previously.

Category 3 shock: Increase in offshore borrowing costs

The impact of this shock peaked after two years, with a 40 per cent average fall in profits (figure 29). A large proportion of the impact was due to the 'instant' impact of the sharp rise in interest rates. The largest impact one year after the shock was equal to 128 per cent of base-year profits — that is, one bank reported an accounting loss in the first year, but returned to profitability in the following years.

Figure 29

Offshore borrowing shock as a percentage of base-year profits



Bank profitability was actually expected to improve two years after the shock, due to increasing interest margins on lending. One shortfall of this stress test was that it did not adequately capture 'quantity' effects, such as changes in the volume of lending. This is because the results had to be compared to a counterfactual of 'no shock'; for simplicity and consistency, we imposed zero growth in net lending for the 'no shock' scenario. As a result, there was little scope for a fall in net lending in the shock scenario.

The banks reported sizeable provisions for losses on residential lending, but they also noted a number of factors that would offset the impact of the shock. Outstanding housing loans are, on average, about 60 per cent of the value of the property at the time of origination, and new loans are usually no more than 80 per cent of the value of the property. Loans with higher loan-to-value ratios are usually insured, either by a third party, or through 'self-insurance' by setting aside an amount of reserves comparable to the premiums charged by third-party mortgage insurers.

5.3 Conclusions

While the results of the stress testing exercise were encouraging, it is important to remember that stress tests are quite artificial, and the results should be taken with caution. First, the banks involved came from a very strong starting point. As at March 2003 (the assumed date of the shocks) New Zealand banks had been consistently profitable and well capitalised for more than a decade, and had developed strong credit risk cultures and risk management systems.

Second, the banks knew the size and duration of the shocks in advance, which allowed them to treat the shocks as temporary. If the banks were facing these scenarios in real time, the duration of the shock would be unknown, and the banks' responses in terms of their willingness to continue lending and to 'manage customers through' could be more conservative than they assumed for this exercise.

Third, the results will be specific to the scenarios as they were specified in the exercise. For example, a real foot-and-mouth outbreak could evolve in a myriad of ways, and the exercise was not intended to cover every contingency. While the results presented here are a useful indicator, the actual outcomes could be substantially different, depending on how the outbreak evolved. More generally, macroeconomic stress tests are 'high-level' and will never quite capture the full picture.

Even allowing for these caveats, the stress testing exercise gave us and the IMF a degree of comfort about the ability of the major New Zealand banks to withstand a range of substantial shocks without becoming distressed. The high degree of involvement by the banks greatly enhanced the credibility of the results.

6 New Zealand's foreign exchange and government bond markets

Financial markets fulfil two primary roles: raising/transferring capital and transferring risk. By enabling financial system participants to interact more or less directly, rather than via financial institution intermediaries, they contribute to the efficiency of the financial system. Furthermore, smoothly functioning capital markets are important for maintaining the stability of the financial system. This is because there are important interfaces between the banking system and the capital markets, and because financial systems with well-functioning capital markets as well as an effective banking system have an alternative if one or the other becomes impaired.

There are a number of financial markets, based on the different asset classes they service: debt (bond and money markets), equities, foreign exchange, and the derivatives of each of these. In this *Report*, we provide an introductory review of the foreign exchange and government bond markets.

Both these markets have been functioning well recently. While small by international standards, they have previously demonstrated a capacity to cope well with financial shocks and uncertainty. Liquidity in the markets currently is broadly in line with that seen in recent years, suggesting ongoing resilience.

6.1 Assessing the soundness and efficiency of financial markets

A sound and efficient financial market has a number of inter-related characteristics. First, it requires originators or issuers, to create the products that are to be traded. In some cases, such as the government bond market, there is only a single issuer. In other cases there are many actual or potential issuers.

Secondly, it requires a significant number of participants who have an interest in either holding or trading those products. Both characteristics are important: 'holders' are necessary to provide the 'funding' to the market, while 'traders' are necessary to provide it with liquidity. Some markets have traders that are classed as 'market-makers' — these are entities that are prepared to quote buying and selling prices at all times, and to trade at those quoted prices.

Thirdly, a healthy market has transparent and efficient pricing. Where prices are not fixed but are agreed on a transaction-by-transaction basis, as in wholesale markets, it is important that participants are able to see clearly how prices are actually moving. It is also important that the margin between buying and selling prices is kept as small as possible, so that the costs of trading are kept low — this is a key indicator of market efficiency and liquidity.

Fourthly, it is desirable that prices move in a steady rather than volatile manner. Volatility can occur if a market does not have the capacity to absorb 'shocks' or surprises, because of a lack of depth or a lack of diversity. In these circumstances, the markets may become unbalanced and generate price movements that are outside the range warranted by economic or financial fundamentals. In extreme cases, participants may withdraw from the market completely, and cease to quote prices or conduct trades. Both the size and the liquidity of a market provide useful indications of the capacity of a market to absorb shocks.

Finally, the integrity of financial markets requires robust trading systems, a sound legal basis, and high professional and ethical standards. Trading systems can operate through a recognised exchange, dedicated trading systems, or broker and dealer networks. In each case, clear procedures need to be in place to agree on the terms of a transaction, provide any necessary confirmations, and attend to the resulting settlements.

Future issues of the *Financial Stability Report* will review some of these attributes in greater depth. The remainder of this section provides an overview of some of the key features of the foreign exchange and government bond markets.

6.2 Foreign exchange market

The foreign exchange market serves a number of different needs for the various participants. The market involves the trading of the New Zealand dollar for foreign currencies, and is dominated by the trading of the New Zealand dollar

Table 8

Summary of foreign exchange market segments

Segment	Transaction details	Purpose	Users
Spot	Sale of one currency for another at today's prevailing rate.	Actual flow of currency	Broad client base
Swaps	Contract to buy/sell a currency for another currency at the current exchange rate and to reverse the transaction at some future date, with the future exchange rate determined by relative interest rates in the two markets.	Hedging of assets and liabilities	Banks, fund managers
Forwards	Contract to buy/sell currency at a specified future date.	Hedging for a future currency flow	Exporters, importers
Options	An option to buy or sell a currency at a specified future date.	Hedging for a future currency flow	Exporters, importers

against the US dollar. The main products traded are set out in table 8.

The smooth functioning of the foreign exchange market is critical for the facilitation of New Zealand's external trade, and the for the stability of the financial system, given New Zealand's heavy reliance on foreign capital. New Zealand banks source approximately one-third of their funding from offshore, and need to manage the exchange rate risks arising from this so that they are not unduly exposed to currency fluctuations. To do this, they hedge their foreign currency borrowings through the foreign exchange swaps market. This makes the swaps market particularly critical. But it is also the deepest and most liquid of the foreign exchange product markets, with daily turnover of over US$5 billion in New Zealand.

Turnover and liquidity

The Bank for International Settlements conducts a triennial international survey of foreign exchange markets,[25] which enables cross-market comparisons to be made to gauge the overall robustness of a market. Preliminary results for the April 2004 survey were released on 28 September (tables 9 and 10). These show that the volume of foreign exchange transactions — in the New Zealand dollar against other currencies as well as in third currencies — undertaken by banks trading in New Zealand in April 2004 was US$7.5 billion per day. This is significantly higher than the US$4.2 billion per day in April 2001, but similar to that of April 1998. These movements arise mainly from changes in the value of the New Zealand dollar against the US dollar. However, we estimate that of the increase between April 2001 and April 2004, about a quarter was attributable to growth in transaction volume.

In addition to our interest in the amount of dealing — in all currencies — undertaken by banks in New Zealand, we have a close interest in the global turnover of the New Zealand dollar (including trading of the New Zealand dollar

Table 9

Market analysis of total foreign exchange turnover in New Zealand

Market	Average daily turnover (US$m)	% of total
Spot	1,554	21
Forward	547	7
Swap	5,226	70
Derivatives	126	2
Total	7,453	100

Source: RBNZ data for BIS 2004 survey.

Table 10

Currency analysis of total foreign exchange turnover in New Zealand

Currency	Average daily turnover (US$m)	% of total
NZD/USD	4,304	58
USD/AUD	1,741	23
USD/EUR	543	7
USD/JPY	176	2
USD/GBP	203	3
Other	486	7
Total	7,453	100

Source: RBNZ data for BIS 2004 survey.

25 See "Trends in foreign exchange trading", *Reserve Bank of New Zealand Bulletin*, December 2001, and "The foreign exchange market and derivative activity", *Reserve Bank of New Zealand Bulletin*, March 1999, for analyses of the 2001 and 1998 BIS surveys.

in other dealing centres, for example, London and New York).[26] The former is relevant in so far as it provides a barometer of the breadth of foreign exchange services to the New Zealand economy. The latter, by contrast, provides an indicator of the liquidity — and convertibility — of the New Zealand dollar. One of the reasons why the Reserve Bank holds foreign exchange reserves is to maintain a capacity to enter the market for the New Zealand dollar should the market become dysfunctional and the convertibility of the New Zealand dollar come under threat (discussed below).

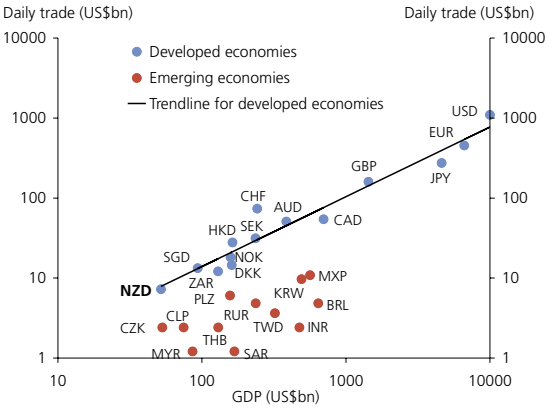
Daily turnover in the global foreign exchange market of the New Zealand dollar is small by comparison with the major currencies, but is commensurate with the size of the New Zealand economy (figure 30).[27] The mature currency markets tend to trade in a fairly close relationship with respect to GDP, and the New Zealand dollar sits close to the best-fit line.

Some further indicators of the depth and efficiency of the New Zealand dollar market are provided in table 11, along with comparisons with selected countries — the volume traded, the difference (or 'spread') between the bid and offer prices, and the number of market-making participants.

These indicators suggest that the New Zealand foreign exchange market is not as deep or efficient as some larger counterparts, but we assess that to be a reflection of the

Figure 30

Global currency trading volume vs GDP



Source: Source: OECD 2000 *Economic Outlook*, BIS 2001 survey, RBNZ.

New Zealand dollar market's small size, not of weaknesses in the market itself. Smooth functioning of the market is evident from the fact that day-to-day volatility in the value of the New Zealand dollar is similar to that for the Australian dollar, both versus the US dollar and on a trade weighted basis (table 12). During the most recent six-month period, day-to-day volatility has been higher than over the preceding five years, but this is evident for the other currencies as well, signifying that the volatility has been mainly US dollar-sourced.

Table 11

Key measures of liquidity

Currency	Daily volume (US$m equivalent)*	Spread (points)	Market makers
New Zealand dollar	6,725	5	6
Australian dollar	49,653	3	54
Euro	441,545	2 to 3	numerous
Danish krone	14,589	4 to 5	11

* Total global daily volume (spot, forwards, and swaps).

Source: Bloomberg, BIS 2001 survey, RBNZ.

26 Finalised BIS survey data on global turnover in the New Zealand dollar is expected to be available by early 2005. In the light of the data on increased turnover in the New Zealand market, we expect the survey results to show the New Zealand dollar maintaining its global market share since 2001.

27 This chart is based on the 2001 BIS survey results; the 2004 results are not expected to materially alter the picture.

Table 12

Daily volatility of various currencies vs US dollar and trade-weighted indices

(Standard deviation of percentage changes)

	Daily volatility vs US dollar (%)				Daily volatility of trade-weighted index (%)				
Time period	NZD	AUD	EUR	GBP	NZ	AU	EU	UK	US
5 years	0.76	0.69	0.64	0.50	0.63	0.62	0.45	0.40	0.25
3 years	0.74	0.69	0.60	0.51	0.58	0.58	0.37	0.36	0.26
1 year	0.89	0.82	0.66	0.60	0.60	0.61	0.35	0.38	0.32
6 months	1.07	0.96	0.69	0.66	0.68	0.72	0.33	0.41	0.34

Source: Datastream.

Reserve Bank intervention capacity

It is possible to envisage circumstances where bad news or major uncertainties could lead to dysfunction in the foreign exchange market, evidenced by sharply widening 'spreads' and increased reluctance by participants to deal in the market, and ultimately by market failure. In the nearly 20 years since the New Zealand dollar was floated, this has never happened — while there have been some significant economic and financial shocks, there has not once been a break in price-making or the ability to trade in the New Zealand dollar.

Given how critical the foreign exchange market is for the New Zealand economy, and the seriousness of the consequences if it were to become dysfunctional, the Reserve Bank maintains foreign exchange reserves as part of a capacity to intervene to support the market. In March this year the Minister of Finance agreed to an increase in the Reserve Bank's holdings of foreign exchange reserves over the next four years, from just under $4 billion to about $7 billion.[28] At the same time, the Minister agreed to the Bank having a new capacity to intervene in the foreign exchange market for the purpose of reducing the peaks and troughs in the exchange rate cycle, where doing so would be consistent with maintaining medium term price stability.[29]

Foreign exchange settlement risk

One of the more significant risks in the foreign exchange market is settlement risk. This is because an exchange of different currencies involves the respective payments being made in different time zones. For example, a sale by a local bank of New Zealand dollars for US dollars involves paying the New Zealand dollars during the New Zealand business day and receiving the US dollar in its US dollar bank account, typically in New York, during the US business day.

This time difference for New Zealand can be as long as 18 hours — that is, the New Zealand seller can make its New Zealand dollar payment up to 18 hours ahead of receiving the US dollars. There is a risk, which is normally very slight, that the later settling leg will fail because the other party involved has become insolvent in the meantime. However, if such a failure occurred the amounts involved could be extremely large, reflecting the volume of business transacted through the foreign exchange markets and the perception by the participants that the risk of failure is very low. In the unlikely event that it did happen, such a failure could cause the insolvency of one or more financial institutions.

The major international banks (in close cooperation with the relevant central banks) have organised a cooperative venture, Continuous Linked Settlement Bank (CLS Bank), to put in place a structure that will enable both 'legs' of a foreign exchange transaction to be settled simultaneously, and thereby eliminate this settlement risk. CLS Bank is already in operation for 11 major currencies. The New Zealand dollar is scheduled to be added in late November 2004. For further details about CLS Bank see box 2.

28 The quantum of funds held by the Reserve Bank as foreign reserves is agreed with the Minister of Finance as a range denominated in terms of Special Drawing Rights (SDRs). Prior to March 2004 the range was 1.45–1.75 billion SDRs. Under the new agreement, the Reserve Bank will gradually increase foreign reserves to a minimum level of 2.45 billion SDRs.

29 See news releases of 11 March 2004 and 30 March 2004 regarding the Reserve Bank's revised intervention policy and the speech given by Deputy Governor Orr on 25 March (also in *Reserve Bank of New Zealand Bulletin*, June 2004). The news release of 30 March 2004 also provides links to the advice given to the Minister.

Box 2

Continuous Linked Settlement Bank

Banks that choose to settle their foreign exchange transactions through CLS Bank will eliminate settlement risk in these transactions.[30]

Settlement in CLS Bank occurs in a five-hour window, though for the currencies in the Asia-Pacific region, this is reduced to a three-hour window starting at 5pm New Zealand time (or 7pm during daylight saving time).

The payment flows as at present and in CLS Bank are as in figures 31 and 32. At present the trade is made between the two banks and then settled in two different time zones.

In CLS Bank, the settlements occur at the same time. CLS Bank receives the payment instructions from each bank and matches them in its systems. It then generates a payment schedule. Once funds have been received from each of Bank A and B into CLS Bank's accounts, it is then in a position to settle the trade between the two parties. If one party were to default, the trade is not settled and no monies are transferred from CLS Bank to the defaulting bank.

Because there are large numbers of banks and trades being matched within CLS Bank, its matching algorithms enable a high percentage of the trades to be settled on the basis of a net funds flow. The net flows are typically about 25 per cent of the gross flows that would otherwise have occurred outside CLS Bank. CLS Bank has other algorithms and trade processes that enable further reductions to be made, resulting in net flows as low as 5–10 per cent of the initial gross payment flows.

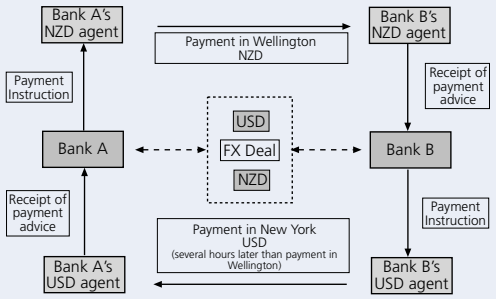
30 See "Foreign exchange settlement risk survey", *Reserve Bank of New Zealand Bulletin*, December 2001.

The reductions in flows enable banks to make large savings in their liquidity requirements for settling foreign exchange transactions, as well as eliminating the default risk that they otherwise faced with foreign exchange trades settled outside CLS Bank.

CLS Bank in New Zealand is a member of Exchange Settlement Account System (ESAS), and has applied to be a designated payment system under the Reserve Bank of New Zealand Amendment Act 2003. By being designated, under New Zealand law, all payments made through it will be final and irrevocable (that is, they cannot be unwound in the case of bankruptcy of one of the two parties, once the payment has settled).

Figure 31

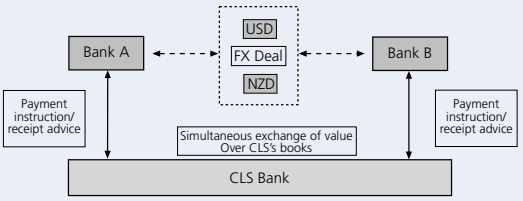
Payment flows for both legs of a NZD/USD trade at present



Foreign exchange transaction: Bank A sells NZD to Bank B for USD.

Figure 32

Payment and instruction flows for a NZD/USD trade in the CLS environment



Foreign exchange transaction: Bank A sells NZD to Bank B for USD.

6.3 The government bond market

Government debt is by far the largest single component of the New Zealand debt market. The large amount on issue and the near-zero default risk of government securities lead them to being the benchmark for other sectors of the debt market. However, the amount of government debt has fallen relative to the size of the economy (gross debt on issue has declined to about 25 per cent of GDP compared with 33 per cent of GDP in the mid-1990s), which has raised questions about the ongoing depth of the government bond market. Some investors have begun to use the domestic interest rate swap market as an alternative benchmark.

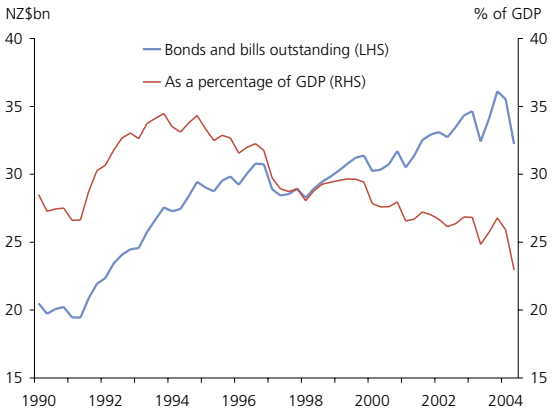
The Government has run significant operating surpluses in recent years, which have been sufficient to cover its requirements for investment finance (for outlays on infrastructure and other investments, including contributions to the New Zealand Superannuation Fund). Nevertheless, the Government is expected to maintain net issuance in the future, so the prospect of the government bond market shrinking in nominal terms is not a significant issue at present.

In recent years, turnover in the government bond market has trended down (figure 34), although this trend has been offset by increased repurchase transaction (repo) turnover. While repurchase transactions do not necessarily provide the market with trading liquidity in the same way as do outright sales and purchases, they do make the government bond instrument itself more liquid, by enabling holders to put them to short-term use while still maintaining a longer-term hold strategy.[32]

The yield spread on New Zealand ten-year government bonds, relative to the equivalent Australian bonds, has been quite stable at around 50 basis points[31] for the past six to seven years (see figure A24, graphical appendix). While the spread relative to US bonds has increased, this reflects more that US bond yields have been unusually low, rather than suggesting an increase in the risk premium for holding New Zealand government bonds.

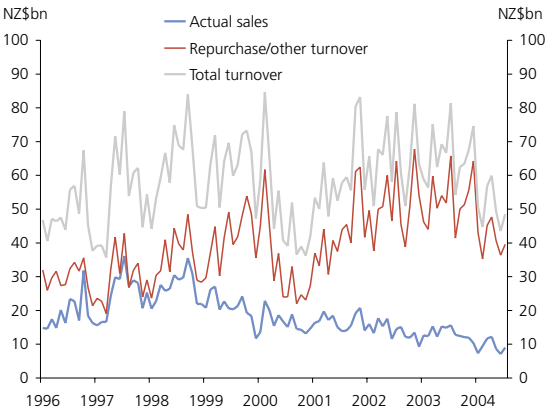
The ability of the bond market to cope with transacting business under a variety of economic and financial conditions is an important indicator of its underlying strength. Figure 35 depicts the change in the average spread (versus the US instrument) for the ten-year bond. Red areas are where, on a month-to-month basis, the yield spread has widened, and the blue areas are where the spread narrowed. This indicator might be expected to spike during times of heightened financial uncertainty — when, in a market under stress, trading volumes could be expected to fall, and spreads widen. However, there is no evidence of abnormal behaviour in the data depicted in figure 35, suggesting a good degree of resilience in the New Zealand bond market.

Figure 33
Domestic government debt on issue



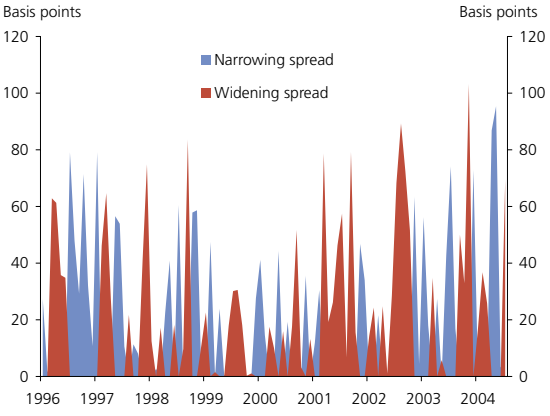
Source: Statistics New Zealand, RBNZ.

Figure 34
Monthly turnover of government bonds



Source: RBNZ.

Figure 35
Change in New Zealand ten-year bond spread over US ten-year bond



Source: Datastream.

31 A basis point (bp) is 1/100th of a percentage point, e g 0.5% = 50bp.

32 However, the current level of turnover in the bond market (physicals and repos) is, on occasion, putting some pressure on settlements when institutions need to obtain bonds from the market to fulfil their settlement obligations, particularly in repo transactions.

Graphical appendix[33]

International

Figure A1a

Real GDP growth

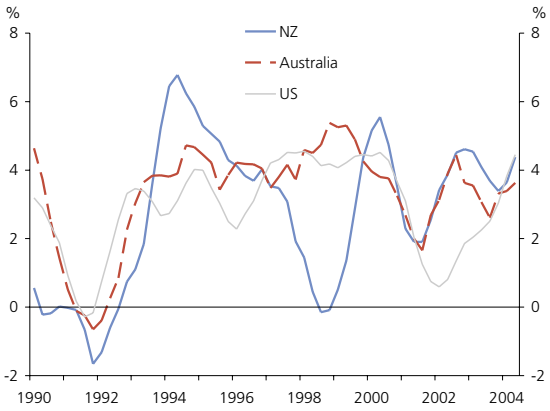


Figure A1b

Real GDP growth

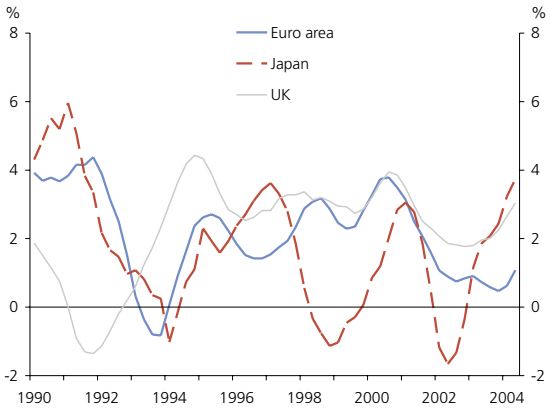


Figure A2a

Current account balance

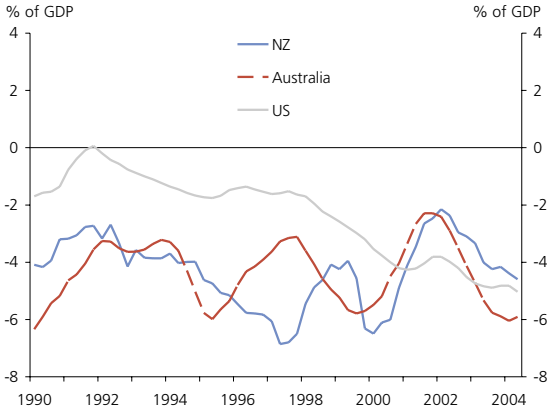


Figure A2b

Current account balance

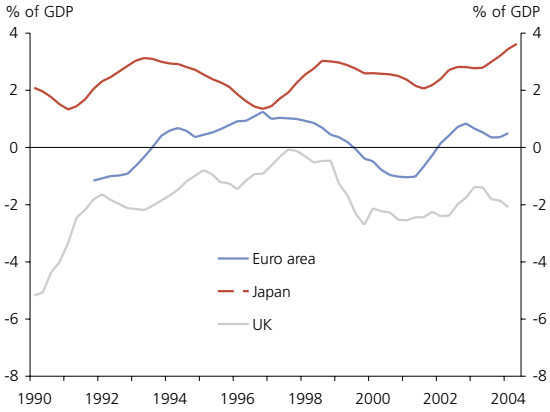


Figure A3

Trade-weighted exchange rate indices

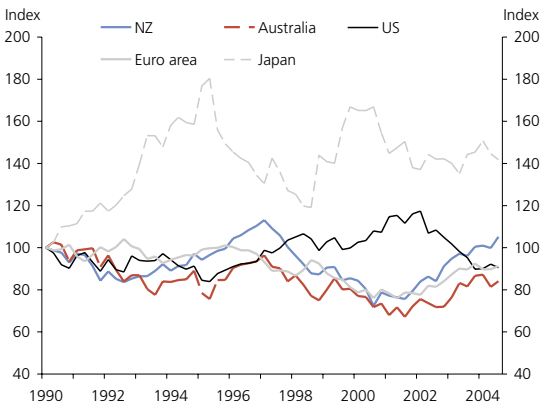
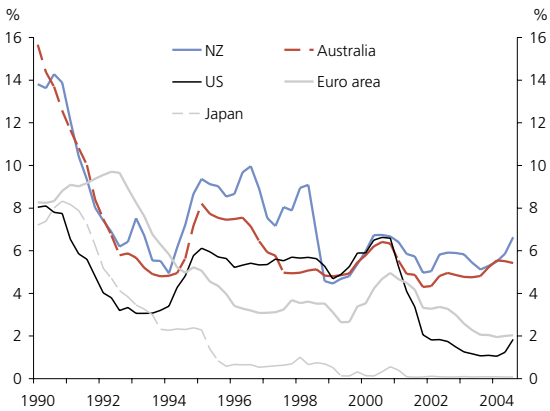


Figure A4

Short-term interest rates



33 Definitions and sources are listed on pp. 45-46

Asset prices

Figure A5

Equity market indices

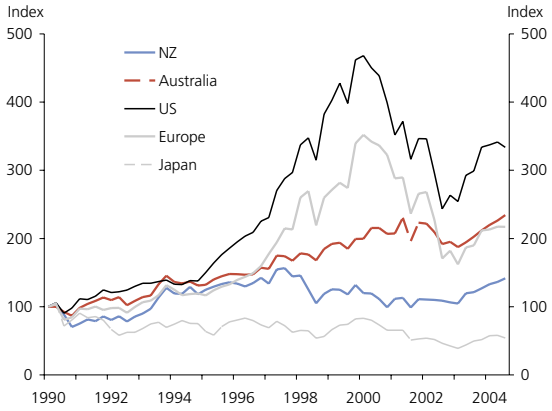
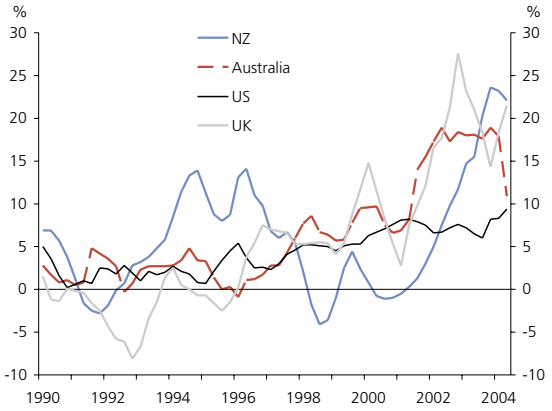


Figure A6

House price inflation



New Zealand

Figure A7

Household debt and servicing costs

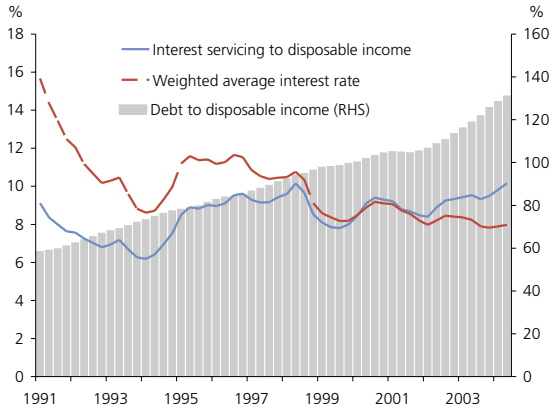


Figure A8

Household assets and liabilities

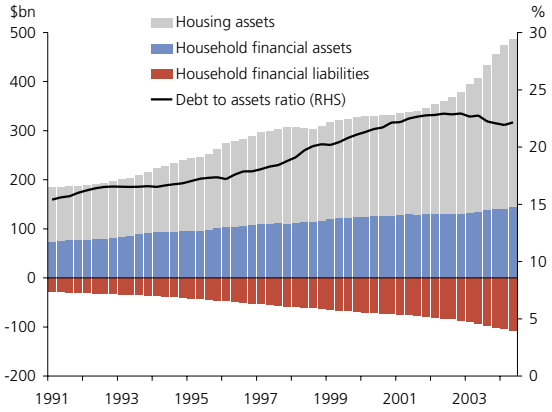


Figure A9

Property price inflation

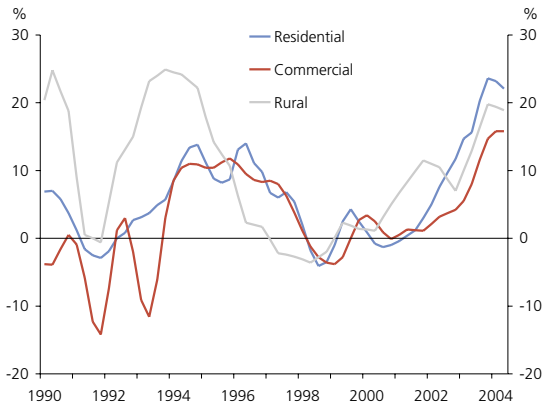
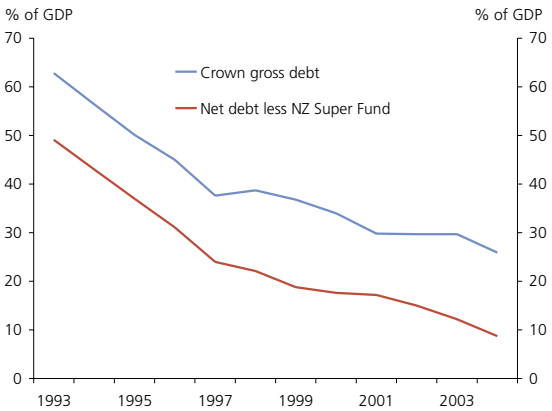


Figure A10

Government debt



New Zealand financial system assets and liabilities

Table A1

Financial system liabilities

$ billion	1990	1995	1998	2003
Banks' funding sources				
Households	28	37	41	51
Other domestic sources	25	30	40	75
Non-residents	11	22	35	62
All other liabilities and equity	7	9	14	32
Total	71	98	140	220
Other deposit-taking institutions				
Households	3	4	4	7
Other sources	1	1	2	6
Total	5	6	7	15
Funds under management				
Households	25	41	49	54
Other sectors	2	2	3	6
Total	27	43	52	60
Total financial system liabilities	**103**	**147**	**199**	**295**

As at 31 December. Source: RBNZ.

Table A2

Financial system assets

$ billion	1990	1995	1998	2003
Banks' claims on				
Households	20	41	56	88
Other domestic	36	45	66	85
General govt	8	6	5	8
Non-residents	2	2	5	21
All other assets	5	4	8	18
Total	71	98	140	220
Other deposit-taking institutions				
Households	2	3	3	6
Other sectors	2	2	3	7
Total	5	6	7	15
Funds under management				
Domestic fixed interest	na	na	23	30
Domestic equities	na	na	8	7
Domestic other	na	na	4	4
Overseas investments	na	na	17	19
Total	27	43	52	60
Total financial system assets	**103**	**147**	**199**	**295**

As at 31 December. Source: RBNZ.

Table A3

New Zealand registered banks as at 30 September 2004

Registered bank's name	Market share (1)	Credit ratings		Parent	Country of parent
		S&P	Moody's		
ABN AMRO Bank NV	0.2	AA-	Aa3	branch (2)	Netherlands
ANZ National Bank Limited	33.9	AA-	Aa3	ANZ Banking Group Limited	Australia
Commonwealth Bank of Australia	0.9	AA-	Aa3	branch (2)	Australia
ASB Bank Limited	14.1	AA-	Aa3		Australia
Bank of New Zealand	17.0	AA-	-	National Australia Bank	Australia
Citibank N A	1.0	AA	Aa1	branch (2)	USA
Deutsche Bank A G	6.7	AA-	Aa3	branch (2)	Germany
Kiwibank Limited	0.5	AA-	-	New Zealand Post	New Zealand
Kookmin Bank	0.1	BBB+	A3	branch (2)	South Korea
St George Bank New Zealand Limited (3)	0.1	BBB-	-	St George Bank Limited	Australia / New Zealand
Rabobank Nederland	0.3	AAA	Aaa	branch (2)	Netherlands
Rabobank New Zealand Limited	1.4	AAA	-	Rabobank Nederland	Netherlands
The Bank of Tokyo-Mitsubishi, Ltd	0.1	A-	A2	branch (2)	Japan
The Hongkong and Shanghai Banking Corporation Limited	2.8	-	Aa3	branch (2)	UK
TSB Bank Limited	1.0	BBB-	-	Taranaki Community Trust	New Zealand
Westpac Banking Corporation	20.1	AA-	Aa3	branch (2)	Australia

(1) Registered bank's assets as a proportion of the total assets of the banking system, as at 31 March 2004.

(2) The New Zealand registration is for a branch of the overseas bank.

(3) A joint venture with Foodstuffs NZ, controlled by St George Bank Ltd.

Source: Registered banks' disclosure statements.

Banking sector indicators

Figure A11

Capital adequacy ratios

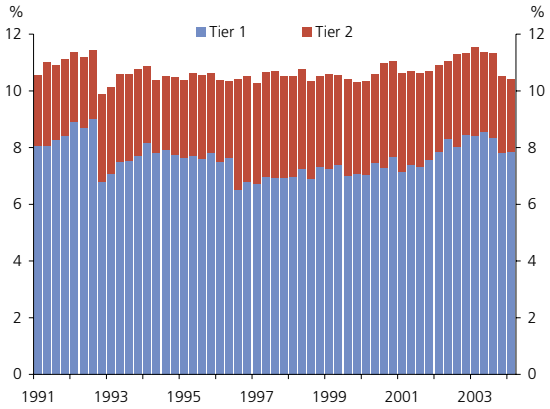


Figure A12

Asset quality

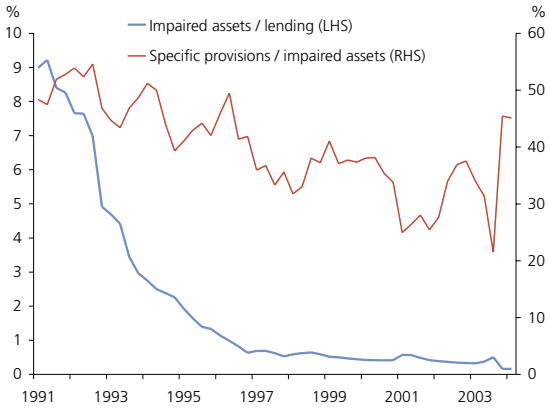


Figure A13

Return on assets

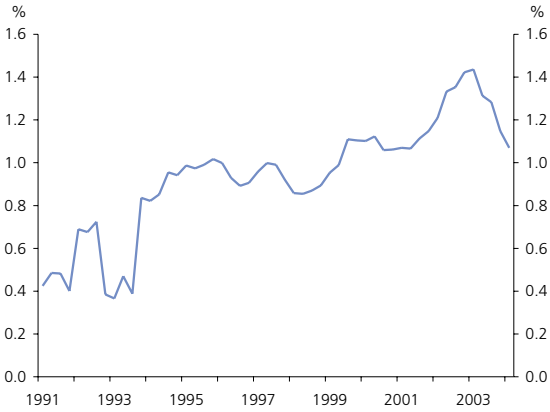


Figure A14

Operating costs to income

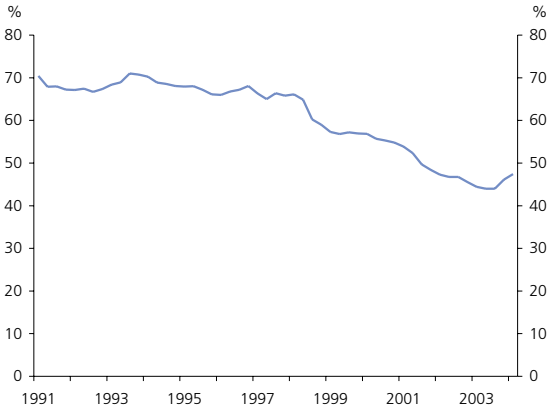


Figure A15

Lending margins

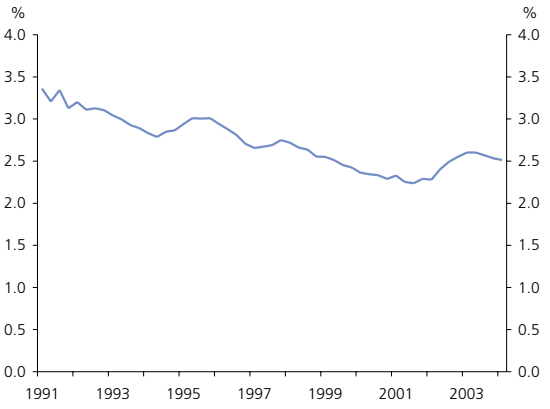


Figure A16

S&P credit ratings for registered banks

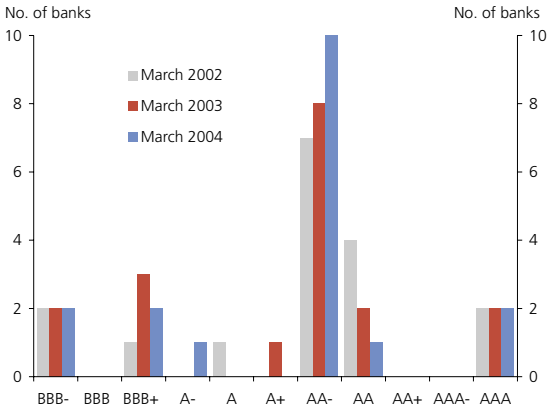


Figure A17

Bank asset composition

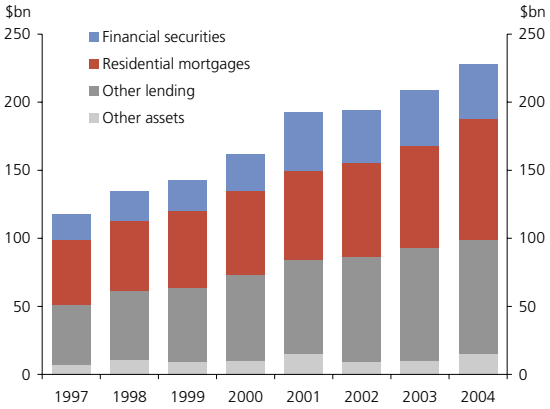


Figure A18

Bank funding composition

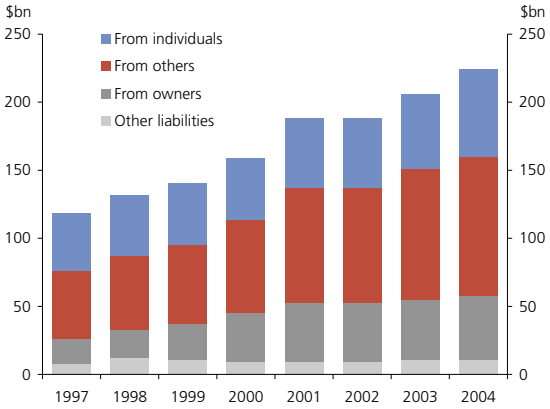


Figure A19

Bank asset growth

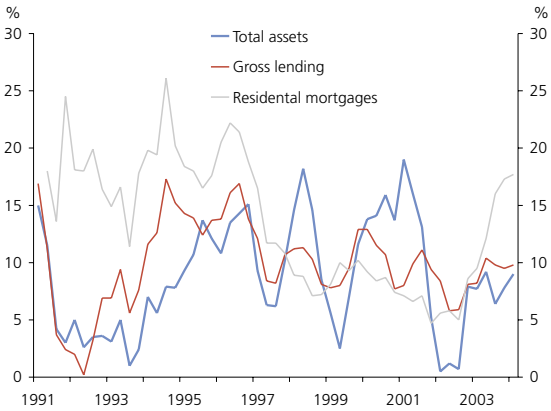
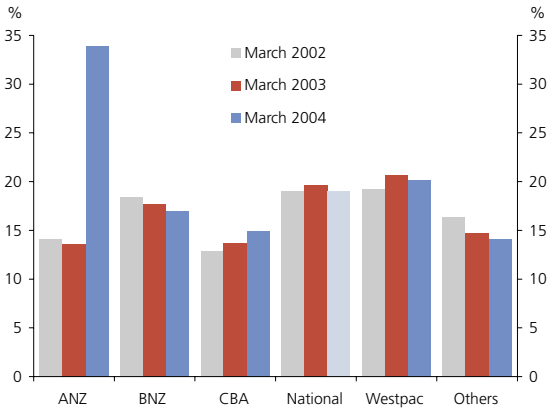


Figure A20

Bank market share



Non bank financial institutions

Figure A21

NBFI asset composition

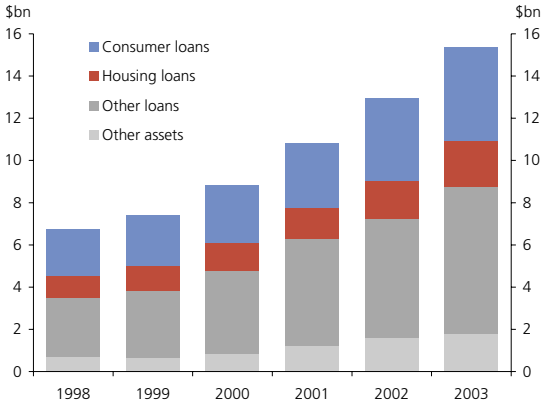
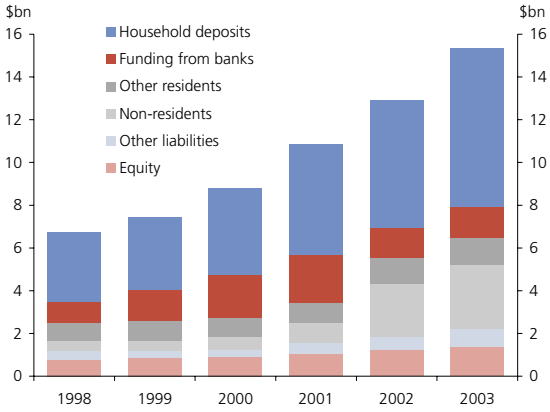


Figure A22

NBFI funding composition



New Zealand financial markets

Figure A23

Government bonds on issue and turnover

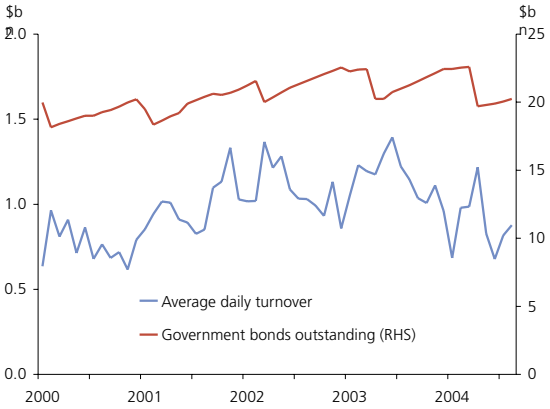


Figure A24

Ten-year government bond spreads

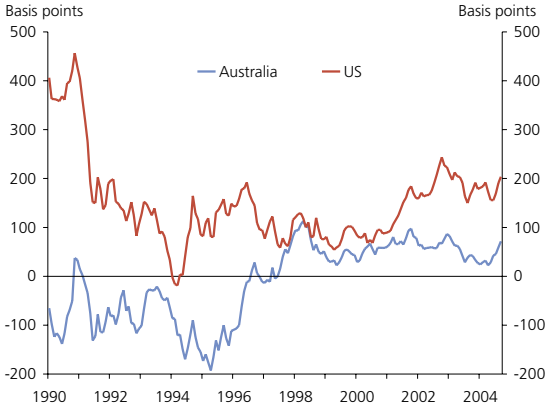


Figure A25

NZD turnover in domestic markets

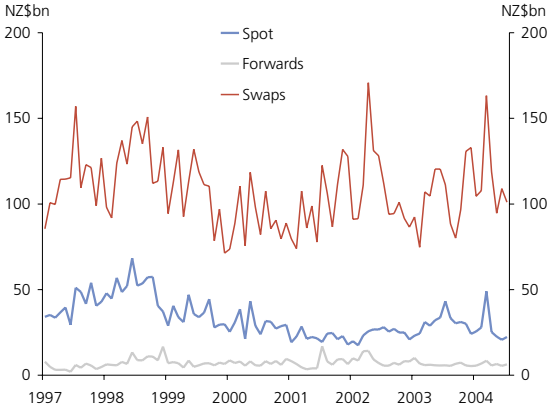


Figure A26

NZD/USD and implied volatility

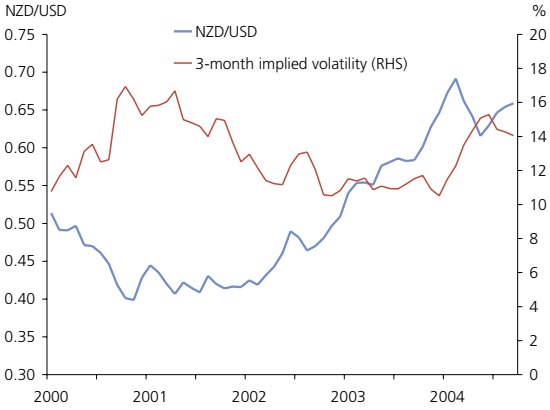


Figure A27

Equity market capitalisation to GDP

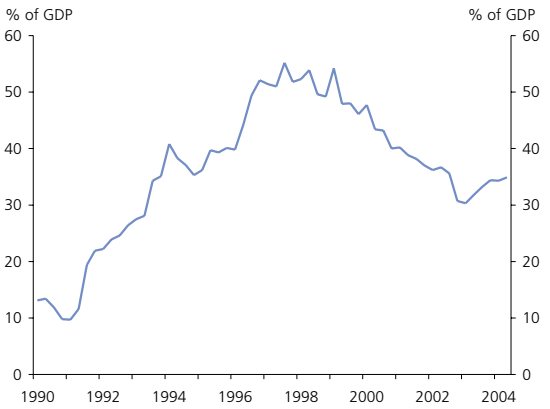
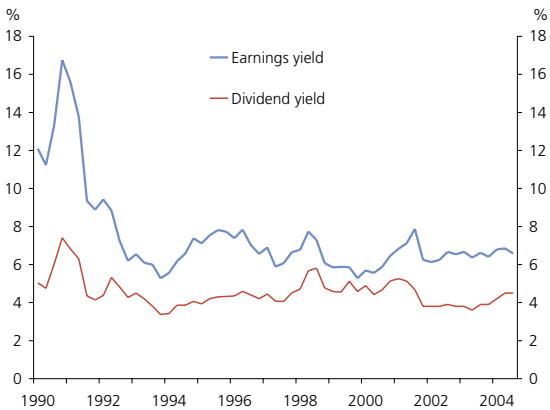


Figure A28

Earnings and dividend yields



Notes to the graphical appendix

The appendix contains a suite of charts that will appear regularly in the *Financial Stability Report*. They provide an overview of developments in a set of key economic and financial indicators. Definitions and sources (in italics) are noted below. The data for the charts in this *Report*, including those in the graphical appendix, are available on the Reserve Bank website.

1	Real GDP growth	Annual average percentage change in real GDP. *Datastream*.
2	Balance of payments	Current account balance as a percentage of GDP, four-quarter total. *Datastream*.
3	Trade-weighted exchange rate indices	Trade-weighted indices, 31 March 1990 = 100. *Bank of England*.
4	Short-term interest rates	Yields on 90-day bank bills. *Datastream*.
5	Equity indices	Morgan Stanley Capital Indices, 31 March 1990 = 100. *Datastream*.
6	House price inflation	Year-on-year change in national house price indices. *Datastream*.
7	Household debt	Household debt excludes student loans, and is based on monthly surveys with over 95 per cent coverage of household debt. Household disposable income is gross before deduction of interest paid, and is interpolated from March year data from *Statistics New Zealand*, with *RBNZ* 2004 and 2005 forecasts. Weighted average interest rate is published *RBNZ* mortgage rate data with an estimate for consumer loan interest rates.
8	Household assets and liabilities	Housing assets are *RBNZ* estimates of aggregate private sector residential dwelling value. Household financial assets are as published annually by *RBNZ*, with quarterly figures interpolated prior to 1995, based on component estimates from then. Household liabilities are from *RBNZ* series compiled as for figure A7.
9	Property prices	Year-on-year change in property price indices. Commercial and rural property prices are interpolated from semi-annual figures. *Quotable Value New Zealand*.
10	Government debt	The Treasury.
11	Capital adequacy ratios	Tier 1 and Tier 2 capital as a percentage of risk-weighted assets, for all locally incorporated banks. *General Disclosure Statements* (*GDS*).
12	Asset quality	Impaired assets as a percentage of total lending; specific provisions as a percentage of impaired assets; for all registered banks. *GDS*.
13	Return on assets	Net profits after tax and extraordinary items, as a percentage of average total assets, four quarter average, for all registered banks. *GDS*.
14	Costs to income	Operating expenses as a percentage of total income, four quarter average, for all registered banks. *GDS*.
15	Lending margins	Net interest income as a percentage of average interest earning assets, four-quarter average, for all registered banks. *GDS*.
16	Credit ratings	Standard and Poor's credit ratings on New Zealand dollar long-term senior unsecured obligations in New Zealand. HSBC is excluded as it is not rated by S&P in New Zealand. *GDS*.
17	Bank asset composition	As at 31 March. *GDS*.
18	Bank funding composition	As at either 31 March in current year or 31 December in previous year. *GDS*.

19	Asset growth	Year-on-year change in total assets of all registered banks. Gross lending is before provisions. *GDS*.
20	Market share	Bank assets as a percentage of total assets of registered banks. March 2004 share for ANZ Bank includes National Bank. *GDS*.
21	NBFI asset composition	*RBNZ Annual Statistical Return* as at December.
22	NBFI funding composition	*RBNZ Annual Statistical Return* as at December.
23	Government bonds issued and turnover	*RBNZ*.
24	Ten-year government bond spreads	Yield on ten-year benchmark New Zealand government bond, less yield on US and Australian equivalents. *RBNZ*.
25	NZD turnover in domestic markets	*RBNZ* survey
26	NZD/USD and implied volatility	Standard deviation used to price three-month NZD/USD options. UBS Warburg, *RBNZ*.
27	Equity market capitalisation to GDP	Total market capitalisation of firms listed on New Zealand Stock Exchange, as a percentage of annual nominal GDP. *Datastream*.
28	Earnings and dividend yields	Earnings and dividends as a percentage of total market capitalisation. *First New Zealand Capital*.