

Financial Stability Report

November 2013

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This report is published pursuant to section 165A of the Reserve Bank of New Zealand Act 1989.

The charts and tables in the appendix to this report use data available as at 25 October 2013.

More recent statistics may be used in the main body of the report.

This report and supporting data (with some further notes) are also available on www.rbnz.govt.nz

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Objectives of the *Financial Stability Report*

The Reserve Bank of New Zealand Act 1989 requires the Reserve Bank to produce a *Financial Stability Report* twice a year. This document must report on the soundness and efficiency of the financial system and the measures undertaken by the Reserve Bank to achieve its statutory prudential purpose set out in that Act. The *Report* must also contain the information necessary to allow an assessment of those activities.

In May 2013 a Memorandum of Understanding (MOU) was entered into by the Governor of the Reserve Bank and the Minister of Finance regarding macro-prudential policy and its operating guidelines. The MOU specifies that the Reserve Bank's *Financial Stability Report* must report the reasons for, and impact of, any use by the Reserve Bank of macro-prudential policy instruments. The *Report* will also provide an assessment of the appropriateness and effectiveness of macro-prudential policy decisions.

1 Overview

New Zealand's financial system remains sound. The banks are well capitalised and have strengthened their funding base, while non-performing loans continue to fall. All banks comfortably meet the new Basel III minimum capital requirements introduced at the start of the year. Core funding ratios are also well above the required level.

The main threats to the financial system are the risks associated with growing imbalances in the housing market. The Reserve Bank has introduced measures to moderate these risks to financial stability.

The household sector has high levels of indebtedness relative to both historical and international norms. Although debt levels relative to income have eased from their 2007 peak, they have been increasing since late 2012. Of particular concern has been stronger housing lending, and a reduction in lending standards as reflected in the increased lending to borrowers with high loan-to-value ratios (LVRs). Households and banks are highly exposed to the housing market, with housing representing a majority of household assets and bank lending.

From 2002 to 2007, New Zealand experienced one of the largest increases in house prices among the 34 OECD countries. While house prices fell after the 2008 Global Financial Crisis (GFC), house price inflation has increased over the past 18 months, taking house prices in some regions to well above their 2007 peaks. House prices in the Auckland and Christchurch markets, which together account for just over half of house sales, have risen by 17 percent and 8 percent respectively over the past year. House prices in the rest of the country have been increasing by a more modest 3 percent, but with larger increases in Taranaki, Hawke's Bay, Nelson/Marlborough and Otago. The OECD and IMF both believe that New Zealand's house prices are significantly overvalued.

Rapidly rising house prices in Auckland and

Christchurch reflect both supply and demand pressures. In Auckland, housing construction has been low for some years, partly as a result of land use constraints. In Christchurch the housing stock was significantly damaged by the 2010 and 2011 earthquakes. Housing demand has been stimulated by a range of factors, including the broadening economic recovery; the effects of stronger net inward migration; the decline in mortgage rates; and the increased availability of credit.

If left unchecked, excessive increases in house prices increase the likelihood and potential magnitude of a correction in house prices following an economic downturn. These conditions could cause significant financial distress for some households, while lenders could suffer a decline in asset quality. In a severe downturn, banks and other intermediaries can become much less willing to lend to creditworthy borrowers.

The Reserve Bank has responded to this risk in two ways: by requiring the banks to hold more capital against high-LVR housing loans, and by requiring them to restrict the proportion of new high-LVR housing loans. Higher capital requirements introduced in September 2013 aim to improve financial stability by better reflecting the potential loss associated with high-LVR lending. LVR lending restrictions, introduced in October, will directly limit the amount of high-LVR lending the banks can undertake. Together, these policies are expected to slow housing lending and house price inflation and reduce the potential risks to bank balance sheets.

While it is still too early to draw conclusions on the effect of the policy initiatives, the initial evidence suggests there has been a change in market behaviour. Banks have increased the price of high-LVR mortgages, while significantly reducing high-LVR pre-approvals.

If New Zealand is to manage current imbalances

in the housing market, it is critical that the underlying housing supply issues in Auckland and Christchurch be addressed. Restraining the growth in housing credit will only assist to moderate excess demand pressures in the short to medium term.

Outside the household sector, parts of the rural sector are also highly indebted. The dairy sector, in particular, is vulnerable to a fall in commodity prices or an increase in debt servicing costs. International dairy prices are at record levels, and are providing a significant boost to incomes in the dairy sector. Growth in farm debt has been modest and farm land prices are still below pre-crisis peaks. Nonetheless, a return to pre-2007 credit growth and spending patterns within the sector would present risks to financial stability.

More broadly, the New Zealand economy faces vulnerabilities associated with its high level of external debt. High external debt is the result of persistent current account deficits, which reflect a shortfall in national savings relative to investment. While private sector saving has improved in recent years, the Reserve Bank expects some worsening in the external balance as residential investment expands over the next 2–3 years. In this context, it is important that the improved savings performance is maintained and that the public sector deficit continues to reduce.

New Zealand's external debt is mainly intermediated through the banking system. Since 2008, strong growth in retail deposit funding has allowed banks to meet the lift in credit demand without significantly increasing their offshore funding. In the past six months, New Zealand banks have retained good access to wholesale funding markets, with risk spreads returning to levels not seen since before the GFC.

International financial market conditions have continued to improve, but remain fragile, as major

economies continue to cope with imbalances revealed by the GFC. The European banking system remains vulnerable to high debt levels and modest economic growth. The United States economy is improving, and the authorities are now presented with the challenge of withdrawing the extraordinary monetary stimulus measures in an orderly manner. The US economy is also pushing up against its legislative public debt ceiling, which has created some policy uncertainty. The developing economies, which experienced relatively good economic growth in recent years, have started to slow. An abrupt slowdown in the Chinese economy could pose risks to New Zealand's international commodity prices.

Over the past six months the Reserve Bank has continued to enhance the prudential regulatory framework to strengthen the soundness of the New Zealand financial system. The Reserve Bank's review of the prudential regime for non-bank deposit-takers was completed in September 2013, and several legislative amendments are proposed to ensure the regime is appropriately targeted. A review has been undertaken of the oversight regime for payment and settlement systems, and it is expected that powers will be strengthened in this area. The licensing of insurers to comply with the prudential requirements under the Insurance (Prudential Supervision) Act 2010 was completed on 9 September 2013. This represented a major effort by the industry with 99 insurers granted licences.



Graeme Wheeler
Governor

2 Systemic risk assessment

The financial system remains sound...

New Zealand's financial system remains sound. The major banks are well-capitalised and comfortably meet the new Basel III capital requirements. They have good access to funding, aided by strong growth in retail deposits. Stable or 'core' funding is well above the minimum prudential requirements. Banking system profitability is stable and supported by a declining proportion of non-performing loans. The non-bank deposit taking sector accounts for a very small share of intermediated credit and does not pose a significant systemic risk. The licensing of the insurance sector has been completed, and the sector is now subject to oversight and to solvency requirements.

...but risks are growing.

As discussed in the May *Report*, risks to the stability of the financial system have emerged over the past 12 months due to growing imbalances in the housing market. House prices have continued to grow strongly, enabled by low interest rates, an easing in lending standards – including a higher proportion of lending to borrowers with low deposits – and limited supply in parts of the country.

Policy measures have been taken to address growing risks in the housing market...

In response to this increased risk of a disorderly correction in the housing market, the Reserve Bank has introduced two policy initiatives specifically aimed at high loan-to-value ratio (LVR) lending by banks.

- As of 30 September, 'internal model' banks were required to hold a higher level of capital against their high-LVR housing exposures. This complements the higher level of loss-absorbing capacity that all locally incorporated banks must now hold as part of the new Basel III capital requirements introduced at the start of this year.

- As of 1 October, LVR restrictions came into force, designed to dampen housing-related credit growth and house price inflation.

...but other risks to the New Zealand financial system are also present.

Developments in other sectors, such as farming and commercial property, are not currently posing significant near-term concerns for the stability of the financial system. However, certain parts of the farming sector remain highly leveraged and could be exposed in the event of a sharp fall in commodity prices from current high levels (see chapter 4). In addition to creating cashflow pressures for some farms, such a fall would likely result in a decline in rural land prices.

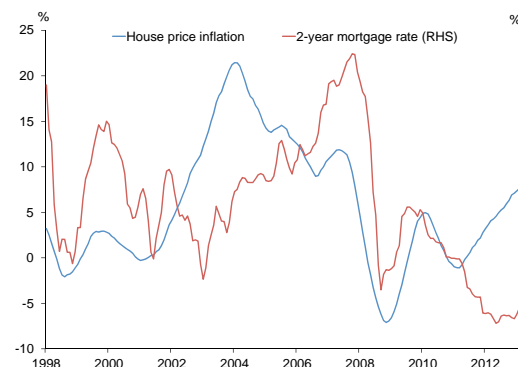
The banking system has reduced its reliance on offshore funding, by funding an increasing proportion of its assets through retail deposits (see chapter 5). This trend has helped to reduce the vulnerability of the economy to disruptions in global funding markets. The Reserve Bank's September *Monetary Policy Statement* forecasts are for a widening in the current account deficit (CAD) over the next three years as domestic economic activity strengthens. A more marked widening in the CAD driven by the private sector would tend to be associated with stronger credit growth and increased use of offshore funding by the banks. The latter would lead to an increase in the financial system's exposure to adverse developments in offshore markets.

Imbalances in the housing market have been increasing.

Since the last *Report*, house prices have continued to grow strongly (figure 2.1). As discussed in chapter 4, housing market imbalances reflect constrained supply relative to strong demand. The imbalance between

supply and demand is most apparent in Auckland and Christchurch, where house price inflation has outpaced the rest of New Zealand.

Figure 2.1
House price inflation and the 2-year mortgage rate



Source: REINZ, RBNZ.

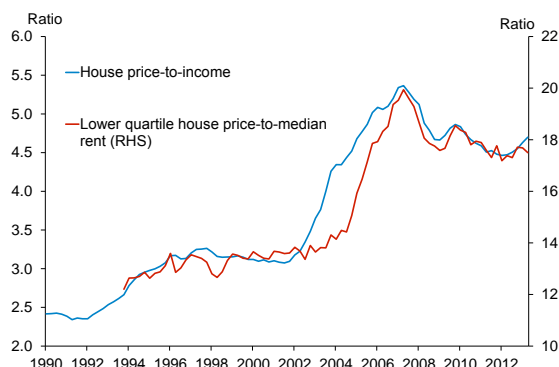
Note: The 2-year mortgage rate is a new customer borrowing rate from December 2004. Prior to this date the series has been back-dated using the 2-year swap rate.

The demand for housing assets and housing-related credit has been supported by a combination of historically low mortgage interest rates (that have increased the borrowing capacity of households) an easing in bank lending standards over the past 18 months, and a recent pick-up in net inward migration. Some households, in deciding to take on more debt, may be anticipating a continuation of strong house price growth or expecting low borrowing rates to persist.

House prices are high...

The increase in residential house prices over the past few years has occurred from a starting point of high house prices relative to fundamental measures such as rents and household income (figure 2.2). New Zealand house prices grew strongly in the period prior to the Global Financial Crisis (GFC), increasing just over 120 percent between 2000 and 2007. House prices subsequently fell by 10 percent, as borrower demand declined on the back of an increase in unemployment and a reduction in households' appetite for debt, and banks tightened the terms and conditions of lending to households.

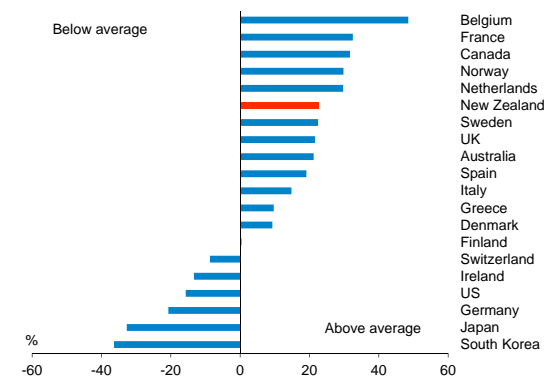
Figure 2.2
House prices relative to measures of fundamentals



Source: Property IQ, RBNZ, Statistics New Zealand, Department of Building and Housing.

House prices started to rise again in late 2009 and have increased by 16 percent since then. House prices are currently high by historical standards (relative to fundamental measures), and are overvalued by international comparison (figure 2.3).

Figure 2.3
House price-to-income by country
(deviations from historical averages, latest available data)



Source: OECD.

Note: Calculation of deviations from historical averages specific to length of individual country house price series.

...as is household indebtedness.

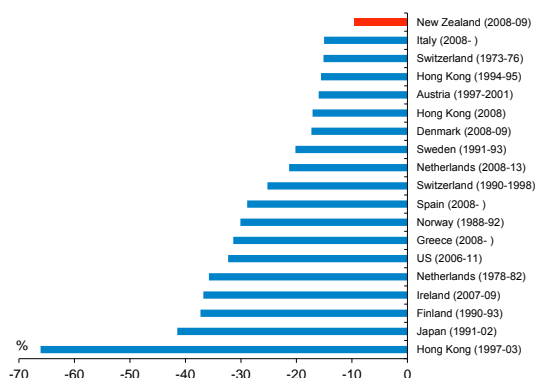
New Zealand's household debt-to-disposable income ratio rose from 100 percent in 2000 to 153 percent at its peak in 2009 (see chapter 4). Household indebtedness fell modestly following the GFC, but has since increased to 146 percent as housing-related credit growth has outpaced income growth.

While household debt servicing ratios fell from the 2008 peak as mortgage interest rates declined, borrowing rates have started to rise recently. Some borrowers may have difficulty servicing their debt obligations as interest rates begin to rise again (see box B, chapter 4).

The risk of a disruptive correction to house prices and household balance sheets has increased...

If unchecked, further near-term growth in house prices increases the likelihood of a disruptive adjustment in the housing market. Periods of large nominal house price declines have been experienced by a number of advanced countries over the past 40 years (figure 2.4). More recently, the GFC has highlighted the severe financial and economic damage that can arise from a rapid correction in house prices, as witnessed in the US, Ireland and Spain, where prices fell by 30 to 40 percent. In the US, for example, a quarter of borrowers found themselves in a position of 'negative equity' – owing more than what their houses were worth.

Figure 2.4
Advanced economy house price corrections since 1970



Source: BIS, Haver.

Note: Nominal house price declines of greater than 15 percent (peak-to-trough), based on available data, including the largest New Zealand nominal house-price fall. The length of individual country house price series varies.

The 10 percent decline in New Zealand house prices between 2007 and 2009 was the largest local fall in nominal terms, at least since 1970. This is modest compared to some of the house price corrections in other countries. However, high inflation in the 1970s and 1980s masked several episodes where house prices

substantially declined in real terms both in New Zealand and elsewhere.¹

...which could affect the banking system.

A rapid decline in house prices could lead to losses for lenders in the event of borrower default, and a significant tightening in the terms and conditions of credit offered to borrowers. In the worst case, this would threaten the solvency of financial institutions. Financial distress for households and lenders can be further exacerbated by the negative impact that a housing correction can have on the economy through a reduction in investment, employment and output.

In the case of the Nordic economies in the early 1990s (figure 2.4), the correction in house prices was accompanied by severe stress, and sometimes crises, in the banking system. This was also the case in the US, and in several European economies such as the United Kingdom, Spain, Ireland, Portugal and Greece during the GFC.

Housing market risks are compounded by high-LVR lending.

The increase in housing demand that has helped to fuel rapid house price inflation, has been enabled by an easing in bank lending standards and an increased share of low-deposit, or high-LVR, residential mortgage lending.

High-LVR lending accentuates loan losses and worsens the subsequent economic disruption when overinflated house prices correct abruptly.² High-LVR lending reduces the margin of collateral above the value of the outstanding loan and this margin may become negative if house prices fall, leading to loan losses for the lender if the borrower defaults. High-LVR borrowers often have a higher debt servicing ratio – apportioning a higher share of their disposable income to meet their principal and interest payment obligations – so are more vulnerable

¹ See Hunt, C (2013) "The last financial crisis and the case for macro-prudential intervention", Reserve Bank of New Zealand *Bulletin*, 76(2), June, pp. 3-16, for a discussion of real house price cycles since 1970.

² See the RBNZ (2013) *Regulatory impact assessment: Restrictions on high-LVR residential mortgage lending*, August, for a summary of the international literature; available here: http://www.rbnz.govt.nz/financial_stability/macro-prudential_policy/5407434.pdf

to financial or economic developments such as a sharp rise in interest rates, or a change in their employment circumstances. High-LVR borrowers are therefore more likely to be forced to sell when house prices are falling, reinforcing the wider house price adjustment.

Analysis of loan losses on residential mortgage lending over the period 2008 to 2012 shows that the loss rates on New Zealand banks' mortgage portfolios was higher on high-LVR lending relative to low-LVR lending.³ This evidence of high and correlated loss rates for high-LVR loans suggests they are associated with a higher level of systemic risk relative to other mortgage lending.

The Reserve Bank has increased capital requirements for high-LVR lending...

Earlier in the year the Reserve Bank initiated a staged review of bank capital adequacy requirements for housing loans (see the *May Report*). As a result of the first stage of the review, bank capital requirements for high-LVR lending increased on 30 September for those banks permitted to use their own internal models to calculate their minimum capital requirements. This permanent prudential adjustment is designed to improve the resilience of the banking system to the greater systemic risks associated with high-LVR lending.

...and introduced a 'speed limit' on high-LVR lending...

In August, the Reserve Bank announced the introduction of LVR restrictions that took effect on 1 October. This policy initiative is part of a new 'macro-prudential' policy framework designed to further enhance the Reserve Bank's role in promoting the soundness and efficiency of the financial system. A Memorandum of Understanding signed with the Minister of Finance in May 2013 sets out the objectives of macro-prudential policy, the specific set of instruments currently in scope, and the policy's governance arrangements.

Most prudential settings are set permanently 'through-the-cycle', and calibrated to protect bank solvency in

the case of extreme downturn scenarios. A temporary macro-prudential overlay, imposed during a period of rising systemic risk, aims to provide more scope for banks to lend to creditworthy borrowers during a subsequent period of financial stress in two ways. Firstly, the resilience of the banking system to severe financial and economic shocks is enhanced by building up capital and liquidity buffers during the upswing of a credit cycle, which can subsequently be 'released' during a period of stress to support lending. Secondly, some macro-prudential tools attempt to attenuate the extremes in the credit and asset price cycle itself.

As one of four instruments in the macro-prudential toolkit, LVR restrictions are the instrument best placed to help address the build-up in systemic risk presently driven by housing market developments.⁴ By reducing the supply of credit to the most leveraged borrowers, LVR 'speed limits' are designed to dampen housing-related credit growth and house price inflation, while also acting to reduce the riskiness of banks' housing loan portfolios.

...which reduces the amount of new high-LVR lending to 10 percent.

The LVR restrictions constrain the share of new high-LVR residential mortgage lending that banks can undertake to 10 percent of new mortgage flows. High-LVR lending is defined as mortgage loans with an LVR greater than 80 percent. Prior to implementation, high-LVR lending peaked at around 30 percent of new mortgage flows for the banking system as a whole, up from around 23 percent in early 2011. After taking into account exemptions from the limit for loans with certain characteristics, this flow of high-LVR lending will be effectively halved.⁵

The introduction of a 'speed limit', as opposed to an outright ban on high-LVR lending, will help to minimise any welfare costs associated with this quantitative tool –

³ See RBNZ (2013) *Consultation Paper: Review of bank capital adequacy requirements for housing loans (stage one)*; available here: http://www.rbnz.govt.nz/regulation_and_supervision/banks/policy/5199878.pdf

⁴ For a discussion of the four tools and the broader framework see Rogers, L (2013) "A new approach to macro-prudential policy for New Zealand", Reserve Bank of New Zealand *Bulletin*, 76(3), September, pp. 12-22. For a comparison of the effectiveness of LVR restrictions relative to alternative policy options see the *Regulatory impact assessment*.

⁵ These exemptions include the high-LVR loans written under the Housing New Zealand Welcome Home Loan Scheme, bridging loans, refinancing of existing loans and high-LVR loans to existing borrowers who are moving home but not increasing their loan amount.

banks will still be able to provide some high-LVR lending to creditworthy borrowers. The specific calibration of the speed limit policy reflects internal Reserve Bank research on the potential effectiveness of the restriction, together with feedback from banks and other interested stakeholders from consultations throughout the year.

The Reserve Bank is currently working with banks on the implementation of the restrictions and addressing any issues that arise. The Reserve Bank has requested new data to better measure flows of mortgage lending by LVR. The LVR policy framework will be refined following the second stage of the housing review (see chapter 7).

LVR restrictions are a temporary tool.

The LVR restrictions are temporary, however their removal will be determined on the basis of the Reserve Bank's assessment of the effectiveness of the speed limit in dampening housing-related credit growth and house

price inflation (see box A). The restrictions will be removed once there is evidence that significant imbalances in the housing market have abated, and the Reserve Bank is satisfied that their removal will not reignite housing-related credit growth and house price inflation.

Rising interest rates, as the economy continues to strengthen, are expected to further dampen housing demand, reinforcing the impact of the macro-prudential intervention. Removing LVR restrictions will therefore need to be considered in relation to an assessment of broader financial conditions, including monetary policy settings.

The Reserve Bank may also remove the restrictions if the speed limits are not achieving the stated objective of reducing systemic risk, or if any distortions that arise from the restrictions outweigh the benefits.

Box A

Assessing the impact of LVR restrictions

LVR restrictions are a new policy tool for New Zealand, and there is some uncertainty as to the magnitude of the quantitative impact of the policy. This is especially the case since New Zealand appears to be unique in the use of a speed limit approach. The Reserve Bank's initial estimates, published in a recent *Analytical Note*, are that LVR restrictions will result in 3-8 percent fewer house sales, 1-4 percentage point lower house price inflation and 1-3 percentage point lower housing credit growth over the first year that LVR restrictions are in place, than would have otherwise been the case.⁶

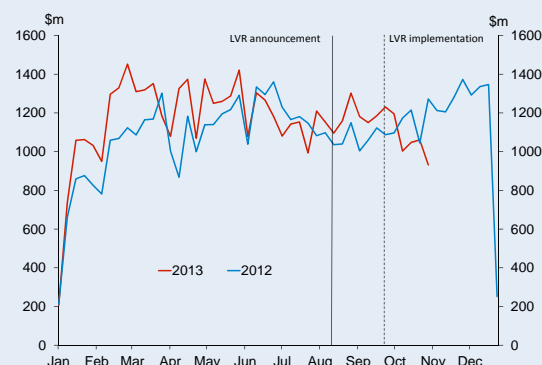
If LVR restrictions had not been implemented, the projected rise in interest rates in the September *Monetary Policy Statement* would have been higher, placing more upward pressure on the New Zealand dollar. The Official Cash Rate is forecast to increase by 2 percent from 2014 to the beginning of 2016. The impact of LVR restrictions on inflation pressures is estimated to be equivalent to a 30 basis point rise in interest rates over the first year, although with a lesser impact in subsequent years.

The Reserve Bank is closely monitoring market developments to assess the effect that these restrictions are having. The Reserve Bank expects that market segments with a higher proportion of high-LVR borrowers and greater levels of housing market activity will see larger impacts from LVR restrictions, particularly where a smaller proportion of borrowers are eligible for Housing New Zealand's Welcome Home Loan Scheme.

Despite the policy being announced six weeks prior to implementation, there is little evidence to suggest that a material degree of activity was brought forward before the policy took effect. Mortgage credit approvals were only a little stronger over that period (figure A1), as were housing market transaction volumes. In part, this may be due to banks tightening credit criteria in the weeks

leading up to implementation, to control the pipeline of lending that would be drawn down after 1 October.

Figure A1
Weekly value of mortgage approvals



Source: RBNZ, REINZ.

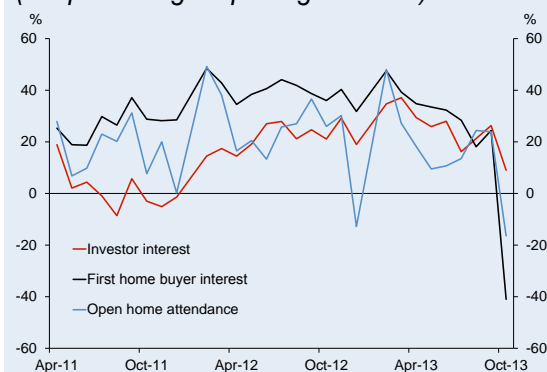
At this stage there is only limited information on how the market has responded in the period immediately following implementation. From early September, banks started to increase low equity premiums, and tightened the availability and terms of pre-approvals for high-LVR loans. Many banks also moved to two-tier mortgage pricing, paying higher interest rates for high-LVR loans. In addition to those changes, banks reported less willingness to waive low equity premiums or offer discounts to high-LVR customers. Banks have also tried to actively manage their outstanding pre-approvals, with some banks cancelling outstanding high-LVR pre-approvals.

While the pipeline of pre-approved lending may slow the immediate impact, there are some initial signs that this tightening in lending standards is starting to affect the housing market. On a seasonally adjusted basis, housing market approvals were 2.2 percent lower in October than September. Anecdotal reports from real estate agents and mortgage brokers also suggest that there was a material drop in buyer interest and transaction volumes. For example, the October BNZ REINZ survey of real estate agents, which was conducted about a week after LVR restrictions came into effect, reported declining housing market activity. Respondents reported fewer people visiting open homes and a reduction in auction clearance rates. First home

⁶ See Bloor, C and C McDonald (2013) "Estimating the impacts of restrictions on high-LVR lending", Reserve Bank of New Zealand *Analytical Note* 13/05, October.

buyer interest was reported as being substantially lower, while investor activity was less positive than it had been previously (figure A2).

Figure A2
Real estate agents' perceptions of house
buyer demand
(net percentage reporting increase)



Source: BNZ REINZ residential survey.

So far, these market responses are broadly as expected. However, there is likely to be a degree of market volatility over the first few months that LVR restrictions are in place, as market participants adapt to the new environment. It will not be until property market activity settles down in a few months' time that a clear view of the impact of the restrictions will emerge. The Reserve Bank will continue to monitor market developments closely to gauge the effects of the policy, including unintended consequences or for signs of regulatory 'leakage' (see box C).

The Reserve Bank does not expect LVR restrictions to materially inhibit new construction, as house prices remain high enough for construction to be profitable once developments are approved. Furthermore, many home buyers (particularly those buying newly built homes) are not high-LVR borrowers, so buyer demand for new construction should continue. Nevertheless, the Reserve Bank is gathering further data on the lending market for newly built homes as part of assessing the impact of LVR restrictions.

3 The international environment and financial markets

The mix of global growth has shifted. Emerging market growth has slowed, while growth in the major advanced economies is strengthening. Expectations of a reduction in monetary policy stimulus in the US have increased, leading to a rise in longer-term global interest rates and contributing to funding pressures for some emerging market economies. The rise in longer-term interest rates has also played a role in the recent increases in longer-term bank lending rates in New Zealand.

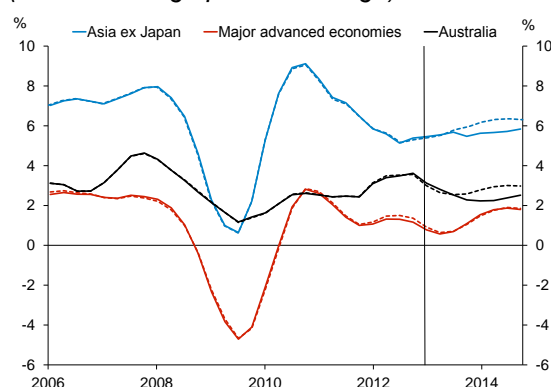
A number of downside risks to the global economy could create financial stress for New Zealand. A disorderly slowing in Chinese and emerging market growth could result in a sharp fall in commodity prices, significantly impacting the indebted parts of the agricultural sector. Disruptions to global financial markets could result in reduced access to funding for New Zealand banks at a time when offshore funding requirements are rising. Potential triggers include further financial stress in Europe, a sharp increase in long-term interest rates in the transition to tighter global monetary policy, or political intransigence in the US surrounding the public debt ceiling negotiations.

Emerging market growth has slowed as advanced economies have strengthened.

The economic recovery in advanced economies has progressed since the *May Report*, while growth has slowed across several of New Zealand's key emerging market trading partners (figure 3.1). The US has continued to grow steadily in recent months. The downturn in the euro area has not been as severe as many had feared, although the outlook for sluggish growth remains. The recent slow-down in emerging market activity partly reflects signs that Chinese growth is slowing.

The shift in the mix of global growth represents a significant change compared to recent years. Following the Global Financial Crisis (GFC), emerging markets experienced a rapid economic recovery, while the growth performance of advanced economies was weak. Investors now appear more confident about advanced economy prospects, while concerns around some emerging markets have been growing since May. This change in sentiment is reflected in equity prices throughout 2013 (figure 3.2).

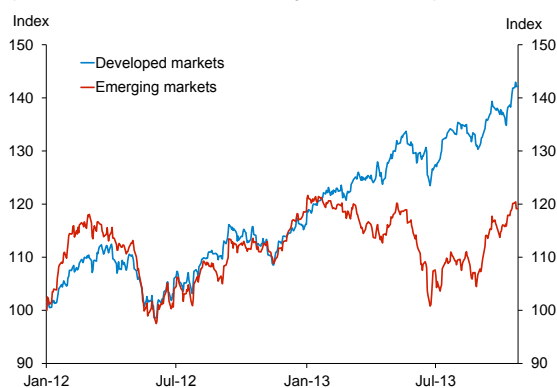
Figure 3.1
GDP forecasts for key trading partners
(annual average percent change)



Source: RBNZ.

Note: Dotted lines refer to March MPS forecasts. The solid lines refer to September MPS forecasts.

Figure 3.2
MSCI world equity indices
(US dollar terms, January 2012=100)

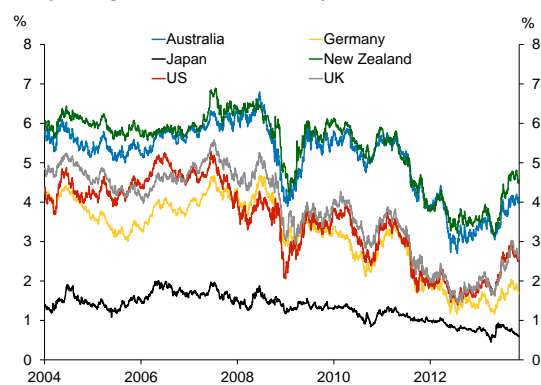


Source: Bloomberg.

Long-term bond yields have increased.

Stronger growth in advanced economies, particularly in the US, has seen markets contemplate a reduction in monetary policy stimulus. Most notably, the US Federal Reserve signalled in late May that it may reduce its quantitative easing programme later in the year by slowing the rate at which it purchases long-term bonds. The prospect of the Federal Reserve 'tapering' bond purchases drove an increase in US long-term government bond yields (figure 3.3), from 1.6 percent in May to a peak of 3 percent in early September. Bond market volatility increased in the months after the announcement, in part due to uncertainty within the market about when and how the transition to tighter US monetary policy would occur. In September, after the Federal Reserve surprised market participants by announcing that it would not yet begin tapering, long-term interest rates retraced some of their

Figure 3.3
10-year government bond yields



Source: Reuters.

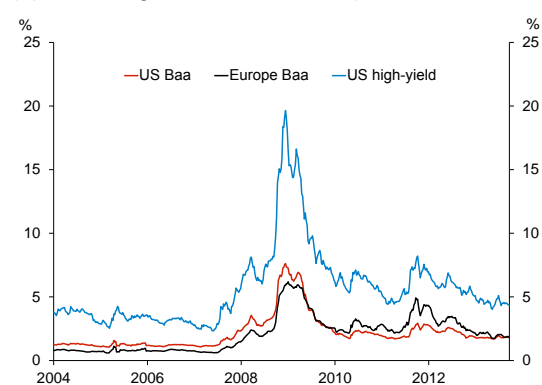
earlier rise. Nonetheless, markets largely assume that the tapering will begin at some point next year.

The US bond market sell-off resulted in an increase in long-term interest rates in many other economies. The rise in long-term yields for New Zealand dollar bonds has been slightly larger than for other advanced economies, partly reflecting the strengthening outlook for domestic economic growth relative to many other advanced economies. An exception to the trend has been Japan, where the bond market is dominated by domestic buyers. The Bank of Japan has been making significant purchases of government bonds. However, a very large monetary and fiscal stimulus, when government debt ratios are very high, could create risks for the Japanese economy.

Credit and equity market prices have continued to appreciate.

Monetary settings in advanced economies remain extremely supportive. One of the intended effects of unconventional monetary policies is to push down long-term yields on safe assets, thereby increasing the relative appeal of riskier securities and stimulating market activity. Increased risk-taking associated with unconventional monetary policies has been particularly evident since the latter half of 2012, for example in credit spreads narrowing on riskier corporate bonds (figure 3.4). Other indications of risk-taking in advanced economies include a rise in the share of high-yield bonds in corporate bond issuance, rising equity prices, and a marked fall in equity market

Figure 3.4
Advanced economy corporate bond yields
(spread to government bonds)



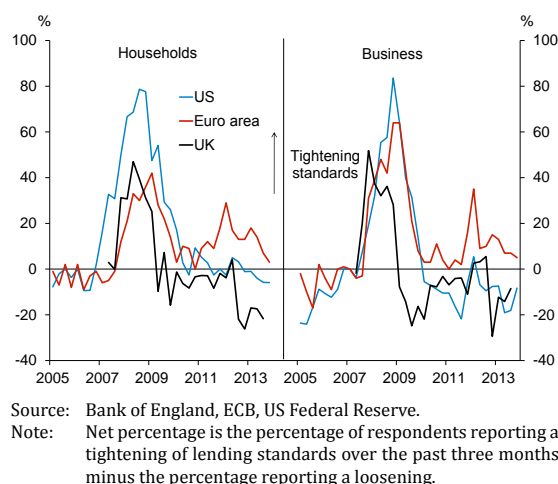
Source: Barclays Capital.

volatility. The sell-off in global bond markets after May briefly reversed that process, but market prices and risk premia have since returned to previous levels.

Banking system stress is declining outside of Europe.

Credit conditions have eased in the US and the UK over the past year (figure 3.5). Easier bank lending conditions have been supported by a decline in non-performing loans. House prices are increasing, which is gradually reducing the incidence of negative equity (particularly among US households). In contrast, the euro area banking system remains under significant stress with rising non-performing loans. In many troubled economies, housing markets remain under pressure, unemployment is high, and corporate profitability is weak. This has led banks to continue to tighten lending standards, albeit at a slower rate than they had previously. Tight credit conditions are continuing to act as a headwind to recovery in the euro area.

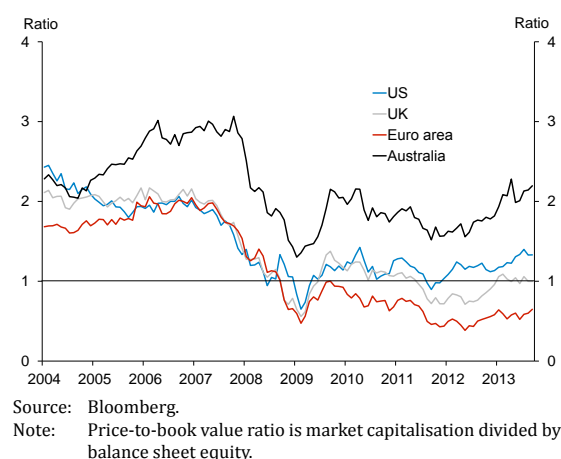
Figure 3.5
Survey measures of bank lending standards
(net percentage)



Banks in advanced economies have been increasing their capital buffers in response to the phasing-in of higher minimum capital ratios under the Basel III capital framework. Improving asset performance in most advanced economies has added to profits, allowing banks to increase capital through retained earnings. Stronger

capital and improved profitability have seen a significant improvement in price-to-book value ratios in the US and UK (figure 3.6). European banks face a more difficult task increasing capital buffers in a weak economic environment. The fact that European banks are still trading at a discount to book value also suggests that it is costly to raise new capital. As a result, some banks may be attempting to achieve higher risk-weighted capital ratios by tightening credit criteria and focusing on growth in lower risk assets.

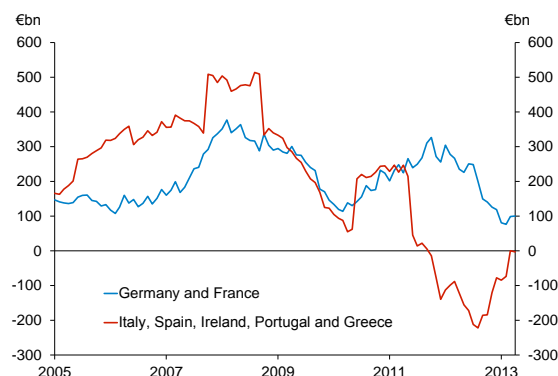
Figure 3.6
Price-to-book value ratios in selected banking systems



Significant financial stability risks remain in Europe.

Previous policy actions by European officials have reassured markets that policymakers are committed to the continuation of monetary union and that the near-term risk of a break-up of the euro has declined. The ECB has contributed to the decline in uncertainty by announcing Outright Monetary Transactions – a programme to purchase the bonds of troubled countries. The outflow of deposits from the most troubled countries has also slowed in recent months (figure 3.7). If this trend continues, it will help to reduce the financial fragmentation that occurred in recent years when investor concern about the possibility of troubled economies leaving the euro led to deposit flight. This resulted in tightening credit conditions and compounded the difficult growth and sovereign debt outlook.

Figure 3.7
Deposits held at domestic financial institutions
in selected European economies
(annual change)



Source: ECB.

Despite these recent improvements, several European economies face significant challenges to reduce public and private debt and improve growth prospects. The negative feedback loop between stress in the banking system, sovereign debt pressures, and large output losses, remains a risk. Reforms to the bank regulatory framework, enacted in June, allow the European Stability Mechanism to recapitalise banks directly, however national governments are required to contribute to any recapitalisation. With banking system non-performing loans remaining substantial and underlying profitability weak, there remains a risk of further banking stress in euro area economies. Further increases in the perceived risk of one or more economies leaving the euro could also trigger renewed stress.

US debt ceiling negotiations continue to pose risks.

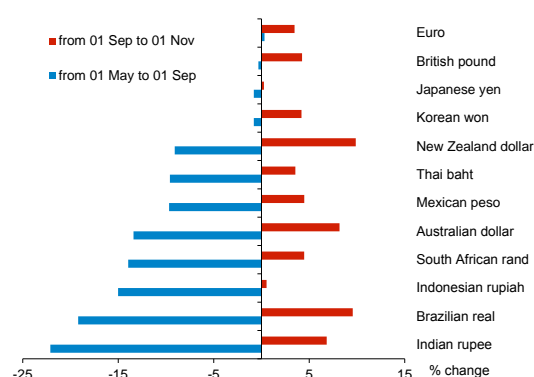
US government budget negotiations continue to be very divisive, with disagreements over the recent healthcare reforms and the need for further spending cuts. In late September, as budget negotiations failed to progress, those disagreements led to the shut-down of many US government services and an increasing risk of the US failing to raise the debt ceiling which, in an extreme scenario, could have resulted in a default on interest payments for US Treasury bonds. In mid-October, an agreement was reached to temporarily raise the debt ceiling and re-open the government at current spending levels. There was only a small increase in market volatility

as a breach of the debt ceiling approached, suggesting that market participants were confident that a deal would be brokered before a default occurred. Nevertheless, US Treasuries play a vital role as collateral in a wide range of financial markets, and a default on US Treasury bonds represents a significant tail risk if the debt ceiling is not increased permanently in coming months.

Some emerging market economies have experienced funding pressure.

Emerging market economies experienced strong capital inflows in recent years, aided by the search for yield brought on by accommodative advanced economy monetary policy. Strong capital flows have underpinned credit and asset price growth in many economies. In recent months the prospect of reduced monetary stimulus in advanced economies and the weaker growth outlook for emerging markets has seen some of these capital flows weaken. To date, economies that are more reliant on foreign funding have been most affected, with India, Indonesia and South Africa experiencing sharp currency declines (figure 3.8). The falling currencies could result in rising debt burdens (in local currency terms) for some borrowers with foreign currency denominated debt. However, emerging economies have generally strengthened their resilience since the Asian Financial Crisis in the late 1990s by increasing their reliance on domestic currency debt and building up foreign exchange reserves.

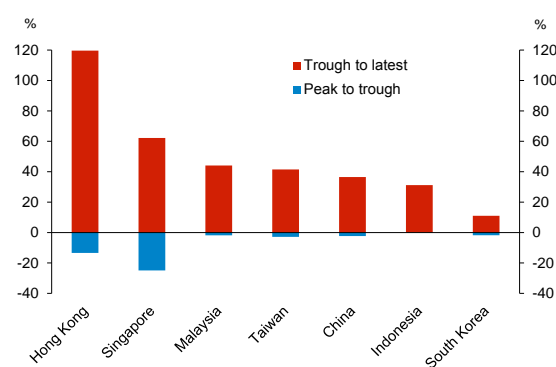
Figure 3.8
Movements in selected currencies against the USD



Source: Bloomberg.

With the exception of India and Indonesia, most of New Zealand's emerging market trading partners in the Asia Pacific region have current account surpluses. As a result, they have been less affected by the recent reduction in global appetite for emerging market debt. Nevertheless, domestic imbalances have increased in many of these economies since the GFC. Residential property prices have appreciated significantly (figure 3.9), often accompanied by credit growth in excess of nominal GDP. This trend has continued in several economies in recent months, and some have further refined macro-prudential policies targeted at the housing market.

Figure 3.9
Residential property prices in key emerging market trading partners



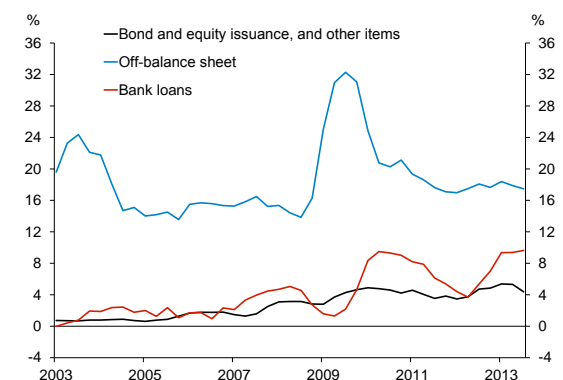
Source: Haver.
Note: See data sheet for details.

A disruptive slowdown in China remains a possibility.

China experienced a property investment and construction boom in the years after the GFC, driven by the introduction of a major fiscal and monetary stimulus. Credit expanded rapidly as the Government encouraged banks to lend, while property prices also appreciated (figure 3.9). Much of that credit was lent to local governments to provide infrastructure loans. In recent years, the authorities have sought to moderate property market pressures and credit growth in the regulated banking sector. However, overall credit has continued to increase much faster than nominal GDP, with the shadow banking system – financial intermediaries and funding markets sitting outside the traditional banking sector – accounting for a larger share of financing. Much of this growth is related to off-balance

sheet activities of banks (figure 3.10), often via wealth management products that offer higher deposit rates than the regulated banking sector.

Figure 3.10
Sources of financing in China
(flow of financing as a percent of GDP)



Source: Haver.
Note: Off-balance sheet lending includes entrusted loans, trust loans and bank accepted bills.

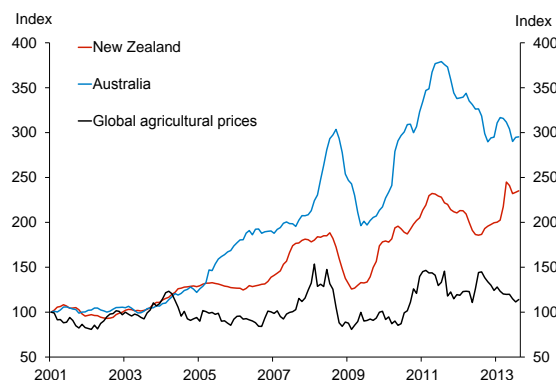
As the authorities have moved to slow the investment boom, Chinese growth has slowed to 7.8 percent over the past year. Additional large fiscal stimulus is unlikely given the financial stability risks built up over recent years, and this implies lower growth in the future. As the transition to slower growth occurs, there is a risk that some of the credit extended during the investment boom turns out to be of lower quality than initially assessed, potentially resulting in losses to the financial system that could tighten credit conditions and significantly slow the economy. An increase in loan losses could be amplified if funding is withdrawn from the shadow banking sector, seeking the relative safety of the regulated banks.

Slowing Chinese growth has implications for Australia...

In recent years, strong Chinese growth has provided a significant boost to Australia, helping to drive a record-high terms of trade and strong mining exports, and stimulating investment in the resources sector. As China has slowed, export commodity prices for Australia have declined from elevated levels (figure 3.11). This is occurring at a time when the major resources investment phase is coming to an end. The Reserve Bank of Australia has responded

with substantial cuts in Australian interest rates over the past 18 months to provide support for domestic demand.

Figure 3.11
Australian and New Zealand export commodity price indices
(world prices, January 2001=100)



Source: RBA, ANZ, Dow Jones-UBS.

Australian housing market activity appears to have picked up in recent months. Australian banks, including the 'big 4' banks with large subsidiaries in New Zealand, hold strong capital buffers compared to their international peers and are now some of the most highly rated banks in the world. However, risks to financial stability could increase if low interest rates stimulate a significant acceleration in house prices and household borrowing.

...although New Zealand commodity prices have proved relatively resilient.

To date the soft commodities that New Zealand exports have proved relatively resilient to the slow-down in emerging economies. Milk prices are currently at historically high levels. New Zealand commodity export prices have outperformed global agricultural prices, partly reflecting growing demand from Chinese consumers for New Zealand dairy products (figure 3.11). If growth slows sharply in China, New Zealand commodity prices could fall materially, with negative implications for the indebted agricultural sector (see chapter 4). New Zealand would also be affected indirectly through its strong trade links to the Australian economy, and through the strong linkages between the Australian and New Zealand banking systems.

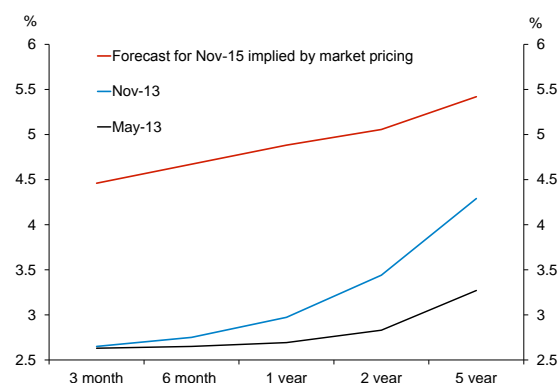
The New Zealand dollar has remained elevated.

The New Zealand dollar (NZD) has remained broadly unchanged relative to the USD since the *May Report*. Although the NZD depreciated in the months following the *May Report*, it has been on an appreciating trend since the start of September, partly reflecting the strengthening outlook for the domestic economy (figure 3.8). The NZD has appreciated against the Australian dollar (AUD) over the past six months, reflecting the differing trajectories for interest rates and the terms of trade of the two economies. Overall, the New Zealand dollar Trade Weighted Index remains at elevated levels. Following the increase in global long-term interest rates in May, there were some signs of volatility in the NZD market and a higher probability of a sharp depreciation implied by the options market. Although market conditions have calmed, the recent experience highlights the tendency for the NZD to come under pressure during periods of heightened market volatility.

Long-term wholesale interest rates have increased...

The increase in global long-term interest rates has had a significant impact on longer-term wholesale yields in New Zealand. Longer-term swap rates, used by the banks to match their funding book with their fixed interest rate lending, have increased markedly since May (figure 3.12). In addition to higher global interest rates, domestic interest rates have been influenced by increased market expectations of a rise in the Official Cash Rate (OCR) and increased domestic demand for hedging interest rate risk. Rising swap rates have led to increases in mortgage rates at terms of greater than one year. Over the next two years, mortgage rates across the curve are likely to increase further. While the timing and size of any interest rate increases is uncertain, the current market pricing is for the 90-day interest rate to rise by around 180 basis points over the next two years and the 2-year swap rate to rise by around 145 basis points (see chapter 4 and box B for more discussion of the risks around rising interest rates).

Figure 3.12
Wholesale interest rates
(bank bill and swap rates)



Source: Reuters, Bloomberg.

Note: Forecast for November 2015 is constructed from forward markets.

...and bank funding spreads remain above pre-crisis levels.

Bank funding spreads, representing the difference between the actual cost of bank debt and benchmark interest rates, have generally eased during 2013, but remain well above levels that existed before the GFC (table 3.1). The increase in funding spreads since 2007 has partly offset the low level of the OCR. Long-term offshore funding costs have increased due to a higher risk premium on long-term bank debt in offshore markets, as well as higher costs for New Zealand banks in hedging the exchange rate risk involved in issuing foreign currency bonds. The spread between deposit rates and benchmark interest rates has also increased, reflecting efforts by banks to increase their share of retail funding in order to meet both market and regulatory requirements for 'core funding' after the crisis (chapter 5).

Table 3.1
Indicative bank funding spreads before and after the global financial crisis
(NZD cost relative to benchmark interest rates)

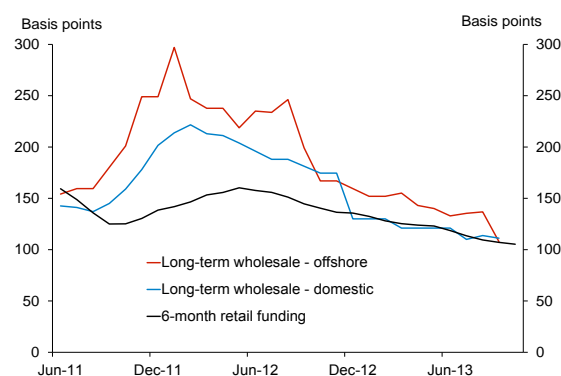
	2000-2007 (basis points)	Current (basis points)
5-year offshore issue	15	140
- Cost to issue in US market	10	105
- Cost of hedging exchange rate risk (USD/NZD)	5	35
6-month retail deposit	-40	110

Source: RBNZ liquidity survey, *Retail Interest Rate Survey*, Bloomberg, RBNZ calculations.

Note: Benchmark interest rates are the relevant swap rate or bank bill rate depending on the term.

Funding spreads on bank debt issued offshore have eased since early 2012 (figure 3.13). However, during this period the banks have had little need to issue offshore funding due to strong retail funding (see chapter 5). Strong retail funding has enabled banks to reduce the spreads on six-month retail deposits (the most common fixed term deposit). Funding spreads for long-term debt issued in the domestic market have also been on a downward trend since early 2012. For example, a bond issue by Westpac in September received a record subscription for a New Zealand bank and was issued at a spread to wholesale swap rates of just over 100 basis points.

Figure 3.13
Bank funding costs
(3-month average spread to benchmark rates)



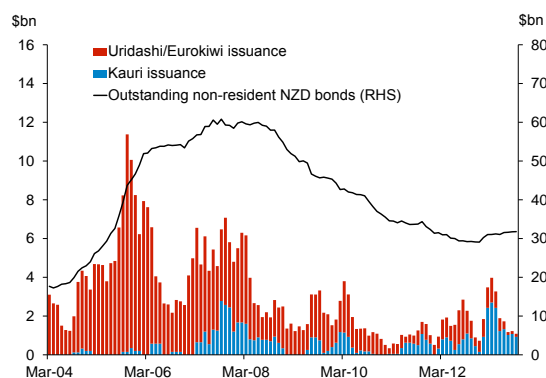
Source: RBNZ liquidity survey, SSR.

Note: Benchmark interest rates are the relevant swap rate or bank bill rate depending on the term. Long-term wholesale includes the average landed costs of new debt issues of between 4 and 7 years.

Bank hedging costs remain high.

The cost of hedging exchange rate risk (the basis swap spread) has increased significantly since the GFC (table 3.1) and now represents a material portion of bank funding costs. This increase reflects the significant reduction in issuance of highly-rated NZD debt by non-residents in the form of Kauri, Eurokiwi and Uridashi bonds. This in turn has limited the supply of bonds that could be swapped with the banks' foreign currency debt to allow them to hedge exchange rate risk (figure 3.14).

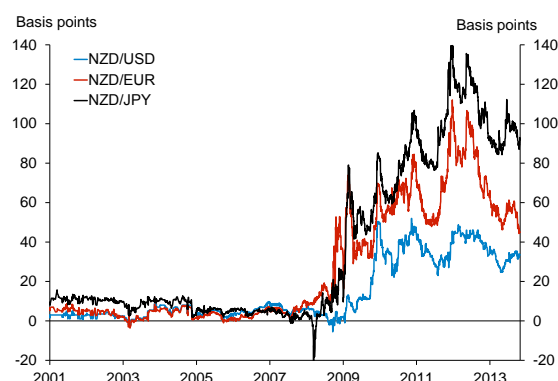
Figure 3.14
Non-resident NZD bonds – issuance and outstanding
(3-monthly total)



Over the past year, issuance of non-resident NZD bonds has increased, and this has resulted in some reduction in the NZD/USD basis swap (figure 3.15).

The cost of hedging funding issued in yen and euro has declined more sharply, reflecting the reduction in the respective costs of first swapping these currencies to USD in offshore markets. Issuance of Kauri bonds was particularly strong early in 2013, although more moderate issuance in recent months has been associated with a rebound in basis swap spreads.

Figure 3.15
Hedging cost for 5-year debt
(basis swap spreads)



The outlook for basis swap spreads is uncertain. Current elevated spreads and a growing yield advantage compared to Australian Kangaroo bonds could encourage further Kauri and Eurokiwi/Uridashi issues, but demand for basis swaps from New Zealand banks is also likely to pick up in line with rising domestic credit growth.

4 Financial risks to the New Zealand economy

Financial risk in the domestic economy has continued to build since the previous *Report*. Strong demand for housing in the face of limited supply has fuelled strong house price growth, while household indebtedness, which is already high relative to household income, has started to increase again. These developments increase the likelihood of a disruptive correction in the housing market at some point in the future.

Debt levels are high within the farming sector, with the bulk of that debt heavily concentrated in the dairy sector. While farm credit growth has slowed over the past six months, high debt levels make the sector vulnerable to either an abrupt fall in commodity prices or a rise in debt servicing costs. The dairy sector is set to receive a large boost from high milk prices and strong volumes this coming season, offsetting some of the negative impact from the drought experienced last summer. The boost to incomes will give the sector some scope to repay debt, thereby reducing its vulnerability to adverse conditions. However, if higher incomes instead result in a return to pre-crisis borrowing and spending patterns, financial risk in the agricultural sector could rise.

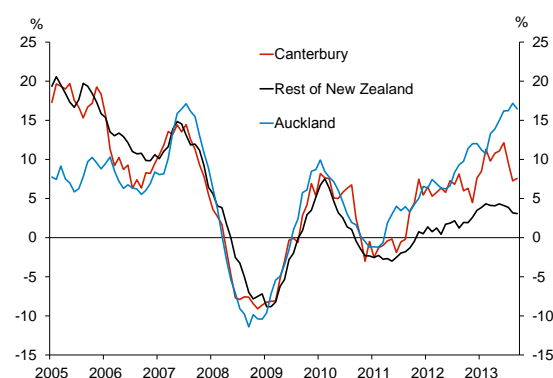
The New Zealand economy has substantial net external liabilities as a result of persistent current account deficits. During much of the past decade, the shortfall in national savings has resulted in offshore borrowing by the banking system to meet credit demand by the private sector. Since 2010, the private sector saving rate has increased at a time of relatively moderate investment activity, enabling banks to fund credit growth with domestic deposits. This positive development has strengthened the funding profile of the banking system, but may be tested if the demand for credit continues to grow over the next few years.

Housing market developments are increasing financial system risks.

House price inflation is currently running at 9.8 percent per annum nationwide. House price increases in Auckland and Christchurch are outpacing those in the rest of the country (figure 4.1). House prices are rising from levels that already appear high when measured relative to incomes or rents and when compared with similar metrics in other countries (see chapter 2).

Annual housing-related credit growth, while still moderate compared to the rates seen before the crisis, has increased to 5.7 percent from 4 percent at the start of the year.¹ As a consequence, household debt relative to income, which increased sharply over the

Figure 4.1
House price growth by region
(annual 3-month moving average)



Source: REINZ.

¹ The household credit data are based on the outstanding stock of credit from period to period, net of new lending and principal repayments. Debt repayments have significantly

increased in the years following the GFC – given low interest rates. Household credit growth may therefore understate the current strength of housing-related credit demand.

last housing cycle in 2003-2007, is rising once again. These developments increase the risk of a future sharp correction in house prices, which could place considerable pressure on the balance sheets of indebted households. As discussed in chapter 2, such a correction could also cause distress for the banking system and other lenders.

Rising house prices reflect a demand-supply imbalance...

Housing market developments in Auckland and Christchurch reflect a combination of factors. The pressures in Christchurch reflect the damage to the housing stock from the earthquakes and the demands of the rebuild.

Housing imbalances in Auckland partly reflect low rates of building over a number of years when the population was growing. As a result, rental inflation has been higher in Auckland than in the rest of New Zealand. However, more recently, house price inflation has significantly outpaced rental inflation in Auckland, suggesting that demand to purchase homes has been influenced by much more than the demand for accommodation.

Moves by the Auckland Council to fast-track resource consents under the Auckland Housing Accord should see supply respond faster than otherwise would be the case. Nevertheless the Accord's targets are ambitious and it will take time for land to be developed and new houses built. Without measures directed towards restraining demand, house prices could continue to rise rapidly and pose an increasing risk to financial stability.

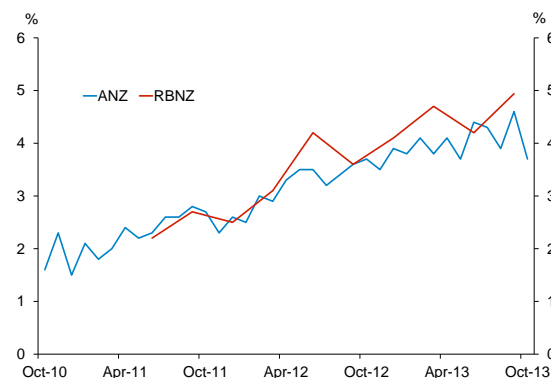
...and low real borrowing costs...

Since the Global Financial Crisis (GFC) interest rates have fallen to historic lows in response to a weak economy. Nominal interest rates have remained low for some time, helping to boost demand for housing. Real borrowing rates have declined even further once house price (or inflation) expectations are taken into account. Low real rates make housing investment relatively attractive from the standpoint of the borrower.

Survey measures of house price expectations have increased as the housing market has strengthened (figure 4.2), although such measures remain relatively

moderate. It is possible that expectations of future house price rises among households and investors have been tempered by policy and regulatory actions including the recent introduction of LVR restrictions and measures to encourage greater housing supply.

Figure 4.2
House price inflation expectations
(1-year ahead)

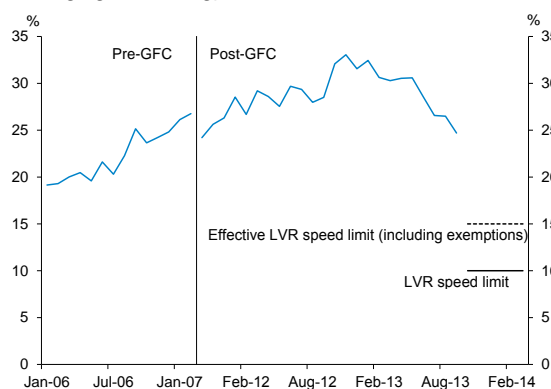


Source: ANZ Roy Morgan survey, RBNZ/UMR housing survey.

...accentuated by an increase in high-LVR lending...

A rise in housing demand has been partly underpinned by a relaxation in bank lending standards since late 2010. In particular, banks have increased the proportion of their lending to high-LVR borrowers. In 2007, the proportion of borrowing that was classed as high-LVR was around 20 percent of total monthly lending flows, but that flow increased to a peak of around 30 percent over the past year (figure 4.3).

Figure 4.3
High-LVR residential mortgage lending
(new origination flows, percent of total mortgage lending)



Source: RBNZ private reporting.

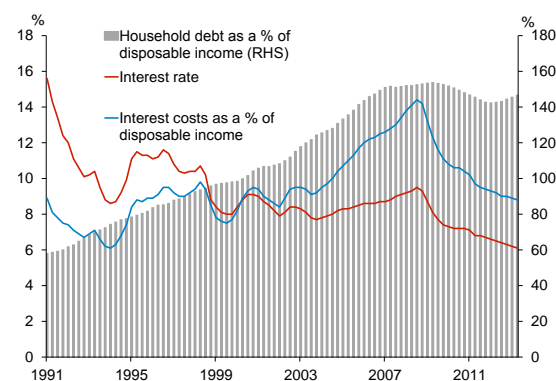
...and a turnaround in net migration.

The lift in housing demand also reflects the positive net permanent and long-term (PLT) migration into New Zealand. For the year to September net PLT migration was around 15,000, comprising a combination of fewer overall departures, more New Zealanders returning from Australia and an increase in arrivals from other regions. While there is evidence suggesting that a reduction in departures has a smaller effect on housing demand than an increase in arrivals, the boost to population is likely to add some impetus to housing demand. Strong inward migration was a significant factor underpinning the initial stages of the last housing cycle in the early 2000s.

Household debt continues to grow faster than income.

Over the past year, the growth in household debt has outpaced income growth. The household debt-to-disposable income ratio is once again approaching its historic highs (figure 4.4). Interest servicing costs are at their lowest level in about 11 years, reflecting mortgage interest rates which, until recently, have been at 50 year lows. However, with fixed mortgage rates already starting to increase, and interest rate increases projected to occur in 2014, debt servicing costs can be expected to increase (box B). Borrowers with high debt-to-income ratios could find themselves increasingly stretched to meet their debt commitments.

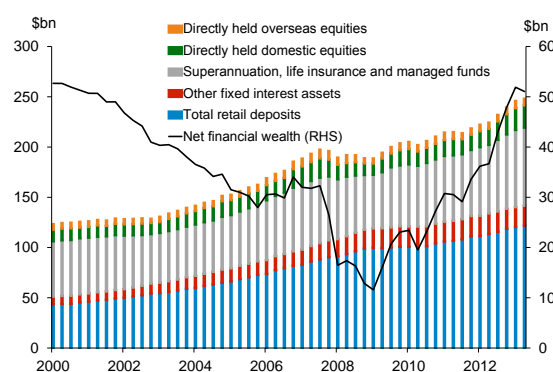
Figure 4.4
Household debt and interest costs



Source: RBNZ Household Financial Assets and Liabilities.
Note: The interest rate is a weighted average rate on housing and consumer loans.

The household sector's net financial wealth – the difference between the sector's financial assets and liabilities – increased following the GFC. In an uncertain environment, households chose to curtail debt and to increase precautionary saving by accumulating financial assets such as retail deposits (figure 4.5). Household deposits account for just under half of household financial assets. Despite a recent decline in deposit interest rates, deposits have continued to grow strongly. While total deposits have likely been boosted by Canterbury earthquake insurance payouts, they have also reflected higher savings. As the overall balance sheet position of households improves due to the rising value of housing assets, there is a risk that households start to save less out of disposable income.

Figure 4.5
Household financial assets and net financial wealth



Source: RBNZ Household Financial Assets and Liabilities.
Note: Net financial wealth is household financial assets less housing and consumer debt.

Box B

The debt servicing ratio as an early warning indicator

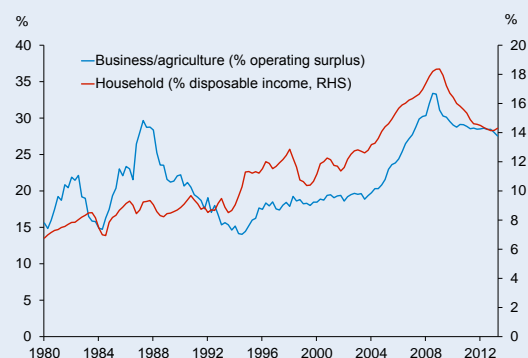
The debt servicing ratio (DSR) measures the proportion of income that is required to service debt. An elevated aggregate DSR implies that, on average, borrowers have less spare income after debt repayment to absorb unexpected expenses. Under these circumstances, a decline in incomes or rise in interest rates is more likely to lead to a large rise in defaults, as debt becomes more difficult to service. Measured across a group of borrowers, or across the economy as a whole, an elevated DSR can therefore give an indication of increased vulnerability in the financial system.

Reserve Bank estimates suggest that the average DSR within the household and business/agricultural sectors reached stretched levels prior to the GFC (figure B1). The rise in the sectoral DSRs was primarily driven by a rapid increase in debt levels in relation to income, but rising interest rates also contributed towards the end of the financial cycle. By 2006, the increase in the economy-wide DSR was similar in magnitude to the run-ups that occurred prior to previous financial crises in advanced economies.²

In general, the DSR is best suited to forecasting financial stress over relatively short time frames of up to one year.³ During the pre-GFC period, the early warning signal of future financial distress produced by the DSR occurred later than for other early warning indicators monitored by the Reserve Bank. There are, however, some episodes where the DSR can provide different information to other early warning indicators. An example is the rapid rise in the DSR of the business/

agricultural sector coinciding with the period of financial stress in the late 1980s. In this case, the rise in the DSR occurred mainly as a consequence of rapid increases in interest rates and the DSR indicated greater vulnerability than other indicators that do not account for the role of interest rates.

Figure B1
Sectoral DSRs
(principal and interest as a share of income)



Source: Statistics New Zealand, RBNZ SSR, RBNZ calculations.

Note: Where available, the average interest rate paid is used to compute interest payments. Principal repayments are estimated assuming a constant average time to maturity. The data sheet has further details.

Although low interest rates in recent years have reduced the DSR, there are reasons to be cautious. The DSR remains elevated in broader historical context, particularly in the household sector, due to the large amount of debt outstanding. There is also evidence that current low mortgage rates are contributing to the recent increases in house prices and household debt. The decline in mortgage rates over the past 18 months has allowed borrowers to service more debt (figure B2, overleaf). This, in turn, may have encouraged borrowers to bid more for properties and contributed to the rising share of high-LVR lending and increases in house prices.

Combined with the elevated level of outstanding debt, this increased risk taking could make the financial system more vulnerable to a rise in interest rates, particularly if borrowers have not allowed for interest rate increases in their financial planning. Longer-term fixed mortgage rates have already increased in recent months. Based on current market pricing for wholesale

² The early warning properties of the economy-wide DSR in predicting financial crises is examined by Drehman, M and M Juselius (2012) "Do debt service costs affect macroeconomic and financial stability?", BIS *Quarterly Review*, September 2012. A persistent rise in the DSR above its 15-year trend is found to be a reliable signal of a period of financial stress within the next year.

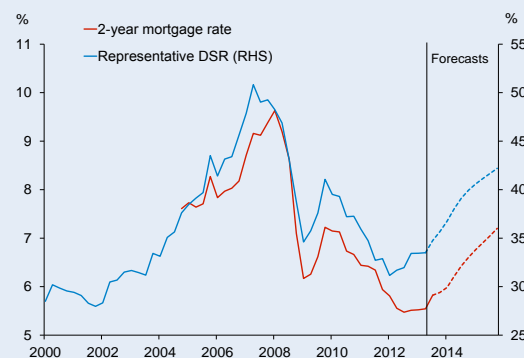
³ For example, box B of the November 2011 *Report* shows that a de-trended credit-to-GDP ratio, another prominent early warning indicator, was signalling a significant increase in financial system risk by 2005. A forthcoming *Bulletin* article will discuss the suite of macro-prudential indicators used by the Reserve Bank.

interest rates, short-term mortgage rates are set to increase from early next year. Applying typical spreads between mortgage rates observed in recent years, current market pricing implies mortgage rates in the vicinity of 7-8 percent within the next 2-3 years. Rising mortgage rates are likely to affect the household DSR fairly rapidly, as most mortgages remain on floating or relatively short fixed terms of less than one year.

Rising interest rates will reduce the servicing capacity of new entrants to the housing market (figure B2), helping to bring about a reduction in house price pressures. Existing borrowers with stretched debt positions, typically buyers with high LVRs that have entered the market in recent years, will also be disproportionately affected by the rise in mortgage rates. Borrowers faced with elevated DSRs may have a range of options to ease financial pressures, including reducing consumption, lengthening the tenure of loans or temporarily switching to interest-only loans. However,

if rising interest rates are combined with a weakening macroeconomic environment and falling household incomes, many of these options could be unavailable and a rise in defaults would be more likely.

Figure B2
DSR for a representative new entrant to the housing market
(principal and interest as a share of income)



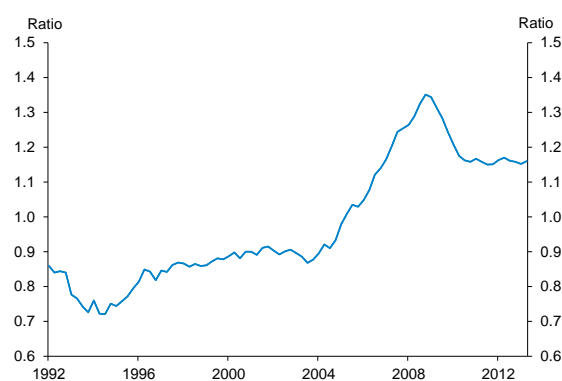
Source: RBNZ, PropertyIQ, Statistics New Zealand.

Note: Forecasts are constructed using the September MPS forecasts for wholesale interest rates, house prices and disposable income. The data sheet has further details.

Business sector indebtedness fell following the GFC.

Business sector credit grew strongly during the upswing in the previous cycle, with growth strongest in the property-related sectors. Following the GFC there was a marked reduction in the stock of outstanding business credit relative to income (figure 4.6), as the availability of credit tightened and the business sector embarked on a process of strengthening balance sheets. Retained earnings have been used to repay debt and build additional resilience for an uncertain trading environment. Business credit growth has remained modest over the past two years despite the return to more robust rates of economic growth.

Figure 4.6
Business credit-to-operating surplus



Source: Statistics New Zealand, RBNZ.

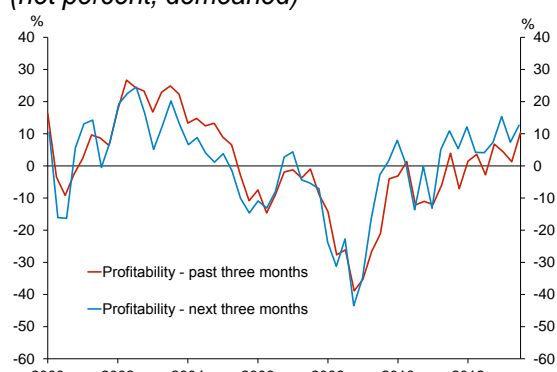
Business sector outlook is improving...

With the economy strengthening in late 2012 and the first half of 2013, business activity and confidence have increased since the last *Report*. Surveyed measures of business profitability have increased for small and large businesses alike (figure 4.7), and the proportion of overdue debtors has declined, helping to improve business balance sheets.

Figure 4.7

Business profits

(net percent, demeaned)



Source: NZIER *Quarterly Survey of Business Opinion* (QSBO).

Over the next two years construction activity associated with the Canterbury rebuild is expected to drive a large part of the economic cycle and industries that support and supply materials to the building industry are expected to face a significant increase in demand. Non-construction businesses also now appear to be increasing investment spending following reduced expenditure in the past few years.

...although credit growth has slowed over the past six months.

Despite the improvement in the business outlook, businesses remain cautious in their appetite for debt. Borrowing from banks and other financial institutions by non-property related business has slowed to near zero growth since late 2012 (figure 4.8). There has also been little net growth in corporate bond issuance by non-financial corporates. Banks report that demand for credit to fund capital expenditure or asset purchases in the non-property business sector has been subdued over the past year. Since business investment has continued to grow, it

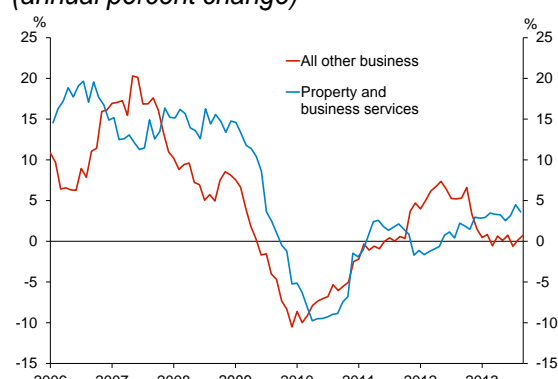
appears that businesses are, for the moment, choosing to fund that investment using their internal resources.

Trading conditions for some businesses remain challenging, helping to explain the sector's cautious attitude towards debt. The high NZD continues to constrain competitiveness of export and import-competing businesses by dampening sales volumes, margins and revenues.

Figure 4.8

Property and non-property business lending

(annual percent change)



Source: RBNZ SSR.

By contrast, property-related borrowing has increased over the past year as confidence and demand have returned to the sector (figure 4.8). Banks report that a significant portion of the increase in property-related credit is attributable to increased property development activity in Auckland and Christchurch.

Activity in the commercial property sector has increased.

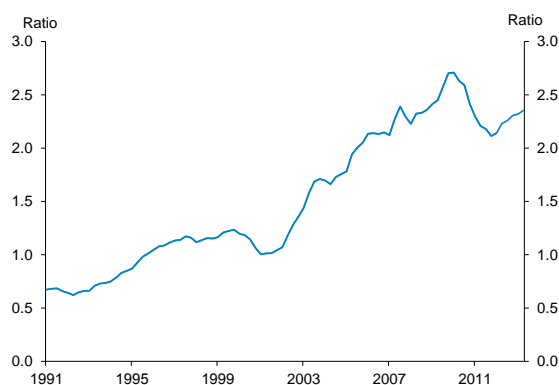
Demand for commercial property has continued to increase as economic growth has strengthened. This is resulting in an increase in borrowing within the property sector. Both rents and capital values have been rising as vacancy rates have begun to decline. Profitability for those who have been able to retain a steady income flow has been supported by low interest rates. Landlords face earthquake strengthening issues, prompted by the Canterbury earthquakes and highlighted by the more recent earthquakes centred near Cook Strait. Timelines have been announced for owners of earthquake prone buildings to complete structural work or demolition. In the

meantime, building tenants have been willing to pay a premium for buildings that are up to code, while demand for lower-grade buildings that often require expensive strengthening work has declined sharply. Buildings that undergo strengthening work should attract higher rents, and obtain more favourable insurance and funding options, but strengthening is unlikely to be financially viable in every case.

Farm sector debt remains high.

As mentioned in previous *Reports* the farming sector has elevated levels of debt (figure 4.9). This partly reflects a surge in investment related to dairy conversions during the last cycle to take advantage of high milk prices, and the associated strong growth in farm land prices. High debt levels increase the vulnerability of the sector to periods when commodity prices decline, depressing both income and land collateral values, or when debt servicing costs rise substantially.

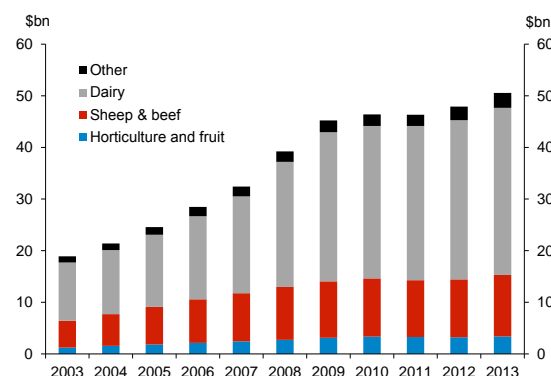
Figure 4.9
Agricultural debt-to-export earnings



Source: Statistics New Zealand, RBNZ SSR.

Agricultural debt is heavily concentrated in the dairy sector (figure 4.10). Given the record forecast milk price payout (see below), dairy farmers may take this opportunity to reduce their debt burden. However, there is a risk that farmers make borrowing decisions based on the assumption of consistently high future commodity prices. Such expectations could be capitalised into farm land prices and so encourage further borrowing. That would leave parts of the sector even more exposed to a downturn in earnings.

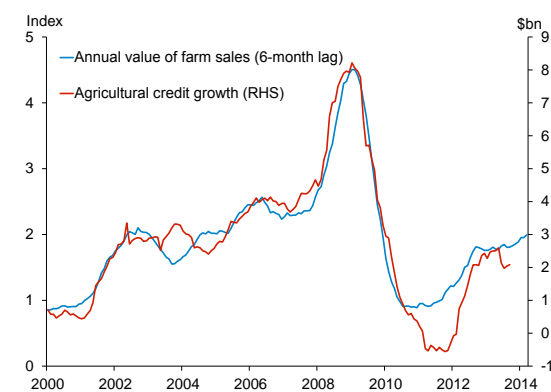
Figure 4.10
Agriculture debt by sector
(June years)



Source: RBNZ Annual Agricultural Survey.

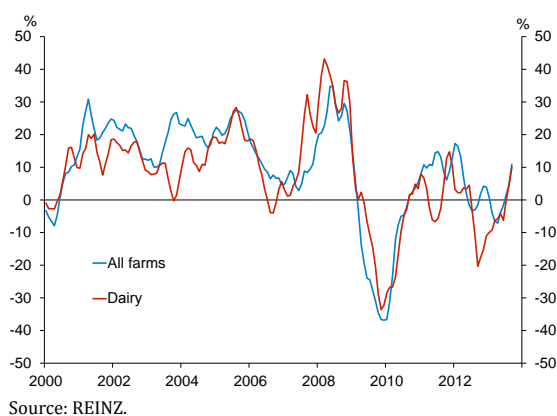
There are tentative signs that activity within the rural property market has picked up, with the value of farm sales rising 5 percent since the start of the year. Based on past historical relationships, this increase in sales activity suggests that credit growth may also rise (figure 4.11). The recent slowdown in credit growth can be partly explained by farmers repaying the additional working capital requirements arising from the drought earlier in the year. Farm price inflation has also picked up in recent months as confidence returns to the sector (figure 4.12).

Figure 4.11
Value of farm sales and credit growth



Source: REINZ, RBNZ SSR.

Figure 4.12
Farm price inflation
(annual 3-month moving average)



Drought has negatively impacted the agricultural sector...

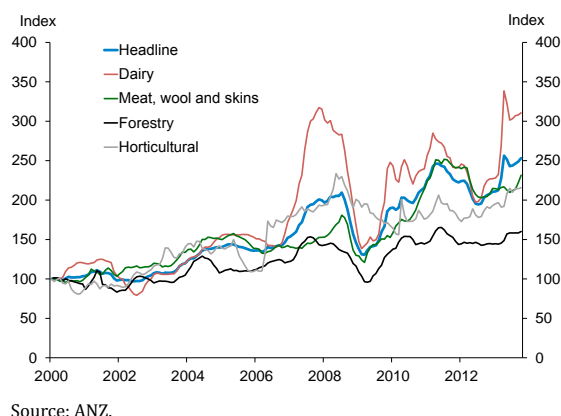
The effects from the drought over the 2012/13 summer season have negatively affected many farmers. The value of agricultural exports has fallen since the start of this year as reduced volumes have out-weighted an increase in international commodity prices. Associated food manufacturing production also declined. In the sheep and beef industry, the drought led to a faster slaughter schedule as farmers shed stock numbers. Legacy effects from the drop in stock numbers will be felt in the coming years for sheep and beef farmers. As a result, some farmers are likely to face relatively stretched financial conditions.

...although dairy prices have increased.

For the dairy sector, domestic drought, and falling global milk production more generally, contributed to a large rise in dairy prices in 2013. International buyers have been prepared to pay a premium to secure supply. Emerging market demand has also remained robust, helping to keep dairy prices elevated (figure 4.13). Reflecting higher dairy prices, Fonterra forecasts a record total payout for the 2013/14 season of \$8.62 – a significant increase on last year's payout of \$6.16. The high payout will incentivise strong production growth for the coming year. Early indications are that production has been strong since the start of the season, as climatic conditions have been more favourable. A significant increase in milk

production volumes could, however, put some downward pressure on prices.

Figure 4.13
Export commodity prices
(SDR terms, seasonally adjusted)

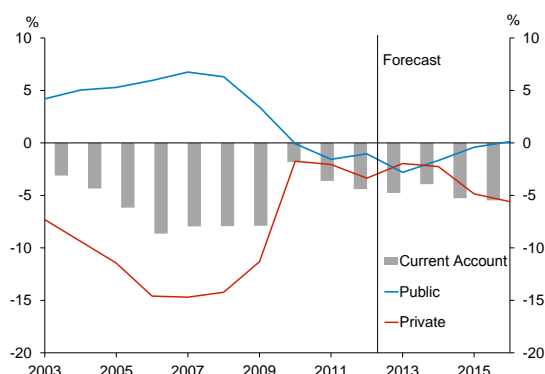


Savings-investment imbalances reflected in persistent current account deficits...

The collective choices of the household, business, farming and government sectors in relation to expenditure, savings and the use of debt are ultimately mirrored in New Zealand's external position. National saving has fallen short of the country's aggregate investment spending over an extended period and the difference has been reflected in the need to draw on foreign savings. Low saving rates created an imbalance between savings and investment for the private sector, contributing to persistent current account deficits. Offshore borrowing by the New Zealand banking system was the principal channel through which the additional investment was funded.

Since the GFC, private sector saving has increased and investment has declined, narrowing the private sector's contribution to the current account deficit (figure 4.14). Partly offsetting that increase in private sector saving has been a substantial reduction in public sector saving, reflecting increased government spending and accompanying fiscal deficits funded, in part, by offshore borrowing. In the 2013 *Budget*, the Government re-affirmed its commitment to return to surplus by 2014/15, which will reduce its overall domestic and offshore borrowing requirements.

Figure 4.14
Sectoral contribution to the current account
(percent of GDP, March years)



Source: Statistics New Zealand.

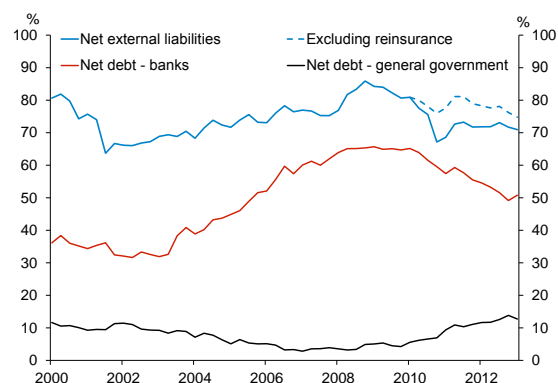
Note: The contribution of each sector to the current account is sectoral gross saving minus sectoral investment. The contribution of government to the current account is net lending from the System of National Accounts' general government sector accounts, while private net saving is derived residually from the current account.

...and a high level of external indebtedness.

New Zealand's net external liabilities relative to GDP have fallen over the past several years despite rising government debt (figure 4.15), owing to an improvement in the level of private sector savings, and from reinsurance obligations relating to the Canterbury earthquakes.

Statistics New Zealand captures these obligations as an asset in the net international investment position, which has resulted in a reduction in net external liabilities. Over time those obligations are being paid out by the insurance sector to fund rebuilding work. Through the rebuild process the pressure on domestic resources will increase, which will likely contribute to a widening in the current account deficit and increasing international debt levels – unwinding the recent reduction in the net external liabilities to some degree.

Figure 4.15
Net external liabilities
(percent of GDP)



Source: Statistics New Zealand.

5 New Zealand's financial institutions

New Zealand's banks are performing well, with profitability underpinned by an ongoing reduction in non-performing loans. Net interest margins remain stable despite an increase in competition among banks for residential mortgage lending. Strong retail funding has allowed banks to maintain their core funding ratios, and to meet credit demand without having to increase their reliance on offshore funding. Banks continue to improve their capital buffers, comfortably meeting the new minimum capital requirements imposed at the start of this year under the Basel III regime.

However, growing imbalances in the housing market, and the increase in high loan-to-value (LVR) lending over the past 18 months, have increased the risks of a sharp rise in losses in the event of a significant housing market downturn. The recent decision to impose LVR restrictions will help to prevent a deterioration in the resilience of the banking system.

Non-bank lending institutions currently provide only a small share of credit in New Zealand. However, the imposition of restrictions on banks' high-LVR mortgage lending could see a pick-up in lending by this sector. The sector is being monitored for activity that would dilute the effectiveness of the LVR restriction.

The three-year licensing process as part of the new prudential regime for the insurance sector was completed on 9 September 2013. There has been a major effort by the industry to comply with the new prudential requirements. Insurers continue to make steady progress on settling the Canterbury earthquakes claims, with almost half of all estimated insurance claims having been paid.

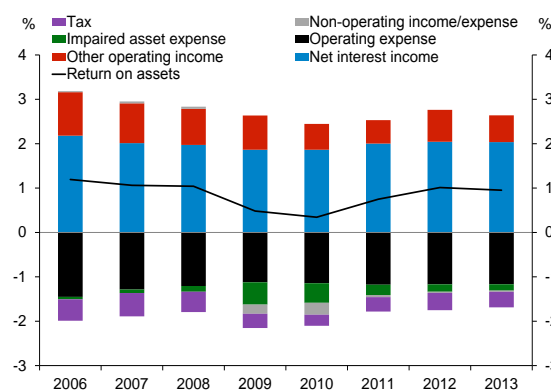
5.1 Banking sector

Banking system profitability remains strong...

A reduction in non-performing loans and an overall increase in net interest margins since 2009 have underpinned a recovery in the profitability of the New Zealand banking system. The banking system is now maintaining a return on assets (ROA) of around 1 percent per annum (figure 5.1).

ROA has almost recovered to around the average levels that prevailed prior to the Global Financial Crisis (GFC). However banks' return on equity (ROE) still remains below pre-GFC levels. This partly reflects market demand for higher levels of loss absorbing capacity after the crisis, and regulatory efforts to improve the resilience of the banking system. In the New Zealand context, low loan loss provisioning and low operating costs have meant

Figure 5.1
New Zealand bank profitability
(percent of assets, June years)



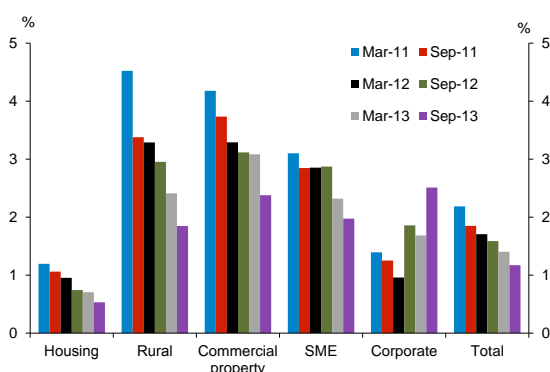
Source: Registered bank *Disclosure Statements*.
Note: Return on assets is after tax.

that ROE is higher than for banks in many other advanced economies. ROE is likely to be permanently lower than pre-GFC levels as a consequence of the ongoing implementation of the new Basel III capital adequacy requirements.¹

... supported by declining non-performing loans.

Overall problem loans have been trending down since the peak in 2011, and the system-wide problem loan ratio is now at its lowest since 2009, at 1.2 percent. Non-performing loans have fallen markedly in the commercial property and rural sectors, with drought conditions earlier in the year having little apparent impact on asset quality (figure 5.2). Corporate non-performing loans have increased due to a few large exposures. Housing lending continues to have the lowest rates of problem loans as a share of sectoral lending.

Figure 5.2
Sectoral non-performing loans
(percent of sectoral lending)



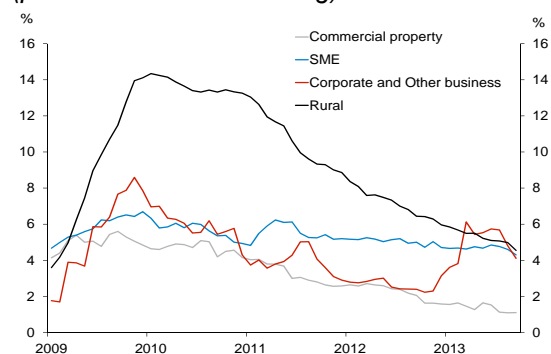
Source: Based on private reporting data from 13 registered banks.
Note: Includes impaired and 90-day past due assets. Data are not standardised and definitions may vary across banks.

The decline in problem loans is likely to continue.

Overall, non-performing loans are expected to continue to gradually decline. Any deterioration in asset quality in the rural sector due to the drought earlier this year is likely to be countered by recent increases in commodity prices, which will reduce rural debt-to-income ratios. However, watchlist loans – which indicate banks' expectations of future deterioration in asset quality – have increased for corporate sector lending (figure 5.3). Those

watchlist loans have started to translate into increases in corporate non-performing loans.

Figure 5.3
Sectoral watchlist loans
(percent of sectoral lending)



Source: Based on private reporting data from 13 registered banks.

While non-performing housing loans have been on a downward trend, the increase in high-LVR lending over the past 18 months has increased the risks of a sharp rise in losses in the event of a significant housing market downturn. The LVR restrictions on residential mortgage lending are expected to support the underlying credit quality of banks' housing exposures over time. Under one scenario featuring a substantial fall in house prices commencing in two years' time, the Reserve Bank estimates that downturn loss rates on banks' mortgage portfolios would be 10-15 percent lower than otherwise.²

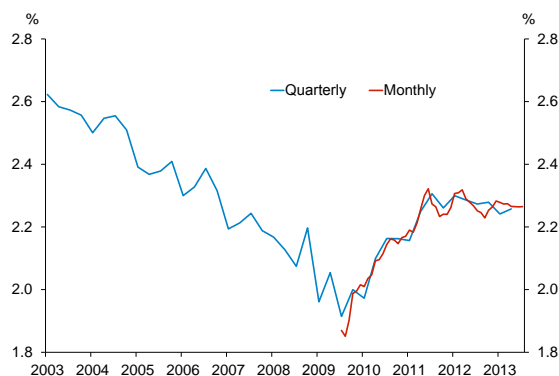
Net interest margins have been stable.

After recovering from a post-crisis low in 2009, net interest margins have remained relatively stable since mid-2011 (figure 5.4). Bank funding costs have fallen over this period and banks have largely passed on the falling costs in the form of lower borrowing rates. As noted in the last *Report*, price competition for fixed mortgage rate products has also been particularly strong, reducing the overall gross yield on interest-earning assets. However, there are more recent signs that competition in the mortgage market has eased as LVR restrictions have been implemented.

¹ See box C in the November 2012 *Report* for a discussion of the impact of increased bank capital on expected ROE.

² See Bloor and MacDonald (2013), cited in box A, chapter 2.

Figure 5.4
Retail banks' net interest margin

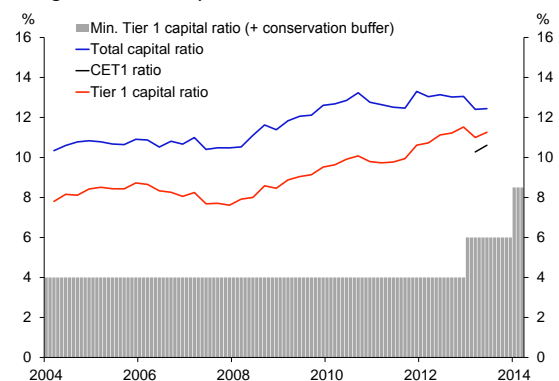


Source: RBNZ Net Interest Margin Survey, Disclosure Statements.
Note: Net interest margin is defined as net interest income divided by average interest earning assets. Series are annualised and monthly data are a three month moving average.

Banks are holding more capital.

All locally incorporated banks are well capitalised and comfortably meet the Reserve Bank's new Basel III requirements that were introduced in January 2013 (figure 5.5). Locally incorporated banks must now hold a higher minimum level of Tier 1 capital to risk-weighted assets (RWA) – 6 percent from 4 percent previously. Banks must also hold a majority of Tier 1 capital as common equity (CET1) – 4.5 percent of RWA. System-wide Tier 1 capital now stands at 11.3 percent, and common equity Tier 1 capital at 10.6 percent as at June 2013.

Figure 5.5
Regulatory capital ratios
(locally incorporated banks, percent of risk-weighted assets)



Source: Disclosure Statements.

From 30 September 2013, changes were introduced affecting the risk weightings of high-LVR housing lending by 'internal models' banks, following stage one of the

Reserve Bank's housing review. Internal models banks are those locally incorporated banks that use their own models (approved for use by the Reserve Bank) to generate appropriate risk weights. Assuming no change in capital by banks, these changes will result in reported Tier 1 ratios falling by around 40 basis points.

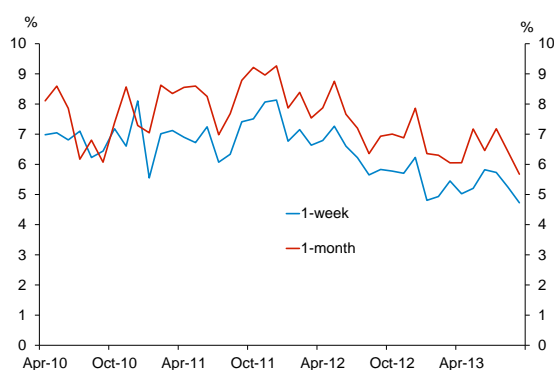
From the beginning of 2014, most locally incorporated banks will be required to hold an additional 2.5 percent of common equity as a 'conservation buffer'.³ Banks will be permitted to operate within the conservation buffer, but face restrictions on distributions to shareholders if they do so. Banks are well placed to meet this requirement, with all locally incorporated banks reporting *de facto* conservation buffers well above 2.5 percent. Further, the recognition of capital instruments that do not comply with new Basel III criteria will be phased out over three years, starting in January 2014. Banks have started to alter the composition of their capital in anticipation of these changes.

Banks have adequate liquidity buffers...

The banking system continues to maintain a satisfactory level of liquidity. Under the Reserve Bank's prudential liquidity policy, banks are required to hold liquidity buffers that satisfy one-week and one-month mismatch ratios, to reduce the risk that an individual bank is brought down by a short-term loss of confidence. These ratios project the bank's net cash outflows, over a week and a month respectively, against available liquid assets that could be used at short notice to raise cash in the event a bank had difficulty obtaining additional funding. Liquid assets can include currency, government securities, claims on the Reserve Bank, and a range of non-government securities rated BBB- or higher. All banks subject to the liquidity policy hold liquidity buffers above the minimum requirement of a zero mismatch ratio (figure 5.6).

³ The Reserve Bank will also be able to impose a counter-cyclical capital buffer (CCB) from January 2014 as part of its macro-prudential policy framework. A CCB helps to build financial system resilience by requiring banks to hold additional capital during periods of excessive credit growth, which can be subsequently released at the onset of financial system stress.

Figure 5.6
Banking system mismatch ratios
(share of funding)

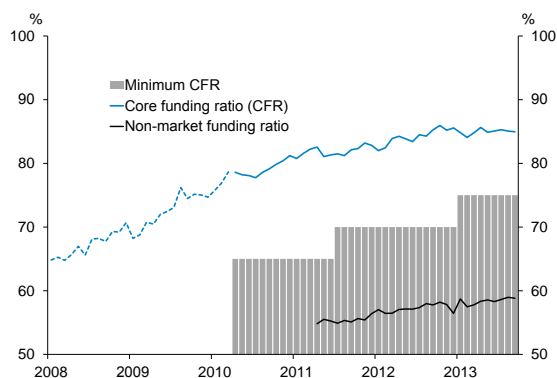


Source: RBNZ liquidity statistics.

...and their funding position continues to improve...

As well as holding substantial portfolios of liquid assets, banks are funding their lending with an increasing proportion of stable or core funding. Core funding includes customer deposits, longer-term wholesale borrowing, and bank capital. The minimum core funding requirement was increased to 75 percent from January 2013. The banking system is currently well above that ratio, with system core funding close to 85 percent (figure 5.7). Those levels of core funding have been supported by modest lending growth, and continued strong growth in non-market funding (mainly retail deposits).

Figure 5.7
Banking system core and non-market funding
(percent of loans and advances)



Source: RBNZ Standardised Statistical Return (SSR), RBNZ liquidity statistics.

Note: The dotted section of the core funding ratio is an approximation based on SSR data. The non-market funding ratio shows the contribution of non-market funding to core funding.

... aided by strong retail funding growth.

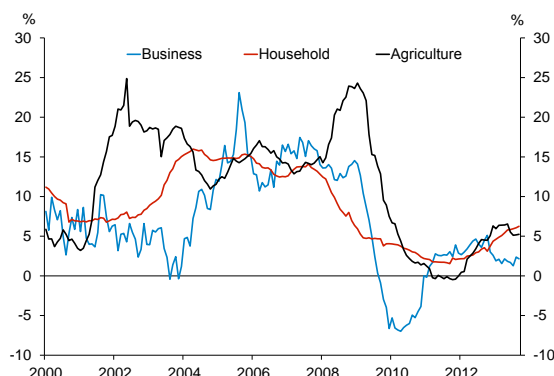
As discussed in the last *Report*, banks have been experiencing strong growth in retail funding in recent years. That growth has been driven by increased precautionary savings and the increased attractiveness of bank deposits compared to other forms of investment. Insurance payouts relating to the Canterbury earthquakes have also boosted retail funding, with total claims payments of just over \$16 billion having been made (see section 5.3).

The growth in retail funding is likely to start to fall as the economy strengthens, business investment starts to rise, and insurance payouts are increasingly withdrawn to fund the rebuild in Canterbury. As risk appetite rises, there is likely to be some substitution towards assets other than bank deposits. That shift could be encouraged by the partial sales of State-owned enterprises, and by any continued improvement in the performance of equities and other financial assets.

Credit growth is gradually increasing...

Total bank lending is currently growing at just under 5 percent in annual terms, up from a low of -1.3 percent in late 2009. Household sector lending grew 6 percent over the past year, although the pace of growth has started to soften in recent months. The rate of growth in lending to business and, of late, to agriculture has been falling in annual terms (figure 5.8).

Figure 5.8
Banking system lending by sector
(annual percentage change)

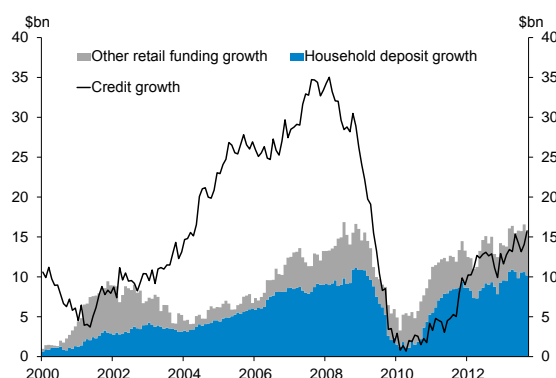


Source: RBNZ SSR.

Lending growth to the household sector has risen in line with continued momentum in the housing market. However, LVR restrictions are expected to exert some braking influence – the Reserve Bank estimates that housing credit growth will be 1-3 percent lower than would otherwise have been the case over the first year that the restrictions are in place. The outlook for agricultural lending growth will largely depend on the balance between indebted dairy farmers using current high dairy payouts to pay down debt and any increase in farm investment in response to the more positive outlook.

In previous economic cycles banks have typically funded credit growth through greater use of international funding markets. Banks have been able to fund increased credit demand over the past few years mainly through retail deposits (figure 5.9). However, if retail deposit growth slows or credit growth picks up, banks' use of offshore funding could increase. Wholesale funding is susceptible to a number of risks, which could result in a sharp increase in funding costs, or periods of restricted access (see chapter 3).

Figure 5.9
Retail funding and credit growth
(annual growth, dollar amount)



Source: RBNZ SSR.

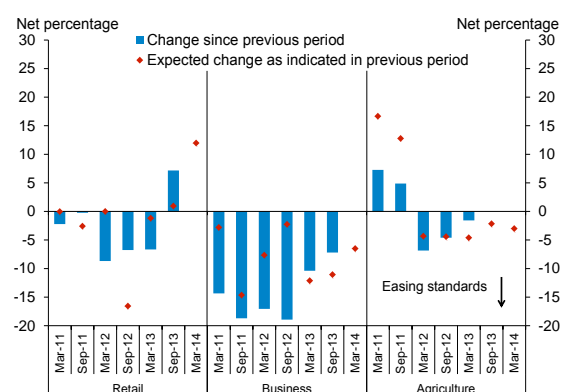
... partly reflecting an easing in lending standards.

As noted in the last *Report*, there was a loosening of access to credit in the household sector, particularly with respect to high-LVR residential mortgages. Results from the Reserve Bank's September *Credit Conditions Survey* indicate that access to high-LVR credit has tightened following the announcement of the LVR restrictions (see box A). Banks also attribute the tightening in credit criteria

to the increase in risk weights used in the calculation of regulatory capital for high-LVR lending, as part of the stage one review of housing capital requirements effective 30 September 2013.

Banks report a continued easing in lending standards to the business sector (figure 5.10), most notably for commercial property and corporate lending. That easing has mostly been seen in price-based conditions (reflecting the margin between lending rates and funding costs). Credit conditions for the agriculture sector remain largely unchanged.

Figure 5.10
Change in banks' lending standards



Source: RBNZ *Credit Conditions Survey*.

Note: Net percentage is the percentage of respondents reporting a tightening of lending standards, minus the percentage of respondents reporting an easing. Individual responses are weighted by market share.

The tightening in lending standards to the household sector might contribute to a further easing of lending standards to the business and agricultural sectors as banks seek to maintain lending growth. Banks may also compete more aggressively for low-LVR lending.

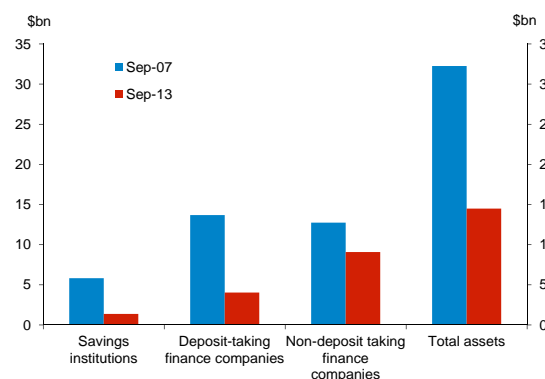
5.2 Other providers of intermediated credit

The non-bank lending sector has declined significantly over the past five years...

Although the banking system accounts for just over 97 percent of intermediated credit, New Zealand households and firms also borrow from non-bank lending institutions (NBLIs). These other providers of intermediated credit include savings institutions (credit unions and building societies) and deposit-taking finance companies – both regulated by the Reserve Bank under the non-bank deposit taking (NBDT) regime – and non-deposit taking finance companies.

There has been significant change in the non-bank lending sector over the past five years, including receiverships, liquidations, mergers, and some movement into the banking sector. As a result, total assets of the sector are less than half the total assets in 2007 (figure 5.11), when the sector accounted for around 8 percent of all credit intermediated by domestic financial institutions.

Figure 5.11
Non-bank lending institutions' assets



Source: RBNZ SSR.

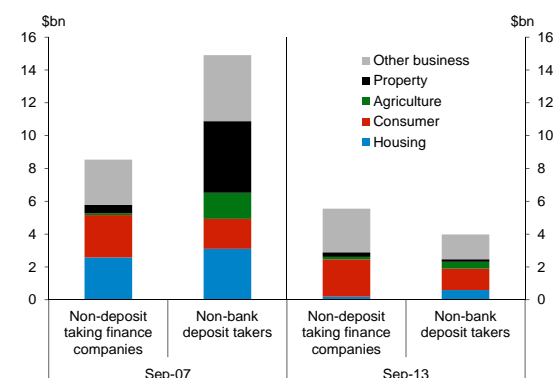
Note: Assets include securitised household and business loans. Data for deposit-taking finance companies exclude those assets that are in moratorium or receivership.

...but lending from the sector could increase in response to LVR restrictions...

The NBLI sector has been relatively stable over the last six months. However, following the introduction of the restriction on banks' high-LVR residential mortgage lending, this sector could expand as it takes on lending that banks are unable to provide. The NBLI sector's exposure to the housing sector is significantly smaller than it was

in 2007 (figure 5.12) but that exposure could increase if the sector responds to demand for high-LVR residential mortgages. The NBLIs' consumer lending could also increase as borrowers seek ways to boost deposits due to LVR restrictions.

Figure 5.12
Exposures of non-bank lending institutions



Source: RBNZ SSR.

Note: Data exclude those assets of deposit-taking finance companies that are in moratorium or receivership.

...increasing their funding requirements.

NBDTs receive most of their funding from retail customers and that funding structure places a natural brake on how quickly lending activity can increase in response to borrower demand. By contrast, non-deposit taking finance companies are funded by a mix of bank loans, equity, and wholesale funding. In the near-term at least, it is more likely that non-deposit taking finance companies will have greater scope to expand and take on any additional housing-related lending.

The Reserve Bank will be monitoring how NBLIs fund any change in their lending to households, particularly if New Zealand banks provide additional funding. The Reserve Bank would be concerned if New Zealand banks significantly increased the funding of NBLI's high-LVR residential mortgage lending. Such activity would undermine the objectives of the LVR speed limit in dampening housing-related credit growth and house price inflation (box C).

Box C

Regulatory leakage from the LVR restrictions framework

'Regulatory leakage' describes financial activity that escapes the regulatory perimeter, and moves to financial products, markets, or institutions not subject to the particular regulation. In respect of LVR restrictions, regulatory leakage could involve avoidance activity by the regulated banks, including activities designed to 'game' the restrictions or exploit loopholes. It could also involve borrowers shifting to non-bank financial intermediaries and other sources of finance.

Such developments could undermine the effectiveness of LVR restrictions. The restrictions are intended to address the recent increase in systemic risk by dampening house price growth and housing-related credit growth. If significant amounts of high-LVR lending continue to occur despite the restrictions, any dampening effect will be limited.

Regulatory leakage from the LVR restrictions may also affect the resilience of the financial system if lenders that are not subject to the restrictions have capacity to significantly increase their lending. If those lenders were or became systemically important, or if they were particularly risky, the shift of lending away from the prudentially regulated banking system could increase overall financial system risks.

The extent to which regulatory leakage will occur depends on how lenders and borrowers respond to the new incentives created by the restrictions. Some foreign lending institutions have expressed interest in entering the New Zealand market in response to LVR restrictions, but none has done so yet. Some existing non-bank mortgage lenders have reported increased borrower demand, although it is unlikely that they will have sufficient capacity to materially undermine the effectiveness of LVR restrictions.

The LVR policy has been designed to reduce the scope for regulatory leakage:

- The restrictions are not permanent, reducing the opportunities and incentives for borrowers and

lenders to undertake significant activity outside the restriction.

- They cast a wide regulatory 'net' – banks account for close to 97 percent of lending to households in New Zealand – limiting opportunities to undertake lending outside this net.
- The restrictions are framed as a 'speed limit', allowing banks to continue to provide some high-LVR lending, reducing the benefits to any new entrants to the market.
- The framework also imposes limits on some obvious avoidance activity, such as lending secured by second mortgage.
- The Reserve Bank has also emphasised it requires banks to adhere to the 'spirit' of the policy, as well as the specific regulatory requirements when undertaking lending decisions.

Further, when calibrating the restrictions, the impact of potential regulatory leakage on the effectiveness of the framework was taken into account, and is reflected in the final calibration. There is potential for the restrictions to be re-calibrated to address specific regulatory leakage, if necessary.

The Reserve Bank has been pleased with the positive engagement with industry during the consultation process, which has helped to address many of the potential problems associated with 'leakage' arising from implementation of the LVR restriction.

5.3 Insurance

Insurer licensing update

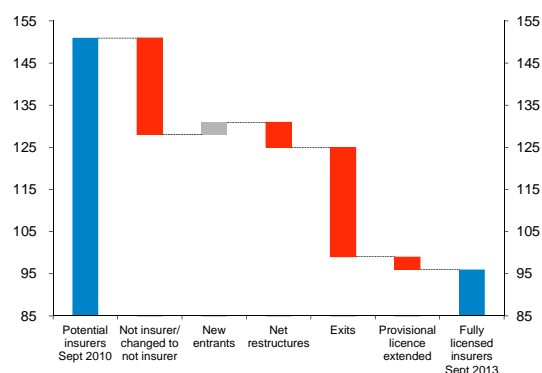
The Insurance (Prudential Supervision) Act 2010 (the Act) required all insurers carrying on business in New Zealand to have a full licence by 9 September 2013, and new insurers to have a full licence before commencing insurance business. Some insurers are exempt from prudential supervision – such as the Crown entities: Accident Compensation Corporation (ACC), Earthquake Commission (EQC) and Southern Response.

An amendment enacted recently provides an exception to the requirement to be fully licensed – qualifying insurers in run-off may continue with a provisional licence to remain supervised by the Reserve Bank. Three insurers are now operating under provisional licences – ACS (NZ) Limited, New Zealand Local Government Insurance Corporation Limited and Southbury Insurance Limited (in liquidation).

The Reserve Bank has issued 96 full insurance licences. All insurers, whether fully or provisionally licensed, are now subject to all relevant requirements of the Act and regulations.

During the three-year transition some insurers have made changes to their business to fall outside the prudential regime, some have exited by way of completed run-off or transfer of their whole portfolio to another insurer, while others have restructured between related corporate entities (figure 5.13). There have been few new entrants to the market.

Figure 5.13
Number of insurers during prudential supervision transition



Source: RBNZ.

Counting both provisional and full licences, 201 licences have been issued to 114 insurers. For 15 insurers their provisional licence has been cancelled, leaving 99 insurers that continue to hold licences – 96 fully licensed and three provisionally licensed.

The Reserve Bank is required to grant certain exemptions to qualifying insurers and also approve proposed transfers of insurance business between insurers where it is assessed to be in policyholder interests. In the past three years, 50 insurers have been granted exemptions – the most common being insurers in approved jurisdictions that can use the solvency requirements of their home supervisor, and qualifying small insurers that are exempted from certain requirements that would otherwise apply. The Reserve Bank has also approved 15 transfers of insurance business. To date six non-insurance entities have been granted an exemption from the use of prohibited words such as 'insurance'.

In addition to licensing, the Reserve Bank has also issued (and in some instances also updated), 34 specific prudential regulations, eight standards, and 12 guidelines that apply to relevant insurers. These are all found on the Reserve Bank's website.⁴ The recently enacted Insurance (Prudential Supervision) Amendment Act 2013 is discussed in chapter 7.

As well as general prudential requirements that apply to all insurers, some insurers have been issued with specific conditions of licence that are tailored to their individual circumstances while also having regard to the purposes and principles of the Act. At this stage, these are not being published by the Reserve Bank. Examples include increased solvency margin requirements for insurers facing significant risks that are not adequately catered for in the applicable solvency standard. Failure to comply with any condition of licence is an offence under section 23 of the Act and will be treated seriously by the Reserve Bank.

It is important to note that the Act expressly states that it is not a purpose of prudential supervision to have a zero risk of insurer failure. In the unlikely event an insurer fails and liabilities are unable to be met in full,

⁴ http://www.rbnz.govt.nz/regulation_and_supervision/insurers/

then policyholders and other creditors should not expect recourse to either the taxpayer or the Reserve Bank.

Canterbury earthquake claims progress

As at 30 September 2013, the EQC has paid \$5.3 billion in Canterbury earthquake claims, and private insurers \$10.9 billion. The total claims payments to date of \$16.3 billion (figure 5.14) is almost half of the estimated total claims costs. Private insurers have paid a higher proportion of their estimated ultimate claims costs than EQC. There remains considerable uncertainty on the ultimate claims costs with some significant issues still to be resolved through the courts and/or by negotiation.

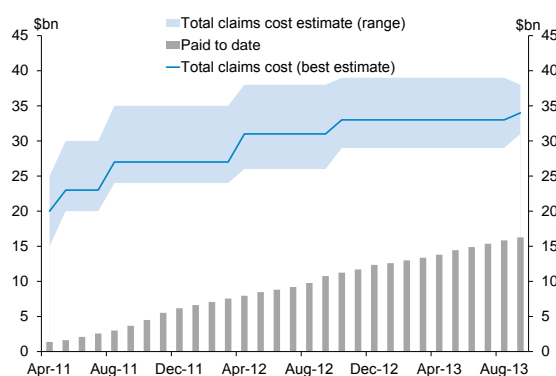
As a result of the Canterbury earthquakes five insurers have entered run-off.⁵ This includes Southern Response and Western Pacific which are not supervised by the Reserve Bank. Four insurers have specific conditions relating to capital or solvency requirements due to risks associated with their Canterbury earthquake claims.

Other developments

The recent Cook Strait earthquakes do not appear to have caused substantial losses covered by private insurance. EQC initially estimated their claims costs at about \$100 million, although this was before it began assessing any of the claims and before the end of the three month claim notification period. Other recent weather events (April 2013 floods, June 2013 storms and September 2013 Canterbury windstorm) have all had significant damage covered by insurance, but claims costs can be easily met from the insurers' financial resources.

Processes for ongoing supervision are being further developed by the Reserve Bank, and where appropriate, updates for industry will be provided. It is expected that there will be a regular statistical return for insurers (e.g., two to four a year) to assist the Reserve Bank in monitoring the financial position of individual insurers and the health of the industry as a whole on a consistent basis. The Reserve Bank will consult with insurers during 2014 on any proposals.

Figure 5.14
Progress of Canterbury earthquake insurance claims



Source: EQC, RBNZ.

Note: Includes EQC and private insurers.

⁵ ACS (NZ) Limited; China Taiping Insurance (NZ) Co., Limited; New Zealand Local Government Insurance Corporation Limited; Southern Response Earthquake Services Limited, and; Western Pacific Insurance Limited.

6 Payment and settlement systems

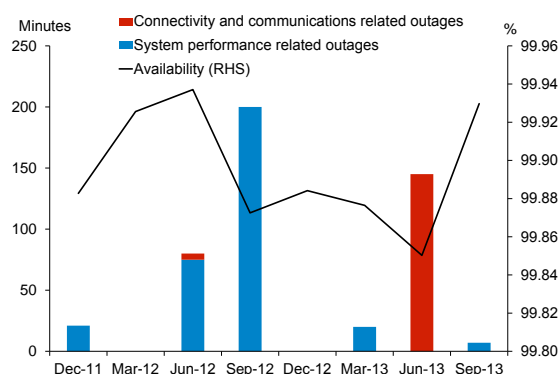
New Zealand's payment and settlement systems have continued to operate effectively over the past six months. Earthquakes that struck Wellington in July and August did not significantly disrupt payment systems as dual office capability enabled the Reserve Bank's Exchange Settlement Account System (ESAS) to operate from Auckland without delay.

The Reserve Bank has continued work with industry on contingency arrangements in the event of ESAS unavailability, given the central role ESAS plays for interbank settlement. The Reserve Bank also supports Payments NZ's (PNZ) efforts to broaden participation in the retail payments system.

Payment and settlement systems have continued to operate satisfactorily.

New Zealand's key systems have processed payments effectively and exhibited a high degree of availability over the past six months. At the core of the payments and settlement systems is ESAS which remained highly reliable during the period (figure 6.1). The Settlement Before Interchange (SBI) arrangements for retail payments have likewise performed well over the period, processing an average of about \$4 billion in daily transactions.¹

Figure 6.1
ESAS/NZClear availability and outages²



Note: Availability is for the 12 months to the current period.

¹ SBI refers to a set of arrangements for the intraday exchange of retail payment instructions between ESAS participants.
² ESAS and NZClear availability are reported together because of the close links between the two systems and because this is the way the Reserve Bank reports. See table 1 for a description of NZClear.

The Reserve Bank-owned ESAS enables real-time gross settlement of interbank transactions. A small number of incidents disrupted normal operation of ESAS since the start of the year. Two of these incidents, occurring in March and August, prevented participants from accessing the system for up to 20 minutes. In both cases the system issues have been rectified. Overall, the incidents had relatively limited impact on interbank settlement.

The earthquakes that struck Wellington in July and August had no impact on payment and settlement systems. In the case of the ESAS/NZClear systems, the Reserve Bank's dual office capability enabled the shift of responsibility for payment and settlement operations and support functions to Auckland without delay. This situation continued until the Wellington site was deemed fit for use and normal coverage resumed a few days later. New Zealand's other primary payments infrastructure is located outside Wellington, enabling the processing of payments to continue largely without disruption.

In late October, overnight payments between New Zealand banks were disrupted as a result of a technology issue encountered by one bank. This incident, however, did not affect ESAS or the SBI arrangements which both remained operational.

Table 6.1
New Zealand payment and settlement systems

System	Description	Owner/operator
High value		
Exchange Settlement Account System (ESAS)*	Provides real time gross settlement of interbank transactions across the exchange settlement accounts held with the Reserve Bank.	Reserve Bank of New Zealand.
CLS*	Provides payment versus payment settlement of foreign exchange transactions.	CLS Bank International.
Retail (Systems that primarily process payments made by individuals and small businesses)		
Settlement Before Interchange (SBI)	Arrangements for the progressive exchange during the day of retail payment instructions (cheques, direct debits and credits, automatic payments, ATM settlement transactions, internet banking and telephone banking). Payments are exchanged using SWIFT and settlement of net interbank positions occurs in ESAS.	Payments NZ Limited, a company owned by eight registered banks.
Paymark Limited	Provides a network for the interchange of point of sale debit, credit, charge and proprietary card transactions.	Paymark Limited, a company owned by the four major registered banks.
EFTPOS NZ Limited	Provides a network for the interchange of point of sale card transactions.	EFTPOS NZ Limited, a company owned by VeriFone Systems.
Securities settlement		
NZClear*	Allows members to settle fixed interest and equity transactions and make cash transfers. Interbank payments occur directly in ESAS.	Reserve Bank of New Zealand.
NZCDC Settlement System*	Used to clear and settle trades on NZX markets. The system includes a central counterparty and securities depository.	New Zealand Clearing and Depository Corporation Limited (a wholly owned subsidiary of NZX Limited).
Critical Service Providers		
SWIFT	Provides secure global financial messaging services.	Society for Worldwide Financial Telecommunication, a co-operative owned by more than 8300 financial institutions.

* Denotes systems declared to be designated settlement systems under the Reserve Bank of New Zealand Act 1989.

Work progresses to enhance business continuity planning arrangements...

As emphasised in previous *Reports*, the establishment of contingency arrangements in the event of ESAS unavailability is a priority for the Reserve Bank, given the central role of ESAS in interbank settlement. In particular, ESAS sits at the core of both SBI processing and PNZ's High Value Clearing System.

The Reserve Bank is developing a back-up version of ESAS that could allow payments to be settled should the primary and secondary systems become unavailable due to a software or database problem. The back-up system is targeted to be operational towards the end of the year.

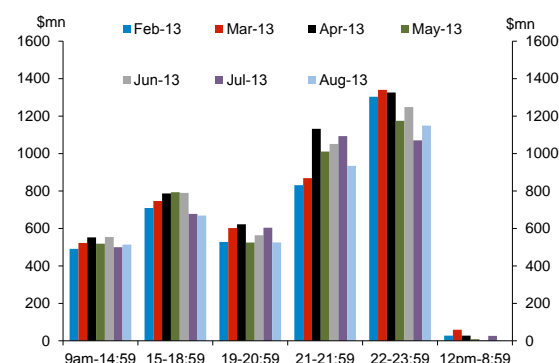
PNZ and the Reserve Bank are reviewing business continuity arrangements covering both high value and retail payments. This work will include defining the procedures that will be followed by different parties should there be a need to invoke the ESAS back-up system. From an oversight perspective, the Reserve Bank sees this as an important initiative to improve the resilience of the payment system.

...but some risks remain.

An area of outstanding concern for the Reserve Bank is the residual risk in the retail payment system. The main issues relate to customer settlement risk as well as operational and liquidity risks. Customer settlement risk refers to the risk of a payment not getting settled due to the failure of one of the banks involved in the transaction. To minimise this risk, the Reserve Bank has stressed the importance of finding ways to reduce the lag between the time a bank customer gives a payment instruction and when those payments are settled.

In addition, operational and liquidity risks arise due to the concentration of payments being made later in the day. This means that, should disruptions occur to the retail payment system for whatever reason, there is less time to resolve issues and settlement of transactions may inevitably be pushed out to a later date. Settlement of much of the value of transactions continues to occur between 9pm and midnight (figure 6.2).

Figure 6.2
SBI activity by time of day
(average daily value)



Source: RBNZ.

The Reserve Bank encourages fair and open access to the retail payment system.

The Reserve Bank supports PNZ's initiatives to broaden participation in the retail payment system and to ensure that views of other key stakeholders are taken into account. As mentioned in the *May Report*, the adoption by PNZ of new access rules, particularly around delegation of decision-making authority to independent directors, signalled a positive step towards more fair and open access to the payment system.

The Reserve Bank will be keen to see sustained progress on PNZ's engagement with a broader class of entities that have a valid interest in payments matters but are not currently direct participants in PNZ clearing systems. Examples of such entities include, but are not limited to, agency banks,³ major retail organisations, and payment card switches.

The Reserve Bank will also monitor the progress of discussions within the industry regarding a potential issue with the use of interchange and branch numbers used by existing agency banks that intend to become direct participants in the future. At present, financial institutions such as credit unions or small banks that access the payments system under an agency arrangement are required to use the interchange (bank) and branch numbers allocated by the agent bank. While this is largely a consequence of how existing SBI participants' systems

³ Agency banks are financial institutions that access the payment system via agency arrangements with other financial institutions (or 'agent' banks) that are direct participants in SBI.

are configured, there is a concern that this situation might restrict the ability of agency banks becoming direct settlement participants in the future. The Reserve Bank is conscious that such a concern is partly driven by the fact that modifying account numbers not only entails a degree of inconvenience to customers but also introduces a cost that must be allocated. The Reserve Bank encourages PNZ and its participants to progress ongoing efforts to better understand the underlying problem and to explore options for its resolution.

7 Recent developments in financial sector regulation

The information below is an overview of prudential policy initiatives since the *May Report*, together with updates on other ongoing policy developments.

Key policy initiatives include: consultation on the second stage of a housing review; further work developing solvency standards for the insurance sector; further work on the framework for strengthening the Reserve Bank's payment oversight powers; and a review of the prudential framework for non-bank deposit-takers (NBDTs).

For further information about each initiative, including the rationale for its adoption, the reader is encouraged to use the links referenced to access the relevant documents.

7.1 Housing review

The Reserve Bank recently consulted on the second stage of its housing review.¹ The consultation paper proposed a number of amendments, which are intended to reduce avoidance of the loan-to-value ratio (LVR) restrictions (see chapter 2), and improve alignment of standardised and 'internal models' banks' regulatory capital requirements.

A key proposal raised for consultation is to include in the loan amount of the LVR calculation claims and undrawn commitments that, when drawn down, would be secured by way of first ranking mortgage over the residential property. Examples of such claims are credit card limits and personal loans. Standardised banks generally add such claims to the loan amount whereas internal models banks operate under a different definition that allows scope to omit such claims.

If the proposals in consultation are adopted, the calculation may increase mortgage risk weights somewhat, but the Reserve Bank expects that the capital impact would be limited. Adoption might, however, affect the flow of high-LVR lending in cases where additional

facilities push the loan into the high-LVR bracket (loans with an LVR greater than 80 percent).

In addition, the paper called for comment on the merit in clarifying:

- That only valuations from professional independent valuers be admissible for the calculation of capital requirements.
- The 'asset class' of a property where that is ambiguous. For example, an income test is proposed for properties that can be used for residential purposes as well as generate an income such as 'life-style blocks'.
- That borrowers with more than four properties be treated as wholesale investors.

Other parts of the consultation paper sought feedback from banks on the capital treatment of more complex borrowing arrangements involving, for example, multiple borrowers and/or multiple securities.

Submissions were due 25 October 2013. The Reserve Bank will publish a summary of submissions and its policy decisions in the coming weeks.

¹ For a summary of the first stage see the *May Report*. Consultation papers and supporting information are available here: http://www.rbnz.govt.nz/regulation_and_supervision/banks/policy/5190364.html

7.2 Insurance policy

The Reserve Bank continues to work with the insurance industry to improve the Reserve Bank's solvency standards in certain areas. The Reserve Bank has consulted the insurance industry on a number of solvency issues this year.

The quality of capital

The consultation paper in this area stressed the importance that the Reserve Bank attaches to the quality of capital held by insurers because this is used to measure insurers' solvency.² The requirements surrounding the quality of capital within the current solvency standards are relatively brief. To improve the clarity and application of the solvency standards, the consultation paper proposed some general requirements and specific qualifying criteria that capital instruments issued by insurers must meet. Adherence to these requirements by insurers will help to ensure that capital instruments used to calculate insurer solvency all have the necessary important attributes of high quality capital.

Useful input on the proposals has been received from industry about how the proposed qualifying criteria could be revised in some areas. The Reserve Bank intends to move forward with revised requirements which are expected to be published in early 2014.

The treatment of guarantees and off-balance sheet exposures

The first part of the consultation paper released in May sets out a proposed framework for the treatment of guarantees of licensed insurers' assets.³ The proposal is to allow for a risk sensitive recognition of guarantees of shorter maturity than the underlying asset and to impose a limit on the extent to which the asset risk capital charge can be reduced through the use of guarantees to reflect the Reserve Bank's premise that although guarantees are an effective form of credit risk mitigation, all guarantees give rise to residual risk.

The second part proposes changes to the text of the solvency standards regarding off-balance sheet exposures. The proposed changes are aimed at clarifying the intended application of the off-balance sheet exposure requirements. The Reserve Bank received detailed feedback from 16 respondents in August. In light of the feedback received, the Reserve Bank intends to release a second consultation paper on guarantees and, in respect of 'off-balance sheet exposures', replace its proposal to amend the standards with formal guidelines.

Financial reinsurance

On 24 October the Reserve Bank published a further consultation document on financial reinsurance.⁴ This document sets out an exposure draft of proposed changes to the solvency standards to address financial reinsurance. The objective of the proposed changes is to ensure that any debt-like aspects of financial reinsurance agreements are appropriately treated in the solvency standards.

7.3 NBDT review

Under Part 5D of the Reserve Bank of New Zealand Act 1989, the Reserve Bank was required to carry out a review of the operation of the prudential regime for NBDTs, and prepare a report on this review for the Minister of Finance, by 9 September 2013. The Minister of Finance was required to present this report to Parliament.

The Reserve Bank commenced this review in late 2012. As part of the process of carrying out the review, in April 2013 the Bank released a discussion document on the operation of the regime to date and a range of potential changes to the regime. Twenty-four submissions were received on this discussion document, with a broad range of views being expressed by submitters. The Reserve Bank also carried out targeted consultation with a large number of stakeholders during the course of the review.

The report on the review has now been completed and tabled in Parliament by the Minister of Finance.⁵ In

² The consultation paper is available here: http://www.rbnz.govt.nz/regulation_and_supervision/insurers/publications/5061333.pdf

³ The consultation paper is available here: http://www.rbnz.govt.nz/regulation_and_supervision/insurers/5310220.pdf

⁴ The consultation document is available here: http://www.rbnz.govt.nz/regulation_and_supervision/insurers/publications/5504820.pdf

⁵ The report is available here: http://www.rbnz.govt.nz/regulation_and_supervision/non-bank_deposit_takers/5475890.pdf

summary, the report concludes that the regime has helped to ensure the soundness of the NBDT sector, and through that outcome, helped to promote the maintenance of a sound and efficient financial system. However, it also proposes that a number of legislative amendments be made to ensure that the regime operates more efficiently in the future. These amendments include:

- better tailoring of the definition of NBDT to entities genuinely carrying on NBDT-type business;
- some technical changes to the existing model whereby trustees act as frontline supervisors of NBDTs, with the aim of improving role clarity and enhancing the ability to respond promptly and effectively in a crisis;
- providing greater flexibility in the setting of prudential standards; and
- providing a more graduated spectrum of remedies for addressing breaches of legal requirements by NBDTs.

Treatment of charitable and religious organisations under the NBDT regime

The Reserve Bank is reviewing the treatment of charitable and religious organisations under the NBDT regime. This review is being conducted in parallel with a review by the Financial Markets Authority on the treatment of these organisations under the Securities Act 1978 (and the new Financial Markets Conduct Act 2013).

In July 2013 the Reserve Bank released a discussion document proposing that smaller charitable or religious organisations acting as NBDTs be declared out of the NBDT regime, and larger organisations of this type move to compliance with the NBDT regime over a transitional period.⁶ Eight submissions were received on this discussion document, and the Reserve Bank is considering its policy position on this issue.

7.4 Payments review

In September, the Reserve Bank released a summary of, and its responses to, submissions received following its public consultation on the framework for strengthening its payment oversight powers.⁷

The Reserve Bank received 16 written submissions in response to the consultation document. From May to July the Reserve Bank engaged with interested stakeholders on a number of key aspects through industry forums and bilateral meetings, which provided useful input to the Reserve Bank's consideration and recalibration of its original proposal.

The Reserve Bank is now finalising its policy recommendation and will seek Cabinet approval in November this year.

7.5 Updates on other policies

Basel III

New requirements for bank capital adequacy came into effect earlier this year. These requirements are part of the Basel III package of reforms. The purpose of the new requirements is to improve the quantity and quality of bank capital and to improve the coverage of risk weighted assets. From 1 January 2013 locally incorporated banks have been required to comply with the following capital ratios (relative to risk-weighted assets):

- Common equity Tier 1 capital ratio 4.5 percent.
- Tier 1 capital ratio 6 percent.
- Total capital ratio 8 percent.

From 1 January 2014 locally incorporated banks that do not hold a conservation buffer of 2.5 percent, comprised of common equity above these minima, will be subject to restrictions on dividends. All locally incorporated banks are currently comfortably meeting the new requirements (see chapter 5).

One notable feature of Basel III is that debt securities can only be included in regulatory capital if they contain a feature that requires that the instrument be either written off or converted to common equity when the issuing bank

⁶ The consultation paper is available here: http://www.rbnz.govt.nz/regulation_and_supervision/non-bank_deposit_takers/exemptions/5357271.pdf

⁷ The paper is available here: http://www.rbnz.govt.nz/regulation_and_supervision/payment_system_oversight/5476599.pdf

is not financially viable. This will improve the quality of bank capital.

Over the period until 2017, instruments issued prior to 2013 that are not compliant with the Basel III requirements can be recognised under transition rules, with the recognised value of the instrument reduced each year over that period. This, in combination with the maturity of existing instruments and asset growth, means that banks will need to issue new Basel III compliant instruments over time. Two banks have already issued Basel III compliant instruments into the domestic market.

Covered bonds

The Reserve Bank of New Zealand (Covered Bonds) Amendment Bill has been read a second time and is expected to be passed in due course.

Insurance (Prudential Supervision) Amendment Act 2013

The Insurance (Prudential Supervision) Amendment Act 2013 (the Amendment Act) came into force on 4 September 2013. The most important amendments are that:

- the Reserve Bank publish and maintain an official register of licensed insurers;
- following approval from the Reserve Bank, an overseas insurer may submit half-yearly insurer and group regulatory financial reports, prepared in accordance with home country requirements, rather than half-yearly financial reports prepared according to NZ GAAP;
- the Reserve Bank may extend the term of a provisional licence beyond 7 September 2013 that has been issued to an insurer that:
 - is subject to an insolvency proceeding; or
 - has had its application for full licence declined; or
 - has received a direction from the Reserve Bank to cease entering into new contracts of insurance.

Insurer licensing

On 7 September 2013 all insurers were required to be fully licensed. The full licensing requirements under the Insurance (Prudential Supervision) Act 2010 are more extensive than those required for a provisional licence and, on this basis, some rationalisation of the sector was anticipated. In total, 96 full licences have been issued by the Reserve Bank, and three provisional licences have been extended under the provisions outlined in the Amendment Act (see section 5.3, chapter 5).

Anti-money laundering (AML)

The Anti-Money Laundering and Countering Financing of Terrorism Act 2009 (the Act) came into full effect on 30 June 2013. As a result, the primary focus of the Reserve Bank's AML work has turned to supervision, in particular, monitoring reporting entities for compliance with the Act and related regulations. The key tools used by the Reserve Bank to monitor compliance comprise onsite inspections, desk-based reviews, and thematic surveys. The Reserve Bank takes a risk-based approach to its supervisory activities. In the initial stages of supervision the Reserve Bank has focused on registered banks, since they represent an inherently higher risk from a money laundering point of view. The monitoring work will also be bolstered by base-line analysis of the contents of annual reports provided by the Reserve Bank's reporting entities. The first of these annual reports has to be submitted to the Reserve Bank by 30 August 2014.

The Reserve Bank continues to work closely with the Financial Markets Authority and the Department of Internal Affairs to produce guidance for the regulated sector. In August 2013 the Reserve Bank published a factsheet about acting on behalf of a customer, an explanatory note on why a trust is considered a customer, and a guideline on wire transfers.

Appendices

Appendix 1

Reserve Bank enforcement

The Reserve Bank has responsibility for enforcing the regulatory obligations of entities in a number of areas, comprising banking, insurance, payments and settlements, non-bank deposit taking, and anti-money laundering and countering the financing of terrorism. The Reserve Bank monitors entities' compliance with the obligations it oversees.

In the event of identified non-compliance, the Reserve Bank has the discretion to take enforcement action and to decide what enforcement action to take. During the past 12 months, the Reserve Bank has undertaken the following public enforcement actions:

- August 2013 – the Reserve Bank prosecuted Broadlands Finance Limited for its failure to have at least two independent directors, as required by section 157L of the Reserve Bank of New Zealand Act 1989 (the Act). The company was convicted and fined \$12,000. The company has appealed.
- May 2013 – an industry notice was issued in respect of Asset Finance Limited and its failure to comply with the requirements concerning related party exposures, in breach of section 157Y of the Act.
- December 2012 – the Reserve Bank prosecuted Avanti Finance Limited for its failure to have at least two independent directors, as required by section 157L of the Act. The company was convicted and fined \$15,000.

Appendix 2

Graphical appendix¹

Figure 1
Nominal exchange rates

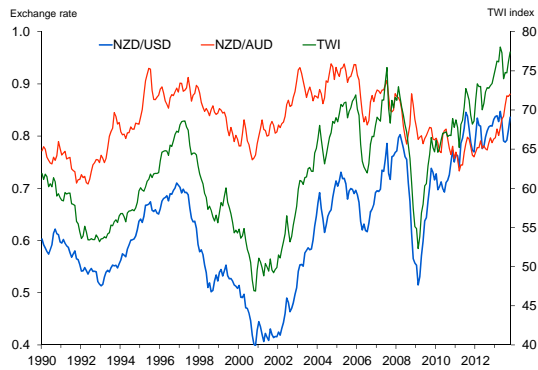


Figure 2
House price inflation
(annual percent change)

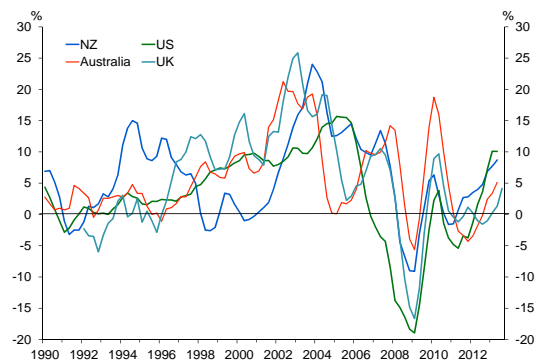


Figure 3a
Current account balance

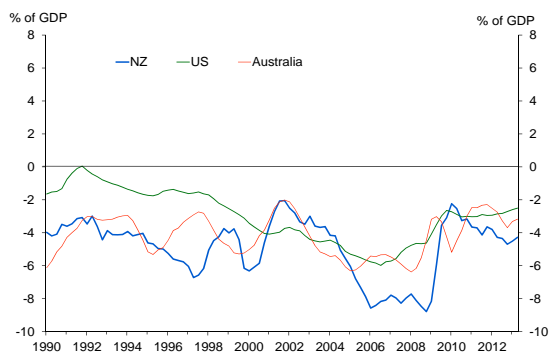


Figure 3b
Current account balance

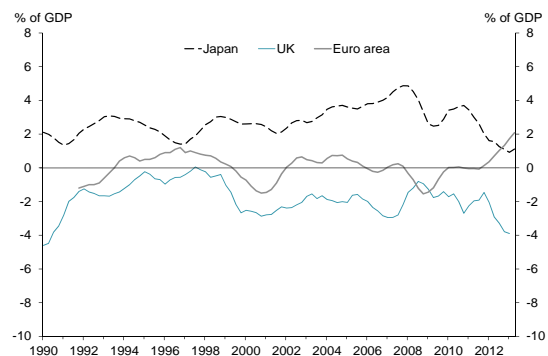


Figure 4a
Short-term interest rates

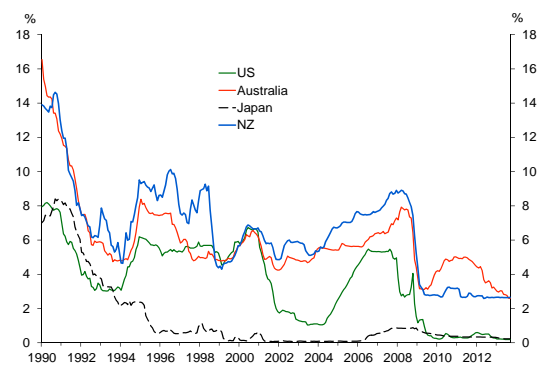
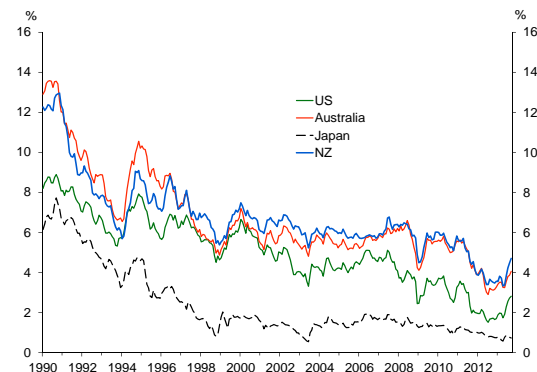


Figure 4b
Long-term interest rates



¹ The data contained in this appendix were finalised on 25 October 2013. Definitions and sources are listed on pages 51-52.

Figure 5
Household debt and servicing costs

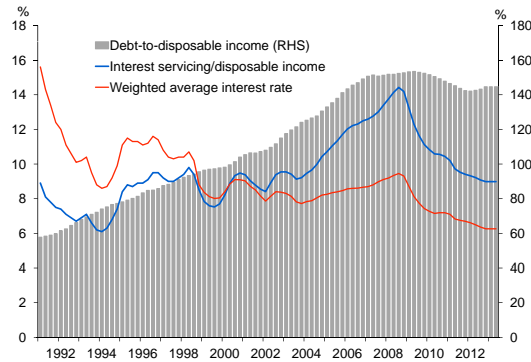


Figure 6
Household assets and liabilities

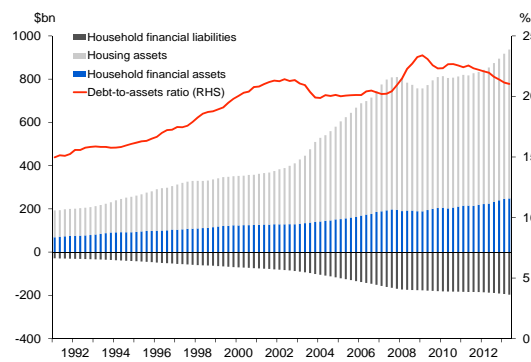


Figure 7
New Zealand house price-to-income

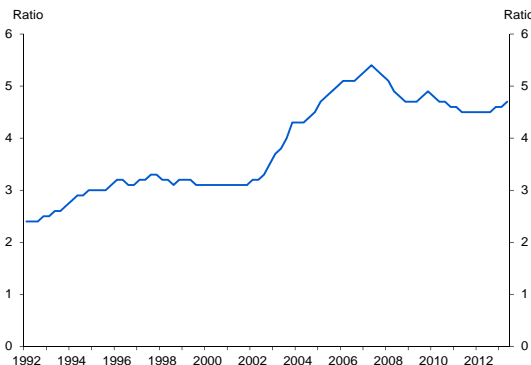


Figure 8
Government debt

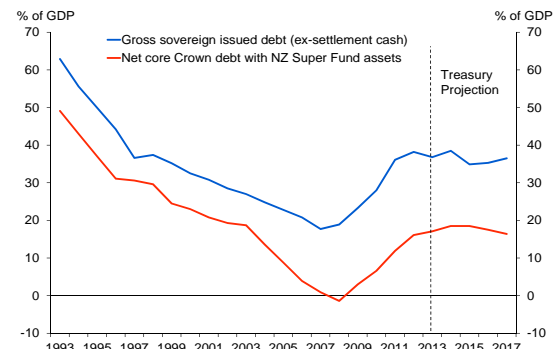


Figure 9
Government bonds on issue and turnover

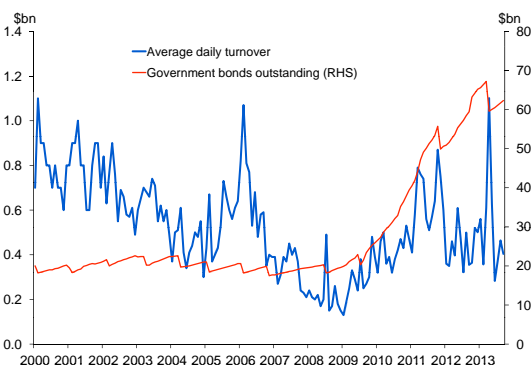


Figure 10
Non-resident holdings of New Zealand government securities

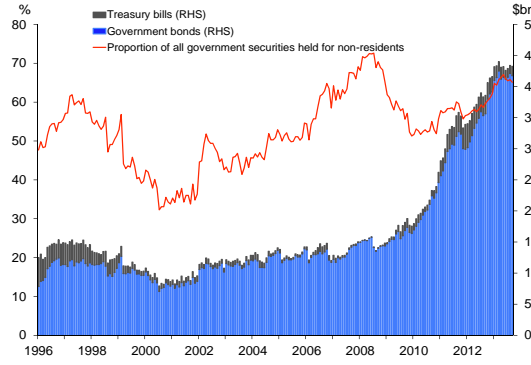


Figure 11
NZD/USD turnover in domestic markets

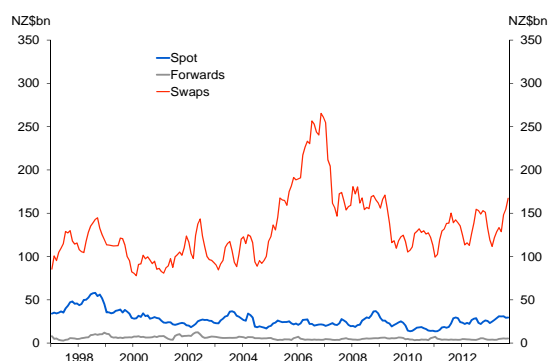


Figure 12
OCR, estimated business lending rate and effective mortgage rate

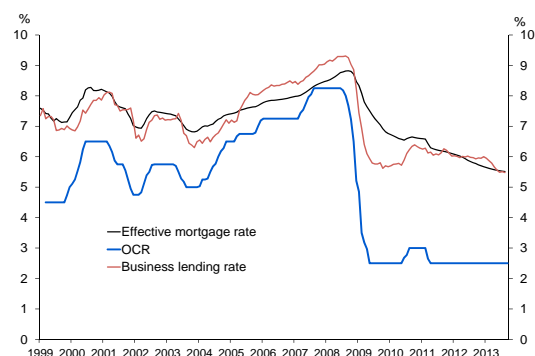


Figure 13
Equity market capitalisation

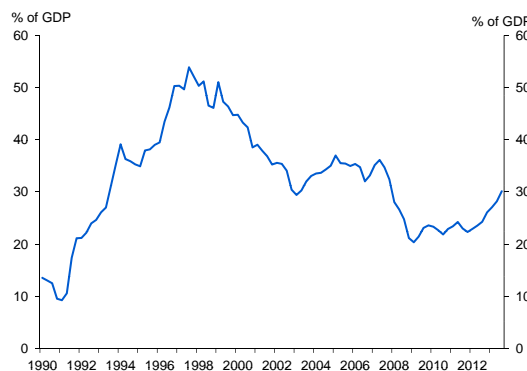


Figure 14
Banking system-wide capital ratios

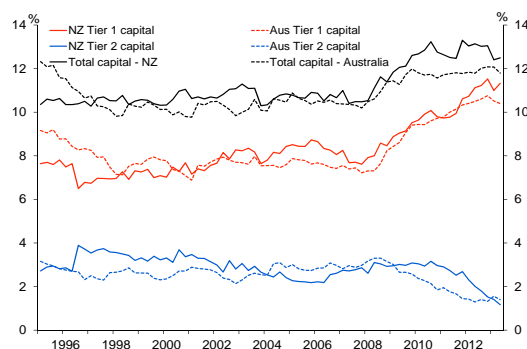


Figure 15
Bank asset quality

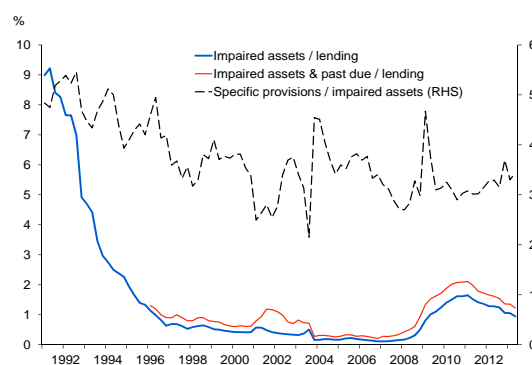


Figure 16
Bank return on assets

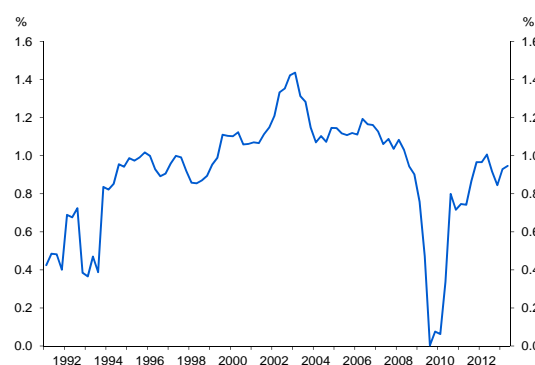


Figure 17
Bank operating costs to income

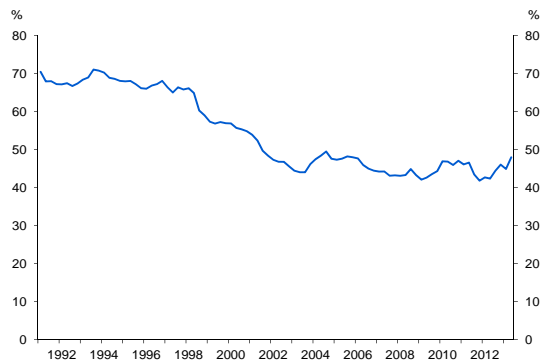


Figure 18
Bank net interest margin

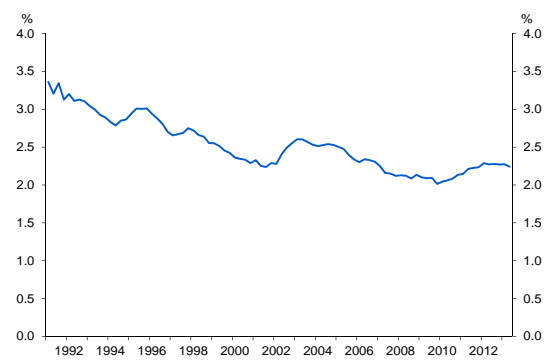


Figure 19
Bank offshore funding

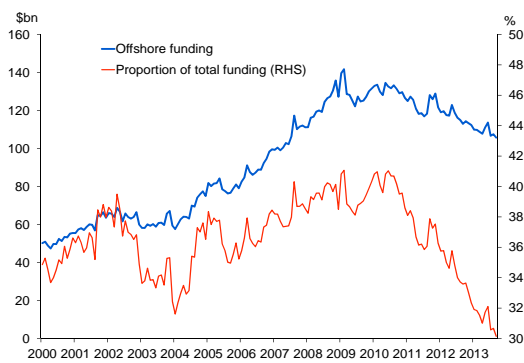
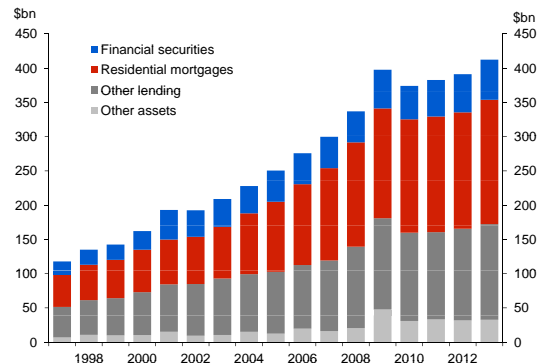


Figure 20
Bank asset composition



Notes to the graphical appendix

The appendix contains a suite of charts that appear regularly in the *Financial Stability Report*. The charts 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	Nominal exchange rates	<i>Reuters.</i>
2	House price inflation	Annual percentage change in national house price indices. <i>Haver Analytics, Property IQ.</i>
3	Current account balance	Current account balance as a percentage of GDP, four-quarter total. <i>Haver Analytics.</i>
4	Interest rates	Yields on 90-day bank bills and 10-year government bonds. <i>Reuters.</i>
5	Household debt and servicing costs	Household debt excludes student loans. Household disposable income is gross before deduction of interest paid and consumption of fixed capital, and is interpolated from March-year data from Statistics New Zealand, with RBNZ forecasts. The weighted average interest rate is obtained from published RBNZ mortgage data (SSR, part E5.10) for residential mortgages and RBNZ calculations for consumer interest rates.
6	Household assets and liabilities	Housing assets are the aggregate private sector residential dwelling value. Data is from Property IQ from 1995, with RBNZ estimates based on the house price index for prior years. Household financial assets are as published annually by RBNZ, with aggregate quarterly figures interpolated prior to 1995. From 1995, quarterly figures are survey-based with minor estimation. Household liabilities are from RBNZ series as for figure A5.
7	New Zealand house price-to-income	Ratio of house prices to household disposable income. <i>Property IQ and Statistics New Zealand.</i>
8	Government debt	Net core Crown Debt is debt attributable to core Crown activities and excludes Crown entities and state-owned enterprises. Forecasts are from 2013 onwards and are taken from the Budget Economic and Fiscal Update. <i>The Treasury.</i>
9	Government bonds on issue and turnover	Total government securities on issue and New Zealand government bond turnover survey. <i>NZ Debt Management Office, RBNZ.</i>
10	Non-resident holdings of New Zealand government securities	<i>RBNZ.</i>
11	NZD/USD turnover in domestic markets	Plotted as three-month moving average. <i>RBNZ survey.</i>

12	OCR, estimated business lending rate, and effective mortgage rate	The effective residential mortgage interest rate is item E5.10 from the registered bank aggregate SSR. The estimated business lending rate is determined residually using information from the SSR for total registered bank NZD lending rates, effective residential mortgage rates, and estimates of consumer and interbank rates. It does not include the effects of hedging activity such as interest rate swaps. <i>RBNZ</i> .
13	Equity market capitalisation	Total market capitalisation of the 50 largest companies listed on New Zealand Stock Exchange, as a percentage of annual nominal GDP. Latest GDP value is estimated. <i>Datastream; Statistics New Zealand</i> .
14	Banking system-wide capital ratios	Capital as a percentage of risk-weighted assets for all locally incorporated banks. Registered banks' <i>Disclosure Statements</i> , <i>Reserve Bank of Australia</i> .
15	Bank asset quality	Impaired assets plus past due as a percentage of total lending; specific provisions as a percentage of impaired assets; for all registered banks. <i>Disclosure Statements</i> .
16	Bank return on assets	Net profits after tax and extraordinary items, as a percentage of average total assets, four-quarter average, for all registered banks. <i>Disclosure Statements</i> .
17	Bank operating costs to income	Operating expenses as a percentage of total income, four-quarter average, for all registered banks. <i>Disclosure Statements</i> .
18	Bank net interest margin	Net interest income as a percentage of average interest-earning assets, four-quarter average, for all registered banks. <i>Disclosure Statements</i> .
19	Bank offshore funding	<i>RBNZ</i> .
20	Bank asset composition	June years. <i>Disclosure Statements</i> .

Appendix 3

New Zealand financial system assets and liabilities

Financial system liabilities

As at 31 December \$bn	2000	2005	2007	2008	2009	2010	2011	2012	2013*
Banks									
Households	41	61	79	90	92	97	106	115	118
Other residents	55	84	98	114	103	104	108	120	122
Non-residents	56	79	111	127	132	127	122	112	114
Other liabilities and equity	26	28	43	72	53	53	60	59	59
Total	178	253	332	403	380	382	395	407	413
Non-bank lending institutions									
Households	5	12	12	9	9	7	5	3	3
Other residents	4	7	8	7	6	7	7	5	5
Other liabilities and equity	2	8	12	11	9	7	5	5	5
Total	10	26	31	27	24	21	17	14	14
Funds under management									
Household assets	56	56	64	54	61	64	66	74	78
Other sector assets	5	7	9	8	8	8	8	9	9
Total	61	63	72	62	68	72	74	83	87
Total financial system liabilities	249	342	435	492	472	474	486	504	514

Financial system assets

As at 31 December \$bn	2000	2005	2007	2008	2009	2010	2011	2012	2013*
Banks									
Households	66	119	152	162	169	173	177	185	191
Other residents	71	102	128	150	137	137	142	149	150
General government	7	6	4	5	13	17	19	19	16
Non-residents	17	12	15	16	16	13	10	12	14
Other assets	17	14	33	70	44	41	47	41	42
Total	178	253	332	403	380	382	395	407	413
Non-bank lending institutions									
Households	5	12	14	12	10	9	7	6	6
Other residents	4	11	13	12	11	9	7	6	6
Other assets	1	3	4	4	3	3	3	2	2
Total	10	26	31	27	24	21	17	14	14
Funds under management									
Domestic fixed interest	27	25	27	28	27	28	30	33	33
Domestic equities	7	8	9	6	7	8	8	10	11
Domestic other	5	4	5	4	4	4	4	4	4
Overseas investments	21	26	31	24	30	32	32	36	39
Total	61	63	72	62	68	72	74	83	87
Total financial system assets	249	342	435	492	472	474	486	504	514

* As at 30 June 2013.

Source: RBNZ surveys and registered banks' *Disclosure Statements*.

Note: General insurance companies not surveyed. Property syndication included in 'domestic other' funds under management. Minor values for RMBS not included. Totals and sub-totals may not add due to rounding.

Appendix 4

New Zealand registered banks

Registered bank's name	Market share ¹	Credit ratings ²			Ultimate parent	Country of parent
		S&P	Moody's	Fitch		
Australia and New Zealand Banking Group Limited (B) ³	2.4	AA-	Aa2	AA-	Australia and New Zealand Banking Group Limited	Australia
ANZ Bank Limited	29.5	AA-	Aa3	AA-	Australia and New Zealand Banking Group Limited	Australia
Commonwealth Bank of Australia (B)	1.2	AA-	Aa2	AA-	Commonwealth Bank of Australia	Australia
ASB Bank Limited	16.3	AA-	Aa3	AA-	Commonwealth Bank of Australia	Australia
Bank of New Zealand	18.1	AA-	Aa3	-	National Australia Bank	Australia
Bank of Baroda (New Zealand) Limited	0.0	-	-	BBB-	Bank of Baroda	India
Bank of India (New Zealand) Limited	0.0	BBB-	-	-	Bank of India	India
Citibank N.A. (B)	0.5	A	A3	A	Citigroup Inc.	USA
Deutsche Bank Aktiengesellschaft (B)	0.8	A+	A2	A+	Deutsche Bank Aktiengesellschaft	Germany
Heartland Bank Limited	0.6	BBB-	-	-	Heartland New Zealand Limited	New Zealand
JPMorgan Chase Bank, N.A. (B)	0.3	A+	Aa3	A+	JPMorgan Chase & Co	USA
Kiwibank Limited	3.8	A+	Aa3	AA+	New Zealand Post Limited	New Zealand
Kookmin Bank (B)	0.1	A	A1	-	Kookmin Bank	South Korea
Rabobank Nederland (B)	0.5	AA-	Aa2	AA	Rabobank Nederland	Netherlands
Rabobank New Zealand Limited	2.3	AA-	-	-	Rabobank Nederland	Netherlands
Southland Building Society	0.7	-	-	BBB		New Zealand
The Bank of Tokyo-Mitsubishi, Limited (B)	0.7	A+	Aa3	A-	Mitsubishi UFJ Financial Group Inc.	Japan
The Co-operative Bank Limited	0.4	BBB-	-	-		
The Hongkong and Shanghai Banking Corporation Limited (B)	1.3	AA-	Aa2	AA-	HSBC Holdings PLC	UK
TSB Bank Limited	1.3	BBB+	-	-	TSB Community Trust	New Zealand
Westpac Banking Corporation (B)	1.9	AA-	Aa2	AA-	Westpac Banking Corporation	Australia
Westpac New Zealand Limited	17.3	AA-	Aa3	AA-	Westpac Banking Corporation	Australia

¹ Registered banks' assets as a proportion of the total assets of the banking system, as at 30 June 2013.

² As at 30 September 2013.

³ Banks marked (B) operate in New Zealand as branches of overseas incorporated banks. All other banks are incorporated in New Zealand.