Financial Stability Report

November 2015

RESERVE BANK
OF NEW ZEALAND
TE PŪTEA MATUA

Reserve Bank of New Zealand
Financial Stability Report

Subscribe online: http://www.rbnz.govt.nz/email_updates.aspx

Report and supporting notes published at:
http://www.rbnz.govt.nz/financial_stability/financial_stability_report/

A list of registered banks' credit ratings is published at:
http://www.rbnz.govt.nz/regulation_and_supervision/banks/prudential_requirements/credit_ratings/

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

ISSN 1176-7863 (print)
ISSN 1177-9160 (online)

Financial Stability Report

November 2015

Contents

Chapter 1
Overview

The New Zealand financial system is sound and operating effectively. Bank lending growth to households and businesses has increased. The banking system maintains capital and funding buffers in excess of minimum requirements and profitability is strong, with a further reduction in costs relative to income. Domestic capital markets have continued to grow, alongside issuance of bonds by both financial and non-financial corporates.

The outlook for global financial stability has deteriorated, with growth in the global economy softening over the past six months and financial market volatility increasing. Slower growth and uncertainty about the path of economic and financial adjustment in China have depressed global commodity prices and added to financial market uncertainty. Interest rates at historic lows are encouraging higher leverage, leading to a build-up in risk in international asset markets. The New Zealand banking system relies on the global markets for funding and in the current environment this represents a source of risk to banking system liquidity.

Against this backdrop, New Zealand's financial system faces two further risks, which have increased since the May *Report*. The dairy sector faces a second consecutive season of weak cash flow, due to low international dairy commodity prices. Dairy prices have recovered since August, but some indebted farms are likely to come under increased pressure over the coming year, which could be exacerbated if dairy farm prices fall significantly. Banks are working with customers experiencing difficulty, and it is important that they continue to take a medium-term view when assessing farm viability. While credit losses on dairy exposures are expected to be manageable, banks need to ensure that they set aside realistic provisions for the likely increase in problem loans. The Reserve Bank is currently undertaking stress tests of the largest dairy lenders to assess the resilience of their portfolios to a prolonged period of low milk prices.

The other significant area of risk relates to imbalances in the Auckland property market. House price growth in Auckland has increased strongly and house price-to-income ratios in Auckland look increasingly stretched relative to global and historical norms. Rising investor participation has been an important driver of price developments. A significant market correction could challenge financial stability given the large exposure of the banking system to the Auckland housing market. International evidence suggests that investor loans have a higher tendency to default in the event of a major downturn in the housing market.

New rules requiring most loans to property investors in the Auckland region to have a loan-to-value ratio (LVR) of no more than 70 percent came into force on 1 November, following consultation on the proposed

measures. This policy, along with recently enacted tax changes and initiatives to increase housing supply, is expected to help moderate pressure on Auckland house prices. Registered banks are also now required to distinguish loans for residential property investment from other residential loans and hold more capital against them. These policy changes are expected to improve the resilience of bank balance sheets to a housing downturn.

With housing market activity generally more subdued outside Auckland and house prices less stretched, the limit on the maximum share of lending at LVRs above 80 percent for the rest of New Zealand was increased from 10 percent to 15 percent from 1 November. However, the Reserve Bank will continue to monitor developments in regional housing markets closely in light of the recent lift in house sales and house price inflation in some upper North Island areas such as Hamilton and Tauranga.

The Reserve Bank continues to make progress on a number of regulatory initiatives. Public consultation has recently closed on the stocktake of banking regulations and a summary of submissions will be published shortly. The Reserve Bank has recently released a consultation paper proposing changes to the outsourcing policy for banks. The Reserve Bank and other government agencies have also begun preparing for the IMF's Financial Sector Assessment Programme (FSAP) for New Zealand, a review of the financial system that is expected to take place in late 2016.

Graeme Wheeler

Governor

Chapter 2
Systemic risk and policy assessment

Global financial market sentiment deteriorated following the May *Report*, in tandem with increasing concerns around the growth outlook for China. Falling international commodity prices have exacerbated domestic vulnerabilities associated with elevated levels of dairy debt, and low global interest rates are adding to risks around the housing market. While the financial system is currently resilient, it is critical that banks maintain strong capital and liquidity buffers and apply prudent lending standards.

Problem loans in the dairy sector may increase as cash flow pressures persist for a second season. The Reserve Bank expects that lenders will continue to take a medium-term approach to assessing farm viability, and will set aside realistic provisions in anticipation of increased loan losses. Losses for the banking system as a whole are expected to be manageable, even if low milk prices persist for a number of years.

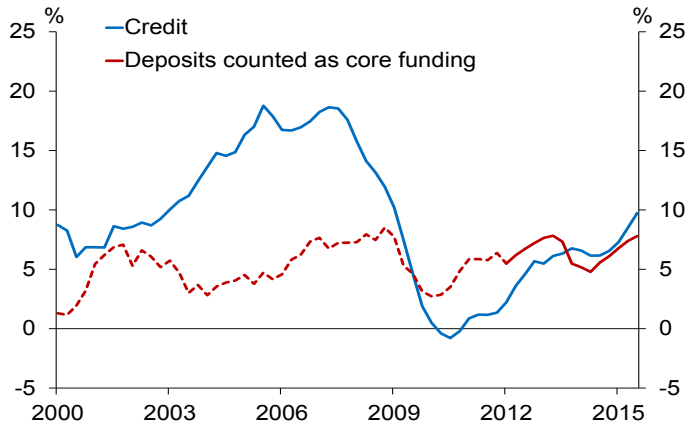
There is a growing risk of a correction to Auckland house prices, which could have a large impact on the financial system due to the high level of household indebtedness. Tighter restrictions on lending to Auckland investors have been introduced from 1 November. The restrictions are expected to help mitigate financial stability risks by reducing the proportion of riskier mortgage loans and dampening Auckland's rapid house price inflation.

Risk assessment

The financial system remains sound…

An increase in private sector savings since the Global Financial Crisis (GFC) has been associated with a significant reduction in the gap between bank lending and deposit growth (figure 2.1). The rise in deposit funding has allowed banks to reduce their exposure to funding risks. Capital relative to risk-weighted assets is also at its strongest level for a number of years, giving banks greater capacity to absorb a period of rising loan losses.

Figure 2.1 Annual increase in credit and deposit funding *(% of GDP)*



Source: Statistics New Zealand, RBNZ *Liquidity Survey*, RBNZ *Standard Statistical Return* (SSR).

Note: 'Deposits counted as core funding' includes haircuts made as part of the liquidity policy, which increase according to the size of the deposit. The dotted line shows growth in deposits measured by the SSR, prior to the introduction of the liquidity policy.

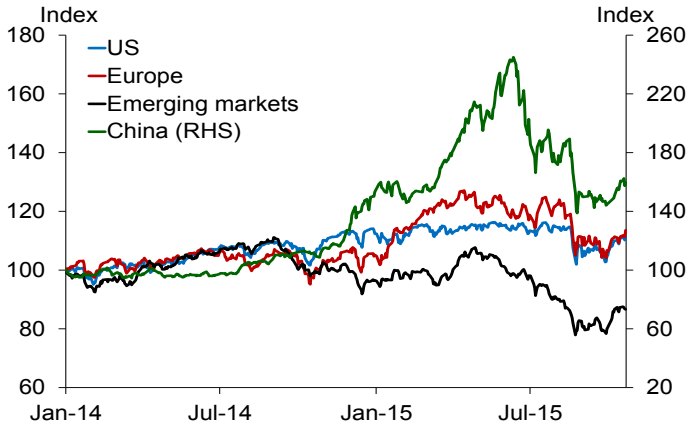
...but risks to the financial stability outlook have increased.

The financial system faces three key risks, which have increased over the past six months. First, weakness in global commodity markets is expected to result in a second consecutive year of weak cash flow for dairy farmers, which could aggravate the existing high levels of indebtedness in the sector. Second, Auckland house prices have become increasingly elevated relative to incomes, increasing the risk of a significant price correction. Finally, there is an increased risk of a further disruption to global funding markets.

Concerns about Chinese growth have intensified.

Increasing concerns about the growth outlook in China, sustained falls in commodity prices, and capital flow pressures in some emerging markets have all undermined financial market sentiment since the May *Report*. Equity prices declined sharply between June and August, particularly in China and other emerging markets (figure 2.2). Credit spreads and volatility also increased. With global interest rates expected to remain low for a prolonged period, there are concerns that risk is under priced and that there has been a structural decline in liquidity in key financial markets (box B). These concerns could be realised if normalisation of US interest rates exacerbate capital flow pressures facing emerging markets.

Figure 2.2 Equity prices in selected economies *(January 2014 = 100)*



Source: Bloomberg.

Notes: Indices are S&P 500, EuroStoxx 600, MSCI Emerging Markets Index, and Shanghai Composite.

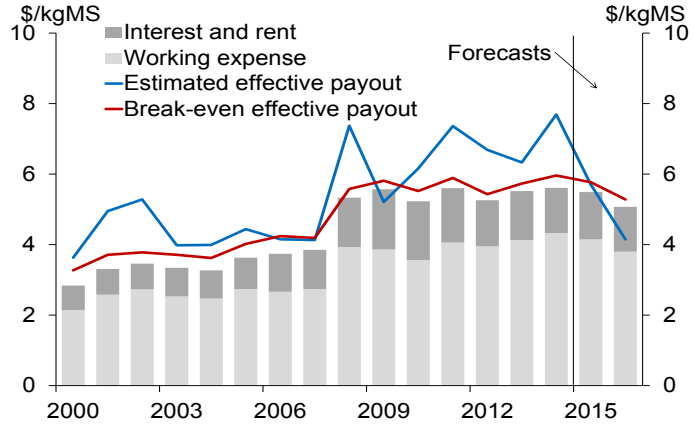
China's economic growth is expected to be lower in coming years, with the Chinese authorities progressing with financial reform and the economy transitioning to a consumption-led growth model. Significant increases in debt since the GFC accentuate the risk of a sharper slow down, with major potential impacts on New Zealand via lower commodity prices and weaker export demand. Heightened volatility in global financial markets could also increase offshore funding costs, although greater reliance on domestic deposits helps to moderate this risk.

Indebted dairy farms are making significant losses…

Global milk prices remain low due to strong global supply, sanctions on imports of dairy products by Russia, and slower Chinese demand. Prices have recovered from August lows, partly due to lower expected domestic production combined with a reduction in the amount of product sold via the GlobalDairyTrade auction. Growing demand for dairy from emerging markets is expected to support medium-term global milk prices at levels that are significantly higher than current prices. However, there is a risk that global supply is slow to adjust to low milk prices, given that quotas on European Union milk production have recently been removed and profitability in other major dairying regions has so far held up much better than in New Zealand.

With debt levels and working expenses rising over the past decade, reduced milk prices are generating significant cash flow pressures for the dairy sector. For many farmers, revenues are expected to be below break-even levels for a second consecutive season (figure 2.3). In response to lower revenues, farmers are reducing working expenses, business drawings and herd sizes. Reduced spending is in turn placing significant financial pressure on firms servicing the dairy sector. There is also an elevated risk that a drought associated with the El Niño weather pattern in 2015-16 could add to farm financial stress in some regions.

Figure 2.3 Actual and break-even dairy payout



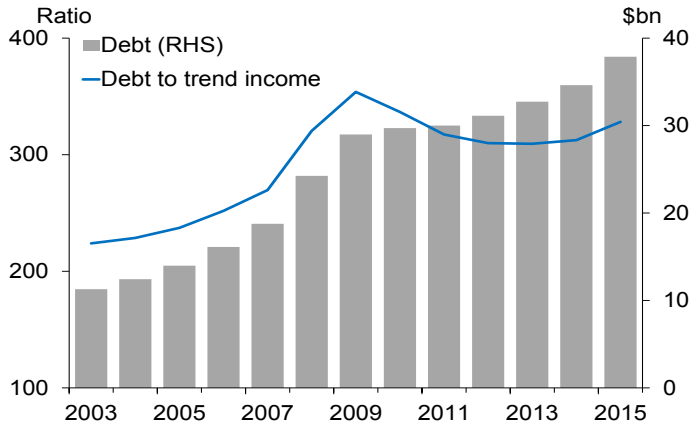
Source: DairyNZ, Fonterra.

Note: Effective payout is an estimate of milk revenue for the season, based on DairyNZ survey data. The break-even payout is working expenses plus interest and rent costs plus drawings, adjusted for livestock revenue. Forecasts are from DairyNZ.

…requiring increased working capital borrowing.

Significant volatility in global milk prices in recent years has highlighted the risks associated with dairy sector debt, which remains elevated relative to trend income (figure 2.4). Operating losses have increased demand for working capital borrowing, particularly among farms with high break-even payouts. With banks continuing to lend to farmers who they consider viable in the medium term, dairy sector debt has already increased by around 10 percent over the past year. Although Fonterra's interest free loan offer will finance some of the remaining cash shortfall, further increases in bank debt levels are likely to add to break-even payouts in future seasons.

Figure 2.4
Bank loans to the dairy sector



Source: RBNZ *Annual Agricultural Survey*, DairyNZ, RBNZ calculations.

Note: Trend income is used to adjust for volatility in commodity prices and milk production. The trend payout is assumed to be $6.25 per kgMS in the 2015-16 season. See data sheet for more details.

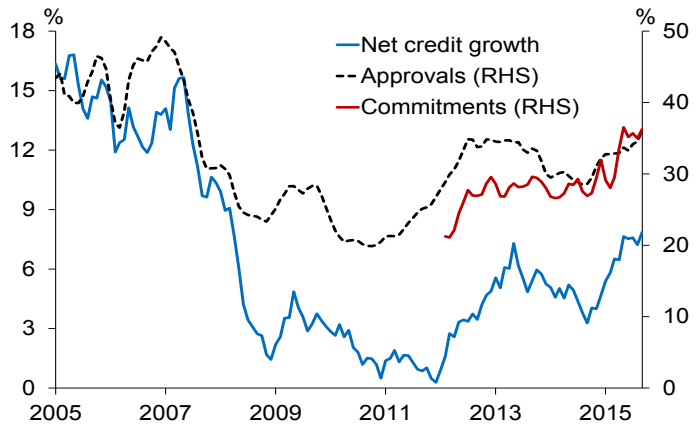
There is an increased risk that loans to some highly indebted farmers will become non-performing in coming seasons, especially if the payout is slow to recover. Farm values have so far been supported by low interest rates and a positive medium-term outlook for milk prices. However, based on the limited number of properties transacted in recent months, dairy farm prices now appear to be declining. While farm prices appear to be less overvalued than prior to the GFC, there is a risk that downward price movements are amplified by market illiquidity as occurred then. Reduced farm values would likely exacerbate the rise in non-performing loans in the sector (box A).

Household debt levels remain elevated…

The interaction between low mortgage rates, high household debt, and increasing house prices poses a significant risk to the financial system. Global and domestic interest rates have been historically low for a number of years, and have declined further in recent months. Sustained periods of low interest rates tend to result in upward pressure on asset prices, as the cost of debt falls and required asset yields decline. Declining borrowing costs can partly explain the 17 percent increase in house prices over the past year. Although low mortgage rates are enabling a significant increase in debt repayment by existing mortgage borrowers, rising house prices have put upward pressure on buyer debt-to-income ratios. As a consequence, the aggregate household debt-to-income ratio has remained at historically elevated levels.

Housing debt increased at an annualised rate of around 8 percent in the three months to September (figure 2.5). New mortgage commitments have increased sharply and are running at around 36 percent of outstanding mortgage debt. As a result, the characteristics of new mortgage commitments are being reflected in overall bank mortgage portfolios relatively quickly. Notably, a significant proportion of mortgage lending is being undertaken at elevated debt-to-income ratios (box C). Although low mortgage rates are currently relieving pressure on these indebted households, some borrowers could quickly come under pressure if their labour incomes decline or mortgage rates increase.

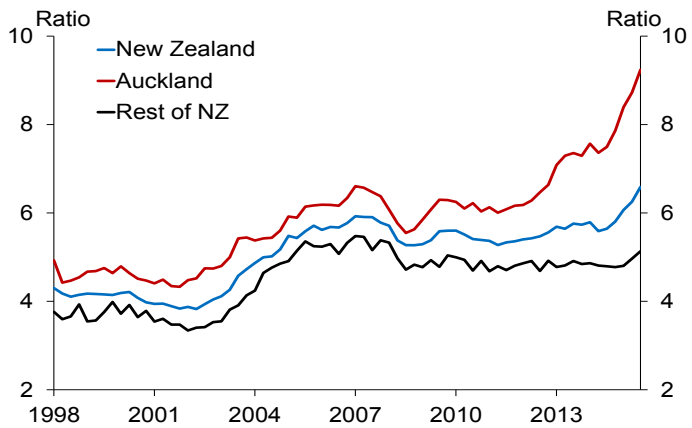
Figure 2.5
Net and gross mortgage lending
(quarterly annualised, % of housing debt)



Source: RBNZ *Housing Approval Survey*, RBNZ SSR, RBNZ *New Residential Mortgage Commitments Survey*.

Note: Mortgage approvals are an approximation of actual mortgage origination trends.

Figure 2.6
House price-to-income ratio



Source: CoreLogic NZ, REINZ, Statistics New Zealand.

...and Auckland house prices are increasingly stretched.

Mortgage credit growth is being driven, to a significant extent, by the Auckland property market. House prices in the region have increased 27 percent over the past year, supported by strong immigration, constraints on the supply of new housing, and further falls in mortgage interest rates. The price-to-income multiple for Auckland has now reached 9.2, up significantly from 6 in 2011 (figure 2.6), and is high by international standards. Rental yields have also contracted sharply alongside an increase in the investor share of sales. By contrast, house price multiples and house price inflation are much lower in the rest of New Zealand, although there are signs that strong Auckland price pressures are spreading to nearby regions.

With prices becoming increasingly stretched relative to household incomes and rents, there is increasing potential for a sharp price correction in Auckland. A correction could be triggered by a range of demand-side factors, such as a deterioration in labour incomes, an unexpected rise in mortgage rates, a reversal in migration flows, or a sudden reduction in investor appetite. There is a risk that a downturn could be amplified by a rise in sales by investors, given that investors have more elevated debt-to-income ratios, and appear to be purchasing on the basis of expected capital gain. Falling house prices could in turn weaken economic activity if indebted borrowers attempted to restore balance sheets by reducing consumption.

Policy assessment

Banks will need to manage an increase in dairy problem loans.

The Reserve Bank supports the medium-term approach to assessing farm sustainability adopted by banks, and expects they will continue to work with customers facing short-term cash flow pressures. A broad-based tightening in lending standards would risk exacerbating the pressures currently faced by dairy farmers.

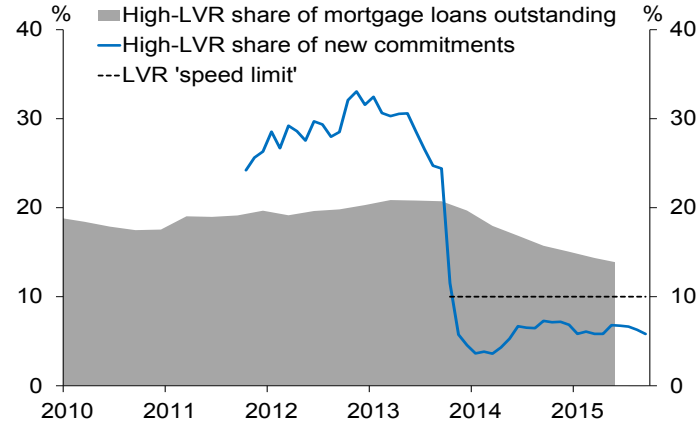
The Reserve Bank has requested that the five largest dairy lenders[1] undertake a stress test of their dairy portfolios, and is encouraging these lenders to set aside realistic provisions to reflect the likely increase in problem loans. Initial modelling by the Reserve Bank suggests that potential losses for the banking system as a whole would be manageable, even under a sustained downturn in the dairy payout (box A).

Speed limit on high-LVR lending is increasing resilience of mortgage portfolios...

Increased housing supply remains an essential factor in reducing the imbalances in the Auckland housing market, and more rapid progress in building new housing in the region is required. In the interim, macro-prudential policy can help to moderate the risks to the financial sector and broader economy. Government measures relating to housing demand have also recently been introduced, including a requirement for buyers and sellers to provide IRD numbers and a 'bright line' test for taxation of capital gains when a property is sold within two years of purchase.

In late 2013, the Reserve Bank introduced a 10 percent speed limit on all mortgage lending with a loan-to-value ratio (LVR) of greater than 80 percent. The objective was to mitigate financial stability risks associated with the housing market, as high-LVR borrowers are more likely to default during a severe housing downturn. The share of mortgage debt with an LVR of more than 80 has declined from 21 to 14 percent (figure 2.7), increasing the resilience of bank mortgage portfolios. While the policy had an initial restraining effect on house price inflation, this effect has waned over the past year. This is particularly the case in Auckland, where sharp increases in house prices are reducing LVRs of existing owners. There does not appear to have been material regulatory leakage from the policy, for example by borrowing from non-banks (chapter 5).

Figure 2.7
High-LVR mortgages



Source: Registered banks' *Disclosure Statements*, RBNZ *New Residential Mortgage Commitments Survey*.

Note: LVR greater than 80 percent as a share of total mortgage loans is for the big five banks only. LVR greater than 80 percent as a share of new commitments excludes exemptions.

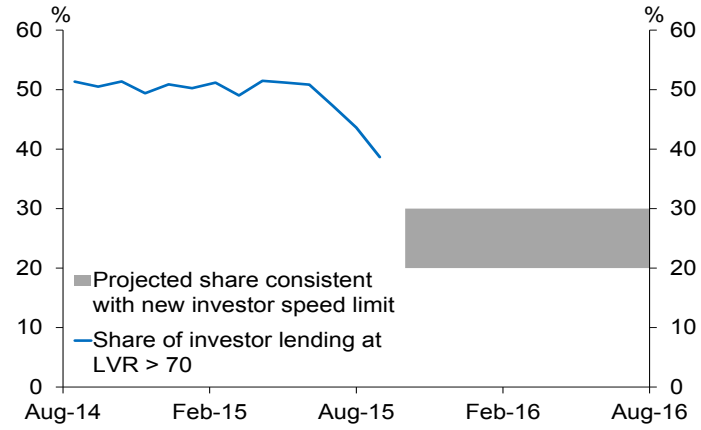
1 These are ANZ, ASB, BNZ, Rabobank and Westpac New Zealand.

...and tighter restrictions on Auckland investor lending will further mitigate risks.

Changes to the LVR speed limit came into effect on 1 November, and include new restrictions on Auckland investor lending. Under the new policy, no more than 5 percent of Auckland investor lending by registered banks can be at an LVR exceeding 70 percent. The more targeted policy is aimed at mitigating financial stability risks in the Auckland housing market, reflecting international evidence that losses on investor loans tend to be larger during a severe downturn. The policy change is being supported by the addition of a new asset class for investor loans in the bank regulatory capital framework, with higher capital requirements being introduced for this category of lending (chapter 6).

By reducing sales to leveraged investors, the new policy is expected to decrease the proportion of riskier loans on bank balance sheets and temper rapid Auckland house price inflation. Although data on Auckland investor lending are not yet available, the nationwide share of investor lending with an LVR above 70 percent has moderated in the lead-up to the introduction of the policy (figure 2.8). Initial estimates suggest that the policy could eventually affect around 13 percent of all Auckland housing transactions, and moderate Auckland house price inflation by 2-4 percentage points over the next year. The policy will have a longer-lasting effect on banking system resilience by reducing the share of investor loans with an LVR of greater than 70 percent.

Figure 2.8 Nationwide high-LVR investor lending commitments



Source: Registered banks' *Disclosure Statements*, RBNZ *New Residential Mortgage Commitments Survey*.

The impact of the higher speed limit outside Auckland will be monitored.

From 1 November, the LVR speed limit was increased from 10 to 15 percent for all residential mortgage lending outside Auckland. This reflects significantly less stretched house price multiples and much more subdued house price inflation in the rest of New Zealand. In recent months, strong Auckland price pressures appear to have spread to nearby cities such as Hamilton and Tauranga, where prices are growing at 18 and 14 percent per annum respectively. While this could be positive for financial stability if it reflects demand shifting from the overheated Auckland market, a prolonged period of rapid house price inflation in these areas could increase financial stability risks. The Reserve Bank will monitor regional housing markets carefully as the higher LVR speed limit outside of Auckland takes effect.

Adequate capital buffers are critical for system resilience.

It is critical that banks maintain strong buffers of high-quality loss-absorbing capital to ensure the financial system is resilient to a severe economic downturn. Capital ratios remain above Basel III regulatory requirements, and have increased in the years following the GFC. Tier 1 capital ratios increased from 8 percent of risk-weighted assets in 2008 to about 12 percent in early 2012. Tier 1 capital ratios have been broadly constant since 2012, although some banks have recently begun replacing common equity capital with lower quality Tier 1 capital instruments (chapter 5).

The Reserve Bank is planning to review bank capital adequacy requirements over the next year. This is motivated, in part, by potential changes to the Basel capital adequacy framework and a likely increase in bank capital requirements in Australia as part of its Financial System Inquiry. The first stage of this review will deal with issues around the internal models approach to risk weighting, currently used by the four largest Australian-owned banks. The review will then turn to the question of whether current headline capital requirements are appropriate.

Box A

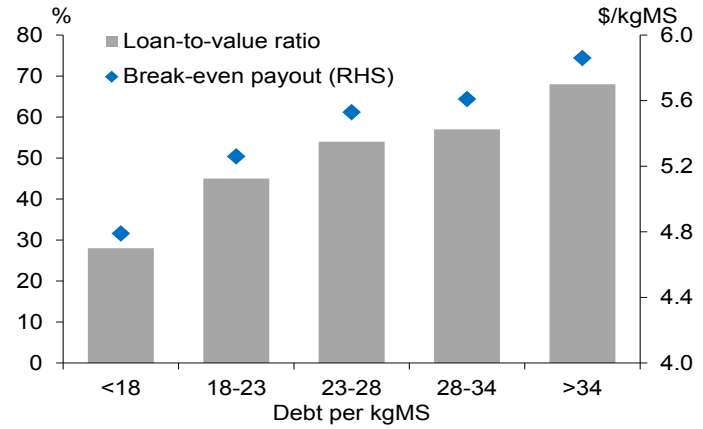
An updated assessment of dairy sector vulnerabilities

The risk of a substantial rise in non-performing loans (NPLs) in the dairy sector has increased over the past two years, with the existing vulnerability of elevated debt levels being amplified by a large proportion of farmers making operating losses. Using a sample of farm unit records from DairyBase, this box gauges the potential scale of NPLs under hypothetical stress scenarios for the dairy payout and farm land values.[1]

Banks are currently working with customers under financial stress, and lending to existing customers on the basis of expected profitability under a status quo (SQ), or medium-term, payout that is significantly higher than realised in the 2014-15 and 2015-16 seasons. Demand for working capital has increased substantially, with about half of dairy farms expected to suffer a second consecutive year of operating losses in the 2015-16 season.[2] As a result, debt levels have increased by around 10 percent over the past year. Significant demand for working capital is likely to continue while dairy incomes remain below the estimated average break-even payout of about $5.30 per kilogram of milk solids (kgMS).

Loans are likely to be classified as non-performing (with further lending curtailed) for farms where future periods of positive cash flow become unlikely and equity levels are eroded. Farms that have higher debt per kgMS tend to have both higher loan-to-value ratios (LVRs) and break-even payouts (figure A1). For example, the 20 percent of debt with the highest debt per kgMS has an average LVR of 68 percent and break-even payout of $5.80. Consequently, the risk of a loan becoming non-performing will increase particularly rapidly for highly indebted farms during years with a low payout, especially if farm values decline or the SQ payout is revised downwards.

Figure A1 Average break-even payout and loan-to-value ratio by debt per kgMS



Source: DairyNZ.

Note: Break-even payout is defined as in figure 2.3. Each bucket contains 20 percent of total dairy debt.

Table A1 shows three stress scenarios which provide a metric for assessing the resilience of the sector to lower payout and farm price outcomes. These are not a central forecast for outcomes over the next few years.

- Under the base scenario, the effective milk payout is $4.15 in 2015-16 (the current DairyNZ forecast), recovers to $5.50 in 2016-17, and then increases by a further $0.50 per kgMS in the remaining seasons. Farm prices fall by 10 percent in 2015-16.

1 A forthcoming *Bulletin* article will provide a detailed overview of the data and expand upon the analysis contained in this box.

2 This estimate is constructed by updating farm unit records from the 2013-14 season in line with (i) DairyNZ forecasts for effective milk revenue, which differ from the headline payout due to factors like retrospective payments for previous production ($5.70 in 2014-15 and $4.15 in 2015-16), (ii) DairyNZ forecasts for cost containment (average farm working expenses and drawings fall by 90 cents per kgMS over the two seasons), and (iii) an assumption that interest rates on term debt fall by 50 basis points from their 2013-14 levels. Fonterra's interest free loan is assumed to reduce working capital borrowing from banks by 30 cents per kgMS.

Table A1
Farm prices and effective payouts in stress scenarios

	Change in land price (%)		
	Base	**Medium**	**Severe**
2015-16	-10	-15	-20
2016-17	0	-10	-15
2017-18	0	0	-10
2018-19	5	0	0
	Effective payout ($/kgMS)		
2015-16	4.15	4.15	4.00
2016-17	5.50	4.75	4.00
2017-18	6.00	5.25	4.50
2018-19	6.50	5.75	5.00

Source: RBNZ assumptions.

- Under the severe scenario, the milk payout is $4.00 in 2015-16 and 2016-17, and recovers very gradually thereafter (by $0.50 per kgMS per season). Farm prices are assumed to fall by around 40 percent by 2018-19, consistent with the persistently low milk prices under this scenario. This severe decline is the same as assumed in the joint APRA/RBNZ stress tests in 2014.

- The medium scenario is essentially the midpoint of the base and stress scenarios.

Farm balance sheets are updated after each season to reflect increased working capital required to cover negative cash flow, or any pay-down in debt, and the assumed change in farm value.[3] A loan is modelled as non-performing when (i) cash flow in the current season is negative, (ii) the farm has an LVR greater than 90 percent, and (iii) the farm would still make negative cash flow under the SQ payout. The SQ payout is assumed to be $6.25 in 2015-16, and would gradually fall over time if the payout remains very low.[4]

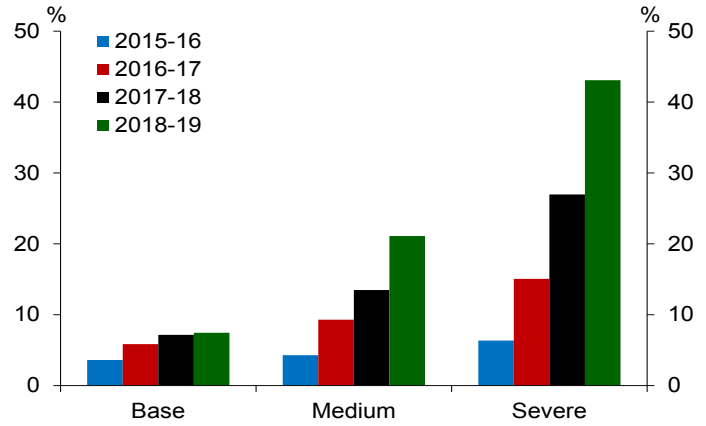
Under the base scenario, NPLs are estimated to increase to 7.8 percent of sectoral debt (figure A2). Around half of these NPLs materialise in the 2015-16 season, reflecting the one-off decline in land values and the relatively quick recovery in the payout in subsequent years. The rise in NPLs is estimated to be much sharper and more prolonged under the medium and severe scenarios, reaching as high as 44 percent of debt (owed by 25 percent of farms) under the severe scenario. This partly reflects the more marked decline in farm values, which pushes a large number of farmers above an LVR of 90 percent. Another key driver is the muted payout recovery, which results in a sustained increase in working capital borrowing and a decline in the SQ payout.

The peak of NPLs under the base stress scenario is higher than the previous peak in early 2011 (see figure 5.7). This is consistent with the fact that the scenario features a more marked and prolonged decline in farm income than was experienced in the post-GFC period. Watchlist loans peaked at 18.2 percent of sectoral exposures, providing some indication of how large NPLs may have become if the post-GFC dairy

3 All scenarios allow for significant cost containment in 2015-16 in line with DairyNZ forecasts (see footnote 2 for more detail), and costs are assumed to vary positively with the assumed payout in later years. The model also assumes banks recognise only two-thirds of the change in market value of farms in any given year, and the remainder at the end of the scenario horizon. This reflects that valuations tend to lag market prices during periods of stress. The model is similar to Hargreaves, D and G Williamson (2011), 'Stress testing New Zealand banks' dairy portfolios', Reserve Bank of New Zealand *Bulletin*, 74(2), June, http://www.rbnz.govt.nz/research_and_publications/reserve_bank_bulletin/2011/2011jun74_2hargreaveswilliamson.pdf

4 The SQ payout is modelled as a moving average of the five previous payouts and forecasts for the next two seasons, which is broadly in line with banks' actual modelling.

Figure A2
Modelled NPLs under stress scenarios
(% of original exposures)



Source: DairyNZ, RBNZ assumptions (see table A1).

situation had deteriorated further. This suggests that the modelled NPLs are well within the plausible range of estimates, given the scenario assumptions.

The proportion of NPLs that will eventually result in loan defaults is highly uncertain. Under the assumption that all NPLs result in defaults, the stress testing model can be used to estimate an upper limit for banking system losses.[5] Loss rates for the banking system under the three scenarios are estimated to range from 2 to 14 percent of all dairy lending. These losses amount to around 2 to 18 percent of total before-tax profits, and a similar proportion of capital, of the five largest dairy lenders over a typical four-year period, suggesting that they are manageable for the system as a whole. The Reserve Bank has requested that the five largest dairy lenders undertake stress tests of their dairy portfolios, providing an institutional level view of potential losses under similar scenarios. Results are expected to be returned before the end of the year, and will be reported on in due course.

5 The model assumes that banks face significant costs of disposing of foreclosed assets due to transaction costs, a fire-sale discount, and delays in selling the farm. These assumptions imply banks make losses whenever they foreclose on a farm with an LVR above 75 percent.

Chapter 3

The international environment and financial markets

The outlook for global financial stability has deteriorated, alongside a weakening outlook for economic growth and increase in financial market volatility. Low interest rates continue to support global recovery, but also encourage leverage and financial risk-taking. At the same time low interest rates may be disguising a decline in market liquidity, which could amplify volatility in financial markets.

Slowing growth in China has been a key driver of deteriorating market sentiment, and has translated into weaker global demand for capital, intermediate and primary goods. Weak demand is affecting New Zealand directly through lower export prices, and indirectly via its adverse effect on trading partners in Asia and Australia. As China progresses with rebalancing and financial liberalisation, there is a risk that growth could slow by more than expected.

Offshore funding spreads for New Zealand banks have increased moderately since the May *Report*. With uncertainty about Chinese growth and the impact of policy normalisation by the Federal Reserve, there is a risk that funding spreads widen further alongside increased volatility in global financial markets.

Global growth has weakened.

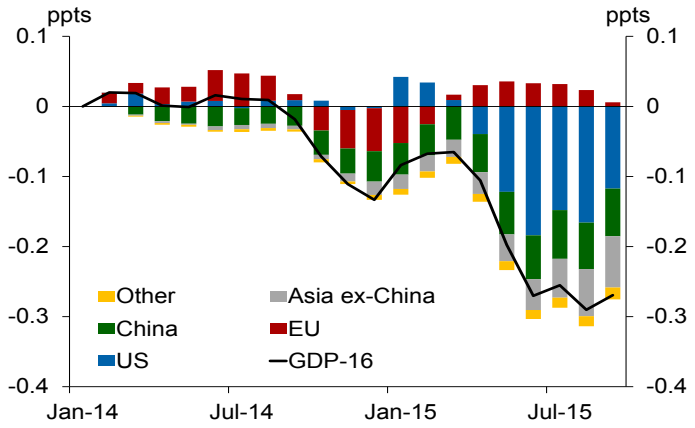
The outlook for global growth has weakened since the May *Report*. Growth forecasts for the US, China, and Asia more broadly have all been revised downward (figure 3.1). Expected growth has also slowed in major commodity producing countries, including Australia, Brazil, Russia, Turkey and South Africa. In contrast, forecasts for EU growth have been relatively stable, despite uncertainty about Greece in the second quarter. While lower commodity prices have reduced incomes in commodity producing countries, they have supported growth in commodity importing countries, such as the US, and most of Europe and Asia.

Global interest rates remain low...

Long-term interest rates remain around historic lows, as measured by 10-year government bond rates (figure 3.2). Low global interest rates reflect high global savings relative to investment, a decline in expected long-term growth and inflation, and stimulatory monetary policies adopted by major central banks. Low interest rates are transmitted across borders through a variety of mechanisms, including capital flows, and have

contributed to long-term interest rates in New Zealand that are around multi-decade lows.

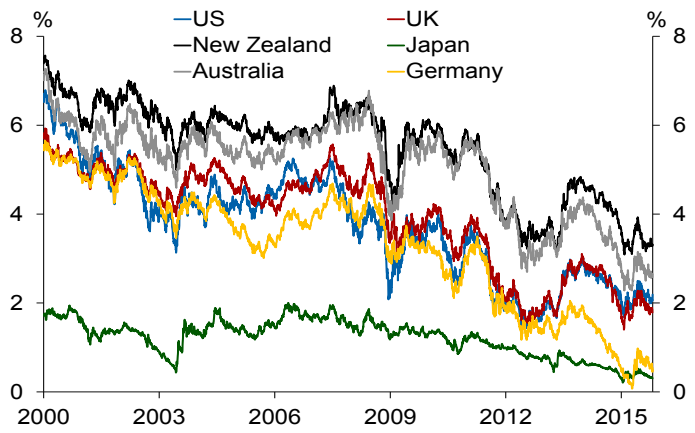
Figure 3.1 Revisions to global growth for 2015 *(percentage points)*



Source: Consensus Economics, IMF, RBNZ calculations.

Notes: Weighted by nominal 2014 GDP. Asia ex-China includes Hong Kong, India, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand. Other includes Australia, Switzerland, Canada and the United Kingdom. These countries account for about 80 percent of world GDP. The word 'global' replaces 'trading partner' from the print edition.

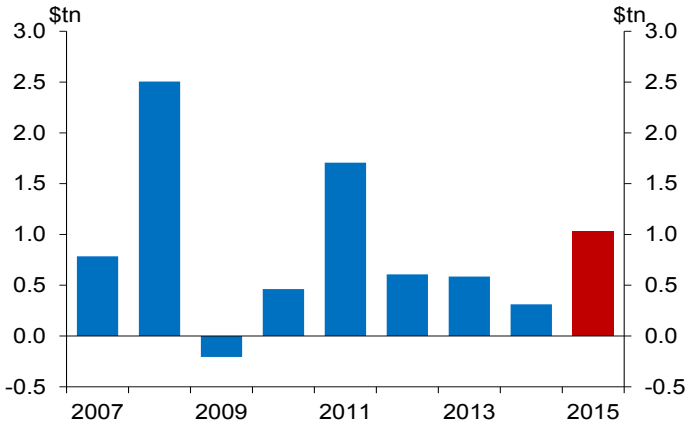
Figure 3.2 10-year government bond yields



Source: Haver Analytics.

Interest rates are expected to remain low for some time. Quantitative easing by major central banks has intensified through 2015, with the ECB and Bank of Japan both expanding their asset holdings (figure 3.3). In response to the weaker outlook for growth and inflation, policy interest rates have been eased in several countries, including Australia, Canada, China, New Zealand and Norway. In China, bank reserve requirements have also been eased several times. In the US, market expectations are for a first interest rate increase in December, around six months later than expected at the start of the year.

Figure 3.3 Estimated change in major central bank balance sheets *(USD trillion)*



Source: Bloomberg, Bank of England, RBNZ estimates.

Note: 2015 is an estimate.

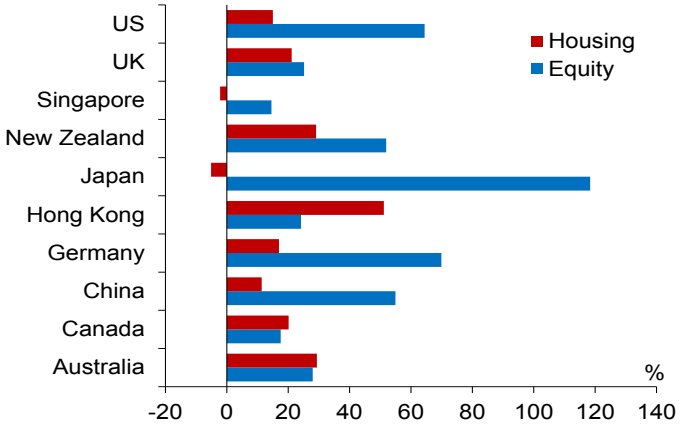
... encouraging leverage and risk-taking.

Low interest rates have aided economic recovery, and are helping borrowers to repay their debts. However, they also appear to be leading to a build-up in financial risks. Low interest rates enable new borrowers to take on more debt, encourage investors to shift to higher-risk assets, and put upward pressure on asset prices. These effects have been visible in reduced risk premia in global financial markets in recent years, which

may have masked a decline in structural liquidity (box B). There is the potential for a disruptive market adjustment when interest rates return to more normal levels. The first tightening by the Federal Reserve could provide an initial test of market resilience.

Low interest rates are a key factor supporting demand for equities, and residential and commercial property in New Zealand. Equity prices have risen by an average of 66 percent since 2012 in the US, UK, Germany and Japan, where interest rates have been particularly low (figure 3.4). Residential property prices have also increased significantly, leading some countries to put in place prudential measures to guard against the associated risks to financial stability. For example, during 2015, loan-to-value ratio (LVR) limits have been introduced or tightened in Hong Kong, Ireland, New Zealand and Norway.

Figure 3.4 Equity and house price growth *(% change from January 2012)*



Source: Dallas Fed House Prices, Haver Analytics.

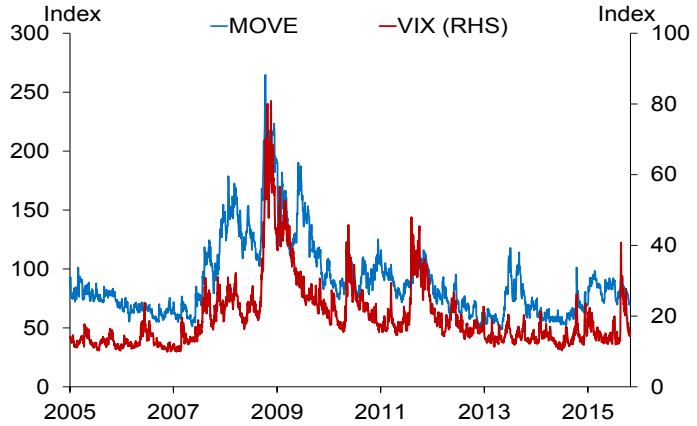
Note: New Zealand equity line corrects the data used in the print edition.

The rapid rise in property prices, accompanied by growing investor activity, represents a growing risk for the Australian banking system. In July, the amount of capital that Australian banks are required to hold against residential property loans was increased, and additional capital measures are being considered by the Australian Prudential Regulation Authority (APRA). In recent years, APRA has also introduced a *Prudential Practice Guide* for mortgage loan origination and a limit on the growth rate of investor lending at individual banks. Lending standards for high-LVR, interest-only, and investor loans have tightened in recent months which, along with increases in bank capital, will help to mitigate risks associated with the housing market.

Financial market sentiment has deteriorated…

Sentiment in global financial markets deteriorated during August, in response to increasing concerns about slower growth in China and capital flow pressures on emerging markets. After increasing rapidly from mid-2014, Chinese equity prices fell by around 40 percent between June and August to retrace much of the earlier rise (see figure 2.2). Expectations of further weakening of China's economic growth then contributed to significant falls in other equity markets and an associated rise in equity market volatility (figure 3.5). Negotiations between Greece and its creditors also contributed to market volatility in early 2015, before agreement on emergency funding for large debt repayments due in the third quarter of 2015 was reached in August.

Figure 3.5
Equity and bond market volatility



Source: Bloomberg.

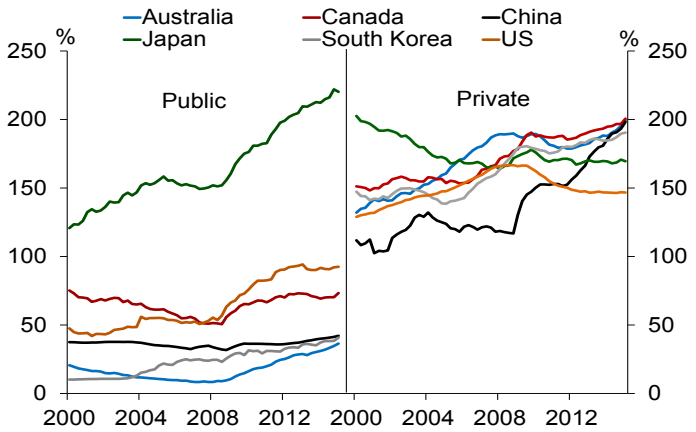
Note: MOVE is the implied volatility of the US Treasury markets. VIX is the implied volatility of the S&P500 equity index.

...alongside increasing concerns about Chinese growth.

Chinese growth is important for the global economy, for New Zealand, and increasingly for global financial markets. With China being the largest contributor to global growth over the past decade, it has important effects on other countries through demand for capital, intermediate and consumer goods. For New Zealand, exports to China have grown from 11 percent to 20 percent of total exports between 2010 and 2014. In turn, the slowing of China's growth has weakened New Zealand export demand and export prices. China is now of a size where concerns about slowing growth are enough to move global financial markets, despite China's modest degree of financial integration with global markets.

After three decades of export-led growth, China has relied more on domestic sources of growth in recent years, following reduced global demand after the GFC. Investment in real estate, manufacturing and infrastructure was the primary driver of growth during 2008-10, supported by rapid credit expansion. Since 2008, private debt has increased very rapidly, to advanced-country levels (figure 3.6).

Figure 3.6
Public and private debt
(% of GDP)



Source: Bank for International Settlements.

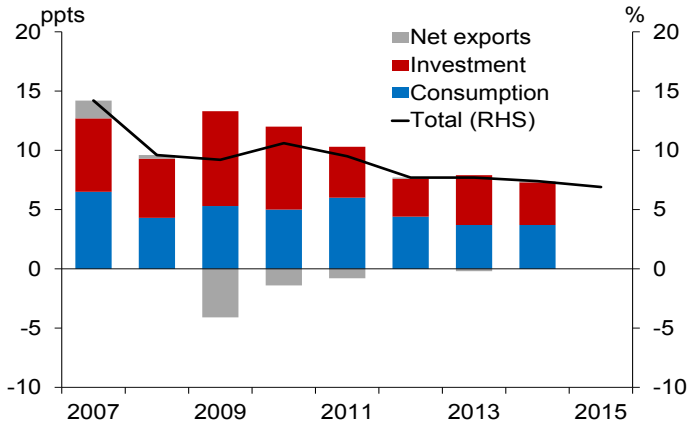
A significant component of the increase in debt since 2008 has been local government borrowing. The risks associated with local government debt have been moderated by the introduction of a debt swap arrangement in March. High interest rate local government loans can be exchanged for long-term local government bonds. The bonds carry lower interest rates, in part because they are acceptable as collateral at the central bank. The RMB 1 trillion debt swap introduced in March was expanded to RMB 2 trillion in June. Although general government debt remains modest, many local governments have close connections to large state-owned enterprises.

China's growth model is changing...

Chinese GDP growth has slowed to about 7 percent since 2012, compared to 10 percent per annum during 2008-10 (figure 3.7). The

slowing in GDP growth since 2011 has reflected considerably weaker investment growth in China. Investment in real estate and manufacturing has slowed particularly sharply, while infrastructure investment has continued to grow at about 10 percent in nominal terms. Total investment growth has slowed from about 25 percent in 2012 to less than 15 percent in 2014 in nominal terms, but by less in real terms. Monthly data suggest a further slowing of real investment growth over 2015, although retail sales growth remains robust.

Figure 3.7 Contributions to real GDP growth in China



Source: National Bureau of Statistics of China.

With high indebtedness and overcapacity in some production sectors, consumption will be an important source of Chinese growth. There are signs that this transition is occurring, although overall rates of growth are likely to be lower compared to the export and investment-led models of the past. Annual consumption growth slowed from about 12 percent to 10 percent in real terms from 2011 to 2014. While consumption-led growth provides positive long-term prospects for New Zealand agricultural exports, there is a risk that export demand and prices will be more variable during China's economic transition and financial reforms.

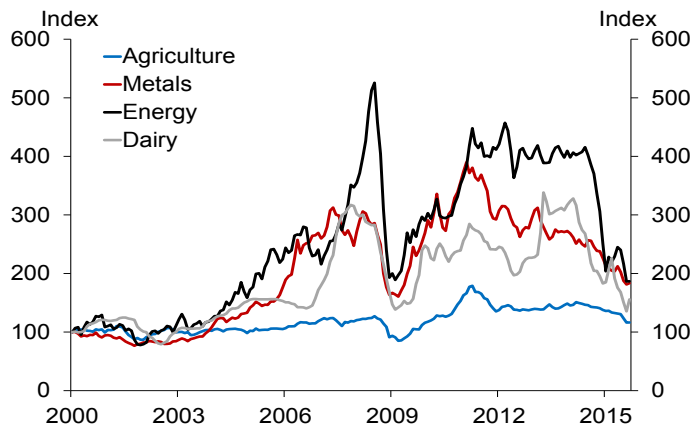
...and there is a risk of a further slowing in growth.

Losses associated with the stock market fall will have a relatively small impact on Chinese household wealth, but could slow the economy due to lower confidence and increased uncertainty. A greater concern is the rise in problem loans that can be expected in the wake of the sharp rise in debt since 2008. Historically, periods of rapid credit growth in other countries have been followed by a rise in problem loans. While the direction of financial reform suggests a greater role for market discipline, the debt swap for local government debt, discussed above, attests to the willingness of the Chinese authorities to respond to prevent acute financial stress. As China transitions to a different growth model and progresses with financial reform, there is a risk that episodes of volatility recur.

Commodity prices have declined further...

Commodity prices declined further during 2015, reflecting modest growth in global demand, strong supply responses to previous high prices, and a range of idiosyncratic supply and demand factors in different markets (figure 3.8). The price of oil, which fell sharply in the second half of 2014, remains more than 50 percent below early 2014 levels. The most important commodity market for New Zealand is dairy products, where there is currently a significant imbalance between global demand and supply. The outlook for global milk prices and the associated financial stability risks for the dairy sector are discussed in detail in chapter 4.

Figure 3.8 Commodity prices *(SDR terms, January 2000 = 100)*



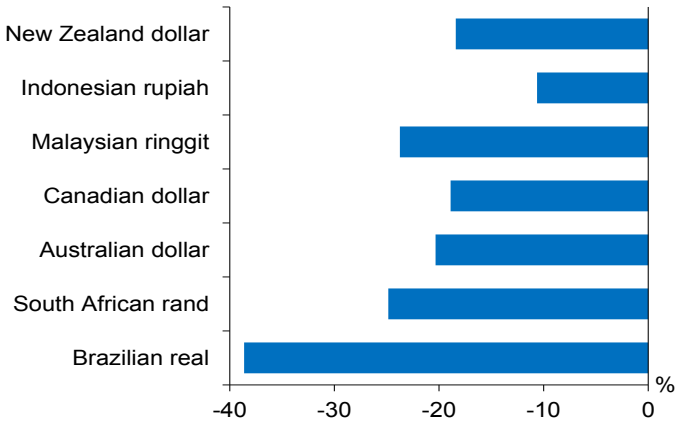
Source: ANZ, IMF.

Note: See datasheet for the composition of the IMF indices. The IMF agricultural index does not capture the basket of New Zealand's key agricultural exports.

...reducing incomes in commodity producing countries...

Falling commodity prices have reduced the incomes of commodity producing countries, and resulted in their currencies depreciating significantly since early 2014 (figure 3.9). Although the sharp fall in the price of dairy products has had a significant effect on New Zealand incomes, other New Zealand commodity export prices have fallen by less in world price terms. This has translated into an increase in prices for many products in local currency terms over 2015, as the New Zealand dollar (NZD) has depreciated. The terms of trade has also been supported by declines in the price of imports, such as oil. With almost all external debt hedged, recent depreciation of the NZD is a significant buffer for the economy and financial system.

Figure 3.9 Commodity currencies against the USD *(% change since January 2014)*



Source: Bloomberg.

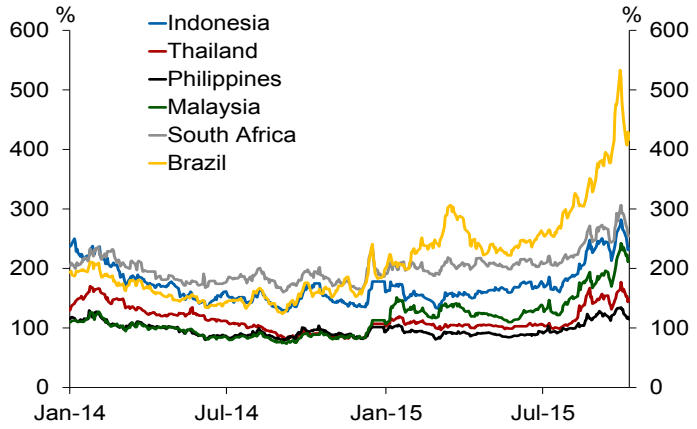
Falling commodity prices also affect New Zealand through their impact on our trading partners, especially Australia. From 2009-11, the prices of Australia's commodity exports rose very sharply. Prices have since declined significantly, with the Reserve Bank of Australia commodity price index falling by 18 percent in US dollar (USD) terms during 2015, on top of a 26 percent fall over 2014. In Australian dollar (AUD) terms, prices have fallen by a more modest 7 percent in 2015. While mining firms are facing difficult conditions, the Australian banking system's exposure to the sector is modest. Nevertheless, commodity price falls have contributed to downward revisions to Australian growth.

...and increasing stress for some emerging markets.

Low interest rates in advanced economies drove funds into emerging market assets in search of income in the years following the GFC. Falls in commodity prices and downward revisions to emerging market growth have seen this trend continue to reverse over the past six months. Rising credit default swap (CDS) spreads for emerging market

economies suggest an increased risk of financial stress, although key trading partners in the Asia Pacific region have been less affected (figure 3.10). Increases in interest rates in major advanced economies could add to capital outflow and asset price pressures. There is also a risk that corporates in some emerging market economies have borrowed in US dollars at low interest rates, leaving them exposed to a rise in debt service costs when their home currency depreciates.

Figure 3.10 Emerging market USD CDS spreads *(% of notional amount)*



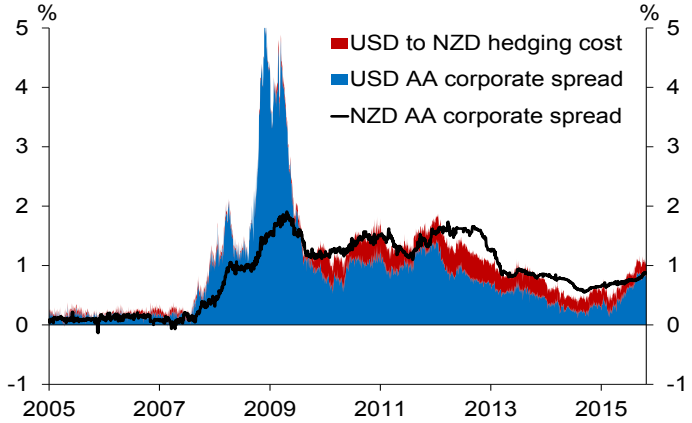
Source: Bloomberg.

Compared to the 1990s, emerging economies are better equipped to manage variability in capital outflows. Many emerging markets have moved to more flexible exchange rates and shifted from foreign currency to local currency denominated government debt. This has meant that, as the terms of trade have weakened in commodity exporting countries, depreciating currencies have mitigated the fall in exporters' incomes in local currency terms (see figure 3.9). Larger stocks of foreign reserves have also allowed financial outflows since 2014 to be offset by reserve sales. China's stock of foreign currency reserves (about USD 3.7 trillion) remains large compared to the stock of potentially unstable non-resident portfolio investment (around USD 2.2 trillion).

External funding spreads have increased...

As volatility in global capital markets has picked up, the offshore funding spreads faced by New Zealand banks have increased. This rise has been mainly driven by the cost of issuing foreign currency debt in offshore markets. For example, the spread on US bonds issued by AA financial institutions has increased by about 60 basis points from the low levels of early 2015 (blue area in figure 3.11). In contrast, the cost of swapping USD funding into NZD has remained in the 20-25 basis point range (red area in figure 3.11). Bond spreads in the European and Japanese markets have remained low, but the costs of swapping funding into NZD have correspondingly increased. On the basis of the small number of market issues over the past year, actual funding spreads for New Zealand banks appear to have increased by around 40 basis points.

Figure 3.11 Indicative 5-year funding spreads



Source: Bloomberg, RBNZ calculations.

Notes: Spreads are between 5-year AA corporate bond yield and 5-year interest rate swap. Hedging cost is 5-year cross currency basis swap. The US series only includes financial firms.

In contrast to spreads on offshore funding, the funding spreads in the onshore New Zealand corporate bond market have increased by only about 20 basis points (figure 3.11). While there are compositional differences between the indices in different markets, onshore and offshore funding costs are generally expected to move together over time. The differential pricing could see New Zealand banks and corporates increasingly issue in the domestic market, pushing domestic spreads up towards levels in other markets.

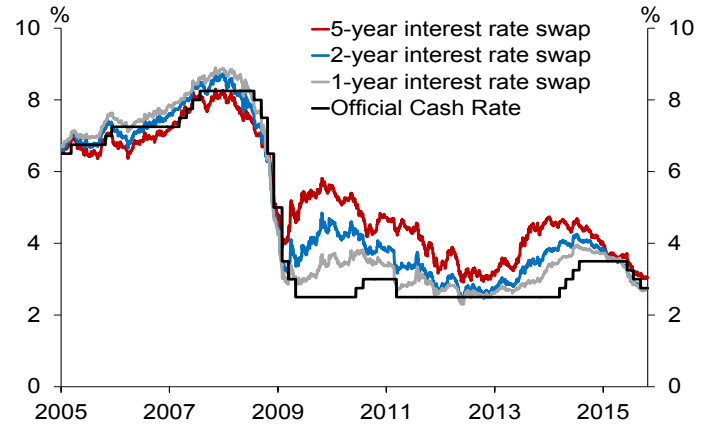
...but overall funding costs have declined.

Despite an increase in wholesale funding spreads, overall funding costs have declined over the past six months due to falling benchmark interest rates. Medium-term interest rate swaps have declined roughly in step with the cuts to the Official Cash Rate (OCR) during 2015 (figure 3.12). With New Zealand's external liabilities remaining elevated, a sustained rise in offshore funding spreads could result in a tightening in domestic credit availability. During the GFC, the rise in spreads was offset by a considerably larger easing of monetary policy, reflected in the decline in benchmark rates over 2008. With the OCR now at 2.75 percent, there is less scope for monetary policy easing to offset a sharp rise in funding spreads.

The onshore bond market has continued to grow.

Difficult conditions in global markets and higher domestic savings have supported the development of the domestic bond market. In 2007, more NZD bonds were issued in offshore markets than in the onshore market (figure 3.13). The stock of outstanding bonds issued in New Zealand has increased by about 150 percent since 2008, while the share of NZD bonds issued offshore has moderated. Over the same period, the market has broadened as the market for financial and non-financial corporate bonds has grown. Capital market development supports financial stability by providing more diversified funding sources for banks and corporates. Outstanding NZD bonds of $173 billion compares with NZX capitalisation of $108 billion, and banking system lending of $405 billion.

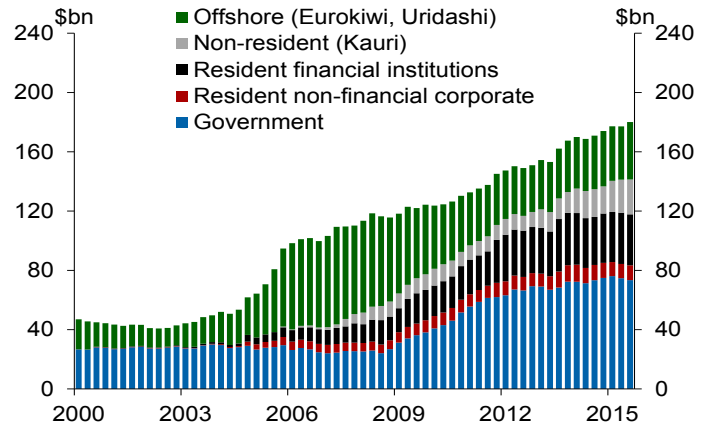
Figure 3.12 NZD benchmark interest rates



Source: Bloomberg.

Note: The interest rate swap mainly reflects expected bank bill interest rates.

Figure 3.13 NZD bonds outstanding by issuer type and residence



Source: RBNZ, BIS.

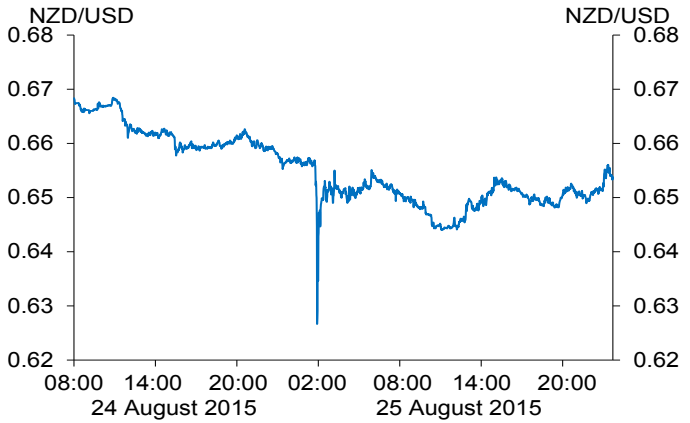
Box B

Implications of global liquidity developments for New Zealand

Over the past year there have been events in which market liquidity has declined suddenly, and there are growing concerns internationally that there may have been a structural change in the provision of market liquidity.[1] A liquid market is one where large transactions can be executed with only a limited effect on the price of an asset. Market liquidity is important for the functioning of financial markets, helping to facilitate the efficient distribution of resources through the allocation of capital and risk at low cost. Market liquidity also supports financial stability, as prices are more likely to remain aligned with fundamentals.

Several events have served to crystallise some of the concerns related to lower market liquidity, including the October 2014 US Treasury bond 'flash rally', the April 2015 'Bund (German government bonds) tantrum' and recent market turbulence tied to concerns around Chinese growth. There has also been evidence of diminished liquidity in currency markets, as evidenced by the rapid moves in the NZD/USD cross rate on 25 August. The rate fell as much as three US cents over 10 minutes before quickly rebounding (figure B1). The by-product of lower liquidity has been increased difficulty in executing trades, higher costs and higher volatility in some markets.

Figure B1
NZD/USD cross rate
(New Zealand local time)



Source: Reuters.

Several factors could explain lower liquidity in some markets. One important factor is reduced 'market-making' activity by financial institutions. Market makers play a key role in providing liquidity by quoting two-way prices to participants in over-the-counter markets (those not run on exchanges). As part of this role, market makers take on risk by holding inventories of the assets they offer to buy or sell. However, since the GFC a combination of a reduction in risk appetite of market makers, and increased regulatory burdens (such as increased capital requirements in Basel III rules) has resulted in less willingness to provide such market making services.

While a reduction in market making has been significant, other factors have been acting on market liquidity, both positive and negative. More generally, global liquidity has been supported by the extraordinarily easy monetary policy settings currently in place by major central banks. In some markets, liquidity has been enhanced by central banks acting directly as market makers or facilitating market activities through securities lending. In addition, many central banks have become a

1 See, for example, BIS (2014) 'Market-making and proprietary trading: industry trends, drivers and policy implications', CGFS Papers, No. 52, November; and IMF (2015) 'Chapter 2: Market liquidity – Resilient or fleeting?', *Global Financial Stability Report*, October.

predictable, large buyer of government bonds, which has in turn caused investors to seek returns in other markets (e.g. more risky corporate bonds), improving liquidity there. On the other hand, liquidity in some bond markets has been reduced by central banks holding significant proportions of outstanding bonds and not turning the stock over as frequently as other market participants.

There are three key channels through which New Zealand could be affected by declining market liquidity: the impact on New Zealand banks' funding markets; the impact on short-term interest rates and monetary policy implementation; and the impact on the New Zealand government bond market.

New Zealand banks fund a significant proportion of their balance sheets by accessing offshore wholesale debt markets. They do this by borrowing in foreign currency, then 'swapping' this back into NZD. Conditions in global financial markets are therefore an important determinant of New Zealand bank funding. New Zealand banks tend to focus on the primary market (new issues) rather than the secondary market for debt. Hence, funding liquidity is of more immediate importance than market liquidity. Funding liquidity refers to the ability of the banks to raise debt as required at a reasonable cost. Reserve Bank discussions with bank treasurers suggest that funding liquidity conditions have deteriorated somewhat in 2015, owing largely to greater market volatility caused by events such as the Greek crisis mid-year and recent turbulence tied to China.

New Zealand banks typically use market makers to help facilitate the foreign currency swap leg involved in borrowing from offshore. Market makers take the other side of the transaction with New Zealand banks (providing NZD in exchange for foreign currency that the banks have raised), while charging a spread. This spread has widened as costs have increased for the institutions providing these market making services for the reasons described above. Overall, the cost increases have been manageable thus far, but this highlights the flow-on effects of changes in market liquidity to New Zealand entities seeking offshore funding.

Fewer market makers in the foreign exchange swap market and lower risk appetite among banks have also led to increased volatility in short-term money markets. This can affect the transmission of monetary policy, with interest rates potentially deviating away from the Official Cash Rate (OCR). The Reserve Bank has responded to this by increasing its participation in the market through open market operations and foreign exchange swaps, which have helped to keep key short-term interest rates in line with the OCR.

The New Zealand government bond market has always been seen as relatively illiquid given its small size in comparison with other sovereign debt markets. Discussions with market participants suggest that liquidity improved significantly following the GFC as issuance rose and new investors were attracted to holding New Zealand sovereign debt. Most investors trading in small parcels of bonds report that they have been able to trade as normal, with domestic market makers able to absorb the risk on their balance sheets. However, some foreign-based market makers have started to reduce their participation in the New Zealand market owing to more generalised global pressures on their market making business model. There are increased risks that over time the higher costs that market makers are facing are passed on to end users through wider spreads offered to clients.

The Reserve Bank will continue to closely monitor developments in liquidity and its effects on the New Zealand financial system.

Chapter 4
Financial risks to the New Zealand economy

House price inflation has continued at a rapid pace in Auckland, driven by low interest rates, strong net immigration, supply shortages, and an increase in investor activity. House price inflation has been accompanied by increased borrowing and a rise in debt-to-income ratios for new lending. Recently implemented restrictions on investor lending are targeted at reducing the rising financial stability risks associated with the overextended Auckland housing market.

Low milk prices are resulting in a second consecutive season of negative cash flow for many dairy farms. There is an elevated risk that highly indebted farms could come under significant financial stress, especially if farm land values decline. While milk prices are expected to recover over the medium term, global supply dynamics could slow the rate of recovery.

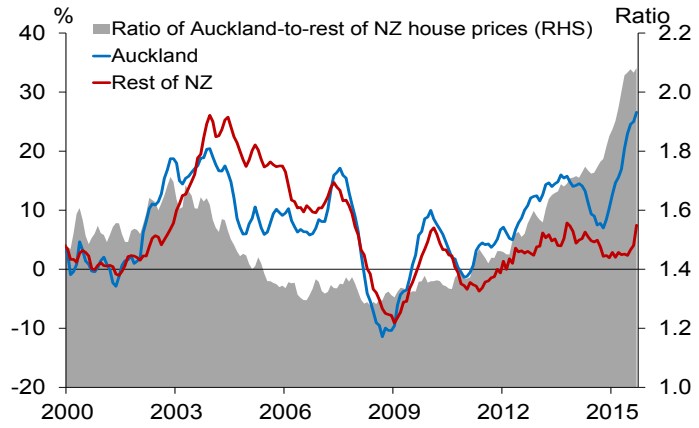
Commercial property prices are increasing rapidly, particularly in the office sector. Rising prices have compressed rental yields and construction activity has increased. While some commercial property markets could become oversupplied in coming years, risks to the financial system are mitigated by a decline in leverage since the GFC.

Households

Auckland house prices are increasing rapidly...

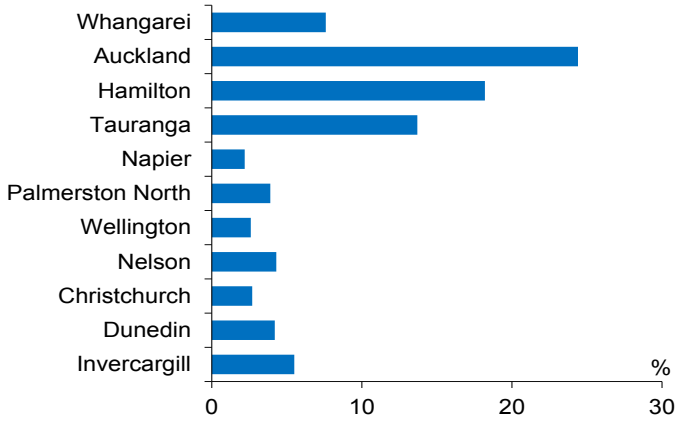
House price inflation has strengthened considerably since the last *Report*, particularly in Auckland. Auckland prices increased at an annual rate of 26.6 percent in the year to September (figure 4.1), driving the nationwide rate to 17.5 percent. In contrast, average prices increased at a lower rate of 7.2 percent in the rest of New Zealand. The increasingly stretched Auckland market is at risk of a damaging correction, especially if economic conditions deteriorate. House prices now exceed nine times gross income in Auckland, placing it among the most expensive cities in the world.

Figure 4.1
House price inflation
(3-month moving average)



Source: CoreLogic NZ, REINZ, RBNZ calculations.

Figure 4.2
House prices in main urban areas
(annual % change, October 2015)



Source: CoreLogic NZ.

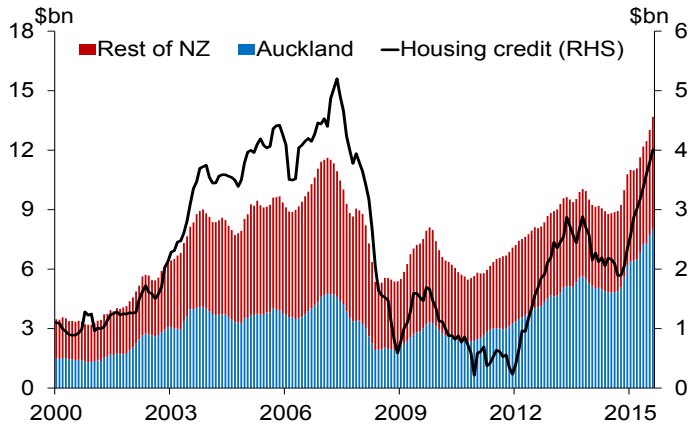
...with signs of spill-over to nearby regions.

While house price inflation in the rest of New Zealand has generally remained subdued, there are signs that rapid growth in Auckland house prices is spreading to surrounding regions. Transaction activity and house price growth have increased in Tauranga and Hamilton (figure 4.2), alongside a rise in the share of sales to multiple property owners in those cities. To the extent that this activity has shifted from the Auckland region, it may help to relieve pressure there. Although house prices are much less stretched outside Auckland, sustained rapid increases in house prices could increase financial stability risks over time.

Housing credit growth is increasing.

Increased housing market activity has been associated with stronger housing credit growth (figure 4.3). While it is difficult to determine the exact proportion of credit growth that is linked to Auckland property, it is likely to be a significant contributing factor. Roughly 40 percent of nationwide sales have occurred in Auckland since 2012. Auckland's share of the total value of sales has recently approached 60 percent – reflecting the increasing price differential between Auckland and the rest of New Zealand. Despite increasing to an annualised rate of around 8 percent, housing credit growth has remained below its historical relationship with house sales.

Figure 4.3
Value of house sales and credit growth
(3-monthly total)

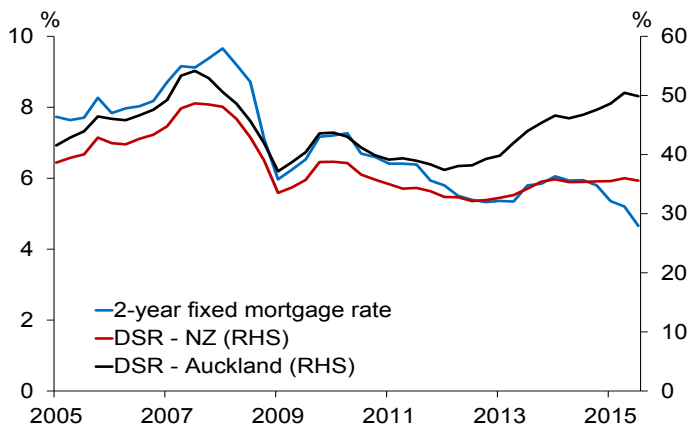


Source: RBNZ *Standard Statistical Return* (SSR), REINZ, CoreLogic NZ.

Low interest rates have contributed to housing demand...

Mortgage rates have declined over recent months to hit new record lows, in line with cuts to the Official Cash Rate and declines in long-term interest rates. Lower mortgage rates have reduced debt servicing costs for new buyers, enabling them to borrow more and purchase higher priced houses. Debt servicing costs for a typical owner-occupier buyer, with a 20 percent deposit and average income, have been stable at around 35 percent of gross income since 2009 (figure 4.4). This compares to nearly 50 percent in 2007, when 2-year mortgage interest rates were over 9 percent. Despite lower mortgage rates, the debt service ratio (DSR) for an Auckland borrower is near its previous 2007 peak, illustrating the significant affordability pressures in the region.

Figure 4.4
Debt servicing ratio for representative house purchaser



Source: CoreLogic NZ, Statistics New Zealand, RBNZ SSR, interest.co.nz.

Note: Representative borrower is assumed to purchase an average house and have average income for their region. They are assumed to take out a 25-year table mortgage with an 80-percent LVR.

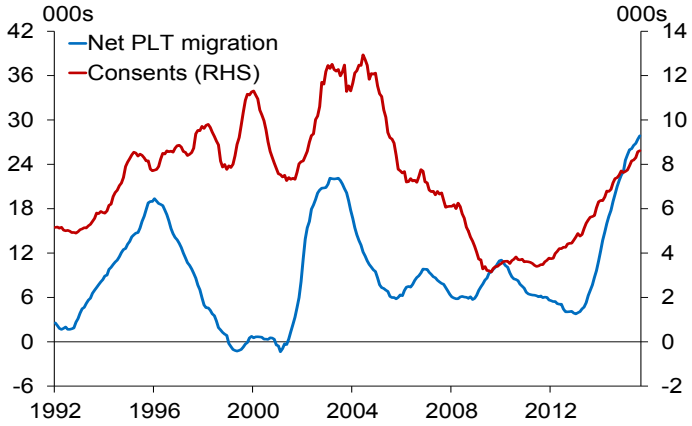
...as have strong migration inflows.

Migration flows into New Zealand have been persistently strong over the past few years, putting pressure on the supply of housing. The increased flow comes from both reduced departures and a greater number of arrivals into the country. Around half of all migrants are moving to Auckland, amounting to around 30,000 additional people per year (figure 4.5). For Auckland, strong migration comes on top of an existing deficit in the available housing stock as well as significant supply impediments. In contrast, elevated migration flows in the rest of the country have generally been accommodated through existing supply, and have been spread more evenly.

It is estimated that the Auckland region is short of about 15-20,000 dwellings. There are signs that the required supply response is starting to occur. Consent issuance has steadily risen, and is now around 8,500 annually. Local and central government have assisted the

supply response by creating special housing areas and offering greater incentives for first time home buyers to build rather than purchase an existing home. Surplus Crown land is also being released for development. While recent developments are positive, it will take some time for increased construction to reduce supply shortages, especially while migration remains strong.

Figure 4.5 Auckland migration and consent issuance *(annual total)*



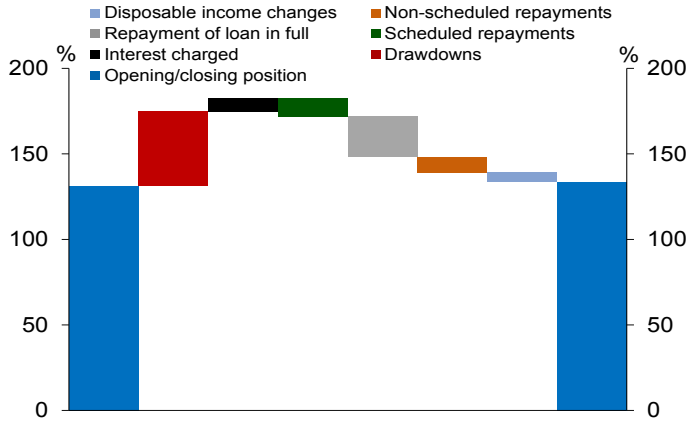
Source: Statistics New Zealand.

Note: Chart is scaled to reflect current average of three people per dwelling in the Auckland region.

Household debt-to-income appears stretched.

Household debt-to-income multiples (DTI) remain elevated at around 160 percent of household disposable income, of which bank mortgage loans account for around 84 percent. Existing borrowers are taking advantage of low interest rates to make increased debt repayments which, excluding repayments made on the sale of property, are equivalent to 20 percent of disposable income (figure 4.6). However, substantial new lending activity has offset the impact of debt repayment. Rising house prices have placed upward pressure on the DTI of new lending, which is currently well above the DTI of outstanding debt. As discussed in box C, elevated DTIs increase the vulnerability of households to a change in economic conditions, such as a rise in interest rates or unemployment.

Figure 4.6 Change in mortgage debt-to-income *(% of disposable income, 2014 Q3 to 2015 Q2)*

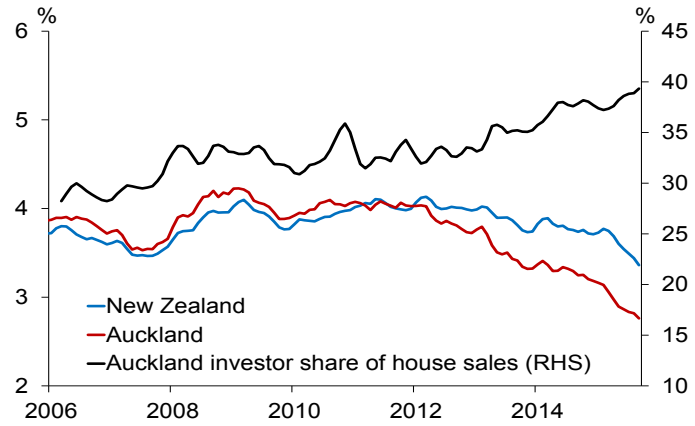


Source: RBNZ *New Residential Mortgage Commitments Survey*.

Lending to Auckland investors poses significant risks.

Increased investor activity has been an important component of the rise in activity in the Auckland property market. The share of sales to multiple property owners has increased from 35 percent to 40 percent since mid-2013, mostly due to a higher proportion of sales to investors owning fewer than five properties. Substantial falls in Auckland rental yields in recent years are stretching the debt servicing capacity of investors, and suggest that investors are entering the market based on the expectation of capital gain (figure 4.7). Consistent with low rental yields, the median Auckland investor in the *ANZ Residential Property Investment Survey* expects cumulative house price growth of 48 percent over the next five years. In contrast, rental yields and the investor share of sales have been broadly stable outside of Auckland.

Figure 4.7 Rental yields and investor share of Auckland sales *(3-month moving average)*



Source: CoreLogic NZ, MBIE, REINZ, RBNZ calculations.

Note: Rental yields are calculated using MBIE average rents and REINZ house prices. Investors are proxied using buyers that own multiple properties.

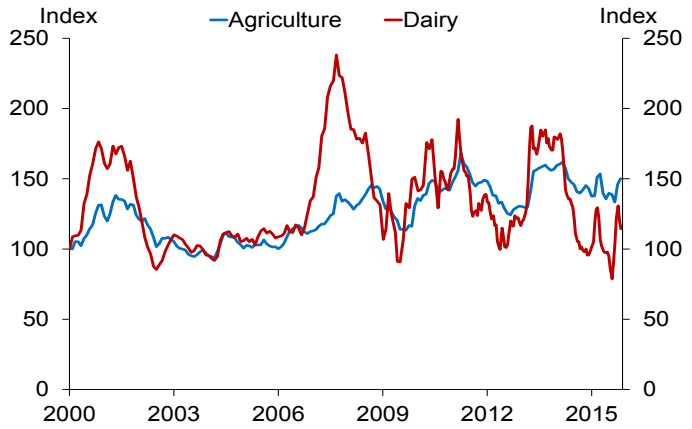
The characteristics of investor lending suggest that these trends are increasing the risks associated with the Auckland housing market. DTIs for investors are significantly higher than for owner-occupiers, with around 60 percent of lending undertaken with a total DTI of over 5 during the past year (box C). In addition, interest-only loans make up a higher proportion of investor lending than in the owner-occupier market. These statistics point to the potential for a sharp rise in investor defaults that could amplify a severe housing downturn, consistent with international evidence. The Reserve Bank has recently tightened rules on Auckland investor lending to mitigate the rising risks in the Auckland housing market (see chapter 2 for more detail).

Agriculture

Dairy commodity prices have fallen substantially...

Global dairy prices remain weak, despite rebounding in recent months (figure 4.8). Following the very elevated prices in the 2013-14 season, a number of factors have led to a substantial fall in dairy prices on international markets. Russia has renewed its ban on imports of dairy products from the European Union (EU), production quotas in the EU were fully removed in April, and major importers, such as China, have slowed their purchases of dairy products.

Figure 4.8 Agricultural commodity prices *(NZD, January 2000 = 100)*



Source: ANZ, Fonterra.

The agricultural sector has benefited from a weaker currency, and non-dairy agricultural commodity prices have remained relatively stable in New Zealand dollar terms. Rising meat prices have supported profitability in the sheep and beef sector, following drought last summer. Meat

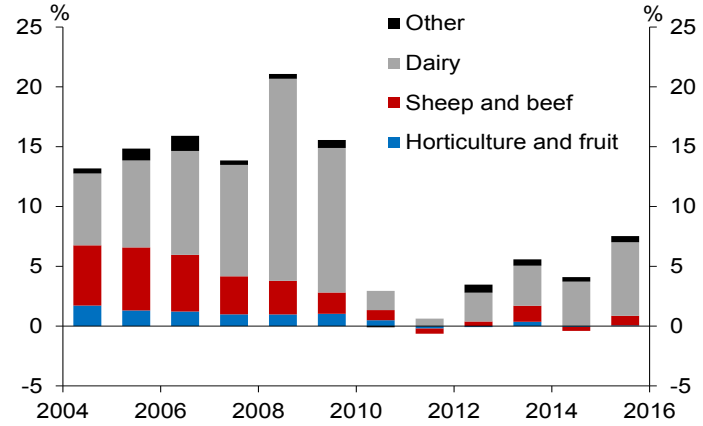
prices are expected to remain high, with herd sizes in the US well below average due to drought.

...placing strain on indebted dairy farmers.

The recent lows in dairy prices, the lowest in more than a decade, are placing financial pressure on highly indebted dairy farmers. For many farmers, 2015-16 will be the second consecutive season of negative cash flow. The break-even payout is estimated to be $5.30 per kilogram of milksolids (kgMS) for an average farm in the current season, compared to the current DairyNZ forecast for effective milk revenue of $4.15 per kgMS (see figure 2.3). Higher cost structures and a substantial rise in debt levels have increased the average break-even payout over the past decade. More than 15 percent of debt is owed by farms with debt in excess of $35 per kgMS, and cash losses are likely to be larger for these highly indebted farms.

Most farmers have sufficient financial capacity to absorb a period of negative cash flow, and banks have helped distressed farmers by expanding working capital facilities. There has been a strong increase in working capital borrowing, with credit to the sector increasing by 10.7 percent for the year to September. Bank debt could continue to increase as the season progresses. Fonterra's interest free loans to farmers will finance some of the cash flow shortfall. In contrast, non-dairy agricultural borrowing has remained weak (figure 4.9).

Figure 4.9 Agricultural lending growth *(% contribution by sector, June years)*

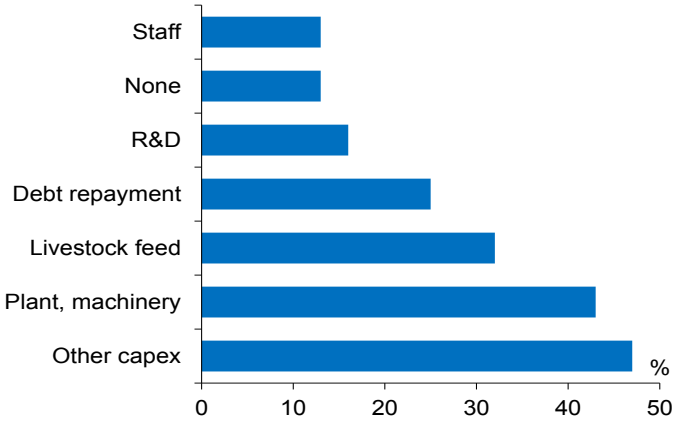


Source: RBNZ *Annual Agricultural Survey*.

Cash losses are driving efforts to cut costs...

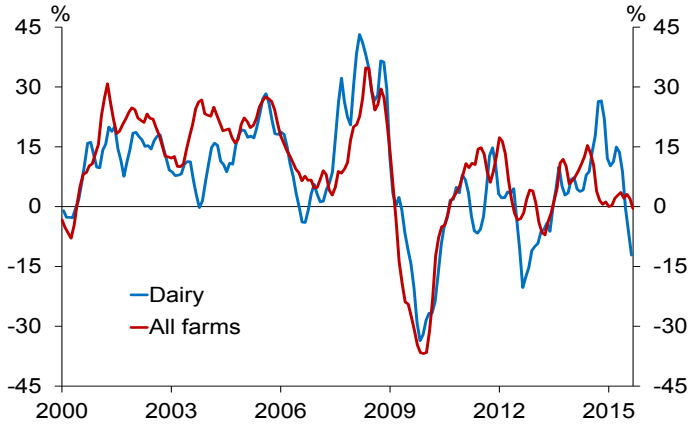
Farmers are responding to the fall in the payout by reducing farm expenditure and stock levels. A significant proportion of farmers report lower expenditure on staff, supplementary feed, capital investment, and research and development over the past year (figure 4.10). Reduced stock levels and lower use of feed supplements are expected to lead to a decline in domestic production this season, with Fonterra forecasting a 5 percent decline. Lower spending by dairy farmers is having significant spillover effects on dairy support industries. These industries rely heavily on farmer expenditure, and are likely to face an increase in financial pressure due to falling revenue.

Figure 4.10
Areas where dairy farmers have reduced expenditure
(past 12 months, % of surveyed respondents)



Source: *ANZ Privately-owned Business Barometer: Dairy Insights 2015.*

Figure 4.11
Farm land price inflation
(annual 3-month moving average)



Source: REINZ.

...and placing downward pressure on farm prices.

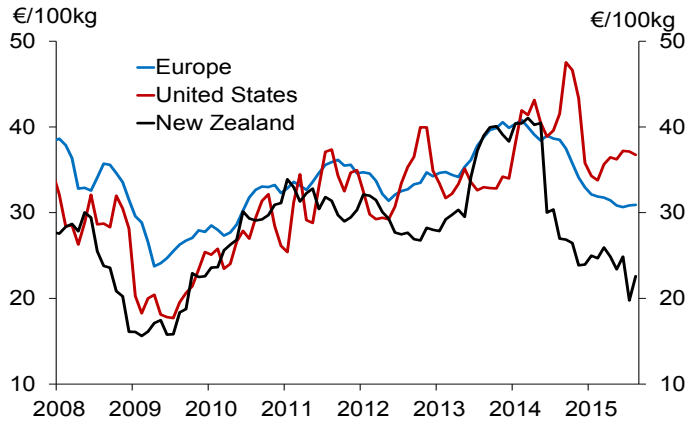
Cash flow stress could also add downward pressure to the price of dairy farms. Prices held up relatively well during the 2014-15 season, supported by low interest rates and a positive long-term outlook for the sector. However, turnover in the market for dairy farms has declined over the past year, with annual sales declining from around 310 to 260. Although the upcoming seasonal increase in sales will provide a clearer indication of price trends, dairy farm price inflation also appears to have slowed (figure 4.11). A sharp decline in farm prices would reduce the value of bank collateral, adding to the risk of a rise in non-performing dairy loans.

Global supply could be slow to adjust to lower prices.

Over the medium term, increasing consumption of dairy products in China and emerging markets is expected to support dairy prices that are significantly higher than current levels. Exports of dairy products to China have declined significantly in recent years, due to a run-down in inventories that had built up during the 2013-14 season. While there is uncertainty as to timing, China is likely to deplete its inventories and return to the market within the next year. Eventually, slower global production growth is also likely to support milk prices. New Zealand dairy farms have low costs of production compared to international competitors, and are well placed to benefit from higher milk prices.

Several factors might cause global supply to hold up, and slow the recovery in prices. Farm gate prices have held at much higher levels in a number of other dairy exporting countries, due to the buffering effect of larger domestic markets and a range of market interventions (figure 4.12). Higher farm gate prices will slow the supply response in these

Figure 4.12 Standardised farm gate prices



Source: Datum.

countries. Increased competition from European farmers is also expected to weigh on prices, as around one fifth of European dairy exports were previously destined for Russia. As long as the Russian market is closed, new buyers will need to be found to purchase the additional supply. Finally, the cost of production is falling worldwide, with fertiliser and feed prices, and interest rates being the main drivers.

El Niño presents downside risk to domestic production.

A further risk to the dairy sector is that production volumes could be constrained by dry conditions over the coming summer, due to an El Niño weather pattern. Based on previous strong El Niños – 1972-73, 1982-83 and 1997-98 – the Eastern areas of the North and South Islands, along with Northland, could experience a drought. In contrast, farmers in other parts of the country could face excessive rainfall. While droughts associated with El Niño conditions have historically resulted in significant declines in domestic production, some farmers have invested heavily in water storage and irrigation projects to minimise the impact from a drought. To the extent that global dairy production declines, lower supply may also support a recovery in milk prices.

Commercial property

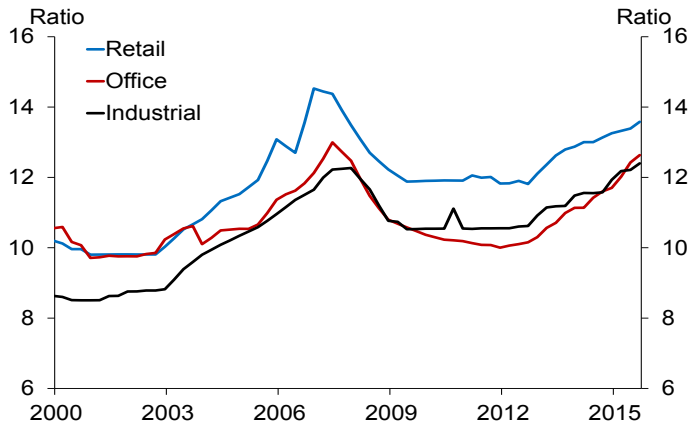
Commercial property prices are increasing…

Commercial property prices continue to increase, due to ongoing strength in office prices and a more recent increase in industrial property prices. Price growth has been underpinned by rising tenant demand, as reflected in declining vacancy rates, due to robust economic growth over the past few years. Low domestic and global interest rates are also supporting investor demand. Offshore investors have been a key driver of recent sales activity, in part reflecting the global environment of low asset yields.

…although the use of leverage is lower than in previous cycles.

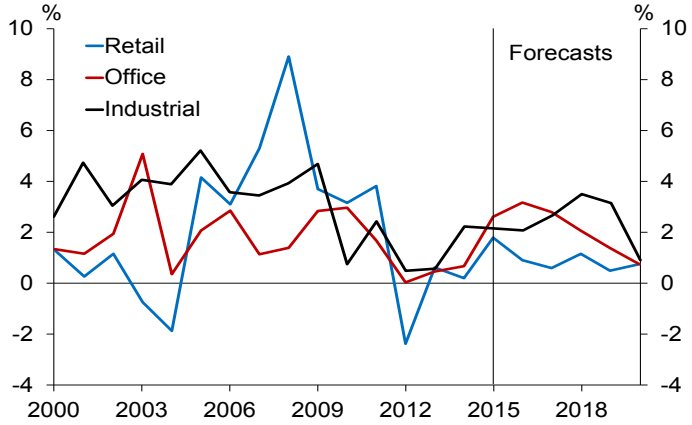
The price-to-rent ratio for commercial property has been increasing in recent years, and is now approaching levels seen immediately prior to the GFC (figure 4.13). The vulnerability of the banking system to a price correction is likely to be lower than during the previous cycle, due to a greater share of equity funding in the sector. In particular, there is more limited use of mezzanine financing for property development, which has been a feature of previous commercial property booms. This has seen the aggregate debt-to-income ratio for the sector fall by 20 percentage points from its 2008 peak (see figure 4.15).

Figure 4.13 Commercial property price-to-rent ratio



Source: JLL.

Figure 4.14 Supply pipeline by sector *(% of sectoral stock)*



Source: JLL.

Although increased tenant demand has been mainly absorbed within the existing stock thus far, rising prices are prompting an increase in commercial property development. Development activity has picked up, particularly in the office sector, where the supply pipeline is expected to be comparable to the 2008-11 period (figure 4.14). As commercial property projects take a long time to plan and build, there is a possibility of eventual oversupply in the market, which has been a feature of previous commercial property cycles. Similarly, apartment construction in the residential Auckland market has also increased significantly, and that market has been prone to periods of oversupply.

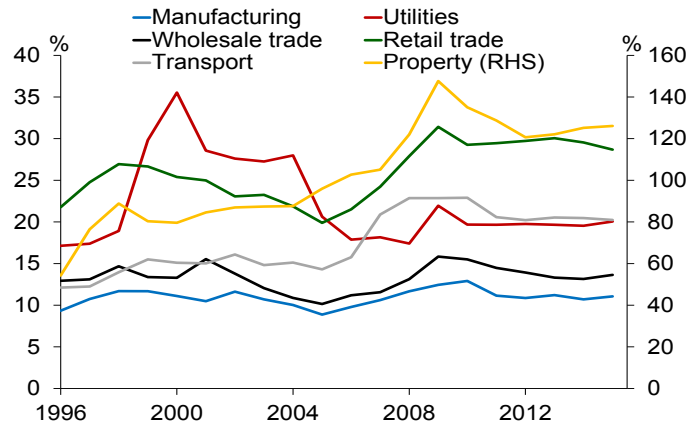
Non-property business

Business borrowers have reduced debt since the GFC.

The non-property business sector has reduced its indebtedness since a peak in 2009, increasing resilience to volatility in earnings or increases in debt servicing costs. As shown in figure 4.15, the ratio of bank debt to earnings has remained relatively stable since 2010 in most industries. Debt levels are now at or below historical averages in the manufacturing, wholesale trade and utilities sectors.

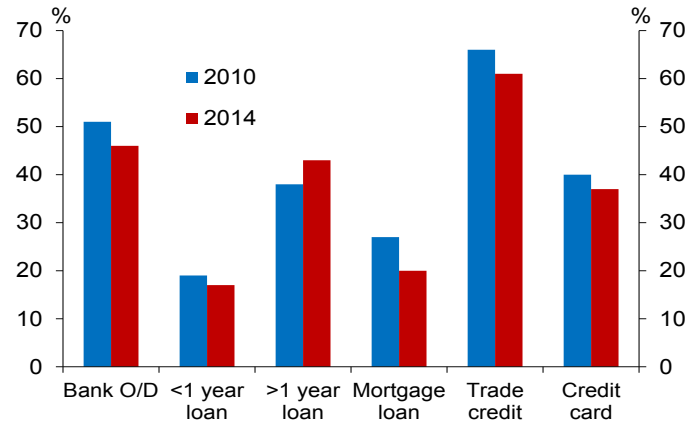
The more cautious attitude to debt is visible across a range of debt products, such as overdrafts, loans, leases, hire purchases, and credit cards. Data from the *Business Operations Survey* indicate that the proportion of businesses with outstanding debt declined between 2010 and 2014 in almost every category (figure 4.16).

Figure 4.15
Business sector bank debt-to-income ratio



Source: RBNZ SSR, Statistics New Zealand *Annual Enterprise Survey*.

Figure 4.16
Outstanding business debt by product type
(% of total respondents)



Source: Statistics New Zealand *Business Operations Survey*.

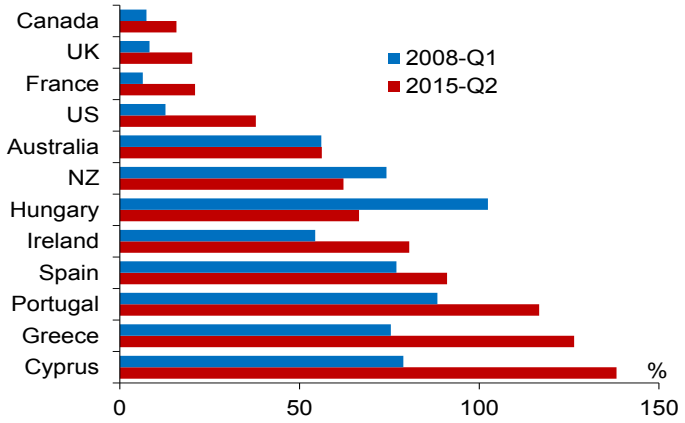
The stronger financial position of the business sector has increased its capacity to fund increases in business investment through borrowing. Following an increase in investment and business confidence, average credit growth increased from 3 percent during 2014 to 6 percent in the year to September 2015. Banks have noted that low interest rates are increasing credit demand, particularly for mergers and acquisitions. With a recent decline in business sentiment and the Canterbury rebuild starting to peak, business lending and investment activity could slow in the coming year.

External sector

New Zealand's external liabilities have declined...

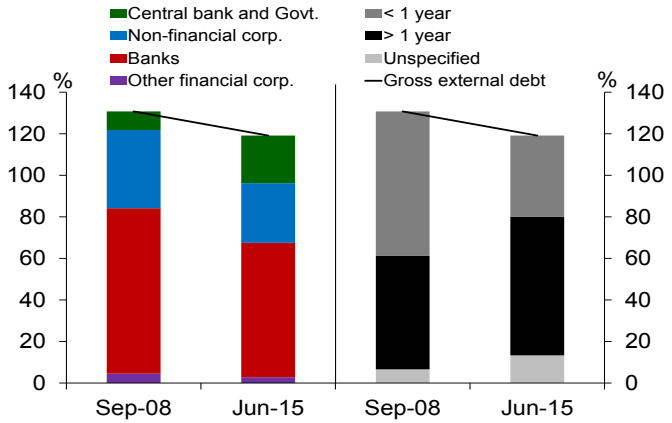
Net external liabilities reached a peak of 85 percent of GDP in 2009, and have subsequently fallen back to 62 percent in June 2015. Over the same time period the net external liabilities of many other indebted economies have deteriorated further (figure 4.17). Notwithstanding the decline in recent years, New Zealand's net external liabilities as a share of GDP remain elevated on a cross country basis. A high level of external liabilities leaves the economy more vulnerable to tighter funding conditions if the cost or availability of offshore funding worsens significantly.

Figure 4.17
Cross country net external liabilities
(% of GDP)



Source: Haver Analytics.

Figure 4.18
New Zealand's gross external debt
(% of GDP)



Source: Statistics New Zealand.

The decline in New Zealand's net external liabilities since 2008 has been driven by a fall in private sector debt intermediated by the banking system, enabled by a significant reduction in the gap between lending and deposit growth. This has resulted in a reduction in both short-term and bank external debt of around 20 percent of GDP (figure 4.18). When combined with a significant increase in banking system liquid assets since the GFC, the rollover risk associated with external borrowing has reduced significantly.

...alongside increased private sector savings.

Prior to the crisis, high investment rates and low private sector savings translated into large and negative current account deficits. Private sector savings have increased over the past decade, with the household savings rate rising by more than 10 percentage points. Greater private savings has partially offset the need for overseas funding, thereby lowering the current account deficit. Falling dairy sector income and increases in investment and construction activity could contribute to a widening gap between private savings and investment in coming years. With the Government having recently returned to operating surplus, its contribution to the current account deficit has declined materially.

Box C

Debt-to-income ratios of New Zealand borrowers

Around 40 percent of residential mortgages in New Zealand are issued at more than five times the borrower's gross income. Total debt-to-income multiples (TDTIs) have increased substantially since the 1980s, when banks were usually unwilling to lend customers more than two times gross income.[1] This box discusses risks around elevated TDTIs, and policies related to mortgage servicing in New Zealand and abroad.

Sustained declines in interest rates since the 1980s have been a significant factor enabling borrowers to service larger loans relative to income. Lower inflation rates have also meant that mortgage repayments remain a significant burden for much longer (high inflation means nominal incomes rise faster, so mortgage repayments diminish quickly relative to incomes). On the supply side of the credit market, New Zealand banks have generally found mortgage lending profitable. As a result, banks have competed to grow market share, partly on the basis of the amount they have been willing to lend to individual borrowers.

For the majority of borrowers with sufficient equity, banks' assessment of their loan servicing ability is the most important driver of the maximum amount that can be borrowed. Banks typically use a net income surplus test for originating mortgages, which is designed to ensure customers will have enough residual income after mortgage and other commitments to meet essential living costs. This can be a reasonable framework for mortgage loan decision making, but only if the underlying assumptions about living costs, income variability and the potential for interest rates to rise are prudent.

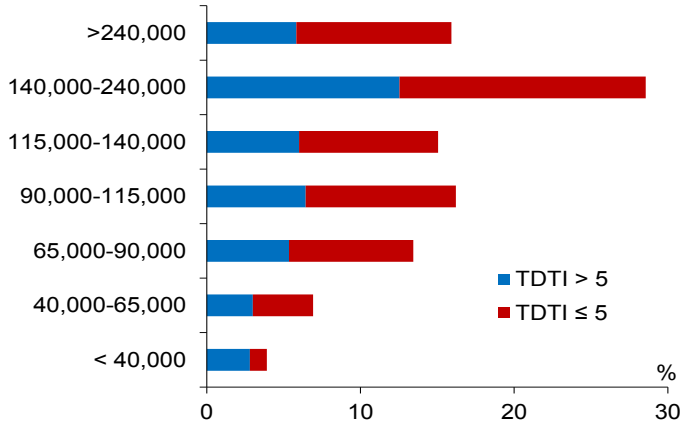
The Reserve Bank has recently begun collecting data on TDTIs at the time of loan origination, with the cooperation of the five largest banks. While the data are not fully consistent across banks, they are broadly indicative of industry trends. A high proportion of loans are originated at high TDTIs, with around 40 percent by value at a TDTI of above five. Under a standard 25-year mortgage contract and a 6.5 percent mortgage rate, these borrowers would be dedicating about 40 percent of their before-tax income to servicing mortgage payments. Although historically low mortgage rates are currently boosting mortgage affordability, elevated TDTIs increase vulnerability to a decline in labour incomes or an increase in mortgage rates.

High income borrowers tend to have significantly more net income surplus for any given TDTI, given that essential expenses do not rise proportionately with income. The risks around high-TDTI lending are therefore somewhat mitigated by borrowers tending to have high incomes. Around 70 percent of all high-TDTI lending is to borrowers with income above the New Zealand household average of about $90,000 (figure C1). Moreover, around 40 percent of lending is to borrowers with incomes of above $140,000. Loans to these borrowers are substantial, often in excess of $1 million, and are likely to be a significant factor enabling rapid increases in Auckland house prices.

About 60 percent of all investor lending is at a TDTI of above 5, with around 25 percent at a TDTI exceeding 7 (figure C2). Part of the reason for high TDTIs is that most investors do not need to meet living expenses out of the rental income they earn. Investors will also often have significantly lower tax bills relative to a homeowner with a similar income, because of their ability to deduct interest costs when calculating

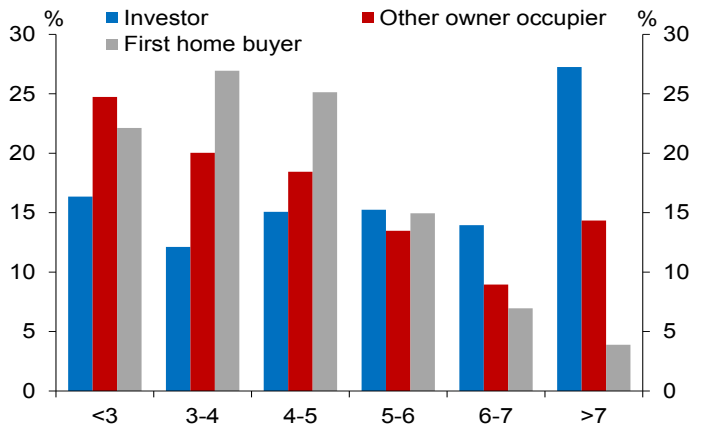
1 TDTI is defined as the total declared debt of the borrower, from all sources, as a ratio to gross income. See Coleman (2007) 'Credit constraints and housing markets in New Zealand' Reserve Bank of New Zealand *Discussion Paper*, DP2007/11 for more on the easing in credit constraints since the 1980s. This definition corrects that used in the print edition.

Figure C1
Distribution of borrowing by borrower gross income
(May 2014 to September 2015, % of total lending)



Source: RBNZ.

Figure C2
Total debt-to-income ratio by buyer type
(May 2014 to September 2015, % of lending to each buyer type)



Source: RBNZ.

taxable income. Nevertheless, the proportion of investor lending at high TDTIs may also indicate elevated risk. By contrast, the share of high TDTI lending is much lower for first home buyers. In the data, borrowers are currently classified by the purpose of the most recent loan, so some 'owner occupiers' (but no first home buyers) are likely to also hold rental properties.

With global interest rates at historically low levels, serviceability calculations have been an area of concern internationally.[2] A number of countries including Australia, Canada, the US and the UK have provided guidelines or rules effectively creating minimum standards for lenders when originating loans. This may be done for prudential reasons, consumer protection or both. Recent policy scrutiny of mortgage origination in Australia has focused on both objectives.[3] In some cases, standards place a practical limit on the amount that can be borrowed. For example, new UK rules arising after the *Mortgage Market Review* require lenders to conduct a full affordability check on mortgage borrowers.

In New Zealand, the *Responsible Lending Code*, released by the Minister of Commerce and Consumer Affairs in March 2015, has some application to mortgage lending. However, the code is less prescriptive around mortgages than in countries like the UK and Australia. On the prudential side, the Reserve Bank's speed limit on high loan-to-value ratio lending will effectively act as a constraint on TDTI for some borrowers. The Reserve Bank also imposes risk-based capital requirements on mortgage loans, and promotes market and self-discipline through governance and disclosure standards. For banks that use Internal-Ratings Based capital models, capital requirements for mortgage loans typically depend on a measure of the borrower's ability to service the loan.

2 Obtaining comparable data on debt-to-income multiples at origination across countries is difficult. Some countries like the UK have such data for owner-occupiers, while others such as New Zealand have data that also cover investors, making the observed average multiples higher.

3 See Byres (2015) 'Banking on housing', http://www.apra.gov.au/Speeches/Documents/1508-ABE-Lunchtime-Briefing-Banking-on-housing-26August2015.pdf

While there have not been substantial losses on mortgage loan books in New Zealand for many years, loans today are much larger relative to incomes. In the current environment of low interest rates, rapidly rising house prices, and elevated household debt, lenders need to take particular care to maintain adequate testing of loan serviceability. These tests should have sufficient regard to the risks faced by customers if interest rates rose sharply or if customers experienced a loss of income. The Reserve Bank will continue to monitor and report on the risks around high-TDTI lending, and intends to gradually expand the collection of TDTI data during 2016 to other banks.[4] The data will also help to assess the effect of the altered LVR policy in increasing the resilience of bank and household balance sheets. The Reserve Bank will publish data for the system as a whole after ensuring that the data are of sufficient quality.

4 This is likely to occur through a further expansion to the recently enhanced *New Residential Mortgage Commitments Survey* (which provides more information on investors and Auckland lending).

Chapter 5
Financial institutions and infrastructure

The New Zealand banking system continues to hold capital and liquid assets in excess of regulatory requirements. Although lending growth has picked up, deposit growth has largely kept pace, helping maintain strong bank funding positions. Banks have maintained strong profitability, with continued reductions in cost-to-income ratios. Risks relating to dairy lending have increased, and it is important that banks adequately provision for expected losses on dairy exposures.

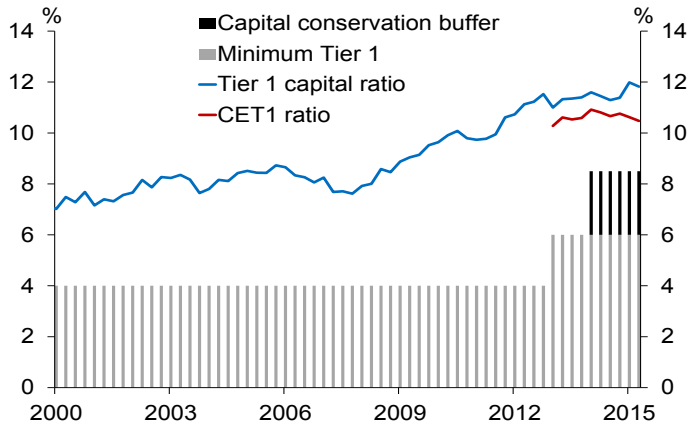
The resilience of the insurance sector has improved since the introduction of licensing, with significant growth in net assets, despite the negative effects of the Canterbury earthquakes on some general insurers. The sector continues to make progress on processing claims related to the Canterbury earthquake.

Banking sector

Bank capital remains above regulatory minimums...

Locally incorporated banks continue to hold capital in excess of current regulatory minimums, providing a buffer against a significant deterioration in economic conditions (figure 5.1). The system-wide Tier 1 capital ratio was 11.8 percent of risk-weighted assets (RWA) as at June 2015, well above pre-crisis norms. The increase since 2008 has been partly driven by stricter capital requirements, with improved profitability enabling capital buffers to be built via retained earnings.

Figure 5.1
Regulatory capital ratios – all locally incorporated banks
(% of RWA)



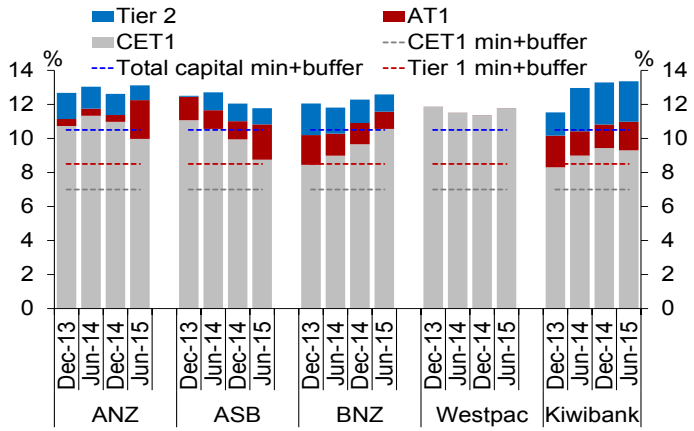
Source: Registered banks' *Disclosure Statements*.

Banks are subject to a minimum common equity Tier 1 (CET1) requirement of 4.5 percent of RWA, and a common equity conservation buffer of 2.5 percent. The conservation buffer, which is over and above required minimums, ensures that banks maintain additional high quality capital to absorb losses in a stress event. Banks are permitted to operate within the buffer but, if they do so, they are subject to restrictions on dividend payments. As at June 2015, the aggregate banking system CET1 ratio was 10.4 percent, down slightly on six months ago, but still above the regulatory minimum plus conservation buffer of 7 percent. As discussed in chapter 6, the Reserve Bank plans to review minimum capital requirements within the next year.

...but the composition of capital has changed.

Over the past two years, there has been a noticeable shift in the composition of capital at some banks (figure 5.2), coinciding with the phasing out of capital instruments that do not comply with the Basel III requirements.[1] As non-compliant instruments have matured, banks have increasingly issued 'hybrid' debt and preferred shares that qualify as alternative Tier 1 (AT1) or Tier 2 capital. These instruments are considered loss absorbing as they must contain provisions for write-off or conversion into common equity in the event that the Reserve Bank determines that the institution is not viable.[2] However, it is important that banks continue to hold sufficient levels of the highest quality (CET1) capital, given its capacity to absorb losses on a going-concern basis.

Figure 5.2
Regulatory capital ratios – large banks
(% of RWA)



Source: Registered banks' *Disclosure Statements*.

Note: 'Buffer' refers to the 2.5 percent capital conservation buffer.

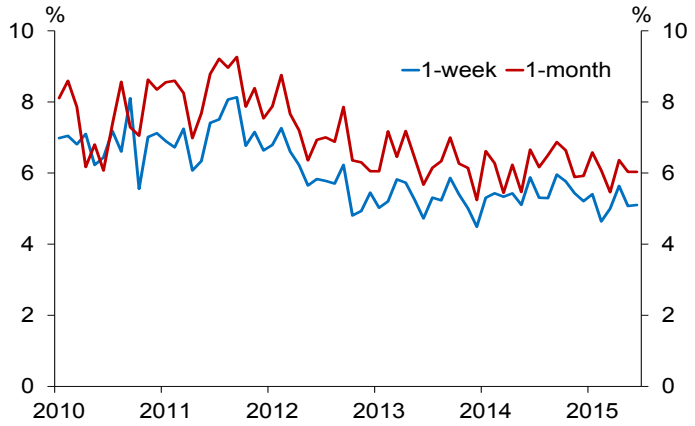
1 This phase-out began on 1 January 2014, with the share of non-compliant instruments included in regulatory capital amortising to zero by 2018.

2 For more information regarding regulatory capital see, Barker, F (2015) 'The Reserve Bank's application of the Basel III capital requirements for banks', Reserve Bank of New Zealand *Bulletin*, 78(5), June, http://www.rbnz.govt.nz/research_and_publications/reserve_bank_bulletin/2015/2015may78-5.pdf

Banks have significant liquid asset buffers…

Under the Reserve Bank's liquidity policy, all locally incorporated banks are subject to minimum one-week and one-month mismatch ratios, which ensure they can withstand a short-term loss of confidence or market disruption. Banks are required to model their projected net cash outflows following a serious loss of confidence in the bank. To meet the requirement, banks must hold adequate levels of liquid assets to fill this projected cash flow mismatch.[3] Banking system liquidity, as measured by the mismatch ratios, has remained relatively stable over the past two years (figure 5.3). As at September 2015, the system-wide mismatch ratios are well above the 'zero' regulatory minimum.

Figure 5.3 Mismatch ratios

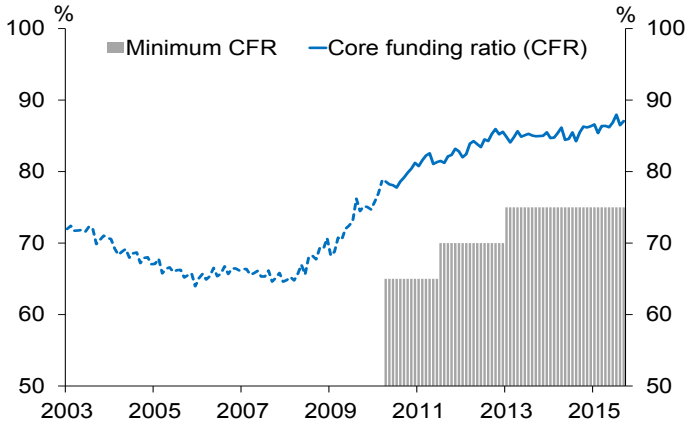


Source: RBNZ *Liquidity Survey*.

…and their funding positions remain strong…

Banks fund their activities through equity, short- and long-term market funding, and non-market funding (deposits). Since 2010, locally incorporated banks have been subject to restrictions on the composition of their funding through a minimum core funding ratio (CFR) requirement.[4] The purpose of this policy is to reduce the vulnerability of the banking system to a period of market disruption by decreasing banks' reliance on less stable funding sources, such as short-term market funding. Since the policy came into effect, the banking system's core funding position has improved significantly (figure 5.4). The system-wide CFR has increased slightly since the May *Report* to 87.1 percent, well above the regulatory minimum requirement of 75 percent.

Figure 5.4 Banking system core funding *(% of loans and advances)*



Source: RBNZ *Liquidity Survey*, RBNZ *Standard Statistical Return* (SSR).

Note: The dotted line for the CFR is an approximation based on SSR data.

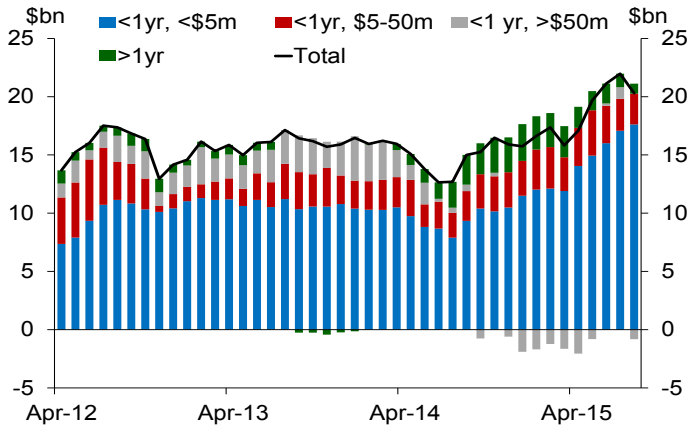
3 Liquid assets refer to securities that can be sold at short notice with limited loss of value, and include balances held with the Reserve Bank, government debt, and a range of other securities.

4 The minimum CFR requirement was initially set at 65 percent of total loans and advances, and was subsequently increased in increments of 5 percentage points to 75 percent from 1 January 2013.

...reflecting increased deposit growth.

Improvements in the banking sector's funding position over the past year primarily reflect strong growth in deposits (figure 5.5). Growth has been most pronounced among deposits with a value of less than $5 million, which increased by $18 billion in the 12 months to September 2015. As smaller deposits are subject to only a 10 percent haircut prior to counting as core funding, this growth has enabled core funding to broadly keep pace with the increase in lending growth over the same period.[5] Annual household deposit growth has also increased from 10 to 12 percent since the May *Report*. Strong deposit growth has meant that banks have had less need to issue debt in wholesale markets, reducing exposure to potential disruptions to offshore funding markets.

Figure 5.5 Deposit funding *(annual growth, dollar value)*

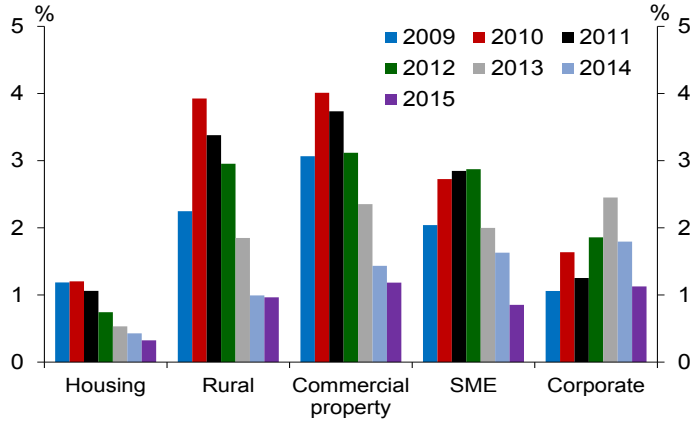


Source: RBNZ *Liquidity Survey*.

Non-performing loans are falling...

Total non-performing loans (NPLs) peaked in 2011 at 2.2 percent of lending, and have since gradually trended down. Over the past year system-wide NPLs fell from 0.8 percent to 0.6 percent of lending, reflecting a broad-based fall in NPLs across sectors (figure 5.6). The improvement in asset quality has been particularly evident in the small-and-medium enterprise (SME) sector, with NPLs almost halving over the past year to less than 1 percent.

Figure 5.6 Sectoral non-performing loans *(% of sectoral lending, September years)*



Source: Based on private reporting data from 21 registered banks.

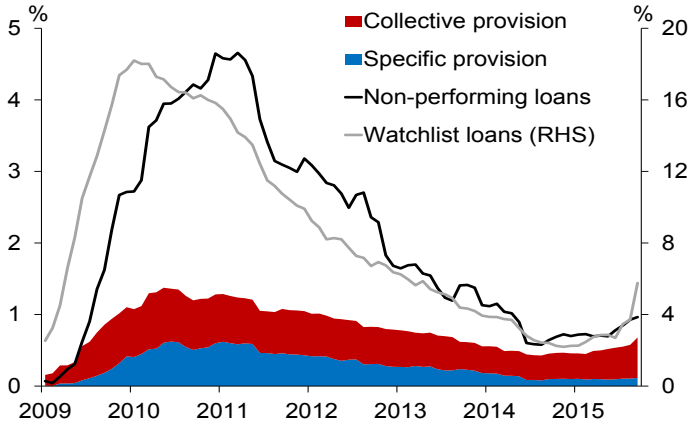
Note: Includes impaired and 90 days past due assets. Data are not standardised and definitions may vary across banks.

5 A 'haircut' in this context refers to the proportion of funding that does not count towards the CFR. For example, a 10 percent haircut on a $100 deposit means that $90 would count as core funding in the calculation of the CFR.

...with the exception of the dairy sector.

NPLs in the dairy sector remain low, despite ticking up to 1 percent from 0.6 percent a year earlier. With many farmers facing two consecutive seasons of operating losses, there is an elevated risk of a substantial increase in NPLs (box A). Watchlist loans, which provide a leading indicator of NPLs, have increased over the past year and currently stand at 5.8 percent of outstanding dairy lending (figure 5.7).

Figure 5.7 Dairy non-performing loans and provisions *(% of lending)*



Source: Based on private reporting data from 21 registered banks.

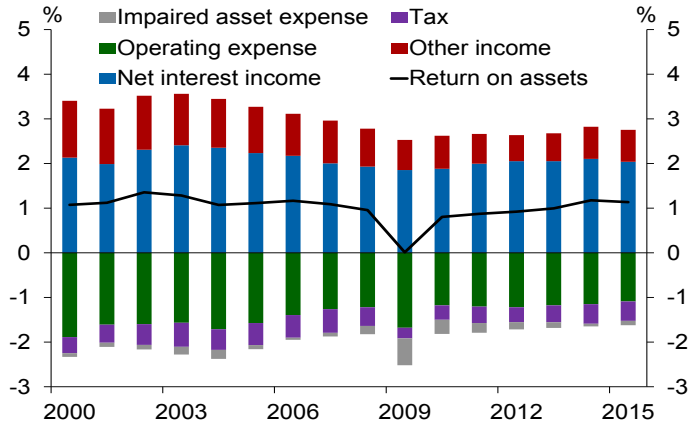
Note: NPLs include impaired and 90 days past due assets. Data are not standardised and definitions may vary across banks.

The Reserve Bank has requested that the five largest dairy lenders undertake a stress test of their dairy portfolios, and is in discussions to ensure they are setting aside realistic provisions to reflect the expected rise in problem loans. Currently, provisions remain low by historical standards, with specific provisions and collective provisions equivalent to 0.1 percent and 0.6 percent of outstanding dairy loans, respectively.[6] However, provisions have picked up recently and are expected to rise further in the coming months, commensurate with the likely increase in problem loans.

Bank profitability remains solid...

Bank profits have remained solid since the last *Report*. Return on assets (ROA) was 1.1 percent for the year to September, similar to a year earlier and near its pre-GFC average (figure 5.8). Return on equity remains below pre-GFC levels due to higher capital as a proportion of total assets. Robust profitability in core functions provides an additional buffer over and above capital to absorb losses in a period of stress.

Figure 5.8 New Zealand bank profitability *(% of total assets, September years)*



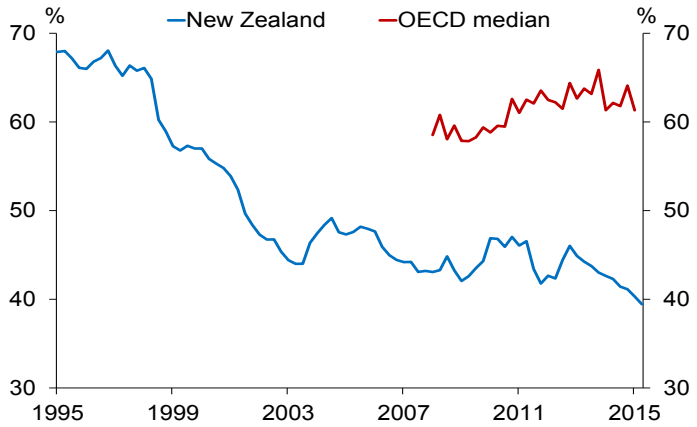
Source: Registered banks' *Disclosure Statements*, RBNZ *Income Statement Survey*.

6 Specific provisions are for losses on loans that are known to be impaired and are individually significant. Collective provisions are for loans assessed in pools of similar assets with similar risk characteristics.

...aided by continued cost containment...

During the late 1990s and early 2000s, banks cut operating costs, resulting in the cost-to-income ratio declining from nearly 70 percent to 45 percent (figure 5.9). Following several years of relative stability, the banking system's operating cost-to-income ratio has declined further to 40 percent. This continued cost containment added 6 basis points to ROA over the past year, and accounts for about half of the increase since 2009. New Zealand bank operating costs are low compared to their international counterparts, although this difference can be partly explained by New Zealand banks' primary focus on traditional deposit and lending activities.

Figure 5.9 Bank operating costs *(% of total income)*



Source: Registered banks' *Disclosure Statements*, IMF *Financial Soundness Indicators* database.

Note: 'Total income' refers to net interest income plus other income.

...and a relatively stable net interest margin.

After recovering from a post-crisis low of 1.9 percent in late 2009, retail banks' net interest margin has remained relatively steady around 2.3 percent (figure 5.10). Over the past six months, increased competition in the residential mortgage market has seen interest income decline modestly relative to interest expense.

Figure 5.10 Retail banks' net interest margin *(annualised quarterly)*

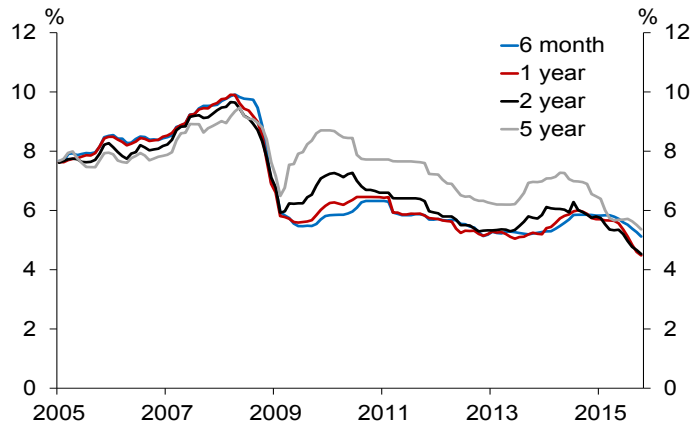
Source: Registered banks' *Disclosure Statements.*

Note: Net interest margin is net interest income relative to interest-earning assets.

Falling benchmark interest rates have supported further declines in fixed mortgage rates since the last *Report* (figure 5.11). Competition has been particularly pronounced at the 2-year term, with the average 2-year fixed mortgage rate decreasing by 1.3 percentage points since the beginning of the year. Falling borrowing costs have driven growth in lending with fixed rates of less than two years, coinciding with a decrease in floating rate loans outstanding. Continued fixed rate competition could see the net interest margin come under further downward pressure, particularly

as fixed rate mortgages tend to have lower margins than floating rate mortgages.

Figure 5.11 Fixed term mortgage rates



Source: RBNZ SSR, interest.co.nz.

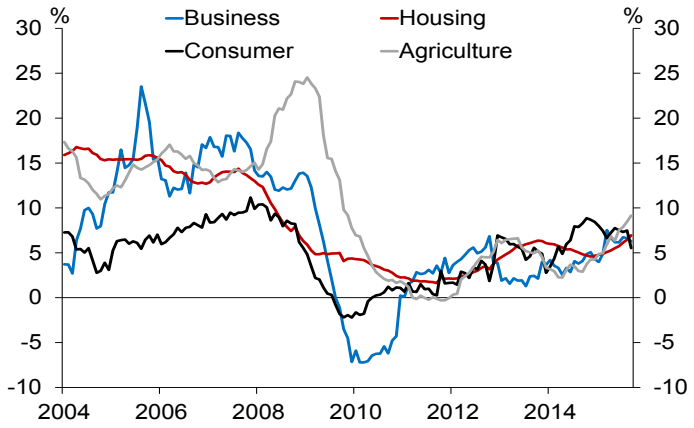
Note: Average new customer rate for largest seven mortgage lenders. Data since 2008 include specials.

Bank lending growth has increased...

Bank lending growth has continued to increase since the previous *Report*, although growth remains lower than prior to 2009 (figure 5.12). Bank lending expanded at a rate of 7.1 percent in the 12 months to September 2015, compared to 4 percent a year earlier. Housing-related lending growth accounted for much of this increase, rising from 4.8 percent to a post-GFC high of 6.9 percent (with 7.8 percent annualised growth over the past three months). New mortgage commitments are increasing at a significantly higher rate, although elevated debt repayment among existing borrowers is masking the effect on net credit growth (see figure 2.5).

Over the past year, business lending increased by 6.3 percent, up from 4.1 percent a year earlier. Business lending growth is unlikely to increase significantly in the months ahead, as recent declines in business confidence dampen business investment and credit demand. Similarly, annual growth in consumer lending, which is currently running at 5.5 percent, is likely to be constrained by lower spending intentions and consumer confidence.

Figure 5.12 Bank lending by sector *(annual % change)*



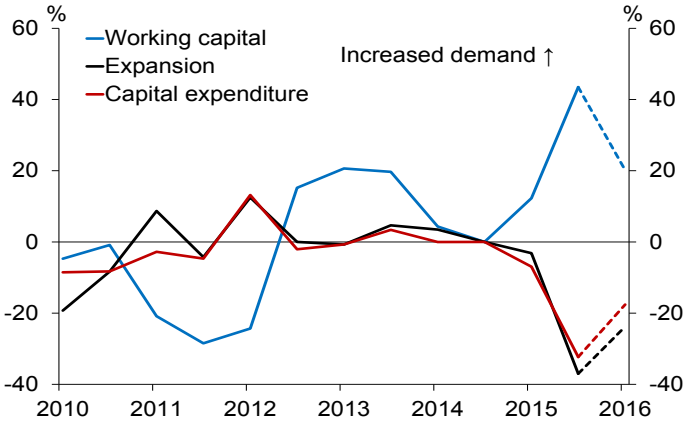
Source: RBNZ SSR.

...and agricultural lending growth is likely to remain strong.

Agricultural lending increased by 9.2 percent over the past year, mainly driven by increased borrowing by the dairy sector. Dairy lending accounts for more than two-thirds of total agricultural debt, and is currently growing at around 10 percent per annum. Banks report that increased credit demand is being driven by rising working capital borrowing in the dairy sector, while credit demand for capital expenditure and expansion dropped sharply over the past six months (figure 5.13). With dairy farm

cash flows likely to remain under significant pressure, banks expect further increases in demand for working capital borrowing over the next six months.

Figure 5.13 Demand for bank lending by the agriculture sector *(net percentage)*

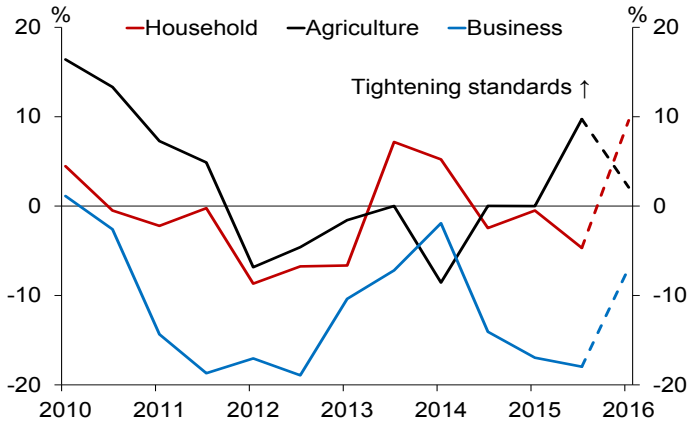


Source: RBNZ *Credit Conditions Survey*.

Note: Net percentage is the percentage of respondents reporting an increase in demand minus the percentage reporting a decline. Individual bank responses are weighted by market share. The dotted line is the expected change six months ahead.

If cash flow pressures persist for an extended period, it is important that banks do not exacerbate these pressures through an unwarranted tightening in lending standards. Banks report some tightening in agricultural lending standards since the May *Report*, but expect standards to remain broadly unchanged over the next six months (figure 5.14). Tighter standards are mostly being applied to customers looking to purchase farms or undertake significant investment. Increased working capital demand has been accommodated, with banks taking a medium-term approach to assessing the viability of customers that are currently making operating losses. Outside of the agricultural sector, banks report a continued reduction in margins on corporate, commercial property and SME lending.

Figure 5.14 Change in bank lending standards *(net percentage)*



Source: RBNZ *Credit Conditions Survey*.

Note: Net percentage is the percentage of respondents reporting a tightening of lending standards minus the percentage reporting an easing. Individual bank responses are weighted by market share. The dotted line is the expected change six months ahead.

The LVR speed limit is improving bank balance sheets.

The composition of mortgage lending is increasing the risks associated with rapid growth in Auckland house prices. A large share of new lending has occurred at elevated debt-to-income ratios, and leveraged investor purchases in Auckland have become increasingly prominent. There is a heightened risk that more exposed borrowers could come under significant stress in the event of a severe price correction. To limit the associated risks, the Reserve Bank implemented a tighter LVR speed limit for Auckland investors, which came into effect on 1 November. On balance, banks are expecting the changes to the speed limit to significantly tighten household lending standards (figure 5.14).

Restrictions on high-LVR lending are mitigating some of the risks associated with the housing market. The system-wide share of new commitments with an LVR exceeding 80 percent has fallen from around

30 percent prior to the restrictions to 6 percent (see figure 2.7). The total stock of such loans in mortgage portfolios has declined more gradually, from a peak of 21 percent to 14 percent as at June 2015. With the easing of the LVR speed limit outside of Auckland, this trend could slow over the next year. However, tighter restrictions on Auckland investor lending will add to the resilience of the banking system to a severe housing downturn.

Non-bank lending institutions (NBLIs)

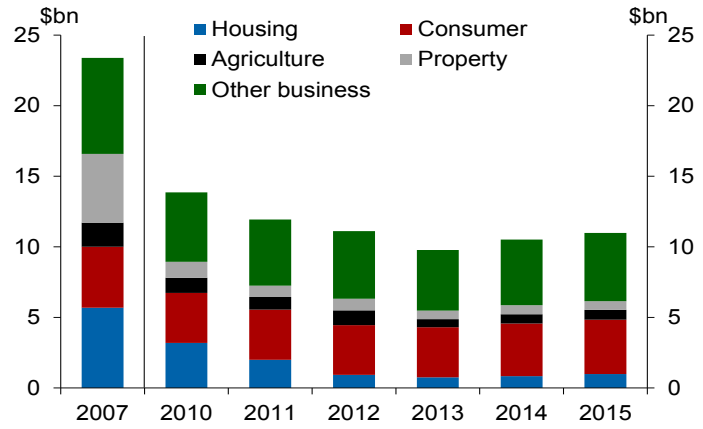
NBLIs account for a small share of intermediated credit…

The banking system is the primary lending source for New Zealand households and businesses, accounting for more than 97 percent of intermediated credit. Other providers of intermediated credit include non-bank deposit takers (NBDTs) regulated by the Reserve Bank – savings institutions (credit unions and building societies) and deposit-taking finance companies – as well as non-deposit taking finance companies. These entities comprise the non-bank lending institution (NBLI) sector.

…but lending has grown over the past year.

The NBLI sector has more than halved in size since 2007 (figure 5.15). Since 2013, the sector has moved from contraction to expansion. Excluding institutions in receivership or moratorium, total lending increased by 4.4 percent in the year to September. Housing-related lending growth has been strong at 17.7 percent. However, due to the small size of the NBLI housing portfolio, the increase represents only one percent of the total growth of intermediated housing credit over the year. Therefore the increase does not represent material regulatory leakage from the LVR policy.

Figure 5.15 Annual NBLI lending by sector *(September years)*



Source: RBNZ NBDT reporting, RBNZ SSR.

Note: Excludes assets of deposit-taking finance companies in receivership or moratorium. In the period shown on the chart, several large NBLIs left the sector and became banks.

Insurance

Low global interest rates continue to affect insurers.

The insurance sector continues to be affected by low global interest rates. Low long-term interest rates drive down investment returns and squeeze insurers' profitability. This environment is particularly difficult for life insurers which need to generate sufficient returns to cover expected claims extending many years into the future. New Zealand life insurers are partly insulated, relative to their global counterparts, due to their primary focus on traditional life cover. By contrast, global life insurers'

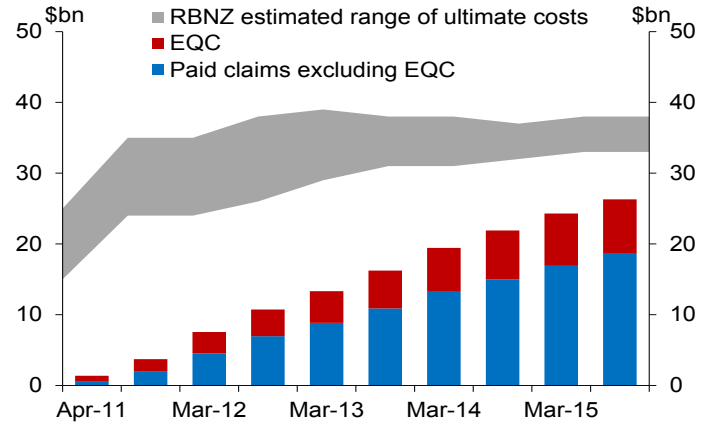
more prevalent use of savings products with guaranteed returns leaves them more vulnerable to eroding profitability and capital positions as a result of lower investment returns.

As noted in the last *Report*, low reinsurance costs have helped to offset the negative effects of low global interest rates on the New Zealand insurance sector. The cost of traditional reinsurance capital has stabilised over the past six months (in US dollar terms). However, overall reinsurance costs have generally continued to decline, partly due to further growth in reinsurance provided through capital markets. Alongside strong competitive pressures, including from new entrants, this has placed further downward pressure on domestic insurance premiums. It remains important in this competitive environment that insurers do not lower underwriting standards in an attempt to increase returns or market share.

Insurers continue to process Canterbury earthquake claims.

As at 30 September 2015, insurers have paid $26 billion in Canterbury earthquake claims (figure 5.16). The Reserve Bank estimates that payouts made to date amount to around 80 percent of ultimate claims costs, compared to 74 percent at the time of the May *Report*. However, the ultimate cost of the earthquakes for insurers remains uncertain, especially because remaining claims tend to be more complex cases. For example, multi-unit dwellings with claims against multiple insurers or with some dwellings uninsured can be very complex to resolve. Private insurers also face uncertainty about how many of the claims currently being worked through by the Earthquake Commision (EQC) will require additional funding.

Figure 5.16 Canterbury earthquake paid claims

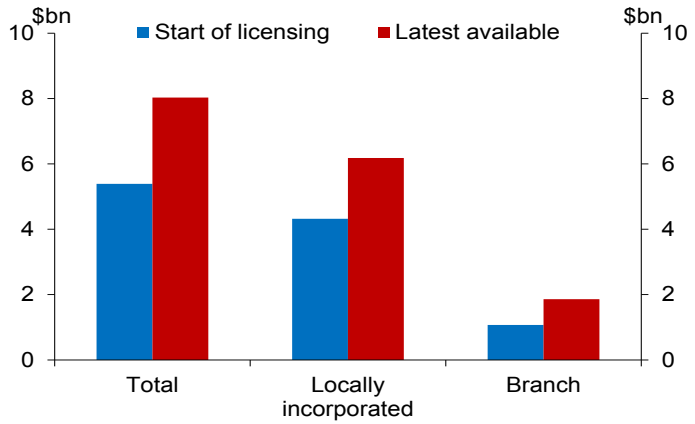


Source: EQC, RBNZ.

Insurance sector capital appears to have improved in recent years.

Since licensing of insurers began, net assets of the sector (a measure of capital) have increased, despite the negative effects of the Canterbury earthquakes on some general insurers (figure 5.17). Over this period, net assets grew at an annual rate of 9 percent, increasing policyholder security. Much of this increase for New Zealand insurers was driven by the Reserve Bank's introduction of insurer capital and solvency requirements, which resulted in significant capital injections. As these regulatory changes caused a level shift in net assets, the rate of improvement is expected to slow in coming years.

Figure 5.17 Insurance sector net assets



Source: Individual institutions' financial statements.

Note: Includes 93 currently licensed insurers for which data are available.

Regular data collection has been implemented.

A lack of available data currently precludes a detailed assessment of trends in the insurance sector. However, the regular collection of insurance data has begun, with licensed insurers providing financial, solvency and statistical data to the Reserve Bank. This information will contribute to the prudential supervision of insurers. The Reserve Bank also plans to eventually publish aggregate insurance sector statistics, and to begin reporting on the data in the May 2016 *Report*.

The Reserve Bank has refined its supervisory framework.

The Reserve Bank takes a risk-based approach to the supervision of insurers so that its resources are appropriately deployed in relation to the purposes of the Insurance (Prudential Supervision) Act 2010. The Reserve Bank has recently identified those insurers whose failure would likely have a high impact in terms of soundness, stability or confidence in the sector, and will dedicate more resources to supervising this group. The supervisory focus does not alter the compliance requirements for any insurer.

Financial market infrastructure

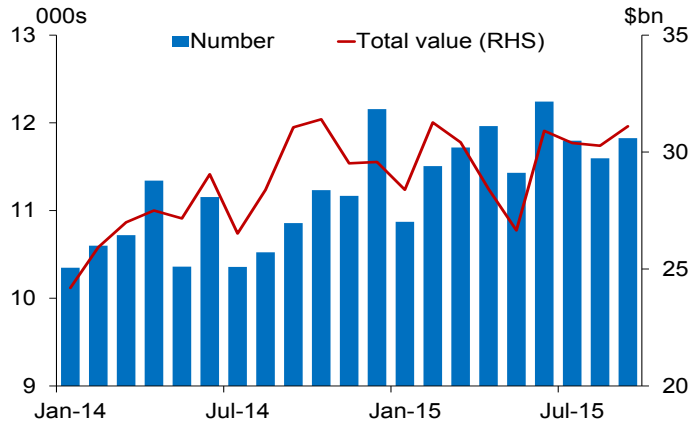
Payment and settlement systems have performed effectively.

Payment and settlement systems play a key role in the New Zealand financial system. Over the past six months those systems have continued to perform effectively, processing transactions without significant incident.

Inter-bank settlement of New Zealand dollar payments occurs in the Exchange Settlement Account System (ESAS) operated by the Reserve Bank. On average around 11,000 transactions with a total value of about $30 billion settle in ESAS each day (figure 5.18). These transactions include high value payments related to financial market transactions as well as the net value of files of smaller value retail payments.

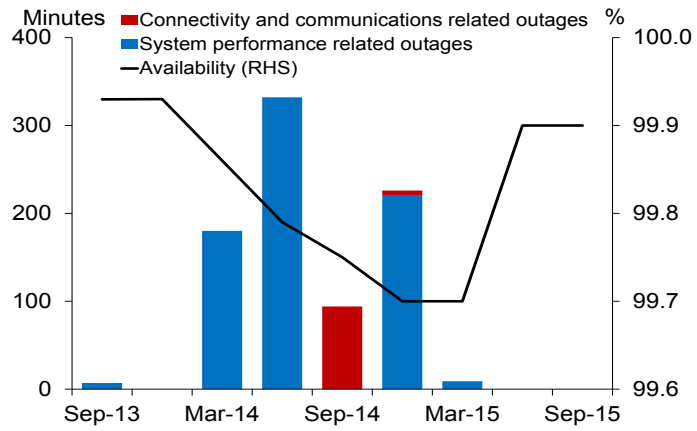
Given its role at the heart of the financial system, ESAS needs to be reliable. As illustrated in figure 5.19, ESAS has delivered the expected high degree of operational reliability with no outages over the past six months.

Figure 5.18 Average daily ESAS transactions



Source: RBNZ.

Figure 5.19 ESAS/NZClear availability and outages



Source: RBNZ.

Note: Availability is for the 12 months to the current period. ESAS and NZClear are reported together because of the close links between the two systems.

ESAS technology to be upgraded.

The ongoing reliability of ESAS is an important objective of the Reserve Bank in its role as system operator. It is one of the reasons why the Reserve Bank has begun work on replacing the existing ESAS technology. Upgrading ESAS will also mean that the system will more readily accommodate future changes in the New Zealand payments landscape. As the system operator, the Reserve Bank intends to manage the replacement project carefully. The project is proceeding as planned with the Reserve Bank having identified a preferred supplier of new technology.

A further outcome of the planned ESAS upgrade will be the separation of ESAS and NZClear, as the replacement of the current ESAS technology will result in a stand-alone system for processing high value inter-bank payments. NZClear is the securities settlement system operated by the Reserve Bank, and is currently closely integrated with ESAS. The Reserve Bank is exploring the possibility of divesting the securities settlement business. However, divestment will only occur if a suitable, equally robust alternative can be identified.

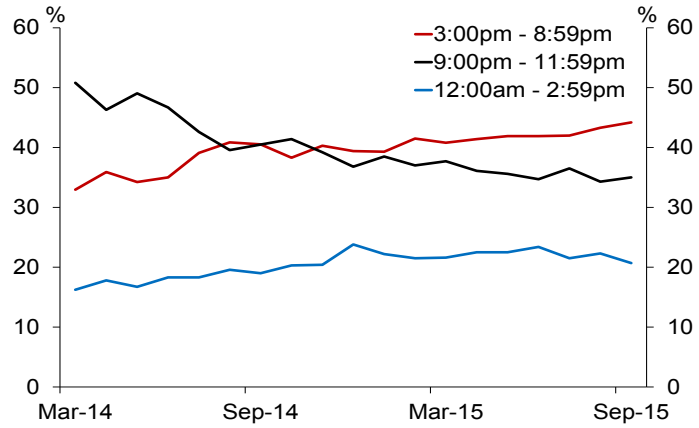
Retail payment system continues to function satisfactorily.

Retail payment instructions are exchanged between banks using the Settlement Before Interchange (SBI) arrangements. SBI arrangements have operated without disruption over recent months.

The Reserve Bank has previously expressed concern about some existing features of the retail payment system: the time taken to settle transactions after a payment instruction is issued by a customer; the value of unsettled transactions at any point in time; and the majority of

retail payments being settled late in the banking day. Banks continue to work towards addressing these concerns and appear to be on track to achieving the agreed goal of being able to exchange retail payment files at least hourly by the end of 2016. Some improvement is already evident. Figure 5.20 illustrates how payments are increasingly being settled earlier in the day.

Fig 5.20
SBI activity by time of day



Source: RBNZ.

Industry needs to facilitate wider direct participation in the payment system.

Access to the New Zealand retail payment system is controlled by Payments NZ Limited (PNZ). PNZ is working on several changes to its rules to facilitate wider direct participation and to simplify the requirements for existing indirect participants who wish to change their access arrangements. The Reserve Bank fully supports the objectives of this work, which is consistent with the policy goal of promoting fair and open access to financial market infrastructures. However, the Reserve Bank is concerned about slow progress on some initiatives and strongly encourages PNZ and its existing participants to address outstanding issues as quickly as possible.

Chapter 6
Key developments in financial sector regulation

Following a series of consultations and feedback from industry, the Reserve Bank recently finalised its policy on a new residential property investor asset class. The new class will be subject to higher capital requirements and has enabled changes to loan-to-value ratio restrictions in Auckland. A second round of consultation has occurred on the regulation of financial market infrastructures, which has led to refinements of the proposed Designation Regime. The Reserve Bank has almost completed a stocktake of regulations affecting banks, and has begun to implement some measures to improve transparency, efficiency and clarity.

6.1 Property investment residential mortgage loans

From 1 November 2015 all registered banks are required to distinguish loans for residential property investment from other residential property loans, and locally incorporated banks will be required to hold more capital in respect of investment loans. With investment loans separately identified, the Reserve Bank has also altered its loan-to-value ratio (LVR) restrictions so that most new residential property investment loans in Auckland now require at least a 30 percent deposit (see chapter 2).

Increased capital requirements and tighter LVR restrictions for investor loans reflect the Reserve Bank's assessment that the losses on those loans are likely to be higher following a sharp economic and housing market downturn.[1] Given that New Zealand has not had a severe housing downturn in recent history, this view is informed by evidence on the performance of investor mortgages during downturns in Ireland, the United Kingdom and the United States. International evidence shows that the performance of investor mortgages was significantly worse than owner-occupier mortgages, even after controlling for the LVR of the borrower. In New Zealand, investors have higher debt-to-income ratios and are more likely to take out interest-only loans.

1 For more detail, see the regulatory impact statement and response to submissions relating to the changes to the speed limit policy: http://rbnz.govt.nz/financial_stability/loan-to-value_ratio/

The new policy was first announced in May 2015, following a public consultation. Additional changes were made to the policy in response to further feedback and to simplify implementation. The final policy was published in August.

New asset class

The Reserve Bank's Capital Adequacy Framework determines the minimum amount of capital a locally incorporated bank must hold, as a proportion of its assets, to absorb unexpected losses. In the framework, assets are divided into classes before determining how much capital must be held in relation to each. There was previously a single 'residential mortgage' class for most loans secured over residential property. From 1 November the residential mortgage class has been replaced by two classes: 'property-investment residential mortgage loans' and 'non property-investment residential mortgage loans'.[2] A non property-investment residential mortgage is a mortgage that is secured only over owner-occupied residential property. Any other residential mortgage is a property-investment residential mortgage.[3]

During consultation, some banks noted that this classification would overstate the risk of a loan secured partly by an owner-occupied property and partly by an investment property. The Reserve Bank responded by adding an option to apportion a loan between asset classes. However, further feedback suggested that an apportionment approach would be too complex for some banks to implement, so the apportionment option was dropped from the final policy.

2 A third category of reverse mortgages, which will be a sub-category of the non property-investment category, will be added on 1 July 2016. See http://www.rbnz.govt.nz/regulation_and_supervision/banks/consultations/proposed-changes-to-BS2A-BS2B.pdf for more information about this separate policy change.

3 Refer to http://www.rbnz.govt.nz/regulation_and_supervision/banks/consultations/proposed-changes-to-BS2A-BS2B.pdf for more information.

Capital requirements

Locally incorporated banks are required to hold more capital to reflect the higher risk associated with investor loans. Banks using the Internal-Ratings-Based (IRB) approach (ANZ, ASB, BNZ and Westpac New Zealand) use their own models to determine risk parameters, which are then fed into a capital requirement formula. Two of the parameters in the formula for investor mortgages have been increased. Banks using the standardised approach (all other locally incorporated banks) calculate their capital requirements using a predetermined regulatory risk weight for each loan. For investor mortgages, this risk weight will be increased.

The increase in the capital requirement will be higher for loans that are highly leveraged. The amount by which a bank's capital requirements will increase depends on the share of investment mortgages in the bank's mortgage portfolio and, for IRB banks, on the initial risk weight applied. Based on data supplied by the banks, which relate to their current portfolios, the Reserve Bank estimates that average risk weights for investment property will rise by about six percentage points. For an IRB bank with an initial risk weight of 30 percent, this implies a 20 percent increase in the minimum capital requirement for investment property loans.

Implementation

New loans to residential property investors will be allocated to the new asset class from 1 November 2015. For loans written before 1 November 2015, banks will need to go through a process of reclassification that will take some time. Banks will therefore have until 1 November 2016 to reclassify existing loans. Until reclassified, existing loans will be treated as non property-investment residential mortgages. The new

LVR requirements for Auckland property investment loans only apply to lending committed on or after 1 November 2015.

6.2 Proposed changes to regulation of financial market infrastructures

Financial market infrastructures (FMIs) are channels through which financial institutions, governments, businesses, and individuals transmit money and financial instruments. They include payment systems, securities settlement systems, central securities depositories, central counterparties, and trade repositories. Together they play an important role in allowing money and financial instruments to be cleared, settled, and recorded reliably.

Many FMIs are used by financial institutions to process large values and volumes of transactions, and are closely linked to other FMIs. Disruption to the operation of an FMI thus has the potential to cause widespread disruption to the New Zealand financial system. The Reserve Bank currently has objectives to ensure the stability and efficiency of payment and settlement systems, and to avoid significant damage to the financial system from the failure of a participant in these systems. The Reserve Bank's current regulatory powers are limited to payment and settlement systems, and are restricted to information gathering.[4] This limits the Reserve Bank's ability to address broader risks to financial stability from FMIs.

Proposals

The Reserve Bank has recently concluded a second consultation on proposed changes to regulation of FMIs. The Reserve Bank's main proposals are that:

- the Reserve Bank and the Financial Markets Authority have more powers to oversee 'systemically important' FMIs, including crisis management powers;
- FMIs that are systemically important be required to be designated under a revised Designation Regime, and non-systemically important payment and settlement systems be able to opt in to that same revised regime; and
- designated FMIs that are payment and settlement systems could continue to seek legal protection for netting and settlement (this is available under the current voluntary designation regime).

Feedback from consultation

The Reserve Bank received 19 submissions from operators of domestic and offshore FMIs, FMI users, and industry groups. The Reserve Bank has also held follow-up meetings with some submitters. Submitters were generally positive about the focus and key aspects of the proposals. Submitters:

- acknowledged that the proposals were consistent with international best practice;

4 Some FMIs have entered into a 'designation' regime, which requires them to comply with additional regulations. However, the regime is not currently compulsory.

- supported strengthening the powers of the Reserve Bank and the Financial Markets Authority over systemically important FMIs, and particularly strengthening crisis-management powers; and

- supported the range of powers being graduated, from rule-making and standard-setting to investigation and enforcement.

However, submitters also expressed some concerns. Some perceived that there was insufficient detail to see how the proposals would work in practice. There were also concerns that compliance costs would increase if the proposals were implemented, and that it would be impractical for smaller FMIs to opt in to the Designation Regime.

The Reserve Bank's response

In-depth discussions with a number of submitters suggest that some details of the policy require further clarification. Since the consultation closed, the Reserve Bank has had discussions with some submitters about the criteria for determining when a payment system is systemically important, the proposed crisis management framework and the oversight of offshore FMIs. The Reserve Bank has also clarified that the new policy would be tailored to the size of the FMI, so that smaller FMIs could practically opt in to the Designation Regime and benefit from legal protection for payment and settlement.

As well as clarifying the detail of the policy, the Reserve Bank is considering some small but important changes to the proposed policy. These include softening the requirements for third parties that provide critical services to FMIs and adjusting the threshold for requiring an FMI to alter its rules. The Reserve Bank has also re-examined the list of potentially systemically important FMIs, based on feedback received.

The Reserve Bank will publish the consultation feedback shortly, together with clarifications and policy changes. The Reserve Bank might also conduct a further round of limited-scope consultation on some of the detail around the proposed policy, such as proposed crisis management powers.

6.3 Regulatory stocktake

The Reserve Bank wants to increase the efficiency, clarity and consistency of existing prudential requirements for banks and non-bank-deposit-takers. The Reserve Bank also wants to improve the processes for making changes to prudential requirements.

During 2014 and 2015 the Reserve Bank held a series of workshops with banks, meetings with a panel of industry experts, and discussions with other interested parties, to seek feedback about opportunities for improvement. The Reserve Bank subsequently issued a consultation document proposing some improvements to policies and processes, mainly affecting banks.[5] The consultation period closed on 16 September. The key proposals in the consultation document, and the feedback the Reserve Bank received, are summarised below.

Disclosure requirements for banks

The stocktake revisited the Reserve Bank's public disclosure regime for banks, to see whether all of the information that banks must disclose is of material value to users. A key question that arose was whether all banks should continue to publish disclosure statements quarterly rather than half-yearly, or whether the benefit of quarterly disclosure in terms of its contribution to financial stability outweighs the costs. The stocktake

5 See http://www.rbnz.govt.nz/regulation_and_supervision/banks/consultation-document-regulatory-stocktake.pdf

proposed some alternatives: reduce the amount of information published in 'off-quarter' disclosures; replace off-quarter reporting with some form of continuous disclosure regime; or remove off-quarter reporting altogether.

Views were divided between those of banks, and those of other submitters (including one rating agency, two academics and three private individuals). Banks were strongly in favour of removing off-quarter reports altogether, provided that this would not lead to substantial increases in other government departments' reporting or disclosure requirements. They argued that:

- disclosure statements are expensive to produce;
- off-quarter disclosure statements are read by a limited number of people, and the information they contain is out of date by the time they are published;
- the Reserve Bank gets private information from banks which reduces the need for the quarterly disclosures; and
- monthly reports to banks' boards would maintain internal bank discipline even if off-quarter disclosure statements are dropped.

Submitters other than banks preferred to retain quarterly disclosures. Some argued that the greater frequency of information helps the market to identify problematic trends sooner, and hence reduce the likelihood of a crisis, as well as being useful during a crisis. Others argued that if the Reserve Bank reduced the amount of public disclosure by banks, while relying more on private bank data for prudential supervision, then the Reserve Bank was more likely to be blamed for failures, with a greater risk that the Crown would be expected to bail out a failing bank. The Reserve Bank is working through the arguments and aims to make a decision before the end of the year.

Format and structure of the Banking Supervision Handbook

The Banking Supervision Handbook (the Handbook) contains many of the Reserve Bank's regulatory requirements for banks. The consultation document set out a number of proposals developed during the stocktake to improve the grouping and layout of the material in the Handbook, to remove duplication and unnecessary material and to make it clearer where to find the rules that are binding on banks. Feedback on the proposed reorganisation has generally been positive, and work has started on implementing the changes. This will represent a substantial exercise running until at least end-2016.

The Reserve Bank's policy-making approach

The consultation document proposed a number of steps to address issues with the Reserve Bank's policy-making processes that were raised during the stocktake. Banks welcomed proposals to better coordinate regulatory and supervisory changes coming from different parts of the Reserve Bank and other regulators, improve the timeliness and detail of information on the Reserve Bank's website and produce a regular industry newsletter. Banks also supported the principle of the Reserve Bank publishing a statement of its approach to policy making, and were broadly happy with a draft of the statement that was included in the consultation document. However, banks suggested that the minimum length of a policy consultation should be six weeks rather than four (with 8-12 weeks as the standard), and that the statement should leave less room for exceptions to the stated approach.

Suitability assessment process for bank directors and senior managers

The consultation document noted two issues with the suitability assessment process for directors and senior managers of banks: the definition of 'senior manager' covers people who are unlikely to influence a bank's financial soundness; and there is no requirement to ensure the ongoing suitability of directors or senior managers after they have been appointed. Submitters agreed in principle that rules should more clearly define the individuals covered by the suitability assessment, although there were differing views about precisely what the definition should be. Submitters also understood the need for ongoing suitability assessment. However, submitters did not like the proposal that directors would have to publicly confirm there was ongoing assessment; they preferred a private attestation to the Reserve Bank.

Disclosing and reporting breaches of a bank's conditions of registration

The consultation document also covered issues with the current arrangements for disclosing and reporting breaches of a bank's conditions of registration. Banks are currently required to report all breaches in their next quarterly disclosure statement, but otherwise are not formally obligated to report these to the Reserve Bank. Most banks supported proposals to require each bank to report an actual or potential breach privately to the Reserve Bank, as soon as practicable after the bank becomes aware of it. The consultation document also proposed re-framing some conditions of registration to reduce the risk of trivial breaches requiring disclosure. While welcoming this suggestion, banks also came up with various proposals that would involve reporting every breach privately to the Reserve Bank, which would then take a view on which were material enough to warrant disclosure.

Concluding the stocktake

The Reserve Bank will be publishing shortly a more complete summary of the submissions received on the stocktake consultation and its policy decisions on the options proposed. That will be the conclusion of the regulatory stocktake as such, but will lead to continuing work in a number of areas to implement the changes identified, including further consultation where needed.

6.4 Update on other regulatory projects

Bank outsourcing policy

The Reserve Bank's outsourcing policy regulates the use of external service providers by locally incorporated banks. The objective of the outsourcing policy is to ensure that banks have the legal and practical ability to control and execute outsourced functions. This is to ensure continuity of basic banking services such as liquidity, payment and transaction services, in the event that a service provider fails or becomes dysfunctional, or if a bank, or its overseas parent, fails. This is important to ensure that the impact of the failure of a bank, or a service provider to a bank, on the wider economy is minimised and to preserve options for the resolution of bank failures.

On 26 August the Reserve Bank released a consultation paper proposing changes to the current policy. Changes are needed because the banking landscape has changed – for instance, the Open Bank Resolution (OBR)[6] policy has been introduced in New Zealand – and because there have been inconsistencies in how the current outsourcing policy has been applied across banks.

6 See http://www.rbnz.govt.nz/regulation_and_supervision/banks/policy/5340579.pdf. The OBR applies to any locally incorporated bank with more than a billion dollars of retail funding.

The proposed changes are not intended to prevent outsourcing in general. The Reserve Bank acknowledges that appropriately robust outsourcing arrangements can improve a bank's efficiency and risk management by allowing access to technology and know-how that would not be available in-house.

The consultation paper discussed the potential extension of the outsourcing policy from the largest banks to all banks that are subject to OBR.[7] It also discussed measures to make it easier for a bank to continue operating in the event of failure, or failure of a service provider, on an ongoing basis. These include:

- requiring the development and testing of separation plans, to ensure foreign-owned banks can continue to offer basic banking services to their customers if a parent fails; and

- preventing outsourcing to related parties of certain functions, such as balancing the general ledger, having access to the SWIFT payments system, and performing calculations for regulatory purposes.

The changes would be supported by strengthened monitoring of outsourcing practices, with banks having to apply for a notice of non-objection before they outsource a function (unless that function is on a list of exceptions). The Reserve Bank will publish a summary of submission feedback after the consultation on the proposals closes on 4 December 2015.

Review of bank capital requirements

The May 2015 *Report* noted the Reserve Bank's plans to review bank capital requirements. Plans for a review were prompted by both international and domestic changes. Domestically, the current framework for determining capital requirements has been in place for several years and it is now timely to assess the framework's operation. The international context for a review includes the Financial System Inquiry (FSI) in Australia and proposals by the Basel Committee for Banking Supervision (BCBS) to change the capital adequacy framework.

The FSI made a number of recommendations relating to capital requirements for banks. Following those recommendations, the Australian Prudential Regulation Authority (APRA) has announced that it will increase the amount of capital that banks must hold in respect of residential mortgage loans (this will bring the amount more into line with the level that New Zealand banks currently hold). APRA is considering whether additional measures are needed to ensure the capital position of Australian banks is 'unquestionably strong'.[8]

In late-2014, the BCBS released a number of proposals to change the way capital requirements are calculated. The proposals were a response to concerns about excessive variation in the realised capital requirements for different banks. This variation makes it difficult to compare capital adequacy across institutions, and reduces confidence in the Basel framework.

The BCBS proposals are yet to be finalised, but might lead to wide-ranging changes to the existing framework. Because the Basel

7 See http://www.rbnz.govt.nz/regulation_and_supervision/banks/consultations/consultation-review-outsourcing-policy-registered-banks.pdf

8 See http://fsi.gov.au/publications/final-report/chapter-1/capital-levels/ for more information about what the FSI considers to be 'unquestionably strong'.

framework is the de facto international standard and is currently used as the basis for determining capital requirements for New Zealand banks, progress of the Reserve Bank's capital review might depend to some extent on when the BCBS is able to finalise its position. The original BCBS timetable for finalisation was the end of 2015, but it appears this will now be very challenging to meet.

Benchmarking of internal capital models

The Reserve Bank has started a project to compare the capital models of the largest New Zealand banks. The project aims to find the extent to which differences in capital requirements reflect differences in credit risk, as opposed to other influences.

ANZ, ASB, BNZ and Westpac New Zealand use an IRB approach to estimate how much capital they should hold for regulatory purposes. Each bank develops its own models to determine components of credit risk and submits them to the Reserve Bank for approval. The IRB approach permits a higher degree of complexity and refinement than the alternative, standardised approach. Potentially, this allows capital requirements to better reflect credit risks, but it also introduces the risk that capital requirements will vary merely because of the form of the model.

As part of the benchmarking project, each of the four banks will run an identical portfolio of loans through their models. Because the Reserve Bank has imposed various calibrations to achieve a degree of consistency in the model outputs, and because the portfolios are identical, the four banks should generate very similar capital requirements. If there are significant differences, it is likely they will be explained by model form.

The benchmarking project will cover residential mortgages and rural loans. For residential mortgages, the intention is to use a large portfolio of loans which will be automatically rated based on quantitative or categorical information. For rural loans, the intention is to use a small number of 'case study' loans which will be rated using a combination of quantitative and qualitative information.

Review of bank liquidity requirements

New Zealand imposed minimum liquidity requirements on locally incorporated banks in 2010. The minimum core funding ratio requires that a proportion of a bank's funding is of a kind that is stable or contractually required to stay in place for at least one year. Minimum mismatch ratios require that a bank hold sufficient liquid assets to meet projected shortfalls of cash inflows and outflows.

Since 2010, the BCBS has finalised standards which include conceptually similar (but not identical) ratios. The New Zealand requirements appear to be working well, but in light of international developments it is timely to consider whether there would be benefits in harmonising with the Basel approach. The Reserve Bank therefore plans to review the existing liquidity policy. As part of the review, the Reserve Bank will also consider whether there should be liquidity requirements for New Zealand branches of foreign banks, and will review requirements for the disclosure of liquidity positions. The review is expected to begin in the first half of 2016.

Financial Sector Assessment Programme (FSAP)

The IMF will be reviewing the New Zealand financial system next year as part of its Financial Sector Assessment Programme (FSAP). The last New Zealand FSAP was in late 2003, with findings and

recommendations published in May 2004.[9] The New Zealand regulatory landscape has changed significantly since the previous FSAP, while the IMF has incorporated various lessons from the GFC by strengthening the analytical focus and coverage of the FSAP.

FSAPs cover three broad areas:

- an identification of key vulnerabilities and an assessment of the resilience of the financial system;
- an assessment of the regulatory frameworks for the banking system, the insurance sector, capital markets and financial market infrastructures, and compliance against key international standards across these sectors; and
- an evaluation of financial safety nets.

FSAPs are a resource intensive exercise, both for the IMF and national authorities. The Reserve Bank and other government agencies have already begun preparing for the 2016 FSAP, with the main IMF mission expected towards the end of next year.

Stress testing

Banks are required to undertake stress testing exercises as part of their internal capital adequacy assessment process (ICAAP). The four largest banks have been provided with a common scenario to use in that process for the current financial year, so that results can be directly compared across participating banks. As noted in the previous *Report*, the Reserve Bank expects to soon provide a draft guide on stress testing methodology to banks and (once it is finalised and published) use this as the basis for further conversations with banks about stress testing practice.

The FSAP process is likely to consider these stress testing activities and their results, as part of their risk assessment, and may also undertake other exercises using New Zealand data during 2016.

9 See http://www.imf.org/external/pubs/cat/longres.aspx?sk=17375.0

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, anti-money laundering, and countering the financing of terrorism. The Reserve Bank monitors entities' compliance with the obligations it oversees. In responding to identified non-compliance by an entity, the Reserve Bank may consider it appropriate to take enforcement action.

During the past 12 months, the Reserve Bank has undertaken the following public enforcement action:

- March 2015 – a formal warning was issued to J.P. Morgan Chase Bank N.A. New Zealand branch under section 80 of the Anti-Money Laundering and Countering Financing of Terrorism Act 2009.[1]
- October 2015 – a formal warning was issued to Kiwibank Limited under section 80 of the Anti-Money Laundering and Countering Financing of Terrorism Act 2009.[2]

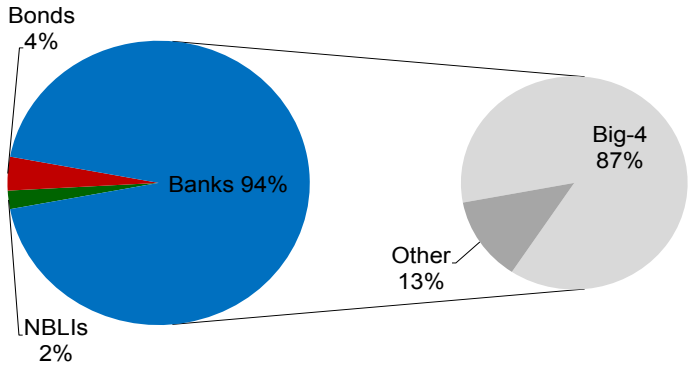
1 See http://www.rbnz.govt.nz/news/2015/6039732.html

2 See http://www.rbnz.govt.nz/news/2015/enforcement-action-under-amlcft-kiwibank.html

Appendix 2
Introduction to the New Zealand financial system

The banking system comprises the majority of lending to the private sector in New Zealand, and is therefore a key focus of the *Report* (figure A2.1). Direct capital market funding (issuance of corporate bonds) and non-bank lending institutions (NBLIs) together account for only 6 percent of total private sector credit. The New Zealand banking system is highly concentrated, with four large Australian-owned banks[1] responsible for 87 percent of bank lending.

Figure A2.1
Sources of private sector credit
(as at June 2015)



Source: Bloomberg, RBNZ *Standard Statistical Return* (SSR).

About 63 percent of bank lending is to the household sector (figure A2.2). Almost all household debt is secured against housing assets, and these assets account for around half of assets owned by the household sector. Rural lending accounts for around 17 percent of total lending, with the dairy sector accounting for two-thirds of this. Lending to the business sector accounts for the remaining 20 percent of total bank lending, around 47 percent of which is to the commercial property sector.

Bank lending is funded from equity, deposits, and both domestic and offshore market funding (table A2.1). Around 64 percent of bank funding is sourced from deposits, with a further 13 percent from domestic sources of market funding. A significant portion of bank funding is sourced from offshore markets. Offshore bank funding accounts for almost two-thirds of New Zealand's external liabilities, which are elevated relative to most other developed economies (figure A2.3). This creates a vulnerability to disruptions to global financial markets. However, almost all debt is hedged into NZD and reliance on short-term funding markets has declined markedly since the GFC.

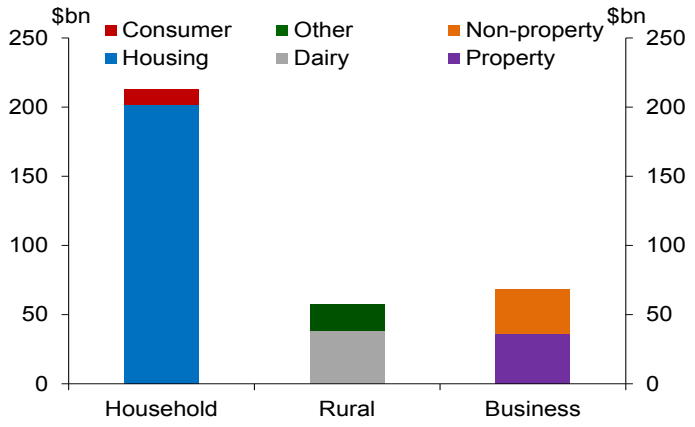
Table A2.1
Banking system funding
(% of total funding, as at June 2015)

	Short term	Long term	Total
Equity	-	-	7.9
Deposit funding, < $5m	48.0	2.7	50.6
Deposit funding, > $5m	12.5	0.7	13.1
Domestic market	7.1	5.8	12.9
Offshore market	7.8	7.7	15.5

Source: Registered banks' *Disclosure Statements*, RBNZ *Liquidity Survey*.

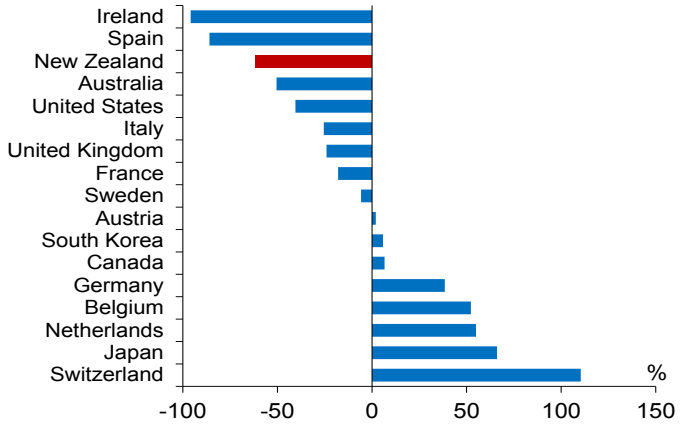
1 These are ANZ, ASB, BNZ and Westpac New Zealand.

Figure A2.2 Sectoral banking system assets *(as at June 2015)*



Source: RBNZ SSR.

Figure A2.3 Net international investment position *(% of GDP, December 2014)*



Source: IMF, Statistics New Zealand.

Appendix 3

Presentations May-October 2015

The Bank presented on Financial Stability and related topics to the following sectors and regions:

Business groups (10)	Auckland, Tauranga, Wellington
Universities	Wellington
Advisers (7)	Wellington, Auckland
Sectors (5)	Auckland, Tauranga, Wellington, Christchurch
Financial Services	Auckland
International finance (3)	Kuala Lumpur, Hong Kong, Istanbul

The Bank also speaks to a range of audiences on Monetary Policy and related topics. They are reported in the *Monetary Policy Statement*.