

# Funding it tough

## A detailed look at bank funding costs

- **Bank funding has become more expensive from every source, with first wholesale then retail rates rising relative to benchmark rates. This has dampened the passthrough from OCR cuts to lending rates.**
- **Net interest margins have narrowed since the credit crisis began, as banks have not fully passed these cost increases through to lending rates to date.**
- **With bad debts on the rise, and banks not recouping these losses through higher lending margins, net profits have fallen.**
- **Net interest margins are similar for the major New Zealand and Australian banks.**

The financial landscape has changed dramatically since the global credit crisis began in full force in August 2007. Investors who were previously happy to accept minimal returns on risky loans have become much more cautious, and are now demanding higher premiums from even the highest-quality borrowers. Central banks have responded by cutting their policy rates to extremely low levels, and in most cases the actual level of interest rates has fallen. But the gap between policy rates and market rates has widened, and is unlikely to return to pre-crisis levels any time soon.

The impact on market-traded assets is easily observed. But banks are more opaque: they pool together funds from a range of sources, at varying prices, and lend the money on to a range of customers – again, at varying prices that reflect the level of risk. As a result, it can be difficult to trace how banks' funding costs and margins have evolved, and even more so in these unusual conditions.

There's no dispute that banks' funding has become relatively more expensive during the credit crisis, which has hindered the passthrough from policy rate cuts to retail lending rates. But to date, we haven't seen a comprehensive answer to the question of "how much". This gap in the public knowledge has fuelled claims that banks are fattening their margins under the pretence of higher funding costs.

This article draws together the facts on both issues. As far as possible, we have used publicly available information, such as

banks' disclosure statements and RBNZ survey data. We show that average lending margins for the major retail banks have narrowed, and that profits have fallen substantially in the last year. We also show that margins in New Zealand are similar to those in Australia, and that lending margins have narrowed by more in New Zealand during the credit crisis.

The second part of this article breaks down the banks' balance sheets to show how funding costs have risen during the crisis. This section is detailed by necessity, given the range of issues involved, and we recommend it only for readers who need to be thoroughly convinced. We show that funding has become more expensive across all sources, with wholesale funding costs rising immediately in the wake of the credit crisis, while retail funding has responded more recently.

### Part 1: The big picture

The two key questions are the extent to which the recent OCR cuts have been passed through to banks' costs of funding; and the extent to which changes in funding costs have been passed through to lending rates. Given the number of issues involved in trying to measure funding costs, the most straightforward answer is to take a top-down approach. We have compiled figures from the major banks' general disclosure statements (GDS), which are published every quarter as required by the RBNZ. In most cases these are available up to March 2009.<sup>1</sup>

Since July last year, the OCR has been cut from 8.25% to 2.50%, a total of 575 basis points (bps). However, since the bank GDS data are quarterly, the average OCR over the quarter is the more appropriate benchmark. The average OCR in the March 2009 quarter was 3.85%, which is 440bps lower than in June 2008 (*Figure 1*). In that time, the average cost of funds for the major banks fell from 7.20% to an estimated 4.80%, based on the banks' GDS available for the March 2009 quarter, giving a total decline of 240bps. Put together, this means that the fall in funding costs was about 200bps less than the fall in the cash rate over the same period.

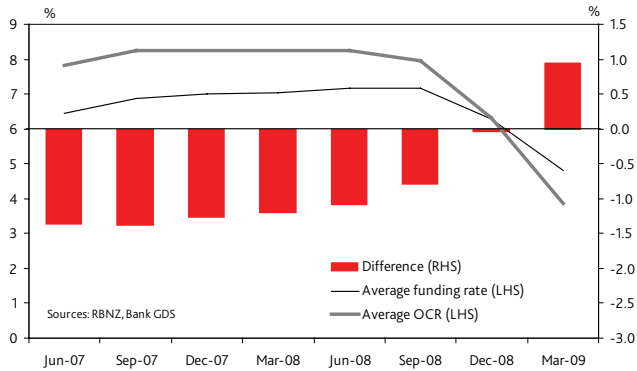
<sup>1</sup> Westpac had not published its GDS for the March 2009 quarter at the time of writing.

For further information, questions or comments contact Brendan O'Donovan, telephone (04) 470 8250, email [bodonovan@westpac.co.nz](mailto:bodonovan@westpac.co.nz)

For all clients: Westpac Institutional Bank is a division of Westpac Banking Corporation ABN 33 007 457 141, incorporated in Australia ("Westpac"). The information contained in this report: does not constitute an offer, or a solicitation of an offer, to subscribe for or purchase any securities or other financial instrument; does not constitute an offer, inducement or solicitation to enter a legally binding contract; and is not to be construed as an indication or prediction of future results. The information is general and preliminary information only and while Westpac has made every effort to ensure that information is free from error, Westpac does not warrant the accuracy, adequacy or completeness of the Information. The Information may contain material provided directly by third parties and while such material is published with necessary permission, Westpac accepts no responsibility for the accuracy or completeness of any such material. In preparing the Information, Westpac has not taken into consideration the financial situation, investment objectives or particular needs of any particular investor and recommends that investors seek independent advice before acting on the Information. Certain types of transactions, including those involving futures, options and high yield securities give rise to substantial risk and are not suitable for all investors. Except where contrary to law, Westpac intends by this notice to exclude liability for the information. The information is subject to change without notice. Westpac expressly prohibits you from passing on this document to any third party. Westpac Banking Corporation is regulated for the conduct of investment business in the United Kingdom by the Financial Services Authority. © 2001

For Australian clients: WARNING – This document is provided to you solely for your own use and in your capacity as a wholesale client of Westpac.

Figure 1: Average cost of funding vs OCR

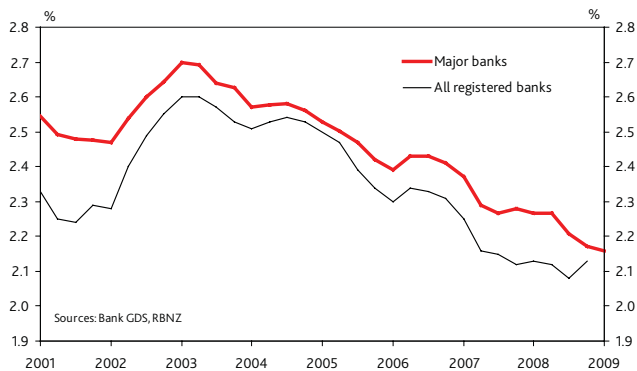


March 2009 estimate based on three of four banks reporting.

As for the link between funding costs and lending rates, Figure 2 shows the net interest margin using the standard reporting method: interest income less interest expenses, as a percentage of interest-bearing assets.<sup>2</sup> Interest margins for the major banks have narrowed in the last year – implying that, on average, lending rates have fallen by more than funding rates. The average margin fell from 2.28% in December 2007 to 2.17% in December 2008, and we estimate that there was a further slight narrowing at the start of this year, based on the GDS for the March 2009 quarter.

Figures previously published by the RBNZ, which covered all registered banks, suggested that margins had increased in the December 2008 quarter. However, that increase was entirely due to one investment bank, which has no retail operations in New Zealand, reporting an unusually large margin for the quarter.

Figure 2: Net interest margins contracting

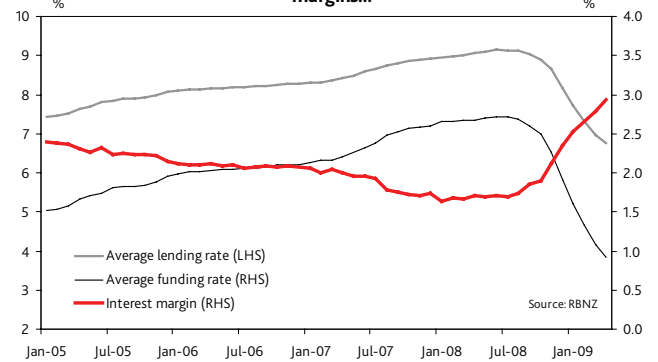


Four-quarter average. March 2009 estimate based on three of four banks reporting.

Another, timelier source of information on banks is the financial data collected on a monthly basis by the RBNZ. At face value, these figures tell a different story: the spread between lending and funding rates has widened since late 2008 (Figure 3).

<sup>2</sup> For banks, “assets” refer to the money that they lend out (e.g. mortgages) while “liabilities” refer to the funds that they bring in (e.g. deposits).

Figure 3: Survey data misleadingly suggests rising margins...

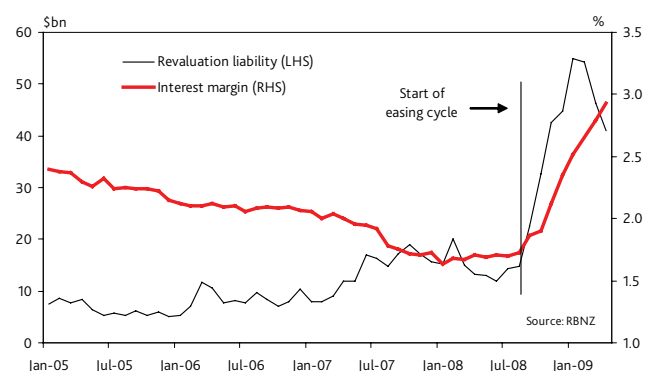


However, the RBNZ note that this data is incomplete on two fronts. First, it only includes New Zealand dollar funding, and one of the aspects of the credit crisis is that foreign currency funding – which accounts for around 30% of total funding – has become relatively more expensive. Even so, it still appears to have been a reasonable indicator of funding costs up to August 2008, a full year into the credit crisis.

The second and, we suspect, more significant omission is that it excludes the impact of hedging. Banks are heavily reliant on short-term borrowing, while their lending (particularly for housing) is weighted more towards fixed-rate term loans. Banks hedge the mismatch using interest rate swaps. As the OCR has been reduced, short-term funding rates have followed, as shown correctly in Figure 2. However, in the RBNZ’s survey the offsetting losses on the swap hedges are instead recorded on the balance sheet as a “revaluation liability” – think of this as the implicit break cost for the banks’ fixed-rate borrowing.

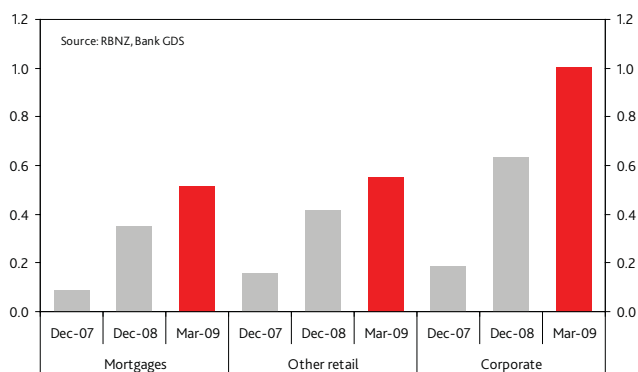
This “liability” rose sharply from September 2008 as the RBNZ began to ease rates aggressively – not coincidentally, the same time that the interest margin recorded in the RBNZ survey began to rise (Figure 4). Market interest rates bottomed out and began to rise again in March, which has since reduced the size of the hedging losses, but they remain around \$25bn higher than before the easing cycle began. We can’t convert this dollar value into an interest rate equivalent without knowing the original terms of the swap hedges. However, a loss of up to \$25bn, against \$240bn of short-term funding (less than 90 days) that could potentially have been hedged, suggests that the impact on banks’ interest margins was significant.

Figure 4: ...because it doesn't fully capture funding costs



The suspicion that banks are increasing their lending margins (or will do in the future) is based on the perceived need to compensate for rising loan losses. With the New Zealand economy in recession since the start of 2008, a rise in loan defaults is inevitable, and impaired assets have risen sharply in the last few quarters, albeit from historically low levels (Figure 5). Impaired assets have risen more rapidly for business loans, as businesses tend to be more exposed to the economic cycle than households.

Figure 5: Impaired assets as a % of loans

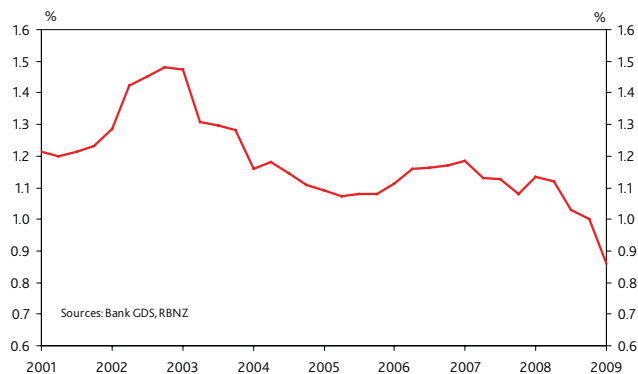


March 2009 estimate based on three of four banks reporting.

Impaired assets are certain to rise further, as they tend to lag the economic cycle – to date, they have only just matched the levels seen during the mild slowdown in 2001. The RBNZ noted in their May 2009 *Financial Stability Report* that banks' provisioning for bad debts has not kept pace with the rise in impaired assets lately, and encouraged banks to be more proactive with their provisioning.

Since banks have not been able to claw back loan losses by increasing their lending margins, their profits have taken a hit. The four major banks reported a return on assets of 1.0% in 2008, and we estimate that this fell further to 0.85% in the March 2009 quarter (Figure 6). Around the world, the benchmark rate of return for the banking industry is generally considered to be 1%, and New Zealand's banks had consistently met this benchmark prior to the credit crisis.

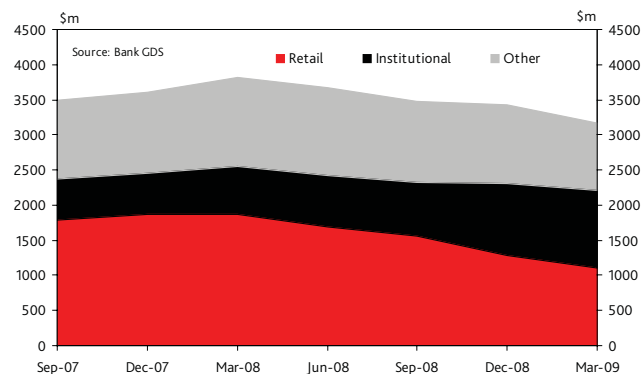
Figure 6: Return on assets for major banks



Four-quarter average. March 2009 estimate based on three of four banks reporting.

The fall in profits is even more marked when looking at the retail side of the business (Figure 7). We estimate that pre-tax profits for the banks' retail segments in the year to March 2009 were down 40% on the previous year, compared to a 17% drop in total profits. A growing share of profits has come from banks' institutional businesses, which have benefited from the extreme volatility in the New Zealand dollar and interest rates during the credit crisis. These profits are unlikely to be maintained as markets regain some stability.

Figure 7: Pre-tax profits by business segment



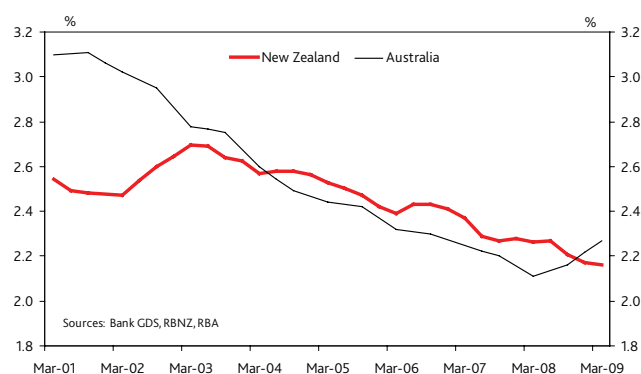
Four-quarter total. Excludes Westpac.

### Across the ditch

It's clear that the major New Zealand banks have taken a hit on their financial performance as a result of the credit crisis; whether they have absorbed their fair share is a judgement call that's beyond the scope of this article. However, as a starting point we can compare their performance against their Australian parent banks, which have faced similar pressures during the credit crisis (and given the woeful state of the banking industry elsewhere, Australia is one of the few countries that we'd want to benchmark ourselves against).

A recent article by the Reserve Bank of Australia<sup>3</sup> found that since the RBA began cutting rates in September last year, the cost of funding for the major Australian banks has fallen by about 330bps, which is 95bps less than the fall in the cash rate over the same period. In contrast, as we showed earlier, the cost

Figure 8: Net interest margins



<sup>3</sup> "The impact of the capital market turbulence on bank's funding costs", Reserve Bank of Australia Bulletin, June 2009.

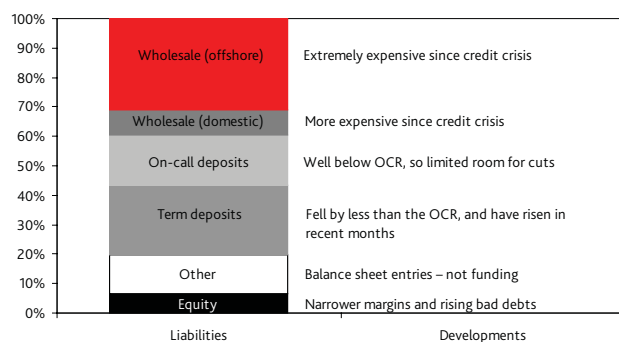
of funding for New Zealand banks has fallen by 200bps less than the cash rate. The RBA article also found that, notwithstanding the rise in funding costs, the Australian banks have modestly increased their margins in the last year, whereas we find that margins in New Zealand have fallen (Figure 8).

## Part 2: The rise in bank funding costs

In this section we review the various sources of bank funding and how they have evolved during the credit crisis. This micro-level approach is simply for demonstration purposes – it will soon become clear that, given the variety of sources of bank funding, piecing together a bottom-up estimate of funding costs would be extremely difficult. The RBA article cited above provides a micro-level analysis for Australia; since the major Australian and New Zealand banks fund from similar sources, their conclusions are not surprisingly similar to ours.

Figure 9 shows our estimate of the breakdown of liabilities for the major New Zealand banks, with a comment on recent developments in each case. Funding is split roughly evenly between wholesale and retail funding, with a bulk of wholesale funding coming from overseas. Each source of funding has responded differently to the credit crisis – wholesale rates began to rise immediately as the crisis unfolded, while retail rates have started to rise more recently. Some liabilities are non-interest bearing, the relative benefits of which are reduced in a low interest rate environment. Finally, the ‘cost’ of equity is a residual, after other funding costs and expenses, including bad debt provisions, are accounted for.

Figure 9: Major NZ banks' liabilities



Source: Bank disclosure statements and RBNZ survey data for December 2008; Westpac estimates.

Before we delve into the details, we need to be clear what we mean by ‘expensive’ or ‘cheap’ funding. In most cases, interest rates have fallen in level terms since the RBNZ began its easing cycle, but many interest rates remain high relative to their usual benchmarks. For short-term rates, the OCR is an appropriate benchmark (in particular through its influence on the 90-day bank bill rate); but for longer-term rates, which are less directly influenced by the current level of the OCR, swap rates are typically used. It’s important to recognise that these benchmark rates are simply for comparison – neither of them is a true borrowing rate.

**Official cash rate:** The OCR is the rate that applies to the RBNZ’s various liquidity facilities. Under the current arrangements,

banks earn the OCR on any balances left overnight in their settlement accounts at the RBNZ (i.e. it’s a deposit rate, not a borrowing rate). In practice, banks try to avoid leaving a significant amount of cash sitting idle, and they will look to put it to other uses – but the returns will be weighed against the alternative of leaving the money with the RBNZ. This means that bank lending rates are set with regard to, among other things, the current and expected future levels of the OCR.

To the extent that banks borrow from the RBNZ at all, they are charged a margin above the OCR, and they have to provide high-quality assets such as government bonds as security – which in turn have to be funded from somewhere else. The RBNZ’s facilities allow banks to manage their short-term liquidity needs; they’re not intended as a source of new funding.

**Swaps:** An interest rate swap is a type of derivative commonly used by banks to manage their interest rate risk. The two parties in a swap agree to exchange fixed-rate and floating-rate interest payments over the life of the contract, where the floating rate is the generic 90-day bank bill rate, and the fixed rate is market-determined and set at the start of the swap (the ‘swap rate’ always refers to the fixed rate).

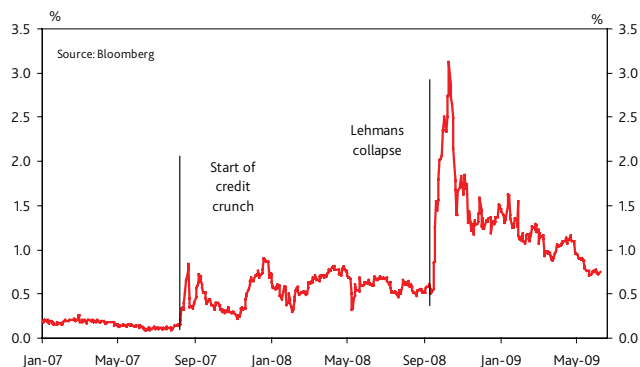
A swap is not a type of loan – no money changes hands at the start of the contract. As a result, the swap rate doesn’t reflect the credit risk of a long-term loan to a bank. An investor who actually lends to a bank will demand a risk premium above the swap rate. Before the credit crisis, this risk premium was low and stable, so the swap rate was a reasonable proxy for banks’ cost of term funding. But the premium has since risen sharply, making swap rates less useful as a gauge of funding costs.

We now review each source of funding in turn.

**Offshore wholesale funding:** Offshore markets are a major source of funding for the main banks, reflecting the fact that savings in New Zealand are inadequate to meet the demand for borrowing. While international money markets are deep enough to meet the banks’ needs, they also tend to be more expensive. New Zealand banks may be profitable, well capitalised and hold high credit ratings, but they are not well known on the world stage – and what’s more, they are ultimately looking to fund in New Zealand dollars, a relatively minor currency with few natural holders overseas.

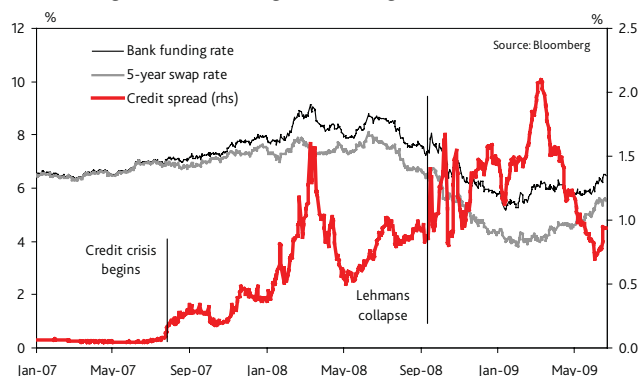
Before the credit crisis, the extra premium that banks paid for overseas funding was low and stable (and, arguably, underpriced), with the cost of short-term borrowing just 10bp over the expected level of the OCR (Figure 10). But as the credit crisis hit in August 2007, this premium rose to 50bp or more, and in the turmoil following the bankruptcy of Lehman Bros in September 2008 it briefly reached as high as 300bp (though there was little funding done at these levels). In recent months the premium has narrowed, but it remains well above pre-crisis levels.

Figure 10: Cost of offshore short-term borrowing



The cost of longer-term funding for New Zealand banks is more difficult to observe, as it's something that is not actively traded in a market. However, there are actively-traded measures for Australian banks which we can use as a guide. Figure 11 shows the price of a five-year credit default swap – a proxy for the premium over swap that a bank would pay for issuing a five-year bond (remembering that the difference between a loan rate and a swap rate reflects the perceived credit risk of the borrower).

Figure 11: Cost of long-term funding for Australian banks



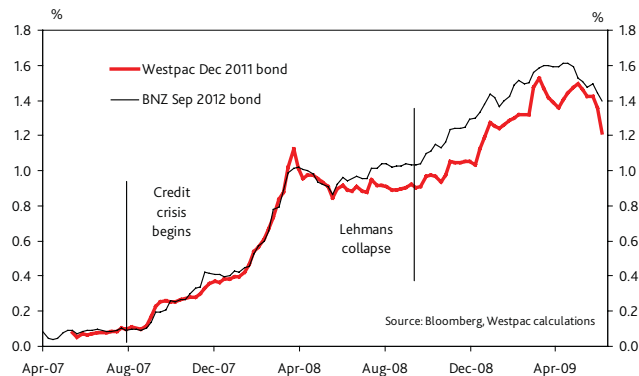
The premium rose from extremely low levels prior to the credit crisis to as much as 200bp earlier this year, before easing back in the last few months (although the benchmark itself – the five-year swap rate – has risen sharply at the same time). When long-term funding rates for New Zealand banks have been observable, they have tended to be 40-50bp more expensive than for Australian banks.

Contrary to what some have claimed, the major banks draw very little funding from their Australian parent banks – they are locally incorporated subsidiaries and operate at arms-length. The funding that is recorded as coming from 'associates' largely refers to funding vehicles that are wholly owned subsidiaries of the New Zealand entities.

**Domestic wholesale funding:** This accounts for about 10% of liabilities, again reflecting the limited pool of funds available in the domestic market. (Fund managers are a large potential source of local wholesale funding, but they also qualify as retail customers, and will favour retail deposits if the rates are better).

Banks have issued some long-term bonds into the domestic market, and while they're not actively traded, we can use the indicative pricing on these bonds as a guide to the return that investors would demand if a new bond were issued today. As with other types of wholesale funding, the premium above the benchmark swap rate rose from extremely low levels as the credit crisis began, and even more so after the Lehmans collapse (Figure 12). The premium has eased only slightly in the last few months – and again, the benchmark swap rate itself has risen sharply in that time.

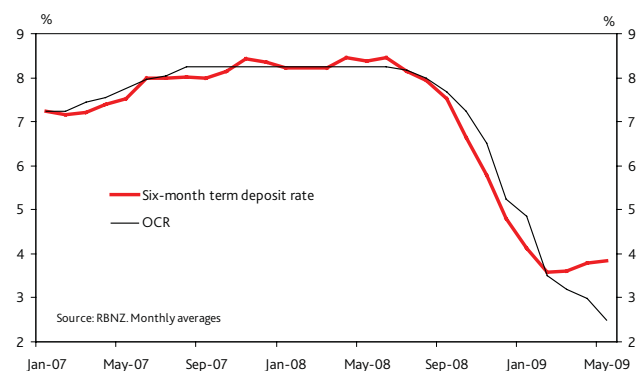
Figure 12: NZ bank bond yields over swap



**On-call deposits:** Accounting for 15-20% of liabilities, these generally fall into two categories. *Transaction accounts* typically have interest rates at or close to zero, so there has been no relief at all from the recent OCR cuts. *Savings accounts* are typically priced at a margin of several percentage points below the OCR. Initially these rates were marked down in line with the OCR, but more recently, banks have chosen to keep these rates above zero rather than fully matching the OCR cuts.

**Term deposits:** These account for 20-25% of liabilities. In the early stages of the easing cycle, term deposit rates were marked down broadly in line with the OCR. However, with the credit crisis dragging on and wholesale funding remaining expensive and/or difficult to get hold of, banks are increasingly turning back to retail deposits as a relatively stable source of funds. But in order to attract those deposits, banks are having to pay up – so term deposit rates are no longer falling in line with the OCR, and in some cases have risen outright (Figure 13). Six-month deposit rates have gone from roughly flat to 150bp higher against the OCR.

Figure 13: Term deposit rates have risen



New Zealand's banks are not alone in this regard. While Australian banks have had more success in raising funds offshore, competition for retail deposits has increased as well. In fact, Australian banks are now offering similar rates for some terms: up to 4% for terms of less than a year, and as much as 5-6% for longer terms. Even so, with a cash rate of 3.0% in Australia compared to 2.5% in New Zealand, this shows that the funding premium remains higher in New Zealand.

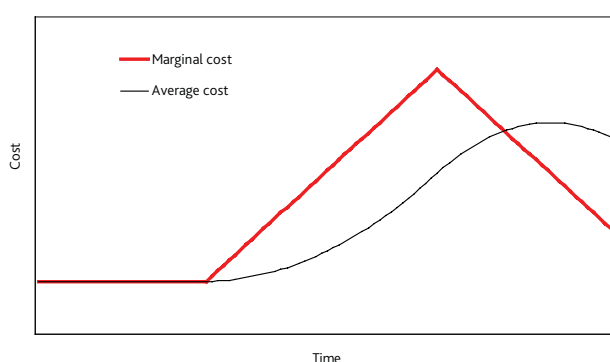
Recent policy developments have added to the upward pressure on deposit rates. The Government introduced a retail deposit guarantee in October 2008, due to fears of a run on banks if depositors sent their money to Australia, which had introduced a similar guarantee at the same time. While the direct cost of the guarantee is minimal (10bp for banks), the indirect effect is that banks are facing greater competition for deposits from finance companies that are also covered by the guarantee. These finance companies tend to offer higher deposit rates – even after paying a higher fee for the guarantee – but are now seen as equally safe in the eyes of depositors.

Secondly, for many months the RBNZ has been urging banks to extend the duration of their funding, to reduce their vulnerability to a loss of access to international money markets. That “should do” will soon become a “must do” when the RBNZ introduces its new policy on bank liquidity. The policy will require the major banks to draw a significantly greater share of their funding from more stable – and more expensive – sources, namely, retail deposits and long-term wholesale borrowing. While the details haven't been finalised, banks are already taking steps toward compliance by seeking more retail deposits and by opportunistically accessing long-term funding.

### Average vs. marginal cost

One final issue is that banks' funding extends not just across sources but across time. The previous figures in this section have detailed the rise in the *marginal* costs of new funding. However, the rise in the *average* cost of funding has not been as rapid, as banks have gradually replaced cheaper pre-crisis funding at more recent, higher rates – Figure 14 gives a stylised example of this. To the extent that banks focus on the *average* cost of funds over time, they have been relatively slow to incorporate the rise in funding premia since the credit crisis began. Put another way, if banks focused on the marginal cost of funding instead, it's likely that lending rates would have

Figure 14: Average vs. marginal cost of funding



fallen much less during the most stressful period of the credit crisis in late 2008/early 2009.

### Mortgage passthrough

As we noted earlier, the level of detail involved makes it impractical to build a bottom-up measure of bank funding costs. However, the evidence presented here seems consistent with our earlier finding that average funding costs have fallen by around 200bps less than the OCR (notwithstanding our point that the OCR is not the ideal benchmark for term funding). This has hindered the passthrough from OCR cuts to lending rates.

Table 1 shows the extent of passthrough to key mortgage rates in previous monetary policy cycles, with the high/low points in rates for each cycle. In previous cycles, mortgage rates have generally matched the movements in the OCR, or even exceeded them – as market expectations for OCR cuts/hikes often overshoot at the end of a cycle. This time, the key mortgage rates have fallen by 140-160bp less than the OCR. However, this is more than justified by the estimated 200bp relative increase in funding costs.

Table 1: OCR passthrough to mortgage rates in previous cycles

End of cycle	Levels			Change (basis points)		
	OCR	Floating	2yr fixed	OCR	Floating	2yr fixed
Mar-99	4.50	6.42	6.65			
May-00	6.50	8.71	8.70	200	229	205
Nov-01	4.75	6.63	6.59	-175	-208	-211
Jul-02	5.75	7.87	7.92	100	124	133
Jul-03	5.00	7.02	6.17	-75	-85	-175
Jul-07	8.25	10.74	9.90	325	372	373
Jun-09	2.50	6.44	5.78	-575	-430	-412

Source: RBNZ

### Conclusion

The recent RBA article concludes: “The recent financial turbulence means that, while the cash rate remains a key influence on banks' funding costs, the costs of the various forms of banks' funding have not fallen as much as the cash rate due to an increase in term premia and credit and liquidity spreads.” The same is true in New Zealand, and in fact the pressures on funding costs have been even greater here than in Australia. This has hindered the degree of passthrough from recent policy rate cuts. Even so, the major banks have accepted some narrowing in interest margins to date, in order to pass OCR cuts on to borrowers.

**Brendan O'Donovan**, Chief Economist, Ph: (64-4) 470 8250

**Michael Gordon**, Markets Economist, Ph: (64-4) 381 1412