

# Raising interest

## Responsiveness of retail bank deposits to interest rates

- **The New Zealand banking system has only limited scope to raise local deposits by paying higher interest on term deposits.**
- **On our estimates, paying 200bp extra in term deposit interest rates has yielded only 4% extra retail funding, at least in the short run.**
- **The GFC and new banking regulations will result in higher interest rates and only a little change in the retail/wholesale mix of funding.**

The New Zealand banking system currently sources 45% of its funding from retail deposits, such as transactional accounts and term deposits.<sup>1</sup> The balance is sourced on wholesale markets, of which a significant portion originates overseas. Since the Global Financial Crisis (GFC) it has become more difficult and relatively more expensive for banks to raise funds on wholesale markets. What's more, the Reserve Bank recently set up regulations that make retail funds significantly more attractive to banks than wholesale funds.<sup>2</sup>

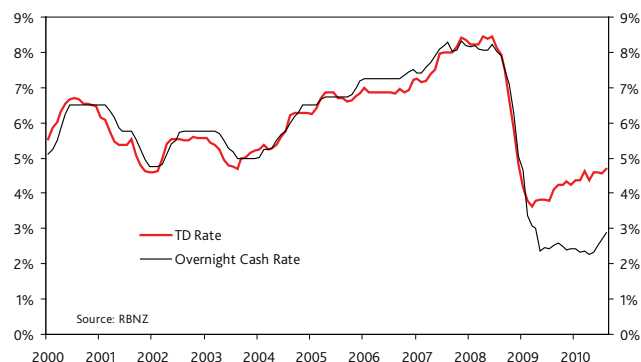
Consequently, banks have begun to compete more fiercely for retail deposits, and this has driven up the interest rate paid on term deposits. The average six-month term deposit rate used to track the OCR quite closely, but over the past year banks have been paying 200 basis points over the OCR for six month term deposits. Despite this, there has so far been only a small increase in retail funds deposited. In this paper we estimate the responsiveness of domestic deposits in the NZ banking system to interest rates, while controlling for other factors such as the state of the economy. We found that retail deposits are fairly unresponsive to higher interest rates. We also noted that a vast improvement in financial conditions has contributed to slow deposit growth over the past 18 months, as investors become more tolerant of risk.<sup>3</sup>

If banks cannot easily raise additional retail funds, and they are finding it expensive (relative to OCR) to raise wholesale funds, then they have little choice apart from "paying up" for their funding. The higher cost of funds will be passed on to borrowers, and the ultimate impact of the GFC and the new banking regulations will be higher interest rates, with little in the way of

a change in the retail/wholesale mix of bank funding – indeed, this is pretty much what we have observed over the past two years. We discussed the macroeconomic impact of the rising cost of funds in earlier bulletins.<sup>4</sup>

Our estimates suggest that for every 100 basis points increase in term deposit interest rates, there is 4.5% extra growth in funds on term deposit (totalled across the banking system). But there is also a 2.7% decline in funds deposited in on-call accounts. This is intuitive. On-call balances are convenient, but they normally pay no or low interest, so there is an opportunity cost to leaving money in them. The higher interest rates go, the less inclined customers are to leave their money sitting in transactional accounts, and the greater the incentive to put money elsewhere (including, but not limited to, putting it on term deposit).

Figure 1: Term deposit rate and OCR



<sup>1</sup> The banking system is defined as all registered banks in New Zealand, including foreign banks that operate as subsidiaries in New Zealand and take no retail deposits.

<sup>2</sup> Banks are now required to have 65% of their funding from "core" sources. Wholesale funds lose their core status when there is six months remaining until maturity, whereas most retail deposits are counted as 90% core right up to the day of maturity.

<sup>3</sup> Since March 2009 the NZX-50 has risen 34% and credit default swap spreads on Australian banks have halved.

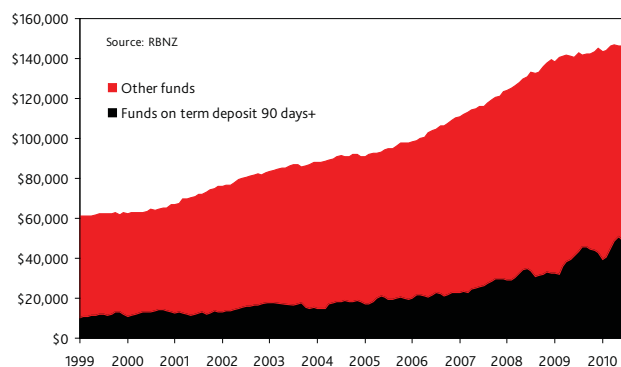
<sup>4</sup> "Before and after", 9 August 2010 and "A matter of interest", 12 August 2010. Available on request.

For further information, questions or comments contact Brendan O'Donovan, telephone (04) 470 8250, email [brendan\\_odonovan@westpac.co.nz](mailto:brendan_odonovan@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. © 2010

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 2: Domestic funds in NZ banking system



We separately estimated the *net* effect of higher interest rates on total domestic deposits with banks, and found that 100bp higher interest rates leads to a 2% increase in total deposit growth. On this basis we concluded that the 200 basis points extra interest being paid on term deposits has garnered banks only 4% more retail funding than would otherwise have been deposited. Banks have limited scope to raise additional funds by hiking interest rates in New Zealand.

Our estimates are valid for the short run only. We could find no evidence to support lagged or delayed responses to interest rate changes. However, the short sample period does not allow us to fully rule out either of the two following possibilities: 1) that the immediate increase in deposits following an interest rate is partly temporary, such that the permanent response to interest rates is smaller than our short-run estimate. Or, 2) that customers change their habits only slowly, such that the eventual permanent response to a change in interest rates is larger than our short-run estimate.

There is also a possibility that a *permanent* change in the *relative* interest rate paid on term deposits will have different consequences to the cyclical interest rate movements that populate most of our sample period. We tested the hypothesis that independent changes in term deposit rates have a distinct effect from OCR-induced changes, but the evidence did not support the hypothesis. (More accurately, we could not reject the hypothesis that OCR-induced and independent interest rate changes provoke the same behavioural response). However, the time period over which we observe independent term deposit rate changes is too short to draw definitive conclusions – the jury is still out.

### Other factors that influence deposit growth

In coming up with our estimates, we needed to control for the state of the economic cycle, which also influences deposit growth. The most effective control variable was monthly growth in the NZX-50 gross sharemarket index, lagged one quarter.<sup>5</sup> One percent sharemarket growth was associated with 0.25% slower growth in term deposits, no change in transactional deposits, and 0.2% slower growth in total deposits. Again, this

is intuitive. An advancing sharemarket signals that investors expect greater returns on investments outside banks and are more prepared to take the associated risks, so money will tend to fly from banks.

There was only limited evidence of a change in depositor behaviour following the onset of the Global Financial Crisis (aside from the normal responses to interest rates and economic conditions). We used average 5-year credit default swap (CDS) spreads on the Australian banks to proxy the perceived severity of the global banking crisis over time, as CDS swaps were at their highest during the most worrying phases of the global financial ructions. We found that a rise in CDS rates was associated with a rise in term deposits, as investors sought additional safety, although this result was below the normal threshold for statistical significance. Rising CDS rates was also associated with lower on-call deposits. Total deposits were unrelated to CDS spreads.

We could detect no unusual behaviour in deposits that could be attributed directly to the 2007 wave of finance company collapses (probably because the companies involved were small). And there was no detectable change in behaviour following the introduction of the Government Deposit Guarantee Scheme (the scheme was designed to prevent a change in depositor behaviour, not induce one). Again, our estimates are valid only for the short-run. We cannot rule out the possibility that long-run behaviour could change if the guarantee scheme were made permanent.

We tested for, but found no statistically significant relationship between monthly growth in bank deposits and the VIX volatility index, and the rate of house price inflation, GDP growth, and wage growth. (Although we are sure a long-run relationship exists between deposits and the last two of these).

Finally, it is worth noting that bank deposits have recently become a more tax-effective savings option. Some deposits can be treated as Portfolio Investment Entities, thereby receiving slightly more favourable tax treatment. And the October 1 reductions in the rate of income tax will diminish the tax disadvantage endured by investments that yield income rather than capital gain. This could result in higher growth in deposits.

### Regression results overleaf.

**Brendan O'Donovan**, Chief Economist, Ph: (64-4) 470 8250  
**Dominick Stephens**, Senior Economist, Ph: (64-4) 381 1414

<sup>5</sup> The relationship was very stable across time and consistent across specifications.

## Regressions results

<b>Equation 1:</b>			
<b>Dependent Variable: <math>\Delta\text{LN}(\text{total deposits})</math></b>			
	<b>Coefficient</b>	<b>Std Error</b>	<b>t-value</b>
Interest Rate $t$	2.01	1.14	1.76
CDS $t$	$4.2 \times 10^{-5}$	$6.9 \times 10^{-5}$	0.61
NZX-50 $t-1$	-0.20	0.07	-2.86
<i>Constant and seasonal dummies not reported</i>			
<b>Sample: April 1999 – June 2010, monthly</b>			
R <sup>2</sup>	0.23		
F(14,120)	2.52		
Durbin Watson	1.72		

<b>Equation 2</b>			
<b>Dependent Variable: <math>\Delta\text{LN}(\text{term deposits 90 days+})</math></b>			
	<b>Coefficient</b>	<b>Std Error</b>	<b>t-value</b>
Interest Rate $t$	4.58	1.88	2.44
CDS $t$	$1.5 \times 10^{-4}$	$1.1 \times 10^{-4}$	1.36
NZX-50 $t-1$	-0.25	0.12	-2.16
<i>Constant and seasonal dummies not reported</i>			
<b>Sample: April 1999 – June 2010, monthly</b>			
R <sup>2</sup>	0.25		
F(14,120)	2.87		
Durbin Watson	1.71		

<b>Equation 3</b>			
<b>Dependent Variable: <math>\Delta\text{LN}(\text{transactional deposits})</math></b>			
	<b>Coefficient</b>	<b>Std Error</b>	<b>t-value</b>
Interest Rate $t$	-2.66	0.60	-4.43
CDS $t$	$-1.2 \times 10^{-4}$	$3.6 \times 10^{-5}$	-3.31
NZX-50 $t-1$	$2.0 \times 10^{-3}$	0.04	0.05
<i>Constant and seasonal dummies not reported</i>			
<b>Sample: April 1999 – June 2010, monthly</b>			
R <sup>2</sup>	0.33		
F(14,120)	4.21		
Durbin Watson	2.30		

## Supplementary details

**Sample period, frequency:** Monthly, April 1999 to June 2010. The sample start was chosen to coincide with the introduction of the OCR.

**Deposit data:** Reserve Bank of New Zealand website, SSR part B1. "Total deposits" means total retail funding. "Term deposits" in eqn 2 refers to retail funds on deposit with 90 days or more remaining until maturity. "Transactional deposits" refers to total retail deposits in Cheque, EFTPOS, or Other Transactional accounts.

**Interest rate:** Weighted average of advertised six-month term deposit rates offered by the main banks. Sourced from RBNZ website, table B1.

**CDS:** 5-year credit default swaps. Daily data sourced from Bloomberg, averaged across four main Australian banks.

**NZX-50:** NZX-50 gross index. Sourced from Bloomberg.