
ARTICLES

The Reserve Bank's new liquidity policy for banks

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A strong liquidity profile is important for all companies.² This is particularly true for banks, given the maturity transformation role that is inherent to much of their business. The maintenance of a sound and efficient financial system requires banks to hold a liquidity profile that is robust to funding shocks. The New Zealand banking system is very concentrated, and unusually reliant on short-term offshore funding by comparison with other developed countries. This makes its institutions, and the system as a whole, particularly vulnerable to liquidity shocks. The Reserve Bank has been working to develop new prudential requirements designed to strengthen the liquidity of the New Zealand financial system. In this article, we explore the nature of liquidity risks inherent within the system and explain in detail the new requirements for registered banks. In doing so, we note that the new requirements come at a time when global regulators are looking to strengthen liquidity requirements in light of the recent financial crisis. The Reserve Bank considers that its new framework provides a solid foundation for enhancing liquidity in the New Zealand financial system, which can be further developed as necessary in the coming years.

1 Introduction

The Reserve Bank registers and supervises banks in New Zealand for the purposes of promoting the maintenance of a sound and efficient financial system, and avoiding significant damage to the financial system that could result from the failure of a registered bank. Bank liquidity is essential to the smooth functioning of the economy: businesses and individuals depend on bank credit, and liquidity problems can quickly spread through the financial system.

This article provides an outline of the Reserve Bank's new liquidity requirements for registered banks. The article proceeds as follows. Section 2 provides a brief description of liquidity risk and the rationale for regulating liquidity in the light of international experience. Section 3 provides an overview of the New Zealand banking sector and the current regulatory structure, and identifies specific liquidity concerns in the New Zealand context. Section 4 outlines the Reserve Bank's new requirements and section 5 details the implementation of the policy. Section 6 concludes.

2 Liquidity risk and international experience

Liquidity risk can arise in a number of forms. From a funding perspective, it represents the risk that an entity cannot meet its obligations as they fall due, and as a secondary matter, the risk to an entity's profitability of being able to meet its obligations only at an elevated cost.

Banks are particularly vulnerable to liquidity risk as a result of the maturity transformation role that they play in the financial system. Retail banks take short-term or on-call deposits, while a major part of their lending is in long-term residential mortgages. It is therefore imperative that banks retain a sufficient portion of their total assets in the form of liquid assets, to be able to meet the potential calls from savers to withdraw their money.

Retail banks take short-term or on-call deposits, while a major part of their lending is in long-term residential mortgages.

¹ This article has benefited from comments from many Reserve Bank colleagues, including Bernard Hodgetts, David Hargreaves, Alistair Henry and Chris Hunt.

² Liquidity is the ability of a firm to meet its financial obligations as they fall due and to finance growth in its business.

Conditions in securities markets can also be a source of liquidity risk for banks. In managing its liquidity position, a

bank will not hold all of its liquid assets in the form of cash,³ as the opportunity cost of doing so would be too high. Rather, it will also hold a variety of marketable securities such as government securities, and highly rated corporate bonds, that it can sell or repo to generate cash.⁴ But while the bank may in principle be holding sufficient liquid assets to meet its obligations as they fall due, its ability to meet those obligations will depend on how liquid the market is for those assets. This can be particularly relevant for companies operating in a country like New Zealand, with relatively shallow capital markets.

While liquid assets are a vital backstop, the normal first line of defence to meet any unexpected outflows is the ability to raise regular new funding from as wide a range of sources as possible – this is especially the case for larger banks. The importance of maintaining a diversified funding profile has been demonstrated by past banking failures, such as Continental Illinois in the US in the 1980s. Continental had experienced a prolonged period of rapid growth through aggressive lending practices. However, mounting losses led to rumours that Continental was close to bankruptcy, setting off a flight of wholesale funding. Continental was highly exposed to this type of run due to its heavy reliance on short-term funding in the Eurodollar market. The crisis was only resolved when US authorities stepped in with a rescue package. An over-reliance on short-term, and relatively expensive funding instruments was also a contributing factor more recently in the failure of Northern Rock in the UK in 2007 (see box 1).

Liquidity and solvency problems have affected numerous financial institutions around the world following the onset of the global financial crisis, and have in fact exacerbated the crisis. This has triggered a wide-ranging debate about the effectiveness of prudential supervision regimes across countries. There have been a number of significant

publications from international bodies, both about the future of prudential supervision in general,⁵ and specifically about liquidity risk.⁶ All of these statements highlight the importance of adequate liquidity and the strengthening of prudential requirements related to it. For example, in its September 2009 report to the G20 leaders, the FSB stated that it was “substantially raising the bar for global liquidity risk regulation”, advocating in particular:

- a new minimum global liquidity standard, introducing a liquidity coverage ratio that can be applied in a cross-border setting; and
- a structural liquidity ratio to address liquidity mismatches⁷ and promote a strong funding profile over longer-term horizons.

The various forms of liquidity risk raise a number of issues for the Reserve Bank in its role as the prudential supervisor of the New Zealand banking sector. Although all companies have a strong incentive to manage liquidity risk effectively to minimise the risk to the profitability and even the survival of their business, the Reserve Bank needs to consider whether there are external factors that might lead individual institutions to adopt business models that result in the financial system as a whole being overexposed to liquidity risk.

A number of factors may be relevant here. The management of each bank can be expected to assess the bank’s liquidity risk only with reference to the costs that the bank itself would incur in the event of a liquidity shock. A liquidity problem at an individual bank can be disruptive for the wider financial system but, in the absence of any external pressure, there may be limited incentive on management to take account of the costs of such disruption. As a result, management may adopt a less robust liquidity position than is desirable for society as a whole.

³ ‘Cash’ in this context means not just physical bank notes and coins but also bank balances that can be used to make same-day payments. This includes demand balances held at other banks (commercial banks or central banks) and settlement balances held in payment systems.

⁴ A ‘repo’ is a repurchase agreement where the seller of a security agrees to buy back that security at a later date for a higher price, effectively resulting in a short-term loan from the investor to the seller.

⁵ For example, the 25 September statement from the Financial Stability Board (FSB) (available at <http://www.financialstabilityboard.org/>).

⁶ “Principles for sound liquidity risk management and supervision” (see <http://www.bis.org/publ/bcbs144.htm>).

⁷ A bank’s liquidity mismatch is the difference between its expected inflows and outflows of cash over a given time period. The expected cash flows can be based on a range of possible scenarios, including business-as-usual or an own-name funding crisis.

Box 1

Bank liquidity failures: the case of Northern Rock

Northern Rock was formed as a building society in the north of England in 1965. It expanded gradually by acquiring smaller building societies before converting to a listed bank in 1997. By 2007, it had become the fifth-largest provider of residential mortgages in the UK, based on highly competitive pricing, which required a narrow margin between what it paid for funds and what its borrowers paid in interest.

To support this growth, Northern Rock became heavily reliant on wholesale funding, which made up more than 70 percent of its total funding, compared with an industry average for UK banks of around 50 percent. For this model to succeed, Northern Rock relied on:

- its ability to raise money in the inter-bank and securitisation markets to repay existing short-term borrowing and fund new lending; and
- its ability to pay a lower rate of interest on these borrowings than it charged to mortgage customers.

The onset of the financial crisis in 2007 created a shortage of liquidity in wholesale markets as financial institutions reduced purchases of mortgage-backed assets and

retained cash to meet their own liquidity requirements. These factors severely undermined the Northern Rock business model, to the extent that it was likely to have to draw on its stock of high-quality liquid assets and sell other assets at distressed sale values.

On 11 September, the company's auditors were sufficiently concerned to inform the Financial Services Authority that they had reasonable grounds to believe Northern Rock may cease to be a going concern. Days later, the company sought assurance of support from the Bank of England as the lender of last resort. Following the public announcement that this facility had been put in place, the bank suffered a run on retail deposits, with 20 percent withdrawn in the space of four days.

On 17 September, the UK Treasury announced that it would guarantee all retail deposits to halt the run. This support was extended on 20 September to provide guarantees on all existing and renewed wholesale deposits and borrowings. Further facilities were announced during October 2007, before Northern Rock was placed into temporary public ownership on 17 February 2008.

Source: Based on National Audit Office (2009) report on the Nationalisation of Northern Rock (http://www.nao.org.uk/publications/0809/northern_rock.aspx).

Furthermore, a degree of moral hazard may arise if banks have incentives to rely excessively on central bank liquidity facilities and other government assistance in lieu of managing their own liquidity portfolios more prudently. Such an outcome can shift the burden of risk from shareholders to taxpayers. The important role played by banks in the wider economy has meant that implicit government support has always been assumed to an extent. Because of the actions required around the world during the recent financial crisis, this assumption has become significantly more explicit. As a result, banks might reasonably, but undesirably, adopt a business model that is overly reliant on this support remaining in place. Prudential minimum standards for liquidity risk should reduce the likelihood that an individual bank needs to call on the central bank as the lender of last resort, and

also reduce the risks to the taxpayer when such support is nevertheless judged essential.

Finally, the nature of the banking sector will also be relevant to the supervisor in assessing liquidity risk across the system. A highly concentrated and inter-dependent banking sector can expect to face a greater degree of systemic liquidity risk. As a result, the scale of any externalities within the system will be multiplied.

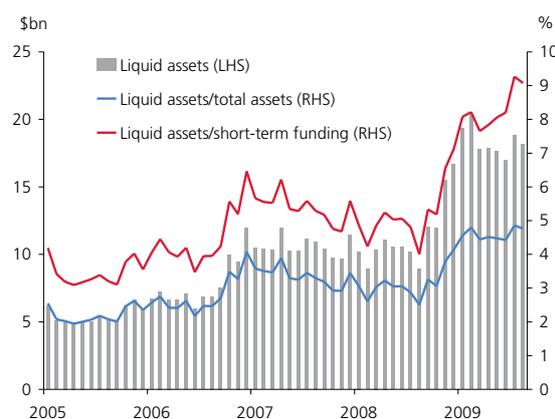
3 Liquidity within the New Zealand banking system

In 1996, the Reserve Bank put in place comprehensive disclosure requirements for New Zealand banks. The Reserve Bank sees market discipline as an important complement to regulatory discipline, and the disclosure regime aims to ensure that the market has the information it needs to exercise that discipline. New Zealand banks' liquidity risk has until now been addressed purely as part of this market discipline approach. Current disclosure rules require each bank to publish information about its approach to managing liquidity risk, and the bank's directors must attest that the bank has had systems in place to monitor and control adequately its liquidity risk, and that those systems have been properly applied. However, the detail of the reporting is largely left to the banks' own discretion.

The Reserve Bank has had concerns for some time that these requirements were proving to be insufficient. These concerns prompted studies by the Reserve Bank on the sources of liquidity and funding.⁸ Earlier in this decade, the low levels of liquid assets held by the banks resulted in a review of the Reserve Bank's domestic market activities and how the payment system was liquefied.⁹ The onset of the global financial crisis in August-September 2007 further underlined the importance of liquidity, and the Reserve Bank announced that it would be commencing work on a revised liquidity policy in its November 2007 *Financial Stability Report*.

As shown in figure 1, New Zealand banks had increased their holdings of traditional liquid assets¹⁰ prior to the Reserve Bank's announcement of its intention to introduce broader liquidity requirements. There has also been a further significant increase since mid-2008, which primarily reflects the banks' response to global market conditions, and the extension of the Reserve Bank's liquidity facilities as discussed below.

Figure 1
New Zealand banks' liquid assets



Source: Reserve Bank of New Zealand Standard Statistical Return.

Note: Short-term funding is approximated by funding with less than 90 days to rate reset (this will overstate funding maturing within 90 days somewhat).

This observed increase can be expected to decrease the banking system's exposure to short-term liquidity risk. However, the Reserve Bank is also concerned with the overall funding profile of New Zealand banks, which is a key driver of longer-term exposure to liquidity risk.

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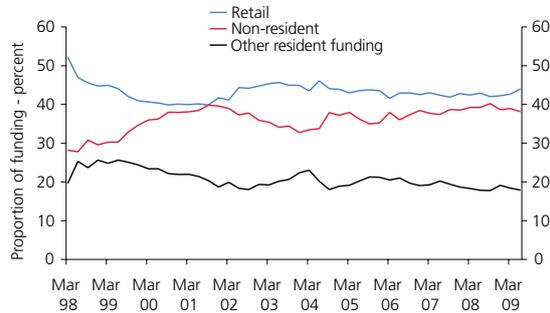
New Zealand runs a persistent and relatively large current account deficit, which is mainly funded through the banking system. In practice, New Zealand banks have raised a large proportion of this funding short-term, with the result that they have been heavily reliant on short-term, overseas funding, as demonstrated by figures 2 and 3 below. Figure 2 shows a breakdown of funding by category, and figure 3 shows the maturity of the banks' non-resident funding.

⁸ For example, see Box 2 'Bank funding', Reserve Bank *Financial Stability Report*, May 2005, p. 13.

⁹ See Nield (2006) and Nield (2008).

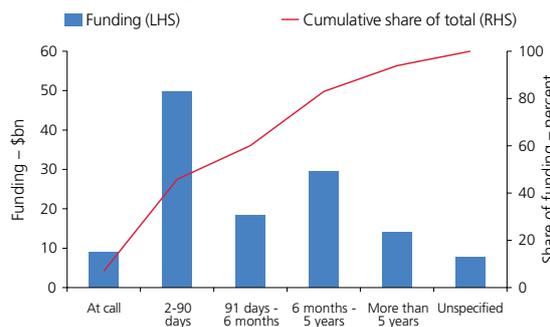
¹⁰ For these purposes, traditional liquid assets are defined as currency, government securities and claims on the Reserve Bank. Other, broader, definitions are possible.

Figure 2
Shares of domestic and non-resident funding by New Zealand banks



Source: Reserve Bank of New Zealand Standard Statistical Return and RBNZ calculations.
Note: Other resident funding includes interbank funding.

Figure 3
Residual maturity of New Zealand banks' non-resident funding

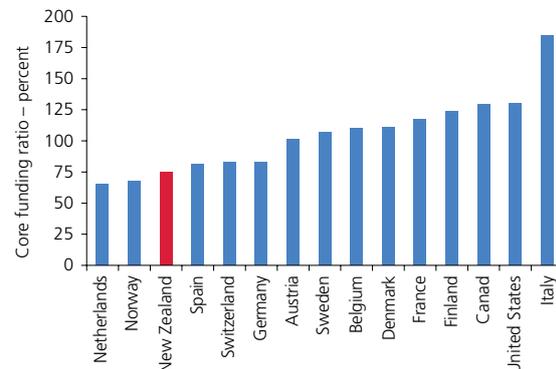


Source: Statistics New Zealand and RBNZ calculations.
Note: Based on data from December 2007.

These funding characteristics contribute towards the overall level of core funding observed in the New Zealand banking system. Figure 4 shows an estimate of core funding as a percentage of bank loans for a number of developed countries.¹¹ While this data should be regarded as indicative rather than definitive, New Zealand's core funding ratio appears to be lower than in most other countries, and by a significant margin in many cases.

¹¹ To allow cross-country comparison, core funding is defined for this chart as domestic and offshore securities with maturity of greater than one year plus household deposits. This is different from the definition of one-year core funding included in the minimum ratio requirements of the new policy (discussed below).

Figure 4
Core funding as a percentage of bank loans



Source: Organisation of Economic Co-operation and Development (OECD) and Bank for International Settlements (BIS) statistics and RBNZ calculations.

The risk associated with a high level of exposure to short-term overseas funding has for some time been identified as a particular concern. This risk was palpably demonstrated by the tightening of international markets experienced by New Zealand banks during the financial crisis, which saw offshore commercial paper issuance¹² fall by around a third in New Zealand dollar terms between September 2008 and March 2009.¹³

In light of the concerns outlined above, the Reserve Bank initiated a consultation process with banks to develop a new liquidity policy framework early in 2008. This led to the publication of a consultation paper in October 2008, which set out proposed new liquidity requirements, including reporting and disclosure requirements, qualitative requirements regarding banks' internal processes for managing liquidity risk, and quantitative requirements. The quantitative requirements (explained in detail below) consisted of:

- a minimum one-week mismatch ratio;
- a minimum one-month mismatch ratio; and
- a minimum core-funding ratio.

As part of its 2009 Article IV consultation with New Zealand, the IMF supported the proposal to adopt such measures, noting in particular that the new rules should help to reduce

¹² Offshore commercial paper issuance is short-term debt issued overseas by New Zealand banks.

¹³ Reserve Bank of New Zealand *Financial Stability Report*, May 2009, p. 31.

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the banks' dependence on short-term offshore funding.¹⁴

The Reserve Bank conducted an extensive formal and informal consultation process with banks on the proposed new liquidity requirements. In particular, this process sought to refine the proposed minimum ratios to ensure that the definitions were consistent with the high-level aims of the proposals. The final policy was published on 22 October 2009,¹⁵ and is described in detail in the following section. It is designed to ensure that individual institutions are incentivised to adopt funding models that will strengthen the New Zealand financial system. In addition, the Reserve Bank has made a number of developments in recent years to help ensure adequate liquidity for New Zealand financial institutions in the event that global market disruptions affect the system. These changes were described in detail in Nield (2008).

4 The Reserve Bank's new liquidity requirements

There are four main components of the policy:

- minimum ratio requirements calculated from banks' financial data, including both on- and off-balance sheet business;
- rules and guidance on the risk management processes that banks should have in place to manage liquidity risk;
- requirements for regular reporting to the Reserve Bank of data on their liquidity positions; and
- requirements for banks to disclose publicly certain information on their liquidity risk and how they manage it.

The first two components are now in place for most locally incorporated banks, and discussions are under way to bring them into effect for the other registered banks, including branches of overseas banks. Reporting and disclosure requirements will be introduced in due course, as discussed further below.

Minimum ratio requirements

The policy defines three ratios (see box 2). The one-week and one-month mismatch ratios set off the value of expected cash inflows (including from the sale of liquid assets) against the value of expected outflows over the respective period. The ratios are defined as the net cash inflow or outflow as a percentage of total funding. The one-year core funding ratio measures the extent to which loans and advances are funded by funding that is stable, either because it has at least a year to maturity or because it is from sources that are less likely to pull out their money at any sign of problems.

Locally incorporated banks are subject to a condition of registration that requires them to maintain the level of each ratio above a specified minimum. A bank's short-term liquidity position can change significantly each day.

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Banks must therefore calculate the ratios on the basis of closing balances at the close of business of each working day. In fact, a bank processing large payments for customers typically has to manage its liquidity position not just at the end of each day, but within each day. It is not practicable for the policy to set quantitative requirements on this intra-day liquidity risk, but it is addressed in the policy's guidelines on liquidity risk management.

Locally incorporated banks are normally required to calculate the ratios consolidated downwards; that is, including the business of all subsidiaries of the bank. This is based on the assumption that cash can flow between different parts of the group as needed. Banks commonly raise funding through dedicated fund-raising subsidiaries. For the bank's

¹⁴ See <http://www.imf.org/external/pubs/cat/longres.cfm?sk=22933.0>

¹⁵ Available from <http://www.rbnz.govt.nz/finstab/banking/>

Box 2

The Reserve Bank's quantitative liquidity requirements

One-week mismatch dollar amount =

- discounted value of primary liquid assets
- plus cash inflows contractually due within one week
- plus 75% of undrawn committed lines granted to the registered bank available within one week (subject to limits)
- minus 100% of "market funding" that can be withdrawn at sight or has residual contractual term within one week
- minus "non-market funding" that can be withdrawn at sight or with residual contractual term within one week, where the percentage assumed to be withdrawn varies by size band (see Figure 5)
- minus other outflows contractually due within one week
- minus 15 % of the undrawn balance of committed lines granted by the bank, other than revolving retail facilities, that can be drawn within one week

One-week mismatch ratio = $100 \times (\text{One-week mismatch dollar amount} / \text{total funding})$

One-month mismatch dollar amount =

- discounted value of primary liquid assets
- plus discounted value of secondary liquid assets
- plus cash inflows contractually due within one month
- plus 75% of undrawn committed lines granted to the registered bank available within one month (subject to limits)
- minus 100% of "market funding" that can be withdrawn at sight or has residual contractual term within one month
- minus "non-market funding" that can be withdrawn at sight or has residual contractual term within one month, where the percentage assumed to be withdrawn varies by size band (see Figure 5)
- minus other outflows contractually due within one month
- minus 15 % of the undrawn balance of committed lines granted by the bank, other than revolving retail facilities, that can be drawn within one month

One-month mismatch ratio = $100 \times (\text{One-month mismatch dollar amount} / \text{total funding})$

One-year core funding dollar amount =

- all funding with residual maturity longer than one year, including subordinated debt and related party funding
- plus 50 per cent of any tradable debt securities issued by the bank with original maturity of at least two years, and residual maturity (at the reporting date) between six months and one year
- plus “non-market funding” that can be withdrawn at sight or with residual maturity up to one year, where the percentage to be included decreases with size band (see Figure 6)
- plus Tier 1 capital

One-year core funding ratio = 100 x (One-year core funding dollar amount / total loans and advances)

liquidity risk, it is the nature of the external funding coming into such a vehicle that is important. Certain subsidiaries could be excluded from the consolidation if the nature of their business meant that this measurement approach did not capture their liquidity risk appropriately. An example would be insurance business. Also, no New Zealand bank at present owns an overseas bank, but that case would need to be considered separately if it ever arose.

A key distinction that all three ratios rely on is between ‘market’ and ‘non-market’ funding. ‘Market funding’ is intended to capture the idea of professional wholesale market funding that would all be withdrawn from the bank on maturity at the first sign of problems. It is defined as all funding provided to the bank by other financial institutions (including any related parties of the bank), and all funding raised by means of tradable debt securities issued into professional markets.

Non-market funding is the rest of the bank’s funding. It can, for instance, include a \$100 million deposit from a large corporate, which is why the policy does not use the terms ‘retail’ and ‘wholesale’ commonly used in liquidity management. For all three ratios, it is assumed that providers of non-market funding will be less reliable, the larger the total amount of deposits that they provide. For instance, for depositors with over \$50 million held at the bank, 80 percent of their funding is assumed to be withdrawn in a short-term liquidity stress. The larger the deposit, the more financially sophisticated the depositor is likely to be, and the more alert to the safety of their funds. But the reason that the policy does not treat (for instance) large deposits from

corporates as purely wholesale is that a reasonable amount of these deposits tend to be of the nature of working capital balances, rather than professional money market placements.

Mismatch ratios

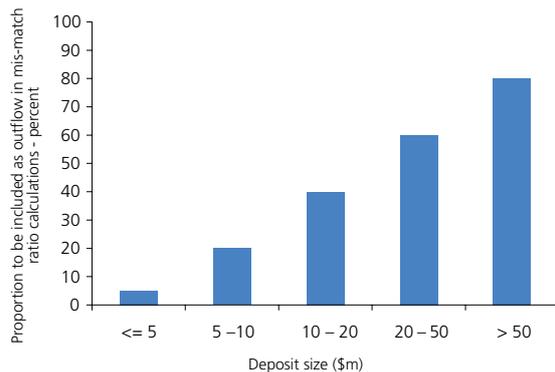
The one-week and one-month mismatch ratios are based on the idea of projecting what a bank’s cash inflows and outflows would be over the next week or month, in the event that the bank is subject to a serious loss of confidence. The ratio definitions then offset the net cash flow position (which will invariably be a net outflow) against available cash and liquid assets that the bank would be able to use to raise cash at short notice. The cash flow projections underlying the ratio calculation should not be seen as describing a precise scenario: it is very unlikely that any future liquidity stress at a bank will play out in exactly the same way as any historical examples. Rather, these are a generic set of assumptions that provide a standard metric for the amount of liquid assets required.

The assumptions about the percentages of funding provided to the bank that will be withdrawn are based broadly on the financial sophistication of the provider and the average size of deposit that they have with the bank. It is assumed that all market funding is withdrawn at the earliest possible date.

On the other hand, non-market funding ranges from small deposits placed by individual retail depositors to working capital balances held by large companies. For this range

of depositors, the cash withdrawal assumptions are based on the size of their deposit with the bank. Figure 5 shows the cash withdrawal assumptions for each size band of depositor.

Figure 5
Percentages of non-market funding in each size band to be included as outflows (negative sign) in the mismatch ratio calculations



When a bank has provided committed lending facilities to commercial borrowers, those borrowers can in principle draw down additional amounts up to the limit of their facility at any time. However, the assumption in the policy is that the rate of such drawing will not be affected by a loss of confidence in the bank, and will continue at their normal rate. Based on historical figures for draw-down rates across a range of products, the assumption is that cash provided to borrowers over the period is 15 percent of the total amount that they could draw down.

However, retail revolving credit facilities such as credit cards and overdrafts are excluded from the calculation. Across a bank's whole portfolio of such business, the net amount of cash flows in and out is relatively small, and there is no expectation that customers would rush to draw down credit on rumours of a problem affecting their bank.

For other assumed outflows and inflows, it makes best sense to base them on fixed contractual terms, so behavioural assumptions are not needed. These include amounts contractually due on derivative contracts, loans due to be drawn down where the amount and timing are certain, and interest payments and receipts due within the period, where cash actually changes hands rather than just being debited or credited to a customer's account.

For a bank with a conventional balance sheet profile, the sum of assumed stress cash inflows and outflows will invariably be negative; that is, a net outflow.

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The policy recognises two options that a bank would have to meet that cash shortfall.

The first is to draw on committed borrowing lines that it has received from other banks. The policy puts tight conditions on the nature of such commitments before they can be included in the calculation. It also only allows 75 percent of the amount of available credit to be included in the calculation. In addition, a commitment from an individual provider can only contribute a maximum of +3 percent to the overall ratio, and commitments in total can only contribute +9 percent. This does not rule out one of the providers being a related party of the bank, such as an overseas parent bank. This treatment recognises that committed lines are a less reliable source of emergency cash than holding a stock of liquid assets, but that they are still a desirable addition to a bank's liquidity armoury.

The second option is to draw on cash balances, or to sell or repo liquid assets; that is, assets the bank holds that can quickly be converted to cash. The policy specifies which types of marketable security (in addition to cash itself) can be treated as liquid assets in the one-week and one-month mismatch calculations. The following is a broad summary of the two classes of liquid asset defined in the policy, primary and secondary:¹⁶

Primary Liquid Assets

- Securities issued by the following –
- New Zealand government
- Reserve Bank of New Zealand
- New Zealand local authorities

¹⁶ The securities listed must all be denominated in New Zealand dollars except where otherwise noted.

New Zealand state owned enterprises
NZ\$ securities issued by overseas sovereign, supranational and quasi-sovereign entities
Residential mortgage backed securities

Secondary Liquid Assets

Securities guaranteed by the New Zealand government (NZ\$ and foreign currency)
Securities guaranteed by AAA-rated sovereign entities (NZ\$ and foreign currency)
Foreign currency denominated securities issued by AAA-rated sovereign entities
Lower-rated and un-rated local authority securities
New Zealand corporate securities
Asset-backed securities
Registered bank securities

Only primary liquid assets qualify for the one-week mismatch calculation, and this ensures that a substantial proportion of banks' total liquid assets will be primary. With one exception, primary liquidity securities are those of such high quality and/or market liquidity that they should be realisable for cash with most financial market participants at any time. The exception is residential mortgage-backed securities, which are not tradable but can be used as collateral for short-term borrowing from the Reserve Bank.

Secondary liquid assets are generally those that are of lesser quality, or less liquid in the New Zealand market, than New Zealand government securities. Registered certificates of deposit issued by banks are also treated as secondary, and with a cap on the amount that can be included, even though the market for them is normally liquid. This is because they are likely to become illiquid as soon as one bank in the system faces liquidity problems.

To adjust for various types of risk (such as market risk, liquidity risk, exchange rate risk and credit risk), the market value of each eligible liquidity asset is reduced by a risk margin (also known as a 'haircut') appropriate to that type of security before that security's market value is included in the mismatch calculation.

The one-week and one-month mismatch ratios are calculated by dividing the net dollar mismatch amounts by total funding. Although minimum requirements could just as well be set

on the dollar amount as on the ratio, the ratio definition is preferred as it allows easier comparison of banks' actual ratios, initially by the Reserve Bank, and potentially by the market, assuming these numbers are included in eventual disclosure requirements.

The standard minimum requirement for both ratios is 0 percent. Notionally, a bank meeting these minima will just survive, without official support, over both the first week and the first month of a liquidity squeeze. However, this depends entirely on the specific set of cash flow assumptions in the calculation, and as noted above, each liquidity problem tends to play out in its own idiosyncratic way. It is likely that banks will maintain their own internal minima for each ratio a few percentage points above the regulatory minimum to reduce the chance of breaches, as the values of both ratios are likely to be quite volatile from day to day.

As a final point, it is worth noting that a bank that sells or repos its liquid assets, or draws down its committed lines, will normally breach its minimum mismatch ratios as a result. However, this is what a bank may need to do to help it survive a temporary liquidity problem. The Reserve Bank expects that a bank would inform it at an early stage of any emerging liquidity problem, and any actual or expected breach of the minimum requirements. The Reserve Bank would then discuss with the bank the options, depending on the circumstances, for it to return to compliance with the standard minima.

One-year core funding ratio

The basic notion underlying the one-year core funding ratio is a comparison between an estimate of the funding of the bank that is stable and which can be assumed to stay in place for at least one year ('core funding'), and the core lending business of the bank that needs to be funded on a continuing basis.

Requiring banks to maintain a minimum one-year core funding ratio reduces the vulnerability of the banking sector as a whole to a period of general market disruption.

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If offshore markets were closed to New Zealand-incorporated borrowers for an extended period, having existing funding at longer maturities would allow a longer breathing space to address the problem.

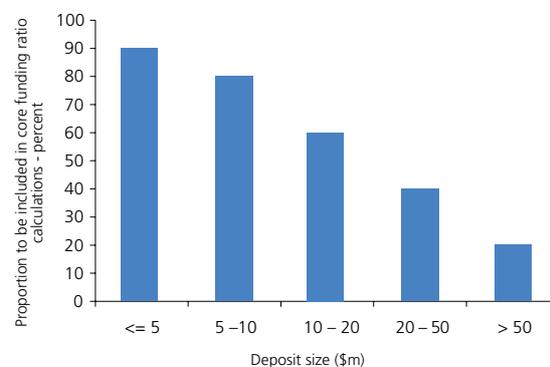
Core funding includes all funding with residual maturity over one year. This includes all deposits with a remaining term of more than one year, whether retail or wholesale in nature, all tradable securities issued with more than one year remaining until redemption, including for instance subordinated debt, and any funding from related parties that the bank is under no contractual obligation to repay for at least a year. Tier one capital as defined in the Reserve Bank's capital adequacy framework is also included.

To avoid excessive volatility of the ratio, tradable debt issued with an original maturity of two years or more remains in core funding for a further six months after it has passed the one year residual maturity mark, but with only 50 percent recognised. Banks would otherwise be under strong pressure not to make individual debt issues in large amounts, which would be inefficient.

Non-market funding with less than one year to maturity is also included in core funding, but the percentage included from each funding provider reduces as the total funding from that provider increases. As with the mismatch ratios, this reflects the fact that deposit size is assumed to be a rough proxy for how stable funding from each depositor is. For instance, a depositor with total deposits at the bank of less than \$5million is assumed to be a less financially sophisticated personal depositor or small business, and accordingly 90 percent of such funding is allowed within the core funding total. The percentages included in each depositor size band are set out in figure 6.

The one-year core funding ratio is the total of one-year core funding as a percentage of the bank's total loans and

Figure 6
Percentages of non-market funding up to one year in each size band to be included in core funding



advances. The idea behind including all loans and advances rather than, say, loans with more than one year residual maturity is that the total represents a key part of a bank's core franchise. A bank that cannot obtain funding to keep rolling over its shorter-term lending when borrowers request it, as well as to fund its longer-term lending, is likely to be in a weak and unsustainable position.

For the initial implementation of the policy, locally incorporated banks are being required to maintain a one-year core funding of at least 65 percent. Under current estimates, the banks all have a ratio above this minimum, but only slightly above in most cases.¹⁷ However, prior to deregulation in the 1980s, the Reserve Bank estimates that the ratio would have been significantly higher, around 90 percent.

In addition to strengthening banks' liquidity positions, the core funding ratio might also be expected to provide a degree of automatic stabilisation to the economy during periods of strong credit expansion. In recent years, banks have been able to fund cheaply in the offshore money markets and use derivatives to synthesise fixed-rate term funding at a cost cheaper than actually borrowing in term markets. The core funding ratio in the new prudential liquidity policy drives banks to either compete for more stable funding from non-financial customers, or borrow in wholesale markets for terms longer than one year. During periods of rapid credit

¹⁷ See "Regulatory impact assessment: RBNZ liquidity requirements for locally incorporated banks" for more detail (available at <http://www.rbnz.govt.nz/finstab/banking/>).

expansion, banks will not have the same ability to borrow at short terms in the offshore money markets to supply domestic demand. To satisfy growing credit demand, banks will need to borrow from a variety of sources, with increased emphasis on customer deposits and longer-term markets. As a result, lending rates should automatically move higher without the Reserve Bank necessarily needing to move the official cash rate to the same extent. With short-term wholesale market rates not likely to rise as much, the attractiveness of the New Zealand dollar as a destination for 'carry trade' investors could be reduced.¹⁸ Through these channels, the policy has the potential to have a role in assisting monetary policy.

Rules and guidance on liquidity risk management

While the three minimum ratio requirements put a ceiling on the amount of liquidity risk that a bank can take on, that in no way guarantees that a bank meeting those requirements is immune to liquidity problems. It is vital that a bank also has its own comprehensive measurement and control framework in place that allows it to manage liquidity risk within its chosen risk appetite, and allows it to spot any emerging liquidity problems early and respond to them promptly.

Under the liquidity policy, registered banks must meet the following condition of registration:

That the registered bank has an internal framework for liquidity-risk management that is adequate in the registered bank's view for managing the bank's liquidity risk at a prudent level, and that, in particular:

- (a) is clearly documented and communicated to all those in the organisation with responsibility for managing liquidity and liquidity risk;
- (b) identifies responsibility for approval, oversight and implementation of the framework and policies for liquidity-risk management;
- (c) identifies the principal methods that the bank will use

for measuring, monitoring and controlling liquidity risk; and

- (d) considers the material sources of stress that the bank might face, and prepares the bank to manage stress through a contingency funding plan.

The policy also includes fuller guidelines that banks should apply to their arrangements for managing liquidity risk. These guidelines are issued under section 78(3) of the Reserve Bank Act, which means that the Reserve Bank could take them into account (without ruling out other factors that might be relevant) in determining that a registered bank has not carried on its business in a prudent manner, or in considering the ability of an applicant for registration as a registered bank to carry on its business in a prudent manner.¹⁹ The applicability of any aspects of the guidelines to a given bank depends on their being relevant to the nature of the bank's business and risks.

Reporting requirements

The October 2008 consultation paper included proposals for banks to report financial data on liquidity risk monthly to the Reserve Bank. No significant concerns were raised in the consultation, so the Reserve Bank intends to put in place reporting requirements broadly in line with those consulted on. Some updates to the proposals will be needed to reflect changes in the policy's minimum ratio requirements since the consultation.

Reporting will cover the following main areas:–

- the values of the bank's one-week and one-month mismatch ratios, and the one-year core funding ratio, as defined in the policy, including the main components of the calculations;
- the maturity profile of the bank's market funding on a contractual basis on a fairly detailed basis, starting with maturities of overnight, 1-7 days, 8-14 days, and so on;
- if the bank makes its own behavioural assumptions in its internal liquidity risk management, the maturity

¹⁸ The 'carry trade' is a currency investment trade where a speculative investor borrows in a currency with low interest rates and invests in a currency with high interest rates.

¹⁹ The Reserve Bank's guidelines broadly cover the same ground as the guidance for banks in the Basel Committee's document "Principles for sound liquidity risk management and supervision" (September 2008).

breakdown of its wholesale funding on that basis, and its daily mismatch position for the first week ahead;

- the breakdown of the bank's market and non-market funding into over and under one-year residual maturity, offshore and domestic, and New Zealand dollar-denominated and other; and
- details of liquid assets held, as defined in the policy.

The aim of the reporting is to allow the Reserve Bank to monitor liquidity risk across the banking sector as a whole, and to compare the liquidity positions of individual banks and spot potential outliers. Banks will need to be able to increase the frequency of reporting from monthly to weekly if required, so that the Reserve Bank can monitor more closely the liquidity position of an individual bank, or the banking system in general, should market concerns require it.

Disclosure requirements

The Reserve Bank's disclosure regime is an important part of its overall regulatory approach. It is intended to enhance market discipline, as noted above. In keeping with this approach, the Reserve Bank is keen to ensure that banks disclose adequate information about their actual liquidity position, and about the way they manage liquidity risk.

The Reserve Bank's disclosure regime is an important part of its overall regulatory approach.

The October 2008 consultation paper proposed that additional disclosure on liquidity would be added to banks' existing quarterly disclosure requirements. This would include the same data that will be reported monthly to the Reserve Bank, but would add some additional items.

More broadly, the Reserve Bank has recently launched a fundamental review of its disclosure regime, which is likely to take several months. One of the issues that this review will consider is whether the overall volume or frequency of disclosure is excessive, in terms of the burden on the

banks producing the data, compared to how much of the information is useful and comprehensible to its intended audience. Further work on the liquidity disclosure proposals has therefore been postponed until that review has been completed.

5 Implementation

The quantitative and qualitative requirements were put in place for most locally incorporated banks through additions to their conditions of registration in October 2009. These new conditions are that the banks meet the requirements of the policy with effect from 1 April 2010. This builds in a period of transition to allow the banks sufficient time to align their internal systems with the new requirements.

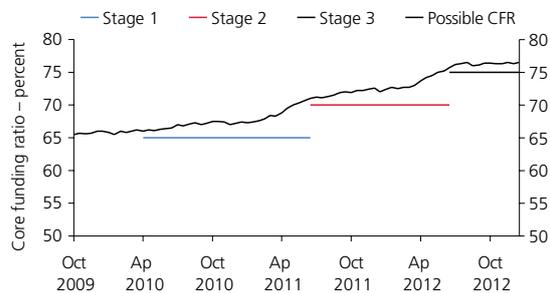
Thereafter, the mismatch requirements are designed to act as a floor to banks' existing management of short-term liquidity risk, and as such, are expected to remain at the initial calibration.

With the one-year core funding ratio, however, the Reserve Bank is seeking to lengthen banks' maturity profiles to provide greater protection against liquidity risk in the medium-to longer term. With this in mind, the Reserve Bank intends to raise the required minimum in the future from the initial 65 percent minimum requirement. It expects to do this in two further stages, with the minimum raised to 70 percent at the second stage, and then finally increased to the expected long-term minimum of 75 percent (as displayed in stylised form in figure 7 below). Most banks will need to adjust their funding profiles to meet the requirements in Stages 2 and 3. The precise timing of these increases will be determined once all parties have had an opportunity to observe the operation of the framework in practice.

The Reserve Bank is currently finalising the treatment of branches of overseas banks under the policy. On the one hand, a local branch needs to ensure that it maintains adequate liquidity in its own right; but on the other hand, this may already be achieved within the global bank's liquidity management framework, or because of liquidity requirements imposed on the whole bank by the home country supervisor. The policy builds in more flexibility in the treatment of branches by allowing such factors to be taken

Figure 7

Illustrative implementation of the core funding ratio



into account. The standard quantitative requirements may be suitably adapted or waived for branches, provided that the Reserve Bank is satisfied that the broad objectives of the policy are still met.

The next step will be the introduction of standard reports to the Reserve Bank covering liquidity data. Requirements for public disclosure will be subject to the forthcoming review as noted above.

6 Conclusion

The introduction of this new liquidity policy marks a significant change in the way the Reserve Bank supervises New Zealand-registered banks. It has arisen from concerns aired by the Reserve Bank over a number of years, which were brought into sharp relief by the global financial crisis. While the initial thinking behind this policy occurred prior to the current period of financial stress, the crisis has had an important influence on the form of the policy. The Reserve Bank has been the first central bank to announce a new prudential liquidity policy, but it has not been developed without discussion or awareness of what overseas regulatory agencies are thinking, in particular the Basel Committee on Banking Supervision, the FSA in the UK,²⁰ and APRA in Australia.²¹ Although there are some differences in approach emerging across the globe, the Reserve Bank considers that its new requirements represent a sound basis upon which to proceed. It will be keeping the operation and calibration of the policy under review, and will make any adjustments

²⁰ See http://www.fsa.gov.uk/pages/Library/Policy/Policy/2009/09_16.shtml

²¹ See <http://www.apra.gov.au/Policy/Enhancing-prudential-framework-for-ADI-liquidity-risk-management.cfm>

as appropriate in light of both international developments and the operational impact of the policy itself. The Bank is confident that the policy will make an important contribution to the objective of a sound and efficient financial system in New Zealand.

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Erratum

Line reading 'Residential mortgage backed securities', column 1, p14 under 'Secondary Liquid Assets', moved to 'Primary Liquid Assets' section of table.