
Y2K and banking system liquidity

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Throughout 1999, much central bank effort went into ensuring that possible public concerns about the impact of Y2K on the banking and financial systems did not have a material impact on the wider economy. Public concerns about banks, or individual institutions' worries about how markets might behave, had the potential to create actual problems. Quite reasonably, banks might have responded to this risk by altering markedly the composition of their balance sheets, in favour of highly liquid assets, to ensure that they had sufficient liquidity if public or market sentiment regarding Y2K turned nasty. This article explains the pre-emptive and liberal approach the Reserve Bank of New Zealand took to assure banks of access to liquidity over the year-end period. Doing so helped avoid disrupting normal business and jeopardising the access of businesses and households to credit.

1 Introduction

Providing ready access to liquidity, in a way that ensures that economic activity and monetary policy are not thrown off course unnecessarily by "shocks" that materially alter the demand for liquidity by banks, is at the heart of what it means to be a central bank. Concerns about Y2K (the date change from 31 December 1999 to 1 January 2000) had the potential to be just such a "shock", and the Reserve Bank and other central banks around the world made additional provisions to ensure ready access to liquidity.

This article outlines the nature of the risks that concerns about Y2K posed for banks and financial markets¹ and describes the Reserve Bank's successful approach to dealing with these issues in New Zealand.

2 What was the problem?

Public and market concerns about the impact of Y2K on the financial sector posed two main risks. First, if the public became worried about the reliability of computerised bank account records, Automatic Teller Machines (ATMs), or other electronic payment mechanisms, large numbers of bank customers might withdraw large quantities of cash from their banks before the end of the year. Such a run to cash was a real enough risk: public opinion polling done for the Reserve Bank throughout 1999 consistently suggested that a material

proportion of the population was considering doing exactly that. If such a run had started, other people could have quickly joined in. Banks that do a lot of retail business typically invest mainly in long-term illiquid assets, such as mortgages. They also hold substantial liquid assets to cater for normal day-to-day business activity and reasonable fluctuations around that normal level. But retail banks do not hold enough immediately-liquid assets to pay out in case of heavy withdrawals by a large proportion of depositors at short notice.

The second area of risk centred on the maintenance of liquid and well-behaved financial markets around the end of the year. In normal circumstances, banks and other big market players rely on being able to borrow readily if they need to, to back up their actual holdings of liquid assets. As part of this, banks typically hold substantial volumes of readily-tradeable short-term securities issued by each other. Running into Y2K, banks faced twin risks: that market participants might want to lower their credit exposures to each other over the end of the year ("just in case" anything went wrong), and that big corporates might turn to banks for liquidity to a greater degree than usual. With industry forums advising participants to avoid trades settling around the end of the year ("just in case"), all this posed a risk that banks would not be able to rely on the wholesale market for liquidity to anything like the usual extent.

Y2K itself was an event recognised well in advance. It had a definite date, and many identifiable risks, but no certainty about what would actually happen. The chances of bank customers withdrawing very large amounts of cash and of a severe breakdown in the functioning of wholesale markets

¹ Throughout this article the intensive efforts made by banks over several years to remedy any technical Y2K problems are taken for granted. The article focuses on the impact of public and market concerns about the impact of Y2K on the financial sector, rather than on any actual technology risks.

were both low. But banks had to be prepared not just for median (or expected) outcomes, but also for the remote (but identifiable) possibility of extremely adverse outcomes around Y2K.

In response, it would have been entirely rational for individual banks to take steps to ensure they could get access to cash. Most obviously, they would have set out to increase their holdings of those securities that would provide guaranteed liquidity. That would have meant potentially large changes in bank balance sheets. Banks would have wound back their lending, trying to substitute, say, long-term illiquid loans for government securities. They would have been more sparing in allowing credit limits to be used. And they would have bid more aggressively for term deposits. Part of the “rationing” process would have involved higher interest rates, especially on loans maturing around the Y2K date change time. Banks and financial markets, and the credit they make possible, play a key role in facilitating economic activity, so these sorts of changes in bank behaviour would have had a widespread impact. If banks had become less willing to lend, both firms and households would have been forced into changing their own spending and investment plans. Last year, that could have placed the then-nascent recovery in jeopardy.

Note that all this could have happened even if every technical Y2K problem affecting every bank and financial institution had actually been remedied well in advance. If people or institutions believed there **could** be stresses within the financial sector over Y2K – indeed, if banks worried that the public might worry – that had the potential to cause serious problems, even if there were no technical faults at all. Contrast this with, for example, the electricity or telecommunications industries, where no amount of public worry had any bearing on the probability of actual problems occurring – one can hoard cash or liquid assets, but not, say, electricity. Y2K illustrates both how important confidence is in the financial sector and the wider impact that disruptions to that confidence can have. That is where central banking – the Reserve Bank – comes into the picture.

3 The Reserve Bank policy response

If banks had set out to increase substantially their holdings of liquid assets their efforts would have placed unnecessary costs and stresses on the economy, and would have been inconsistent with intended monetary policy at the time. The Reserve Bank’s goal was to limit the impact on the economy of any Y2K-induced changes in public or market behaviour by, in effect, providing low-cost insurance against the low probability, relatively extreme, events. To do this, the Bank had to make banks confident that they could rely on it for the added liquidity if needed, and that doing so would be cheaper for them than to self-insure (by re-orienting their balance sheets “just in case”).

In designing our Y2K liquidity arrangements, three key principles guided our thinking:

- Being **early** and therefore **pre-emptive**;
- Providing market **certainty** about the terms on which liquidity would be available; and
- Being **liberal** in providing liquidity.

Under the Official Cash Rate (OCR) system for implementing monetary policy, the Reserve Bank provides the banking system with settlement cash on demand. Settlement cash is simply a deposit in a bank’s account at the Reserve Bank. It plays a central role because banks need it to buy notes and coins from the Reserve Bank, and also use it to make payments to each other for themselves or on behalf of their customers. Banks cannot do without it and the Reserve Bank can control the terms on which it is made available.

We make additional settlement cash available by entering into repurchase agreements (repos)². Banks can obtain as much settlement cash as they like from the Reserve Bank provided they have suitable security as collateral. Under our normal procedures, therefore, banks could have assured themselves of improved access to liquidity over Y2K only by increasing their holdings of government securities, because

² There are two “windows” banks can use for obtaining settlement cash on demand from the Reserve Bank: the Overnight Repo Facility (ORF) at a cost of 25 basis points above the OCR; or rolling over intra-day borrowing into overnight borrowing at a cost of 30 basis points above the OCR.

these were the only securities they could count on being able to turn into settlement cash on demand.³

In principle, one way to limit any increase in banks' demand for government securities would have been to expand the range of securities accepted as collateral (something done by a number of overseas central banks). However, there are not many other non-government liquid securities available locally, and so New Zealand banks hold very few securities other than government securities and short-term bills issued by other banks. As one of the risks we were worried about was that banks would become less keen to hold each other's paper over Y2K, expanding the range of acceptable collateral was not likely to go far towards providing the sort of insurance we were looking to provide.

The Bank's first steps were announced in April. To provide assurances about liquidity over the year-end we indicated that we would:

- Accept limited amounts of bank-issued bills as collateral for liquidity injections via the daily Open Market Operations (OMO) and the Overnight Repo Facility (ORF). Although it was possible that bank demand for other banks' paper might drop away around Y2K, it still made sense for us to be willing to take it as collateral if banks were, in fact, holding such paper.
- Actively use foreign exchange swaps⁴ to inject around \$300 million of liquidity over the year-end. Even at that early stage it seemed probable that trading activity in these markets would fall away towards the very end of the year, and so we envisaged doing these foreign exchange swaps in early December. Foreign exchange swaps offered two main advantages. Most importantly, swaps injected liquidity without tying up the domestic government securities of local banks. Secondly, by having

swaps mature well into January they would provide banks with secure funding over the potentially illiquid period around 31 December.

- Be ready to increase the amount of settlement cash left in the system each day. In normal circumstances, our open market operations aim to leave around \$20 million in the system at the end of each day. However, it was unclear if and when demand for notes and coins would increase over Y2K and, once it had risen, how quickly it would drop back. So the Bank indicated that the amount of settlement cash left in the banking system each day was likely to be somewhat higher than usual at times from around the beginning of December.
- Narrow the bands around the OCR to +/- 10 basis points, rather than the normal 25 basis points. This reduced the cost to banks of both obtaining and holding additional settlement cash. The change meant banks would earn 10 basis points below the OCR on positive overnight settlement cash balances instead of 25 basis points below, and banks could borrow settlement cash on demand via the ORF at just 10 basis points over the OCR instead of 25 basis points over.
- Be willing to lend to banks unsecured if demand for notes and coins rose by \$500 million more than normal, or earlier if there were "material signs of stress" on market liquidity. The unsecured loans would be at an interest rate 25 basis points above the OCR.

The Bank envisaged making additional liquidity available at interest rates very close to the OCR. We took the view that there was no macroeconomic reason why concerns about Y2K liquidity should have a material impact on interest rates – or, hence, for additional liquidity to be made available only at a premium price. In this we were a little more aggressive than most other countries: in the United States, for example, the Federal Reserve's special liquidity facility made cash available over Y2K at 150 basis points above the official interest rate target.

A number of other central banks widened the range of acceptable collateral and indicated that they would actively use foreign exchange swaps. However, we did not believe that these measures alone would be sufficient to eliminate the risk of precautionary balance sheet adjustments by New

³ The Reserve Bank accepts some short-dated private securities (issued by an institution other than the one seeking the funds) as collateral in intra-day repos. However, there are strict limits on the amount of private paper we accept, and most of these limits are fairly fully used in the normal course of business. See Hampton (1999) for a further discussion of intra-day repos and acceptable securities.

⁴ These foreign exchange swaps involved the Reserve Bank, in effect, lending NZ dollars to the market, receiving US securities as collateral. See Brookes (1999) for further details of the Bank's use of foreign exchange swaps.

Zealand banks in the run-up to Y2K. The scale was sufficient to cope with modest Y2K effects on demand for liquidity, but could not cope with the extreme events around Y2K – perhaps several billion dollars in increased demand for currency, or an inter-bank money market that simply dried up. Instead, the centrepiece of our policy approach to Y2K liquidity was that we announced in advance that we would be willing to lend unsecured if that proved necessary. By doing so, we envisaged providing certainty to banks that the liquidity impact of extreme events could be managed in a low-cost way through the Reserve Bank.

Offering the unsecured facility marked out our approach as very liberal – in fact we were the only central bank to do so. In some respects, this initiative was at odds with the Bank's general approach. Over the years, we had progressively reduced, and then eliminated, unsecured lending in our normal operations, and we had increased the quality of collateral we take when we do lend. Moreover, the whole thrust of New Zealand's approach to bank supervision has been to emphasise the role of market forces and market disciplines.

Deciding to offer the unsecured facility involved, in effect, a cost-benefit judgement. The considerable benefit lay in eliminating the risk of unnecessary disruption to economic activity, if banks had to take extensive precautions against the possible impact of unjustified concerns about Y2K. The "costs", or risks, were very limited for a number of reasons. First, it was considered unlikely that the facility would actually be drawn on (its role was to provide insurance against very low-probability events). Secondly, the Bank's assessment was that the New Zealand banking system was very sound, suggesting that even if the facility was drawn on the actual credit risk involved was small (and a small premium above market interest rates was charged to compensate for the added risk the Bank was taking on). Thirdly, because Y2K was a truly unique event, offering the unsecured facility seemed unlikely to set dangerous precedents, that might generate undesirable changes in bank behaviour and attitudes to risk management in the future.

4 Reserve Bank approach – the implementation

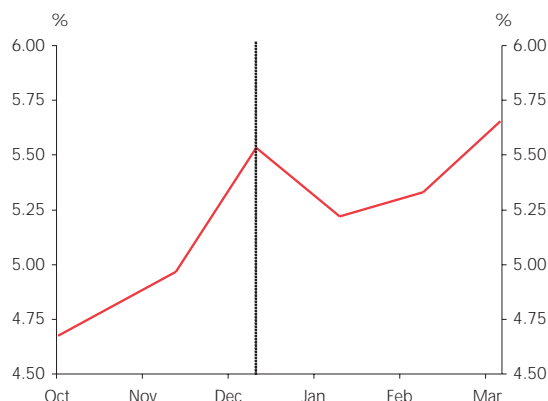
By the time these measures were announced some "distortions" were evident in the interest rate yield curves in other countries, with market interest rates for funds over the end of the year carrying an added premium. In New Zealand, there were early signs that some banks were beginning to think seriously about the potential liquidity implications of Y2K and position themselves accordingly. Keen interest was apparent in government securities maturing early in 2000. However, Y2K effects were not yet reflected in "distortions" in domestic interest rates of the sort seen abroad, perhaps because most New Zealand banking sector and corporate wholesale debt instruments are short-term – typically around three month maturities.

For several months it appeared that the package of Y2K initiatives, which had been widely welcomed by market participants, was working well. However, this story began to unravel towards the end of September 1999, as the maturity dates of current three-month instruments began to fall around the end of the year and pressures on interest rates became apparent. Reluctance by investors to lock in funds maturing in the New Year had the potential to cause the entire yield curve to rise relative to the OCR. However, the actual pressures were centred on funds maturing around the year-end, as had already been the case in other countries.

One way of measuring this effect is to look at implied one-month forward interest rates.⁵ These are shown in figure 1 as at 1 October – around the time the pressures peaked. Note that the implied one month forward interest rate from mid-December was higher than the average of the two implied one month interest rates either side. We refer to this difference as the 'Y2K blip'. A positive 'blip' means that a borrower must pay a higher rate of interest for funds for the one month over the year-end than for the one month periods either side, suggesting a Y2K-related distortion to the yield curve. The larger the 'blip', the greater the apparent Y2K pressures.

⁵ An implied forward interest rate is derived from the bank bill interest rate curve. To give a concrete example, if one knows today's one month rate and today's two month rate, one can quite simply derive an implied one month rate in one month's time.

Figure 1: New Zealand one month forward curve at 1 October 1999



The Bank had originally thought that this ‘blip’ should rise to no more than around 25 basis points because banks had been assured that, in the event of material stresses, they could borrow from the Bank on an unsecured basis at 25 basis points above the OCR. Nevertheless, the one month ‘blip’ peaked at around 60 basis points in early October.

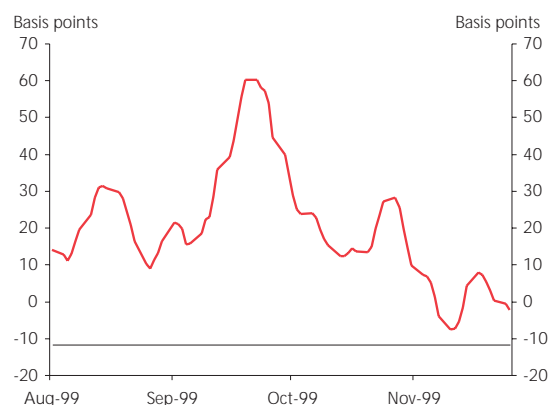
It became apparent that, welcome as the package was, market participants were reluctant to rely on it, and in particular on access to the unsecured facility. A number of banks commented that they did not want to use the unsecured facility in case other market players interpreted use of it as a sign that some institution was in financial trouble. The idea of being dependent on an unsecured central bank facility went against the grain for liquidity managers in banks, whose own superiors and regulators typically emphasised to them the need to ensure ample access to liquidity themselves. Also, some market participants were uneasy as to whether the Bank would be as liberal in our actions as in our policy statements – they were concerned that the Bank would not actually offer easy access to the unsecured facility if pressures really emerged. In a sense, this nervousness was understandable, as Y2K was an event without precedent, and no firm rules had been (or could be) laid down about what “material stresses” actually were.

By late September, the increase in the New Zealand ‘Y2K blip,’ although at levels still moderate by international standards, had prompted us to bring forward, expand, and clarify some aspects of the initiatives announced previously. The first step was to replace gradually \$1 billion of short-term repos with longer-term foreign exchange swaps. We

had initially planned to do a more limited amount of swaps in December. However, because of other liquidity management pressures, the Bank had a substantially higher than usual level of short-term loans already outstanding to banks in the course of our normal operations, and these could be replaced by longer-term swaps.

Normal liquidity management repos are for very short terms (usually 10 days or so). By contrast, the foreign exchange swaps we did had terms of up to four months, maturing in January and early February 2000. By doing swaps for a longer term, the Bank was doing two things. By taking US dollars as our “collateral” instead of domestic government securities, we freed up those securities, and banks could now count on having them available if pressures did arise over year-end. And we were, in a sense, “replacing” those investors who were reluctant – and wanted an added premium – to invest in New Zealand over the end of the year. We were not at all reluctant to invest over year-end, so we were able to obtain attractive yields and take advantage of the ‘blip’, while doing a sufficient volume of business to substantially, and quite quickly, reduce it. Figure 2 shows the profile of the New Zealand ‘blip’ over the second half of 1999.

Figure 2: NZ one month blip over time



Doing these foreign exchange swaps meant that the Bank built up substantial US dollar deposits with international banks. These deposits themselves were, of course, unsecured, and posed some credit risk to the Bank. However, the investments were well-diversified and were done within the Bank’s existing risk limits. The attractive returns available on the swaps more than compensated for the additional risk involved in doing swaps rather than repos. Moreover, from a policy perspective, if we did not do the swaps it was

more likely that the unsecured facility would prove to be needed. We preferred to have exposures to a range of international banks than to have concentrated exposures to a small number of local banks.

Consistent with this approach, the Bank also began offering long-dated repos in the daily OMOs with a term of up to four months, maturing in the New Year. These repos still required government security as collateral, and because market participants were reluctant to tie up relatively expensive government security there was little market interest in the long-dated repo facility until the Bank started accepting private (bank-issued) securities as collateral from 1 December. At that point, a number of banks took the opportunity to lock in funding using private securities as collateral.

The Bank formalised the suggestion that the level of settlement cash might be higher than usual at times over the end of the year. We indicated that the cash target would be increased from 1 December. In the end, the settlement cash target was raised from \$20 million to \$100 million on 1 December, and to \$200 million on 8 December. Increasing the settlement cash target did not make a great deal of **substantive** difference. Getting the settlement cash in the daily OMOs still required banks to provide collateral, and the temporarily narrower bands around the OCR meant that it was not much cheaper for banks to obtain settlement cash in the OMO than by borrowing it each night through the ORF. However, symbols matter too, and the increase was intended to reinforce the idea that our approach to liquidity over this period was liberal. Increasing the cash target did not compel anyone to hold additional settlement cash, but it signalled an open-handed approach if banks wanted the cash. The Bank would have been willing to increase the target further, but there appeared to be no demand for this.

To provide added confidence over the key end-of-year period, when markets are typically thin anyway, the Bank also announced that, no matter what, the unsecured lending facility would be opened from 29 December to 10 January. This was in addition to the standing commitment that the unsecured facility would be opened if the demand for notes and coins rose by more than \$500 million above normal or if signs of material market stress developed.

5 How it transpired

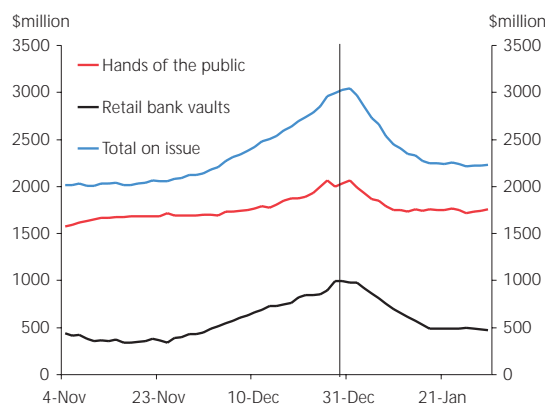
In the event, Y2K passed without any significant computer problems, and, assisted by the steps outlined above, there were also no material distortions in New Zealand financial markets and banking systems. This section looks at some of the effects Y2K did have in New Zealand financial markets.

As the Bank's package of Y2K liquidity support measures unfolded, there were few signs that banks were aggressively seeking to acquire additional liquid assets as a precaution against Y2K. Nonetheless, at the margin there seems to have been a small effect, and by the December quarter added interest in purchasing Treasury bills (the main government security used for collateralising repos) was apparent. This was reflected in an increase in the price of Treasury bills relative to the price of private paper. Once Y2K passed, bidding for Treasury bills in the weekly tenders fell significantly and their relative price in the secondary market also fell away. The additional premium was modest however, especially by comparison with what might have happened if banks had throughout 1999 felt the need to increase markedly their holdings of government securities.

The overnight inter-bank cash market continued to operate smoothly over Y2K. Market contacts suggested that some of the limits banks had on their exposures to each other were reduced over the year-end, but this did not affect the ability of banks to borrow overnight. Nor was there much evidence of banks actually reducing their holdings of other banks' paper. Over the Y2K period, there was no rise in overnight inter-bank interest rates, and no divergence opened up between the costs of secured or unsecured borrowing overnight.

The (non-bank) public's holdings of notes and coins rose by more than normal seasonal patterns would have suggested – at the peak, up by around \$250 million (15 per cent). As was always likely, this increase was material, but still quite moderate. However, that wasn't the end of the story. Even late in December, banks did not know how much currency the public would want to hold, so they increased their own holdings by an additional \$500 million. All that currency had to be purchased from the Reserve Bank, so the banks had to fund – had to put up collateral for around \$750 million more than usual.

Figure 3: Notes and coins



Although banks had to fund this marked increase in notes and coins on issue, the smooth functioning of the inter-bank market and – after a few hiccups – our daily open market operations, meant that there was no need to make the unsecured facility available before 29 December (nor was there any request from banks for us to do so). The year-end arrived with banks in a very comfortable liquidity position. Unsurprisingly then, none of the banks used the unsecured facility at all.

Table 1: Daily transaction volumes in New Zealand
Percentage change November to December

	Government bonds	Bank bill futures	Foreign Exchange (NZD/USD)
1997	+16.4	+1.4	+16.0
1998	+0.2	+27.3	+9.8
1999	-33.5	-13.3	-15.7

As expected, transaction volumes fell in a number of markets towards the end of 1999. Table one shows how activity in the New Zealand bank bill futures, foreign exchange and government bond markets fell away more sharply in December 1999 than in previous years.

Issuance of commercial paper (short-term debt instrument for large corporates) fell away quite markedly in December, totalling only around \$500 million. Indications are that firms who delayed issuing new debt until late December had to pay a slightly higher premium for doing so (although the additional premium was considerably smaller than it appears

to have been in Australia). Issuance in January then jumped to a record monthly high of \$1,400 million.

Because everyone expected wholesale market activity to drop away sharply running into Y2K, the expectation itself is likely to have led some international investors to move their funds out of less liquid markets. Few offshore investors have to be in New Zealand markets, and prudence may have led many to avoid taking positions away from relatively more liquid home markets in North America and Europe around the end of the year. In late 1999 it appeared that Y2K considerations were contributing to the weakness in the New Zealand dollar, although it now seems less likely that this was an important factor. Investors' preferences for more liquid markets when faced with uncertain events like Y2K were reflected in some widening of the spread between corporate and sovereign interest rates world-wide in the second half of 1999.

With Y2K past, wholesale markets were functioning smoothly early in the New Year. Notes and coins also returned to the Reserve Bank relatively quickly. That allowed the additional liquidity provisions put in place in late 1999 to be unwound quite quickly:

- The unsecured facility was closed on 10 January.
- The settlement cash target was reduced back to \$20 million on 12 January.
- The Bank stopped accepting private paper in the OMO and the ORF on 14 January.
- The bands around the OCR were increased back to 25 basis points on 24 January.
- The foreign exchange swaps and the longer-term repos matured in January and early February.

Notwithstanding all the official liquidity support measures, market participants world-wide were still active in ensuring that they had secure access to liquidity over the end of the year. Because there were no major problems when the year-end finally came, actual overnight interest rates were very low at the end of the year. Overnight cash in the United States traded at 4 percent over the year-end – some 1.5 percent **below** the Federal Reserve's official target rate. Market prices earlier in 1999 had suggested that this interest rate could have risen as high as 12 percent. Similarly, overnight interest rates in the UK averaged 3 percent on 31

December – 2.5 percent below the Bank of England’s official interest rate. The New Zealand cash rate could not have fallen this low because we operate with a band around the OCR that means banks could earn, at a minimum, 10 basis points below the OCR on balances at the Reserve Bank. Under our system, the comfort the market felt by the time Y2K came was reflected in the lack of interest in using the unsecured facility.

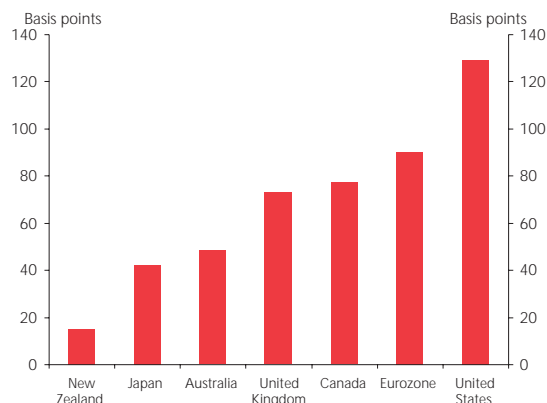
6 Assessment and review

As was discussed in section 2, the mere fact that people and institutions believed there could have been a Y2K problem in financial markets had the potential to cause unnecessary macroeconomic disturbances, as the banking system responded to that risk. In a sense it did not matter if no one **actually** wanted more notes and coins, and no institution **actually** became less willing to deal with the others. What mattered for each individual bank was the possibility that they **might** have happened. In this case self-insurance (banks stocking up on government securities) would have been costly – for banks and for the economy – and the Reserve Bank was able to pre-empt such efforts to self-insure by offering a cheaper option. Because of our position as the central bank we could do this in a way that largely eliminated the risks to the wider economy (and at a modest profit and while assuming relatively little additional financial risk).

One – but only one - indicator of success is the size of the Y2K ‘blip.’ Figure four shows the average of the New Zealand Y2K ‘blip’ from the second half of 1999, and compares it to a series of other countries. The New Zealand Y2K ‘blip’ remained below those of the other countries all year,⁶ and once the foreign exchange swaps were performed in New Zealand, and private paper became acceptable collateral for repos, the New Zealand Y2K ‘blip’ disappeared.

Trying to stand back from the detail, it is still difficult to disentangle fully the impact of the Bank’s liberal approach to providing liquidity. No one knows what would have happened if the Reserve Bank had not taken the precautions it did. Perhaps the balance sheet adjustments – and the

Figure 4: Cross-country average blip



consequent risk to access to credit for the wider economy – would have been modest, but perhaps not. In the wholesale financial markets, at least our approach probably prevented transaction volumes dropping away further, interest rate spreads rising, and key financial market prices falling further. As one illustration of this, market sources suggest that some overseas parent banks may have been comfortable with allowing their New Zealand subsidiaries to provide credit to support wholesale market transactions in New Zealand over the Y2K period partly because of the Bank’s liberal approach to ensuring liquidity access over the year-end.

In the nature of insurance it is taken against events which are not expected to happen, but may. In those circumstances, paying a premium is sensible – and it is all the more attractive when, as on this occasion, the insurance, that avoided risks of disruption to the credit creation process, was able to be provided at such a modest cost.

References

Brookes, A (1999), “ Monetary policy and the Reserve Bank balance sheet,” *Reserve Bank of New Zealand Bulletin*, 62, 17-33.

Hampton, T (1999), “ Intra-day liquidity and real time gross settlement - 18 months on,” *Reserve Bank of New Zealand Bulletin*, 62, 34-46.

⁶ Except for a brief time in September when the New Zealand ‘blip’ rose above the Australian ‘blip’ temporarily.

Box – The Reserve Bank itself demanded increased liquidity

In the local market the Reserve Bank was providing additional liquidity for Y2K, but with another hat on, we were among those wanting extra liquidity around the end of the year.

The Reserve Bank holds foreign currency reserves to be able to intervene in the foreign exchange market in the unlikely event of extreme disorder and market breakdown. Y2K concerns increased the (very low) probability that a thin and illiquid market might have required intervention in December/January. At the same time there was a heightened (though still small) risk that problems in international markets around the year-end might mean that we would not be able to exchange the Bank's longer-term foreign assets for cash as quickly as we would normally be able to. Faced with this risk, the Bank was willing to pay a price to **guarantee** immediate access to a reasonable proportion of our intervention reserves over the end of the year.

In addition to the \$US150 million (or so) of cash the Bank typically holds, the Bank made two distinct provisions to ensure we had access to sufficient foreign currency over

the year-end. First, the Bank purchased an option from one of our counterparties, giving the Bank the right, but not the obligation, to obtain US dollar cash **on demand**. This cash would have cost the Bank 250 basis points above the United States overnight interest rate target via a repo, using our holdings of United States government securities as collateral. Because the Bank wanted insurance only against a low probability extreme event – not being able to repo in the market at a cheaper rate – this insurance cost us very little.

The Bank also repoed out some of the Bank's Japanese government bond holdings in return for yen cash that we left on deposit at the Bank of Japan. Although deposits at the Bank of Japan do not pay any interest, the Bank actually made money from this operation because interest rates in Japan were very low and we held some particularly valuable bonds that other market participants were willing to pay us to borrow.

As expected, intervention was not required, and the additional foreign currency did not need to be used. However, as with other types of insurance, it was prudent to take precautions against events that probably would not happen, but might have.