An update on Eurokiwi and Uridashi bonds

David Drage, Financial Stability Department; Anella Munro and Cath Sleeman, Economics Department

This article provides an update on the market for offshore issues of New Zealand dollar denominated bonds, commonly referred to as New Zealand dollar Eurobonds, Eurokiwis, New Zealand dollar Uridashi, and global issues. Net issuance of these bonds has surged in the past two years, driven by strong demand for credit in New Zealand (high domestic interest rates) and by supply conditions internationally (low yields in Europe and Japan). Offshore issuance of New Zealand dollar bonds provides an important channel for New Zealand firms and households to access foreign capital and reduces, at the margin, our cost of capital. These bonds provide a useful source of hedging for New Zealand's foreign currency external debt, reducing the potential for undesirable valuation effects during times of stress. Ex-post returns on Eurokiwi bonds that had matured by the end of 2004 were on average the same, in euros, as German government bonds, but more variable, reflecting exchange rate risk. In theory, the increased supply of foreign capital from offshore New Zealand dollar bonds puts upward pressure on the New Zealand dollar at issue and downward pressure at maturity. However, historical data suggests that any exchange rate impact around the time of maturity tends to be small, consistent with the idea expected effects are priced-in well in advance by forward-looking markets.

1 Introduction

Offshore New Zealand dollar denominated bonds are typically issued by a non-New Zealand borrower, to investors based outside New Zealand.[1] The bonds are often listed on a foreign stock exchange and are usually sold in small 'retail' parcels (as low as $1,000). These bonds have been issued in the Japanese market (Uridashi),[2] in the European market and through global issues (issued in more than one market). In this article we refer to European and global issues as Eurokiwis. The offshore NZ dollar bond market is not unique. There are offshore bond markets in many currencies, from the traditional US dollar, Pound, Swiss franc and Yen Eurobond markets, to the newer and smaller markets in Eastern European, Asian and Latin American currencies.

The resurgence in New Zealand dollar offshore bond issuance in the past three years is the third distinct period in the last 20 years, following episodes in 1985 to 1987 and 1996 to 1998 (figure 1). A feature of recent issuance has been the rise in the proportion of bonds issued in the Japanese market. Recent issuance of offshore Australian dollar bonds has followed a similar pattern (figure 2), but at a rate about half that of New Zealand dollar bonds relative to GDP. The value of Eurokiwi and Uridashi bonds outstanding is now larger than New Zealand government bonds outstanding and on par with total New Zealand dollar government securities on issue (figure 3).[3]

Figure 4 provides an overview of the maturity profile of issuance undertaken since 1985. Over the whole period, issuance has been concentrated in two, three, and five year bonds. Notably, 95 per cent of Uridashi have been issued for two or three year terms. The maturity profile of Eurokiwis issued over the past few years has, however, been a little longer (a weighted average of almost five years) than was the case during the mid-1990s (weighted average of four years). This shift may reflect increased purchases by institutional investors who appear to have a greater appetite for longer term bonds. In some cases, institutional investors have purchased offshore New Zealand dollar bonds as a substitute for New Zealand government bonds (many of the offshore bonds are issued by entities with a similar credit rating to the New Zealand Government).

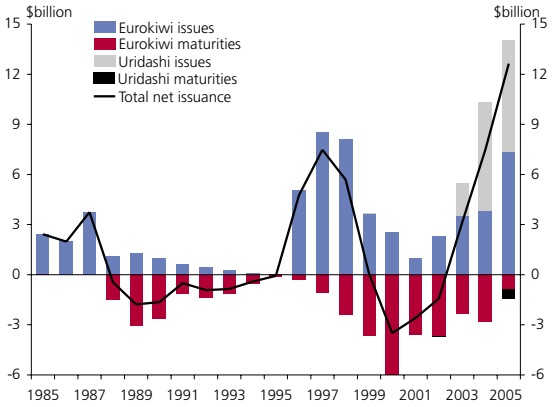
[1] This article updates analysis undertaken by Eckhold (1998).

[2] Around $3.7 billion of so-called Samurai NZ dollar bonds were also issued in 1996 and 1997 to Japanese retail investors. They have a more complex currency risk structure than typical Eurokiwi issues, and as none have been issued since early 1997, they are not dealt with in this article. However, the general principles behind Samurai issues are the same as for Eurokiwis and Uridashi.

[3] However, the volume of secondary market trading in NZ dollar Eurobonds is still small compared to the $1.7 billion average daily turnover in the government bond market.

Figure 1

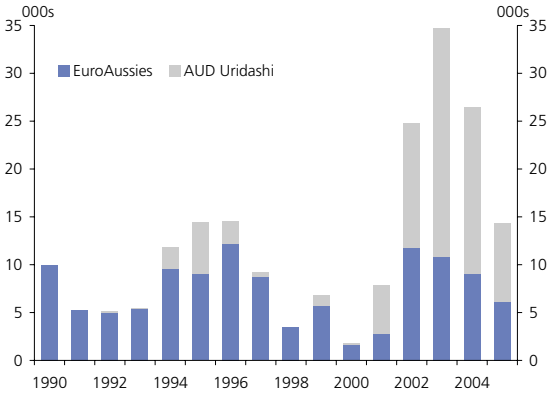
Eurokiwi and Uridashi issuance and maturities



Source: Bloomberg, Reuters and RBNZ. Data for 2005 covers January to August 2005

Figure 2

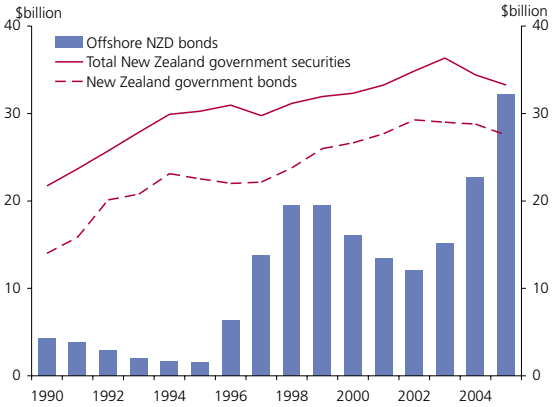
AUD offshore bond issuance



Source: Reserve Bank of Australia. Data for 2005 covers January to August 2005

Figure 3

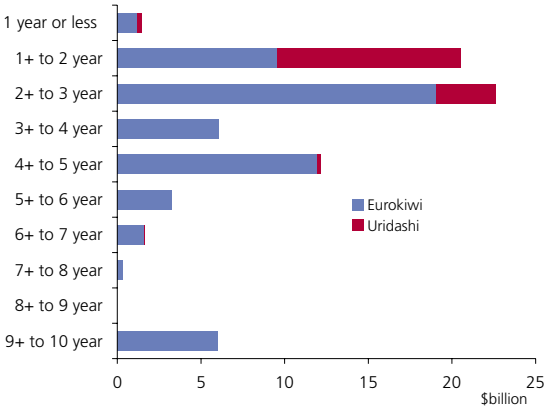
Offshore NZD bonds and government securities outstanding



Source: Bloomberg, Reuters and RBNZ. Data for 2005 covers January to August 2005

Figure 4

Original maturity of offshore NZD bonds



Source: Bloomberg, Reuters and RBNZ.

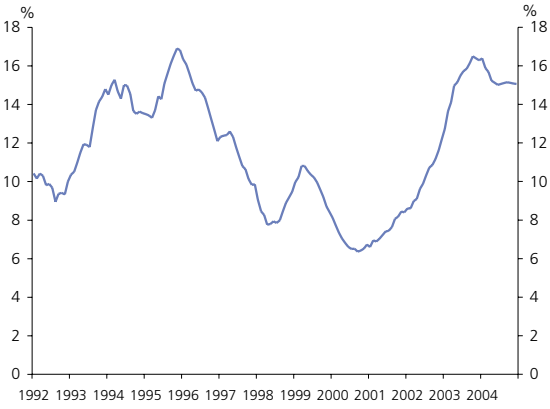
2 The rationale for offshore New Zealand dollar bonds

As in the mid-1990s, the past few years have seen a period of strong credit growth driven primarily by household credit demand. Mortgage borrowing has been underpinned by a very strong housing market due to strong net immigration and rising incomes in a robust economy. Annual household credit growth has averaged around 15 per cent over the past two years – similar to that seen during the last housing market upturn in the mid 1990s (figure 5).

Strong credit demand has contributed to upward pressure on New Zealand interest rates, by increasing the demand for funding and by boosting inflation pressures in the economy, which has led to firmer monetary policy (higher short term interest rates). Meanwhile, interest rates in Europe, Japan

Figure 5

Annual household credit growth



Source: RBNZ.

and the US have been low relative to New Zealand interest rates. For a given level of risk, higher New Zealand dollar yields increase demand for New Zealand dollar assets in the low interest rate markets, especially in countries with high savings rates such as Europe and Japan.

In theory, New Zealand borrowers could access foreign savings by issuing New Zealand dollar debt directly in the European or Japanese market. While this is possible for some large corporations, most New Zealand corporates and banks are insufficiently well known to be able to directly tap into offshore demand for high New Zealand dollar yields. It would obviously be very expensive and difficult for an individual household to enter this market directly. The market for offshore New Zealand dollar bonds provides an intermediation channel through which offshore investors can access the New Zealand market and domestic borrowers can obtain offshore New Zealand dollar funding.

Figure 6 shows the investment flows associated with a typical Eurokiwi or Uridashi issue. There are two borrowers: a New Zealand household or firm wishing to borrow New Zealand dollars through a New Zealand bank, and a highly rated foreign entity (the Eurokiwi issuer) that requires foreign currency funding. There are two sources of funds: the international capital market (foreign currency funding) and foreign investors who are willing to hold New Zealand dollar assets.

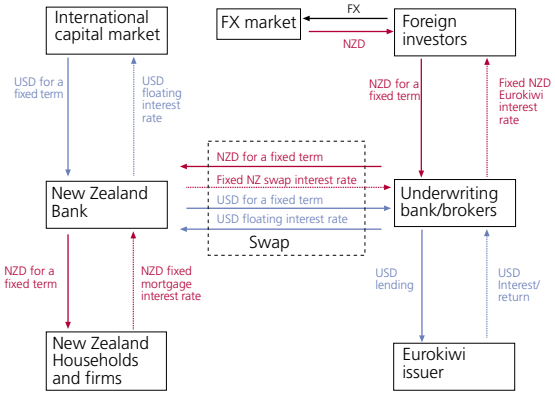
The Eurokiwi issuer, typically a highly rated international bank with a foreign currency funding requirement (e.g. the World Bank), issues New Zealand dollar bonds in a foreign capital market, swaps the proceeds for foreign currency funding in the swap market, and on-lends the foreign currency funds to borrowers (eg, borrowers in the World Bank's developing member countries). On the other side of the swap, a New Zealand bank raises the foreign currency required by the bond issuer and swaps the proceeds for New Zealand dollar funding through the swap market, and on-lends the New Zealand dollar funds to New Zealand households and firms. In essence, each borrows the currency required by the other, and they exchange the proceeds through a swap. The swap is a combined interest rate swap and currency swap known as a cross-currency interest rate swap, and involves an exchange of both the funding and associated interest streams.

Even though the New Zealand bank can access US dollars only at a margin above the issuer's cost of borrowing US dollars, so long as this margin is less than the advantage the issuer enjoys in the offshore New Zealand dollar bond market, there exists an opportunity for both to 'gain from trade'. By borrowing in the market in which they have a comparative advantage,[4] both the issuer and the New Zealand bank ends up with the currency it needs and pays interest in that currency, and at a lower all-up funding cost than if they each borrowed the currencies they require directly. The structure also allows currency risk to be spread more widely.

As shown in figure 6 an international investment bank is also involved. The investment bank will typically identify the opportunity, bring together the various parties, put the structure together, underwrite the Eurokiwi issue (meaning it assumes some risk), and sell the Eurokiwi bonds to retail (or institutional) investors through brokers in the European or Japanese market.

A number of institutional factors have enabled development of the offshore New Zealand dollar bond market. These include liquid spot and swap foreign exchange markets for New Zealand dollars,[5] liquid government bond markets that provides benchmarks for the pricing of swaps and New

Figure 6
The structure of a typical offshore bond issue



[4] The concept of 'comparative advantage' here is no different from that which underpins international trade in goods and services, only here it relates to relative return and packaging of risk.

[5] See table B4 on the Reserve Bank website for details of New Zealand market turnover, BIS (2004) for global turnover, and an article on the topic in this *Bulletin*.

Zealand dollar bond issues, and institutional stability (a commitment not to inflate away New Zealand dollar debt or to influence the value of the New Zealand dollar exchange rate, and an historical record of not defaulting on debt in times of stress).

3 The incentives to issue offshore New Zealand dollar bonds

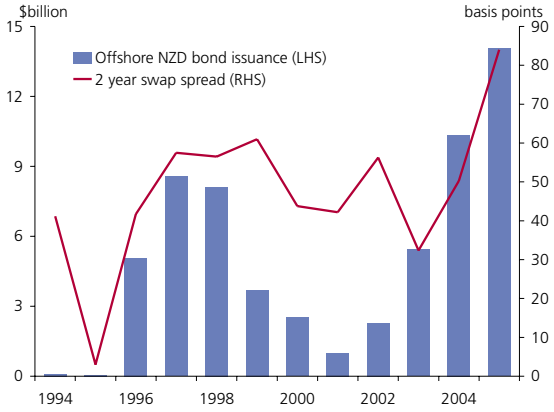
Issuers of New Zealand dollar bonds in the offshore market generally have no need for New Zealand dollar funding. However, the rate at which highly rated Eurokiwi issuers can borrow in the offshore New Zealand dollar market is typically below the rate at which they can swap New Zealand dollar funds for foreign currency funding (the swap rate), giving these issuers a funding advantage. This funding advantage comes from being a recognised name in the foreign market and having a high credit rating which effectively allows the issuer to separate currency risk from default and country risks.[6]

A widening of the margin between the cost of borrowing from offshore retail investors and on-lending (in a swap) to New Zealand banks makes issuing Eurokiwis more attractive. Figure 7 shows the volume of Eurokiwi issues and swap spreads over the past 10 years. While there is not a strong relationship over the period, the widening of swap spreads during the past couple of years appears to have been supportive of the resurgence of issuance over this period.

In general, the largest issuers of Eurokiwis and Uridashi so far this year have been the international development banks (left hand panel of table 1). New Zealand affiliated

Figure 7

NZD Eurobond issuance and the 2 year swap spread



Source: Bloomberg, Reuters and RBNZ.
Note: January to August 2005

Table 1

Major issuers*

Largest issuers in 2005 (January to August)	Number of Issues	Total (NZ$m)	Issuers with New Zealand affiliates (1990-2005)	Number of issues	Total (NZ$m)
Eurokiwis			Eurokiwis		
GE Capital	6	1,400	Rabobank (Netherlands)	15	1,700
KfW Bank (Germany)	10	1,350	National Australia Bank	15	1,600
EBRD	6	1,000	Westpactrust (UK)	7	1,308
Province of Ontario	1	750	Telecom NZ Finance	5	410
Inter-America Development Bank	2	700	ANZ National (International)	1	100
			NZ Dairy Board	1	50
Uridashis					
World Bank	10	2,005	Uridashis		
KfW Bank (Germany)	2	1,496	ANZ Bank (Australia)	1	320
EBRD	1	752	National Australia Bank	1	315
ADB	1	468	Westpac Bank (Australia)	2	390
EIB	1	400			

Source: Bloomberg, Reuters, RBNZ.
* GE: General Electric
EBRD: European Bank for Reconstruction and Development
ADB: Asian Development Bank
EIB: European Investment BankNote: Eurokiwis includes global issues.

[6] See Caballero, Cowan and Kearns (2004) for a discussion of separating currency risk.

issuers (right hand panel of table 1) have participated in the Eurokiwi market since the early 1990s, and in the Uridashi market since October 2004.

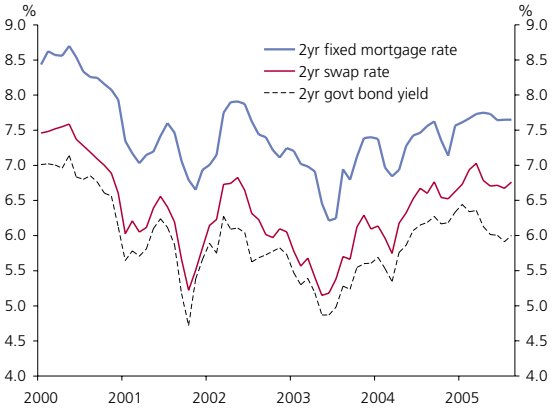
4 Offshore issues and New Zealand banks

While demand for credit has grown rapidly, the domestic deposit base of New Zealand banks has grown slowly. This has put upward pressure on the wholesale cost of bank funding, and led banks to borrow offshore. Increased funding from non-residents, who may not have a natural reason to hold New Zealand dollar assets, potentially leaves banks vulnerable to currency fluctuations (currency mismatch). This is a risk that New Zealand banks and firms are generally not willing to take on.

While the New Zealand bank could borrow New Zealand dollars offshore directly, it generally finds it cheaper to borrow foreign currency in the international capital market and swap the proceeds and associated stream of interest payments for domestic currency funding. With marginal funding coming from offshore, the effective marginal cost of wholesale funding is the New Zealand dollar swap rate – the interest rate banks pay to swap foreign currency funding and interest streams for New Zealand dollar funding. Consequently, fixed mortgage rates are generally set at a margin over swap rates (figure 8).

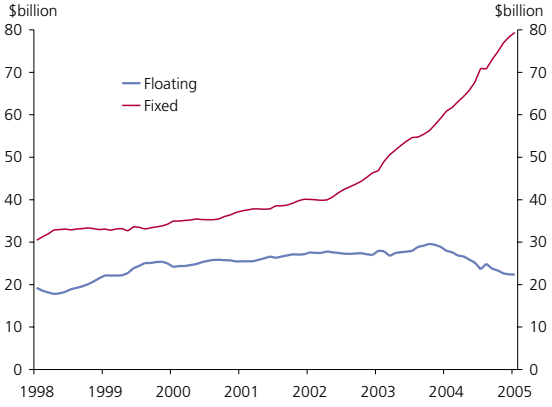
The combination of interest rate and currency swap also enables the New Zealand bank to resolve interest rate re-pricing risk (maturity mismatch). As firmer monetary policy has pushed short term interest above longer-term interest rates, fixed mortgage interest rates have tended to be lower than floating mortgage interest rates. As a result, demand for fixed rate loans has increased, as has the proportion of loans on fixed rates (figure 9). However, the bulk of bank funding is short-term – up to 90 days (figure 10). In part this reflects the short maturity of term deposits received (especially when short term interest rates are higher than long-term interest rates), and the fact that banks typically borrow much of their funds at low cost and lend for longer terms to make a profit. By swapping the bank's short term foreign currency funding and (floating) interest rate obligations for longer term New Zealand dollar funding and (fixed) interest rate obligations, banks are better able to manage their interest rate risk.

Figure 8
2 year interest rates



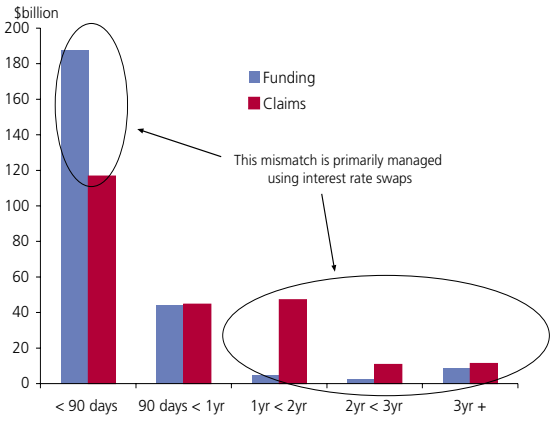
Source: RBNZ.

Figure 9
Floating and fixed rate residential mortgages



Source: RBNZ

Figure 10
Maturity profile of funding and claims of the M3 financial institutions (June 2005)



Source: RBNZ.

5. Incentives to purchase Eurokiwi bonds

There are two elements to the total return that an offshore investor receives from investing in a New Zealand dollar bond:

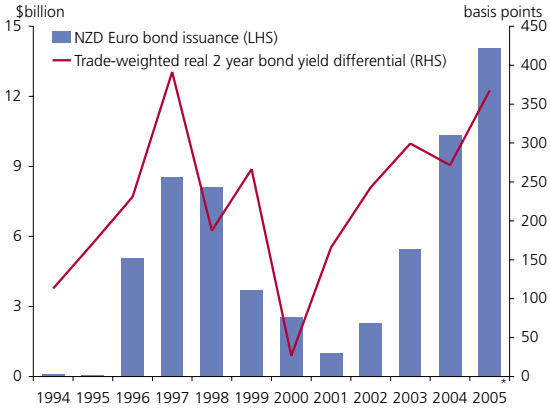
- the yield that the bond offers relative to that on comparable investments – both in the investor's own currency but also in other markets; and
- the expected movement in the value of the New Zealand dollar relative to the investor's own currency over the term of the bond.

Bond yield differentials

The recent resurgence of issuance and the relatively high levels of issuance seen in the mid-1990s have both been associated with periods when New Zealand interest rates were relatively high. As shown in figure 11, real interest rates in New Zealand have risen significantly over the past few years relative to those in New Zealand's trading partners. Two types of interest rate differential matter: those between New Zealand and the home countries of potential investors (eg, European and Japanese), and the interest rate differential between New Zealand and countries where investors might otherwise put their funds (eg, the US). The attractiveness of New Zealand's relatively high interest rates over the past few years, as well as during the 1996 to 1998 period, has also been borne out in strong demand for other New Zealand securities such as government bonds (figure 12).

Figure 11

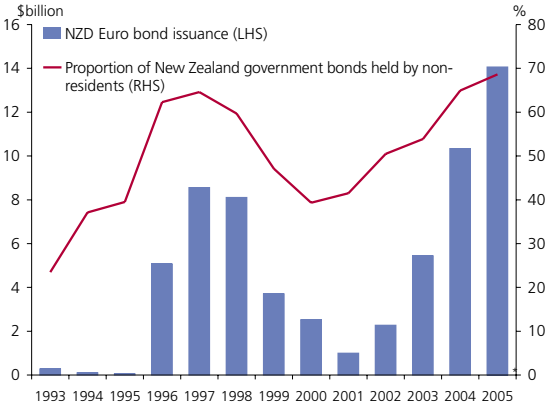
Offshore New Zealand dollar bond issuance and the yield differential



Source: Bloomberg, Reuters and RBNZ. Data for 2005 covers January to August 2005

Figure 12

Eurokiwi issuance and offshore holdings of New Zealand government bonds



Source: Bloomberg, Reuters and RBNZ

* Jan to August 2005 for Eurokiwi issuance. At 31 July 2005 for non-resident government bond holdings

The exchange rate

It is difficult to know how buyers of Eurokiwi bonds form expectations about currency movements. While we generally think of agents as having rational forward looking expectations, this form of expectation does not sit well with some aspects of the data.[7] Anecdotal evidence suggests that some investors tend to extrapolate recent trends, so a past trend of a strong New Zealand dollar could stimulate investment as investors expect further appreciation. The general inability to outperform a "no change" exchange rate forecast (Meese and Rogoff, 1983), may lead some investors to trade on yields alone.

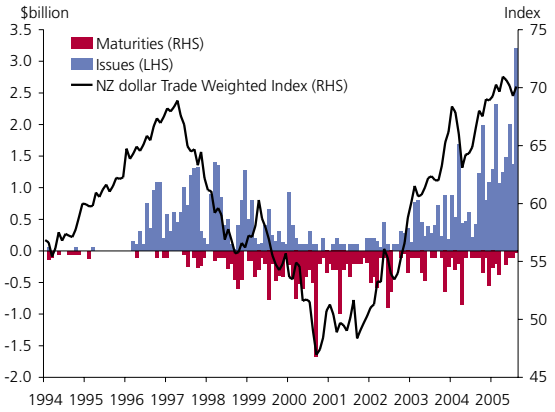
6. Outcomes for investors: ex-post returns

Historically, offshore New Zealand dollar bond issues have been clustered in periods when the New Zealand dollar has been strong relative to its historical average and maturities have been clustered in periods when the New Zealand dollar has been relatively weak (figure 13). This pattern suggests

[7] For example, the NZD/USD exchange rate lags rather than leads the interest differential. See Sarno (2005) for a recent survey of the literature on exchange rate determination.

Figure 13

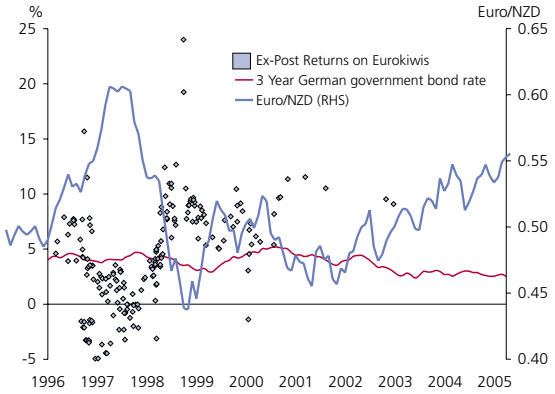
NZD Euro bond issuance and the NZD Trade Weighted Index



Source: Bloomberg, Reuters and RBNZ

Figure 14

Estimated ex-post returns on Eurokiwi bonds



Source: Bloomberg, Reuters and RBNZ

low ex-post returns on the bonds. To investigate this, ex-post returns were estimated for all issues of Eurokiwi bonds that had matured by the end of 2004 for which data was available, covering 198 bond issues, all of which were issued in the European market.

In estimating these returns, it was assumed that (i) investors exchanged Euros[8] to purchase the bonds into New Zealand dollars at the prevailing spot rate on the date the bonds were issued; (ii) on each date a coupon payment was made and at maturity, investors converted their returns in New Zealand dollars, back to euros, again at the spot rates prevailing on those dates. Internal rates of return were calculated based on the euro denominated earnings from the bonds.

The estimated ex-post returns are shown in figure 14, where each square denotes the estimated ex-post rate of return on bonds issued on the date at which they are plotted.[9] The returns exhibit a great deal of volatility, ranging between -5 and 24 per cent. These returns are primarily determined by movements in the Euro/New Zealand dollar exchange rate, rather than the coupon rates to which investors are initially attracted. Investors who purchased Eurokiwi bonds when the dollar was near its peak, in 1996–1997, realised returns that were substantially lower than the returns offered on German government bonds.

As the majority of bonds were held over periods in which the euro appreciated against the New Zealand dollar, the average ex-post return at 4.11 per cent[10] was substantially lower than the average effective interest rate on the bonds (7.1 per cent), and only marginally higher than the average interest rate on three year German government bonds (4.1 per cent) for the same period. Further, the ex-post returns on Eurokiwis were substantially more variable than the returns on German government bonds, reflecting the exchange rate risk from the point of view of the European investors. The Sharpe Ratio, which measures the return per unit of risk, was 1.0 per cent for the sample of Eurokiwis, compared to 9.8 per cent for German government bonds. Hence, by this metric Eurokiwi risk appears underpriced. This pattern is not, however, unique to Eurokiwis for this short sample period. For example, the average ex-post return on three year US government bonds, in euros, was higher than Eurokiwis in absolute terms (6.2 per cent) over the same period, but lower in risk-adjusted terms (0.7 per cent) and lower than German government bond returns by both measures.

The risk premium on a financial asset is usually in the range of 0.2 to 0.4 per cent per unit of volatility (standard deviation) relative to a less risky asset.[11] By this metric, Eurokiwi returns would need to be 76 to 152 basis points

[8] Prior to 1999, average of Euro area exchange rates, weighted by share in Euro area external trade.

[9] Two bond issues included in the sample were made prior to 1996 and are not displayed in figure 14.

[10] All statistics were weighted by the size of the bond issuances.

[11] For example, the historical return on US shares over 'risk free' US government bonds is approximately 0.33 times the difference between the standard deviations of the returns, ie, the US share market has returned an excess 5 per cent over US government bonds, but the standard deviation of the returns for the US share market has been 15 per cent higher.

higher than the 'risk free' German government bond rate to be in this range. Instead the average ex-post return on Eurokiwis is just 1 basis point above the 'risk free' rate. The low average return reflects particularly low returns for bonds issued in 1996-1997 which dominate the small sample. If this period is excluded, Eurokiwi risk does not appear to be underpriced.

When interpreting the results, the simple assumptions used to calculate the returns and the small sample employed should not be overlooked. Bonds may not be held until their full maturity (although the secondary market for these bonds is small, there is anecdotal evidence that some bonds are repurchased by brokers some mont hs before maturity); investors may purchase New Zealand dollars at a forward rate rather than at the spot rate, thereby insuring against depreciations in the dollar;[12] there may be diversification benefits to holding New Zealand dollar assets;[13] and the sample examined is small.

7 Outcomes for the New Zealand economy

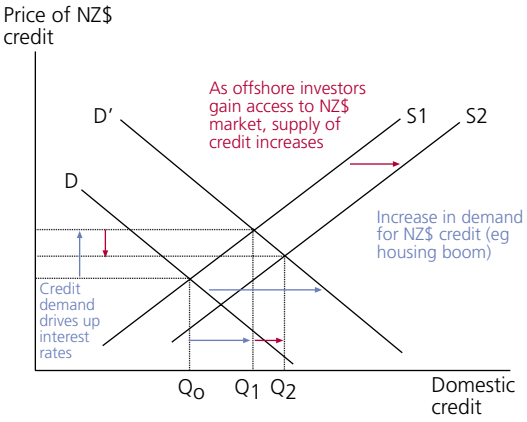
The savings-investment gap, capital inflows and the current account

From a macroeconomic point of view, the Eurokiwi market is perhaps best understood as a part of the ongoing process of capital market integration. Diversification of intermediation channels and of capital markets facilitates cross-border arbitrage, providing financing for our external borrowings at lower cost.

In an open economy, if the balance between domestic savings and investment drives domestic interest rates above world interest rates, then the economy as a whole can invest more than it saves by borrowing from non-residents. In New Zealand, interest rates are high by international standards, implying that the expected return to investing in New Zealand is higher than returns to investing overseas. The difference between national savings and national investment – the current account deficit – is met by an inflow of foreign savings.

From a balance of payments accounting perspective, offshore bonds are not viewed as a capital inflow per se, but as a hedge, where the underlying transaction is typically a New Zealand bank borrowing in foreign currency from offshore markets. In the absence of the bond issue, the New Zealand bank could find hedging from another party through the swap market, at slightly higher cost. Viewed this way, offshore bond issues do not increase the capital inflow (current account deficit) directly. They do, however, increase the available supply of credit and let the demand and supply of credit clear at a lower interest rate, implying a higher level of borrowing (figure 15).

Figure 15
Supply and demand for New Zealand dollar credit



Effects on Interest Rates and the Exchange Rate

As offshore New Zealand dollar bond issues enable an additional group of investors to access the market for New Zealand dollar assets, the supply of New Zealand dollar funding expands, as illustrated by the red arrows in figure 15. The marginal increase in the supply of New Zealand

[12] However, with the forward discount effectively priced off interest differentials, this implies that returns should be equal to German government bond returns, consistent with the low risk of the covered position.

[13] The diversification benefit depends on the covariance between the returns on New Zealand government bonds and German government bonds, measured in euros. This is slightly negative for 1 and 2 year paper (-0.10 and -0.04 respectively), and positive for 3 and 5 year paper (0.53 and 0.32 respectively). In contrast the correlation of New Zealand government bonds is negative relative to 1, 2 and 3 year US dollar government bonds (-0.37, -0.24 and -0.58 respectively), and positive for 5 year paper (0.19).

dollar funding puts downward pressure on domestic interest rates and upward pressure on the exchange rate.

The lower cost of financing encourages New Zealand residents to increase investment (from Q1 to Q2 in figure 15), widening of the savings-investment gap (the current account deficit). From a current account transactions point of view, some of the additional borrowings will be spent on imports, while any upward pressure on the exchange rate reduces the competitiveness of exports and makes imports cheaper.

In the absence of offshore NZ dollar bond issuance, the demand for credit in New Zealand would need to be met by an increase in savings from domestic sources or from other non-resident sources which would require higher interest rates (i1 instead of i2 in figure 15), implying less investment, more saving, and a smaller current account deficit. The bulk of the capital inflow would probably still occur, though at slightly higher cost with domestic credit expanding from Q0 to Q1. Other channels through which foreign savings may flow to New Zealand borrowers include deposits by non-residents in New Zealand banks; non-resident purchases of domestic debt securities; borrowings by New Zealand banks and corporates from offshore banks; and offshore bond issues by New Zealand banks and corporates. To the extent that foreign retail investors under-price risk (as suggested by modest ex-post returns in euro terms), there may be an increase in borrowing, lower interest rates and a stronger New Zealand dollar than might be optimal, but such an effect is likely to be small and temporary.

While, in theory, Eurokiwi bond issues put upward pressure on the New Zealand dollar and downward pressure on the New Zealand dollar at maturity, we find no statistically significant evidence of this in the data either in time series regressions[14] or in examining instances of particularly large issues or maturities in the historical sample.[15] So any effect is likely to be either small, temporary or, consistent with forward looking expectations, priced in well before the maturity date.

Currency Denomination of New Zealand's Foreign Debt

New Zealand residents have invested more than they have saved every year since 1973, leading to a large net liability position. As at March 2005, New Zealand's net international liabilities were equivalent to 84 per cent of GDP, made up of a net equity investment position of 20 per cent of GDP and a net foreign debt position of 64 per cent of GDP.

The willingness of non-residents to hold New Zealand dollar risk provides a degree of financial stability for our economy by providing foreign exchange hedging for our foreign currency denominated debt.[16] This comes from exchange rate valuation effects. In the event of a crisis, which would likely be associated with a (possibly sharp) fall in the value of the New Zealand dollar, if our debt is denominated in foreign currency, then our foreign currency liabilities would increase, possibly by a lot, in New Zealand dollar terms. If, however, our foreign debt is mainly denominated in New Zealand dollars, then a fall in the value of the New Zealand dollar has little effect on the New Zealand dollar value of the foreign debt. In New Zealand, about half of our debt is denominated in foreign currency. However, most of the foreign currency debt is hedged. As shown in figure 16 the $24 billion in Eurokiwis outstanding in March 2005 provided

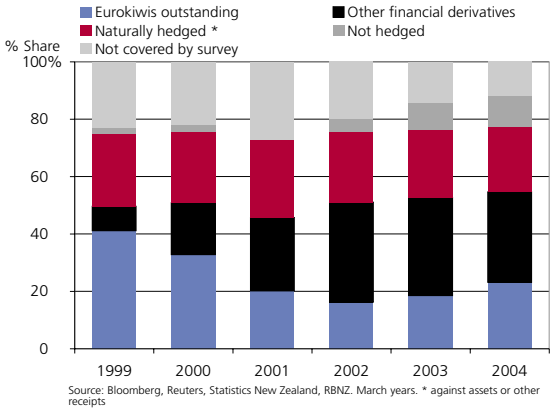
[14] Regressions for the period 1988–2004 included leads and lags of issues and maturities with and without other explanatory variables. The results do not preclude short-term effects that do not persist for more than a day or a week which would not be captured in monthly data, and such effects may be difficult to isolate in this short sample. Moreover, since foreign exchange markets are forward looking, any expected effect of maturities should be priced well before the maturity date, if not at issue. Even if sales of New Zealand dollars associated with maturities of offshore New Zealand dollar bonds has some effect, it may be spread over a period of months, not only because of expected effects, but because some bonds are redeemed early.

[15] The latter approach is motivated by some of the literature on foreign exchange market intervention which suggests that larger interventions have relatively larger effects on the exchange rate (see, for example, Sheen and Kim, 2004). In about half of the months with maturities over $500 billion the New Zealand dollar appreciated and in the other half it depreciated.

[16] In general, non-residents have little natural reason to want to hold New Zealand dollar assets since they typically do not have New Zealand dollar liabilities. Exceptions to this include New Zealanders residing overseas and diversification benefits if returns to New Zealand dollar assets are negatively correlated with returns on foreign assets. So in general, the expected return to New Zealand dollar assets needs to be higher than assets in the currency of the foreign investor's liabilities.

Figure 16

Hedging of New Zealand's foreign currency debt



Source: Bloomberg, Reuters, Statisistics New Zealand, RBNZ. March years against assets or other receipts.

hedging for 30 per cent of New Zealand's foreign currency debt.

As the outstanding value of New Zealand dollar offshore bonds contracted in 2000, other sources of hedging expanded. The fall in the value of the New Zealand dollar from 1997-2000 probably facilitated this shift. A weak New Zealand dollar increases the value of foreign assets and receipts (natural hedging) in New Zealand dollar terms. A weak New Zealand dollar also provides the pricing incentives for increased hedging, by making New Zealand dollar assets relatively cheap. Conversely, as domestic exporting firms have tended to reduce hedging in the last couple of years as the New Zealand dollar has strengthened, banks' need to find other hedging counterparties has put upward pressure on swap rates, increasing the incentive for offshore bond issuance.

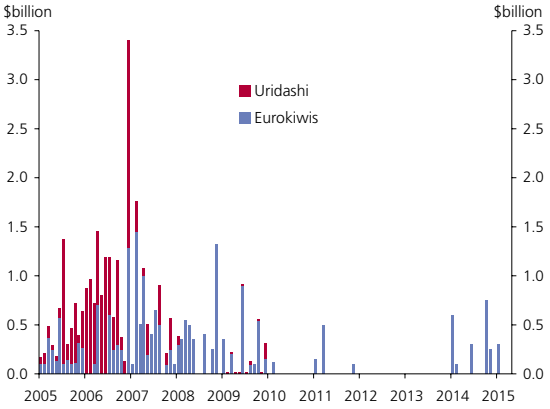
8 Concluding remarks: what lies ahead?

Offshore issuance of New Zealand dollar bonds is likely to continue for as long as the conditions which have fostered it are sustained. Generally, if credit demand remains strong here (and therefore swap rates remain high), foreign interest rates stay relatively low, and investors continue to want to buy New Zealand dollar assets, then offshore bond issuance is likely to continue. Conversely, if credit demand eases (and swap rates fall), or foreign interest rates rise, or investor risk perceptions rise for whatever reason (for example, increased concerns over the size of the current account deficit, or if investors expect the exchange rate to depreciate) then issuance would likely fall.

Looking ahead, a large volume of offshore issues are scheduled to mature in 2006 and 2007 (figure 17). Large volumes of Eurokiwi maturities in 2000–2002, do not appear to have had adverse effects. As shown in figure 16 the fall in hedging from offshore bonds outstanding was generally offset by a rise in other types of hedging. If banks had difficulty replacing currency hedging, we would expect to have seen upward pressure on short-term interest rates, and on the swap rate in particular, which was not the case (figure 7). Nor is there evidence that in 2000 borrowers had to pay any unusual premium to lenders taking on New Zealand dollar exposure (interest rates were falling), nor is there evidence that maturities put significant downward pressure on the exchange rate.

Figure 17

Upcoming NZD Eurobond maturities



Source: Bloomberg, Reuters and RBNZ

While adjustment to the large volume of maturities in 2000 was not disruptive, the concentration of maturities in 2006 and 2007 potentially represents a point of vulnerability for New Zealand markets, and the Reserve Bank will continue to closely monitor developments in markets where any pressures would become apparent.

References

Bank of International Settlements (2004), "Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in April 2004," BIS, September 2004

Eckhold, Kelly (1998) "Developments in the Eurokiwi bond market" Reserve Bank of New Zealand *Bulletin*, Vol. 61. No. 2. June 1998, pp 100-111.

Meese, R and K Rogoff (1983), "Empirical Exchange rate Models of the Seventies: Do they fit out of sample?", *Journal of International Economics*, Vol. XIV, pp. 3-24.

Sarno, L (2005), "Towards a Solution to the Puzzles in Exchange Rate Economics: Where Do We Stand?", *Canadian Journal of Economics*, Vol. 38, pp. 673-708.

Sheen J R and S-J Kim (2004), "Central Bank Interventions in the Yen-Dollar Spot Market", Report Number: ECON2004-4, Sydney University, School of Economics and Political Science.