PECC International Conference

Competition among Financial Centers in the Asia-Pacific: Prospects, Benefits, and Costs – Stumbling Blocks or Building Blocks towards a Regional Financial Community?

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DAY 1. Case Study Reports: Vision, Strategies, Roadmap, and Progress

SESSION III. Shanghai, Wellington, and Seoul

The Kiwi that had to fly: Path Dependence and Evolutionary Niches Among International Finance Centres

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The Kiwi that had to fly: Path dependence and evolutionary niches among international finance centres

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Why should small countries like Australia, New Zealand and Singapore bat well out of their league in international capital markets? In the case of New Zealand, this has been primarily due to structural features of the economy that project the NZ dollar on capital account well beyond its merits on the trade account, with a smaller contribution from time zone advantages. Derivatives have been an essential part of this story, especially cross currency interest rate swaps, which in turn feed off the popularity of offshore NZ eurodollar and uridashi issues among unrelated parties. NZ debt instruments and equities contribute market completion benefits to the APEC capital market as a whole. Associated funding and risk management demands have generated a body of human capital that could likewise be considered a regional resource.

Key words: Capital markets, currency swaps, deficit financing, eurodollar, uridashis

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I Introduction

Why should some small countries end up batting well out of their league in international capital markets? In some cases this might be due to location at geographical trading hubs, or from geopolitical accidents of history. In others it might arise from endowments of nature, most notably in the form of oil or gas reserves and the markets that grow up on the back of oil trading. Such cases may also feature what economists and political scientists call 'path dependence, or 'history matters', the idea that an outcome is going to be very dependent on the precise historical path taken to get there[1]. In the case of New Zealand it could be said to arise because we have a rather odd and chronically unbalanced economy, that has in part arisen because of particular policy decisions or philosophies, most notably those concerning capital market deregulation, monetary policy, and to some extent, tax regimes. Natural endowments are also important, in this case of an equable climate and fertile volcanic soils, exploited by an extremely efficient farming sector; together with outstanding scenic features that underpin a growing tourism trade.

The combination has created a demand for capital that feeds heavily off the rest of the world, which in turn has projected Wellington into the international spotlight as the financial intermediary centre that facilitates the capital flows involved. In terms of the sort of capital markets that the man in the street might think about, such as the stock market, Wellington rates as no more than a small regional centre. Naturally we hope that will change, for one can always substitute cleverness for size and Kiwis have been remarkably innovative in creating trading and clearing platforms and the technology to drive them. But the flows that I have in mind are much larger than that. They originate in Japan and Europe and they end up financing the sort of spending and borrowing habits that calvinistic preachers used to think would consign us all to perdition. As it happens, they are unlikely to be proved right, because the economy can sustain our bad habits. The NZ economy is stronger than at any time since the Korean war, and looks set to become even stronger[2]. But it will continue to suffer from the problem of structural instability. Paradoxically it is this that makes us of interest to world capital markets.

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[1] Thus it was claimed that the QWERTY keyboard arose because it was the configuration that prevented jamming of the mechanical arms of early typewriters, and that the configuration continued into the electronic era simply because everyone had become accustomed to it. The classic reference to path dependence in economics is Arthur, W. Brian (1994), *Increasing Returns and Path Dependence in the Economy*, Ann Arbor, Michigan: University of Michigan Press. There has been much debate and discussion in the economic literature since that time, including whether QWERTY was really an example.

[2] The only cloud on the horizon might be carbon-driven trade protectionism. The tyranny of distance applies to the carbon footprint of tourism; and yes, cows are flatulent, though we're working on it.

The scheme of the paper is as follows. Section II is an introductory background, setting out the scope of NZ capital markets, a menu that covers all the standard things – equities, debt, derivatives, and currency, a reasonably complete package if not a large one. The particular menu is not of central importance in the present context, but it is useful background for things that are. Monetary policy has central relevance for the way that our markets operate and this is also covered. Section III turns to the economic background. The objective is not to survey the economy as a whole, but to explain the origins of the structural imbalances that have such profound implications for the financial markets. Section IV turns to the things that do stake out a claim for Wellington to be a world capital market, namely the attractions of NZ denominated debt in Europe and Asia, and the swap trade that builds on the back. Section V comments on perspectives of regional competition and cooperation. It also adds something that might otherwise be forgotten in a discussion of this kind: the importance of human capital as a complement to financial capital. Whatever our macroeconomic sins in NZ might be, they are expiated by the skills of the people who work and trade in our capital markets, which have become a resource for the world at large. Section V concludes with some miscellaneous complements such as the time zone factor.

II The New Zealand capital market: background

A little general information about the NZ capital markets may be useful at the outset, not because it is of any special importance for the current enquiry, but because it will help in understanding some of the historical background to subsequent developments that have assumed more centre stage. More detail can be found in the comprehensive survey in Bowden and Zhu (2005)[3].

2.1 Equity markets

Most people, when asked to think of a capital market, would probably think of the stock market. NZ does have its own organised stock market, as freely functioning as normal and proper prudential processes will permit it to be. The NZ Stock Exchange demutualised in early 2003, and is now run by NZX Ltd, which is a listed public company on the Exchange itself. Headquarters are in Wellington, appropriately enough in a former woolshed on the waterfront, though much of the trading also takes place from Auckland offices of brokers and other registered traders. Its monopoly status as the only registered stock exchange is based in formal legislation, namely the Securities Market Act 1988, which at the same time formalised

[3] Bowden, Roger and Jennifer Zhu (2000) *'Kiwicap: An Introduction to NZ Capital Markets'*, 2nd ed., Wellington: Kiwicap Education.

the status of the NZ Securities Commission as the official watchdog over the Exchange and of the conduct of NZ securities markets in general. The rules of the Exchange, called 'participant rules', govern the conduct of listed companies as well as the trading process, and are established with supervisory oversight by the Securities Commission. They govern such things as share buybacks, which must be offered publicly on the Exchange in the first instance. The Exchange operates an automated screen trading system called FASTER. In fact, the precursor NZ Stock Exchange was one of the first countries in the world to introduce automated screen trading, originated over the years between 1988 and 1992. The innovative tradition has continued. At times it gets a bit cheeky: recently the NZX has applied to set up an electronic network to record large off-market crosses in the Australian stock market, to the displeasure of the ASX, who are finding out that preaching competition is one thing, but suffering it is another. The NZ stock exchange offers a number of equity derivatives or related products, such as warrants, options, convertible notes and trust or fund units, including equity options in conjunction with the Sydney Futures Exchange. It also operates an associated debt trading board for bonds, debentures and capital notes. Finally the NZX publishes the official stock price indices, notably the NZSX-50, which is the free float based index most often used as a market barometer. It also runs a numbers of other index services, covering also commodities and other prices of importance for economic activity. A recent introduction is an index for the fixed side of interest rate swaps.

The NZ stock market was materially broadened by a number of privatisations of public enterprises, mostly in the late 'eighties and early 'nineties. These include utilities such as Telecom, two major airports, electricity and gas retailers, and Air New Zealand, as well as more exotic assets such as natural gas supply contracts, forestry cutting rights or on the debt side, state housing mortgages. Much of this equity soon disappeared, taken over and absorbed, or in one or two cases collapsing, but some still remain wholly or partly in the public domain. About a dozen of the larger NZ companies are also quoted on the Australian Stock Exchange, and one or two on US exchanges via the ADR market (American Depository Receipts). There is appreciable foreign ownership of NZ stocks, with many larger companies majority owned offshore, extending to derived ownership of formerly public assets like forests. There is scrutiny of outright control of NZ domiciled companies by the Overseas Investment Office, formerly known as the Overseas Investment Commission, which does have the power to decline applications where it is judged that no economic benefit will accrue or on general national interest grounds. In practice, this has not been much of a constraint on foreign takeovers or majority control. The desired openness of our own capital markets

represents a natural symmetry with outward capital movements. In this respect, most NZ funds have extensive holdings of offshore shares in response to both the limited availability of well traded local scrip and natural portfolio diversification. The NZ economy is a heavily cyclical one and international diversification protects against adverse states of the local economy, as well as to industrial sectors that are not well represented in the domestic economy. The industrial coverage of the NZ equity regimen is a bit sketchy, with little representation from growth sectors such as pharmaceuticals, electronics, or internet software. To be sure, Kiwis are an innovative breed, and we have had some very successful developments along such lines: Smith Glaxo Kline originated from a NZ company, and more recent examples include Trade Me, a very popular online auction system along the lines of EBay, and Rakon, which makes silicon wafers. But such developments tend either to end up absorbed in offshore companies, or as private equity and therefore unavailable to general investors. As a result, the traded NZ stocks have a reputation of being more of the nature of cash cows, with a P:E ratio for the indexes only about half those of the corresponding US indexes. This is not entirely a matter of growth prospects, for NZ also has a dividend imputation tax regime, under which corporate tax can be credited against personal tax on dividends, meaning that dividends are in effect taxed only once rather than twice as in the US (the so called double taxation of dividends). There is less of an incentive to retain earnings as a tax shield.

Private equity plays a much larger role in New Zealand than one commonly finds in other countries. By this is meant not private equity funds, though we do have some such funds, but extensive ownership of assets that are traded only by private treaty. Of these by far the most important is real estate, covering commercial, rural and housing. This is partly because in the commodity industries that drive our economy, notably farming and horticulture, family ownership is predominant[4]. But in addition, New Zealanders have a love affair with home ownership, which as an investment class has been superior to company shares, especially once all sources of rewards are factored in including owner-occupied imputed rental. Unsurprisingly, this has lead to extensive investment in rental property, just as in Australia. New Zealand has one of the highest rates of home ownership in the world; the rate has only been dropping recently because only of price competition from landlords buying

[4] This model may change following a more recent deregulation of the dairy industry which has seen foreign entry into processing plants. There is an accompanying trend towards large scale production, with farms now milking thousands of cows as distinct from the old norm of one or two hundred, for which the capital requirements are considerable more onerous. More demanding capital requirements could lead to corporate structures.

to rent. The dispossession of young people from home ownership has caused some disquiet, and it has been mooted that the government should step in to control speculative housing, either by disallowing tax loss offset against other income or by introducing a capital gains tax. Neither looks likely to happen in the near future.

Indeed there is even more of a real estate motive in New Zealand, because of the absence of a capital gains tax, apart from short term trading activities (when the investor is re-classified as a 'trader'). By way of contrast, investments in most managed funds, such as equity or fixed interest products, incur corporation tax on all sources of income, including capital gains. The incentive is therefore to roll your own investment rather than employ a fund manager, for individual investors in shares do escape capital gains tax. Funds do enjoy economies of scale from which small investors can benefit, obtaining diversification access to many more stocks or assets than they could hope to on their own account. Rightly or wrongly, most people would like to think that fund managers have superior informational or expertise in selectivity or market timing, and there is some evidence to suggest that some NZ fund managers do have it[5]. Thus fund investment has grown in recent years, even if not quite as pervasively as in the UK or the US, and recent government savings initiatives will create a taxation incentive for people to lock away savings in managed funds, which will be good for the sector. However it must still be said that a lack of confidence in their own trading abilities, or of faith in company management following some well known historical debacles, drives NZ investors away from the equity market into the property market as the investment of first choice.

2.2 Debt markets

Turning to the debt markets, New Zealand has a range of interest rate instruments with maturities dating out to about 10-12 years. In major capital markets such as the UK or the US the latter would be regarded as at most intermediate maturities. In that sense, NZ does not have long dated bonds. Recent attempts by the author to induce the Treasury to issue long bonds under the name of 'infrastructure bonds' to underpin retirement instruments[6], did not bear fruit: Treasury promptly expropriated the name, but the maturity remained bogged down at about 10 years. There is a fairly full range of government maturities up to that point.

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[5] See for example Bowden, R.J. (2000) 'The ordered mean difference as a portfolio performance measure', *Journal of Empirical Finance*, 7, 195-233, which contains some NZ examples.

[6] Bowden. R. J. (2007) 'Lifecycle derivatives and retirement income assurance using long term debt'. See http://www.wellesley.org.nz/papers_technical.asp

However, there is a shortage of volume, for in recent years the NZ government has been running very substantial budget cash surpluses and an early priority was in fact to retire government debt (net debt is now in fact negative). Much of the existing volume is held by institutions rather than private investors. The shortage of governments means that the market as whole is not well served with adequate pricing signals for fixed interest. This has some limiting implications for the way that monetary policy can influence the term structure. It could even be regarded as leading to a parallel high quality market offshore, in the form of Uridashis and Eurobonds, a subject of central importance for the present enquiry. In the meantime, we note a further adverse exposure, namely that if there is flight to quality then there is likely to be insufficient scrip to satisfy the demand. Such a flight to quality duly occurred in late August 2007, just as it did with the rest of the world. One participant described the NZ debt market at the time as "completely dysfunctional", as banks and other financial institutions scrambled for cover. The NZ Debt Management Office, Treasury's debt manager, was forced to step in and make a special issue after a more or less routine $150m issue attracted bids of $1billion. It was ironic that after struggling through the mid nineties to pay back large amounts of debt, the NZ government found itself having to issue more at a time of massive budget surpluses. Such is the price of virtue.

It is possible to get coupon strips or zero coupon bonds as OTC products off the back of government bonds, and there are very occasional issues into the NZ market of other high grade debt such as the World Bank. Proceeding down the credit scale, there are smaller volumes of local authority stock: large regional authorities, city councils, hospital boards and the like, some of which are issued on tap. There is also a reasonably well traded market for corporate debentures, mostly issued by finance companies. Some of the latter have had undiversified or downright bad asset backing and unconvincing credit ratings. The latter has led in 2007 to some well publicised corporate failures, exacerbated by a flight to quality, with some unfortunate social consequences. There are issues from time to time of more structured debt products such as convertible notes and collateralised debt obligations, generally by major corporates such as Fonterra or Telecom NZ. Bond coupons are taxed at full income tax rates for the holder, as is accrued capital gain. For a further overview of the NZ bond market, see Bowden and Zhu (2005, ibid).

At the very short end there is a flourishing market in bank CD's, out to a year or so, formerly structured as bank bills, with 90 days as the most popular maturity. The Treasury issues T-bills in accordance with the government's liquidity needs, but these tend to be held by banks as rediscounting instruments with the central bank, and are also used by the latter for

purposes of managing the liquidity in the system. Commercial bills are also popular with fund managers, with commercial paper as the unsecured version.

Turning to interest rate derivatives, exchange-based trading in NZ instruments has, after a fairly long history, now been taken over by the Sydney Futures Exchange, though listed as a distinct NZ based board. The bulk of volume is accounted for by 90 day Bank Bill futures; the origins of the name referred to bank accepted bills, though as earlier noted, the latter are now effectively supplanted by bank CD's. There are much smaller volumes of 3 and 10 year futures on Govt bonds. Settlement on the above contracts is in cash. Options do exist on all these contracts, settled in the relevant futures contract, but liquidity is poor, at best.

For OTC interest rate instruments, there is an active interbank market for bond options and for corporate treasury forward rate agreements (FRA's) though the latter are not very actively quoted for anything longer than 18 months out, reflecting the lack of liquidity in the Sydney Futures Exchange. The predominant form of interest rate derivative is unquestionably interest rate and related swaps. These are well supported both in the domestic floating to fixed vanillas and also in the foreign exchange and currency swaps, which will be considered further below.

2.3 Monetary policy and foreign exchange

The anchor to short interest rates is implicitly provided by the central bank, the Reserve Bank of New Zealand (RBNZ). The Bank runs an inflation targeting regime, currently in the 1-3% band. The control instrument is the Official Cash Rate (OCR), which is a rediscount rate applied to banks that are short end of day settlement funds. The clearing banks can rediscount using T-bills; or more recently, by means of foreign exchange swaps with the RBNZ as counterparty, as a response to a shortage of high quality government paper. There is no official reserve ratio. The RBNZ does not rely on attempts to control the supply of high powered money, and indeed the M* family as whole has become almost irrelevant. Indeed with the advent of an automated real time gross settlement, subsequently modified, clearing bank cash reserves are extremely low by international standards. Changes to the OCR, if they are to take place, are announced by the Governor at monthly intervals. There is naturally much market second guessing ahead of such pronouncements, for all short term rates will rise or fall in sympathy, and that in turn has a profound influence on the NZ dollar. The drivers and dynamics will be reviewed in what follows, for they are at the heart of our emergence as an internationally traded currency. Also of relevance will be the limited extent to which OCR changes impact further out along the yield curve. The NZ term structure is by no means a single factor model.

Finally, New Zealand has its own currency, the NZ dollar (NZD) which up to June of this year has been remarkably free of any attempts by the central bank to smooth or manage it, unlike some of our trading partners such as Japan or even Australia. NZ is an open country in terms of its export and import flows, so there is a fair bit of day to day underpinning to the spot market on this account. This extends into the forward market where many export operations routinely manage their exposures with foreign exchange hedges. OTC forwards are the preferred instrument for this purpose though NZD futures are also available on the Chicago Mercantile Exchange. FX forwards do drive the spot NZD rates at certain times, just from the ordinary processes of covered interest arbitrage.

In recent years, FX trading has been dominated by capital account transactions. Short term flows are very responsive to changes in the Reserve Bank's OCR, and the NZD has become a major speculative currency for this reason. Spot FX transactions also emerge from longer term capital inflows, notably those connected with offshore issues of NZD denominated debt, which are discussed further below. Figure 1a illustrates spot trades where one leg is the NZD. Most of these are in either the USD or the Australian dollar (AUD).There is also a flourishing market for third party - USD trades, in which the NZD is not directly involved, derived partly from time zone considerations. Figure 1b illustrates.

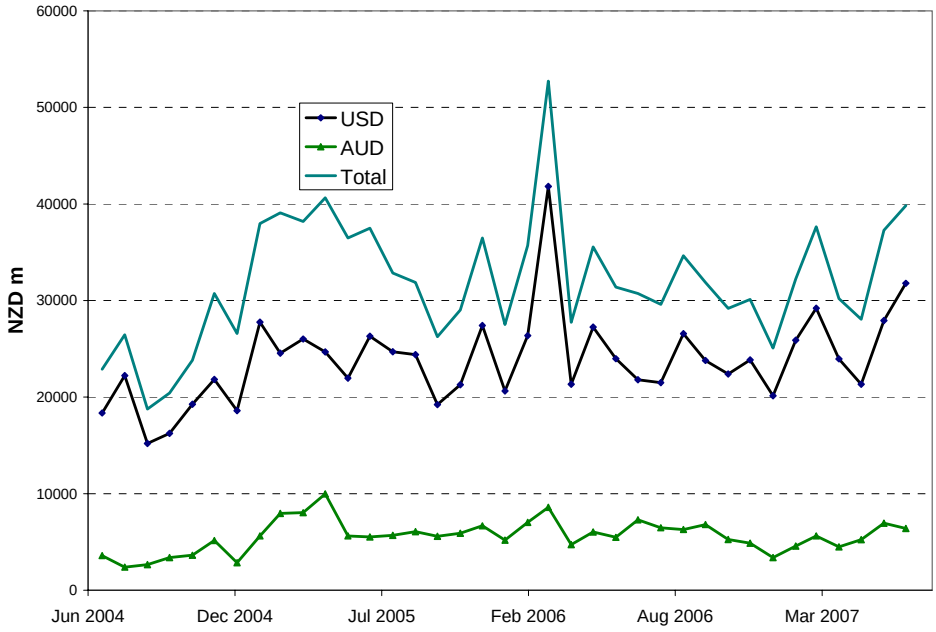

Figure 1a: Monthly spot FX trading volume with NZD as terms or commodity

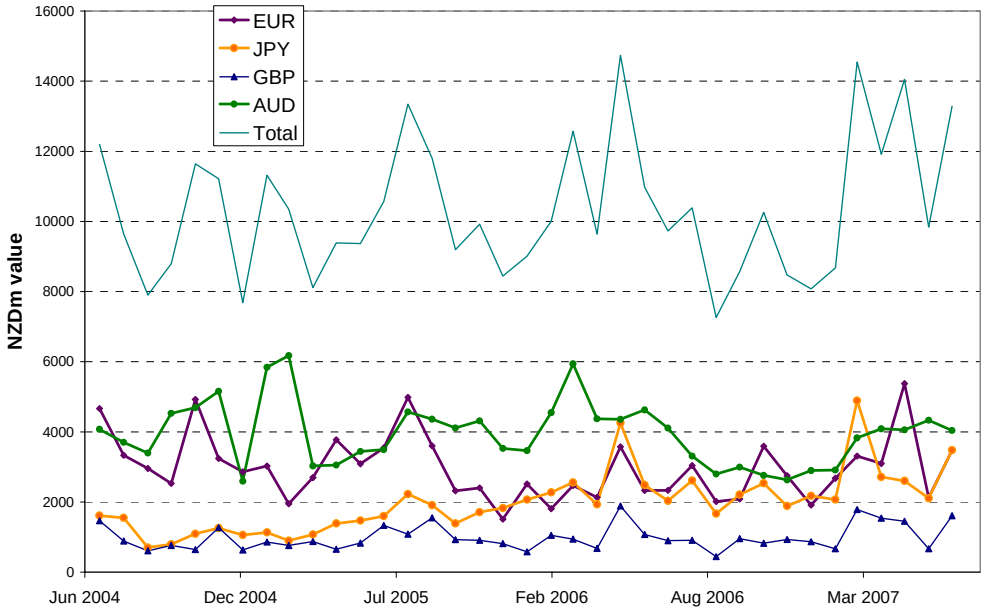

Figure 1b: Monthly spot FX trading volume with USD as terms or commodity

III The economics of structural imbalance

The picture thus far is of a small but reasonably complete capital market, not terribly liquid in some respects, but one that on the whole functions quite freely as to price setting. We have a central bank, operating at arms length from the government; a more or less free floating currency (though see below); locally owned trading and savings banks as well as foreign; a debt market; our own stock market; a futures market by proxy with the Australians; well developed OTC derivative markets. In many of these, New Zealanders have been very innovative with respect to things like automated trading or clearing systems. Financial services companies such as Sunguard Treasury Systems started as small local operations but have spread their wings world wide. Indeed we advertise ourselves to prospective offshore students in finance as the 'world's smallest fully self contained capital market', though some debate exists about whether Iceland might not qualify!

On the other hand there is nothing in all this to suggest that New Zealand should be an object of interest to anything much except financial anthropology, were there to be such a discipline. That we have become of wider interest to the world as whole follows as much from our weaknesses as from our strengths. In what follows, I shall single out the nature or origins of these problems before proceeding in the following sections to draw out their implications for the international financial markets.

3.1 Our deplorable savings habits

It is helpful to start with a bit of economics, specifically the economics of saving and spending. Kiwis are just about the developed world's worst savers on personal account, no matter what income concept you use as benchmark (national income or flow of funds, etc.). We are even worse than Australia, Canada, and the US, none of which are admittedly too flash either. Figure 2 pretty much says it all. Since the mid nineties, our personal saving rate has been negative, and badly so.

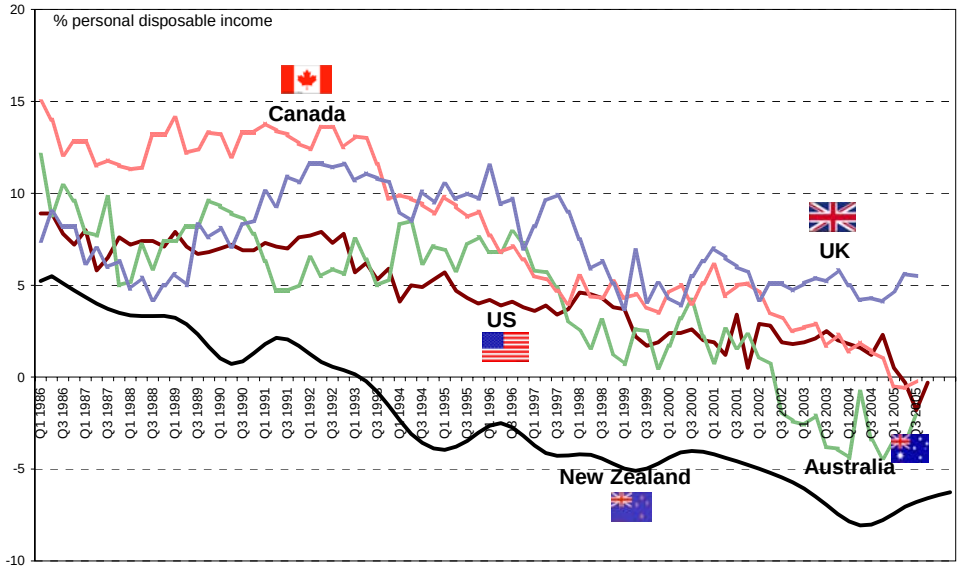

Figure 2: Comparative personal savings rates

Nor does corporate saving, in the form of retained earnings, do much to compensate. Corporate retained earnings took a bit of a slug when dividend imputation was introduced, getting on for twenty years or ago. In countries like the US or UK, company earnings are taxed twice, first in the form of company tax, and then again once received as dividends, in the form of personal tax. In NZ or Australia that is no longer quite as true, because corporate tax can now be claimed as a credit against most of your personal tax. In the US shareholders actually prefer the firm to retain earnings as this shields them against the tax on dividends, and the same motivation induces companies to search more actively for productive activities. So you could expect to find higher rates of corporate saving in the US and this is just what happens. In recent years, NZ companies have not been retaining earnings they way that they probably should, and have acquired the general reputation as high dividend yield cash cows rather than growth stocks. We do have growth capital, located in primary industries, tourism (another major export earner) or education, but not enough to compensate.

This leaves government as the third arm of saving. In recent years the government has been running fairly large budget surpluses, arising partly as a consequence of some very good economic times. A fairly rigorous regime of goods and services tax (GST) on nearly all transactions has helped in this respect: a vacuum cleaner sort of effect. The official cash surplus is also a more mechanical consequence of fiscal creep, arising from the failure of the NZ government to index marginal tax rate markers in a progressive income tax (unlike neighbouring Australia). As a result the government budget surplus has over the last 3-4 years been running at 5-6% of GDP.

To some extent the public surplus has compensated for the dismal saving record of the private sector. But there may be cause and effect involved to the contrary. The Government has been squirreling some of the surplus away in the form of its National Superannuation Fund. The latter is intended to underpin the retirement of the babyboomers, similar in this respect to the funded state schemes of countries such as Ireland, Norway, and more recently Australia (as the 'future fund'). This has led to fears that Ricardian equivalence may be involved, and that the public is looking to the government to save on their behalf, rather than seeking to assure their own source of future retirement income support via long term contractual or other forms of saving.

3.2 Macroeconomic (im)balance

The obverse side of saving is investment. In case of NZ there has not been a problem with aggregate investment expenditure as such. The housing market has been booming, driven by higher immigration flows as well as incomes, together with plentiful home finance (see below). Higher houses prices and Tobin's Q have combined to mean that new home building has been roaring along, and so too has commercial construction. Economic purists might grumble about the direction of the investment spending toward what are basically consumption rather than producer goods; but there is no doubting the strength of investment spending in the aggregate.

As every economics student knows, if there is an excess of local investment over locally generated saving, then it has to be made up with an inflow of foreign saving. In other words, the balance of payments has to fill the gap, in the form of a capital account surplus to match the current account deficit. Figure 3 shows that the current account deficit has exploded in recent years, now at about 10% of GDP.

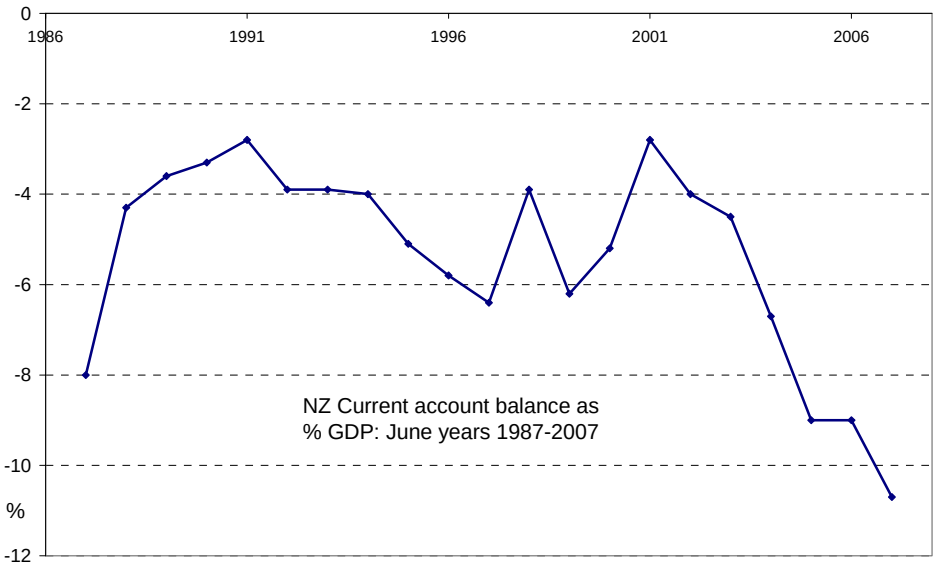

Figure 3: NZ current account balances

If investment is too high in relation to domestic saving then this also connotes an inflationary gap, which can be expected to attract a great deal of attention from a central bank as rigorous in its inflation targeting as the Reserve Bank of New Zealand. Their major sources of concern as to the origins of the inflation have centred on the buoyant housing market. By progressively raising the OCR, the expectation was that this would flow into rates on house mortgage lending. In the event things did not run out quite as they might have hoped. The only unequivocal outcome was that very short term floating rates did rise in sympathy and that NZ short rates were maintained at rates radically higher than available funding rates offshore such as the US or Japan; and particularly in the latter years, also higher than our local comparator, Australia. Figure 4 illustrates.

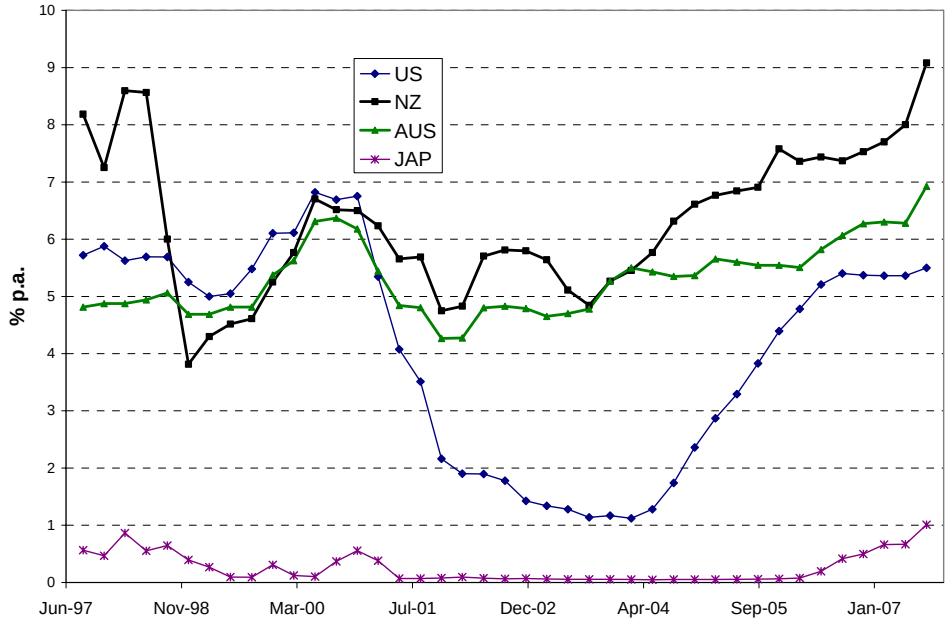

Figure 4: Comparative short term interest rates

3.3 Exchange rate consequences

As one might have expected from the scale of the interest rate divergences, there was an incentive for the carry trade to fund in Japanese Yen, alternatively euros or pounds, and invest in NZ dollar cash rates or CD's. This remained a high risk investment, because the NZX had by then acquired a reputation as one of the world's wobblier currencies[7], though it must be remembered that the yen had also acquired similar dubious status in the aftermath of the Asian crisis. But as the NZ housing market continued to boom, and inflationary fears to grow, the RBNZ was also sending signals to the market about future tightening ahead, i.e. likely future hikes in the cash rate. The effect was like a comfort blanket to the carry trade, sharply undercutting the risk to holding the NZ dollar.

At the same time, it became apparent that structural changes in world trade were likely to be of benefit to NZ. This was especially true of the relationship with China in respect of trade in dairy products. It became apparent that a stronger NZ dollar might in fact have some more fundamental underpinning. And moreover that the export base might continue to narrow, underpinned in dairy, tourism, meat and forestry by the new relationships with the emerging economies of China and India, at the expense of export diversification away from the primary commodities sector. The effect would be to expose the economy to commodity

[7] A more formal empirical study is Bowden, R. and J. Zhu (2007) 'Multi-scale variation, path risk and long term portfolio management', *BE Studies in Nonlinear Econometrics and Dynamics*, forthcoming.

price or other shocks from time to time, which might create continuing instability. This sort of thing would put NZ firmly on the map as a zone of interest to professional currency traders. That it might become so was put beyond all doubt by a rare central bank intervention on June 10 2007, in which the RBNZ tried to sell down the Kiwi. Unfortunately it was still signalling monetary tightening at the time, and the carry trade was quick to pick up the inconsistency. By then the Kraken[8] had awoken, taking the unlikely form of Japanese grandmothers operating off doji candlesticks and similar technical analysis.

To summarise the story thus far, it is of a small economy projected beyond its merits on to the screens of the world currency traders. The effect arises basically because while most of us we pride ourselves on being well balanced people, we are not at all a well balanced economy. We save too little, and invest too much in consumption assets like housing. Our export sector is too narrowly based, and dependent on commodity price fluctuations.

However, spot currency trading is less than half the story, for the NZ dollar still does not rate in the top ten of currencies traded on BIS statistics; though given the above observations on recent history, the position might well have changed since the last available BIS Survey (2004). The story becomes much more complete when we turn to the international debt markets and associated derivatives.

IV Eurokiwis, uridashis and consequences

As a high interest rate currency, the NZ dollar was bound to attract attention from more traditional investors, with a requirement for higher coupons for fixed rate debt, or of floating rates for notes. The trade was to some extent helped along by our history of substantial balance of payments deficits. But even without the existing pool, the trade has been enabled by the world wide growth and sophistication of the cross currency interest rate swaps industry. To be sure, there are other generic types of swap in which NZD features as one leg, such as foreign exchange or currency swaps[9]. These short dated swaps can be used to structure forward agreement and remain popular between banks; their use was also noted above in the context of monetary clearing, and seems bound to grow in the NZD/USD

[8] The Kraken was a mythical giant octopus appearing in a poem by Alfred Tennyson, and echoed in Jules Verne's classic *Twenty Thousand Leagues under the Sea*, where it tried to snaffle the *Nautilus*. It was also a star of horror movies of the 'thirties to 'fifties. The general idea was that mariners should at all costs avoid stirring up the Kraken.

[9] *Foreign exchange swaps* have two legs, namely an initial spot sale and purchase, followed by a reversing forward purchase and sale at the designated future date. They can be used to fund short term currency borrowings or roll existing positions forward. A *currency swap* is where the initial and terminal exchanges are made at the same rate, with the difference picked up by differential interest payments between the parties. Note that currency swaps are sometimes confused with the technically more correct cross currency interest rates swaps.

context. In what follows the label ‘generalised currency swaps’ will sometimes be used to refer to the totality of all kinds of swap with a foreign currency amount or flow as one side. It thus includes narrow currency swaps, foreign exchange swaps and cross currency interest rate swaps. It is the cross currency interest rate swaps (CIRS), and associated transactions that they facilitate, that are the focus of special interest in the account that follows.

4.1 Some structural background

To understand just why NZ has become a major force (if that is the right word) in CIRS requires an appreciation of cognate structural and other trends of the last few years. The first of these has already been touched on, namely high interest rates, most notably at the short end but extending to some degree to further out along the yield curve. This helps to create the supply side and will be elaborated on in due course.

The complementary demand side also emerges out of remarks earlier made, in this case concerning the love affair of Kiwis with their houses, and with housing as an investment. Exploding house prices have been pretty much a world wide phenomenon - everywhere and anytime there is a conjunction of what can be called the three *i*’s in house prices: incomes, immigration and interest rates. In New Zealand, things are acerbated by our exposure to export price and volume shocks and the way that these translate into general economic activity. We used to think of this as a cycle, but recently there have been signs that the export price boom has been more than just a temporary shock, and that good economic times are here to stay. The willingness of household to bear mortgage debt has been an indication both of the initial economic stimulus due to the upswing in commodity prices and the prevailing climate of economic optimism that ensued. As in the UK and other countries, home mortgage debt is also used to finance consumer spending. It is indeed difficult to disentangle the one from the other. Either way, the volume of household debt rose sharply, not just in volume, but in terms of the implied debt servicing burden. New Zealanders are not heavy credit card borrowers, and there is some finance company debt especially for motor cars. But the bulk of this debt represents home mortgages. In addition our poor personal savings record has meant that loan to valuation rates have been quite high, especially for newer entrants to home ownership, or for investors on higher marginal tax rates willing to gear up their tax deductible interest costs. Figure 5 illustrates.

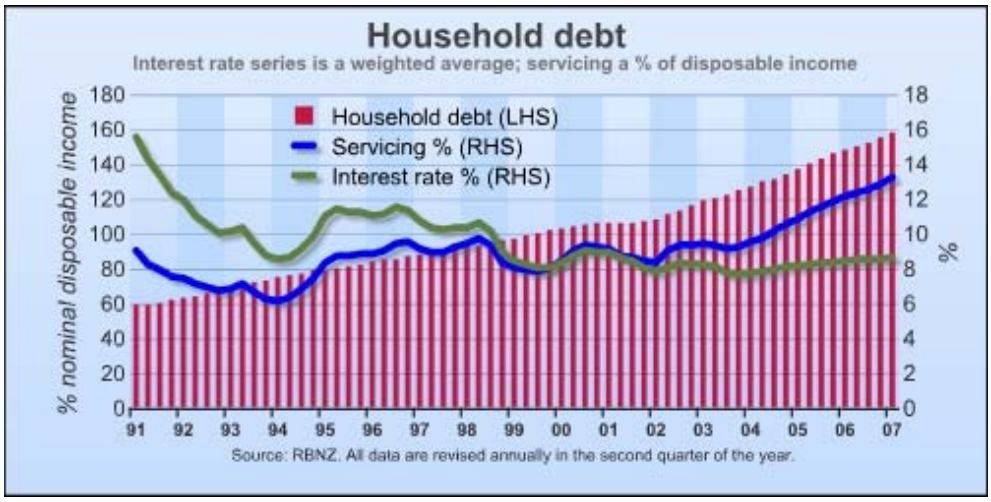

Figure 5: Household indebtedness[10]

Over the last few years the bulk of home mortgages have been written in terms of fixed interest rates rather than floating. There are some good economic reasons to do so. There is always going to be a motive for simple risk aversion; if the rate is fixed, one knows in advance what the liability is every month, at least until the mortgage has to be refinanced. But in addition, the RBNZ has been hiking up floating interest rates via their OCR monetary instrument. This has created an inverted yield curve, so that the typical 3-5 year fixed rate is significantly lower than the floating rate mortgages.

4.2. Off shore NZD funding: eurodollars and uridashis

All this adds up to a substantial demand for fixed rate mortgages. If NZ were a closed economy, a demand of this magnitude would drive up the fixed rate and equilibrate the volume to the demand. That it does not do so is due to the trade in eurodollar and uridashi bonds. NZ dollar denominated debt is popular in both markets, though from slightly different motives. The Kiwi eurodollar is the older of the two markets, with a greater variety of arrangements: floating notes and zero coupon, as well as the more common fixed coupon. The uridashi bonds have been the growth market of recent years. Maturities are more uniformly shorter (typically 2-3 years) and the motive is simply the higher coupon relative to other available debt, including what the stylised 'Japanese housewives', could ever have hoped to obtain locally. For both eurokiwi and uridashi, issuers very often have no intrinsic connection with NZ or NZ institutions, as the tables 1a and 1b make clear.

[10] Graph sourced from Drage, D. Munro, A. and C. Sleeman (2005) 'An update on Eurokiwi and Uridashi bonds', *Reserve Bank of New Zealand Bulletin*, 68, no.3.

Issuer	Arranger	Launch Date	Settle Date	Maturity Date	Amount	Issue Price per 100	Coupon	Years to Maturity
Swedish Export Credit Corp	Mizuho Investment	5-Jan-06	21-Jan-06	24-Jan-08	49	-	6.20	2.0
BNG	Daiwa Securities	6-Jan-06	25-Jan-06	25-Jan-08	655	-	6.00	2.0
CADES (France)	Tokai Tokyo	6-Jan-06	25-Jan-06	24-Jan-08	100.5	-	6.10	2.0
UBS	Takagi	6-Jan-06	27-Jan-06	26-Jan-11	16	79.61	1.00	5.0
CADES (France)	Tokai Tokyo	1-Feb-06	16-Feb-06	20-Feb-08	45	-	6.00	2.0
Instituto de Credito Oficial	Shinko Securities	3-Feb-06	16-Feb-06	15-Mar-08	157	-	6.05	2.1
European Investment Bank	Nomura	9-Feb-06	16-Feb-06	15-Feb-08	611	-	5.90	2.0
KfW	Mizuho Investment	10-Feb-06	24-Feb-06	25-Feb-08	59	-	5.90	2.0
World Bank	Toyota FS	16-Feb-06	24-Feb-06	25-Feb-08	14	-	5.93	2.0
UBS	Takagi	1-Feb-06	27-Feb-06	24-Feb-11	16	79.42	1.00	5.0
Rabobank	Daiwa SMBC	13-Feb-06	28-Feb-06	27-Feb-09	365	-	6.10	3.0
Rabobank	Daiwa SMBC	13-Feb-06	28-Feb-06	27-Feb-08	431	-	5.95	2.0
Kommuninvest	Shinko Securities	2-Mar-06	14-Mar-06	12-Jun-08	120	-	6.06	2.2
Inter-America Development Bank	Daiwa SMBC	2-Mar-06	16-Mar-06	13-Mar-08	761	-	5.67	2.0
Rentenbank	SMBC Friend	2-Mar-06	24-Mar-06	23-Oct-08	115	-	5.82	2.6
Swedish Export Credit Corp	Nikko Cord.	10-Mar-06	28-Mar-06	27-Mar-08	48	-	6.03	2.0
Kommunekredit	Shinko Securities	10-Apr-06	19-Apr-06	23-Apr-08	50	-	6.00	2.0
Landwirtschaftliche Rentenbank	SMBC Friend	10-Apr-06	27-Apr-06	26-Mar-09	150	-	5.70	2.9
World Bank	SMBC Friend	9-May-06	9-May-06	26-May-09	150		5.82	3.0
Eksportfinans	Tokai Tokyo	28-Apr-06	18-May-06	15-May-08	42	-	5.92	2.0
Municipality Finance	Shinko Securities	10-May-06	19-May-06	20-May-08	73	-	6.00	2.0
World Bank	Toyota FS	17-May-06	26-May-06	27-May-08	16	-	6.08	2.0
World Bank	SMBC Friend	26-May-06	2-Jun-06	15-Dec-08	8	-	5.70	2.5
EBRD	Daiwa Securities	31-May-06	9-Jun-06	12-Jun-08	500	100	5.80	2.0
Kommunekredit	Shinko Securities	6-Jun-06	14-Jun-06	16-Jul-08	77	-	6.25	2.1
Eksportfinans	Tokai Tokyo	19-Jun-06	30-Jun-06	18-Jun-08	39	-	6.16	2.0
Kommunalbanken AS	Shinko Securities	5-Jul-06	14-Jul-06	13-Aug-08	80	-	6.16	2.1
Eksportfinans	Tokai Tokyo	18-Jul-06	1-Aug-06	24-Jul-08	47.5	-	6.12	2.0
CBA	Nikko Cord.	20-Jul-06	3-Aug-06	4-Aug-08	10	100	6.35	2.0
World Bank	Shinko Securities	7-Aug-06	10-Aug-06	10-Sep-10	82		6.19	4.1
CADES (France)	Nomura	11-Aug-06	14-Aug-06	14-Aug-08	312	-	6.28	2.0
SEK (Sweden)	Tokai Tokyo	31-Jul-06	16-Aug-06	14-Aug-08	38.5	-	6.23	2.0
Inter-America Development Bank	Daiwa Securities SMI	17-Aug-06	25-Aug-06	26-Aug-08	419	-	6.00	2.0
Rentenbank	Shinko Securities	1-Sep-06	11-Sep-06	11-Sep-08	85	-	6.40	2.0
Kommuninvest	Tokai Tokyo	4-Sep-06	21-Sep-06	18-Sep-08	56.5	-	6.32	2.0
EBRD		20-Sep-06	2-Oct-06	29-Sep-08	566	-	6.12	2.0
Institutio de Credito Oficial	Shinko Securities	2-Oct-06	12-Oct-06	13-Nov-08	103	-	6.47	2.1
World Bank	Daiwa	4-Oct-06	16-Oct-06	16-Oct-08	282	-	6.05	2.0
Bank Nederlandse Gemeenten N	Tokai Tokyo	2-Oct-06	18-Oct-06	16-Oct-08	59	-	6.33	2.0
UBS AG	Takagi	10-Oct-06	30-Oct-06	27-Oct-11	16	78.86	1.00	5.0
Kommuninvest	Tokai Tokyo	1-Nov-06	16-Nov-06	17-Nov-08	87.5	-	6.56	2.0
Toyota Motor Credit	Shinko Securities	9-Nov-06	17-Nov-06	18-Nov-09	162	-	6.68	3.0
Municipality Finance	Ando Securities	23-Oct-06	21-Nov-06	21-Nov-16	60	63.17	1.00	10.0
Bank Nederlandse Gemeenten N	Daiwa Securities	9-Nov-06	23-Nov-06	20-Nov-08	570	99.98	6.32	2.0
World Bank	Nikko Cord.	16-Nov-06	30-Nov-06	19-Nov-09	39	-	6.30	3.0
EBRD	Daiwa	8-Dec-06	11-Dec-06	11-Dec-08	234	-	6.14	2.0
Kommunalbanken AS		18-Dec-06	18-Dec-06	18-Dec-08	85	-	6.42	2.0
KfW	ABN Amro	8-Dec-06	21-Dec-06	21-Jun-09	35	-	6.64	2.5
UBS	Takagi	11-Dec-06	22-Dec-06	21-Dec-11	7.85	78.48	1.00	5.0
World Bank		20-Dec-06	9-Jan-07	8-Jan-09	411	-	6.32	2.0
Bank Fukuoka	Daiwa	9-Jan-07	23-Jan-07	22-Jan-10	375	98.38	6.88	3.0
KfW	BNP	17-Jan-07	23-Jan-07	23-Jan-09	180		6.62	2.0
Toyota Motor Credit	Nomura	18-Jan-07	25-Jan-07	27-Jul-09	76		6.77	2.5
Eksportfinans	Tokai Tokyo	15-Feb-07	15-Feb-07	15-Feb-09	81		6.70	2.0
EBRD	Daiwa	5-Feb-07	15-Feb-07	15-Feb-09	417		6.48	2.0
IFC	Mizuho Investment	7-Feb-07	14-Feb-07	14-Aug-09	70		6.70	2.5
Rentenbank	Ando Securities	28-Feb-07	30-Mar-07	29-Mar-17	55	62.15	1.00	10.0
EFIC	Shinko Securities	28-Feb-07	9-Mar-07	9-Sep-09	65	-	2.50	2.5
Swedish Export Credit Corp	Tokai Tokyo	28-Feb-07	16-Mar-07	17-Mar-09	52	-	6.75	2.0
TMCC	Daiwa SMBC	28-Feb-07	13-Mar-07	26-Mar-09	640	-	6.88	2.0
UBS	Takagi	8-Mar-07	29-Mar-07	28-Mar-12	10	77.56	1.00	5.0
CADES (France)	Tokai Tokyo	4-Apr-07	18-Apr-07	16-Apr-09	51.5		6.97	2.0
Kommunalbanken AS	Mizuho Investment	4-Mar-07	16-Mar-07	16-Mar-09	34		6.70	2.0
Eksportfinans	Okasan	12-Apr-07	27-Apr-07	23-Apr-09	10.26		7.11	2.0
Inter-America Development Bank	Shinko Securities	12-Apr-07	13-Apr-07	14-Oct-09	87		6.95	2.5
UBS	Takagi	6-Apr-07	27-Apr-07	26-Apr-12	10	76.83	1.00	5.0
IFC	Rakuten	10-Apr-07	13-Apr-07	14-Apr-09	6		7.02	2.0
World Bank	Daiwa	23-Apr-07	2-May-07	23-Apr-09	385		6.68	2.0
Eksportfinans	Okasan	27-Apr-07	17-May-07	14-Apr-09	14.15		7.30	1.9
Eksportfinans	Tokai Tokyo	27-Apr-07	25-May-07	20-May-09	83.5		7.11	2.0
Kommunalbanken AS	Mizuho Investment	2-May-07	17-May-07	20-May-10	44		7.15	3.0
BNG	Shinko Securities	8-May-07	17-May-07	19-Nov-09	89		7.13	2.5

Table 1a: NZD Uridashi issues[11], Jan 2006 - May 2007

[11] Source for the data used in tables 1a,b is Reserve Bank of New Zealand.

Issuer	Arranger/Manager	Launch Date	Issue Date	Maturity Date	Amount	Issue Price per 100	Coupon	Coupon Paid	Fees	Credit Rating (Moody's / S&P)	Years to Maturity
Societe Ge	SB CIB	3-Jan-06	3-Jan-06	3-Feb-09	22		Float				3.1
Rabobank	RBC Capital Markets	3-Jan-06	18-Jan-06	18-Jan-11	200	100.865	6.50	ann	-	Aaa/AAA	5.0
KFW	RBC Capital Markets	4-Jan-06	19-Jan-06	15-Jul-09	150	99.405	6.00	ann	-	Aaa/AAA	3.5
KFW	Fortis	4-Jan-06	24-Feb-06	24-Feb-09	50	100.96	6.50	ann	-	Aaa/AAA	3.0
KFW	TD Securities	10-Jan-06	20-Jan-06	17-Dec-07	100	99.925	6.25	ann	-	Aaa/AAA	1.9
European	TD Securities	11-Jan-06	24-Jan-06	15-Jul-09	100	99.225	6.00	ann	-	Aaa/AAA	3.5
Rentenbar	RBC Capital Markets	11-Jan-06	27-Jan-06	27-Dec-07	100	101.1	7.00	ann	-	Aaa/AAA	1.9
CAISSE D	Dresdner	24-Jan-06	24-Jan-06	24-Jan-08	101		6.10				2.0
European	RBC Capital Markets	24-Jan-06	10-Feb-06	10-Sep-14	100	102.471	6.50	ann	-	Aaa/AAA	8.6
Bank of Ne	RBC Capital Markets	25-Jan-06	3-Feb-06	3-Feb-09	150	Par	n BKBM+4	semi	-	Aa3/AA-	3.0
KFW	RBC Capital Markets	25-Jan-06	3-Feb-06	15-Jul-09	100	#VALUE!	6.00	ann	-	Aaa/AAA	3.4
Nordic Inv	UBS	2-Feb-06	23-Feb-06	23-Feb-09	100	101.095	6.63	ann	-	Aaa/AAA	3.0
KBC	KBC	3-Feb-06	3-Feb-06	3-Aug-06	23		6.50				0.5
HBOS	RBC Capital Markets	3-Feb-06	3-Feb-06	23-Feb-09	130		Float				3.1
KFW	TD Securities	6-Feb-06	15-Feb-06	17-Dec-07	100	100.015	6.25	ann	-	Aaa/AAA	1.8
EIB	TD Securities	6-Feb-06	17-Feb-06	15-Jul-09	100	99.615	6.00	ann	-	Aaa/AAA	3.4
Bank of Ne	TD Securities	8-Feb-06	16-Feb-06	16-Feb-10	150	Par	n BKBM+6	ann	-	Aa3/AA-	4.0
Bank of Ne	TD Securities	8-Feb-06	16-Feb-06	16-Feb-10	100	Par	n BKBM+6	ann	-	Aa3/AA-	4.0
Export Dev	RBC Capital Markets	8-Feb-06	23-Feb-06	23-Feb-09	200	100.933	6.50	ann	-	Aaa/AAA	3.0
Republic o	Deutsche Bank	9-Feb-06	22-Feb-06	26-Sep-08	70	99.64	6.00	ann	-	Aaa/AAA	2.6
Council of	Fortis	10-Feb-06	27-Mar-06	27-Mar-09	30	100	6.00	ann	-	Aaa/AAA	3.0
IBRD	RBC Capital Markets	13-Feb-06	27-Feb-06	15-Jul-09	200	101.325	6.38	ann	-	Aaa/AAA	3.4
EIB	RBC Capital Markets	13-Feb-06	28-Feb-06	10-Sep-14	100	101.99	6.50	ann	-	Aaa/AAA	8.5
ANZ Natio	ANZ National (Internat	14-Feb-06	14-Feb-06	17-Feb-11	150		6.82				5.0
CAISSE D'A	MORTISSEMENT DI	15-Feb-06	15-Feb-06	20-Feb-08	45		6.00				2.0
IBRD	JP Morgan	21-Feb-06	21-Feb-06	26-Sep-08	12		6.06				2.6
Westpactr	TD Securities	22-Feb-06	6-Mar-06	7-Sep-07	100	100.59	6.75	ann	-	Aa3/AA-	1.5
IBRD	Dresdner	23-Feb-06	23-Feb-06	25-Feb-08	14		5.93				2.0
BNP Parib	BNP Paribas	23-Feb-06	23-Feb-06	23-Feb-09	2		Float				3.0
BNP Parib	BNP Paribas	23-Feb-06	23-Feb-06	23-Feb-09	2		6.15				3.0
GECC	RBC Capital Markets	23-Feb-06	17-Apr-06	17-Apr-09	150	99.453	6.63	ann	-	Aaa/AAA	3.0
BNP Parib	BNP Paribas	3-Mar-06	3-Mar-06	14-Feb-14	7		Float				8.0
BNP Parib	BNP Paribas	3-Mar-06	3-Mar-06	14-Feb-14	7		Float				8.0
IBRD	BNP Paribas	9-Mar-06	9-Mar-06	13-Mar-09	15		5.58				3.0
IBRD	Dresdner	23-Mar-06	23-Mar-06	14-Mar-08	10		5.46				2.0
LWR	Dresdner	23-Mar-06	23-Mar-06	27-Jan-09	115		5.82				2.9
Bank of Ire	Barclays Capital	23-Mar-06	23-Mar-06	22-Mar-09	35		Zero				3.0
IBRD	Dresdner	29-Mar-06	29-Mar-06	14-Apr-08	15		5.46				2.0
Westpac	RBC	30-Mar-06	30-Mar-06	30-Mar-11	150		Float				5.0
CIBC (FRI	TD Securities	6-Apr-06	20-Apr-06	20-Apr-11	150	Par	n BKBM+8bp			Aa3e/AA-	5.0
EIB	TD Securities	20-Apr-06	20-Apr-06	15-Jul-09	100		6.00			Aaa/AAA	3.2
LWR	Dresdner	26-Apr-06	26-Apr-06	23-Mar-09	140		5.70				2.9
BNP Parib	BNP Paribas	26-Apr-06	26-Apr-06	24-Apr-12	147		0.00				6.0
GECC		4-May-06	18-May-06	28-Sep-15	225	98.073	6.50	semi		AAA	9.4
EIB		9-May-06	18-May-06	10-Sep-14	100	101.14	6.50	ann		AAA	8.3
Anglo Irish	NAB	16-May-06	16-May-06	16-May-07	50		0.00				1.0
EIB		24-May-06	7-Jun-06	10-Sep-14	100	101.5	6.50	ann		AAA	8.3
IBRD	Dresdner	26-May-06	26-May-06	14-May-08	150		5.82				2.0
Danone Fi	Citigroup	27-May-06	27-May-06	29-Jan-08	253		5.92				1.7
EIB		31-May-06	15-Jun-06	15-Jul-09	100	99.338	6.00	ann		Aaa	3.1
IBRD	Dresdner	1-Jun-06	1-Jun-06	15-Dec-08	8		5.70				2.5
Kommune	Shinko	6-Jun-06	6-Jun-06	16-Jul-08	77		6.25				2.1
EIB		7-Jun-06	7-Jun-06	7-Sep-14	100	101.499	6.50				8.3
IADB	TD Securities	8-Jun-06	8-Jun-06	8-Jun-16	200	98.39	6.25				10.0
IBRD	BNP Paribas	21-Jun-06	26-Jun-06	14-Jan-09	8		5.82				2.6
IBRD	Dresdner	21-Jun-06	13-Jul-06	14-Jul-08	8		5.76				2.0
Bank of Ire	TD Securities	26-Jun-06	3-Jul-06	1-Jul-11	100	Par	n BKBM+8bp			Aa3e/AA-	5.0
Rentenbar	Mizuho	9-Jul-06	9-Jul-06	15-Oct-08	85		6.40				
IADB	TD Securities	10-Jul-06	19-Jul-06	19-Jul-11	100	100.04	6.13	semi		Aaae/AAA	5.0
IADB	TD Securities	15-Aug-06	15-Aug-06	15-Aug-11	100	99.775	6.25				5.0
Toyota	TD Securities	7-Sep-06	7-Sep-06	21-Sep-09	150		6.75				3.0
GECC	TD securities	12-Sep-06	12-Sep-06	26-Sep-16	300	99.04	6.75			Aaa/AAA	10.0
Westpac	Barclays Capital	29-Sep-06	29-Sep-06	29-Sep-08	50		6.03				2.0
IBRD	JP Morgan	19-Oct-06	19-Oct-06	20-Apr-09	5						2.5
IBRD	JP Morgan	9-Nov-06	9-Nov-06	10-Nov-08	2						2.0
KFW	ABN Amro	21-Nov-06	8-Dec-06	2-Dec-09	100	99.73	7.00	semi		Aaa/AAA	3.0
IBRD	Dresdner	30-Nov-06	30-Nov-06	25-Nov-08	16						2.0
EIB	TD Securities	6-Dec-06	6-Dec-06	15-Jul-09	100		6.00				2.6
IBRD	Dresdner	7-Dec-06	7-Dec-06	25-Jun-09	13		6.06				2.6
CBA	CBA	11-Dec-06	11-Dec-06	11-Dec-11	20		0.00				5.0
GECC	RBCCM	12-Dec-06	8-Jan-07	8-Jan-10	100	100.365	7.25	semi	-	Aaa/AAA	3.0

Table 1b: Eurokiwi issues January 2006 - May 2007

Figure 6 is a snapshot[12] from mid 2006 that adds both sources, eurokiwi and uridashi to get total issue volume. It also adds in the maturity profile for the years to come. The TWI is the trade weighted exchange rate. The strength through 2006 reflects two influences, one the carry trade earlier noted as the RBNZ tightened and the second the demand for NZD that accompanied purchase of the uridashis, which had perforce to be unhedged so that the high NZD coupons could be enjoyed. The rush of issues from 2005-6 coincided with the strength of the NZ housing market and is driven partly by the demand for swaps off the back. It has created a future redemption/rollover shadow, which has occasioned some worry as to the consequences. The newspaper clipping illustrated as exhibit 1 is fairly typical of commentary on the subject.

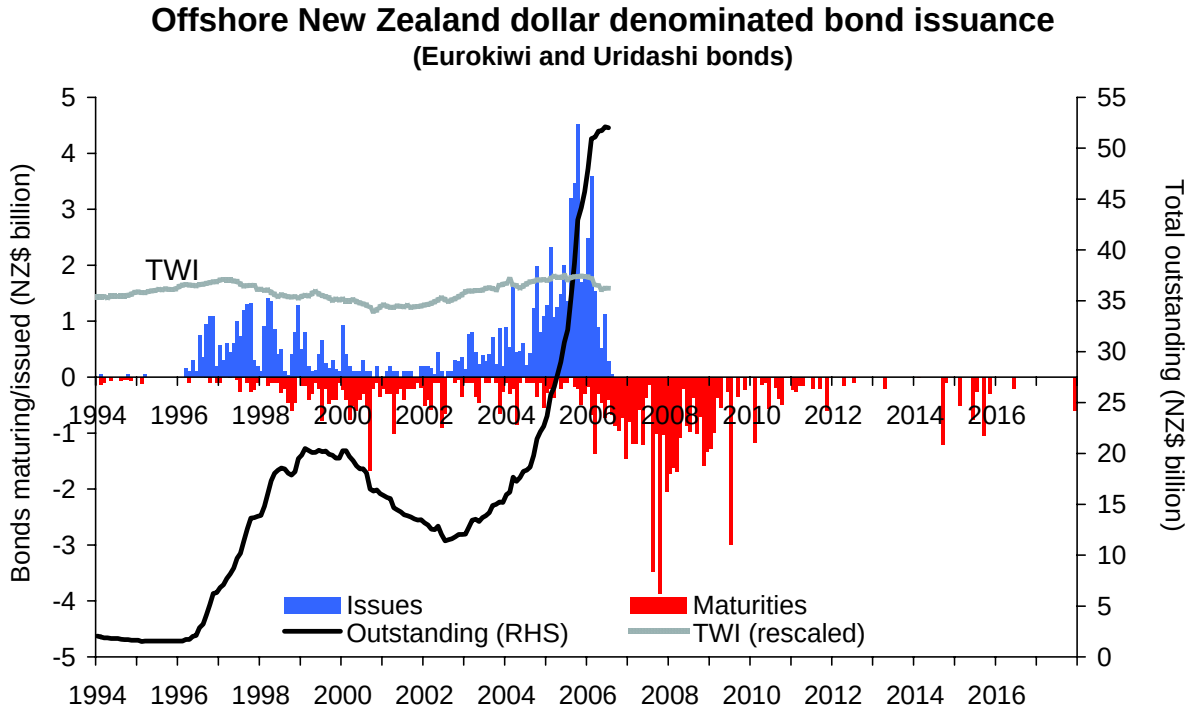

Figure 6: Eurokiwi and uridashi: Volume and redemption shadow

[12] The graph was constructed using data from RBNZ and Thompson Financial Datastream, and appears in Bowden R.J. (2006), 'Instrument insufficiency and economic stabilisation', *Australian Economic Review*, 39, 257-72.

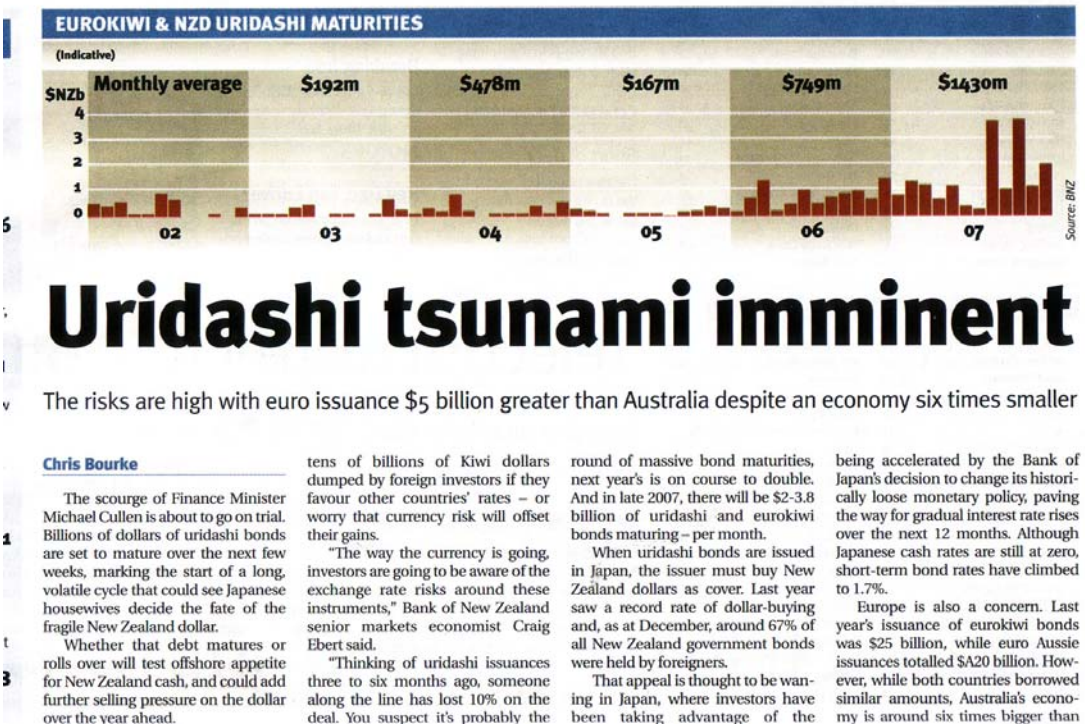

Exhibit 1: The press in worry mode

(March 2006 *NZ National Business Review* article)

4.3 Cross currency interest rate swap structures

It is the role of the CIRS market to bring the two above influences together, namely the demand for funds originating ultimately from NZ homeowners, and the supply originating with offshore demand for NZ dollar denominated debt and their high coupons. The basics are reasonably straightforward. The foreign debt issuers will receive fixed rate payments from NZ banks passing them through as coupons to the Japanese housewives (or Belgian dentists[13] etc.), in exchange for the preferred style and currency obligations (e.g. floating USD). In turn, the NZ banks will receive their own fixed payments from their NZ mortgage customers. Figure 7 shows a fairly typical such arrangement.

[13] The apocryphal 'Belgian dentists' appeared fairly early on in the Eurodollar literature, though I do not know who originated the saying. Belgian dentists were supposed to like bearer bonds for tax avoidance reasons, cashing the coupons on their periodic ski trips to Switzerland. The 'Japanese housewives' are a more recent invention to correspond.

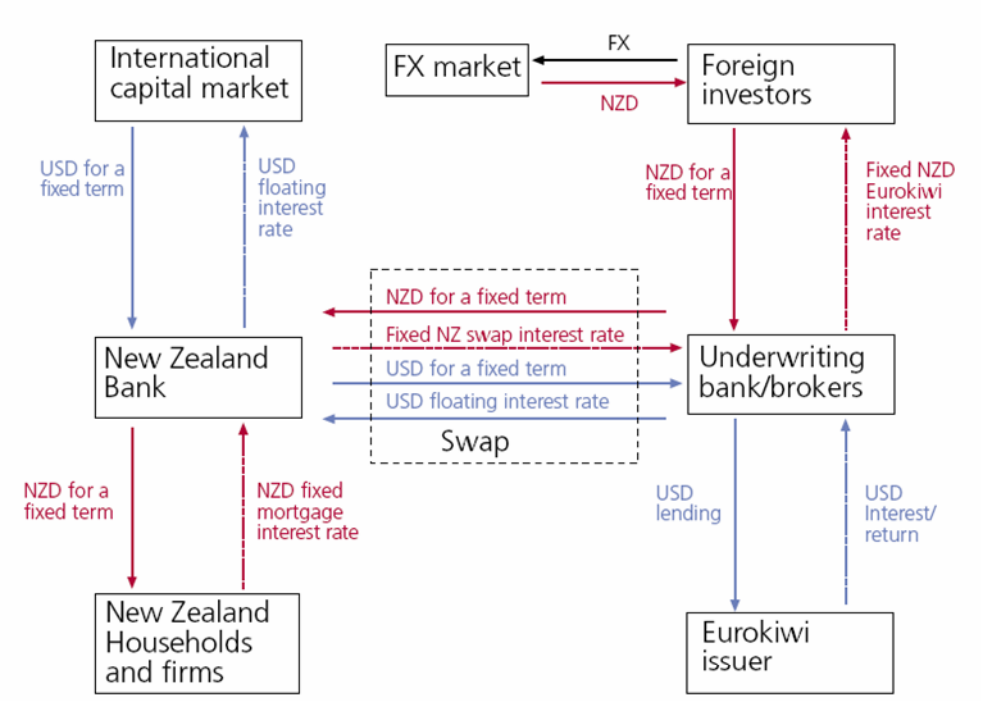

Figure 7: Flows on a typical eurokiwi or uridashi CIRS[14]

The NZ leg of the CIRS is where the NZ banks come in. The swap spread, taken in the usual sense of the difference between the swap rate over the corresponding governments, climbed in late 2005 from just 15 basis points to 115 or more, reflecting the soaring demand from homeowners for fixed price mortgage accommodation, and the corresponding willingness of their banks to supply fixed Kiwi through to the foreign institutions via the CIRS.

The conjunction of supply and demand on each side of the swap, together with a market clearing price, results in swap volume. Figure 8 plots the volume of home-based generalised currency swaps, i.e. all types of swap incorporating the NZD as one leg and a foreign currency on the other. As the typical CIRS diagram (figure 7) suggests[15], the bulk of the business has the USD as the other leg (right hand axis), though from time to time there have been appreciable volumes in other currencies such as the JY. The growing volume through 2005-7 is clearly apparent.

[14] Source is Drage et al (2005, ibid).
[15] Though note also the earlier comments that straight FX swaps are now used by the banks in the monetary clearing process to secure end of day accommodation by the central bank. Disaggregated figures as to the precise type of swap are not published by the RBNZ.

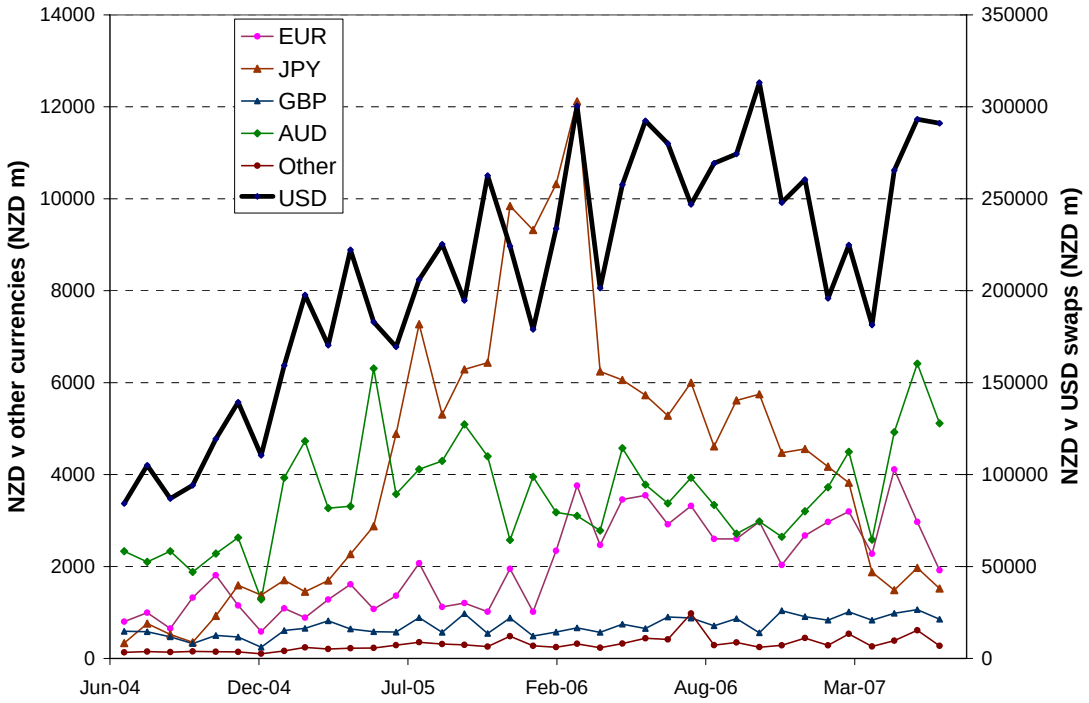

Figure 8: Generalised currency swaps[16] with NZD as one leg

An appreciable amount of generalised currency swaps are also traded in the NZ market in which the NZD is absent from either leg; 'third party' currencies, so to speak. Most of these have the USD on the one side, and of these, the majority involve the Australian dollar as the counterparty currency. Figure 9 plots the volume over the last few years.

[16] Includes all types of swaps with foreign exchange as counterparty. Source of underlying data is RBNZ.

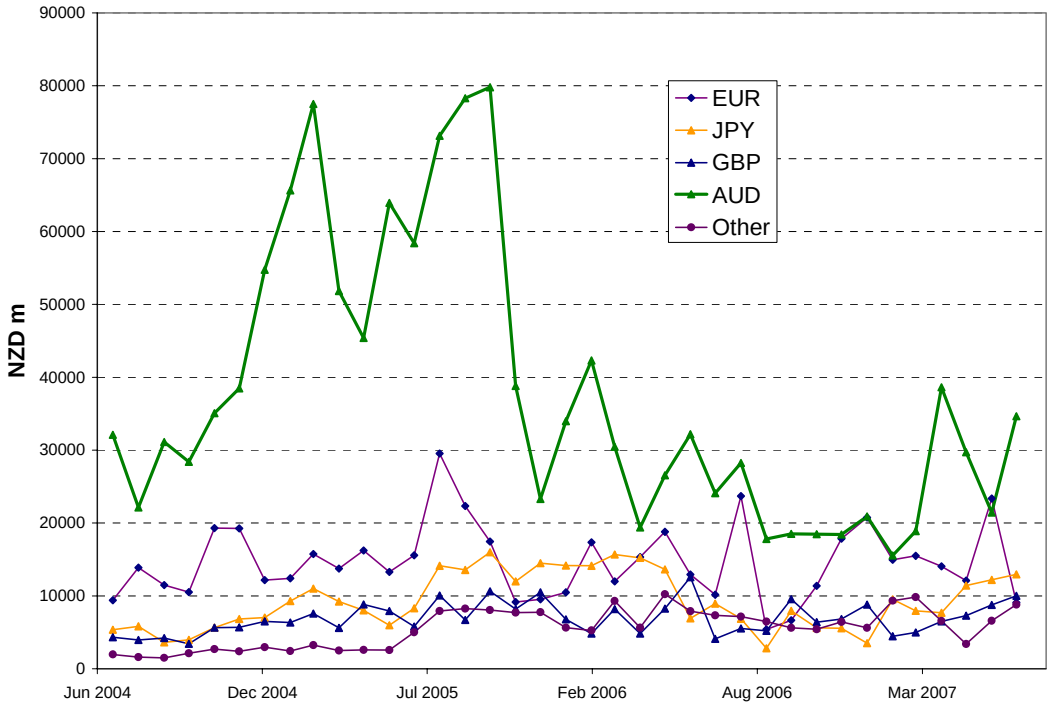

Figure 9: Third party generalised currency swaps

To summarise the above discussion, there has in recent years been volume on an international scale in the market for offshore NZ dollar denominated debt, and in the derivatives that are used to convert the liabilities into those of the NZ banking system and ultimately of NZ homeowners. It is this trade, together with trading or positions in currency spot and forwards, that projects our small country on to the world markets.

V The refiner's fire: concluding remarks

5.1 Regional perspectives

So far as regional competition is concerned, there is certainly some such, notably with the Australian markets. As earlier remarked, the recent attempt by the NZ Stock Exchange to construct an Australasian equity trading platform will stoke this particular fire. But frictions of this kind should not be allowed to obscure some cooperative synergies. NZ is too small to have an autarkic futures exchange, even though historically it did get established and proved rather innovative. It made much more sense for this to be developed further as a partnership between the Sydney Future Exchange and the NZ Stock Exchange. Moreover, closer economic relationship (CER) agreements have done much to harmonise trade, regulatory, and taxation arrangements across the Tasman, and this will always help financial market integration, even if some taxation differences persist. But so long as the two Tasman countries

continue to run separate currencies, there will always be a barrier to easy translation of financial capital from one to the other.

On the other hand, none of this is likely to impact adversely on just where NZ does contribute to international and Asian-Pacific capital market integration, namely the debt markets and the derivatives that handle the currency or interest rate risk. It is hard to see that we compete with anyone on such things. Indeed, a much better case can be made that NZD denominated liabilities add quite materially to the income and diversification possibility sets of investors across the Asian region. Where would the Japanese housewives be without their uridashis? Or their mothers without doji candlesticks, and the gyrations of the NZ dollar? Moreover, even NZ shares or similar assets can be quite useful to an equity or other balanced portfolio, for the NZ economy is not by any means synchronous in its business cycles with the US or Japanese economies, nor even with the Australian.

To summarise, I do not see the NZ relationship with the rest of the APEC capital markets as zero sum in character. Synergistic (positive sum) elements are associated with market completion benefits to the APEC capital markets as a whole. It is a matter of complementarity, rather than competition. To the extent that it does not happen now, it is a matter of improving investors' information sets, just as one would want to see NZ investors becoming more informed about the financial systems of South-east Asia.

5.2 Human capital

Preceding discussion should have illustrated, if nothing else, that the New Zealand economic environment has not been a calming experience. We have the world's wobbliest currency, and interest rates and stock prices are likewise highly variable. Chances are that all this will continue in the years ahead. Yet the odd thing is that we have come through the refiner's fire in good shape, and arguably much stronger for the experience.

Indeed, there is an important point underlying all this. A financial centre is not just a lot of screens and numbers, and nor are glass towers a necessary feature. What does make it special are the people that work in it. The quality of the human capital is in fact more important than physical capital. In this respect, education is important and we pay a lot of attention to that aspect, particularly of the 'learning by doing' variety. The VIAF programme in which I participate has become one of the largest post experience applied finance programmes in the world and its graduates have spread to all the major international financial centres.

But in addition, there is nothing like the refining fire of experience, and in this respect, we emerged as survivors. Learning how to cope with fluctuations has contributed a lot of

valuable human capital in the general area of risk management. In the late nineties, around the time or the Asian crisis, a number of large NZ corporates suffered major losses from ill conceived hedging programmes, which have passed into case study history. Banks now pay a lot of attention to advising clients on how to deal with such problems, and in tailoring solutions, some of which call on exotic instruments like commodity- libor - exchange rate swaps. For instance, a local authority that runs a transport fleet has cost exposures to both oil prices (as diesel fuel) and the NZ dollar, both items highly volatile over all wavelet time scales. A bank would structure a swap under which the authority would exchange its floating exposures for a fixed NZD payment to cover both the NZ dollar and the oil exposure as the relevant Platt Singapore gasoil reference rate. New developments like OTC milk futures are under way to help dairy companies or large farmer enterprises manage their exposure. Designing and pricing instruments of this kind is a first class training experience for bank staff, and we take a certain amount of credit from our academic role in preparing students for this sort of operational environment. As a result, some of our bank treasuries have become recognised training grounds for junior staff and a conduit for them through to the markets of London and New York: a case of "come to New Zealand and see the world".

In summary, one should not lose sight of the fact that it is people who run capital markets and people who trade in them, or manage positions. A further test of an international financial centre is the quality of the people who work there and their academic and experiential credentials. On that sort of criterion, NZ does not stack up too badly. After all, if we are to believe the opinion polls, a home-grown Kiwi ex FX trader from the New York markets now looks set to be our next prime minister!

Finally, it is truism that financial markets never sleep. A trader who has a position to lay off or develop further will operate well after the rest of the building has gone home, or may be forced to ask colleagues in the offshore offices to handle the position overnight. Some of the volume reported above in connection with generalised currency swaps will have originated in this way. Or colleagues offshore may ask NZ traders to manage positions into the new day. Until such time as Tonga[17] develops a financial market, New Zealand will always enjoy a place in the sun simply on time zone grounds: it is the first capital market to open each day and even if the caller is not fluent in English there are good chances of being able to find an expatriate from Japan or China on the premises.

[17] I believe the first place to see the new day is in fact the far eastern tip of Siberia, but the Tongans have the more exclusive time zone.

Indeed that is a good note on which to conclude. Wellington as a city is virtually unrecognisable from when I first started work as a humble clerk in the NZ treasury. We can't do much about the climate, but the rest is not too bad. It is now a vibrant and cosmopolitan place. To be sure, the 'Wellywood' movie industry has helped to project the city on to a world stage, as has the internationalisation of education and the growth of the tourist link. From the professional point of view, however, what has also changed over the intervening years has been the sophistication of the financial system, and the way that it is now integrated within the global financial system, while retaining its own distinctive features. I am often asked, for instance, whether it is sensible for such small country to retain its own currency, especially one with so much instability. There is indeed much economic logic to a currency union with Australia or even with the US. There is probably equal logic for a merger of the respective stock markets. Yet in many ways that would be a pity. Wellington enjoys the attention that derives from being an international centre, and not just the small regional one that we would otherwise become.