

PERSPECTIVES

**MACROECONOMIC POLICY CHALLENGES FOR
NEW ZEALAND: MONETARY POLICY**

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NOVEMBER 2006

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Macroeconomic policy challenges for New Zealand: monetary policy¹

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Originally presented at a Reserve Bank of New Zealand/New Zealand Treasury workshop,
Testing Stabilisation Policy Limits in a Small Open Economy,
Wellington, 12 June 2006

1. Introduction: What, if anything, has gone wrong?

New Zealand's overall economic performance in the upswing 1999 to 2005 has been exemplary, with GDP growth averaging 3.5 per cent, taking unemployment down to an enviable 3.6 per cent. True, inflation has crept up, but this is consistent with the greater flexibility incorporated in the inflation target regime. The current account deficit (CAD) has been running at around 9 percent of GDP, but it can be argued that this is the expected result of international integration – the CAD allows separation of saving and investment decisions².

By 2005 capacity constraints were showing, but by the second half of the year demand growth was slowing, and the housing boom seemed to be levelling out. There is the prospect of a “dream rebalance”³.

This is a small very open economy operating much as the text-books suggest it should. What residual concerns might there be?

- The CAD is an outlier both historically and internationally. The underlying mean level may indicate that there is a structural issue here, with the need to examine saving incentives. Perhaps greater ability to borrow (equity withdrawal by house-owners) has reduced savings and this may have further to run.
- While inflation has been running at an acceptable rate, inflation *expectations* are creeping up, and a depreciating exchange rate could put further pressure on the inflation target at a time when it will be inconvenient to raise rates to support the currency.
- Internationally, the amplitude of the business cycle seems to have moderated⁴. Early indications are that this has happened also in New Zealand, but at a disaggregated

level, there seem to be much more GDP volatility in the tradable sector compared with the non-tradable, which might be driven by the wide swings in the exchange rate over the course of the cycle.

The next section looks at how monetary policy has changed over the past two decades. The subsequent section looks more specifically at the way monetary policy works now, and makes the case that it has become much less potent (at least in its counter-cyclical impact) as the economy has become more integrated with international financial markets. Section 4 looks at possible problems, while Section 5 summarises the issues that policy might address. The balance of this paper looks at what might be done, using monetary policy, using prudential policy and lastly through greater integration with Australia.

2. How has monetary policy changed over time?

Two environmental changes might be noted. The more obvious one is the integration of New Zealand with world financial markets, with the exchange-rate float of 1985 marking the watershed. The other factor is a shift in thinking about what monetary policy might (and should) be trying to achieve.

New Zealand pioneered inflation targeting, which has been developed and refined to become the “best practice” approach of most central banks world-wide. Such was the entrenched nature of the earlier inflation, and so fundamental was the break from earlier approaches to macro policy, that there was a perceived need to put monetary policy in a precise and tightly defined stand-alone role, anchoring the price level, with no responsibilities (or even regard) for the cycle.

The second evolutionary element in the monetary policy environment was the gradual relaxation of this view, as inflation was contained and price expectations anchored⁵. This was not, of course, to expect that monetary policy could boost growth beyond the constraints of capacity: it was, instead, to recognise more specifically that monetary policy impinges on the course of the business cycle and *vice versa*. The current debate (to which this paper might hope to contribute) is a continuation of the exploration of the ways in which monetary policy affects not only price stability, but also interacts with the real side of the economy. The more comprehensive view of monetary policy includes consideration of how it interacts with other “arms” of policy (prudential and fiscal), and the search for “supplementary instruments” which can take some of the pressure off monetary policy.

Acknowledging that the principal objective of monetary policy is price stability and that this can be (and has been) successfully achieved, the focus here will be on the interaction of monetary policy and the *cycle*. New Zealand is subject to a variety of shocks, but the issues might be illustrated by looking at one external supply-side shock (terms-of-trade, via commodity prices) and one internal demand shock (the housing cycle⁶). Before the float in 1985, policy-determined short interest rates (and, for that matter, direct controls) impinged directly on excess demand shocks such as a housing boom.

Terms-of-trade shocks produced booms and busts for the commodity sector, which might be buffered to some modest extent because the income variations accrued directly to the commodity-producing sector, encouraging a cyclical savings variation which may have helped smooth the CAD cycle (savings rose when times were good for exporters, although there was the possibility that this might be offset by investment increases)⁷.

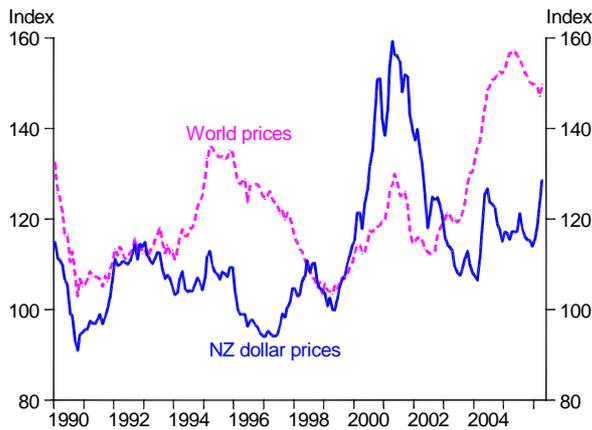
Since the float, increasing integration with world capital markets has likely raised the importance of the exchange rate channel of monetary policy to a point where, in recent times, it may dominate the interest rate channel. The textbook model envisages that higher interest rates cause a floating exchange rate to rise: this creates an expectation of depreciation as the exchange rate reverts to its longer-run equilibrium, and the expectation of depreciation equilibrates the higher domestic interest rates with international rates⁸. In this world, monetary policy still has some of its impact via interest rates, but to the extent that the action is now through the exchange rate, monetary policy does not impinge very directly on an excess demand shock to slow it, but instead helps to divert or “spill” it into a larger CAD through changes between tradable and non-tradable prices.

A floating exchange rate will buffer a terms-of-trade shock by smoothing exporter incomes over the course of the commodity cycle. This in itself is a helpful characteristic, but the exchange rate movement does nothing to encourage extra savings in “good times” when commodity prices are strong: the flexible exchange rate spreads the benefit of the shock widely, in the form of cheaper imports. The beneficiaries, the majority of whom will have no direct economic relationship to the commodities sector, may not understand that “seven fat years” would be followed by “seven lean years”, so saving may fall in response to a favourable shock.

This configuration of interest rate/exchange rate is less well-suited to constraining a housing boom, as the interest rate channel (which might have been effective in an interest-sensitive mortgage market) is muted, and the exchange rate channel squeezes the tradable sector, when the driving cause of the boom is the rapid increase in house prices and the associated wealth-effects⁹.

What we might expect to see in this integrated world (compared with the old fixed rate/ less integrated world) is less impact of monetary policy on the amplitude of the cycle in demand (because interest rates are not directly affecting the cycle so strongly, and counter-cyclical movement in saving may not be present), and larger fluctuations in the current account, with a larger current account deficit associated with a stronger exchange rate. When we look for these characteristics in the New Zealand data, they are partly obscured by other factors. The outcomes may have been muted in the 1990s, first

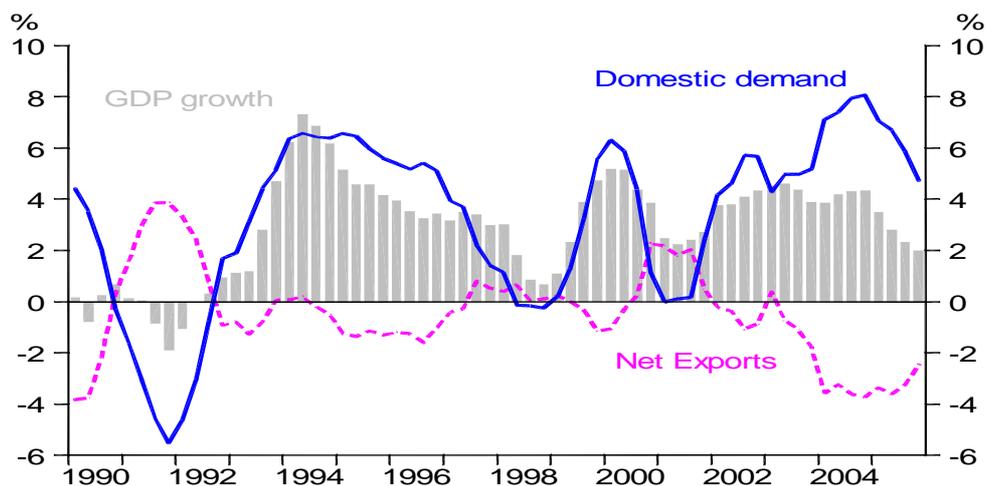
Graph 1: Commodity prices, USD and NZD



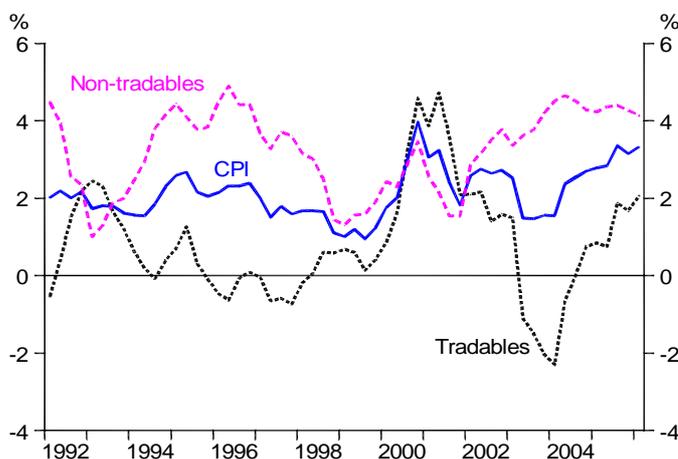
by the influence on interest rate settings of the “exchange rate comfort zone” in the first half of the decade and then by the MCI-based policy until 1999. But the exchange rate *did* largely offset stronger commodity prices in 1995-6 and again in 2003-2006 (see Graph 1), although in 2001 this effect is not present (more on this later)¹⁰.

The “spill” of strong demand growth into net imports can be seen in 1995-6 and most clearly in 2003-6 (see Graph 2).¹¹

Graph 2: Demand “spill-over” into net exports



Graph 3: Tradable and non-tradable CPI inflation

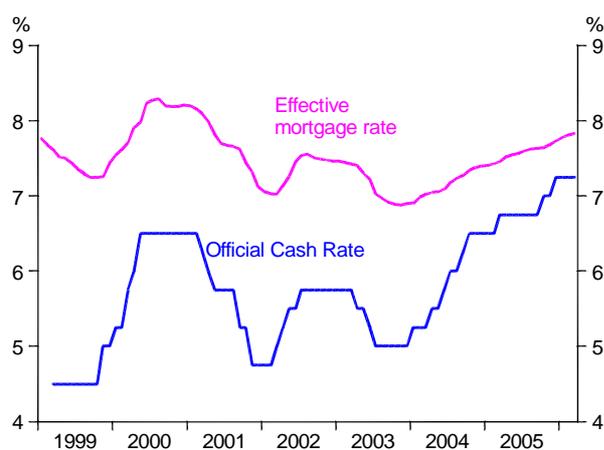


In terms of price stability, the post-1985 system works well (and in particular the inflation targeting system has been very effective). The cyclical variation in the CAD acts to counter the inflationary impact of the cycle directly through *cheaper* imports (see Graph 3, where tradable prices reflect both world prices and the exchange rate) and indirectly

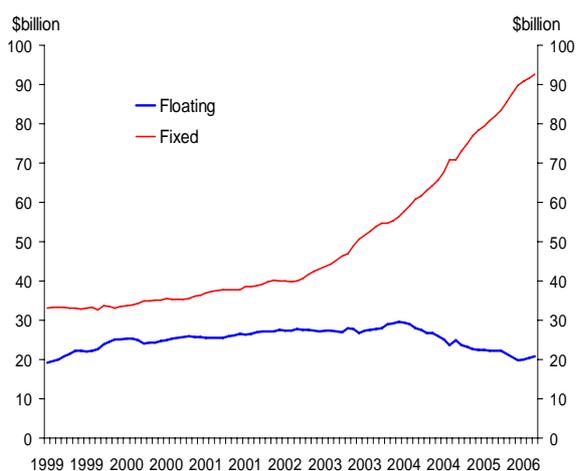
through extra *supply* from imports (Graph 2). But, with echoes of the old “financing versus adjustment” debate, both types of shock are being “funded” rather than “adjusted”. If we consider the impact on the cycle, we might be more inclined to look for alternative or supplementary instruments, particularly in the case of domestic shocks such as a housing boom.

3. Where does this leave monetary policy now?

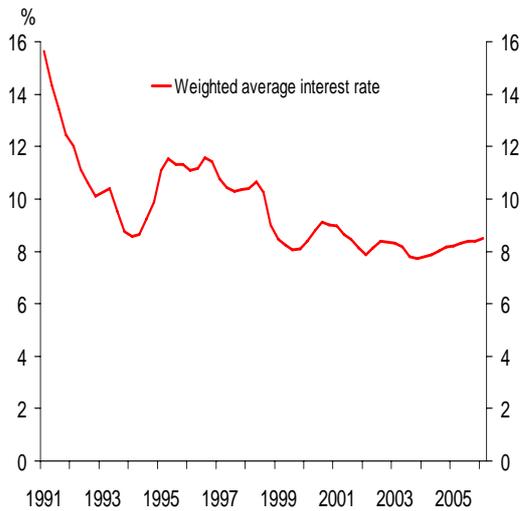
International financial integration seems to have made monetary policy much less potent in its impact on the cycle. Borrowers (particularly housing borrowers, see Graph 5) have moved further out on the yield curve, borrowing at interest rates only modestly influenced by the movement in the OCR (see Graphs 4 and 6). The most recent tightening phase illustrates the issue. In the first seven months of 2004, the OCR was raised by 100 b.p. (5 percent to 6 percent, see Graph 4) and the RBNZ warned the market in its September 2004 MPS that interest rates would have to rise further. This movement and clear statement that high rates would be maintained should have been fully incorporated into the term structure of interest rates (including the anticipation of future higher rates), but in practice had little effect on the yield curve (see Graphs 7 and 8). Whereas in earlier tightenings, the mortgage rate had risen significantly and had not fallen appreciably below the floating rate during this phase of the cycle, in 2004 and 2005 the prevailing 2-year rate was 100b.p. or more below the floating rate (see Graph 8). At the same time, because existing borrowers are borrowing for a fixed term rather than at floating rates, the impact of an OCR rise is lagged, and those borrowers who got themselves “set” with a fixed rate in the second half of 2004 (when RBNZ was moving strongly to tighten) have largely avoided the tightening until now.



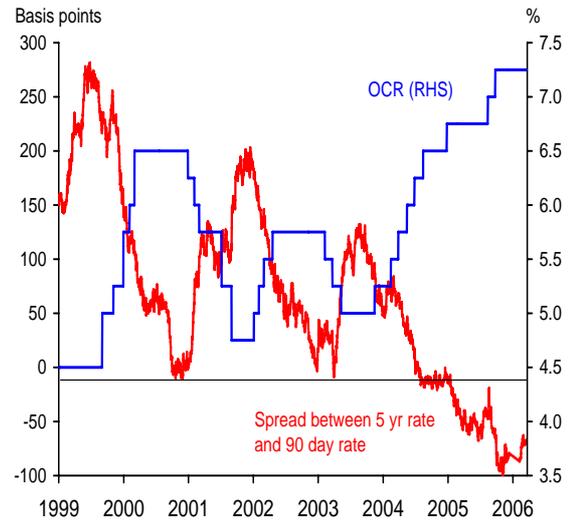
Graph 4: OCR and effective mortgage rate



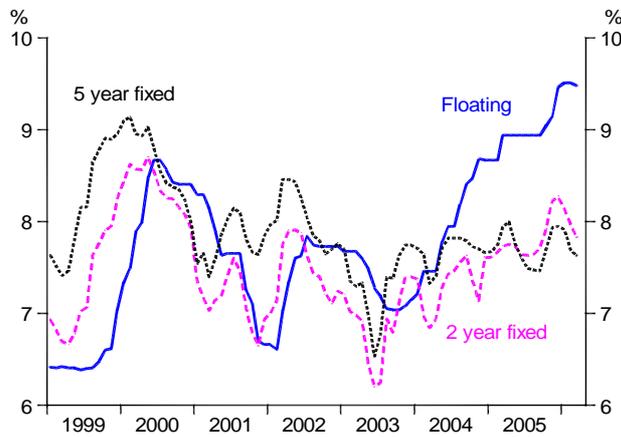
Graph 5: Fixed and floating loans



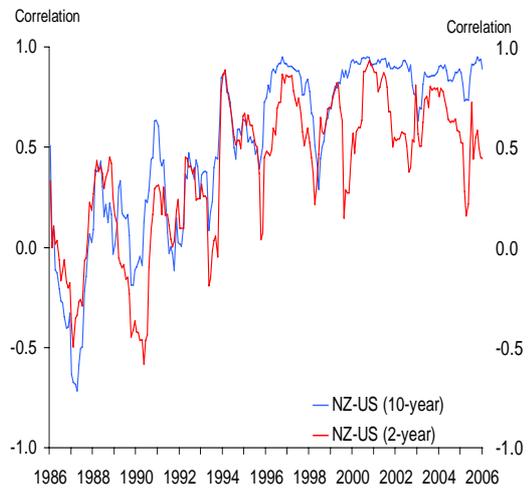
Graph 6: Weighted average rate new borrowers



Graph 7: The OCR and the slope of the yield curve



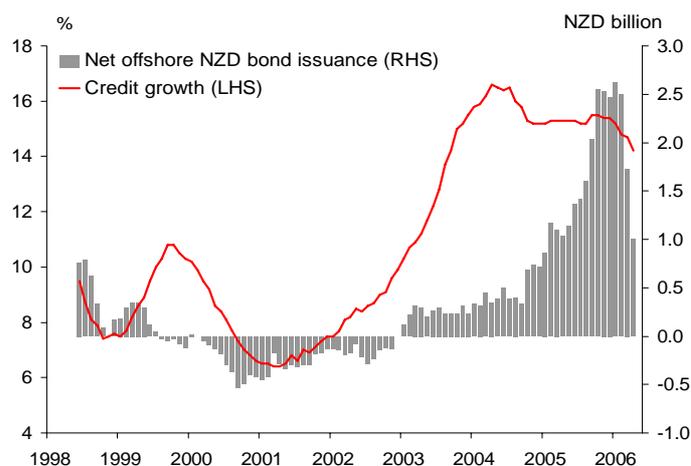
Graph 8: Mortgage rates



Graph 9: Co-movement of interest rates.

Borrowers are in effect reaching into the lower interest rates available in world capital markets (see co-movements of New Zealand and USD interest rates, Graph 9). This is reflected in the close movement of domestic credit growth and the NZD bond offshore issuance, which fund the strong growth in banks' mortgage lending (Graph 10).

Graph 10: Credit growth and offshore NZD bond issuance



There is still some arbitrage along the yield curve (consistent with the expectations hypothesis), but there is also powerful international arbitrage with overseas longer rates (Graph 9). As RBNZ was pushing up the OCR, the longer end was being affected through the expectations channel, but also by the low world interest rates.

What about the impact of the monetary tightening on the exchange rate? The strong capital inflow, greatly influenced by the demand for domestic credit and the banks' need for foreign funding, determines the current account (an identity if there is no official intervention). The exchange rate has to move by enough to "spill" demand into net imports, opening up the current account deficit so that it equals the capital inflow. This movement in the exchange rate often seems to be much more than is justified by the interest rate differential¹².

The central point is that interest rates are not doing the "heavy lifting". The main driver is the exchange rate, driven by capital flows at the longer end (the increase in net foreign NZD bond issuance in 2005 was big enough to fund the whole CAD), rather than short-term interest differentials.

It could be argued that this is an acceptable, even desirable, outcome. It does, however, raise some issues:

- Does the exchange rate move too much?
- As a consequence of this, are some sectors unfairly or unnecessarily subject to excessive price shifts?
- If monetary policy is having its main impact via the exchange rate rather than interest rates, can it effectively address a domestic demand shock such as a housing boom?
- Is the CAD, in some sense, too big?
- Does the external funding make the banks vulnerable?

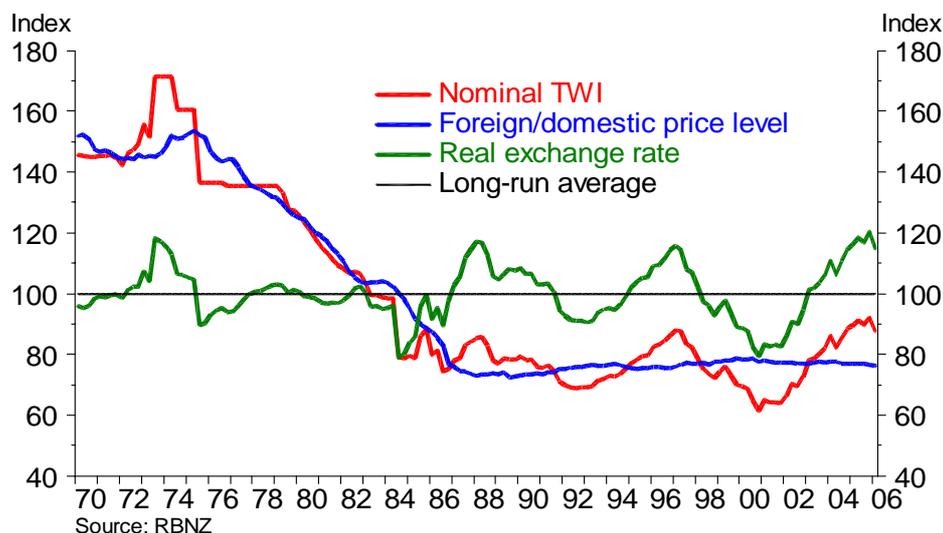
4. The possible problems

(a) Does the exchange rate move too much?

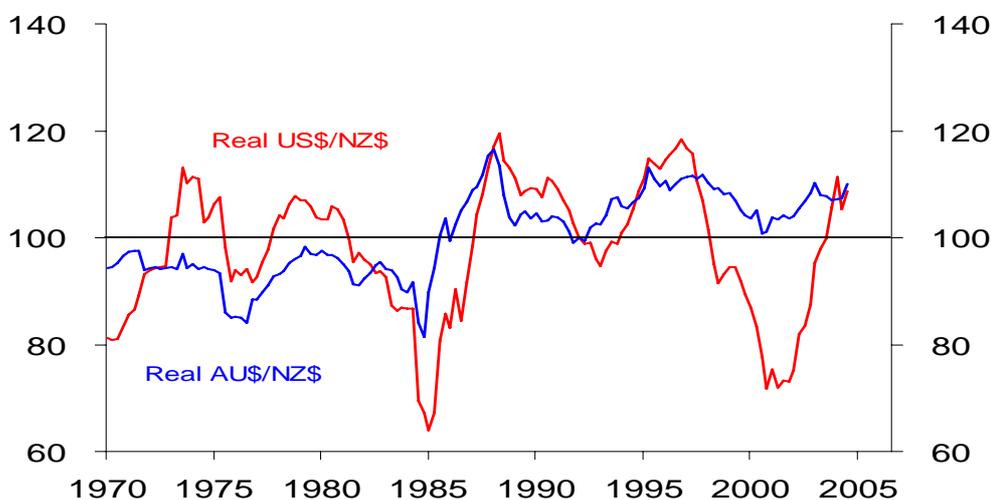
The nominal USD/NZD exchange rate moves by around 20 percent on either side of the average over the course of the cycle i.e. about 40 percent between peak and trough¹³. The Australian dollar – also a “commodity currency” – moves by around 30 percent on the same basis. The periodicity of these exchange rate cycles matches the general economic cycle, which also generally corresponds with the world commodity cycle.

Three other characteristics might be worth noting here. First that the real exchange rate, while fluctuating over a wide range, has been remarkably stable over the past 35 years (see Graph 11). Second, that there is much less fluctuation against the Australian dollar (see Figure 3 of Munro (2004)) – perhaps because they are both responding to the world commodity cycle¹⁴. Thirdly, that since the reforms of the 1980s, the earlier persistent slide of the nominal exchange rate has been halted.

Graph 11: Real exchange rate



Graph 12: AUD and USD exchange rates



Interest rate differentials don't seem to be enough to explain the movements. An interest differential moving typically by around 300 b.p. over the course of the cycle might, if the cycle lasted say four years between peak and trough, explain (at most) an exchange rate swing of 12 percent. To put the same point slightly more formally, the relationship found by Huang (2002) was that 100 b.p. of differential is associated with an exchange rate change of 6 percent, which would imply that the cycle has a much longer periodicity than observed¹⁵.

Nor does the commodity price cycle seem to be an adequate explanation. Certainly, the exchange rate should respond to a change in commodity prices (see Blundell-Wignall et al (1993), and Chen and Rogoff (2005)), but if these are regular (albeit persistent) cycles, rather than permanent shifts, then movement over the course of the cycle should be limited by the arbitrage opportunities based on past fluctuations. This remains the puzzle: there seems to be a fairly regular opportunity to buy cheap and sell dear, making up to 40 percent over the course of one downswing or upswing if the timing is right. Of course there is uncertainty as to the timing of the cycle but perhaps the main constraint on exploiting this is the periodicity of the cycle – the position would have to be held for half a cycle – probably four or five years. Few arbitrageurs can hold a position for that long¹⁶.

Overshooting of this kind might seem to strengthen the case for foreign exchange intervention. Some movement in the exchange rate over the course of the cycle is desirable (to help spill excess demand into net imports, and to smooth inflationary pressures over the cycle). For both these reasons, when we come to look at possible actions below, *tightly* constraining the movement in the exchange rate would be inconsistent with the current approach to monetary policy, but actions to “lop the peaks and fill the troughs” would seem to do little to inhibit the effectiveness of policy, might reduce the danger that a downward overshoot might un-anchor inflation and inflationary expectation, and might reduce the damage to non-commodity exporters (see next section).

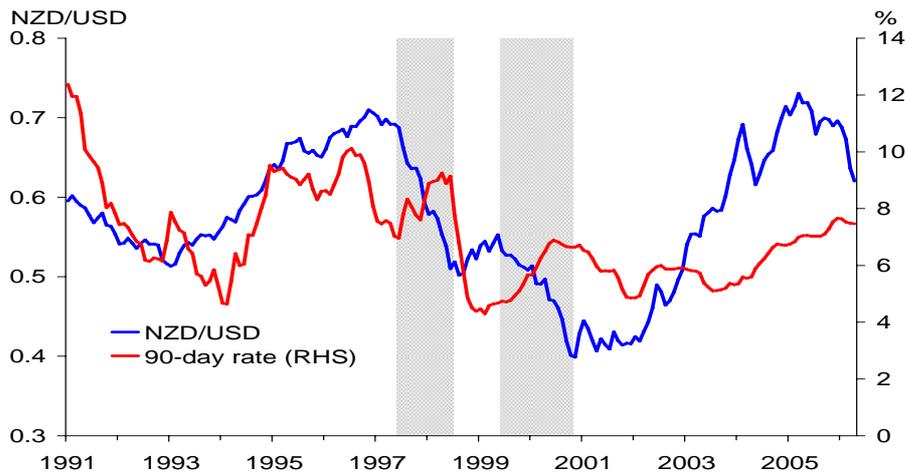
This case for intervention is strengthened if we explore a low-probability high- impact scenario. Nearly 40 percent of the funding for banks' credit expansion comes ultimately from NZD-denominated foreign raisings. These instruments are held by unsophisticated investors (mainly Japanese retail investors) with little knowledge of the NZ economy, attracted by the high running yields (a situation enhanced by the temporary factor of low domestic interest rates in Japan). If, during the downward phase of the NZD, they decide to cover their FX exposure, the adjustment could be substantial. Most of the adjustment is likely to take place in the exchange rate rather than the interest rate, with the new equilibrium reached when there are alternative *non-resident* investors willing to hold the FX exposure, because they are fairly confident that there has been enough exchange rate overshooting to make this worth the risk. We know that there are not many currency arbitrageurs, because the exchange rate moves so widely over the course of the terms-of-trade cycle, so a large overshooting seems possible. It may be that we have already seen a small episode of this. In the 2000-02 period there was a rundown in outstanding Uridashi-type funding from around \$20 billion to

around \$12 billion. This coincided with a downward overshooting of the exchange rate which was not only much larger than can be explained by equations involving interest differentials and commodity prices (see Munro (2005)), but it is the one example in recent experience when the exchange rate did not strengthen in the face of stronger commodity prices.

These funding vulnerabilities have usually been discussed in terms of roll-over and maturities, and given the retail distribution methods for the financial instruments, this may be the most relevant issue. But there is at least the possibility that these investors could change their FX exposure *at any time*, by selling NZD (even if they go on holding the NZD denominated instrument). It has been argued that this sort of funding, in which the foreigners take the FX risk, is inherently safer than other capital flows where the FX risk is carried by New Zealanders (which are characterised as being subject to “original sin” (see Eichengreen and Hausmann (1999)). While this means that foreign investors (rather than New Zealanders) are holding the balance sheet risk if the NZD falls, their actions could potentially be a powerful influence on the exchange rate in the event of a reassessment of New Zealand’s rating. The amounts are now much larger than in 2000 (more than \$50 billion outstanding – or 30 percent of annual nominal GDP or 115 percent of annual export earnings) and if these retail investors shift out of NZD, it may require a big shift in the exchange rate before other non-resident take over the FX exposure from them.

It could be argued that these transactions are being entered into by “consenting adults” who understand the risks and have factored them into their calculations. But in this case the risk is of a “macro-financial” nature, where the individual decisions may be rational and largely risk-protected, but the impact of an adjustment on the economy will be felt more widely than on those involved in the transaction itself. The intermediaries – the NZ banks – feel well protected because their FX position is balanced; the borrowers face only the roll-over risk if they want to continue their mortgages beyond the borrowing period; the ultimate lenders are relaxed either because of their ignorance, or because this is only a small part of a diversified portfolio¹⁷. The risk lies to macro stability. This might come in the form of drastic cutting back of credit because new funding is not available. Or it might come in the form of substantial pressure on inflation during an exchange rate overshoot: the greatest threat to price stability in the targeting era seems to have been in the period of Uridashi maturities in the early 2000s, when the exchange rate weakness pushed up tradable prices in 2000-01 (see Graph 3). It would be inconvenient, to say the least, if exchange rate weakness forced a tightening of interest rates at a time when “headwinds” in credit-provision, a cyclically-weaker housing sector, declining consumer confidence and weaker commodity prices were working together to weaken growth^{18 19}.

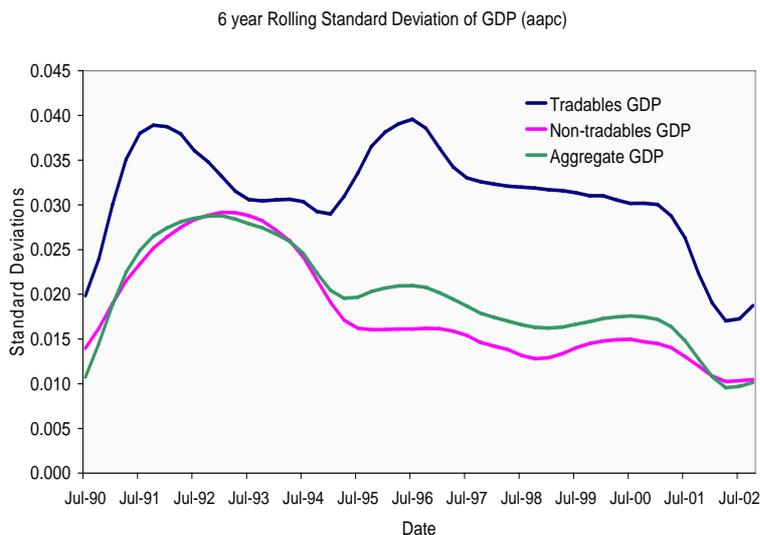
Graph 13: Interest rates defending the exchange rate



(b) Are the tradable and non-tradable sectors excessively disrupted?

All that can be offered here is a rough idea of the magnitudes involved. We know that over the course of the cycle the CAD widens by around 3 percentage point of GDP. But the impact will be felt differently in different parts of the tradable sector. For commodity exporters (45 percent of total exports), the movement of the exchange generally coincides with the commodity cycle, leaving the NZD price of commodity exports stable (see Graph 1). To the extent that the cyclical adjustment in the tradable sector is on the import side, the export sector is unaffected: in the most recent upswing (between 2002 and 2005), imports rose from around 30 percent of GDP to around 40 percent.

Graph 14: 6-year rolling standard deviation of GDP



One measure of the degree of disruption might be given by the variability of output in the two sectors. Graph 14 shows that tradable-sector variability is greater than either non-traded or total (as measured here, by a six-year rolling annual average growth standard deviation). Leaving aside the issue of whether this maps the cycle closely, even if we accept that the

tradable sector is more variable, this could be accounted for by the normal nature of the sector – subject to shocks *other than* the shock administered by exchange rate variability. Greater stability of

the non-traded sector may be an intrinsic, universal characteristic, reflecting the stability of the services and government components of this sector.

Buckle *et al* (2001) address some of these issues, and find that the greater stability in aggregate GDP observed over the past twenty years results from the absence of the policy-making shocks of the 1980s (the “Think Big” era). There are no indications that the sector which might have benefited from more stable NZD prices (the primary sector) is less cyclical than before²⁰.

Graph 15: Export as a percent of GDP



Based on this rather flimsy evidence, we might conclude that generally (i.e. when the exchange rate moves with commodity prices) the primary sector as a whole is not seriously disadvantaged by the large swings in the exchange rate (although this would not be true for every commodity sector).

Even if this is true, it is still possible that these exchange rate swings have a structural impact – discouraging investment (and production) in the tradable sector, through an uncertainty premium. It is even harder to get a handle on this. One characteristic of the New Zealand tradable sector is that it has grown much less, as a share of GDP, than the OECD average. But this may simply be a different intrinsic characteristic of the NZ economy (the contrast between the close integration that has occurred in Europe, compared with the commodity-base comparative advantage of New Zealand). What could be said, however, is that exports/GDP has risen only slowly. The secular slower rise in tradable prices (which is a universal phenomenon) may suggest that there is less producer price-power and more competition in this sector, perhaps discouraging investment.

(c) Should policy aim to operate more directly on the source of the shock?

In two of the last three cycles the housing sector has been an important element of the shock, and to respond to this by squeezing the tradable sector seems to apply the instrument of policy to an area well removed from the source of the problem.

Central bankers are ambivalent about the role of monetary policy in asset booms/bubbles, but the damaging effects of the housing cycle seem at least as clear in New Zealand as in any of the countries where this has occurred (see Hebling 2005). The dominance of housing in household balance sheets, the rise in household debt and the absence of a broad capital-gains tax all suggest that this has been

unhelpful (with much wider impact on demand than simply the building sector) and sets the stage for an uncomfortable adjustment.

As against this, the house-building (as distinct from the house price inflation) is needed to cope with the demographics of a large net migration. On balance, there seems a case for exploring measure that would impinge more directly on sector-specific booms – see below.

(d) Is the CAD “too big”?

The cyclical component the CAD is the “spill” of excess demand, so is a part of the stabilisation mechanism. Less spill means more pressure on domestic resources (including inflationary pressure), so unless measures can be found to smooth domestic demand more effectively, the cyclical variation in the CAD probably has to be accepted.

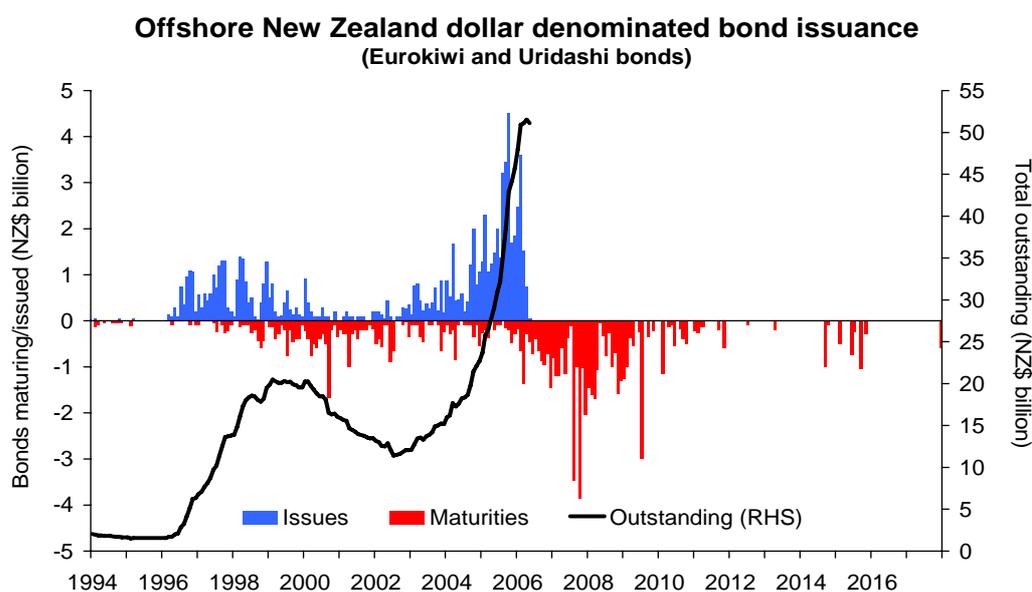
But the *mean* level of the CAD is another matter. Sustainability calculation for CADs are notoriously subjective: common “rules of thumb” such as sustaining current levels of net foreign debt as a percent of GDP can be interpreted differently (see Edwards, this volume)²¹. But if the underlying mean level has shifted from the 3-4 percent of GDP to 5-6 percent, the likelihood that it is unsustainable (in the Herb Stein sense of requiring adjustment) seems high, and the policy question is: “how painful will the adjustment be?” Any correction needs to come largely on the savings side, as there is a generally accepted need for greater capital deepening to raise productivity²².

This isn’t the place to debate whether NZ saving is inadequate, but three points might be made. First, that the provision of a universally available retirement pension seems very likely to distort individual choice in the direction of lower-than-optimal household saving. Second, the housing boom seems to have influenced household saving markedly, and it is not clear that households are correctly assessing the effect of this on their wealth. Third, if the underlying saving were raised (say, through mandatory retirement contributions²³), then the exchange rate would be lower, on average, than currently²⁴. While the peaks of the CAD are likely to get the publicity, shifting the *average* level lower would give an ongoing and sustained different price incentive (and profitability) to the tradable sector.

(e) Vulnerability of financial sector.

One unusual characteristic (although shared by Australia) is that the banks draw so heavily on overseas sources of funding. We noted above that the ultimate suppliers of the funding (typified by Japanese retail investors) may not be well-informed investors, creating at least the potential for them to change their position: their lack of detailed knowledge means that the arrival of a small amount of new information may represent a large increase in their overall understanding, and trigger a change of investment holding.

Graph 16: New Zealand bond issuance offshore



In terms of conventional prudential issues, the banks seem safe enough: they have covered both their FX and interest exposure, and mortgage lending has a low-risk history. The issue is a macro-financial one²⁵: what is the wider effect of any adjustment that the banks might need to make? The main adjustment might be the loss of such an important funding source, and the “headwinds” this might create, as banks reduce the growth in their lending. It is worth noting that the banks cannot compensate for the loss of the FX cover by simply continuing their current USD-denominated foreign borrowing, without the NZD cover: the NZ banks cannot take this exposure for prudential reasons and the existence of foreigners who are ready to take the NZD exposure is fundamental to this type of capital flow.

The issue could be seen this way: the banks themselves have protected their prudential positions by shifting risk elsewhere. In a financially integrated world with large international flows, *some* party to the transaction bears an FX exposure: this risk cannot be removed by hedging, only shifted to another party. Will the risk-takers (the Japanese investors) go on taking this exposure? The NZ household borrowers bear other risks, mainly roll-over risk as they have borrowed shorter than their planned asset-holding period. A macro-financial view would take into account not only the impact of events on the financial intermediaries which are the direct responsibility of the prudential authorities, but the macro implications of the unfolding events if some of these risks came to pass. The case for policy action, bearing on the banks, is motivated not by concern for the short-term prudential health of the banks’ balance sheets, but by concerns to ensure that the banks can continue to play their role as the overwhelmingly-predominant intermediary in the NZ economy.

5. Summary of the issues

We have identified a number of issues. Before seeing whether policy is in a position to address these (and which “arm” of policy might be most suited), we might summarise them:

- When monetary policy is tightened, effective borrowing rates don’t move as much as might be expected, but the exchange rate moves much more.
- Monetary policy does not impinge very strongly or directly on demand shocks (such as a housing boom).
- The banks’ heavy reliance on foreign funding leaves them vulnerable, not to a prudential risk of failure, but to a risk that they would have to sharply alter the growth of their lending.
- The large average CAD suggests the need for adjustment that will involve higher national savings.

6. What might be done with monetary policy?

- (a) The inflation targeting framework.

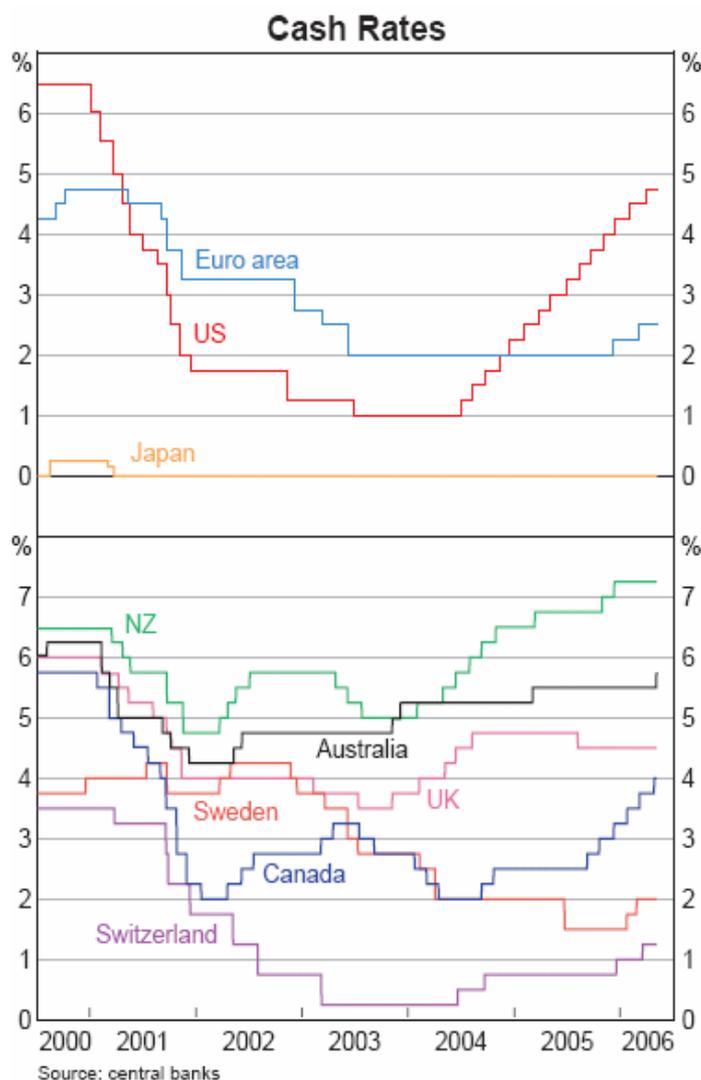
As noted, New Zealand has a variant on current “world best practice” for monetary policy and it would require more serious problems than are currently being experienced to justify a radical departure. Marginal modifications or re-balancing could be explored, but there are no obvious candidates for radical change:

- A central issue in any inflation targeting regime is the degree of flexibility around the inflation target. Sometimes this is specified in terms of a range, but more usefully it is specified in terms of the *time period* in which the target must be maintained – how quickly should the recorded rate return to the specified band. Given the re-specification of the target in September 2002, RBNZ has the freedom to use not only the range, but the specification “over the medium term”. The central issue here is *price expectations*. The relevant time period may change over time. At present, however, the “wobble room” seems to have been pretty fully used, as price expectations (at least as measured by financial markets commentators) have moved up in response to the cyclical pressures on prices.
- The role of asset prices is under debate among central bankers²⁶. New Zealand practice seems to be centrally positioned in the spectrum of opinion (see Bollard (2004)), with recognition that wealth effects will influence demand and hence pressure on prices, but without giving monetary policy the task of pricking asset bubbles.
- The single decision-maker role of the RBNZ Governor was identified by Svensson (2001) as the major departure of the NZ system from usual international best practice. This issue was comprehensively addressed in the RBNZ submission at the time, and there seems little more

to add. For a counter-view, Blinder and Morgan (2000) argue for better decision-making by committees, a finding backed up by the Bank of England’s experimental work reported by Mervin King (2002).

- Measurement of CPI. Asset prices play some role in the new Zealand CPI, because of the way housing costs enter the index. This might not be as “pure” as some would like, but if it helps RBNZ take more account of housing price movements, it seems on balance no bad thing.

Graph 17: Official interest rates



- Is the RBNZ “too active”? In the current cycle, New Zealand moved the OCR up by 225 b.p., which doesn’t seem out of line with international experience (see Graph 17). In any case, if the shock that New Zealand was encountering was larger than those experienced elsewhere, large movements might not be described as “more active”²⁷. Huang (2002) argues that if the implicit Taylor rule used by the Australian and US authorities had been applied to New Zealand, interest rates would have moved much as they did in practice.

- Transparency. RBNZ is more transparent than most central banks, particularly on forecasts. On one aspect there might be room for more public dialogue. The RBNZ (and the Governor) have been active in talking about the housing boom²⁸, but might have been much more boldly explicit in pointing out the dangers to individuals and the economy. A rise in the price of an asset that an owner-occupier will go on using has only a limited wealth effect, properly assessed. Of course, calling the housing cycle is a tricky business and there are issues of

reputation at stake. At least, however, there might be more extensive official factual commentary next time around, and for this the statistical base needs to be developed further.

(b) Foreign exchange intervention.

RBNZ has, since March 2004, had a specific policy of being ready to intervene in the foreign exchange market to “trim the peaks and troughs of the exchange rate cycle”. The circumstances in which this may occur have been set out²⁹. It is envisaged that these actions will be “probably rare” and no intervention of this type has yet occurred. In routine practice the main constraint may be that, even if the exchange rate movement is judged to be excessive, intervention may be inconsistent with the then-current stance of policy. For example, even if it had been felt that the appreciation of the NZD was excessive in the second half of 2005, the OCR setting was restrictive, and foreign exchange intervention might have been seen as inconsistent³⁰.

This possibility of intervention seems a valuable addition to the policy arsenal. The RBNZ has described it as “another monetary policy tool”, in addition to the setting of the OCR. Like all tools, it has to be used with discretion, but the hurdles that have been put in front of its use, and the historical record, may inhibit its use. This would be a pity, as the Australian experience suggests that it is an instrument with more opportunity for beneficial use than is implied by RBNZ commentary³¹. If markets are working well and delivering the correct price signals, there is no case for attempting to change this outcome. But the evidence of excessive movements and unexploited arbitrage opportunities looks to be quite strong. The “alternative tool” argument is particularly strong if the currency is falling sharply during the downward phase of the cycle. In the exchange rate falls of 1997/8 and 1990/91, interest rates were raised (c 200bp) (see Graph 13). If the exchange rate falls sharply during the impending weaker phase of the cycle, there may be opportunity to use the intervention instrument rather than the OCR³². The power of commentary on the exchange rate, used sparingly, again should not be under-rated.

We have discussed the low-probability high-impact scenario that New Zealand’s ability to attract large NZD-denominated foreign inflows might change sharply. The issue is not whether NZ would be able to borrow internationally: the issue is whether there might be moments when foreigners who have taken a currency exposure change their minds. We could explore the quantities of intervention that might offset this (see Gordon (2005)), but this suggests that reserve holding is the key, whereas the main issue may be preparing the decision-making mind-set. Substantial intervention might run reserves down, but the FX borrowing capacity of the New Zealand Government (and the RBNZ) is greater than any likely requirement.

If foreigners are reluctant to hold NZD exposure, one response would be to encourage more New Zealanders to hold FX exposure³³. Arguments supporting this are:

- a. Borrowing in NZD is more expensive than borrowing in USD. New Zealand interest rates, along the yield curve, are routinely significantly higher than in Australia or the USA.
- b. New Zealanders know more about NZD than others, and are therefore more likely to be stable position-holders or (better still) counter-cyclical arbitrageurs.

This might include a readiness on the part of the Government to switch currency exposure of its own debt.

- (c) Instruments that might restore the potency of interest rates in impinging more directly on interest-sensitive sectors.

The weakness of monetary policy stems from the ability of mortgage borrowers to shield themselves from OCR increases by going further out on the yield curve. So there are attractions to the mortgage interest levy explored in the Supplementary Stabilisation Instruments (SSI) Paper (section 3.6) (RBNZ and NZ Treasury (2006)). It is described as “a wedge...established between the interest rate paid by domestic borrowers and those available to foreign savers”³⁴. In the SSI Paper, this is presented as a way of achieving the same degree of policy restraint with less effect on the exchange rate, but it might also be presented as a method of restoring some of the power of monetary policy to affect the housing cycle. Perhaps the main attraction (as noted in the SSI Paper) is that it is a price-based mechanism. This point might be strengthened by observing that it would seem to be doing what the market is failing to do –incorporating the implication of the OCR into the whole interest rate structure. For those who see this as interference in the workings of the market, it might be noted that such a levy would just do what monetary policy routinely does – shift the rate of interest away from its “natural” (in a Wiksellian sense) rate.

The SSI Paper is on balance against this idea, largely because of administrative problems, the need for discretionary decisions, and because it is seen as a “significant departure from the current approach to monetary policy”. The argument against discretionary action, and the difficulty of recognising booms in advance, could be addressed if the levy were to be in place continuously, with the rate set by a mechanical rule. It could be set at a level to ensure that the actual borrowing rates further out on the yield curve fully reflect the current *intention* of policy. When the RBNZ foresees that it will maintain the OCR at current rates for longer than the market has built into the yield curve (as is the case at present), the levy could be set to correct what could legitimately be seen as a market imperfection. If this is too complex, it could be set at a rate based on the slope of the yield curve, with the tax imposed whenever the yield curve is negative, at a rate which would ensure that borrowing costs further out on the yield curve rise at around the same rate as the OCR.

A levy seems the simplest approach, but if there are legislative problems with this, it might be more feasible to use a mandatory deposit requirement, as used by a number of countries (Australia in the 1970s, Chile in the 1980-90s), which has the same effect of putting a wedge between the foreign and domestic interest rates. The difficulties of this (e.g. disintermediation) are explored in the SSI Paper. The core of the suggestion made here, compared with the SSI proposal, is to replace the discretionary element with a rule.

7. What might be done with prudential policy?

There are two constraints if prudential policy is to be used to help macro-issues. First, the Act requires that measures are primarily for prudential objectives³⁵ – but this is broad enough to include “promoting the maintenance of a sound and efficient financial system”. Secondly, administrative difficulties arise if prudential rules change over the course of the cycle in a discretionary way. The additional practical current issue is that banks are grappling with the complexities of Basle II and will strongly resist any additional measures.

That said, two points might be made:

- There is a growing awareness in the international debate of the importance of “macro-financial” issues (see Borio and White (2004), and Borio and Lowe (2002), and the papers by White cited in the bibliography). There is little doubt that excessive growth in housing credit has significantly exacerbated the boom in a number of countries (see BIS Papers No 21 April 2005), and this problem falls uncomfortably between the objectives of monetary policy (CPI price stability) and prudential policy (ensuring systemic financial stability).
- There is an inherent pro-cyclicality in the financial sector: the greatest prudential risks are incurred in the mature phase of the upswing.

The issue is to find a way of addressing these concerns with a *prudential* instrument. The key here might be to achieve a general acceptance that the heavy dependence on foreign funding presents a clear problem for the banks and their customers. The scenarios run in the course of the FSAP (IMF 2004) took a different tack – they explored the possibility that maintaining this funding might require a substantial rise in borrowing costs, which might put pressure on borrowers. The main concern in the FSAP was the health of the banks, rather than any macro-financial concerns. The low-probability scenario envisaged here is different – where non-residents are not prepared to supply the NZD-denominated leg of the funding in sufficient quantity to maintain the outstanding loans and at the same time to provide a minimal expansion of intermediation. To the extent that prudential requirements cause the banks to do things they would not otherwise do, this needs to be justified in terms of some distortion or some externality, and the externality in this case is that the banks do not suffer the full

effects of a sharp cyclical reduction in their intermediation role – extra costs are borne by the actual and potential borrowers. Without specific contingency plans in place, the RBNZ prudential authorities would be justified in limiting the extent of the foreign funding and taking measures to “lop the top” of the housing boom driving the foreign borrowing.

This could be done in a variety of ways. Policy might focus on the funding side by imposing direct limits on each bank’s access to foreign funding, or might make this funding more expensive through taxes, or by additional capital (or liquidity) requirements against this more volatile form of funding. Or policy might focus on the mortgage lending volume, imposing additional capital requirements or a Loan/Valuation Ratio (LVR) against this type of lending.

Two housing-lending-specific measures are explored in the SSI Paper. The first suggestion is to link bank capital more closely with risk factors, specifically acknowledging that these risks rise with an asset bubble. The second possibility explored in the SSI Paper is to make discretionary changes in a comprehensive LVR. The SSI Paper acknowledges that discretionary measures are likely to be tardy and inadequate. Even a fixed (non-discretionary) LVR would, however, help as it is only in the last phase of the cyclical expansion that LVRs tend to push into new territory³⁶. In any case, such measures can be made both variable and non-discretionary, based on a mechanical calculation (similarly to the approach to the mortgage levy, above). What might be the basis of such a mechanical rule? If the measures are directed at the mortgage lending side of banks’ balance sheets, the rule should reflect the abnormal rise in the asset price which is securing the loan (as this is the element which is most at risk if asset prices show mean reversion over the course of the cycle). Goodhart (2005) suggests that capital requirements should be based on the *rise* in housing and property prices, compared with the underlying inflation. Analogous logic would suggest that LVR requirements should be based on an *average* price level of the asset over, say, the previous five years, rather than the current valuation.

The case against housing-specific measures is that, so far at least, the bad-debt experience is not adverse. One counter-argument is that investment-housing has become more important, and that the repayment experience on this is yet to be tested³⁷. But the more fundamental point is that this is too narrow a view of prudential risk. The measures discussed here are macro-prudential, designed to ensure that the banks remain efficient financial intermediaries throughout the cycle, and in the face of low-probability events such as a “sudden stop” of foreign funding sources. Constraining their activities at the height of the asset cycle will improve their ability to perform their role over the full course of the cycle.

A modest first step here might be to collect much more comprehensive data (there are, for example, no data which separately identify investment housing loans), including details of LVRs and debt-service/income ratios, and give these data widespread and critical public coverage and commentary.

The process of collection, in itself, is a signal to the banks of official concern. A second modest step would be to require insurance for loans with LVR above 80% (which is encouraged in Australia by the application of a higher capital requirement if this insurance is not in place). Given that bank lending margins have *fallen* during the upswing of the housing cycle, it may be helpful to undertake a vigorous dialogue with the banks on whether their dynamic provisioning over the course of the cycle is, in fact, reflecting the indisputable fact that loans given in the mature stage of the cycle are more risky than average bad-debt experience would indicate³⁸. Whatever the appropriate risk discounts *on average* over the cycle, they should be significantly higher in the mature phase of the boom. A modest further step would be to ask each of the banks to set out its contingency plan in the event that the FX cover they need for their foreign funding is not available.

Consideration might be given to two further measures on the funding side. First, to impose a limit on the share of foreign funding in any financial institution's balance sheet (on the grounds that this is potentially more volatile), together with a liquidity ratio that would require institutions to keep a modest percentage of the borrowed funds in a liquid form. Second, to impose a more substantial withholding tax on these funds. At present such funds pay only 2 percent (around 10 b.p.). Current arrangements seem to give foreign providers of funds a substantial tax advantage compared with New Zealand sources of funds (e.g. depositors), who presumably bear the normal tax rates. It goes without saying that the timing of introduction of measures like this needs careful consideration.

8. Other possibilities

Greater integration (with Australia?)

Note the greater convergence of AUD and NZD (Graph 12). In some ways it is surprising that interest rates and the exchange rate show the variation that they do, in two economies so well integrated internationally (including, unusually by international standards, a high degree of labour mobility). New Zealand pays a significant premium for borrowing overseas in its own currency. There is an interesting contrast with, say, Switzerland which similarly retains full sovereignty and its own currency, but whose interest rates are closely linked to the European Community, as is the exchange rate. While only 20 percent of New Zealand imports come from Australia, the degree of integration in trade and finance is very high (85% of New Zealand banking is done in Australian subsidiaries/branches). Greater integration would provide more protection against the sort of "sudden-stop" capital-flow changes discussed above, as Australian investors (with their greater knowledge of New Zealand) might be readier to fill the gap without the exchange rate moving so far.

That said, full integration seems hard to achieve in practice. Even in the banking area, with substantial commonality of institutions and common laws, the regulatory approach (particularly in relation to crisis resolution) seems fundamentally different. Similarly, differences in taxation treatment seem,

unfortunately, to stand firmly in the way of close integration. Governments on both sides of the Tasman put high priority on a continuation of the integration process, but seamless integration still seems a long way off.

9. Conclusion

New Zealand's admirably high level of economic debate, its vigorous and open institutions, and the quality of the bureaucracy ensure that foreigners will be hard-pressed to make much of a contribution to the policy debate. Policy has, of course, evolved and will continue to do so. The tightly specified approach to policy, with each element given a narrowly defined objective, served well for a time, and since then the sharp edges have been softened. What an outsider might be able to offer is some encouragement to complete this unfinished process, to achieve a pragmatic mix in which the arms of policy reinforce each other to tackle problems which fall outside a narrowly defined task or fall uncomfortably between the remits of the different arms of policy. So monetary policy looks beyond price stability, prudential policy looks beyond the narrow task of keeping the banks solvent, fiscal policy looks beyond the immediate needs of the government finances, and each "arm" of policy asks what it might do to address issues such as the swings of the housing cycle, the fluctuating price signal from the exchange rate, and the adjustment issues presented by the current account deficit.

In defining their role, central banks need to assert how subtle (some might say feeble) is their instrument and how dependent it is on reputation and psychology. Price expectations have to be kept stable without leaning too hard on activity. The aim is to avoid having to do what Volcker did in the US in 1979-82, necessary though that was in the circumstances. How much more difficult for a small internationally integrated economy, where the ability to influence the central bank's usual instrument – the interest rate – is greatly circumscribed by foreign capital flows. It goes without saying that central banks need to go on maintaining the primacy of the price stability objective. But they need to go beyond this, with the aim of pre-emptively minimising imbalances which sooner or later need a period of painful slow growth to resolve. Some measures are within RBNZ's current mandate (more active FX intervention). Some are in the RBNZ remit, but require some widening of the thinking about prudential policy, so that it covers macro-financial issues. Other ideas explored here would require a high level of inter-institutional co-operation, particularly with the Treasury. This forum provides an opportunity to take this forward.

NOTES

¹ I am very grateful for the willing help from RBNZ and NZ Treasury staff, and comments and suggestions from others. This paper was originally presented at a Reserve Bank of New Zealand/New Zealand Treasury workshop, Testing Stabilisation Policy Limits in a Small Open Economy, held in Wellington on 12 June 2006. The full proceedings of the workshop are available at <http://www.treasury.govt.nz/testingstabilisationpolicy/> and at <http://www.rbnz.govt.nz/research/workshops/12jun06/2837468.html>.

² i.e. New Zealand has escaped from the Feldstein/Horioka constraint.

³ See The dream rebalance? Stephen Toplis (Bank of New Zealand) April 2006.

⁴ See Cotis and Coppel (2005)

⁵ This evolution was formalised in the introduction of Clause 4(c) (later Clause 4(b)) in 1999 to the Policy Targets Agreement as an explicit recognition that unnecessary volatility in output, interest rates and the exchange rate is detrimental to economic welfare, and may have adverse consequences for economic growth. See also Bollard and Karagedikli (2005), and RBNZ, The evolution of monetary policy implementation.

⁶ Which might be seen as home-grown, but might be affected by NZ's relative cyclical position influencing demographics.

⁷ This might have been reinforced by the prevalence at the time of single-seller desks and producer boards which aimed to smooth farmer incomes.

⁸ This effect on the exchange rate will be stronger, the longer the rise in the short-term policy rate is expected to last.

⁹ One commentator described the process as: "Sacking the All Blacks' coach when the New Zealand cricket team loses a match".

¹⁰ See Chen and Rogoff (2003).

¹¹ 2001 had the unusual combination of a weaker domestic economy, strong export demand and a weaker exchange rate which combined to give a powerful boost to net exports.

¹² The contribution which the exchange rate makes to the "spill" depends on import elasticity and the price pass-through (this is probably getting less over time (see Hampton (2001), so the exchange rate might have to move further), and casual observation suggests that price relativities produced by the exchange rate change are not doing much of the work.

¹³ The IMF measures exchange rate movements in terms of persistence and standard deviations (see IMF Special Issues 2005), but the issue here is best captured in a more intuitive way – the height of the peaks and troughs.

¹⁴ Trade between the two nations does not appear to be enough to make this a strong anchor of the cross rate – Australia's share of New Zealand imports is only around 20 percent.

¹⁵ This relationship applies to the period since the OCR was introduced in 1999. Before that, the relationship seems even smaller – 100bp being associated with a 2-3 percent change in the exchange rate (see Zettelmeyer (2000)).

¹⁶ For a discussion of the same phenomenon in Australia, see Gruen and Kortian (1996).

¹⁷ Neither of these factors would prevent them from cutting their exposure if the exchange rate moves unexpectedly.

¹⁸ Nor could there be strong reliance that the weaker NZD would quickly strengthen net exports. This is reflected in changes made to the RBNZ model FPS: "the impact on the economy is now smaller and slower. This change was made in response to the surprisingly slow impact the weak New Zealand dollar had on New Zealand activity between 1998 and 2000." RBNZ Forecast and Policy System August 2004.

¹⁹ The RBNZ might "look through" the pressure on inflation and resist raising rates, but it is worth noting that rates were raised during the last two period of exchange rate weakness.

²⁰ Hours worked in the traded sector (and in the manufacturing component of this sector) don't seem all that sensitive to the cycle.

²¹ To give an example of this – with nominal GDP growth of 5 percent, the CAD would have to be held to 3.8 % of GDP to keep the net foreign debt at its current level, which (with investment income around minus 6 percent of GDP) implies a positive balance of goods and services of more than 2 percent of GDP, compared with minus 2 in 2005.

²² A fall in housing investment has some potential to contribute to the re-balancing.

²³ A mandatory retirement contribution seems to have given added impetus to the development of a deeper funds management sector in Australia, and a deeper body of managed investment funds might help financial stability (c.f. Greenspan's "spare tire").

²⁴ This is true in the short and medium term, although in the long run, cumulated changes in national wealth may alter this.

²⁵ See White, Making macroprudential concerns operational (2004).

²⁶ See White (2006) and references in this paper.

²⁷ Perhaps the only episode that might be described as overly active is the reduction in rates in 2003, reversed shortly afterwards.

²⁸ Bollard addressed the issue, but in a relatively low-key way, in *What's happening to the property sector?* (2004).

²⁹ “Specifically, before intervening the Bank will need to be satisfied that all of the following criteria are met:

- the exchange rate must be exceptionally high or low;
- the exchange rate must be unjustified by economic fundamentals;
- intervention must be consistent with the PTA; and
- conditions in markets must be opportune and allow intervention a reasonable chance of success.” (see Eckhold and Hunt (2005)). One important issue not dealt with in this article is whether the profits on intervention at one phase of the exchange rate cycle are distributed to the government. As these “profits” may be needed to offset against the balance sheet revaluation losses that occur when a long FX position is held during an appreciation phase of the NZD, an accounting treatment that allows some revaluation reserves would be desirable.

³⁰ Not because of any concerns that this would have been unsterilised intervention – intervention is always sterilised, in the sense that liquidity operation will always be carried out to leave system liquidity at the appropriate level.

³¹ See Becker and Sinclair (2004).

³² West (2003) suggests that large movements of the interest rate are required to shift the exchange rate appreciably.

³³ There seems to be a mind-set that prefers NZD-denominated foreign borrowing – a pernicious influence of the “original sin” argument.

³⁴ It is presented in the SSI Paper as impinging on both borrowers and savers, but it seems more likely that foreign borrowing rates are set internationally, and the effect would be predominantly on domestic borrowers. The SSI Paper holds out the possibility that it could be effective without pushing up borrowing rates much, but unless rates go up enough to reduce borrowing, the capital inflow will be much the same, and the pressure on the exchange rate much the same.

³⁵ This may be reflected also in the philosophical approach of many policy makers, who see advantage in keeping the elements of policy making separated and “pure”.

³⁶ For a description of the Australian experience, see *Recent developments in low deposit loans*, RBA Bulletin October 2003, which indicates that 100% LVRs are three times as likely to default as 80% LVRs, and that 2% of high LVR loans are “past due” compared with 0.7 % of all securities loans. High LVR loans are, however, a small proportion of total housing loans – only 2% have LVRs of 95-100% and ½% are over 100%.

³⁷ International experience suggests that some borrowers do walk away from mortgages, although this proportion is small.

³⁸ BIS research suggests that the loan-provisioning experience is concentrated in the downswing of the cycle, whereas it might be more logically concentrated in the upswing when the loans are taken on in overly-optimistic circumstances. See Table 1 of *The importance of property markets for monetary policy and financial stability*, Haibin Zhu, BIS Papers 21 April 2005. See also T. Helbling, *Housing price bubbles*, BIS Papers 21 April 2005.

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