

# The long-term level “misalignment” of the exchange rate: Some perspectives on causes and consequences

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## Abstract

Despite the huge, decades-long, and continuing deterioration in New Zealand’s relative productivity, the real exchange rate has not, on average, fallen. The persistently (and perhaps increasingly) “overvalued” exchange rate – itself a symptom of imbalances across the economy – is central to understanding why, despite the far-reaching reforms of the late 1980s and early 1990s, the large gap between New Zealand’s standard of living and those in other advanced economies has not even begun to close. The exchange rate hasn’t adjusted largely because average New Zealand real interest rates have, surprisingly, remained so much above those abroad. That gap, in turn, appears to reflect New Zealand’s own choices (including policy ones) which mean that at any particular interest rate (the “world interest rate”) there is a bigger difference here between desired investment spending and the available national savings than is typical abroad. Higher New Zealand real interest rates have simply been the rationing device, reconciling the conflicting desires. There is little evidence that our policy frameworks adversely affect savings more than those in other countries, and little sign that house prices can explain much, if anything, about New Zealand longer-term savings behaviour. By contrast, population growth seems to have been much more important than has previously been recognised. New Zealand’s population growth slowed sharply in the 1970s and 1980s, as more New Zealanders pursued better opportunities abroad. But the marked liberalisation in immigration policy in late 1980s and early 1990s resulted in New Zealand once again experiencing materially above-average population growth. In combination, the substantial real domestic resources required to accommodate a fast-growing population and the quite modest savings of New Zealanders appears to have crowded out (through higher interest rates and a high average real exchange rate) other productive investment. Materially higher productive investment, especially in the tradables sector, was probably required if the big challenge of catching up again with the incomes of other advanced countries, and reversing the decline in New Zealand’s relative productivity performance, was to be met. If the rate of population growth over the last couple of decades had been materially lower, that would have resulted in lower average interest rates and a much lower real exchange rate. And New Zealanders’ long-term income prospects would, most probably, have been much improved.

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## Introduction

Earlier papers presented to this forum focused on the considerable short-term volatility and the large multi-year swings (or “cycles”) in the New Zealand’s exchange rate. The big swings in the exchange rate can usually be broadly explained by fluctuations in the underlying macroeconomic factors that influence actual and expected returns on New Zealand dollar assets relative to those in other countries.

This paper takes a rather longer-term and wider-ranging perspective on the New Zealand story. Some of it is quite exploratory in nature, floating ideas (and, hence, providing plenty of material for future research to examine in greater depth)<sup>2</sup>. It is organised around three key (unusual and unexpected) stylised facts: three “failures”, as it were, of New Zealand’s economic performance:

- The “failure” of New Zealand incomes to rise relative to those of other advanced countries in the decades since the reforms of the mid-late 1980s and early 1990s (indeed, on some measures the gap has continued to widen);
- The long-term “failure” of the real exchange rate to adjust durably downwards to reflect the large and sustained decline in New Zealand incomes and productivity relative to those elsewhere in the advanced world;
- The “failure” of New Zealand interest rates to converge to those in the rest of the advanced world since the achievement of low and stable inflation in the early 1990s.

The central claim of the paper is that these “failures” are connected. Had interest rates settled at around typical advanced economy levels, our exchange rate would have fluctuated around a much lower average level, allowing better-balanced, stronger and more sustainable growth in per capita incomes and productivity. The resulting exchange rate might even have been less volatile. Our interest rates have probably been so surprisingly and persistently high, on average, because of the savings and investment choices and preferences made in New Zealand and the pressure those choices placed on scarce domestic resources.

In the second half of the paper, I review many of the possible stories that have been advanced as explanations for these imbalances – that is, for the pattern of savings and investment demand that we have seen over recent decades. I suggest that the interaction between New Zealanders’ modest rate of savings and the investment needs of a relatively rapid, primarily policy-induced, rate of population growth is likely to have been (and to remain today) a major element in explaining the “three failures”.

## Economic underperformance

New Zealand’s economy was one of the worse performing of the twentieth century. Angus Maddison, the great historian of global macroeconomic trends, estimated that in 1913, on the eve of World War One, per capita incomes in New Zealand were among the two or three highest in the world, rivalling those in the United States and Australia<sup>3</sup>. A country’s per capita income rank 100 years ago is a reasonable predictor of where that country ranks today: for the most part, countries that were very rich then still are today<sup>4</sup>. But New Zealand is one of

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<sup>2</sup> A recent author on a quite different topic noted “Entire books have been written on virtually every issue I touch upon, which means that in the following pages I gambol blithely through minefields.” I identify with that, even though in the case of New Zealand’s modern economic history all too few books have been written. Each page of this paper could easily warrant forty more.

<sup>3</sup> Maddison’s data are available at <http://www.ggdc.net/maddison/oriindex.htm>

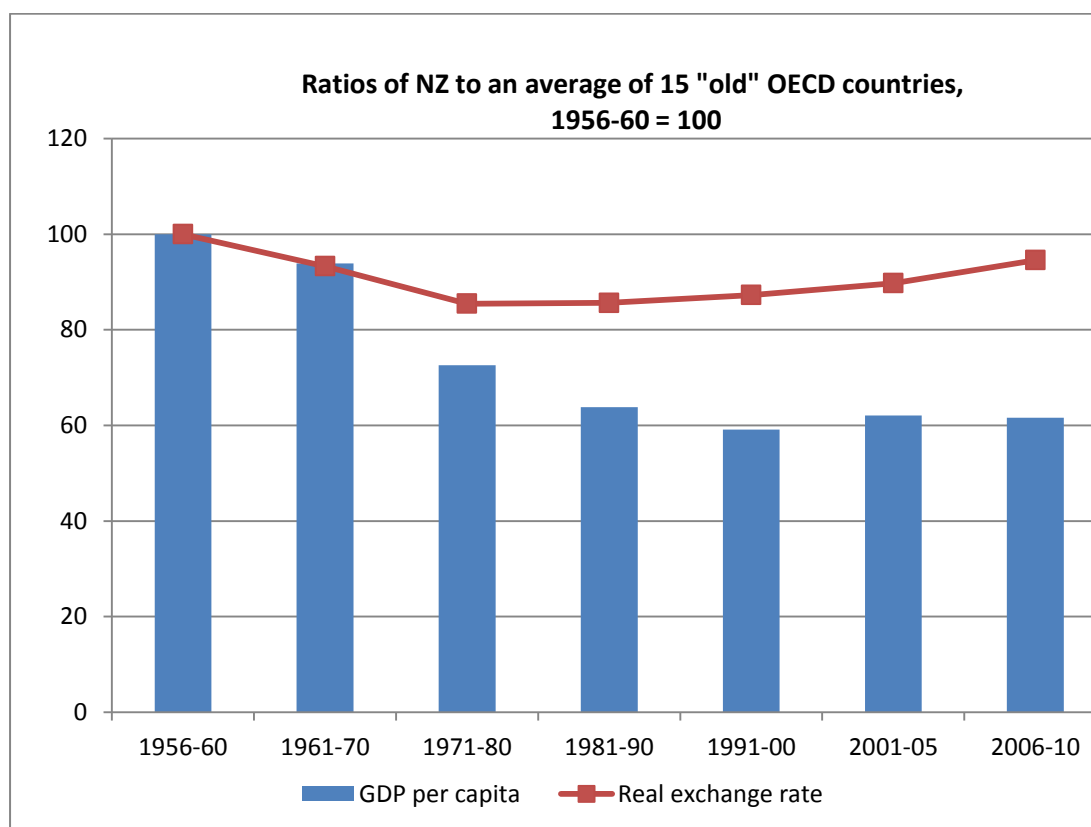
<sup>4</sup> Ed Glaeser’s version of a chart illustrating this relationship is at <http://economix.blogs.nytimes.com/2009/10/06/what-happened-to-argentina/>

the exceptions. Of the countries that had relatively advanced economies in 1913, only Uruguay, Romania, and Argentina experienced greater relative falls than New Zealand. Unlike them, New Zealand has been a stable democratic country with a functioning market economy and the rule of law over the entire century.

Even in 1950, New Zealand incomes were still among the very highest in the world. Now they are not.

The decline in New Zealand’s **real** GDP per capita, relative to other advanced countries, is fairly well-recognised. That should have had implications for the real exchange rate. But, as various observers have noted, in thinking about the “appropriate” exchange rate developments in the terms of trade (the prices of what we make here and sell abroad relative to the prices of the goods and services we import) also have to be taken into account. Figure 1 does that<sup>5</sup>.

**Figure 1 Relative GDP per capita and relative real exchange rates**



Data note: Nominal GDP per capita, converted at PPP exchange rates, and BIS narrow effective exchange rate indices. Prior to 1963, estimated real exchange rates calculated using OECD nominal exchange rate and CPI inflation data.

Source: Penn World Tables, BIS, OECD, author’s calculations

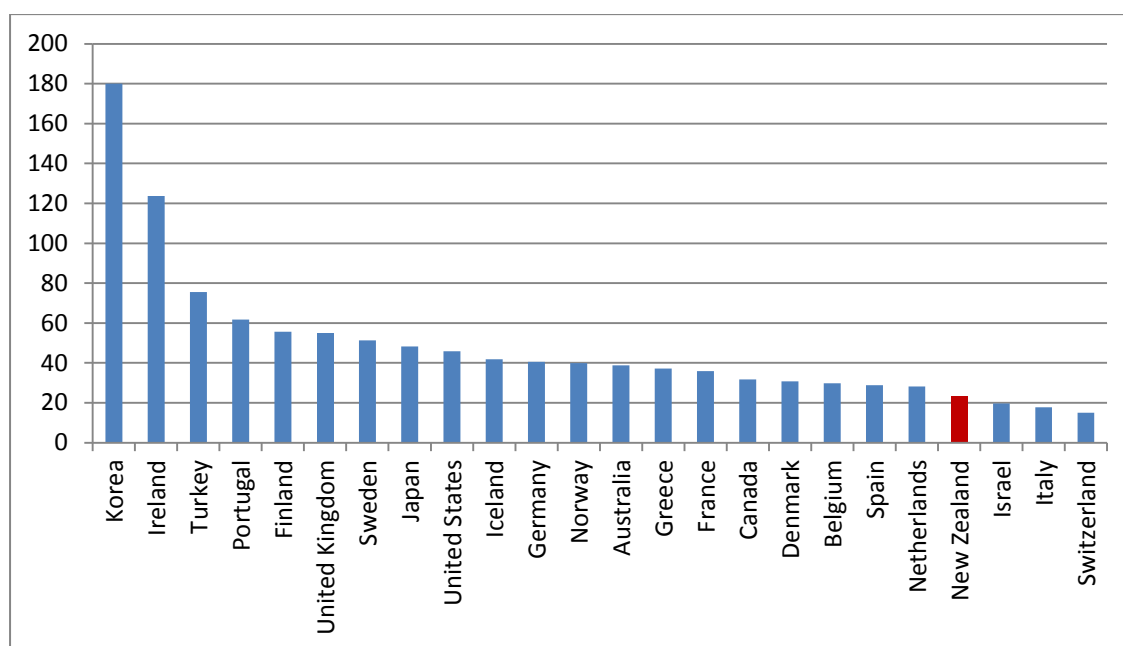
<sup>5</sup> The chart starts from 1956 because hours worked data are available for these 16 countries from around then. The picture for GDP per hour worked (in the Appendix) is broadly similar to that for per capita income, but the New Zealand decline is starker: a relative decline of almost 60 per cent. Hours worked per capita have increased materially in New Zealand relative to the average of these 15 other advanced economies, somewhat limiting the adverse implications for per capita incomes of the sharp deterioration in New Zealand’s relative productivity.

Figure 1 compares New Zealand's average per capita incomes against the simple average of the per capita incomes in a representative group of 15 other member countries of the OECD which were (a) already advanced market economies in the 1950s, and (b) for which data are available for the entire period<sup>6</sup>.

Figure 1 is constructed using **nominal** GDP, converted at purchasing power parity exchange rates. In other words, the data capture both changes in the volume of output per person, and the changes in average New Zealand incomes arising directly from changes in the terms of trade (the direct effect of a rise in the terms of trade is to lift nominal GDP – and real purchasing power – but not to lift real GDP, the volume of output produced in New Zealand).

With New Zealand incomes and those of the peer group each set equal to 100 in 1956-60, it is easy to see the sharp relative decline in New Zealand incomes over the subsequent 30 years. From the 1960s to the late 1980s our real incomes (and real productivity) and fell relative to those abroad and our terms of trade also fell. Since the late 1980s, and especially in the last half dozen years, New Zealand's terms of trade have been materially higher (though no higher than they were in the 1950s). So the failure of our incomes to catch up again, as shown in Figure 1, reflects both a recent improvement in the terms of trade and a further relative decline in real output per capita (and, in particular, output per hour).

**Figure 2 Cumulative growth in real GDP per hour worked (%): 1990 to 2011**



Source: OECD

It was widely-expected that the far-reaching economic reforms of the mid-late 1980s and the early 1990s would substantially reverse New Zealand's decades-long economic decline<sup>7</sup>. At

<sup>6</sup> The other 15 countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States.

<sup>7</sup> This claim has been controversial in some circles. However, the OECD Economic Survey of New Zealand, published in February 1991 (drafts of which were scrutinised intensely by New Zealand officials and, where required, debated line by line with the OECD) begins by noting (page 11) that "the principal goal of the programme of micro and macroeconomic reforms was to reverse the decline in New Zealand's economic performance *vis-à-vis* other OECD countries". More popularly, I have a copy of a newspaper photo from the late 1980s in which the then Minister of Finance, Hon David Caygill, is shown pointing to a

the time, international agencies such as the OECD regarded the reforms as putting New Zealand's economic policy at the leading edge among advanced economies in many areas. To this day, the OECD puzzles over why, having followed the sorts of prescriptions usually proposed by the OECD, New Zealand has seen no sustained improvement in its relative productivity performance. Others have described this as New Zealand's 'productivity paradox'. Even today, when many policy settings are no longer quite at the leading edge, New Zealand policy frameworks score well on many dimensions - perhaps best known is the number 3 rank in the World Bank's ease of doing business index.

Income and productivity gaps opened up over decades and have shown no sign of reversing. Given that sustained deterioration, we might have expected to see a large decline in New Zealand's real exchange rate<sup>89</sup> - perhaps averaging, over a long period, 25-40 per cent lower than the levels around which it has actually fluctuated over the last couple of decades. A decline in the real exchange rate raises the relative price of consumption, and helps adjust to the decline in our incomes relative to those in other countries. But it also enables New Zealand firms to compensate for productivity disadvantage, enabling them to maintain or re-establish competitiveness in global markets. If such a decline in the real exchange rate had occurred, more new entrants would have been able to take advantage of the liberalisation of the economy and of key product and factor markets, operating competitively from New Zealand and selling into world markets. Once policy frameworks had been put on a sound basis, which had been done by the early 1990s, a substantially lower average real exchange rate might, in turn, have been expected to have reversed much of the relative loss of productivity and incomes. Indeed, that appears to have been the expectation of key advisers and policymakers at the time of the 1984 devaluation.

As Figure 1 shows, no such sustained fall occurred. Instead, on this measure the level of the real exchange rate was not so very different at the end of the period than it was in the late 1950s or early 1960s (and is higher still today)<sup>10</sup>. But it is, in some respects, a tale of two halves. Until the early 1980s it appears that the real exchange rate was, broadly, trending downwards, as one might have expected (and despite such obstacles as a high inflation rate and the typical lags in adjusting the fixed nominal exchange rate). There were substantial fluctuations in the real exchange rate even during the pre-float era, and there is lots of "noise" in any measures of the real exchange rate, but the downward direction was reasonably clear.

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stylised chart illustrating that New Zealanders should expect such a reversal of fortunes to follow from the reforms.

<sup>8</sup> There is a variety of ways of characterising this (Balassa-Samuelson) hypothesis. The simple approach adopted here, constrained by the availability of suitable and comparable long-term data, using aggregate income or productivity differentials is in line with that adopted in, for example, Chong, Jorda and Taylor (2010). At a slightly more popular level, poorer countries typically tend to have lower price levels. A regular observation from visitors is how expensive New Zealand is relative to many higher income advanced countries.

<sup>9</sup> Singapore's experience is at the other extreme. Despite a huge improvement in relative productivity over the last 50 years there has been no overall appreciation in the Singaporean real exchange rate (see the chart in the graphical appendix). A consequence of this sustained undervaluation (typically the largest in the world on the Cline-Williamson methodology), which has the effect of unduly boosting the relative price of consumption, is current account surpluses averaging around 17 per cent of GDP for the past 20 years.

<sup>10</sup> The measure used here takes the BIS real exchange rate index for New Zealand, divided by the average of the BIS real exchange rates for the group of 15 other advanced countries (in each case, estimated for the first few, very stable, years). The results are very similar, in aggregate, if just the New Zealand real exchange rate is used. However, for bilateral comparisons (especially New Zealand against Australia, both prone to similar exchange rate cycles) it is more appropriate to take a ratio of the respective real exchange rates. The bilateral analysis against four other Anglo countries is shown in the graphical appendix.

Over the period since the mid-1980s, and despite the recovery in the terms of trade, relative incomes have not improved, but the average level of the real exchange rate has risen. That has left a large gap between New Zealand's disappointing economic performance and its real exchange rate.

Perhaps unsurprisingly, then, New Zealand is one of the few advanced economies in which the ratio of exports to GDP has gone sideways in recent decades. Countries that have experienced strong sustained growth, converging on the incomes of advanced countries, have typically experienced rapid export growth, relative to GDP, at least in the transition period<sup>11</sup>. Domestic policy, and competitive open domestic markets, matter a lot, but convergence is hard. The sort of strong sustained growth that helps close the income and productivity gaps typically requires a strongly growing export sector as well - in combination they help generate the much higher levels of multi-factor productivity that ultimately characterise successful economies. In the longer-run, strong growth in the production of internationally competitive goods and services supports higher sustained domestic consumption and better living standards across the community.

But why has the gap between the real exchange rate and New Zealand's relative economic performance opened up and proved, on average, so persistent?

### Interest rate differentials

New Zealand interest rates are currently at the lowest levels for decades, but they are still high relative to those in other advanced economies (and, indeed, many emerging countries). Our interest rates have now been high relative to those in other countries for a long time.

But it wasn't always so. Homer's (1977, p569) *A History of Interest Rates* reports decennial averages of long-term government bond interest rates for the 1930s through until the 1960s for Australia, New Zealand, South Africa, Canada, India, the United Kingdom, and the United States. The United States stands out; New Zealand does not<sup>12</sup>. Those were the decades of (mostly) fixed exchange rates, and (for most countries much of time) controls on private capital flows.

Our real interest rates were also not high, or higher than that elsewhere, in the 1970s and 1980s. Indeed, New Zealand's real government bond yields were fairly low for much of that time<sup>13</sup>. In an OECD study, Orr et al (1995) chart consistent measures of real long-term interest rates for 17 OECD countries starting from 1980. The only thing that stands out about the New Zealand data prior to 1985 is how **low** our real interest rates were. On this measure, even in the second half of the 1980s, the post-liberalisation disinflation period, nothing really stands out.

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<sup>11</sup> See, for example, Berg et al (2011), Jones and Olken (2007), Hausmann et al (2005), and Commission on Growth and Development (2008). Drawing on the latest *Human Development Report* Timothy Taylor highlights (<http://conversableeconomist.blogspot.co.nz/2013/03/rise-of-global-south.html>) also reproduces a cross-country chart highlighting a correlation between improvements in the Human Development Index and the foreign trade share of GDP.

<sup>12</sup> The earlier period (1950s and 1960s) would, however, repay further study. As Singleton et al (2006) have argued, New Zealand kept import controls and foreign exchange controls (on current account transactions) on for longer than most advanced economies. To the extent that these effects were macro-economically important, it could be that a market-clearing neutral real interest rate might have been higher in New Zealand than in other advanced economies.

<sup>13</sup> Probably reflecting some combination of regulated interest rates, high inflation and compulsory reserve requirements on the one hand, and a marked slowing in actual and potential GDP growth on the other hand. As I suggest later in the paper, a marked slowing in population growth probably contributed.

Capital account restrictions were removed in late 1984 and the exchange rate was floated in early 1985. Reversing the poor inflation record became the prime focus of New Zealand's monetary policy. Real short-term interest rates rose rapidly, as had happened in other countries (for example, the United Kingdom and the United States a few years earlier). That was seen as a normal part of the disinflation process, and was not expected to last long: when in earlier 1987, 90 day bank bill rates were around 27 per cent, long-term bond yields were around 16 per cent, quite similar to where US and UK bond yields had been at the height of their respective disinflations in late 1981<sup>14</sup>. As New Zealand's inflation record had been worse than those of most other advanced economies, it was generally accepted by advisers in policy agencies that the scale of the disinflation task would also be greater.

At the time, there was no particular reason to assume that our real interest rates would settle anywhere very different from those in other low inflation advanced economies: open capital markets, convergent policy frameworks, and a fiscal policy that had rapidly moved New Zealand back to structural primary surpluses by the late 1980s all tended to support this view. Indeed, for much of the 1990s, any puzzlement over the lingering gaps between New Zealand interest rates and those abroad was often just put down to a slow adjustment of domestic expectations to the new era of low inflation, given that our experience of inflation had been worse than that in most other advanced economies<sup>15</sup>. Officials generally expected to see substantial convergence of interest rates. But markets thought so too.

Since, for example, today's 10 year bond yield can be thought of as being made up of today's 5 year interest rate and today's expectation of where five year rates will be 5 years from now, the slope of the interest rate yield curve captures something material about what markets expect to happen to interest rates in future. All else equal, if today's short-term interest rate is well above today's long-term interest rate that is consistent with markets expecting short-term interest rates to fall in future.

Interest rate yield curves tend, on average, to be modestly upward-sloping - consistent with the greater risk on a long-term asset. New Zealand's experience has been different.

During periods of intense disinflation, it is common for yield curves to become downward sloping. High real short-term interest rates typically part of getting inflation down. But high short-term rates typically are not expected to last. Once inflation falls then both inflation expectations and the real interest rate component of short-term rates will be expected to fall.

But in the two decades since New Zealand's inflation rate has settled around typical advanced country levels, the New Zealand yield curve has typically been materially more downward sloping (or less upward sloping) than those in other advanced countries. On average, when markets expected future short-term interest rates to be flat in other countries, they expected further falls in New Zealand short-term interest rates. If that had happened, our interest rates would have gradually converged to levels closer to those in the rest of the advanced world.

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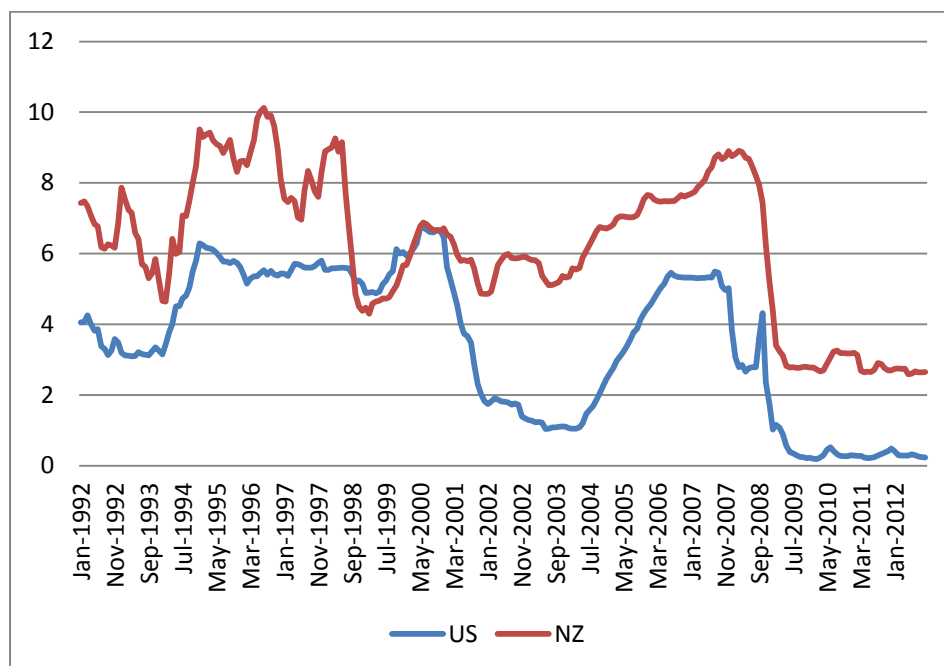
<sup>14</sup> The OECD database records that US long-term bond yields were 15.3 per cent in September 1981, and UK long-term yields were 16.3 per cent in October 1981.

<sup>15</sup>In a speech then Governor Don Brash (1996) noted that the question he was asked most often was about why our real interest rates were among the highest in the world. His response was that New Zealanders' clearly did not behave as if the high nominal interest rates were in fact high in real terms, noting "only when New Zealanders regard present interest rates as quite high, so that borrowers are a little more reluctant to borrow and savers are a little more eager to save, will interest rates begin to track down again. That will be one important by-product of consolidating confidence in the Bank's absolute commitment to low inflation."

Two decades on, that convergence still hasn't occurred. Despite very similar inflation outcomes, both short and long-term interest rates have typically been higher those abroad and have shown little or no sign of actually converging.

Figure 3 helps illustrate this, using a simple comparison of New Zealand and United States short-term interest rates<sup>16</sup>.

**Figure 3: New Zealand and US short-term interest rates**



Source: OECD

Of course, short-term interest rates go through big cycles, here and abroad. At times our interest rates have been as low as, or lower than, those in some other countries. In 2000, for example, the OCR was at the same level as the Fed funds target rate (and for the last few years, the OCR has been below Australia's cash rate). But the predominant story has two recurring features:

- Our real interest rates have remained higher than those abroad.
- Market prices suggest that that gap has nonetheless persistently been expected to narrow.

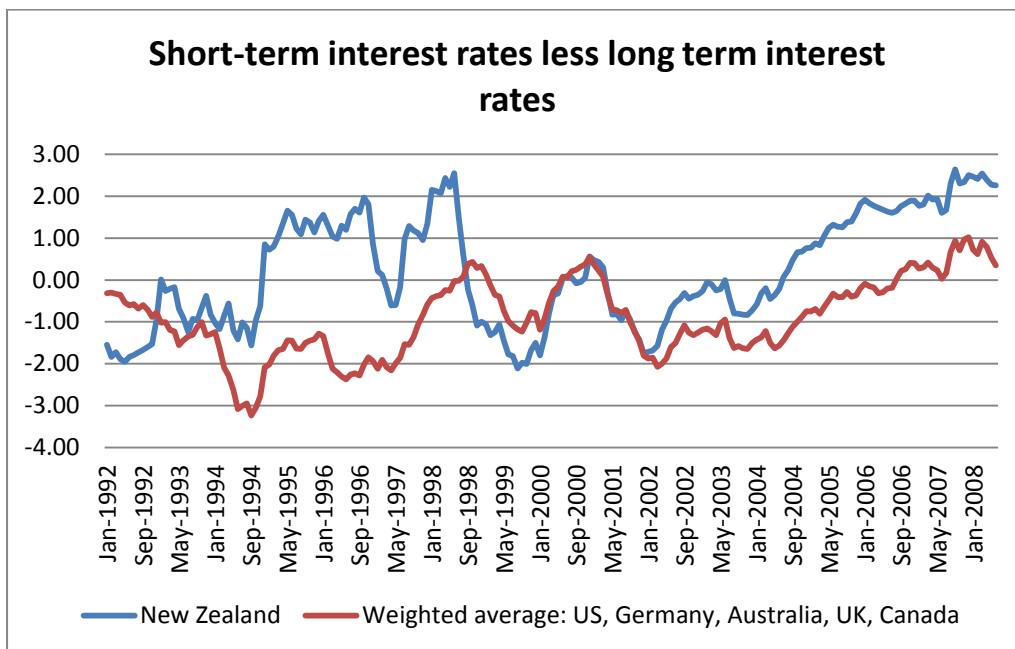
Figure 4 helps illustrate the second point. It shows the slope of the interest rate yield curve, in years since New Zealand achieved low inflation, for New Zealand and for a selection of other advanced countries (the Anglo countries, and Germany as a representative economy for the euro-area)<sup>17</sup>. The higher the number here (short rates less long rates) the more markets expect that short rates will fall in future. And when the blue line is above the red line (as it typically was over that period), New Zealand short rates were expected to fall by more than foreign short rates were expected to fall. In other words, the gap between our short term rates and those abroad was, typically, expected to narrow.

<sup>16</sup> In recent years, many commentators have suggested that US interest rates would have been lower still (and hence the gap larger) if the near-zero limit on nominal interest rates were not present.

<sup>17</sup> The chart stops in mid-2008, as by then the zero bound on short-term rates was becoming binding for a number of the comparator economies, complicating the interpretation of the slope of the yield curve (long-term interest rates could fall, but short-term ones could not).



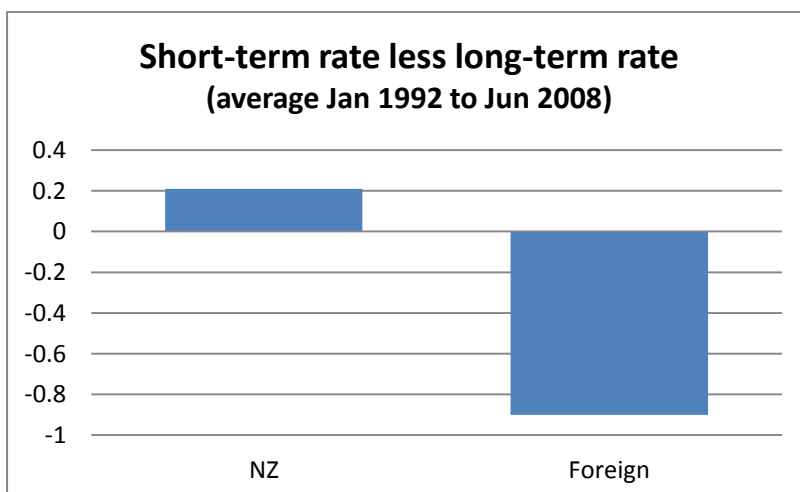
**Figure 4: Yield curve slopes**



Source: OECD, author's calculations. Weights: US .4, Germany .2, Aus. & UK .15, Canada 0.1

The gap was persistently expected to narrow, but it failed to do so persistently. There were periods when our short term rates fell into line with those of one or other of the other advanced economies, but those periods typically proved quite short-lived. The gap fluctuates but has not (yet) shown any sign of closing permanently. Figure 5 summarises the average experience over the full period shown in Figure 4. If one splits the period in half at the start of 2000, the gap between the New Zealand yield curve slope and that of this group of other advanced countries is much the same in first half as in the second half.

**Figure 5: Average yield curve slopes**



Source: OECD, author's calculations

But how is all this connected to a story about New Zealand's real exchange rate?

The key proposition is that, with open capital markets, in normal circumstances **expected** returns should be approximately equal across countries. When events happen that change expected returns, we expect to see changes in investors' portfolios – and in the associated financial market prices – that fairly quickly eliminate any differences in expected returns. Obvious free lunches simply are not left on the table.

For a foreign investor considering buying a New Zealand dollar instrument (a highly-rated government bond, for example) the expected return consists of two components. The first is the interest rate on the security itself. And the second is the **expected** change in the exchange rate over the period the investor holds the security. The interest rate is readily observable, but expectations (implicit or otherwise) about the exchange rate are not. However, a standard formulation in the economics literature (albeit a stylised approximation) suggests if the gap between (risk-adjusted) domestic and foreign interest rates increases<sup>18</sup> this will be accompanied by a prompt increase in the spot exchange rate, above the level consistent with, say, long-term competitiveness considerations. And the spot rate will increase sufficiently that the scale of the expected future depreciation in the exchange rate just offsets the higher returns temporarily available on domestic short-term interest rates themselves<sup>19</sup>. The longer the divergence in interest rates is expected to last, the greater the near-term appreciation of the exchange rate would tend to be.

All else equal, then, high interest rates in country A relative to those in country B can be seen as representing an expected future depreciation in the currency of country A relative to that of country B. Of course, expectations often aren't realised.

Actual monetary policy cycles don't usually involve a single change in our interest rates relative to those abroad. Instead, here and abroad, those cycles tend to involve a series of increases in the level of short-term interest rates, as demand and price pressures prove unexpectedly strong - both markets and central banks tend to underestimate how much pressure is building up when upswings get going. The succession of increases in interest rates (relative to those abroad) tends to go hand in hand with a series of steps up in the exchange rate. And the process works in reverse when monetary policy moves into an easing phase.

Looking back now over the last 20 years we can see a large and persistent average gap between actual New Zealand short rates and those abroad (and a high average real exchange rate). But the persistently large average interest rate gap wasn't the way people experienced things as we moved through those decades. Cyclical factors always dominate in the short-term. And so when New Zealand short-term interest rates were quite low relative to those abroad over 1999 to 2001, the exchange rate fell steeply and then remained low for a time. Some hoped, or expected, that the falls would prove permanent, and that interest rate convergence was finally occurring. But then the whole process to be thrown into reverse as the domestic demand and inflation pressures of the last decade - at any

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<sup>18</sup> Whether because of data surprises or policy surprises, and whether because of events here or in the other countries.

<sup>19</sup> These effects can be quite small or very large. If a 90 day rate rose by 1 per cent and was expected to stay up for a year, the spot exchange rate would need to rise only 1 per cent, all else equal, to equalise future expected returns. A 2 percentage increase expected to last for 10 years would, all else equal, require an appreciation of around 20 per cent to equalise expected returns.

given level of interest rates - once again proved persistently stronger than those abroad. Whatever the underlying reason (we explore that later), New Zealand needed much higher short-term interest rates than those in other advanced economies to secure much the same domestic inflation outcomes<sup>20</sup>.

At times, there has been an on-balance expectation that New Zealand's real exchange rate would rise. However, going back to before 1984 there has been a persistent strand in commentary (not just domestically but from, for example, respected international agencies) that New Zealand's real exchange rate was overvalued and needed to, and in time would, settle at a rather lower level. Some anchored this argument in external indebtedness considerations, some in the disappointing long-term performance of the economy, some just in the (apparently reasonable) expectation that New Zealand real interest rates would converge on, and subsequently fluctuate around, those abroad. This is also reflected to some extent in the survey of business expectations which the Reserve Bank has been running since 1987 - more often than not the net balance of expectations has been for depreciation in the exchange rate over the year ahead.

The gist of the argument then is that the exchange rate has, on average, been persistently held up by the surprisingly persistent gap in between our interest rates and those abroad. If there has been a (long-term average) surprise in where our interest rates ended up relative to those in the rest of the advanced world - and there clearly has been - it is only to be expected that we would find surprises in the closely-connected (long-term average) exchange rate. The exchange rate has perennially been expected to fall in future, and potential purchasers of New Zealand dollar bonds had to take account of those expectations. Factoring in the prospect of quite a large exchange rate fall at some point into their expected return calculations offsets the apparent benefits to foreign investors of our high domestic interest rates<sup>21</sup>. This doesn't have to be true for each and every investor - lots of investors in all markets want, or need, to believe they have found the path to near-certain excess returns - but it does tend to hold across the market as a whole. People appear to have been behaving quite rationally, given the pervasive expectations about interest rate convergence. The fact that those expectations were, with hindsight, wrong is another matter.

If this story is approximately right then we need to focus on understanding why New Zealand interest rates have needed to be so much higher than those abroad for so long. What was missed that meant that the expectations about future average interest rates (relative to those abroad) were wrong?

For some time, a popular argument was that the Reserve Bank had simply run monetary policy tighter than in other countries - "too tight" was the subtext. With the benefit of 20 years' experience that explanation can be set to one side: New Zealand's inflation targets, and its inflation outcomes, have been very similar to those in other advanced economies. If

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<sup>20</sup> Similar, over long periods, to saying that the New Zealand "neutral" interest rate has been materially higher than those in other advanced countries.

<sup>21</sup> To avoid excessive wordiness, and to focus on the direction of the net flows, this section is framed in terms of the choices of a foreign investor, but the situation facing a New Zealand investor is essentially the same. Given a choice between high New Zealand interest rates and those available on other currencies, the resident investor also needs to (implicitly) factor in the expected change in the exchange rate.

anything, for much of the period inflation was a bit above the middle of the successive target ranges<sup>22</sup>.

Short-term interest rates are, of course, heavily influenced by the Reserve Bank. The Official Cash Rate is directly set, but it is set in light of everything else going on in the economy, to achieve the agreed inflation target. In turn, the level of domestic long-term interest is heavily influenced by perceptions of where short-term interest rates will be (where the Reserve Bank will set them) in the future<sup>23</sup>. All else equal, the less the pressure that spending is putting on scarce domestic resources, the lower New Zealand interest rates will be. The Reserve Bank doesn't determine the level of demand (spending) that takes place in New Zealand at any given interest rate; it is something the central bank takes as given, adjusting the OCR as required in response to keep inflation around the target.

Several observers have argued that the large average gap between our interest rates and those seen abroad is some sort of "risk premium" imposed by foreign funders to account for foreign exchange rate risk associated with the large negative net international investment position (NIIP) as a per cent of GDP that New Zealand has had over recent decades. Different versions of this argument have been made recently by Rose (2010, 2011, and 2012) and by Burnside (2011). For a variety of reasons outlined in greater length in Appendix 1 this explanation cannot be an important part of the story. In short, if there had been high and/or growing concerns about New Zealand's international indebtedness among international lenders such concerns should have been expected to be reflected in a surprisingly **low** real exchange rate. Brief periods (such as late 2000 and early 2009) aside, that hasn't been New Zealand's experience in recent decades.

So, if the surprisingly persistent average gap between New Zealand interest rates and those in other advanced countries did not reflect overly tight monetary policy or investor unease about the risks associated with a high NIIP position, what did it reflect? That is the focus of the rest of this paper<sup>24</sup>.

### **A (desired) savings and investment perspective on persistent interest rate differentials<sup>25</sup>**

A useful way of representing the pressure on domestic demand is to look at savings and investment. In a closed economy, if firms and households want to undertake some investment this year, as well as consuming, that investment has to be financed from this year's production. The share of this year's production that isn't consumed is what we call saving. But if firms and households (in aggregate) also want to consume heavily (let's say that they actually want to consume all this year's production), then desired investment and savings plans do not match. In a closed economy, actual savings and actual investment are,

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<sup>22</sup> Reserve Bank (2007a) reports some empirical results showing that the Reserve Bank reacts to economic data in much same way as a comparator group of other central banks.

<sup>23</sup> Day to day there is, of course, a very high correlation between changes in New Zealand long-term interest rates and those in major markets abroad. However, over time it is typically countries with high (low) average short-term rates that also have high (low) average long-term rates

<sup>24</sup> In Reddell (2012), a paper prepared at an earlier phase of the process leading to this forum, I reviewed more fully some of the literature on New Zealand's experience with high real interest rates.

<sup>25</sup> Discussion in this section builds from the approach outlined in Labuschagne and Vowles (2010).

and must be, equal. What reconciles savings and investment plans (again, for any given inflation target) is the real interest rate (and associated financial prices - for example, real equity prices). If desired investment persistently exceeds desired saving at any given interest rate then actual real interest rates will prove to be persistently high: the higher interest rates discourage some investment and, perhaps some consumption, to the point where the various plans and desires are reconciled.

The picture is different in an open economy, where New Zealanders (or their banks and other financial intermediaries on their behalf) can borrow from, or lend to, the rest of the world. Actual savings of New Zealanders (“national savings”) do not typically, and do not need to, match the real investment taking place in New Zealand. If all goods and services and factors of production were perfectly and freely mobile across borders, imbalances between desired saving and investment would have no impact on New Zealand interest rates<sup>26</sup>.

In fact, we often think of the economy as being made up of two broad sectors - the tradables sector and the non-tradables sector<sup>27</sup>. We might be able to import as many Toyotas as we like with only limited direct implications for any domestic variables, but increased demand for café meals, or new houses, puts immediate pressure on New Zealand specific real resources<sup>28</sup>. Actual increases in demand - whatever the cause - typically affect both the (stylised) tradables and non-tradables sectors<sup>29</sup>.

In a country with a fixed exchange rate, or for an individual small country in a currency union, excess demand pressures do not put any upward pressure on nominal interest rates. For such countries, nominal interest rates are, in effect, set externally for the whole region. Excess demand in countries such as Ireland or Spain during the boom years of the previous decade resulted in slightly higher rates of wage and price inflation in those countries than in the rest of the currency union. With the same nominal interest rate across the currency union, that left domestic Spanish and Irish borrowers facing interest rates that actually looked and felt **lower** in the excess demand countries, than in, say, Germany. In Germany, desired savings (at the common euro area interest rate) typically exceeded desired investment, resulting in inflation rates lower than the region average (and, hence, higher perceived real interest rates).

But for a country with a floating exchange rate, and a commitment to keeping domestic inflation in check, the picture is different. If desired national savings fall short of desired investment, at the “world” interest rate, some of the excess demand will simply be met from imports and the current account deficit will widen.

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<sup>26</sup> However, in such a world the case for national currencies (and national interest rates) would also be largely empty.

<sup>27</sup> This is a stylised conceptual distinction. Various commentators use a variety of indicators to approximate the distinction, although none fully adequately capture the economic differences (partly because almost everything produced or consumed has some mix of tradable and non-tradable components)

<sup>28</sup> Labour can be quite mobile, but houses for migrants to live in (or the roads they drive on) are not. Building those facilities requires real domestic resources.

<sup>29</sup> For example, even the import of books via Amazon still involves a domestic courier driver.

But that excess desired demand - again, whatever the source - will also put pressure on scarce domestic resources. If New Zealand just kept its interest rate at some “world” interest rate, the excess demand pressures would push up New Zealand’s inflation rate. Faced with that outlook, the response by the Reserve Bank would typically be to raise New Zealand interest rates. That, in turn, would tend to raise New Zealand’s (nominal and real) exchange rate to a point where the expected future returns from holding New Zealand dollar assets roughly equate with those on holding assets in other currencies.

So the gap between desired national saving and desired investment is met in a number of ways. A wider current account deficit is part of the story, but only part. The higher interest rates locally will crowd out some investment that would otherwise be undertaken by New Zealand firms (and households). And the higher exchange rate will also tend to make New Zealand exports less competitive, reducing incomes, and further discouraging some investment that would otherwise have occurred in the tradable sector. The actual gap between national savings and investment – which is just the observed current account deficit - will be narrower than the “desired” gap. Higher real interest rates and the higher real exchange rate will have “crowded out” some spending that would otherwise have taken place, disproportionately crowding out activity and investment in the tradables sector.

For any individual shock that temporarily boosts demand, this mechanism is quite uncontroversial (if not always comfortable). A one-off widening in the fiscal deficit - or a material lift in consumer optimism - will put this sort of pressure on real interest and exchange rates. The temporary upward pressure on real interest rates and the exchange rate proves relatively short-lived, and in time the effects are fully unwound – real interest rates and the real exchange rate may even have to undershoot their long-term levels for a time, to earn the returns necessary to service the additional foreign debt taken on during the period of exuberance.

The New Zealand economy over the last 25 years has been through a series of such cycles. All economies do. For example, the United States and Canada have had similar interest rates on average over the last couple of decades, but at times domestic pressures have meant interest rates in Canada have been a bit higher, and at other times rates in the United States have been higher. On average, over time, it looks as though the desired gaps between national saving and domestic investment in the two countries have been quite similar. The situation is quite different in, say, Singapore, where very persistently high savings rates have not been matched by desired investment rates at the “world” real interest rate, and so Singapore has experienced real domestic interest rates persistently below those in other advanced economies, and a relatively low real exchange rate. These financial prices have encouraged (or “crowded in”) some spending (probably disproportionately tradables sector investment) that would otherwise not have taken place.

What of New Zealand? Savings and investment plans have clearly ebbed and flowed. At times the gap between our interest rates and those abroad has been small, or even negative, and at other times there has been a very large positive gap. But, on average, our interest rates have much higher than those in other advanced countries - higher, on average, even than in Australia. We can add to the mix indicators such as the high average real exchange rate, rising domestic asset prices, and large increase in the ratio of domestic credit to GDP. Taken together they suggest an excess demand story, one that can be

characterised as “on average, over the last 20 years or more, desired real investment (gross fixed capital formation) in New Zealand at the world real interest rate has materially exceeded the desired (national) saving of New Zealanders at that interest rate, and by more than in other advanced economies”<sup>30</sup>.

Why might that have been?

### **What might have made New Zealand savings and investment intentions different?**

Answering this question, especially over a prolonged period such as the one we are looking at here, is no mean feat. Nor is the question new. Many Reserve Bank documents over the last 15 years or so have posed the question in an only slightly different form: what has made New Zealanders ready to borrow so much and save so (relatively) little at such high interest rates<sup>31</sup>. In any particular year, there might be some quite obvious and distinctive answers. In the early 1980s, for example, the government-initiated Think Big programme provided a large (foreign-financed) shock to investment. All else equal, a particularly large easing in fiscal policy will be likely to show up as a substantial reduction in savings. And in years when there has been a large net migration outflow, investment (especially residential investment) tends to be very weak.

But in this paper, the focus is not on short-term developments or the ebbs and flows of individual business cycles. We are primarily interested in more systematic forces that might have been at work over longer periods of time. What influence, or combination of influences, has generated such a large gap between desired investment and desired savings, that could only be reconciled by such a large average gap between New Zealand real interest rates and those abroad, and such a large gap between our actual average real exchange rate and what the exchange rate the severe deterioration in our relative productivity performance might have suggested?

Getting closer to the answers is complex for several reasons:

- Since the persistent average gap between New Zealand and foreign interest rates, with a floating exchange rate and an open capital account, is an unusual experience by international standards, and as New Zealand is a small country, there has been relatively little formal domestic or international literature on the issue.
- The question is phrased in terms of desired investment and desired savings at the “world” interest rate. Neither desired investment nor desired savings is directly observable, and New Zealand has spent no material period post-liberalisation with interest rates at the “world” rate.

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<sup>30</sup> Note that McCann (2009) offered an alternative narrative, drawing on the economics of agglomeration, to account for the failure of New Zealand incomes and productivity to converge with those of the recent of the advanced world. Under this approach, which emphasises the relative unattractiveness of investment in small isolated economies, we should expect to see a quite different set of stylised facts. In particular, we should have expected to see persistently lower interest rates in New Zealand than abroad – little pressure on resources arising from domestic investment, with higher domestic savings to take account of the deteriorating relative future income prospects – and a persistently weak real exchange rate which would help to compensate for the disadvantages of size and distance. Current account surpluses might also have been expected.

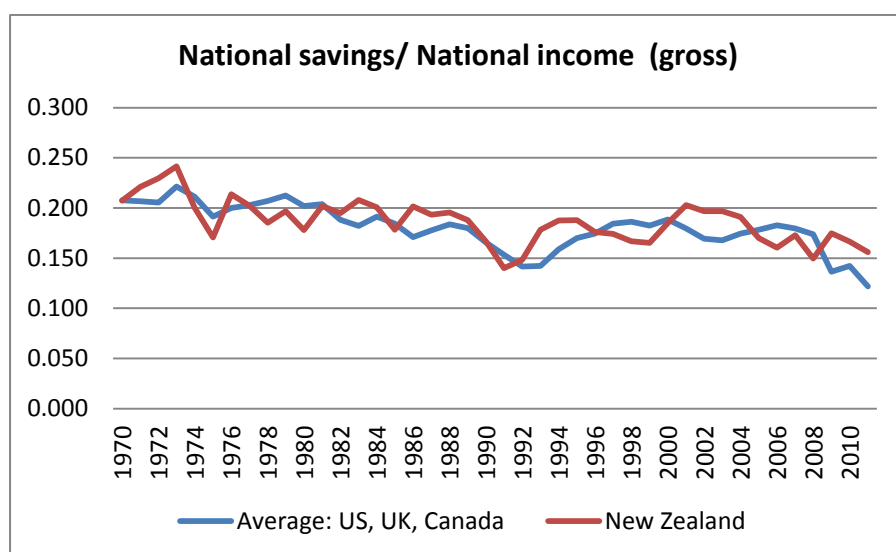
<sup>31</sup>See, for example, Reserve Bank (2007b).

- Households, firms, and governments both invest and save. It isn't the same firms and households necessarily doing both at the same time, but we can't simply analyse savings choices and preferences totally independently of investment opportunities.
- While specific government policy choices affecting savings or investment provides a convenient entry point, government policy choices are also not made in a vacuum - firms and households take account of government choices, in ways that are not always easy to identify confidently.

But first, what are some of the relevant stylised facts?

It is well known that New Zealand's national savings rate<sup>32</sup> has been quite low<sup>33</sup> by the standards of other advanced countries (typically represented by the OECD grouping). It is less well-recognised that New Zealand's national savings rate has fluctuated around a pretty constant average for the last 20 years or so, or that the gap between the New Zealand national savings rate and Australia's has narrowed rather than widened on average over recent decades. Indeed, comparing New Zealand with the three other Anglo economies (Canada, the United Kingdom, and the United States) it is striking is how similar the national savings performance has been over the forty years shown in Figure 6<sup>34</sup>.

**Figure 6: Comparative national savings rates over time**



Source: OECD, Statistics NZ

<sup>32</sup> In this paper I focus on measures of gross savings (mainly gross national savings). National savings is the savings of New Zealand residents (and resident entities), and accordingly the income of New Zealanders (gross national income, GNI) is generally an appropriate denominator, especially for understanding the choices of New Zealanders in cross-country perspective. In many countries the gap between GDP and GNI is small, but in New Zealand the large accumulated negative IIP position means that a material proportion of what is produced domestically accrues to foreigners. An alternative approach would be to focus on net savings relative to net national income (i.e. with depreciation deducted from both). Gross measures are more common, and also probably more reliably measured.

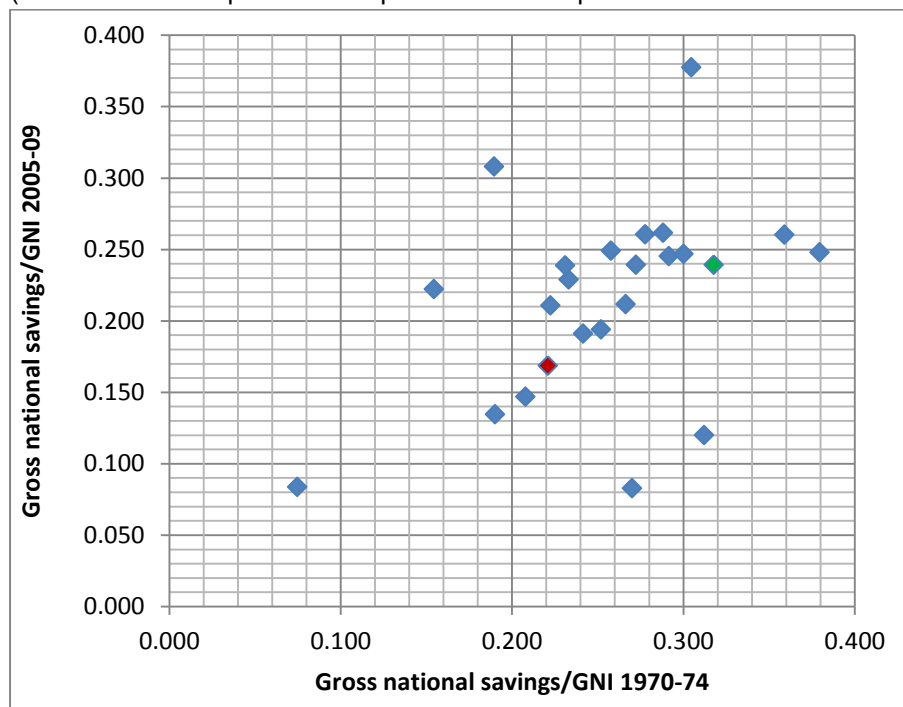
<sup>33</sup> Even with appropriate inflation adjustment. As highlighted in Reserve Bank (2010), appropriate adjustment for the inflation component of nominal interest somewhat narrows the difference between the "true" economic national savings rates of countries with large debt-financed negative NIIP positions and those with large positive NIIP positions,

<sup>34</sup> OECD data in this area go back only to 1970.



And while New Zealand's national savings rate was the sixth lowest among OECD countries in the second half of the last decade (the latest period for which data are available for all countries), it was also sixth lowest in the first half of the 1970s. As the chart below shows there is quite a striking relationship for many countries between their savings rate 40 years ago and those more recently, despite all the policy, regulatory and environmental changes here and abroad over the intervening decades<sup>35</sup>.

**Figure 7: Average national savings rates for OECD countries**  
(in this and subsequent scatter plots each dot represent an individual OECD country)

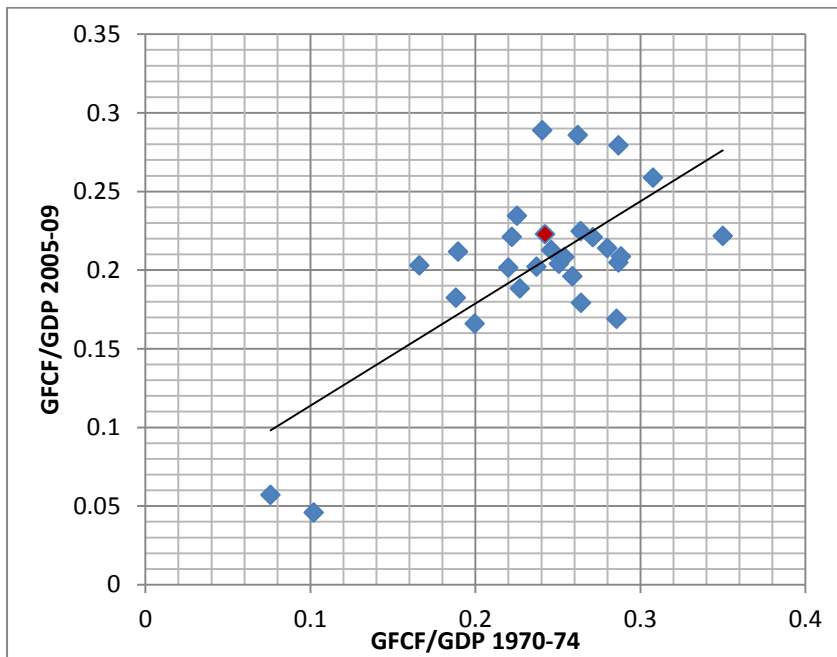


Source: OECD NZ marked in red, Australia in green.

As for investment, at a superficial level New Zealand's actual investment/GDP ratios look strikingly uninteresting: in the middle of the pack at the start of the period, and at the end.

<sup>35</sup> As Sutch (1972) notes, for example, at the start of this period New Zealand, Canada and the United States were 3 of the 4 countries with the highest value of life insurance (relative to GDP). He notes that, under the influence of favourable tax treatment, New Zealand life insurance assets had risen to around 20 per cent of GDP (in 1969). By contrast, they are around 3 per cent of GDP now and Canada and the US have insurance premiums (as a share of GDP) more than twice those of New Zealand.

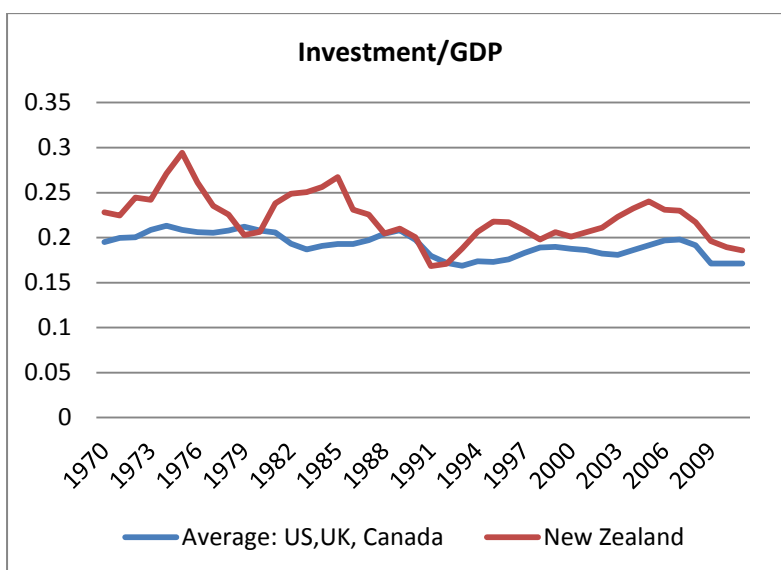
**Figure 8: Investment/GDP: OECD countries**



Source: OECD

As Figure 6 highlighted, New Zealand isn't the only Anglo country to have had a relatively low national savings rate. Each of those countries have had a stronger productivity performance than New Zealand (Canada less so than the US and UK). But what is perhaps equally interesting is Figure 9, comparing investment shares of GDP for New Zealand and the group of Canada, the United States, and the United Kingdom. New Zealand's investment share of GDP has averaged persistently higher than in those other three countries, even with higher real interest rates.

**Figure 9: Investment: some low savings Anglo comparisons**



Source: OECD, Statistics NZ

Before we proceed further, three things are worth highlighting:

- These are ratios of actual investment at actual real interest and exchange rates, they are not desired ratios. As discussed earlier, it is the desired investment - at some world interest rate - that gives rise to the pressures on real interest rates (relative to other countries) and, hence, on the real exchange rates, crowding out, and skewing, investment that would otherwise take place.
- In the first half of the period, New Zealand's per capita GDP was still well above the OECD average. By contrast, New Zealand is now near the bottom end of the incomes of this group of OECD countries.<sup>36</sup> A middling ratio of investment to GDP generated materially more real dollars of new capital per worker in New Zealand (relative to other countries) than is the case now. The OECD has highlighted that real dollars per worker, calculated at purchasing power parities, spent on business investment has been quite low by OECD standards in New Zealand, and – consistent with this - business investment as a share of GDP over the last couple of decades has also been relatively low (especially for a country with above average rates of population growth)<sup>37</sup>.
- New Zealand has a high ratio of government investment to GDP, and in both sub-periods has had above average rates of population growth. Thus, a middling ratio of total investment to GDP, translates back to quite low additions to the business capital stock per worker. Growth in the business capital stock per worker is typically an integral part of an income convergence process, partly because it is more and different capital that enables continuing potential gains in multi-factor productivity to be captured.

Before we look at some of the specific possible explanations for New Zealand's experience - looking for things that explain New Zealand's differences - it is worth briefly reminding ourselves of a few stylised general results from the economics literature.

First, the savings rate appears not to be very responsive to changes in interest rates<sup>38</sup>. Differences in returns (especially after-tax returns) can make a material difference to the allocation of savings (e.g. as between tax-favoured retirement accounts and conventional bank accounts), but there is much less evidence of much response of the overall savings rate to overall interest rates (pre or post tax). If so, then desired national savings at some "world" interest rate are probably not, on average, very different from the actual average savings rate we observe.

Most of the actual variations in interest rates we observe reflect fluctuations in the business cycle, and we need to look beyond those swings when thinking about the influence of interest rates on structural, or longer-term average, savings choices. But in many respects the stylised result should not surprise us very much.

At a household level, much saving is undertaken for precautionary purposes and to fund post-retirement consumption. Interest rates could reasonably be expected to influence precautionary saving only a little - a change in the interest rate alters the opportunity cost of such saving, but not the probability of adverse events occurring. And in thinking about

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<sup>36</sup> The (mostly non eastern bloc) OECD countries for which data are available throughout.

<sup>37</sup> See, for example, the chart of sectoral investment rates in OECD(2011)

<sup>38</sup> Note that this is very different from the proposition that a higher desired savings rate at any given interest rate might quite materially lower average observed interest rates.

savings for retirement (or bequests), interest rates cut both ways. On the one hand, through a “substitution effect”, higher real interest rates increase the returns to savings and the future opportunities that consumption deferred today can generate. But on the other hand, if people have in mind a “target” level of consumption post-retirement (or a “target” bequest) then higher interest rates lower how much one needs to save now to generate that target level of assets.

By contrast, business investment is typically regarded as being driven largely by expected real returns relative to the cost of capital. Real interest rates are an integral component of the cost of capital. In business cycles, investment often looks to be driven largely by changes in demand, and as interest rates typically move with cycles in demand, it is hard to distinguish a strong role for interest rates in investment behaviour in the shorter-term. But looking beyond the individual cycles, it is pretty clear that firms will only stay in business and invest to the extent that expected returns at least cover the cost of capital. All else equal, the higher real (risk-free) interest rates are, the less business investment will be undertaken<sup>39</sup>. And if higher domestic interest rates translate into a higher real exchange rate - beyond what is warranted by productivity and terms of trade trends - as this paper has argued has been the case in New Zealand, then the composition of investment is likely to be skewed towards inward-facing (non-tradables) investment. If there are fewer long-term growth opportunities domestically than internationally - as seems plausible, especially for a small country - then total business investment might be further dampened<sup>40</sup>.

Of course, business investment needs to be financed. Firms cannot typically be wholly (offshore) debt-financed. So higher domestic investment tends, all else equal, to boost business savings - firms withhold relatively more of the profits as retained earnings to reinvest in the business<sup>41</sup>. By contrast, when there are fewer perceived growth and business investment opportunities, business savings - the under-discussed element of the savings picture - will tend to be weak. When growth opportunities are weak (and the tax system does not penalise distributions) a larger share of any profits will be distributed to shareholders to make their own (household) savings and consumption choices.

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<sup>39</sup> This need not mean that a high interest rate country has low investment. Australia, for example, has for a long time had a business investment share of GDP that is very high by international standards, reflecting the capital-intensive nature of developing its resources sector. Those investment needs, driven by the new income opportunity (in the form of the discovery of those resources and, latterly, the rise in the terms of trade), appear to have been a material element in why Australian interest rates have averaged higher than those in most of the OECD, although still below those in New Zealand. Investment in other Australian business sectors is, nonetheless, likely to have been crowded out to some extent.

<sup>40</sup> Most of the capital equipment in New Zealand is itself imported, so the higher exchange rate lowers the cost of investment goods themselves. However, a firm looking towards expanding export markets also sees its potential selling prices fall if the exchange rate rises. Profitable exporting is ultimately about selling domestic value-added (especially labour). It is, therefore, unlikely that - all else equal - that a higher exchange rate would ever boost total business investment, and in particular that in the tradables sector.

<sup>41</sup> And, in respect of gross business savings, to cover the depreciation on the increased stock of capital.

## **Some possible New Zealand specific factors**

In reviewing factors that might help explain the New Zealand story, we look first at savings-related explanations and then at ones more focused on investment.

### **Savings**

Ideas that have been suggested to explain New Zealand's relatively modest national savings rate include:

- Different cultural preferences
- Aggregate fiscal policy
- Social welfare and public pension arrangements
- Tax treatment of savings
- The available range of savings vehicles
- Past track record of high inflation
- House price inflation

In the rest of this section, we review each of these possible stories.

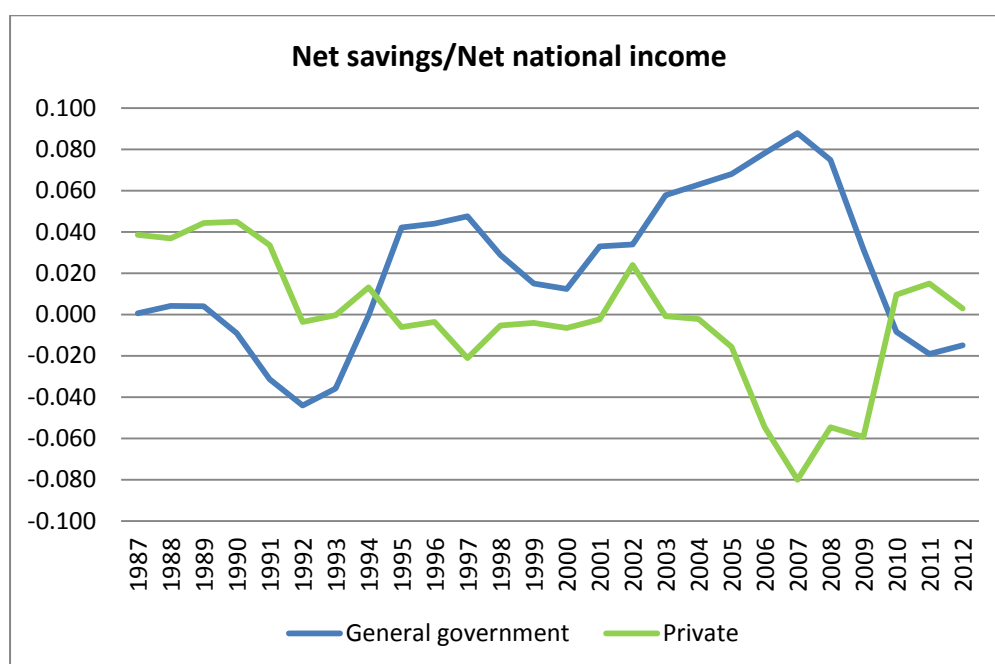
It is possible that New Zealanders' underlying tastes and preferences are just different from those in many other advanced economies. If everything else was the same in two countries, a country whose people had a lower desired savings rate would tend to find its incomes lagging behind those abroad. The investment opportunities might be much the same, but the heightened desire to consume today rather than tomorrow would mean that more of the economy's total production would accrue to foreign providers of capital, and total production might also lag if some productive investment was crowded out. It is difficult to know why New Zealanders might have materially different preferences on this score than their peers in other, relatively culturally similar, countries – and as we have seen the actual national savings outcomes in New Zealand tracked those in the US, the UK and Canada remarkably closely. If there are underlying difference in preferences, it would be a feature governments might have to take into account in some other planning, but otherwise might not obviously be directly a matter for policy (which should typically putting a high weight on respecting, and working within the constraints of, private preferences).

For the rest of this paper, we focus our search on possible differences, or salient features, in the New Zealand policies that might be part of the story.

In other countries and at other times, fiscal policy (large fiscal deficits) has been blamed for low levels of national savings. The private sector doesn't, in the short-term at least, tend to fully offset the effects of large or sustained fiscal deficits. But deficits can't credibly be the story in New Zealand on average over the last couple of decades. We had 15 years of fiscal surpluses, and are even now our ratio of public debt to GDP is towards the lower end of the OECD range. Of course, at present large fiscal deficits are probably tending to hold our interest rates a little higher than they otherwise would be – though no more so than in many others advanced economies - but this paper is focused on understanding 20-year averages not on any particular year. New Zealand's public sector savings rate has been quite high by OECD standards over the last 20 years, but in part it has needed to be because public sector investment as a share of GDP is also typically quite high in New Zealand.

In any case, in determining its own saving behaviour, the private sector takes into account government choices about its own savings. In the international literature, there is a consensus that the private sector doesn't, in the short-term at least, tend to fully offset the effects of large swings in the fiscal position<sup>42</sup>. However, in New Zealand over the last 20 years since low inflation became established it is striking just how often fluctuations in private and government savings have offset each other<sup>43</sup>. There is a variety of reasons for that relationship, but it cautions against seeing past government dis-savings as a major factor explaining national savings, and against expecting a return to positive net government savings to materially and sustainably lift national savings rates above those experienced in recent decades.

**Figure 10: Private and government savings (\$m)**



Source: Statistics NZ

So in examining the possible role of government in the New Zealand macro imbalances story, we shift to focus on the microeconomic settings that might influence private sector choices and behaviour.

For example, some argue that our welfare system explains the relatively low rate of private savings. Why save, so the argument goes, when the government will cover many of the risks in life? There is little doubt that, all else equal, a welfare system will tend to reduce the rate of private savings. But all advanced economies have welfare systems, and have done so for decades, and the New Zealand welfare system is neither one of the largest nor one of the most generous among OECD countries (many European countries have both more generous welfare systems and higher private and national savings rates). Indeed, in some respects our welfare system may have been less distorting to labour participation and

<sup>42</sup> See, for example, the OECD work in Rohn (2010).

<sup>43</sup> In periods of when there is high (and changing) inflation and substantial levels of public debt patterns in reported sectoral and national savings rates can be materially distorted (on account of the inflation compensation component of nominal interest rates).

savings choices than those in many other countries. For example, although the current New Zealand Superannuation system is relatively generous in preventing outright poverty among the elderly, as a flat rate system without a means test it still leaves middle and higher income people (those with the greatest capacity to save) with considerable need, and incentive, to save if they wish to maintain pre-retirement levels of consumption<sup>44</sup>. And, Accident Compensation aside, the rest of our state-sponsored income replacement programmes all pay flat rates, unrelated to prior earnings.

Other dimensions of policy that affect retirement savings may be relevant. An obvious possibility is the tax treatment of savings? New Zealand, to a first approximation, follows a comprehensive income tax approach<sup>45</sup>. In New Zealand, income that is put into retirement savings vehicles, and the income earned on those funds, is treated by the tax system in much the same way as any other factor incomes. We follow (with some minor exceptions around Kiwisaver) the TTE model - income going into a fund is taxed, earnings of the fund are taxed, and withdrawals from the funds (like withdrawals from any bank account) are not taxed, or are exempt. New Zealand is the only OECD country to use that model, and only three use the, in-principle equivalent<sup>46</sup>, ETT. Most OECD countries treat significant portions of savings for retirement considerably more generously for tax purposes.

New Zealand also did so until the late 1980s. The impact of the far-reaching changes made then has not been extensively researched. As already noted, the international evidence on the effectiveness of differential tax treatment in boosting national savings is not overly favourable. Taxing income from savings differently than other income incurs a significant fiscal cost, and hence a proper assessment of the impact on national savings requires a fuller assessment of the impact of the other fiscal measures that would be put in place to cover the revenue losses from the differential tax treatment. The international literature would lead one to expect that the effect on national savings of the late 1980s changes was small<sup>47</sup>, and there is no obvious subsequent reduction in the New Zealand national savings rate relative to those in other countries.

In recent years, economists have increasingly drawn on behavioural theories (such as bounded rationality, and imperfect self-control) for insights into household saving behaviour. This literature allows for the possibility that households may respond (either positively or negatively) to aspects of tax incentive programmes that are not directly related to the after-tax rate of return. These behavioural theories have also led some to advocate policies that either encourage or force individuals to save more through channels such as compulsory saving or soft-compulsion (for example, auto enrolment with opt-out). There is some evidence that cleverly-designed mechanisms of this sort can lead to increases in household savings rates, although it is less clear whether such increases are necessarily welfare-enhancing, if individual preferences (rather than those of policymakers) are regarded as pre-

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<sup>44</sup> Indeed New Zealand's total net expenditure on age-related pensions, as a per cent of GDP, is quite low by advanced country standards.

<sup>45</sup> Which much of the literature would argue systematically penalises, and deters, both saving and investment. For an application of this argument in a New Zealand context, see Reddell (2012).

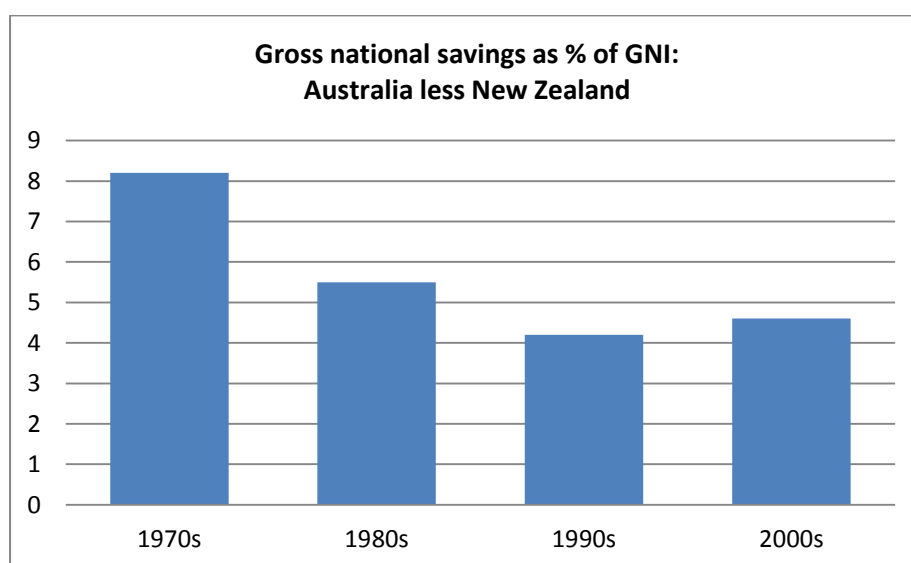
<sup>46</sup> In present value terms

<sup>47</sup> Although the effect on superannuation and life insurance products themselves was clearly large. Superannuation and life insurance assets dropped from around 50 per cent of disposable income in the mid 1980s to around 30 per cent in the mid 2000s.

eminent<sup>48</sup>. More immediately, for this paper, it seems unlikely that differences in this area can explain much about New Zealand’s relative savings performance over several decades, as in most cases these “nudges” and clever interventions are of quite recent origin.

Relatively few OECD countries have the sort of compulsory funded private retirement saving scheme used in Australia (and the national savings performances of those few countries also differ widely). It is difficult to reach a strong view about the difference the Australian model has made. Even in Australia, there is a range of estimates for the contribution of compulsory savings to the national savings rate (some suggesting an effect of little more than 1 per cent of GDP). Perhaps more importantly, in terms of understanding the New Zealand story, it isn’t sufficiently recognised that Australia’s national savings rate was considerably higher than that in New Zealand well before the introduction of compulsion at the start of the 1990s. And since the compulsory scheme was introduced, the gap between the savings rates in the two countries (which fluctuates from year to year, with the cycle, respective terms of trade etc) has not on average increased further in the last couple of decades. Australia’s national savings rate has over decades consistently been materially higher than those in New Zealand and the other Anglo countries. The highly capital intensive nature of the Australian resources sector, alluded to earlier, is likely to have been a material part of the explanation, especially as regards business saving.

**Figure 11: Comparing Australian and New Zealand national savings trends**



Source: OECD

Most OECD countries have some kind of mandatory state employment-linked pension scheme (a “tier 2” pension in the jargon) under which people accrue expected retirement income entitlements. However, these are typically not asset accumulation schemes. As such, they should not themselves be expected to have boosted national savings – they are a mechanism for calculating future entitlements, but not for funding those entitlements<sup>49</sup>. The US Social Security scheme provides a useful illustration. Workers and employers pay social security taxes, and workers accrue entitlements to future income and service-linked benefits,

<sup>48</sup> For one critical review of work in this area see Leonard (2008).

<sup>49</sup> In many cases, governments have simply assumed large unfunded off-balance sheet liabilities as contributions (e.g. social security tax contributions) lag well behind accruing entitlements.



but the tax proceeds are, in effect, just general government tax revenue. As is well-known, the US general government debt (not to speak of future commitments) remains far higher, as a share of GDP than that in, say New Zealand. If anything, unfunded schemes of this nature risk reducing national savings, if households factor their own entitlements (which are relatively transparent) into their planning, but don't fully take account of the future tax burden of paying for those entitlements (which is highly uncertain for any individual).

Some have also argued that New Zealand's past experience of high inflation, and the large losses experienced in, for example, the post 1987 crash may help explain low savings rates in recent decades – “why bother if I'm just going to lose it” the argument might run. For some individuals this factor may have been important. But it seems unlikely to account for much of the overall picture. After all, savers in many countries have experienced big fluctuations in equity markets and in the prices of other assets, and there are few advanced economies that have not experienced a financial crisis of one sort or another in recent decades. New Zealand's experience of high inflation has also been suggested as one factor discouraging saving. Even if the direction of the effect was clear<sup>50</sup>, New Zealand's poor inflation record - now a brief interlude decades in the past – was not so different to that in, say, Australia or the United Kingdom (let alone the experiences of some of the more peripheral OECD countries).

Some have also argued that New Zealanders don't save because there is nothing to save in - advocates of this view often cite the relatively small size of the listed equity market. Little weight should be put on this story. First (and as Figure 6 showed), New Zealand's national saving performance has been quite similar to those of several other, much larger, Anglo countries. But even setting that comparison to one side, those New Zealanders with material accumulated savings have access to the investment vehicles of the wider world, while for those with fewer resources the range of instruments available in New Zealand is fairly conventional. Any particular individual has plenty of institutional options available even in New Zealand and the New Zealand tax regime which, unlike those in most OECD countries, treats directly-held assets (e.g. private rental properties) pretty similarly to institutional holdings<sup>51</sup>.

House prices sometimes appear in discussions around the savings rate. Generally, they should not, at least over the longer time periods this paper is concerned with. Higher house prices, on a stock owned very largely by locals, do not boost a country's net wealth or the future consumption possibilities of its people. For each person (e.g. someone about to downsize) who is made somewhat better off, there are others - those yet to buy a house – who are made worse off. Higher house prices do free-up some additional borrowing capacity, but again this (short-term) effect, is countered by the increased deposit that first home buyers now need to save to purchase a house in the first place. For now, it is just worth noting that over the 2000s New Zealand experienced the biggest house price boom in

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<sup>50</sup> The risk (or memory) of higher and more volatile inflation could equally, and rationally induced higher savings rate as a buffer against the greater uncertainty associated with this inflation risk.

<sup>51</sup> Of course, it is likely that the relatively modest level of New Zealand savings has influenced the size of, say, the New Zealand listed equity market. If there were more savings seeking a home, it is likely that more companies would seek to issue equity on the NZX: investment banks are constantly assessing the cheapest ways for firms to raise new capital. It is also likely that the high cost of capital in New Zealand has tended to see New Zealand firms migrate into the hands of foreign investors, with lower costs of capital (and hence able and willing to pay a higher price for the same business).

its history - and yet over that decade the ratio of consumption to GNI was all but unchanged. Even the household savings rate (to household disposable income) reached a low point not at the peak of the housing boom, but in the year to March 2003, the very first year of material house price inflation<sup>52</sup>.

Business savings tends to be a neglected part of any discussions about savings behaviour in New Zealand. In an economy with many owner-operated businesses, the distinction between business and household saving can, in any case, be blurry. In principle, however, business saving is that portion of the income generated by the business that the owners choose to reinvest in the business. Expected future returns are, of course, a key element in that calculation (as is an assessment of the relative attractiveness of debt and equity finance)<sup>53</sup>. Abstracting from the ups and downs of business cycles, business savings, in an economy with reasonable market disciplines, are likely to reflect a perceived future opportunities - if they are poor, business savings will be low too.

In that sense, the average rate of business saving is best thought of as largely endogenous, responsive to the rest of economic policy framework and the overall business environment, rather than as an independent driver of growth prospects. In other words, were business investment prospects in New Zealand better - if, for example, the real exchange rate were cycling around a level (as per Figure 1) more consistent with New Zealand relative productivity performance - the average business savings rate would also, over time, probably be materially higher.

Standing back to sum up the discussion on savings, a thought experiment can be helpful. If all New Zealanders woke up tomorrow morning with a heightened autonomous (God-given perhaps) desire to save - wanting to save, say, 20 per cent of national income rather than 15 per cent - that would have material (and probably generally desirable) economic implications. Inflation pressures would ease markedly, and interest rates (actual and expected) would drop quite materially. The exchange rate could also be expected to fall. In response to the lower cost of capital, investment (especially that in the tradables sector, since domestic demand would have weakened), and the productivity performance of the New Zealand economy and the incomes of New Zealanders, could be expected to improve materially.

But to understand hypothetically what would happen if preferences were to change is very different from understanding why New Zealanders' savings choices have been as they are (and why those in several other Anglo countries have been similar to ours - and so different to, for example, those in many northern European countries). There is little sign of distinctive or egregious policy-induced distortions that can explain the savings choices of such countries, and particularly those in New Zealand.

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<sup>52</sup> In the very short-term some correlation between consumption and house prices is quite plausible for other reasons. For example, rising house prices are strongly correlated with high turnover in the housing market, and moving house typically involves surges in consumption expenditures - legal services, estate agent services, moving costs, as well the discretionary "new lounge suite for the new house". For more discussion of the (lack of) link between consumption, savings, and house prices see de Veirman and Reddell (2011).

<sup>53</sup> Unlike many tax systems, the New Zealand imputation system does not artificially bias firm financing towards reliance on debt.

## Investment

If savings preferences and choices are as they are, apparently not severely adversely affected (more than in other advanced economies) by government policy settings, what of the investment side of the gap between desired saving and desired investment?

Investment - whether by households, firms, or government - plays a vital part in supporting living standards and as part of the process of economic growth. Investment encompasses, inter alia, building new houses, building and equipping new schools, hospitals and roads, and the new factories, offices, and software that are integral part of a growing business sector. High-performing fast-growing economies tend to have a faster rate of growth in business capital stock per worker than less well-performing economies do. That isn't because all investment is good and therefore more is better - many command economies invested very heavily, and wastefully (as New Zealand did with the Think Big projects). But over time rapid growth in productivity, and in particular total factor productivity, tends to go hand in hand with high rates of business investment per worker. Many of the potential productivity gains are made possible by new generations of physical capital, facilitating better - more productive - combinations of labour and capital.

As noted earlier, the fact that actual investment as a share of GDP has been about average, even at New Zealand's high interest rates, suggests that the amount of investment firms would have wanted to do ("desired investment"), at an interest rate equal to that in the rest of the world, has been materially above average. That extra desired investment is what is being crowded out by the high average New Zealand interest rates, and the associated pressure on the real exchange rate and other financial prices. And the business investment that does occur is disproportionately skewed towards non-tradables sector, a sector which only rarely provides, in isolation, a robust foundation for fast sustained long-term growth

If the high desired investment was itself reflecting rapid productivity growth and abundant private sector investment prospects, perhaps particularly in the tradables sector, we might regard it as an unalloyed good thing. Over the long haul, all else equal, interest rates tend to be higher when, for other reasons, long-term growth prospects are better. In Australia, where the investment share of GDP has been very high, primarily to take advantage of the emerging minerals opportunities, that is a plausible story<sup>54</sup>. In New Zealand, we have had nothing similar. And our actual productivity growth has been no better than average over the last 20 years, (typically a bit worse, and with no sign of convergence). However, it is quite plausible that the policy frameworks put in place in the late 1980s and early 1990s have given rise to a high incipient demand for investment. A lot of investment would occur if (domestic and foreign) firms considering the possibility of investing here faced a "world" real interest rate, and a real exchange rate more aligned to the actual productivity record.

What then put the block in the road of achieving these possibilities?

Changing rates of population growth appear to have been an underappreciated factor in the analysis of savings and investment patterns in New Zealand<sup>55 56</sup>.

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<sup>54</sup> Although it is interesting to note, in Figure 2, that even over the last 20 years Australia's rate of real labour productivity growth has been only around the median among OECD countries.

<sup>55</sup> Although not necessarily in the older literature. See, for example, the perspectives of Horace Belshaw (1952) and Sir Frank Holmes (1966).

Over the last 50 years (and more) New Zealand's population has mostly grown materially faster than the populations of other advanced countries. Overall, advanced country population growth is slowing as birth rates have declined, but New Zealand's population has still typically grown faster. In the 15 or so years after 1990, our population growth was among the fastest in the OECD<sup>57</sup>.

Population growth has considerable implications for required investment – or, in the parlance of this paper, “desired investment” at the world interest rate. Crudely, every new person living in New Zealand requires on average an addition to the net capital stock (houses, roads, hospitals, shops, offices, factories equal to 3-4 years of income<sup>58</sup>), just to maintain pre-existing capital/output ratios. If the rate of population growth increases by 1 per cent per annum, this means that the required (or “desired”) gross investment to GDP ratio, all else equal, will be 3-4 percentage points of GDP higher if the pre-existing capital to output ratio is to be maintained. That puts additional pressure on scarce real resources - scarce particularly in an economy with only a modest national savings rate - and tends to hold domestic interest rates higher than otherwise<sup>59</sup>. The issue isn't money – that can be borrowed abroad - it is the availability of, in particular, the domestic labour required to actually put the investment in place. Most of the capital stock is buildings (residential dwellings alone make up around 40 per cent of the capital stock) and construction is a relatively low productivity labour intensive sector.

All else equal - and in particular for an unchanged savings rate - faster population growth (especially relative to that abroad) means that some other investment that would otherwise occur will tend to be crowded out to make way for the infrastructure (private and public) needs of the increased population. This is not some central planner's response, but how the market respond to the demand created by the additional population – it crowds out spending that is relatively more sensitive to changes in real interest and exchange rates. Typically, that will be business investment, especially that in the tradables sector. In such a situation, the total capital stock will still be growing, perhaps quite materially, but the capital stock per capita, or per worker, will be growing less rapidly than it would otherwise have done.

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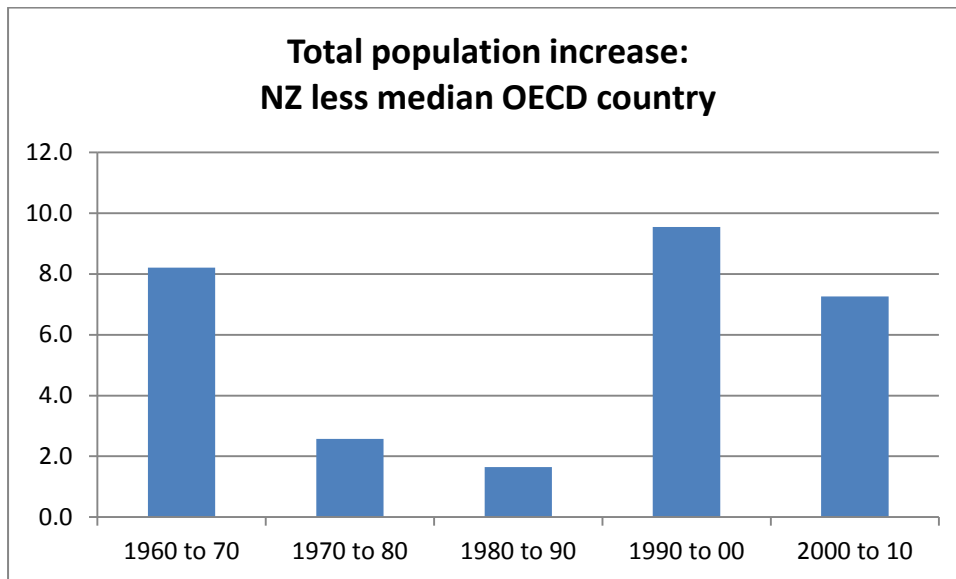
<sup>56</sup> The material that follows was first foreshadowed in Reddell (2010 and 2011) and Savings Working Group (2011)

<sup>57</sup> Israel recorded the fastest population growth of any OECD country over the last couple of decades (and one of the lowest rates of productivity growth).

<sup>58</sup> The net capital stock is estimated by Statistics New Zealand at around three times annual GDP

<sup>59</sup> Or require other forms of rationing (exchange controls, direct credit restrictions) of the sort seen in the 1950s and 60s.

**Figure 12: Population growth differentials, by decade**

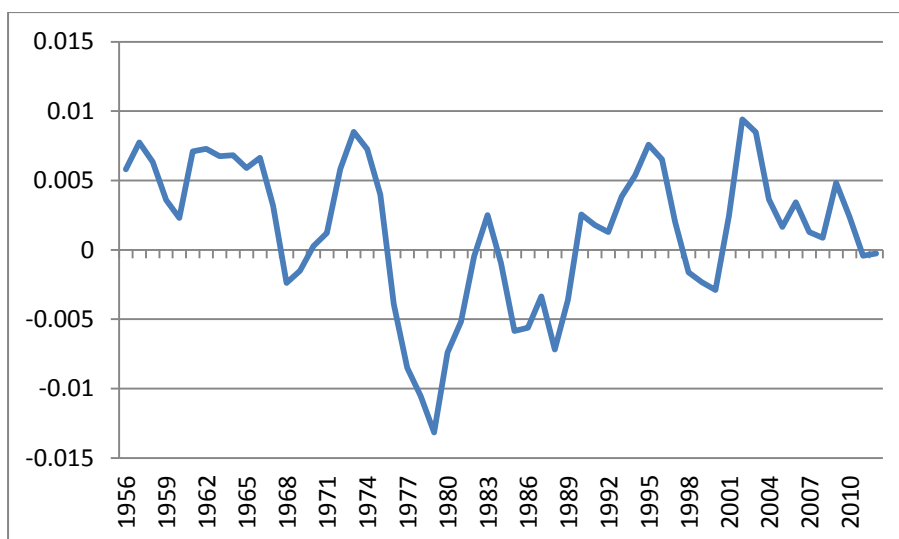


Source: OECD (Sample includes all current OECD countries)

The argument holds in reverse, for declines in the rate of population growth. The gap between New Zealand's population growth and that abroad hasn't been stable - not just year-to-year but over long periods. In the 1970s and 1980s population growth in New Zealand fell away much faster than that in the rest of the OECD (Figure 12). For a period in the late 1970s, population growth fell to zero (and for the decade or so around that time, population growth was the lowest in recorded New Zealand history).

What happened? As is well-recognised, New Zealand's economic performance deteriorated sharply, especially as the terms of trade fell, and net migration turned deeply negative. The scale of the outflow was very large by historical standards. New Zealanders appeared to respond quite rationally (as other research has shown) pursuing perceived better opportunities abroad, especially across the Tasman.

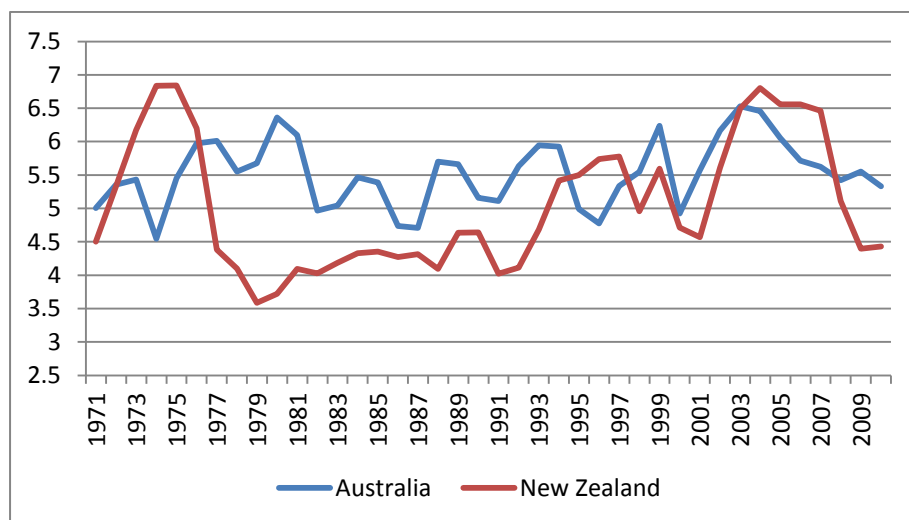
**Figure 13: Net permanent and long-term migration/total population**



Source: OECD

People have to live somewhere, and quite modest changes in population patterns have big implications for the required flow of new housing. One insight into the difference the net outflow made is shown by looking at the comparison between the share of GDP accounted for by residential investment in New Zealand and Australia.

**Figure 14: Residential investment as a per cent of GDP**



Source: OECD

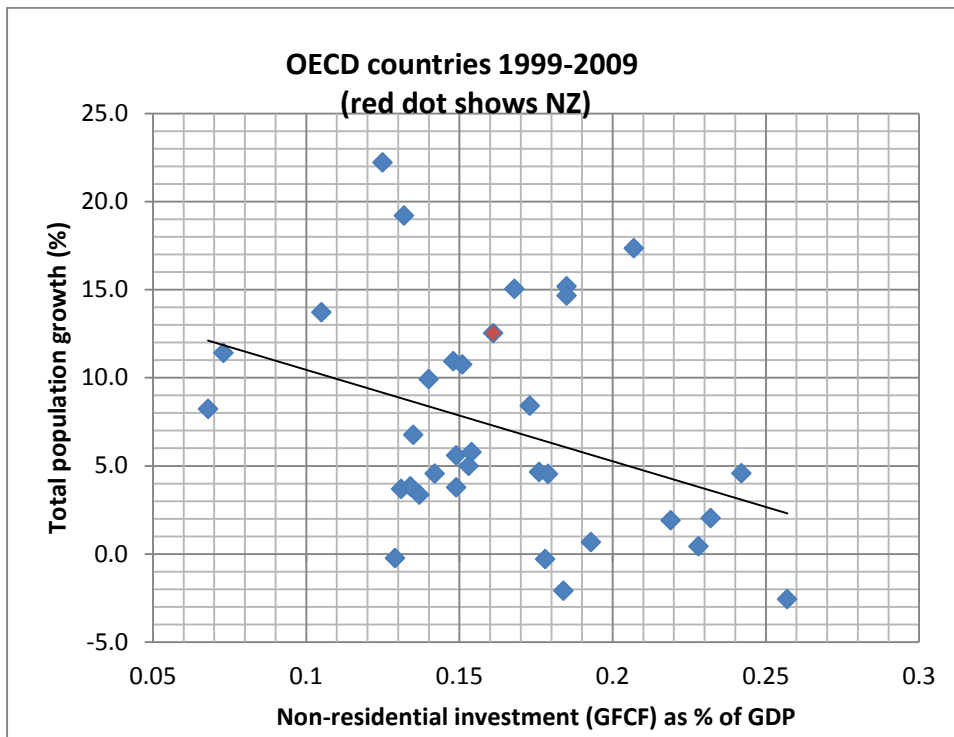
The marked reduction in population growth over the second half of the 1970s and throughout the 1980s materially reduced the volume of real resources devoted to labour-intensive house-building here relative to Australia. Resources freed-up that way are available for other activities. In particular, in the near-term, reduced population growth reduces pressure on (real resources and hence on) real interest rates and the real exchange rate. And note, from Figure 1, that for much of this period the real exchange rate was heading downwards – the direction it needed (both with the benefit of hindsight, and as seen at the time) it needed to go. Of course, there were so many other distortions in the economy at the time, and a pretty slow, and faltering, pace of liberalisation, that it was difficult for the economy to capture the gains that the stabilising outflow of New Zealanders would otherwise have made possible<sup>60</sup>.

But how much does all this matter? It is impossible to re-run New Zealand's history, as so much else was going on at the same time. However, cross-country comparisons across time can offer some insight. Good data for enough countries are scarce, but Figure 15 takes data for all OECD countries for the last decade or so (for which consistent data are available). It plots population growth over the period against the share of GDP devoted to investment in things other than houses. If one plots population growth against (real physical) investment in house-building one finds the expected upward slope: faster population growth

<sup>60</sup> Indeed, the huge Think Big investment programmes - a demand shock of a size on a par with the repair of Christchurch post-earthquake, although probably much more import-intensive - worked in exactly the opposite direction.

means a larger share of the economy's resources devoted to building houses. All else equal, I expected to find an upward slope for non-housing investment too: after all, more people means more roads and schools, and factories and shops are needed. But for the last decade at least, and for this sample of advanced countries - a variegated one, from the old rich, to the much poorer emerging eastern European members - the relationship is quite unexpected. Countries with faster population growth have devoted a smaller share of GDP to non-housing physical investment than their peers with slower population growth have.

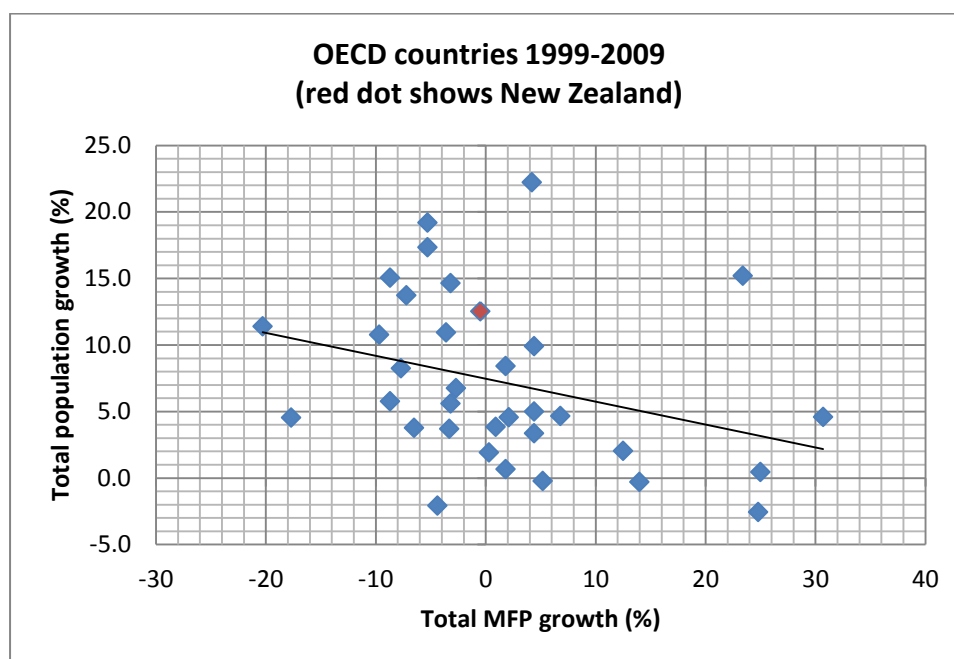
**Figure 15: Population growth and non-housing investment**



Source: OECD.

Figure 16 shows the same, unexpected negative relationship between population growth and multi-factor productivity growth. Most would probably have expected either no relationship at all or an upward sloping one.

**Figure 16: Population growth and multi-factor productivity growth**



Source: OECD

None of these are tight, mechanical or inevitable relationships – and they might not pass any formal tests of statistical significance. And there are interesting outliers: Australia, for example, has had rapid population growth and strong investment (on the back of record minerals prices). But the relationships, such as they are, are in completely the other direction to what was expected - it is the absence of any upward slope that is really telling. In the case of eastern European countries, for example, it appears that outward migration and very low birth rates (resulting in flat or falling populations) may, in conjunction with less modest national savings rates, have assisted the process of convergence in income and productivity towards the levels of the richer OECD countries. Those countries, having substantially reformed and liberalised their economies, have achieved some material convergence. New Zealand has not. Appendix 2 presents some summary data, drawing on the experiences of eastern Europe and Korea, on the one hand, and New Zealand and Israel on the other hand.

However, this is not a paper about global convergence patterns. I present these rather limited data as a suggestive cross-check on the story I am proposing to explain some key aspects of the New Zealand experience. Is it implausible that population growth could have had material implications for the New Zealand growth and productivity story? On the face of it, the recent international experience suggests not.

The proposition of the remainder of this paper is that New Zealand's immigration policy choices may have inadvertently stifled the market (or citizen) led adjustment, and thus over the last 20 years or so materially undermined the prospects for the sort of income and productivity convergence that many would have expected.

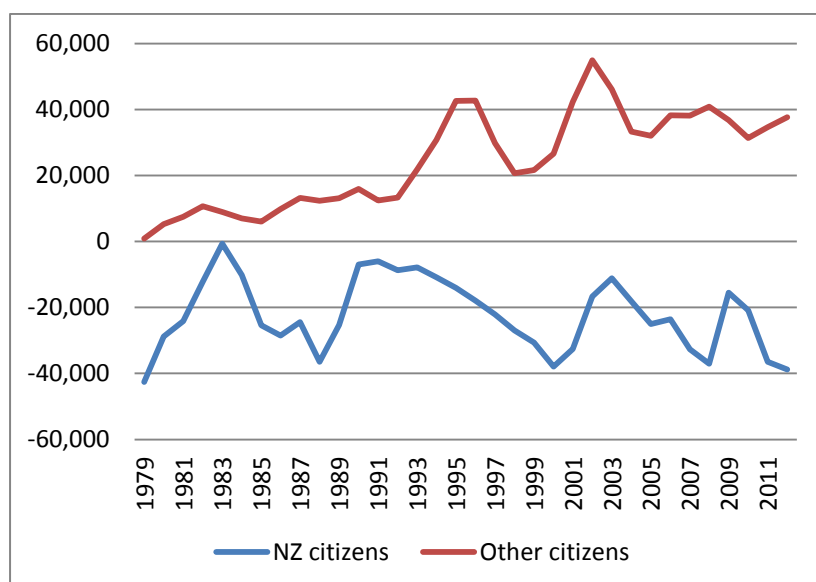
After the period of very subdued population growth, New Zealand's population growth accelerated rapidly from the early 1990s and, relative to other advanced economies, the pace remains strong. Public policy played a decisive part in the change - it is not just a



matter of the free exercise of individual New Zealanders' preference (either through having more children, or choosing to stay rather than leave New Zealand).

Immigration policy was markedly reshaped and liberalised in the late 1980s and early 1990s<sup>61</sup>. In macroeconomic terms, the most important element of the change was the very substantial resulting increase in the net inflow of non-New Zealanders.

**Figure 17: Net permanent and long-term migration, by citizenship**



Source: Statistics NZ

Figure 17 tells the story. The net outflow of New Zealand citizens fluctuates (with the New Zealand and foreign business cycle) but has been negative for several decades. The average annual outflow - around 0.6 per cent of the population over the last decade - is large by international standards. But it is now typically more than offset by the increasing number of net arrivals of non NZ citizens: from around 10000 in the period prior to the reforms, to something closer to 40000 per annum now. The difference makes a material macroeconomic difference; on average, for example, equivalent to around half New Zealand's house-building in a normal year. As a share of population, the average net intake of non-New Zealanders is one of the largest anywhere; directly as a matter of policy choice. The net inflow of non New Zealand citizens has accounted for around 80 per cent of average population growth over the last two decades.

The split of the data here between New Zealand and other citizens is simply to help illustrate the nature of the policy "shock". Nothing in this paper relies on, or implies, any differences in the fundamental characteristics of New Zealand citizens and immigrants to New Zealand

<sup>61</sup> Key measures included a new Immigration Act put in place in 1987, and the introduction of the points-system in November 1991. The changes were designed to remove preferences for traditional countries, and put greater focus on skilled migration, all within an intellectual climate focused on liberalising product and factor markets. For a brief history of New Zealand immigration policy, see <http://www.teara.govt.nz/en/history-of-immigration>, and for a fuller discussion see, for example, Spoonley and Bedford (2012)

from other countries<sup>62</sup>. The only critical difference is that New Zealand citizens can come and go as they wish - their choices are totally endogenous to, e.g., relative economic conditions. By contrast, Australians aside (who make up a very small proportion of migrants), non-citizens can migrate to New Zealand only other policy provisions set, and altered from time to time, by the New Zealand government. Thus, although gross and net flows of non-New Zealand citizens can and do fluctuate, the substantial increase in the average net inflow since the late 1980s is a direct result of domestic policy choices.

It is widely accepted that the big swings in migration are tightly linked to the cyclical performance of the New Zealand economy (and causation probably runs both ways). But although the big cyclical swings help illustrate the general nature of my story (in that demand effects quite materially dominate supply in the short-term, a perspective reflected in most New Zealand macro forecasts), my interest is much less with the swings than with the trend – the high average level of arrivals, which is directly countering the stabilising effects of the outflow of New Zealanders.

Migrants, like us all, need a roof over their heads. An old argument in the New Zealand debate is that, in some sense, New Zealand is overinvested in housing. Relative to population it is simply not true<sup>63</sup>. Over the last 20 years or so residential investment as a share of GDP has been above the average for OECD countries. But, as noted earlier, countries with faster population growth tend to devote a higher share of GDP to house-building (people have to live somewhere), and New Zealand's population growth in the last 20 years or so has been both above average for OECD countries (in the upper quartile in fact) and materially faster than in the previous 15 years. If anything there has probably been a little less house-building here than our population growth and the average international experience (given population) might have suggested. The high real price of houses is probably largely a result of supply-constraints in the face of big increases in demand<sup>64</sup> - and, in isolation, suggests that given our population growth, insufficient real resources have been devoted to house-building. At the margin, high real interest rates (relative to other advanced economies) will also have acted as a modest drag on house-building here relative to other advanced countries.

Taking the period as a whole, it is likely that the markedly increased net inflow of non-New Zealanders - a new wave entering each and every year - has extended and exaggerated the degree to which our average interest rates have exceeded those of other advanced economies. That, in turn, will have extended and exacerbated the persistent severe average overvaluation of the real exchange rate. In that sense, government policy has tended to

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<sup>62</sup> This paper does not deal with any issues around the quality of the migrants or of the design details of the inward migration programme itself. Implicitly, it treats foreign migrants as sharing much the same qualities and needs as the marginal New Zealand citizen addition to the population. In the international migration literature, New Zealand's programme appears to be highly-regarded. As a lower-income, small and distant advanced economy, New Zealand may struggle to attract the brightest, best, and most driven of potential migrants. However, neither that topic nor any absorption/matching issues are dealt with in this paper which is focused on macroeconomic issues and pressures.

<sup>63</sup> And as Briggs (2012) suggests, probably not as a share of household assets either.

<sup>64</sup> The tax-favoured nature of ownership of houses (especially owner-occupation) may also, at the margin, have contributed to high house (or land) prices. Home ownership itself is probably not more tax-favoured in New Zealand than in many other OECD countries, but since many other savings vehicles in other countries are also tax-favoured in a way that they have not been in New Zealand since 1988, there may still be a greater bias towards housing in New Zealand.

directly, if inadvertently, stymie the rebalancing and adjustment that private citizens' choices would otherwise have brought about.

Had that net outflow experienced in the 1970s and 1980s continued over the last two decades, the resources that had to be devoted to the housing (and the other population-driven components of the capital stock) demands of a fairly rapidly rising population would have been free for other uses<sup>65</sup>. Other things equal, we might have expected to have seen rather lower real interest rates and a lower real exchange rate. The prospects for "capital deepening", and for associated improvements in labour productivity and MFP, made possible by the other reforms and liberalisation of the late 80s and early 1990s, would have been materially enhanced. If, say, the same ratio of total investment (gross investment to GDP) had occurred, it would have involved materially less house-building and less government infrastructure investment. On the other hand, private business investment, which is much more sensitive to expected economic returns, would have made up a much larger share of total investment. Within business investment it is likely that there would have been a stronger skew towards investment in the tradables sector to take advantage of the opportunities created by a lower exchange rate and the generally fairly good business regulatory environment<sup>66</sup>.

A prevalent view among many economic analysts and academic researchers is that there are long-term real per capita economic benefits to the recipient country from migration<sup>67</sup>, although these gains are not always easy to demonstrate empirically. Little or none of the literature in the area takes account of the role of real interest rates in floating exchange rate countries. Thus, it is quite plausible that migrants to, say, one city or state in the United States end up raising per capita incomes in that area. But an individual city or state is simply one small part of a common currency area<sup>68</sup>, with sufficiently integrated labour and goods markets that the sorts of issues New Zealand has faced, as regards real interest rates and real exchange rates, do not arise. In its own comprehensive review of Australian immigration, as economically "orthodox" body as the Australian Productivity Commission (2006) suggested that there was no evidence that immigration provided economic benefits to Australians (although it clearly benefits the migrants themselves). A relatively recent, and widely-cited, BERL modelling exercise for the former Department of Labour (Hodgson et al 2009) suggested that there are material per capita income benefits from immigration to New Zealand - but the per capita income gains arose solely from the higher labour force participation of typically younger migrants; they were not productivity gains. And that modelling did not take account of the resulting real interest and real exchange rate pressures in a country with modest savings rates.

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<sup>65</sup> Note that if net migration of non-New Zealanders had continued at 1980s rates, New Zealand's total population growth rate would still not have been particularly low relative to other OECD countries.

<sup>66</sup> A possible parallel that might warrant further analysis is the reunification of Germany. Large inward migration (as in New Zealand) might be in some ways parallel to the impact (in terms of investment needs) of adding 16 million people from a less well-developed east. Looking ahead, South Korea will probably face a similar adjustment challenge at some point.

<sup>67</sup> A good example of this position in the New Zealand context is chapter 7 of Spoonley and Bedford (2012). Note that benefits to the migrants themselves seem, on average, uncontroversial: revealed preference is that they continue to come.

<sup>68</sup> Borgas (2002), a leading scholar on the economics of immigration, notes that existing research which is mostly focused on using data on the impact of immigration on individual cities or regions sheds little light on the impact on a national economy.

Internationally, there is no evidence over the last century that countries with faster population growth, or greater inward migration, have achieved faster income or productivity growth than other countries. There is no evidence that small countries have grown less fast than large countries. The United States has been known in recent decades for its large inward migration. But in the decades after World War I the United States severely clamped down on inward migration, and there is little sign of any resulting economic harm - indeed, for a variety of reasons, those were also the decades of the greatest US economic dominance and of very strong growth in multi-factor productivity.<sup>69</sup>

In this paper, I am not attempting to make general statements about the economic impact of immigration on the citizens of recipient economies. In general, my reading of the evidence is that it makes quite a small difference either way<sup>70</sup>. But specific circumstances can matter a lot. And the New Zealand situation is unusual. With modest savings, and a large net outflow of New Zealand citizens, it looks quite anomalous for policy to have been designed to induce large net inflows of people from other countries<sup>71</sup>. I suspect it looks anomalous for good reason - given the specific circumstances of New Zealand, and the aspirations towards convergence, it was not very good policy. In other circumstances, the appropriate immigration policy might be quite different - Ireland, for example, took in large numbers of foreigners once it was already well on the way to convergence, and in persistently high savings Singapore and Switzerland, additional labour inflows may help ensure a more efficient use of the abundant available domestic capital. But that simply has not been the New Zealand situation, perhaps even more so as the share of the domestic population with tertiary-qualifications has increased markedly (including relative to other advanced countries) in recent decades.

The older literature on the economics of immigration suggests that migration tends to deliver factor price equalisation - thus, on its own, for example the large net migration from New Zealand to Australia will have tended to improve prospects in both places, while narrowing the wage differentials between the two countries. That was the experience of United States and Europe in the late 19<sup>th</sup> and early 20<sup>th</sup> century<sup>72</sup>. New Zealand's inward migration experience is probably tending to work in the same direction. Around half of the net inward migration has been from countries with average incomes and productivity (and typically policy climates) materially poorer than New Zealand's<sup>73</sup>. Against that backdrop, there is little reason to think that factor price equalisation, even if it is at work, would induce the sort of equalisation - with the wealthier OECD countries - that we have typically aspired to.

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<sup>69</sup> See, for example, the table on page 43 of Field (2011). In a recent CBO working paper drawing on Field's work, Shackleton (2013) notes a hypothesis under which the "dramatic reduction" in immigration itself contributed to the acceleration in MFP growth.

<sup>70</sup> In a recent paper Boubtane and Dumont (2013) produce some results suggesting small beneficial effects on average across the OECD. (The New Zealand numbers reported in that paper reflect the impact expected on New Zealand from the scale/nature of our migration if, and only if, the coefficients of the model estimated for the OECD area as a whole applied specifically to the other features of the New Zealand economy.)

<sup>71</sup> It is, in some ways, as if the government had attempted to respond to the outflow of locals from Taihape by an active programme of replacing the departing locals with outsiders.

<sup>72</sup> This is also consistent with the modelling results reported in the recent joint Productivity Commissions (2012) report on the Australia/New Zealand relationship, or those in the NIESR work on the impact of EU migration on the UK (Barrell et al (2007)).

<sup>73</sup> From the breakdown (available for the last decade or so on Infoshare) of permanent and long-term migration by country of birth.

## Conclusion

Catching up to the rest of the world, having once fallen so far behind, is hard. Far-reaching reforms, to introduce more open and competitive product and factor markets, were (and remain) a vital element in making convergence a possibility. But some key economy-wide relative prices have stood in the way of achieving what the reforms should otherwise have made possible. The key theme of this paper has been that the failure of the real exchange rate to adjust to the sustained relative decline in New Zealand incomes and productivity over several decades (and notwithstanding the recent recovery in the terms of trade) has been a critical element in the story. This, in turn, appears to result from whatever led to the surprisingly persistent gap between real interest rates here and those abroad.

A “desired savings and investment” framework appears to be the most appropriate lens through which to think about the real interest rate gap. We cannot yet be sure what it is that makes New Zealand so different in this area. It seems unlikely that there are obvious policy choices that explain our persistently quite low national savings rate - itself not a new development - but the modest savings rate is something that policymakers need to take into account. Low population growth of the sort we saw in the late 1970s and 1980s would have provided a good platform to maximise the per capita income benefits of the wide-ranging reform programme, especially in a country with a modest savings rate. Instead, immigration policy reforms had the effect of sharply reaccelerating population growth, at just the time when the focus might more naturally have been on lifting per capita income rather than total GDP.

High levels of government-induced inward migration could reasonably be seen as having stifled the self-stabilising market adjustment that was otherwise at work in response to the unexpected deterioration in New Zealand’s economic performance. The large outflow of New Zealanders, of itself, tends to dampen real interest rates and weaken the real exchange rate, which would have given New Zealand the chance to concentrate scarce resources in the tradables sector with the greater opportunities that exist in the markets of the world. A shortage of labour (skilled or otherwise) is not - and has not been at any time in recent history - the most obvious gap in New Zealand’s growth performance and prospects<sup>74</sup>. In that respect, for example, the New Zealand situation in this period could be seen quite differently from those of, say, Singapore or Switzerland – countries with persistently very high national savings rates, where additional labour might play a useful role in complementing, and best utilising locally, the relatively abundant supply of capital from local savers. Ireland poses an interesting parallel: it experienced substantial net outflows of Irish citizens for decades. Far-reaching reforms and the liberalisation of the Irish economy led to a sharp acceleration in Irish income and productivity growth, and only after Ireland had already achieved substantial convergence with the rest of the advanced world did large scale inward migration occur<sup>75</sup>.

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<sup>74</sup> As Sir Frank Holmes noted in his 1960s writings on the economics of New Zealand immigration, apparent shortages of skilled labour often reveal more about the appropriate stance of monetary policy than about the appropriate migration policy (even more so in days before points scheme and high tertiary participation rates).

<sup>75</sup> There is not space to treat the Irish story extensively. I include this brief reference here largely because it has been suggested that Ireland’s experience is inconsistent with my argument about New Zealand. In fact, I see the Irish experience from the 1960s to the 1990s as reinforcing my story, although in the post

The indications that countries with faster population growth have in recent decades devoted fewer resources to non-housing investment and have seen less growth in multi-factor productivity are sobering. They provide another straw in the wind, suggesting caution about the merits of continuing large inward immigration to New Zealand for the time being - while the convergence challenge is huge and the available domestic resources (“savings”) to support the capital requirements of both a growing population and significant “capital deepening” are quite modest. Had the inflow of (well-chosen) non New Zealanders been kept to the aggregate levels seen in the 1980s, it is almost certain that over the last couple of decades New Zealand real interest rates would have been closer to those in the rest of the world, and the real exchange rate would have been materially lower<sup>76</sup>. (House prices would have been lower, and) if real interest and exchange rates had been lower then per capita incomes would most likely have been materially higher, on a path to convergence with our former (and future?) rich country peers<sup>77</sup>. If we ever do make material progress towards convergence then a higher exchange rate will look more warranted – we see rising real exchange rates in many East European countries as they converge - but we can’t put the cart before the horse.

When a family has fallen on hard times, and has to devote lots of energy to stabilising the situation and restoring the family finances, having another child at the same time isn’t a terribly prudent economic choice. Having another child then will almost invariably worsen the family’s economic position (whatever other joy it brings). It is a folksy comparison and breaks down at some points, but New Zealand is in some respects that family: choosing to have lots more kids, as it were, with all the attendant pressures, just when we were otherwise getting into a position to capitalise on the reforms put in place in the late 1980s and early 1990s and restore the family finances and income prospects.

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1999 period the Irish experience becomes very different because of being part of the euro common currency area.

<sup>76</sup> But, like most real exchange rates, still quite variable. It is, however, at least possible that lower average real interest rates would mean that less international market attention would be paid to New Zealand. If so, that might reduce the exchange rate volatility associated with ebbs and flows in financial market sentiment.

<sup>77</sup> And the much-improved opportunities might reasonably have even been expected to have lifted the savings rate (business saving in particular).

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## Appendix 1: Can a debt-related risk premium explain New Zealand interest rates?

It has been argued that the large average gap between our interest rates and those seen abroad is some sort of “risk premium” imposed by foreign funders as a result of the foreign exchange rate risk associated with the large negative net international investment position (as a per cent of GDP) New Zealand has run over recent decades. Different versions of this argument have been made recently by Rose (2010, 2011, 2012) and by Burnside (2011). By looking at the corollaries of the hypothesis - what else we might have expected to see if the story were true - this note outlines more fully why it seems improbable that a risk premium of this sort is an important part of the story.

In the abstract, the idea that foreign investors might have become uneasy about the net indebtedness of New Zealanders is plausible. The international history of sudden stops and financial crises, including the quite recent cases of countries with similarly high negative NIIP/GDP ratios, suggests that the possibility can't simply be assumed away.

Had such concerns arisen around New Zealand, what might we have expected to see? We would not have expected to see any enduring effect on New Zealand short-term interest rates since short-term rates are largely determined by the Reserve Bank's assessment of what is required to achieve the inflation target. This was so even in the period prior to the introduction of the Official Cash Rate in 1999. Heightened foreign concerns about an accumulated external debt load do nothing to increase domestic resource pressures (in ways that would warrant higher short-term interest rates). Indeed, such concerns, if they were to arise, might lessen domestic inflation pressures slightly if, for example, greenfield foreign direct investment was to be adversely affected, or if the foreign investors' concerns influenced the attitudes of domestic resident firms and households, who might be expected to respond by saving more and investing less.

Long-term interest rates are a more plausible place to find signs of investors' concerns about risk. If risk related to the large accumulated NIIP position had been a significant and sustained part of the New Zealand interest rate story over the last couple of decades, one might have expected to have seen high long-term interest rates relative to our short-term rates<sup>1</sup>. But as discussed in the main text, the New Zealand experience has been the opposite way round - long-term rates have been low relative to short-term rates.

However, if heightened foreign fears had emerged at some point and subsequently been sustained, their requirement for an increased return to compensate for the perception of heightened risk is real and has to be met. No foreign lender has to lend to New Zealand (a tiny part of the global investment universe). If the concern isn't reflected in interest rates it can, in a floating exchange rate country, be reflected directly in the exchange rate itself<sup>78</sup>. In such a scenario, we might expect to see that exchange rate drop - and drop sufficiently far below some concept of a longer-term “equilibrium” rate, that the expected eventual future appreciation in the exchange rate provides the additional required total expected return.

If investors' concerns about the NIIP position had become a significant sustained issue we should have seen either high long-term interest rates relative to short-term rates, or the exchange rate undershooting some sort of longer-term equilibrium (or some combination of the two). In fact, over the last 25 years there has been no sustained sign of either, individually or in combination<sup>79</sup>.

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<sup>78</sup> Engel (2011) also notes that “theoretically, a currency whose assets are perceived to be risky...should be weaker *ceteris paribus*.”

<sup>79</sup> This Appendix should not be read as suggesting that for brief specific sub-periods external risk considerations might not have been an important factor. For example, the precipitous fall in the exchange

The equity risk premium provides a useful parallel. When investors become more concerned about the risk associated with an individual share, or with the market as a whole, they want a higher return to cover the risk of holding the asset concerned. But the typical response is not to successfully demand higher dividends. The operating businesses can't just generate more profit on demand, and for any given operating profit an increased dividend paid by a troubled company and all else equal, will tend to further **weaken** a company's financial position. Rather, what typically happens is that the share price falls to a point where the future expected dividends and future expected appreciation in the share price together provide the higher rate of return investors are now requiring to take on the risk.

If sustained heightened external investor concerns about the New Zealand NIIP position had ever developed they would, most probably, have been reflected in a sustained period of exchange rate weakness. And an adjustment of this sort would have been an example of self-stabilising properties of the economy at work. A fall in the exchange rate provides the signal that shifts resources away from meeting domestic demand, towards (net) production for exports. That shift of resources in turn and over time reduces the build-up of net external liabilities, lowering the NIIP/GDP ratio back towards some more comfortable/sustainable/normal level. As the NIIP ratio returns to a more comfortable level, foreign investor concerns should ease expected required returns would fall, and the exchange rate might be expected to recover some ground.

None of this feels like a story that describes New Zealand for any sustained period in the post-liberalisation (or post price stability period). In many respects, the New Zealand stylised facts seem to fit rather better a story in which, for the most part, we have been able to borrow from abroad, in pretty much any amount we wanted, without heightened foreign concerns or the need to provide higher returns for foreign investors. Indeed, there were periods that look, and felt at the time, a lot like excessive **enthusiasm** for New Zealand assets, typically when domestic factors led to our interest rates rising relative to that elsewhere. Only rarely did foreign investors think our interest rates would stay indefinitely at such elevated levels - indeed, the higher New Zealand interest rates rose relative to the rest of the world in any particular cycle, the more they were expected to fall in the not-too-distant future.

Those advancing the risk premium explanation sometimes cite a cross-country scatter plot in which countries with large negative (positive) NIIP positions tend to have high (low) domestic interest rates (and some associated regression results). Large stock imbalances arise out of persistent flow imbalances and successfully differentiating the roles of stocks and flows is challenging<sup>80</sup>. This paper argues that domestic interest rates are largely driven by (actual and expected) flow imbalances - things that affect domestic inflation pressures. By contrast, concerns about the stock (of external debt), if they were to develop in a floating exchange rate country, seem more plausibly likely to be reflected in the exchange rate of the country concerned. The exchange rate reflects the value (actual and expected) of one country's money in terms of other moneys. By contrast, an interest rate is largely about returns across different time periods within a country.

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rate in late 2008 and early 2009 was probably partly a reaction to a sharp rise in global risk aversion, affecting (for example) the currency of a country heavily reliant on short-term offshore wholesale debt.

<sup>80</sup> Thus, for example, over the last 20 years New Zealand and Australia have had both among the persistently largest current account deficits in the advanced world and also among the largest average negative net IIP positions. On the other hand, Norway and Switzerland have had very large flow surpluses and large positive NIIP positions.

## Appendix 2 Some experiences from potential convergence countries

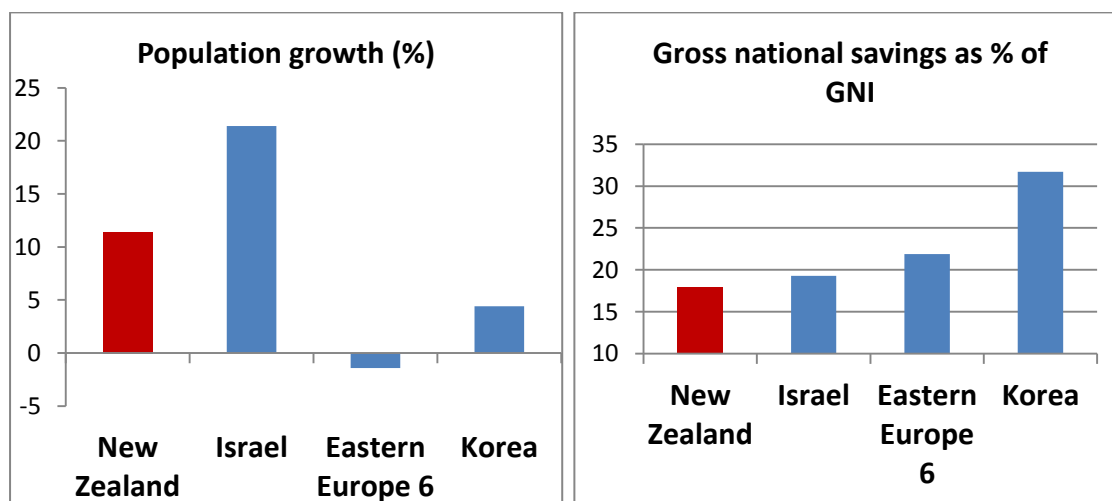
In preparing this paper, I had the opportunity to reflect briefly on the experiences of a number of other OECD countries each of which might, 20 years ago, have been considered as positioned for convergence with the more successful OECD economies: Israel, the six former communist East European countries (Czech Republic, Poland, Hungary, Estonia, Slovenia, and Slovakia) and Korea.

The experiences of these countries, relative to New Zealand, over the subsequent period makes interesting reading. Taken in isolation, they prove nothing - there is always a myriad of factors relevant to each country's story<sup>81</sup> – but it provides one lens for thinking about the New Zealand experience, comparing ourselves with a group of countries not often considered in local debate. They are intended to stimulate discussion, debate, and perhaps further research.

New Zealand and Israel had two of the highest rates of population growth in the OECD over recent decades, through a combination of migration and natural increase. By contrast, the East European countries have had falling populations over the last decade, through a combination of very birth rates and emigration (to the newly opened destinations in the EU). Korea has had modest population growth, with a very low birth rate.

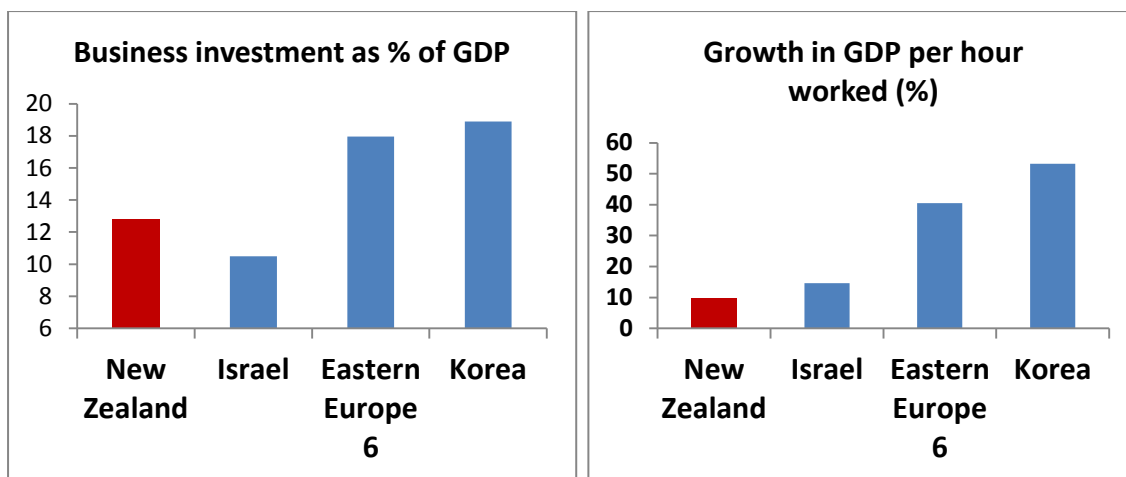
In each of these economies, including New Zealand, there was extensive reform and liberalisation across a wide range of product and factor markets. It is striking how different the aggregate results have been. The charts below look at the decade 1999 to 2009, the period for which data were readily available for all countries, and having the advantage of avoiding the immediate post-Communist years: by 1999 each of these countries was a functioning democratic market economy.

The first two charts show population growth and national savings rates.



The second set show business investment and growth in real GDP per hour worked.

<sup>81</sup> For example, several of the East European countries adopted the euro late in the period, and Israel faces constant defence and security issues.



In terms of bottom lines, New Zealand's experience is very similar to Israel's. As Figure 2 in the body of the paper shows, for the whole period since 1990, Israel has grown marginally slower than New Zealand. Given the high rate of migration to Israel<sup>82</sup>, and the highly skilled nature of many of the migrants, it is not a particular promising story for the possible benefits of migration.

Over the period, the eastern European countries and Korea achieved very substantial amounts of convergence (albeit starting from far lower incomes than New Zealand's or Israel's), with flat or falling populations, while New Zealand and Israel saw their productivity slip further behind the leaders in the OECD. Of this group of countries, New Zealand still had the second highest real GDP per hour worked in 2011 (behind only Slovenia) - but at less than two-thirds of the G7 or euro-area average we, and each of those countries, still had huge room for convergence.

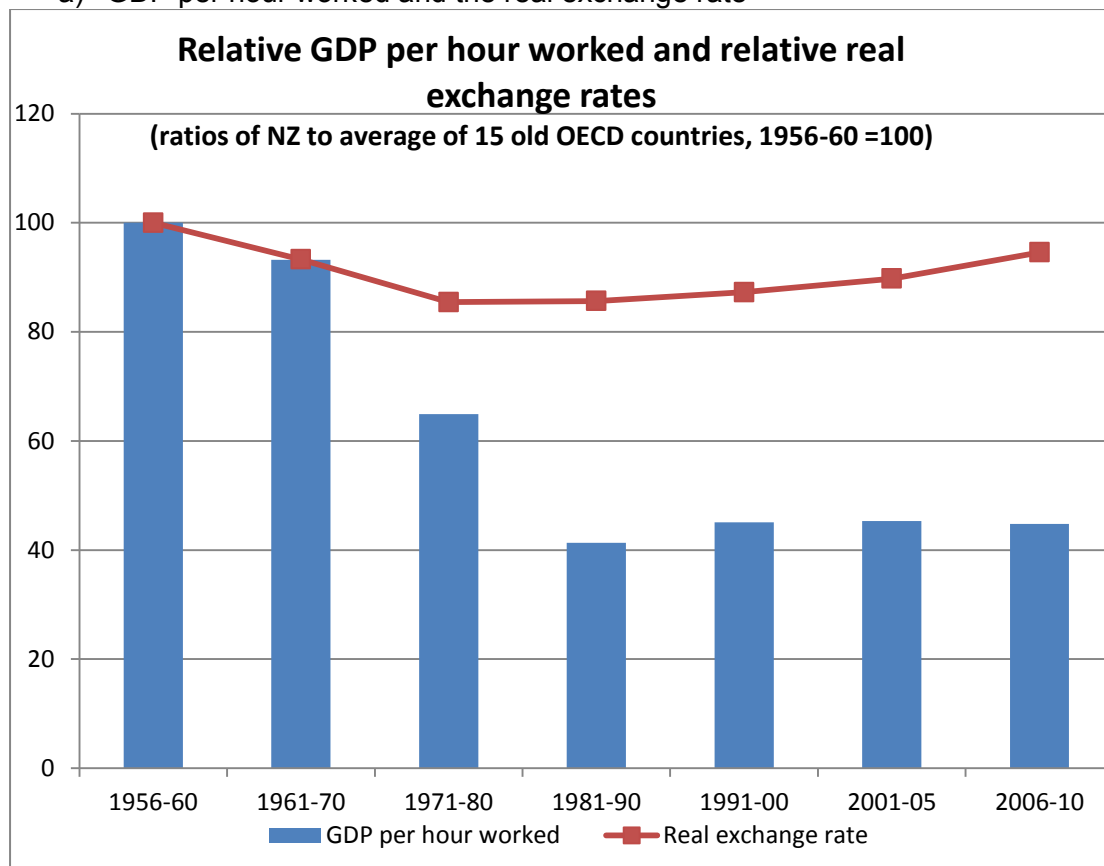
None of this is to suggest a mono-causal story for each of these countries. These economies also had higher savings rates than New Zealand did. But in a sense that is my point: in colloquial terms, their stars were aligned. Relatively high savings rates, much-improved micro policy frameworks, in combination with very low population rates, helped make room for rapid productivity growth and convergence in per capita GDP.

New Zealand, by contrast, appears to have inadvertently put a major element of policy directly at odds with the longstanding savings choices of our own people. Doing so, stifled the adjustment our citizens were already bringing about, exacerbated the macroeconomic imbalances, and seriously impeded the prospects for realising the full gains of our own extensive microeconomic reform programme.

<sup>82</sup> Provided for in their founding laws, rather than a current economic policy choice

## Graphical appendix: supplementary charts

### a) GDP per hour worked and the real exchange rate

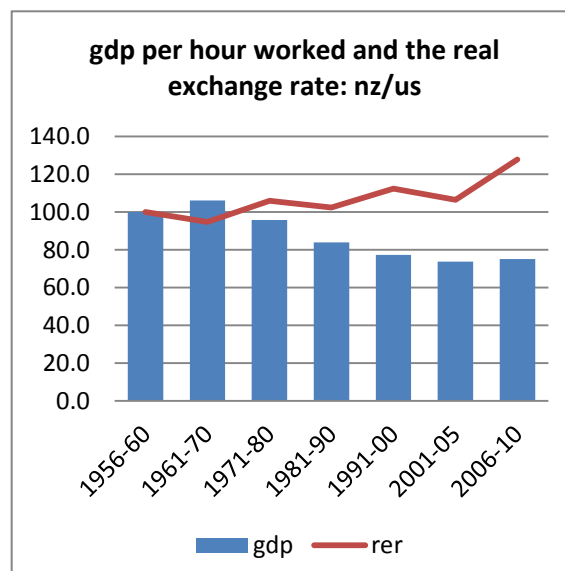
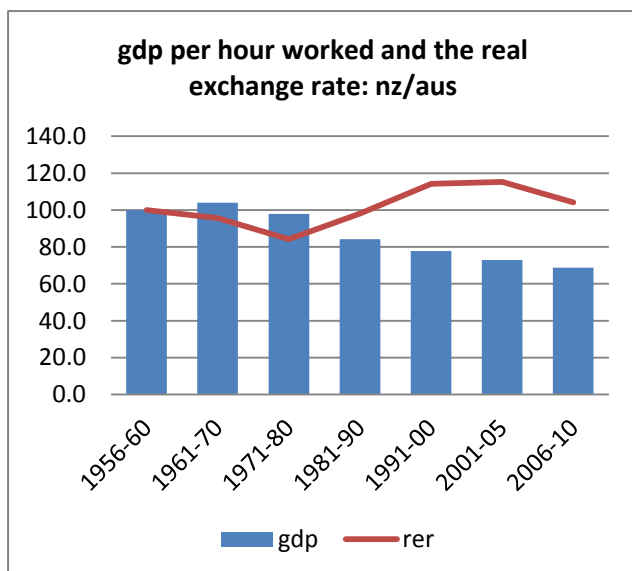


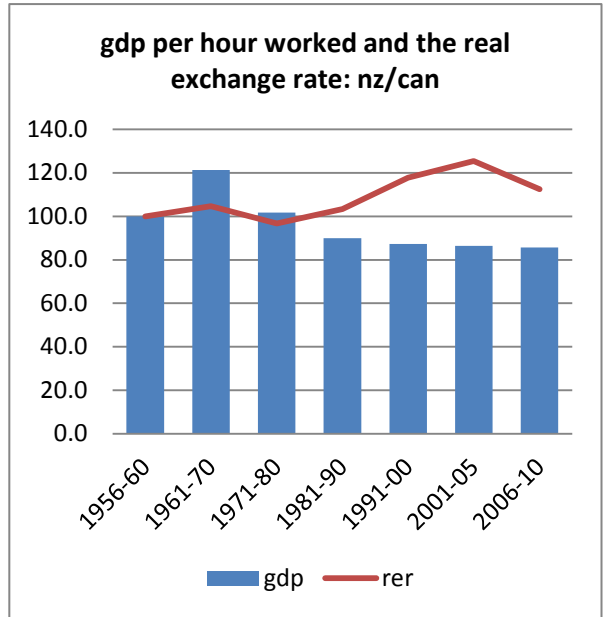
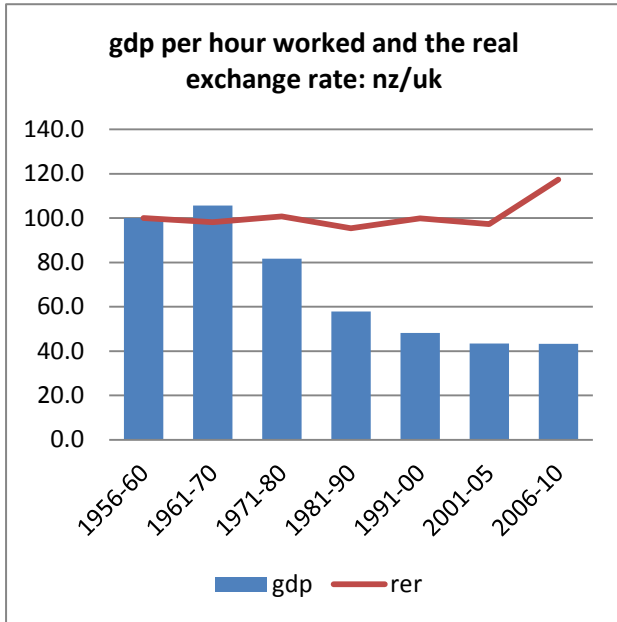
Data note: Nominal GDP per hour worked, converted at PPP exchange rates, and BIS narrow effective exchange rate indices. Prior to 1963, estimated real exchange rates calculated using OECD nominal exchange rate and CPI inflation data.

Comparator countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States

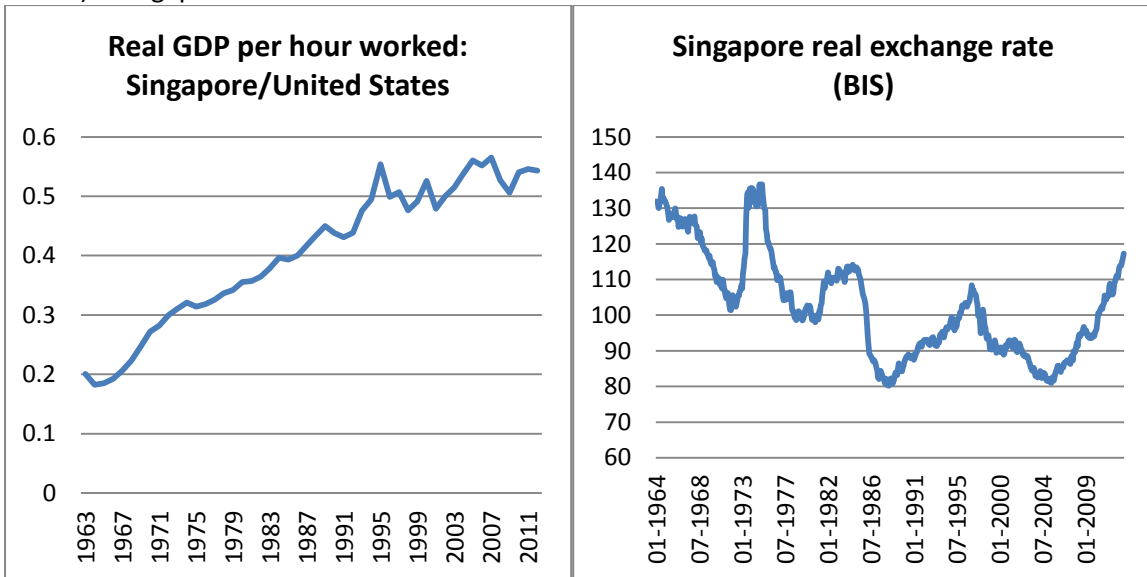
Source: Penn World Tables, Conference Board, BIS, OECD, author's calculations

### b) GDP per hour worked and real exchange rates: selected bilateral comparisons





c) Singapore



Source: Conference Board, BIS

d) A New Zealand business perspective

- “The fact is we have long faced four intractable problems; a structural current account deficit, low productivity, low savings rates and low [business] investment rates.”
- “the exchange rate is the critical factor in decisions around productive investment and as a consequence, export growth”

John Walley, NZ Herald, 19 March 2013