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# Savings and the household balance sheet

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The past decade and a half has seen a consistent decline in the household savings rate in New Zealand. This trend is not isolated to New Zealand, but is also occurring in other OECD countries. In addition, household indebtedness has risen at a faster rate than in other OECD countries. It is difficult to know how much further the savings rate will fall and household indebtedness will increase, but an adjustment in behaviour is likely at some point. The low household savings rate has contributed to an ongoing reliance on foreign savings. The banking system appears to manage the risks associated with using foreign savings well. However, as New Zealand's reliance on foreign savings increases, the economy at large potentially becomes more exposed to changes in international investor preferences, while households may become more sensitive to changes in interest rates, the labour market or house prices.

## 1 Introduction

Over the past 15 years, the level of savings undertaken by New Zealand households has fallen sharply, a trend mirrored in other OECD countries. During this period, household debt has risen sharply, largely for the purposes of financing housing activity. This article reviews developments in household savings and the wider household balance sheet against the backdrop of savings behaviour for the New Zealand economy as a whole. It draws some comparisons with other countries and explains the link between savings behaviour and the country's current account deficit.<sup>2</sup>

Household savings is a subject of considerable interest to a wide range of policy-makers and raises a host of issues. Many – such as whether households are saving adequately for retirement – are beyond the scope of this article. However, the article highlights some important macro-economic issues. As household saving falls, the reliance on foreign savings to fund investment tends to increase unless the fall in household savings is offset by a rise in savings by other domestic sectors. In turn, the economy potentially becomes more exposed to shifts in the investment preferences of foreign investors and their willingness to lend to New Zealand. In addition, a more indebted household sector may become more sensitive to changes in interest rates and incomes, a factor of particular importance to monetary policy.

## 2 Savings by sector

National savings is the proportion of a country's income that is not consumed in a particular period and is therefore available for investment (see box 1). While this article focuses on household savings, it is useful to look at how the overall national savings rate has trended. Figure 1 shows the sectoral breakdown of savings by households, business and the public (government) sectors, each expressed as a percentage of GDP.<sup>3</sup> The household savings rate has been trending downwards, and this will be analysed in further detail later on. Business savings, on the other hand, have been trending upwards since the early 1990s, and have been the main contributor to national savings. Business savings are the retained profits or undistributed income of companies, so the increase in business savings is largely a reflection of rising profitability among New Zealand companies. After a period of running budget deficits, the government started to run budget surpluses from the mid-1990s. This resulted in an improvement in public savings, which is now a strong contributor to national savings.

Although both business and public savings have increased significantly over the past decade, this improvement has only just been enough to offset the continual decline in household savings. The net national savings rate has been almost flat since the late 1980s apart from the decline in the early 1990s, but has remained positive apart from the 1992/93 period. Despite a positive net national savings rate, this has been insufficient to fully fund new investment in

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<sup>1</sup> This article was written while the author was on secondment from The Treasury.

<sup>2</sup> This article was finalised prior to the release of updated household asset and liability estimates by the Reserve Bank on 10 June. These statistics can be accessed at <http://www.rbnz.govt.nz/statistics/monfin/>. Some statistics reported in this article may differ from these updated estimates.

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<sup>3</sup> Household saving includes that of farmers. Public saving captures only central government. Business saving is the residual, capturing local government, non-profit organisations, companies and state-owned enterprises.

Figure 1  
 Net savings rate by sector  
 (as a per cent of GDP)

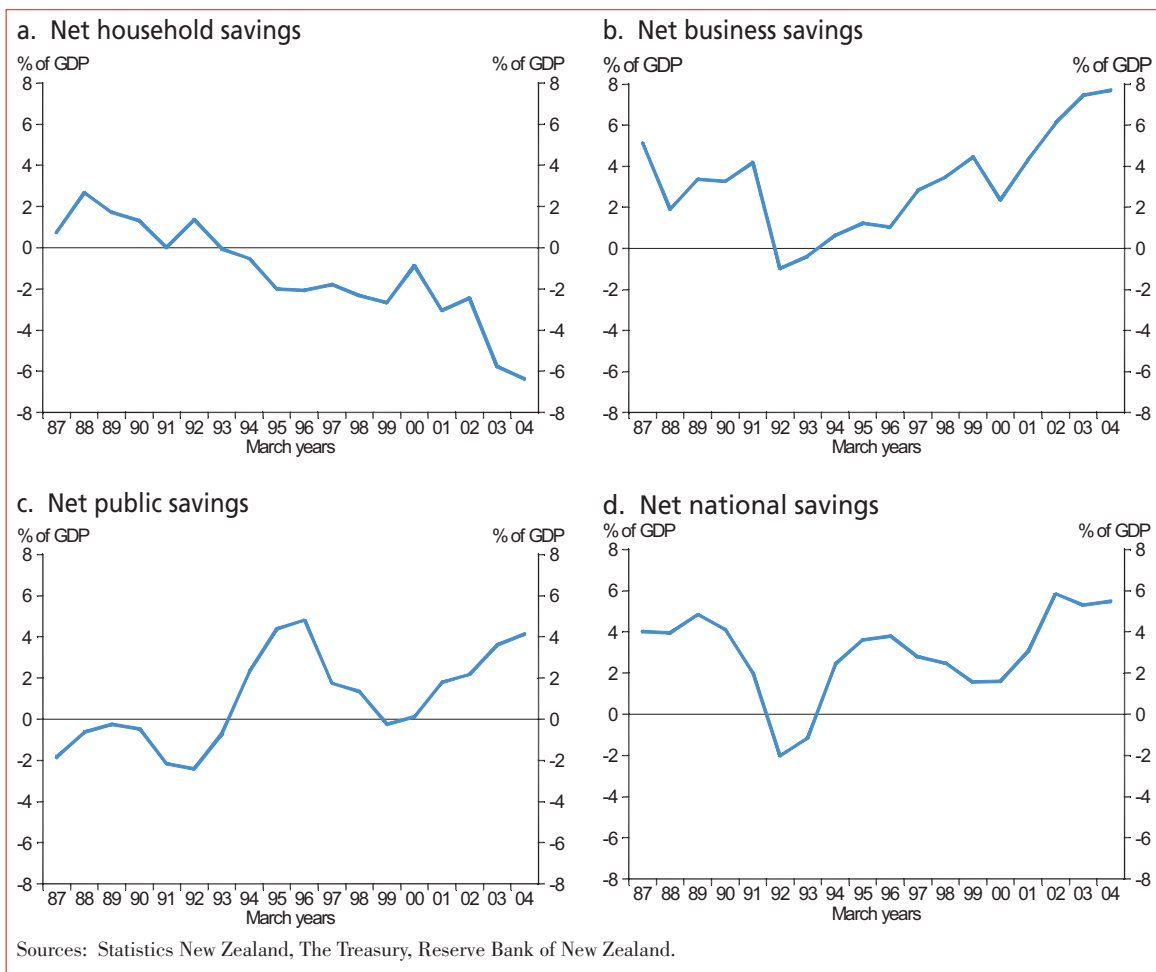
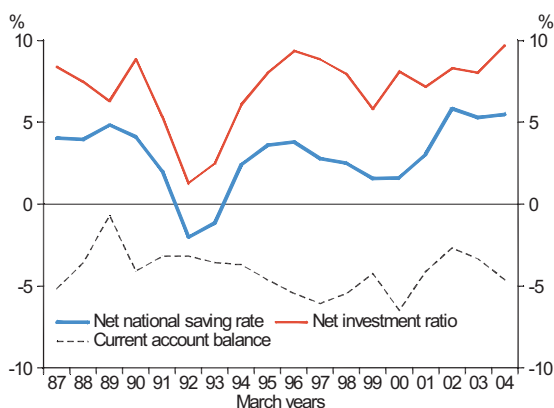


Figure 2  
 Savings-investment gap and the current account  
 (as a per cent of GDP)



the economy, and the country has continued to run current account deficits (figure 2 and box 1).

New Zealand's investment to GDP ratio has been broadly similar to the OECD average over the past two decades. And for most of the past two decades, New Zealand's gross national savings rate (which includes depreciation) has been below that of the OECD average, resulting in lower current account balances. In 2004, New Zealand's current account deficit stood at 6.4 per cent of GDP, larger than the OECD average of 1.2 per cent, but comparable to the deficits of Australia and the US (figure 3). Since the late 1990s, the gross national savings rate gap with the OECD has closed, partly due to the OECD savings rate declining, but also largely due to the improvement in New Zealand's business and public savings. The increase in the current account deficit with the OECD is due to an increase in New Zealand's investment to

(continued on p 16)

**Box 1**

**Relationship between national savings, investment and the current account**

In an open economy, the relationship between national savings, investment and the trade balance can be expressed by the following national accounts identity:

$$GDP = C + I + G + NX \quad (1)$$

where GDP is gross domestic product, C is consumption, I is investment or gross fixed capital formation, G is government expenditure, and NX is net exports. Allowing for net income paid abroad (the balance of income earned on New Zealand's foreign assets and paid to service its foreign liabilities), results in:

$$GDP + NI = C + I + G + NX + NI \quad (2)$$

Rearranging equation (2) yields:

$$(GDP + NI - C - G) - I = NX + NI \quad (3)$$

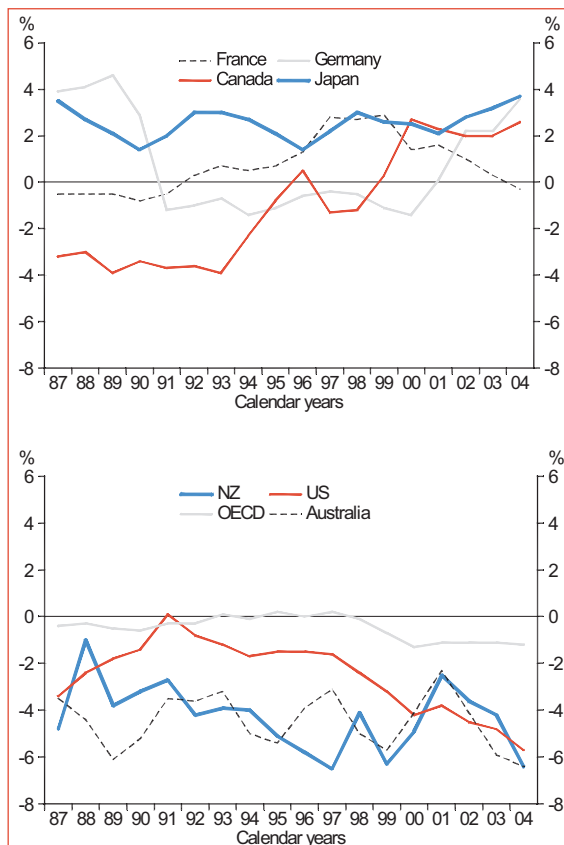
The variables on the left hand side in brackets form national savings, and the variables on the right hand side make up the current account balance. Hence, we can rewrite equation (3) as:

$$GSAV - I = CAB \quad (4)$$

where GSAV is gross national savings and CAB is the current account. There are two concepts of national savings – gross and net. Gross savings represents the resources available for investment (capital formation) including replacement of fixed capital. Net savings (NSAV) is derived from gross savings by subtracting depreciation (consumption of fixed capital, CFK):

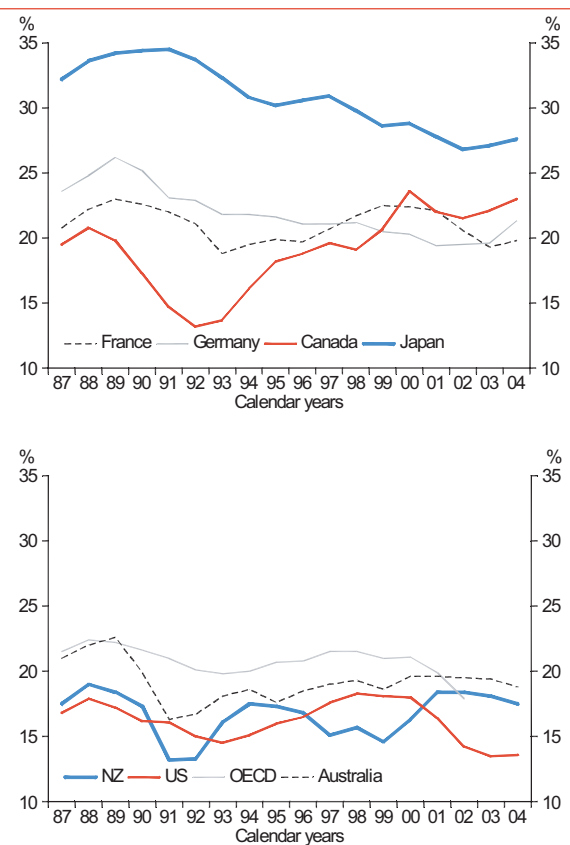
$$NSAV - [I - CFK] = CAB \quad (5)$$

**Figure 3**  
Current account balance comparison  
(as a per cent of GDP)



Sources: OECD, IMF, Statistics New Zealand.

**Figure 4**  
Gross national savings rate comparison  
(as a per cent of GDP)



Sources: OECD, IMF, Statistics New Zealand.

Note: The New Zealand savings rate has been adjusted to gross to allow for comparison.

GDP ratio over the past few years. Years of running current account deficits have resulted in New Zealand incurring a negative net international investment position which is one of the largest in the OECD.

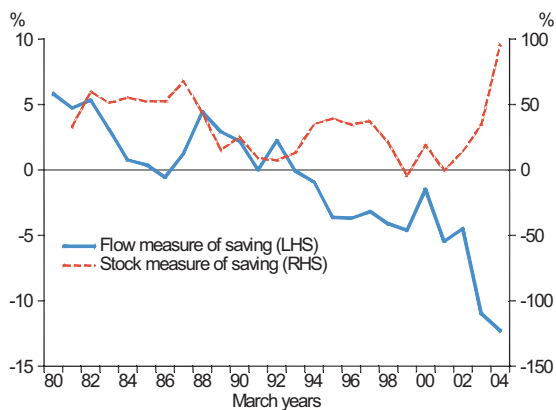
### 3 Trends in household savings and the balance sheet

#### Household savings trends

There are two approaches to the measurement of savings. It can be measured in terms of "flows" (i.e. the difference between current income and consumption expenditure), or as the change in the "stock" of accumulated net wealth (i.e. the difference from one year to the next of assets less liabilities). The flow measure, sometimes known as financial savings, is most commonly used in analysing household savings. The stock measure, sometimes known as economic savings, provides an alternative measure of savings which incorporates not only the flow measure (positive savings add to households' asset base) but also increases (or decreases) in the value of assets and liabilities. Asset price changes are therefore an important driver of changes in the stock measure of savings.

Figure 5 shows the two savings measures. The flow savings measure was trending upwards over the 1970s, peaking at 5.8 per cent of income in 1980. Thereafter, the flow savings

**Figure 5**  
Financial and economic savings rate<sup>4</sup>  
(as a per cent of household disposable income)



Sources: Statistics New Zealand, Reserve Bank of New Zealand.

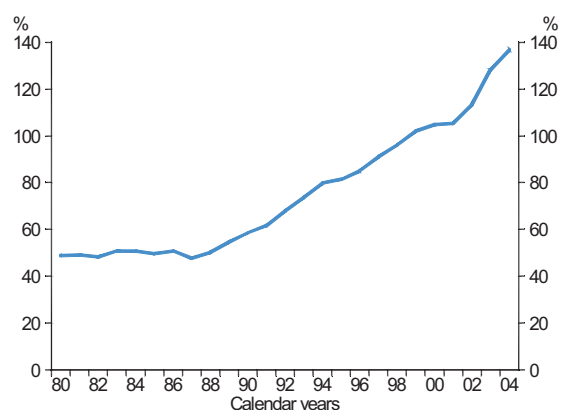
<sup>4</sup> The stock measure of saving, which is in calendar years, has been aligned to the closest corresponding March year.

measure has been on a downward trend, falling to a new historic low of -12.3 per cent of income by 2004. Since 1993, the flow savings rate measure has been negative. The stock savings rate measure declined at a slower rate to trough at -5.0 per cent in 1999. The stock savings rate measure then rose sharply from 2001 to reach 83 per cent in 2004, while the flow savings rate continued its downward decline. It is unclear how the flow measure of savings is influenced by changes in the stock measure. However, it is possible that the decline in the flow measure of savings is partly a response to the sharp rise in the stock measure in recent years, brought about by a rapid rise in house prices. How the flow measure may evolve now the housing market is cooling is unclear.

#### Household balance sheet trends

The focus of attention on the household balance sheet tends to be on debt, due to its rapid accumulation over the 1990s. The debt-to-income ratio was fairly stable throughout most of the 1980s, averaging around 50 per cent of disposable income. Following financial deregulation from the mid-1980s, the debt-to-income ratio accelerated to reach around 140 per cent of disposable income (figure 6). A characteristic of New Zealand household indebtedness is the concentration of debt to large financial institutions, secured against housing. Almost 90 per cent of total household debt is owed to large financial institutions, and of that over 90 per cent is for mortgages. There is little

**Figure 6**  
Household debt-to-income ratio  
(as a per cent of household disposable income)

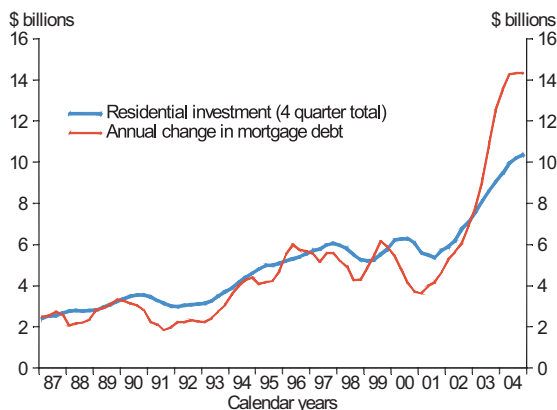


Source: Reserve Bank of New Zealand.

empirical work on the determinants of household debt. Apart from financial liberalisation freeing up households' ability to access credit, little is known about what drives debt accumulation decisions (Hull, 2003). However, the increase appears to be inextricably linked to the rapid rise in house prices, with expectations on capital gain likely to have driven debt decisions for many households. It is also likely that lower (and less volatile) interest rates (nominal and real) since the early 1990s have made many households more willing to take on debt.

Given that a large share of household debt is in the form of mortgage debt, much of the increase in debt would have been used to fund investment in new housing. Tentative support for this is provided in figure 7, which shows the relationship between the annual change in mortgage debt and the nominal value of residential investment. Higher residential investment activity, typically reflecting the overall housing market, will correspond with increased mortgage debt accumulation. From mid-2003, the increase in mortgage debt exceeded the amount required to fund the value of new residential investment, suggesting households were accessing the increased equity in their properties for general consumption or investment purposes (for example, investment in a small business).

**Figure 7**  
Nominal residential investment and mortgage debt

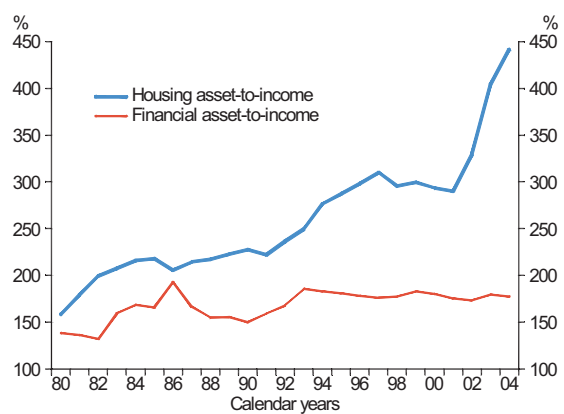


Sources: Statistics New Zealand, Reserve Bank of New Zealand.

On the asset side, a characteristic of New Zealand households is the dominance of housing. In 1980, the proportion of household assets was almost evenly split between housing and financial assets. Today, housing assets account for

around 70 per cent of New Zealand households' total assets. The relative increase in housing assets has been particularly marked in the past few years due to high house price inflation. As a percentage of disposable income, housing assets increased from 162 per cent in 1980 to 435 per cent in 2004. Financial assets increased from the early 1980s to peak in 1986 at 200 per cent of disposable income. After the sharemarket crash of 1987, however, the financial asset ratio fell and was largely static throughout the 1990s at around 175 per cent of disposable income (figure 8).

**Figure 8**  
Household asset-to-income ratios  
(as a per cent of household disposable income)



Source: Reserve Bank of New Zealand.

## 4 Comparison with OECD countries

### Household savings rate comparison<sup>5</sup>

The decline in New Zealand's household savings rate is not an isolated case. The past few decades have seen a similar decline in the household savings rates in many industrial countries (table 1 and figure 9). New Zealand's household savings rate appears to be consistently one of the lowest among OECD countries, but its decline is not the steepest. Australia and Japan experienced larger falls in their savings rates from the 1970s. However, cross country comparisons of savings rates are fraught with difficulties due to differences in measurement, institutional arrangements, financial market development, demographics, and time

<sup>5</sup> Only the flow measure of saving is compared.

## Box 2

### Savings measurement issues

The flow measure of savings is derived from the Household Income and Outlay Account (HIOA) produced by Statistics New Zealand. This measure is consistent with the System of National Accounts (SNA) and allows for cross-country comparisons. The stock measure of savings is derived from the Reserve Bank's household assets and liabilities data. The stock measure of savings is larger than the flow measure due to the inclusion of asset price changes (note the scales in figure 4).

Both the flow and stock measures of savings are the difference between two very large numbers (being disposable income and household consumption for the flow measure, and changes in assets and liabilities for the stock measure), and are subject to wide margins of error. The hidden economy, which is likely to be larger on the income side than the consumption side, biases the flow measure of savings downwards (Claus and Scobie, 2002).

In addition, the flow measure of savings is currently being redeveloped by Statistics New Zealand and is not an official statistic. The work to date by Statistics New Zealand on the redevelopment indicates that a number of the series in the HIOA will be revised, and while some of these may be offsetting, it is anticipated that key residuals such as household savings will be affected.

In the stock measure of savings, household liabilities are overstated because some of the lending is in effect loans to small businesses secured by residential mortgages. Thorp and Ung (2000) estimated that some 10 to 20 per cent of household debt in New Zealand is secured on housing but used for business purposes. Assets, on the other hand, are likely to be understated. For example, direct investments in forestry and unlisted business equity are not included in the financial asset estimate, and direct holdings of overseas equities are likely to be underestimated (Thorp and Ung, 2000).

Table 1

### Household savings rate in selected countries

(decade averages as a per cent of household disposable income)

|               | 1970–1979 | 1980–1989 | 1990–1999 | 2000–2004 |
|---------------|-----------|-----------|-----------|-----------|
| Australia     | 14.2      | 11.1      | 5.0       | 0.1       |
| United States | 9.6       | 9.1       | 5.2       | 1.7       |
| Canada        | 12.0      | 15.3      | 9.1       | 3.1       |
| Germany       | 13.1      | 12.8      | 11.6      | 10.4      |
| France        | 13.2      | 9.5       | 10.0      | 11.2      |
| Netherlands   | 4.1       | 14.3      | 13.9      | 10.1      |
| Japan         | 23.7      | 16.3      | 12.3      | 6.8       |
| OECD          | 16.6 *    | 17.3      | 13.0      | 10.4      |
| New Zealand   | 3.6 **    | 2.8       | -1.6      | -6.9      |

\* average over 1977–79.

\*\* average over 1972–1979. New Zealand data relate to March years.

Sources: Statistics New Zealand, OECD.

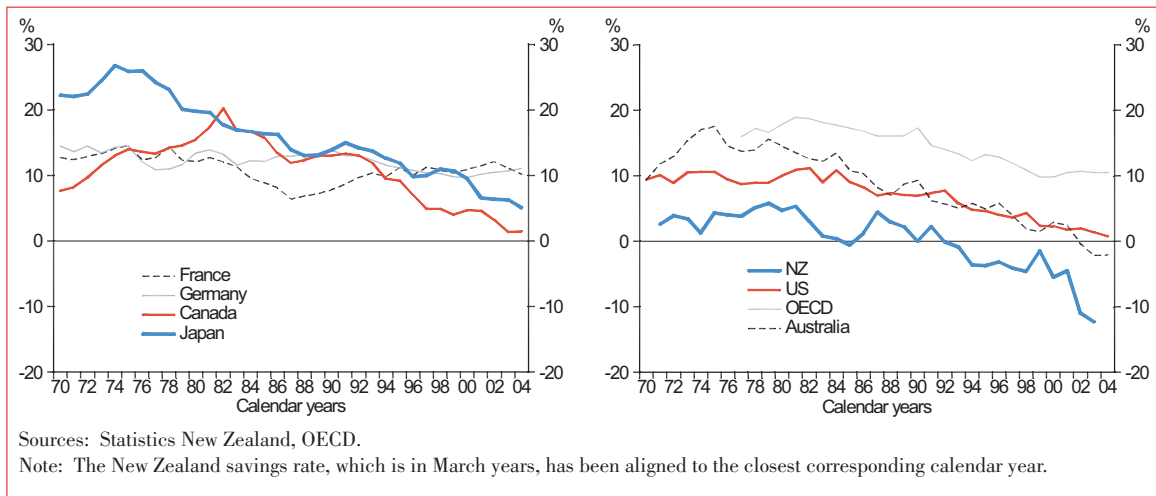
preferences.<sup>6</sup> Bearing these in mind, a broad stylised fact is that household savings rates across most industrialised countries have been falling. In some OECD countries, the decline in savings rates has coincided with increases in

households' net financial wealth. This has not been the New Zealand experience, where the net financial wealth ratio has been steadily declining (figure 12).

There is a substantial international literature on savings and its determinants. The baseline models in most empirical studies of household savings include public and business savings, demographic changes, real interest rates, inflation, proxies for financial liberalisation, and income growth.

<sup>6</sup> Measurement differences include whether private pension benefits less pension contributions are included in disposable income or not, whether saving rates are gross or net of depreciation, and whether non-profit institutions are included or not. The OECD attempts to make adjustments where it can.

**Figure 9**  
**Household savings rate comparison**  
**(as a per cent of household disposable income)**



Empirical research on the determinants of New Zealand's household savings rate is scarce. The most recent examples are Choy (2000) and IMF (2003). Choy<sup>7</sup> found that changes in the household savings rate are primarily explained by movements in real wealth (proxied by real house prices) and business savings (corporate veil argument),<sup>8</sup> both having a negative effect. Positive effects come from the indirect tax ratio and real interest rates. The IMF study found that the trend decline in New Zealand's household savings rate was reasonably well explained by the fundamental determinants of higher public savings (partial Ricardian equivalence),<sup>9</sup> higher government pension and income support, increased household wealth, and improved access to credit.

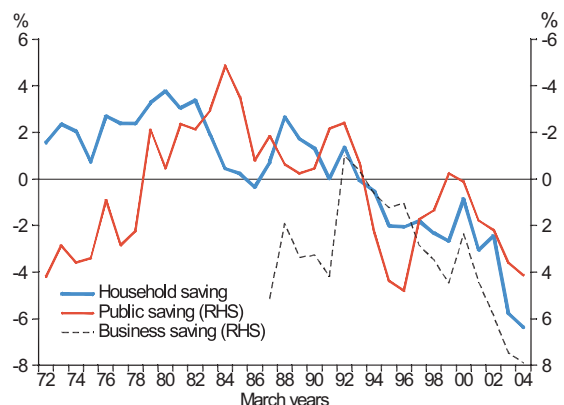
A simple casual observation between household, public and business savings seems to lend some support to the corporate veil and Ricardian equivalence hypothesis (figure 10). In the absence of proper econometric estimation, this casual observation can only be indicative. It does suggest however, that the downward decline in

the household savings rate is partly in response to rising public and business savings. There is, however, no general agreement on whether Ricardian equivalence or even the corporate veil theory holds, and further work in this area is required.

**Household balance sheet comparison**

Figure 11 compares the debt-to-income ratio for New Zealand against selected OECD countries. Apart from France, all countries have exhibited an upward trend in their debt ratios. In the case of Australia and New Zealand, the ratio rose faster than other countries to be at the upper end of the range. This increase came off a much lower base and

**Figure 10**  
**Household, public and business savings**  
**(as a per cent of GDP, right hand axis reversed)**



Sources: Statistics New Zealand, The Treasury, Reserve Bank of New Zealand.

<sup>7</sup> It should be noted that due to the lack of cointegration in the household saving rate equation and limited time series, Choy's result should be viewed as tentative.  
<sup>8</sup> The corporate veil argument states that households perceive business saving to be their own because businesses are ultimately owned by households. Households therefore reduce their own saving when business saving increases, and vice versa.  
<sup>9</sup> Ricardian equivalence states that government deficits have little real economic effect because households anticipate the fact that any government borrowing has to be repaid later, and households respond by increasing their saving.

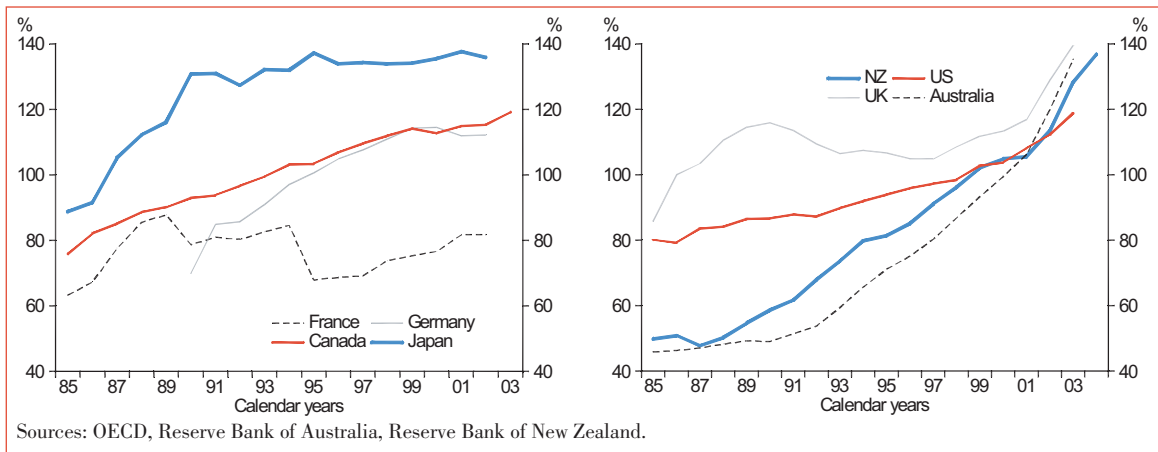
occurred later, suggesting that Australia and New Zealand were catching up to other developed countries after financial liberalisation, increasing their debt towards desired levels as access to credit became easier.

Housing wealth accounts for around 70 per cent of New Zealand households' total assets, compared with around 65 per cent for Australia and Italy; between 50 to 55 per cent for the United Kingdom, Germany and France; and around 37 per cent for the United States. When expressed as a percentage of household disposable income, New Zealand's housing wealth is comparable to Australia's and the United Kingdom's. Its holding of financial assets on the other hand is extremely low, contributing to the low net financial wealth and total net wealth position (table 3). In addition, while other OECD countries' net financial wealth

rate has risen, New Zealand's has been on a decline (figure 12). New Zealand's total net wealth to disposable income ratio is predominantly driven by house prices, more so than of other OECD countries.

The reasons for the relatively low level of financial asset holdings in New Zealand households are not clear. Measurement issues could be one, but is unlikely to account for all the difference. The absence of a compulsory savings scheme (as in Australia); the absence of tax incentives to promote savings (as in the United States' 401k); a preference for investment in property; risk aversion after the 1987 sharemarket crash; a lack of access to diversified financial investment products; and a relatively generous minimum retirement income level may be reasons for New Zealand's lower financial asset holdings compared to other countries.

**Figure 11**  
Household debt comparison  
(as a per cent of household disposable income)



**Table 2**  
Household balance sheet in selected countries  
(as a per cent of household disposable income)

|                | Non-financial assets (housing) | Financial assets | Debt | Net financial wealth | Total net wealth |
|----------------|--------------------------------|------------------|------|----------------------|------------------|
| New Zealand    | 441                            | 178              | 137  | 41                   | 482              |
| Australia      | 564                            | 301              | 135  | 165                  | 729              |
| United States  | 243                            | 420              | 118  | 302                  | 545              |
| United Kingdom | 455                            | 413              | 139  | 269                  | 725              |
| Canada         | 290                            | 345              | 120  | 225                  | 515              |
| Germany        | 338                            | 282              | 112  | 171                  | 509              |
| France         | 380                            | 303              | 79   | 227                  | 607              |

Note: Figures are for 2003, except for France where 2002 figures are used and for New Zealand where 2004 figures are used. Sources: OECD, Reserve Bank of New Zealand.



Figure 12  
Household net financial wealth  
(as a per cent of household disposable income)

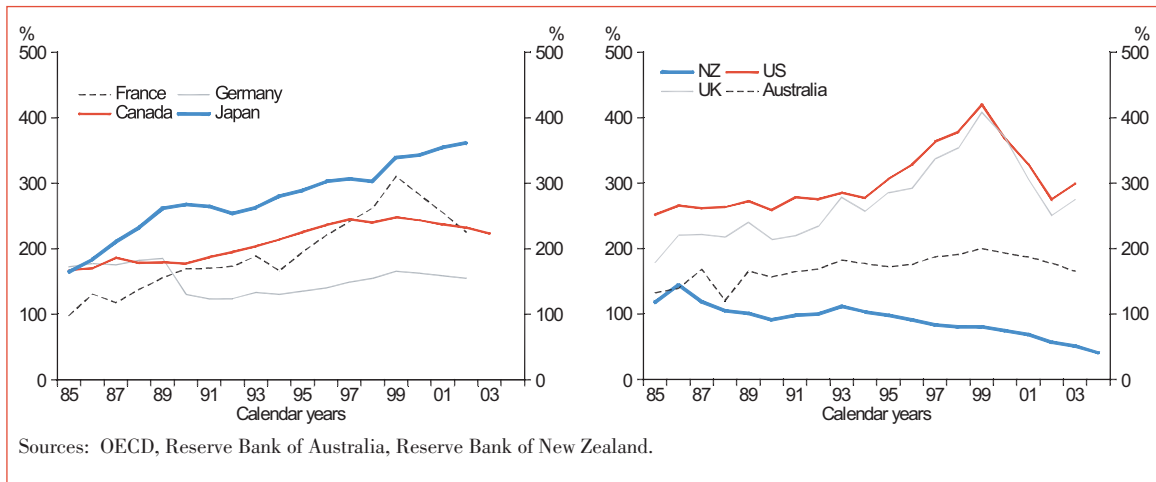
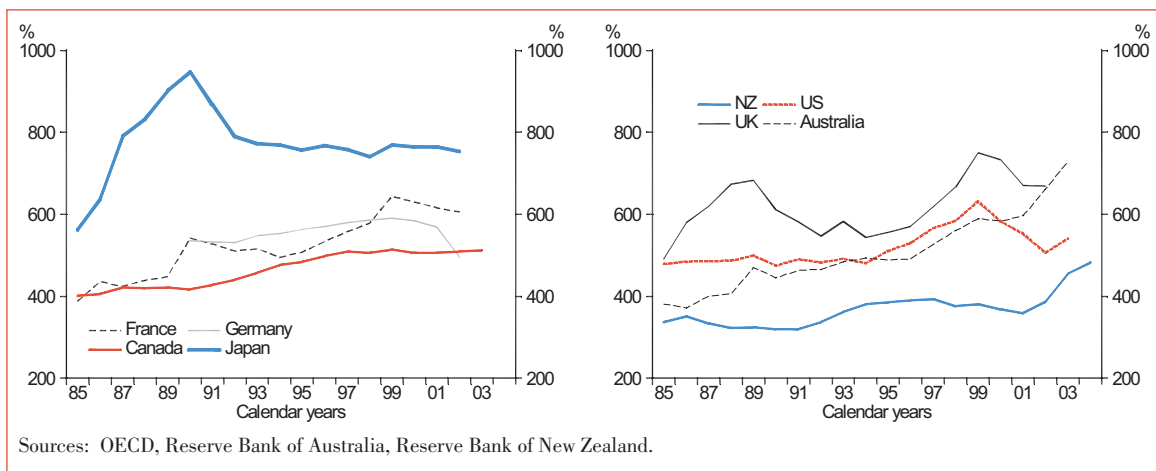


Figure 13  
Household net wealth  
(as a per cent of household disposable income)



## 5 Macroeconomic implications

New Zealand consistently runs current account deficits, indicating that national savings is insufficient to fully fund new investment. Sustained current account deficits have led to a large negative net international investment position, which currently stands at 84 per cent of GDP. In the absence of further improvements to national savings (improvements to date have been limited by the negative savings rate of the household sector), meeting the country's future investment needs will continue to require more foreign capital. Over time, an increasing reliance on foreign capital may increase the sensitivity of the New Zealand economy to changes in global or domestic economic circumstances.

Growing debt levels, combined with a relative lack of diversification of its assets, potentially increases the sensitivity of the household sector to changes in interest rates, incomes or house prices. Higher debt levels implicitly mean a greater sensitivity to interest rate fluctuations than in the past as debt servicing burdens are higher. The IMF recently estimated that the sensitivity of consumption to interest rates has increased, with a 1 percentage point rise in real interest rates now estimated to reduce consumption by 2.3 per cent after two years, as compared to a 0.8 per cent reduction in the late 1980s.

To some degree, central banks may be able to take an increase in household interest rate sensitivity into account

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when setting monetary policy. Over time, the size of the cycle in interest rates may be reduced to reflect the increased leverage that interest rate changes exert on household demand. However, the central bank is not the only entity that affects interest rates in the economy – global interest rate developments have an important bearing on New Zealand's interest rate structure, particularly for longer-term interest rates. Moreover, even if the amplitude of the interest rate cycle does reduce over time, some heavily indebted households may still be more exposed to interest rate changes than in the past.

Higher debt servicing burdens may also make some households more exposed in the event of a rise in unemployment (eg in the case where one partner in a household financing a home loan loses their job). On the asset side, the relative lack of financial assets means that households have less of a buffer in the event of a significant shock to incomes. This potentially means that more of the adjustment to an income shock (eg from a significant increase in unemployment) would have to come through reduced spending, or by selling illiquid assets (such as housing), potentially at a loss. Similarly, the dominance of housing assets in the household balance sheet may leave household wealth more vulnerable to a fall in house prices, than would be the case if assets were more diversified.

As the use of foreign savings increases, New Zealand implicitly becomes more exposed to changes in the investment preferences of the foreign investors who provide those funds. Foreign investors have been very willing to fund New Zealand's current account deficits in recent years – with capital inflows placing some upward pressure on the exchange rate – but their willingness to provide funds could change in the future. Although the banking system appears to manage its exposures associated with funding from abroad very well, New Zealand may be exposed to changes in the terms under which foreign investors are prepared to make funds available. Such shifts could result in a change in the price of funding (ie the interest rate) and could prompt a significant exchange rate adjustment. There are many factors that could prompt a re-assessment of investor preferences, some of which may have little to do with the New Zealand economy itself. Changes in global

investment preferences are a fact of life, even for countries with limited external debt. However, as debt levels increase, the potential for such changes to have a more significant effect on the exchange rate or economic activity will tend to increase.

## 6 Conclusion

The past decade and a half has seen a consistent decline in the household savings rate in New Zealand, at a time when debt levels relative to income have also increased rapidly. It is impossible to know at which point household behaviour may change, prompting a levelling off (or outright fall) in debt ratios. It is also noteworthy that similar trends have been observed in other countries. In the meantime, higher debt levels associated with dis-saving may increase the sensitivity of households to various economic 'shocks'. A further consequence of increased reliance on overseas funds is that New Zealand may be more exposed to changes in international investor preferences than used to be the case.

## References

- Choy, Wai-Kin (2000) "Determinants of New Zealand national and household saving rates: a cointegration approach," Paper presented to the New Zealand Association of Economists Conference.
- Claus, Iris and Grant Scobie (2002), "Saving in New Zealand: measurement and trends", Treasury Working Paper 02/02.
- Hull, Leslie (2003), "Financial deregulation and household indebtedness," Reserve Bank of New Zealand Discussion Paper DP2003/01.
- IMF (2003) "Explaining New Zealand's savings behaviour," *New Zealand: Selected Issues Country Report* No. 03/122.
- IMF (2005) "Household indebtedness and monetary policy," *New Zealand Selected Issues Country Report* No. 05/153.
- Thorp, Clive and Bun Ung (2000), "Trends in household assets and liabilities since 1978", Reserve Bank of New Zealand *Bulletin* Vol. 63, 2.