

Treasury Report: A Synopsis of Theory, Evidence and Recent Treasury Analysis on Saving

Date:	2 May 2007	Treasury Priority:	HIGH
Security Level:	IN-CONFIDENCE	Report No:	T2007/654

Action Sought

	Action Sought	Deadline
Minister of Finance (Hon Dr Michael Cullen)	Note the contents of this report	Friday 11 May 2007
Associate Minister of Finance (Hon Phil Goff)	Note the contents of this report	
Associate Minister of Finance (Hon Trevor Mallard)	Note the contents of this report	
Associate Minister of Finance (Hon Clayton Cosgrove)	Note the contents of this report	

Contact for Telephone Discussion (if required)

Name	Position	Telephone	1st Contact
			✓

Enclosure: No

2 May 2007

SH-13-5

Treasury Report: A Synopsis of Theory, Evidence and Recent Treasury Analysis on Saving

Executive Summary

The topic of savings has attracted a high and increasing level of interest since 2005, with attention from the Reserve Bank of New Zealand, the OECD, the Government (through a focus on saving initiatives) and the media (with the release of national accounts data on saving, particularly the household saving rate and the current account).

The key purpose of this paper is to provide an update on saving based on recent data, evidence and other new insights, to update you on Treasury's current view on saving and to draw out some implications for saving policy.

Background

Treasury's most recent major report on saving ("Saving in New Zealand: A Synthesis" in 2003)¹ argued that although the level of private savings appeared low, there was no strong case for immediate active policy intervention and it would be better to wait and monitor saving trends in the period ahead. More recently, in our "Briefing to the Incoming Government 2005 - Sustaining Growth", we repeated that we did not see a strong case for compulsory individual saving or significant direct government subsidy of private saving, but in light of low private savings and associated macroeconomic vulnerabilities we recommended a suite of policies that err towards supporting private saving (such as facilitation of work-based savings, financial education and transparent long-run fiscal planning).

Issues with Measurement and Evidence

Despite interest in the topic, and new data and research, the policy analysis of saving remains difficult for three main reasons. First, high-quality data about saving in New Zealand (at both macro and micro levels) remain elusive and there are still lively and ongoing debates. Secondly, evidence about the effectiveness of possible interventions to lift saving is often not unambiguous. Thirdly, even interventions that are effective in achieving one objective usually have downsides measured against other objectives.

Overall Findings in Saving Performance

In light of these challenges, a high degree of judgement is required in order to come to an overall view on policies for saving. Bearing this in mind, our overall key conclusions on saving in New Zealand are as follows:

- Saving essentially involves reducing consumption today in order to increase it in the future. The act of saving also releases resources which can be invested in the productive capacity of the economy. In open economies, any shortfall in domestic savings compared to domestic investment can be made up by borrowing from abroad. This shows up as a current account deficit and an addition to net external liabilities. Economic models (including those that frame saving decisions in terms of income, returns to saving, and preferences about consumption now versus later, and those that include "behavioural" approaches emphasising the role of myopia, inertia and

¹ www.treasury.govt.nz/prg/background/prg-tsy-snz.pdf

potentially inconsistent preferences over time) offer useful insights into the determinants of saving.

- There are a range of potential benefits and costs of saving. Potential benefits include improved financial resilience for individuals, better macroeconomic outcomes under some circumstances (e.g., a lower structural current account deficit and equilibrium real exchange rate), and potential financial system development. Costs include the sacrifice of current consumption, and distortions and fiscal costs arising from possible interventions such as compulsion or tax incentives.
- International commentators, as well as the Reserve Bank of New Zealand, have drawn attention to New Zealand's poor household saving performance. However, it is hard to get a clear picture on household saving from official data. Some measures show household saving as positive, but modest, while others show a negative and declining trend. Until better measures become available there is little we feel that can be confidently concluded about household saving. In the meantime a least-regrets approach is called for and we explore this below. Action to achieve better measures should be a matter of priority.
- Data on national saving are more reliable. They show the rate is positive but low compared to most other OECD countries and has been declining in the last few years. New Zealand's current account and net external liabilities partly reflect saving trends and the data on these are also more reliable and certain. The current account deficit (CAD) has continued to grow and is now at level that would make it impossible to sustain our present (very high) ratio of net external liabilities to GDP. But there are several unusual cyclical factors that have contributed to the high CAD (such as the strength and persistence of the current exchange rate cycle) and it is difficult to disentangle the overall CAD into cyclical and structural components.
- International evidence suggests that although compulsion and tax incentives induce more private saving in the prescribed form, people offset this to some degree by reducing their other saving or taking on more debt. Offsetting is most marked (and can reach around 100%) in the case of tax incentives that high income earners disproportionately take up because they gain most from them. There is least offsetting when schemes impact on low to middle income people who have limited offset opportunities.
- Household wealth has increased significantly driven by house prices rising even faster than the rapid rise in household debt. Many people appear to be saving adequately for retirement but a significant minority are not. Low to medium income earners as a group contains a relatively high proportion who are not saving adequately. While people in the lowest income decile generally do not save, this is rational given their expectation that New Zealand Superannuation (NZS) will give them a higher level of income from age 65. Micro data and estimates of saving rates tend to suffer from inadequacies and uncertainties in a similar fashion to macro data and estimates.

Conclusions

In 2005 we advised the adoption of a suite of policies that take account of macroeconomic vulnerabilities and err towards supporting private saving, such as facilitation of work-based savings and financial education.

The Government has already taken a number of measures that fit with this advice – KiwiSaver, the Retirement Commission's financial education campaign, the current regulatory review of financial products and providers, the tax treatment of portfolio investment entities, the business tax package, and long-term fiscal reporting – and we

substantially agree with these steps. However, in the light of the recent data, evidence and analysis mentioned above, on balance we think that further or stronger pro-saving action is now justified.

This judgement for further or stronger action rests on a least-regrets approach in the light of data uncertainties, persistent macroeconomic imbalances and the possibility that individuals are basing saving decisions on long-run expectations that could turn out to be mistaken. On the last point, policy needs to take account of potential biases that mean people may be under-saving relative to what is desirable over the long term. One possible bias is people's probable lack of awareness of the fiscal strains that are likely to appear in the long term as the New Zealand population ages. If trends do not change, these strains could mean that programmes like NZS may have to become less generous in the future. Another bias could be people's unrealistic expectations about the future course of property prices. Higher private saving would be a way to mitigate these outcomes should they come to pass, whereas waiting until they become more certain could be leaving it too late.

A well designed reform package going beyond the current KiwiSaver scheme would be a sensible option to consider in order to further encourage private saving. Any scheme should be designed in accordance with a number of guiding principles derived from the experience of other countries about the effectiveness of schemes, and the particular features of New Zealand's current situation, including:

- Tax incentives should avoid generous benefits to high income earners who are already saving and will be most likely to simply switch between different forms of saving. Rather, because low to middle income earners tend to have low savings and have less ability to offset saving induced by an intervention, the scheme's incentives should strongly impact on this group.
- Savings should be locked in for an extended period – given that fiscal strains and property price uncertainties may take many years to resolve.
- Given evidence supporting the effectiveness of behavioural mechanisms such as automatic enrolment, the scheme's design should exploit these.
- Since most benefits of higher savings rest on higher national saving the fiscal cost of tax incentives or other subsidies involved in the scheme should substantially not come at the expense of government saving. This means substantially funding any cost within a fiscal plan that keeps to the current gross debt track.
- Although compulsory schemes can be effective in lifting private and national saving they suffer the disadvantage of inflexibility that is likely to be costly in the face of varying individual circumstances. It is desirable to avoid such inflexibility.
- The property boom is a significant contributor to current low household saving and macroeconomic pressures. Any saving scheme should be designed as far as possible to reduce rather than stimulate the demand for property, and is likely to be more effective if accompanied by complementary measures to slow speculative demand for property.
- To maximise the beneficial impact of higher saving on financial system development, a scheme should require households to invest in financial assets through a range of flexible and well-managed superannuation funds.
- The large increase in the flow of saving into managed funds highlights the need for a sound and robust system of fund regulation and good financial education for savers.

Recommended Action

We recommend that you:

- a **note** the contents of this report.
- b **note** that Treasury and the Ministry of Economic Development are preparing an interim joint report on a project regarding “Financial Markets, Savings and Investment” which is being undertaken as part of the Economic Transformation programme of policy work.
- c **note** that Treasury will report separately on ways to improve the quality of saving measures.

John Whitehead
Secretary to the Treasury

Hon Dr Michael Cullen
Minister of Finance

Treasury Report: A Synopsis of Theory, Evidence and Recent Treasury Analysis on Saving

Purpose of Report

1. The key purpose of this paper is to describe the saving landscape in New Zealand, and draw out its implications for saving policy. We believe that doing this may be useful (i) as background to your interest in saving issues; (ii) to contribute facts and informed judgements to public debate; (iii) to inform any future policy changes; and (iv) to give an update on Treasury's view on saving.
2. The paper is organised as follows:
 - Background
 - A savings framework
 - Evidence of saving in New Zealand
 - What international evidence tells us about the effectiveness of saving programmes
 - National saving and the current account deficit
 - Conclusions

Background

3. In Treasury's "Briefing to the Incoming Government 2005 – Sustaining Growth", we said that we did not see a strong case for compulsory individual saving or significant direct government subsidy of private saving. Nonetheless in light of low private savings and associated macroeconomic vulnerabilities we recommended a suite of policies that err towards supporting private saving (such as facilitation of work-based savings, financial education and transparent long-run fiscal planning).
4. Treasury's most recent major report on saving was its contribution in 2003 to the work of the Periodic Review Group when it reviewed the trends and policy settings affecting retirement incomes in New Zealand (Treasury, 2003). We found that although the level of private saving was low there was no strong case for active policy intervention. However, we noted grounds to expect that household saving would increase in the period ahead possibly without further policy change. The main grounds were:
 - the one-off boost to borrowing and consumption from economic restructuring and financial deregulation would have largely run its course, and
 - the growing number of baby boomers reaching their prime saving years (45-60 years old).
5. Since 2003, by a number of measures, household saving has continued to decline, and potential macroeconomic vulnerabilities arising from an even larger current account deficit have grown. This paper examines these recent trends and also the research in relation to saving that we and others have conducted since this previous report on saving. It also examines evidence on the effectiveness of policies used in other countries to boost saving, such as compulsion and tax incentives.

6. It need hardly be said that the topic of saving has received a high and increasing level of attention since 2005:
- The Reserve Bank of New Zealand (RBNZ), operating monetary policy in the face of a booming housing market, has focused a substantial research programme on saving behaviour in New Zealand. It has held a workshop, published papers and the Governor has made a number of speeches.
 - The most recent report of the OECD has highlighted low domestic saving and high reliance on foreign saving as the cause of macroeconomic imbalances in the economy and increased vulnerability to changes in external sentiment
 - Many of your own speeches have focused on saving, and the Government has taken several measures to improve saving outcomes through initiatives such as the New Zealand Super Fund, KiwiSaver, and changes to the tax treatment of managed funds.
 - You have also grappled with the conundrum of running substantial operating surpluses in the Crown accounts which cannot be spent or used to fund tax cuts without the risk of exacerbating inflation and exchange-rate pressures – unless somehow the reduction of the surplus resulted in higher private saving.
 - Recent national accounts data related to saving, particularly the household saving rate and the current account, have shown further declines and this has triggered considerable media comment.
7. Treasury itself has continued to work on saving and related issues. There have been three main strands:
- Work on supplementary stabilisation instruments for reducing cyclical excess demand, and, in the macro policy forum, on whether monetary policy remains effective in the face of concerns about persistent inflation and exchange-rate pressure and growing external imbalances.
 - Continuing work on the patterns of income, wealth and saving of New Zealand 45-64 year old individuals and couples especially as data emerges from new Statistics New Zealand (SNZ) surveys such as the Survey of Family Income and Employment (SoFIE).
 - A new joint programme of work with the Ministry of Economic Development on “financial markets, saving and investment.” This work is looking at the interactions between saving, financial system development, investment and economic growth. While not yet complete, this work has broadened our perspective on the ways that saving is important to good overall economic performance and growth in particular. We are writing a separate report on our findings on financial market development and will be submitting this to Ministers in a week or so.
8. New Zealand is not starting from scratch in policies and institutions around saving. It already has a well-developed multi-pillared retirement income framework which includes New Zealand Superannuation (NZS), a public education programme (through the Retirement Commission) and KiwiSaver from 1 July 2007 which will add a significant further pillar to the current system by encouraging and facilitating private superannuation saving. This framework enjoys relatively broad political consensus and is regarded internationally as being simple and efficient. However, notwithstanding its

strengths, changes to demographics are likely to put pressure on its future fiscal sustainability.

A Savings Framework

There are a range of potential benefits from increased saving

9. Many Governments around the world focus on increasing saving and fostering people's saving habits on the basis that increased domestic saving can generate a range of potential benefits, especially after a sustained period of saving (say 15-20 years). In particular increased saving could contribute to:
- Improved financial resilience and incomes of individuals before and after retirement (see paragraphs 46-48).
 - Higher national income (see paragraphs 70 and 82).
 - Increased diversification of household balance sheets (where there is a bias towards saving in a particular form), thereby reducing household exposure to declines in the value of particular classes of assets (e.g. housing) (see paragraphs 35-37 and 44-45).
 - Reducing New Zealand's average current account deficit and net external liabilities over time, lowering the equilibrium real exchange rate and reducing the cost of capital (see paragraphs 63-83).
 - Reducing macroeconomic vulnerabilities, including that of a significant exchange-rate correction (see paragraphs 70-79).
 - Increased growth and development of New Zealand's financial system. This will be described and discussed in more detail in a companion Treasury report (refer to T2007/486 forthcoming). It could include:
 - Development of the country's financial markets (e.g., deepening of the stock market and the market for corporate debt) with beneficial knock-on effects on firm growth and productivity.
 - Financial innovation (e.g., the creation of new financial instruments, such as mechanisms for trading equity in closely held firms).
 - Increased investment, depending on the extent to which firms currently face finance constraints.

.....but also costs

10. There are a number of costs of increased saving including the fiscal cost to government² and sacrifices in current consumption. There may also be economic efficiency costs of incentives or regulations to promote saving that significantly distort behaviour.
11. Any proposal to increase saving needs to balance the benefits against these costs. To do this it helps to have a model or framework that captures the key features of, and influences on, people's savings behaviour.

² Applicable if the saving programme involves a cost to the government in forgone revenue or direct expenditure.

Economic Theory

12. From an individual perspective, saving involves reducing consumption today in order to increase it in the future. In the broader economy, refraining from consumption out of current income releases resources which can be invested in the productive capacity of the economy. Economic theory suggests that there are three key determinants of consumption in different periods, and therefore of saving:
- *Income* – the total of a person’s wages, salary, self-employed income, interest, dividends and rents. On some definitions, capital gains (e.g. from rising asset prices) are also regarded as income.
 - *Relative prices* – the key determinant here is the return on savings, that is, the higher the return, the more future consumption a given amount of savings today will buy (the return is affected by interest rates and taxes).
 - *Preferences* – different people have different views about whether consuming today or later is a good thing.³ Generally people are impatient and will tend, all else equal, to prefer spending today. But the extent of impatience varies – at the extremes some people cannot spend all their income quickly enough while others cannot tolerate the idea of spending any money today.
13. What determines people’s preferences is complex. They can be influenced by upbringing, social mores, the degree of risk and uncertainty, etc.
14. While the interactions can be complex, the central results are that:
- increasing income increases the proportion of income saved,
 - increasing the return on savings usually increases the proportion of income saved, and
 - preferences can change but at a slow rate.
15. Despite variation in preferences there are also generic motivations that apply to most people. Accordingly, an individual’s saving can typically be placed in one or more of the following:
- *Life-cycle saving*⁴ – where people save to meet certain long-term objectives. Most theoretical models of individual saving behaviour are founded on this model.
 - *Precautionary saving* – where people save to protect themselves and their families against unexpected events, such as job loss or health problems.
 - *Bequest saving* – where people seek to accumulate an estate to leave to their children or to a charity.
16. Under the life-cycle model individuals choose how much to save/consume and how much to work over their lifetimes, and in some versions they also care about their descendants’ welfare.⁵ These models assume that consumption exhibits diminishing marginal utility, so that, in order to maximise lifetime utility, households smooth

³ Economists often refer to people’s “discount rates” to describe their preference between spending today and tomorrow.

⁴ Modigliani and Brumberg (1954); Ando and Modigliani (1963); and Barro (1974).

⁵ Barro (1974)

consumption over time.⁶ There is debate in the literature on the extent to which this model is consistent with observed saving behaviour.⁷ Nevertheless, New Zealand and other research provide broad support for the life-cycle model.⁸

Behavioural Models

17. The standard economic theories of saving assume that people have stable preferences and they make decisions that are consistent with these preferences over time. It is a model of rational behaviour.
18. However, there is an emerging literature called 'behavioural economics' that suggests a need to qualify the standard assumption that agents always act rationally. It draws on the insights of psychology and takes as its point of departure the possibility that individuals' preferences are not always maintained consistently over time, particularly when long horizons are involved.⁹
19. Behavioural economics recognises that people sometimes find it difficult to initiate actions that have high up-front cost and distant benefits, and to adhere to long-term plans. This produces a range of observed behaviour such as procrastination, and difficulties with maintaining a level of commitment. There is now substantial evidence that the institutional environment in which people undertake saving is likely to matter and that it is possible to design mechanisms that mitigate such behaviours.
20. Based on both rational and behavioural models, the interventions available to governments in order to boost saving rates include:
 - *Increasing incomes* – economic growth that flows through to higher wages is good for saving. Targeting pro-saving initiatives at people with low to moderate income is likely to also have a greater proportional payoff, since it is these people who save the least to start with.
 - *Increasing the return to savings can have an effect* - this can be done through the introduction of tax concessions for savings or by a more general reduction in tax on income from capital.
 - *Increasing the financial education of people* - education campaigns designed to influence preferences can produce results. However, they are likely to take some time to be effective, since preferences tend to be deep-rooted.
 - Financial regulations that ensure the provision of adequate and sound information to savers (to counteract the natural information asymmetries between savers, intermediaries and borrowers) and that foster market disciplines.
 - Mechanisms that help counter inertia, procrastination, myopia and lack of long-run commitment, such as automatic enrolment, compulsion and limitations on early withdrawals.

⁶ Treasury (2003)

⁷ The main empirical shortcomings are that: consumption, and hence saving, is excessively sensitive to temporary changes in income; there are constraints on the ability to borrow against expected future income; and the elderly do not dis-save nearly as much as the model predicts (Treasury, 2003).

⁸ Treasury (2003); Coleman (2006).

⁹ Treasury (2003)

Business and Government Saving

21. The saving of individuals might also be influenced by saving done by business and the government. Theory and evidence suggest that individuals' saving behaviours are influenced to some extent by government saving decisions.¹⁰ Where the government's fiscal position is in surplus, it is in a collective sense saving on behalf of households. Businesses are owned by individuals so their saving is even more directly on behalf of the individual owners. So to understand household saving behaviour one needs also to take into account the saving being done by businesses and by the government.¹¹ Chart 1 illustrates this where household and government saving appears to be tracking in opposite directions. The OECD found evidence of partial, yet substantial, offsetting movements in aggregate private and public saving.¹²
22. Some major government programmes, such as New Zealand Superannuation (NZS) and the national health system, serve as partial substitutes for private saving and insurance. However the government finances both NZS and health from current taxes rather than accumulated crown saving invested in productive assets¹³ making these Pay-As-You-Go programmes (rather than Save-As-You-Go programmes which fund investment in productive assets). Given this, and that these programmes play an important role in people's lives and affect their long-term saving decisions, there is a case for governments to be transparent about future entitlements and to encourage more private saving. Population ageing over the next few decades reinforces this case.

Pressures that will Shape and Constrain Policy in New Zealand

23. As indicated in the statement of New Zealand's Long-Term Fiscal Position,¹⁴ New Zealand is experiencing a shift in the structure of its population. We are in transition from a high fertility and mortality rate to a low fertility and mortality rate (i.e., the ageing of the population). This is a permanent change in the age structure of the population rather than a temporary shift.
24. Although it is difficult to predict with accuracy the trend in New Zealand's population, some analysis has been undertaken. Treasury analysis indicated that by 2100 the combined ratio of young and old will be back to the levels seen at the beginning of the 20th century. However, the split between young and old is expected to be very different with people over 65 making up the larger share (rather than the smaller share). Further, most of the change in population will occur over the next 30 years which is significant for the fiscal position since the government bears a large portion of the cost of supporting the elderly.
25. Other parts of the New Zealand environment will continue to change over the long term:
 - The government will face increasing Budget pressures. Based on current policy settings tax revenue is expected to remain flat while expenditure is expected to rise. This implies that changes will be required to current expenditure and revenue settings.
 - The financial environment is one of growing global integration, rapid changes in financial practice and increasing complexity of financial contracts.¹⁵ This has

¹⁰ See McCulloch (2002)

¹¹ Treasury (2003)

¹² De Mello, Kongsrud and Price (2004)

¹³ This is changing to some extent in the case of NZS because current taxes are being invested in the NZS Fund.

¹⁴ Treasury (2006)

¹⁵ Claus, Jacobsen and Jera (2004)

implications for financial literacy and the robustness of New Zealand's regulation settings.

- New Zealand has relatively high income inequality and wealth inequality, and this has implications for policies relating to saving.
- It is not just financial capital that matters but also how New Zealanders build and use human capital. Trends in New Zealand's human capital development (e.g., longer time in the education system, multiple careers, cost of education and who bears it, student loans, etc.) feed back into the patterns of financial capital accumulation.

Evidence of Saving in New Zealand

Saving can be measured in different ways ...

26. Saving can be measured in different ways. The first two relate to the sources of data on savings:
- macro sources (the flows and stocks of saving at the national level and for each of the sectoral components of national saving – household, business and government – from National Accounts and other aggregate data), or
 - micro sources (the flows and stocks of saving based on individual-level data from household surveys).
27. A further two approaches relate to whether saving is conceived as a flow or a change in stocks of savings:
- The *flow* measure is more conventional and is income not spent on current consumption.
 - The *stock* measure is the change in the stock of wealth (otherwise known as “net worth”). That is, the change in net worth between the beginning and the end of a period, where net worth is the difference between assets and liabilities.

The main difference between these two measures is asset revaluations, that is, asset revaluations are incorporated in the stock measure, but not in the flow measure.¹⁶

...and based on a variety of datasets, none of which gives a complete picture

28. In New Zealand a number of data sources are used to analyse saving in line with these different approaches (see Table 1), each with its strengths and weaknesses.

Table 1: Data sources for saving and wealth

	Flow: income less expenditure	Stock: change in net worth
Unit record (e.g., household)	- Household Economic Survey	- Household Savings Survey - Survey of Family, Income and Employment
Macroeconomic aggregates	- Household Income and Outlay account - Institutional Sector Accounts - National Accounts	- Reserve Bank of New Zealand household financial assets and liabilities

Source: Bascand, Cope, and Ramsay (2006); Treasury (2007)

¹⁶ Treasury (2003)

Macroeconomic (Aggregate) Data

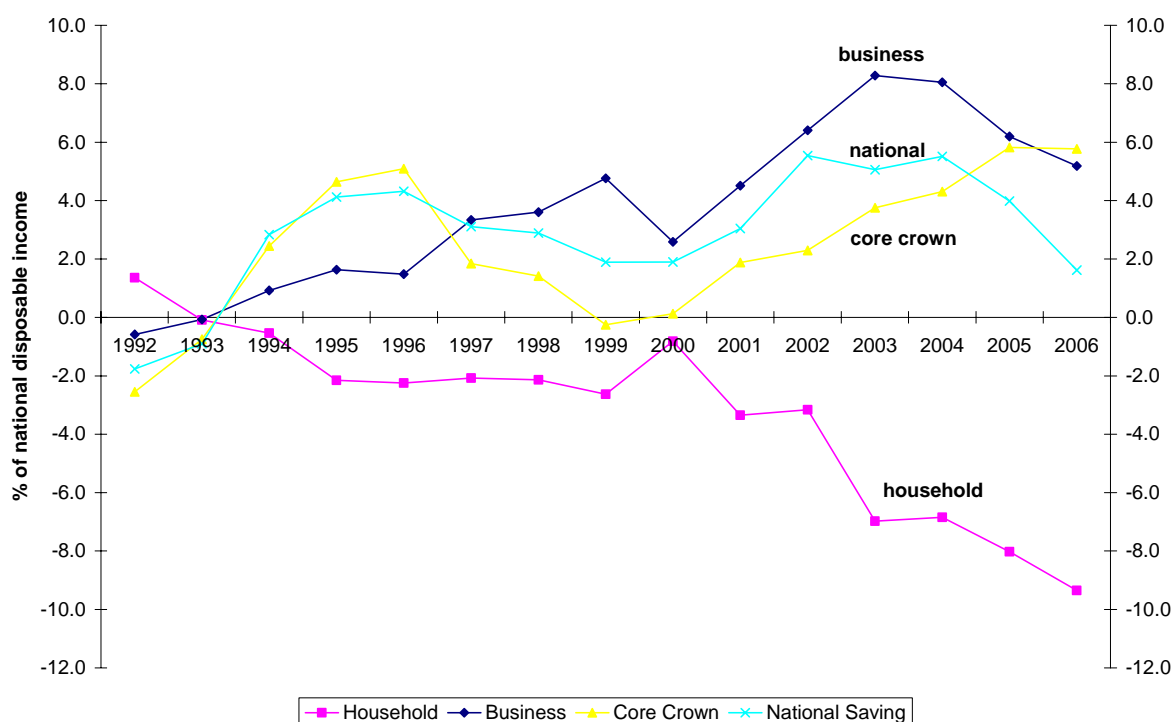
Macro data indicate that national saving is low in New Zealand and has been declining ...

29. At a macro level, data indicates that New Zealand national saving was around 4% of national disposable income in 2005 and fell to 1.6% in 2006 (down from 5.5% in 2004) and over the past ten years it has fluctuated between around 2% and 6%, a range significantly below the OECD median. Decomposing the data further into its components (i.e., household, government and business saving) the picture is less clear owing to unreliable data on household saving.

Available data do not give us a clear picture of household saving...

30. The Household Income and Outlay Account (HIOA) measure - put out by SNZ as an 'experimental' rather than official series shows household saving rates declining since the early 1990s and becoming strongly and increasingly negative since around 2001 (Chart 1). An alternative flow measure produced by the Reserve Bank of New Zealand¹⁷ also shows a declining trend into negative territory but to a lesser extent than the HIOA measure. On the other hand, Scobie and van Zijll de Jong (2006) develop a measure based on adjusting changes in households stocks of wealth for changes in house prices. This indicates positive levels of household saving and no negative trend (Chart 2).

Chart 1: Saving by sector¹⁸

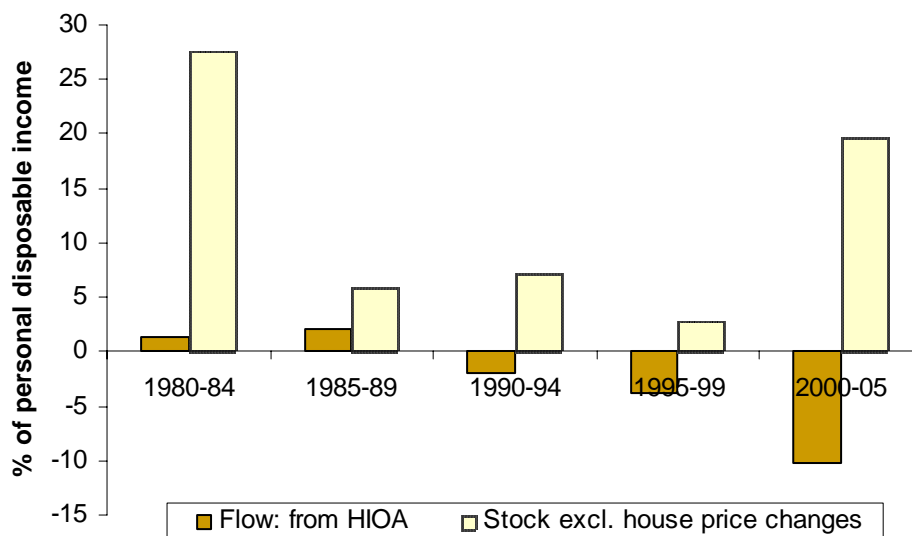


Source: Treasury

¹⁷ Hodgetts, Briggs, and Smith (2006)

¹⁸ Note that the denominator in these rates is *national* disposable income, whereas in Chart 2 it is *personal* disposable income and in Table 2 it is *household* disposable income. The latter two being smaller than national disposable income, the corresponding saving rates will be larger (in absolute terms).

Chart 2: Stock and Flow Measures of Household Saving Rates: as a percent of Personal Disposable Income



Source: Treasury

31. The reason for the HIOA data being labelled experimental is that SNZ does not produce a complete set of institutional sector accounts and until it does this there will be a degree of uncertainty in the treatment and allocation of certain transactions between households and the other sectors.¹⁹ SNZ are working to improve the sector accounts with the assistance of the Reserve Bank of New Zealand and the Treasury. Until better measures become available there is little we feel that can be confidently concluded about household saving.

...but international comparisons suggest New Zealand has low comparative household saving.

32. International comparison of household saving as a percentage of disposable income show that rates in New Zealand appear to be significantly lower than in other countries (see Table 2). However, it should be kept in mind that these comparisons use the experimental HIOA data and there may be issues with data collection and definitions in other countries.

¹⁹ Bascand and Ramsay (2006)

Table 2: Selected country household saving rates (period averages as a % of household disposable income)

	1970s	1980s	1990s	2000-2004	2005
Australia	14.2	11.1	5.4	-0.5	-2.6
United States	9.6	9.1	5.2	2.1	-0.4
Canada	12.0	15.3	9.1	3.4	-0.2
Germany	13.1	12.8	11.4	9.9	10.7
France	13.2	9.5	11.6	12.2	11.6
Netherlands	4.1	14.3	14.1	8.4	5.7
Japan	23.7	16.3	12.4	5.0	2.4
New Zealand	3.6	2.8	-1.6	-7.2	-14.8

Data for Japan for 1970s are for period 1972-1979. Source: OECD

33. The OECD (2007) points to low household saving. It argues that while the government has a high saving rate, the household saving rate is significantly negative and household debt has climbed sharply to around 160% of disposable income (which is higher than in most other OECD countries).
34. Overall, official figures on national saving (the aggregate of household, business and government saving) are more robust than the sector figures. They show New Zealand national saving is positive but low compared to most other OECD countries and has been declining in the last few years (Chart 1).

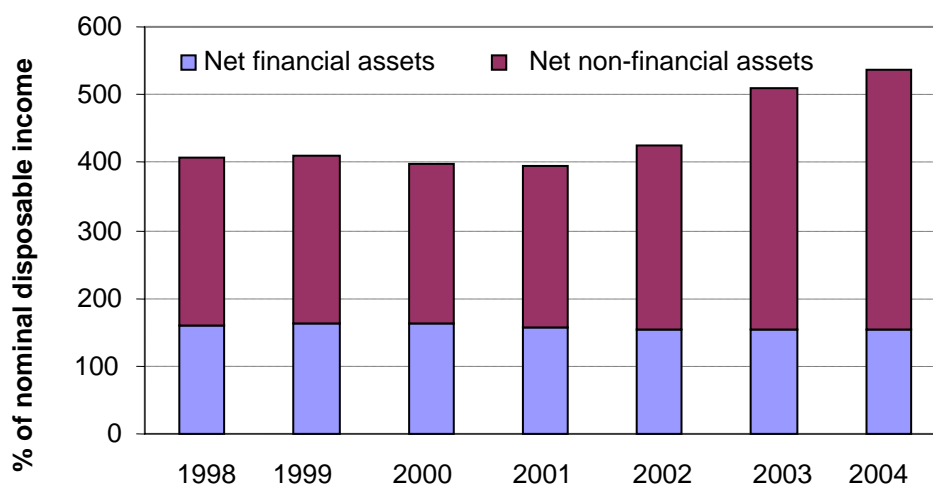
New Zealanders rely a lot on housing for their wealth...

35. Macro data also indicate that New Zealanders rely heavily on housing stock for their wealth (Table 3). In 2005 around 75.7% of household sector gross wealth was invested in housing while only a small proportion (around 11.5% of household sector gross wealth) was invested in life, superannuation and managed funds or direct holdings of equities. Moreover the predominance of housing in household portfolios has increased in recent years owing to rapid house price rises (see Chart 3 – in which housing equates roughly to ‘non-financial assets’).
36. A noteworthy trend in Table 3 is that household net assets have tripled since 1990 (from \$171 billion to \$526 billion in 2005), while the household saving rate appears to have been decreasing over that period (Chart 1). Although this could reflect some data discrepancies it should be noted that the increase in wealth is driven by the revaluation of assets (predominantly housing) and that acquisitions of new assets have been effectively offset by a corresponding increase in liabilities. This lack of saving (in a flow sense) is likely partly to reflect a wealth effect (as people feel wealthier, they consume more through, for example, borrowing more against their assets).

Table 3: Household sector net worth (December years)

<i>\$ Billions</i>	1990	2000	2001	2002	2003	2004	2005
Balance sheet							
Deposits with financial institutions	30	45	49	54	59	65	72
Direct holdings of equities	9	17	16	15	18	20	20
Life, superannuation and managed funds	26	57	56	50	51	53	57
Other financial assets	7	7	9	11	13	14	13
Housing stock	127	231	247	282	370	429	506
Total assets	199	357	377	412	511	581	668
Loans secured by housing	25	64	71	78	86	99	115
All other loans	3	14	13	15	22	25	27
Total Liabilities	28	78	84	93	108	124	142
Household sector net worth	171	279	293	318	403	457	526
Composition of change in net wealth							
Net acquisitions of new assets and liabilities				3	1	0	-1
Net revaluations of assets				22	84	54	70
Change in net worth				25	85	54	69

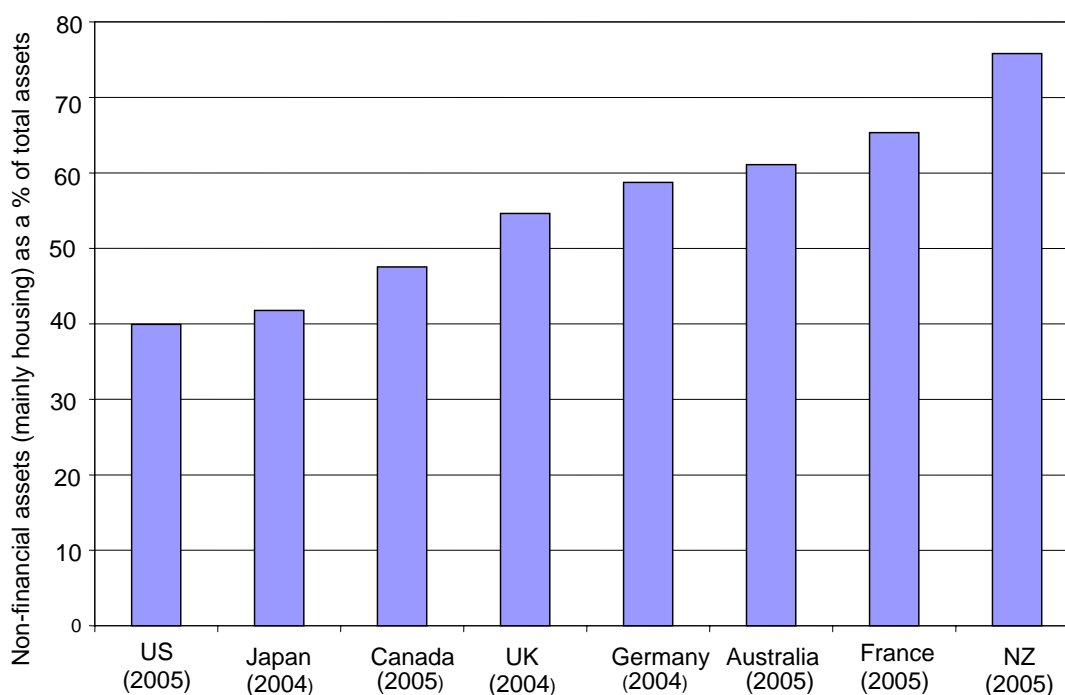
Source: Hodgetts, Briggs, and Smith (2006)

Chart 3: Decomposition of New Zealand household net wealth

Source: Reserve Bank of New Zealand

...which is also supported by international comparisons.

37. Compared to other countries for which data are available, housing appears to contribute more to total household net wealth in New Zealand. Chart 4 shows aggregate data across several OECD countries. This appears to be consistent with cross-country wealth survey data (Table 4).

Chart 4: International comparison of composition of total household assets

Source: OECD, Reserve Bank of New Zealand

Table 4: International comparison of household portfolio composition

	Canada (1999) LWS*	Finland (1998) LWS	Italy (2002) LWS	Sweden (2002) LWS	USA (2001) LWS	NZ (2004) SOFIE
Financial assets (%)	22	16	16	28	41	15
Real estate assets (%)	78	84	84	72	59	85

Note: Some assets have been removed from the survey data to aid comparability.

Source: Luxembourg Wealth Study (LWS), New Zealand Survey of Family Income and Employment (SOFIE)

A lot of New Zealand assets are owned or financed by foreigners...

38. A considerable proportion of assets in New Zealand are either owned by foreigners or are financed by loans from foreigners. As a result income earned by foreigners from New-Zealand-located assets is not balanced by income earned by New Zealanders from assets located offshore placing New Zealand's investment-income balance (a major component of New Zealand's current account deficit) at a deficit (refer further to section "National saving and the current account deficit").

Microeconomic (Household) Data

39. Unfortunately there are no surveys in New Zealand which have been specifically designed to measure the flow of saving at individual household level. This represents an important limitation. In the absence of any better measures the Household Economic Survey (HES) is often used.²⁰
40. Although the aggregate HIOA and the micro HES data are both flow-based measures there are differences between the two datasets. HES-based estimates of household saving rates are higher and show less evidence of a declining trend in recent years. In

²⁰ Le, et al. (2007:11)

principle, adding up the individual household incomes and outlays from the HES should give estimates of aggregate household income and outlays obtained from the HIOA. But a number of adjustments are required in order to reconcile the two measures. Overall, SNZ estimates that HES captures 96% of income data in the HIOA but only 83% of similar items on the expenditure side. This asymmetry seems to explain why rates of household saving estimated from the HES are much higher than those from the HIOA and why they need to be adjusted to be put on a comparable basis.²¹

New Zealanders appear to invest relatively little in superannuation assets and less than people in other countries...

41. SNZ data (from the Household Savings Survey (HSS)) can be used to estimate New Zealanders' net worth. Across all non-partnered individuals the median level of net worth was estimated to be \$10,300 in 2001, while the mean was \$97,900.²² The large discrepancy between the mean and the median suggests that a few very high net worth individuals are skewing the mean indicators. Couples exhibited a similar pattern.
42. In terms of superannuation holdings, this HSS data showed that middle and upper income non-partnered individuals and couples in wage and salary employment were more likely to hold superannuation assets and that the value of their superannuation assets rises fairly systematically with income.
 - More people have personal superannuation schemes (12%), compared with workplace schemes (8.2%), and overall about 19% of the population hold any superannuation scheme (see Table 5, note that a small proportion hold both types of scheme).
 - The median value of all superannuation schemes is about \$20,000, with the median value of workplace superannuation schemes (\$26,200) being higher than that of personal superannuation schemes (\$15,600) (see Table 5).
 - The number of individuals who hold a superannuation scheme increases consistently across income brackets. However, the pattern of average scheme values is less clear. The higher scheme value for the first two income quintiles reflects the larger number of older people, who have low current income but have accumulated large savings in private superannuation schemes (see Table 6).

Table 5: Holdings of superannuation schemes by types of schemes

	Percent of population who hold a scheme (%)	Mean value of scheme (\$)	Median value of scheme (\$)
Workplace superannuation scheme	8.2	72,800	26,200
Personal superannuation scheme	12.0	40,500	15,600
Any superannuation scheme	19.3	56,200	20,000

Source: Treasury's calculations based on 2001 Household Savings Survey data for individuals aged 18-64

²¹ Bascand, et al. (2006)

²² Scobie, et al. (2007)

Table 6: Holdings of any superannuation scheme by income quintile

Quintiles of income	Any superannuation scheme		
	Percent of population who hold a scheme (%)	Mean value of scheme (\$)	Median value of scheme (\$)
1	1	67,400	24,400
2	2	43,300	14,500
3	4	40,200	15,200
4	6	51,500	22,800
5	7	71,700	25,000
Total	19	56,200	20,000

Source: Treasury's calculations based on 2001 Household Savings Survey data for individuals aged 18-64

43. Overall, New Zealanders appear to invest relatively less in superannuation assets than people in other countries. For example, SNZ data indicates that 6% of total assets are invested in superannuation in New Zealand, whereas in Canada 15% of total assets are invested in superannuation and in the United States 11%.²³
44. In line with macro estimates, property ownership seems to play a large role in the household wealth portfolios.²⁴ According to the Survey of Family Income and Employment (SoFIE) the median ratio of net equity in property to total net worth indicates that a 'typical' household holds over half of its total net worth in property and this increases to over 80% when restricting the measure to households who report ownership of property.
45. Although property ownership figures prominently in New Zealanders' overall wealth, one study shows that even if half of housing equity is converted to retirement income, the reduction in saving rates to maintain living standards in retirement is still modest.²⁵ This indicates that property ownership should not be viewed as a substitute for 'adequate' levels of retirement saving.²⁶

Although cohort analysis data is interesting it should be used cautiously...

46. Recent work in Treasury by Le, Scobie and Gibson (2007) and Scobie, Le and Gibson (2007) used data on a specific cohort (people aged 45-54 years old) to estimate "prescribed" saving rates required for those people to enjoy a level of consumption in retirement similar to what they had before retirement (see Chart 5 and Chart 6). Achieving this level of retirement consumption is taken as the criterion of 'adequacy' of saving. The estimates take account of the actual current wealth and income of the cohort as recorded in SoFIE. The authors analysed two scenarios which differed in the assumed path of pre-retirement income. The conclusions for couples included that:
- Assuming the pre-retirement income increases at a constant rate until retirement (Chart 5), the median prescribed rates for couples range between 0% for income quintile 1, to over 30% for income quintile 5 (and between 22% for wealth quintile 1, to around 25% for wealth quintile 3, to almost zero for the 20% wealthiest people).²⁷
 - Assuming the pre-retirement income reaches a peak and then decreases before retirement (Chart 6), the median prescribed rates range between zero for income

²³ Statistics New Zealand (2003)

²⁴ Scobie, et al. (2007)

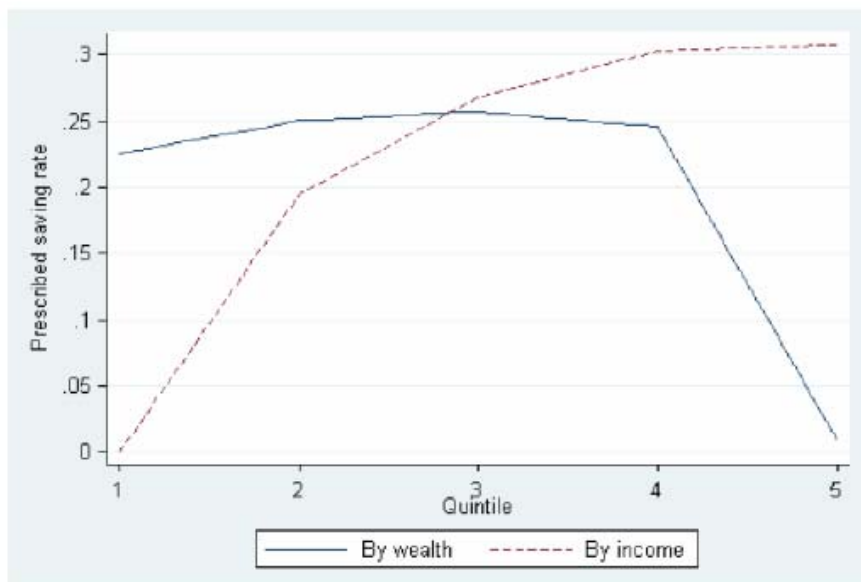
²⁵ Scobie, et al (2007)

²⁶ Ibid

²⁷ This means, for example, that people on the middle income bracket (quintile 3) need to save around 30% of their income in order to enjoy consumption at the levels they enjoyed before retirement.

quintile 1 to over 25% for income quintile 5 (and between 11% for wealth quintile 1, to almost zero for the 20% wealthiest people).

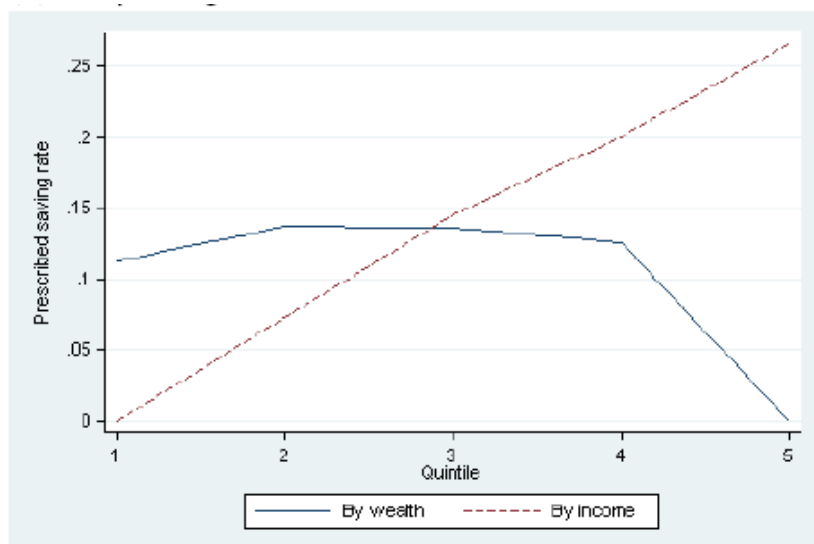
Chart 5: Median prescribed saving rates by wealth and income quintiles (Couples aged 45-54) – assumes pre-retirement income rises at a constant rate till retirement



Note: Saving rates here are expressed as a proportion of after-tax income.

Source: Scobie, et al. (2007)

Chart 6: Median prescribed saving rates by wealth and income quintiles (Couples aged 45-54) – assumes pre-retirement income peaks and then falls before retirement



Note: Saving rates here are expressed as a proportion of after-tax income.

Source: Le, et al. (2007)

47. These studies highlight that the rate of saving required to smooth consumption in retirement differs greatly across income and wealth quintiles.

48. Le, et al. (2007) also used HES and SoFIE data to estimate actual savings rates of New Zealanders between 45-64 years old in order to compare them with their prescribed savings rates. The idea was to see how many appear to be saving inadequately for their retirement. Bearing in mind the difficulty of estimating actual savings from available data, the analysis suggested (Table 7) that:²⁸

- For the majority of people surveyed in the lower income brackets, no further saving should be required, as NZS offers a higher income than their current and projected pre-retirement income.
- About one third of those surveyed are not saving enough (i.e., their estimated current saving rates fall below those required for 'adequacy' as assumed by the analysis).
- A higher proportion of low to middle income people (those earning between \$15,000 and \$50,000 per year) are not saving adequately compared to people on higher and lower incomes.

Table 7: Proportions of the population who may be saving inadequately for retirement

	Baseline (%)	Adjusted (%)	Low-middle Incomes, adjusted (%)
Non-partnered individuals			
Ages 45-54	34	19	14
Ages 55-64	28	9	10
Couples			
Ages 45-54	37	30	34
Ages 55-64	37	14	23

Notes: The adjusted scenario assumes a decline in retirement consumption with age and introduces a cap on retirement consumption, which results in lower prescribed saving rates. "Low to middle incomes" is the group of people earning between \$15,000 and \$50,000 per annum.

Source: Le, et al. (2007) and Treasury

49. Some commentators have interpreted the specific findings of the Le, et al. (2007) analysis, as an indication that there is not a saving "problem" in New Zealand, or that there is no evidence that New Zealanders are not saving enough for retirement. However it should be noted that:

- Micro data and estimates of saving rates tend to suffer from inadequacies and uncertainties in a similar fashion to macro data and estimates.²⁹
- The wide variation across households within the cohort examined indicates that although many aged 45-64 may be making adequate provision, a significant minority appear to be saving at rates below that needed to accumulate an adequate level of retirement wealth.
- The people who have the least need to save are those with the lowest incomes or the most wealth. Apart from these groups, a significant number of couples and non-partnered individuals may need to undertake additional saving if they are to sustain their current consumption levels when they retire.

²⁸ Le, et al. (2007)

²⁹ Bascand et al. (2006)

- At only around \$21,000 per annum for a couple, NZS on its own offers only a very modest income. It is indeed rational for people currently working and earning less than this amount not to save and further reduce their consumption. On the other hand, some people in this position will be on a low income only temporarily or be drawing support for a higher level of consumption from other sources.
 - Whether or not people are saving adequately for retirement, it may be wise for people to save for other purposes than retirement, e.g., early retirement, bequests or simply as a buffer against uncertainties about health, life expectancy and so on.³⁰
50. The specific cohort analysed, i.e., 45-64 year olds, are not necessarily representative of the whole population. The circumstances that have affected their lives are different to those of younger generations, or even older generations. For example, affordability of buying a home in the 1970s is quite different than it is presently, reflecting different levels of maturity of the economy and the impact of immigration patterns over time. Further, people over time may face different expenditure needs. For example, tertiary education costs have changed over time: prior to 1992 tertiary education was largely free for students; since 1992 it has been subject to fees, assisted through loans by the government which incurred near-market interest; and now student loans are interest-free. The different policies have imposed different expenditure requirements on different generations of people, which has a flow-on effect on their ability to save.

What International Evidence tells us about the Effectiveness of Saving Programmes

51. Typically, overseas governments have introduced either a compulsory saving regime (such as Australia), or tax incentives for saving (such as United States), or a combination of both (such as Chile). While each of these has drawbacks, this section summarises the evidence of their effectiveness in raising household and national savings.
52. Both compulsory regimes and tax incentives are likely to cause people to change their behaviour in different ways depending on their circumstances:
- households that previously consumed all or nearly all of their income might decide to save in tax-advantaged superannuation to take advantage of the higher returns and increase lifetime income - which would be new savings,
 - households that already save voluntarily may merely substitute the existing saving into the tax preferred or compulsory form (especially higher income earners). This is known as the “switching effect” (also known as “offsetting”), and
 - some households may even save less overall since they no longer have to save as much to achieve the same level of lifetime income.
53. Although the amount of switching tends to be larger with tax incentives than compulsion,³¹ there is a wide range of estimates. The extent of switching is difficult to estimate and the effect will differ based on the specific design of the superannuation scheme. The different types of schemes are discussed below.

³⁰ Le, et al. (2007)

³¹ Connolly et al. (2004)

Tax Incentives

There is evidence that participation in saving programmes increases with incentives...

54. In the United States it was found that that participation in and contributions to Individual Retirement Accounts increased as the size of incentives increased.³²
55. Tax incentives involve a cost to the government. They tend to benefit higher-income individuals and families more, as higher-income earners are much more likely to save and they face higher marginal tax rates.³³ However, if tax incentives can be designed in a way that reduces the relative benefit to higher income earners (such as allowing a dollar amount or a cap for the tax subsidy rather than a lower tax rate), the benefit will flow relatively more to lower-income earners. On the other hand, a capped subsidy reduces the incentive for higher income earners to save at the margin, as it effectively increases the value of saving that they are already doing and they may merely shift from other forms of saving to the tax-favoured form.
56. However, researchers are less certain and the evidence³⁴ is less clear about the extent to which incentive programs increase net household saving.³⁵
 - Some concluded that savings programs substantially increase net household saving.³⁶
 - Others concluded that retirement savings incentives do little to increase net household saving³⁷ or that retirement saving programs increase net private saving modestly and only for selected groups.³⁸

Compulsory Regimes

...there is also evidence that suggests that compulsion has contributed to higher saving rates.

57. One recent and much talked about example is the compulsory superannuation scheme in Australia.
58. Compulsory superannuation was introduced in Australia in 1986 and the system initially applied to employees in Federal awards, with 3% of their earnings saved in superannuation funds in lieu of wage rises. The system was extended to apply to most employees in 1992 under the Superannuation Guarantee Charge, with the contribution rate gradually raised to its current level of 9% of earnings and coverage increased to 90% of employees. Both mandated and voluntary superannuation receive concessionary tax treatment with limits applied to tax deductions for high income earners.^{39 40}

³² Duflo, Gale, Liebman, Orzag and Saez (2005)

³³ Hungerford (2006)

³⁴ Note that each of these studies has their own strengths and weaknesses which are not discussed in detail here.

³⁵ Toder and Khitatrakun (2006)

³⁶ Cheronzhukov and Hansen (2004); Engelhardt (1996); Poterba, Venti and Wise (1996)

³⁷ Engen, Gale and Scholz (1996)

³⁸ Attanasio and DeLeire (2002); Attanasio, Banks and Wakefield (2005); Engen and Gale (2000)

³⁹ Connolly and Kohler (2004)

⁴⁰ In 1988 the Government imposed a 15% tax rate on both contributions and earnings and to compensate for these changes, the Government reduced the tax rate on the taxed element of lump sum superannuation benefits, reduced from 15% to zero (provided the benefit was preserved until age 55) for amounts up to the low rate threshold (Reinhardt and Steel, 2006). Amounts above this threshold were taxed at the reduced rate of 15%, while annuities remained taxed at marginal rates, the Government introduced a 15% rebate when benefits were paid to the individual (Reinhardt and Steel, 2006).

59. Households' superannuation assets as a proportion of GDP have more than tripled in Australia over the past 20 years.⁴¹ In terms of net average flows, Australian households' flows into superannuation grew from an average of 2.8% of GDP in 1989-95 to 4.6% over 1996-2002,⁴² while the stock of savings increased from 36.6% of GDP (December 1988), to 69.9% of GDP (December 2002). It was found that only one third of the increase in household assets in superannuation in Australia over the past 20 years was due to the valuation effects.⁴³ Although it is difficult to pinpoint the effect of the compulsory superannuation scheme on household savings, it was estimated that if compulsory superannuation had not been introduced the counterfactual saving rate would have been lower by around 1.5% of GDP by 2001/02.⁴⁴ However, compulsory saving has not completely offset removed all of the structural features associated with low saving.
60. The experience of Chile, which introduced compulsory employee and employer contributions more than 20 years ago, indicates that such a pension reform can have a significant impact on national savings. One study estimated that compulsion increased national saving by somewhere between 0.67% and 4.6% of GDP in Chile.⁴⁵

There is evidence that compulsory and tax-favoured saving may be partially offset by switching behaviour.....

61. Evidence on tax incentives and compulsion shows that they increase people's participation in saving programmes, but the net increase in private savings will depend on the behaviour of individuals:
- Because many people are not able to offset their enforced new saving by either reducing their other saving or by increased borrowing, compulsory superannuation (such as in Australia) will increase their overall saving.⁴⁶ In particular:
 - liquidity-constrained households (low to middle income earners are more likely to be liquidity constrained and less able to substitute between superannuation and non-superannuation saving) are less able to offset,⁴⁷ and
 - compulsion may lift the savings of myopic households by causing them to re-evaluate how much long-term saving is necessary to accumulate sufficient funds for retirement.
 - Depending on the extent and form in which people currently save, some are likely to switch from their current form of saving to the tax-favoured or the compulsory form of saving. For example, the Reserve Bank of Australia estimated that in Australia around 35 to 50 cents in the dollar of compulsory superannuation was offset by reducing other saving or higher borrowing.⁴⁸
 - To the extent that incentives result in higher net saving it is mostly through raising the saving of people with modest earnings or who lack access to other assets that they could either shift to tax-favoured accounts or use as collateral for borrowing.⁴⁹

⁴¹ Based on data in Connolly and Kohler (2004).

⁴² Connolly and Kohler (2004)

⁴³ Connolly and Kohler (2004)

⁴⁴ Connolly and Kohler (2004)

⁴⁵ Corbo and Schmidt-Hebbel (2004)

⁴⁶ Connolly and Kohler (2004)

⁴⁷ Edey and Simon (1996)

⁴⁸ Connolly and Kohler (2004)

⁴⁹ Toder and Khitatrakun (2006)

Default Schemes

Default schemes seem to be effective in increasing participation...

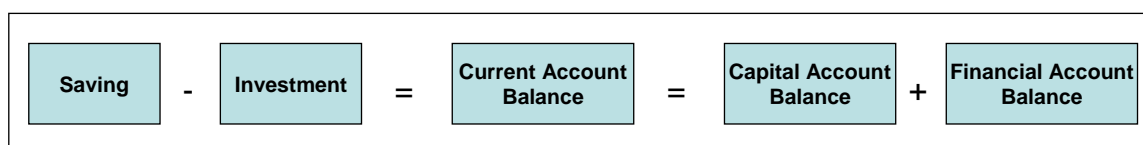
62. There is quite strong evidence supporting the behavioural economic analysis of saving. For example, participation rates are high in relation to default schemes (i.e., automatic enrolment). In the United States it was found that participation increased substantially when enrolment in the 401(k) programmes was made the default (with voluntary opt-out) in place of the usual opt-in rule (with non-participation as the default).⁵⁰

National Saving and the Current Account Deficit

New Zealand presently has a high current account deficit...

63. Concern about New Zealand's low saving rate is sometimes linked to concern about its persistently high current account (CAD). This section analyses this link, examines possible reasons for the presently high CAD and the implications for saving policy.
64. The current account of the Balance of Payments can be viewed from three related perspectives (see Figure 1):
- the difference between national saving and investment,
 - its component flows, that is, the flows of goods, services and investment income between New Zealand and abroad, and
 - the flows of financial transactions between New Zealand and abroad (the Capital Account and Financial Account).⁵¹

Figure 1: Balance of Payments identities



...however, cyclical current account deficit levels should not be confused with underlying structural deficit levels.

65. The real exchange rate, exports, imports, and the investment account balance play a role in the current account. Economists in the 1980s re-considered the role of consumption, saving and investment in the current account and emphasised the impact of these across *time periods* (hence it is known as the intertemporal approach to the current account). This approach recognises that a person's saving and investment decisions are based on life cycle considerations (as discussed above).
66. According to the intertemporal approach, for an open economy with access to international capital markets, the impact of changes to people's income on the current account will be as follows:

⁵⁰ Beshears et al. (2006).

⁵¹ The current account records transactions in goods, services, investment income and current transfers. The capital account covers all transactions that involve the receipt or payment of capital transfers and the acquisition or disposal of non-produced, non-financial assets. The financial account covers all transactions associated with a change of ownership in international financial assets and liabilities during a period.

- A perceived *temporary* income increase would result in higher saving, a lower CAD and no significant change in consumption. Since people prefer to keep their consumption unchanged between time periods (i.e., they carry out “consumption-smoothing”) and because the income change is temporary, and there is the prospect of a negative income change in the future, households let savings act as a buffer to shocks.
 - A *permanent* income increase would raise consumption with little change in the rate of saving and the current account. The current account deficit may even rise initially if people anticipate the income increase and prefer to consume today (for example, by borrowing from abroad) part of their future stream of (higher) income confident that they will be able to service accumulated liabilities.
67. The intertemporal approach was expressed in policy views such as the “Lawson Doctrine” (after the former Chancellor of the Exchequer)⁵² where a large CAD need not be a concern if it reflects private-sector decisions and the fiscal accounts are sustainable. If on the other hand, excess demand and/or distortions in the economy such as biases to saving or investment cause large CADs, policy should address these problems directly.
68. By the late 1990s economists were adding qualifications to the intertemporal approach. In particular, they paid more attention to the possibility of sudden reversals of investor sentiment and rapid exchange-rate adjustments. Furthermore, in the context of the economic theory above, there may be factors that result in people basing decisions on erroneous or myopic expectations about future income and/or asset values. This could result in their consumption smoothing plans not being realised or difficulties in servicing accumulated liabilities.
69. Empirical studies of whether the intertemporal approach holds vary across countries and sample periods. Recent research estimating this type of model on New Zealand data does not reject that people display consumption-smoothing behaviour.⁵³ However, there is evidence that the recent deterioration of the current account is not consistent with the long-term solvency condition in these models, perhaps implying that the external balance will have to go through a significant correction. A key metric therefore is the sustainability of the CAD.

Sustainability of the Current Account Deficit

New Zealand’s present current account deficit is not sustainable...

70. A considerable proportion of assets in New Zealand are either owned by foreigners or are financed by loans from foreigners. This partly reflects a lack of domestic savings and partly a high demand for New Zealand assets by overseas investors. An outcome is that income earned by foreigners from New-Zealand-located assets is not balanced by income earned by New Zealanders from assets located offshore. As a result New Zealand’s investment-income balance with the rest of the world is currently running at a deficit of around \$12 billion per annum or between 7% and 8% of GDP.⁵⁴ This is a major component of New Zealand’s current account deficit that is presently close to \$14.4 billion per annum or over 9% of GDP.⁵⁵

⁵² Edwards (2001).

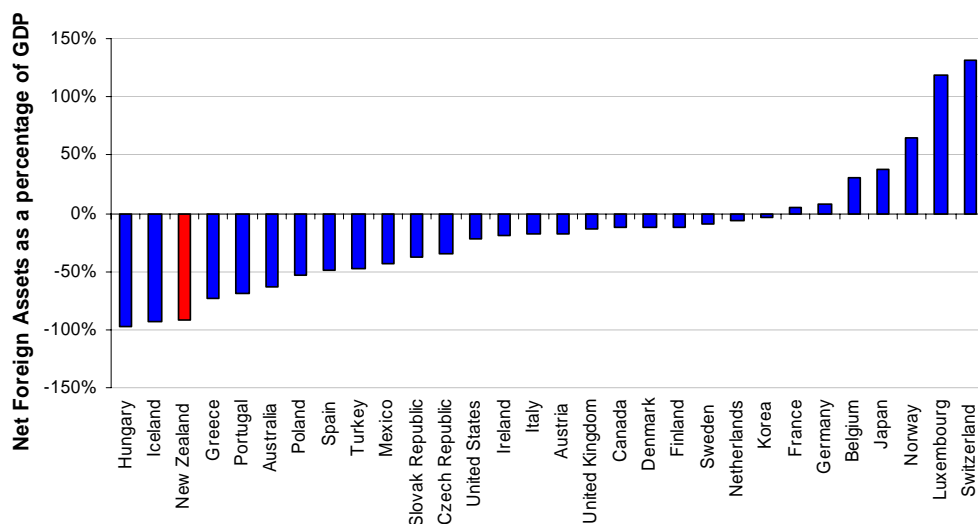
⁵³ The empirical analysis estimates a benchmark consumption-smoothing CA and performs statistical tests to see if the actual current account deviates from this benchmark. Kim, Hall and Buckle (2006) estimate the model for the period 1982-1999. Munro and Sethi (2006) estimate the model of the period 1982-2005.

⁵⁴ Reserve Bank of New Zealand.

⁵⁵ December 2006 quarter data from the Reserve Bank of New Zealand.

71. Constructed estimates of external assets and liabilities for 145 countries for the period 1970-2004 show New Zealand to be an outlier (ranked 3rd highest in the OECD) in terms of net external debt levels⁵⁶ (Chart 7).

Chart 7: Net External Liabilities



Source: Lane and Milesi-Ferretti (2006)

72. Another and related way to assess the likelihood of a correction in a country's current account is to apply the notion that in equilibrium the ratio of the Net International Investment Position (NIIP) to GDP (i.e., NIIP/GDP) must stabilise at some level. The NIIP is the stock measure of New Zealand's net external liabilities and so represents accumulated current account balances. It follows that the sustainable current account (CA) to GDP ratio (i.e., CA/GDP) will depend on this long term NIIP/GDP, the country's long term trend rate of real growth of GDP and the rate of inflation.
73. Table 8 shows alternative deficits, as a percent of GDP, associated with alternative long-run NIIP/GDP ratios for different nominal GDP growth rates. For example, with a long-run nominal GDP growth rate of say 5%, the country could maintain a long-run NIIP/GDP ratio of 80% providing it runs a long-run CAD of just below 4% of GDP.

Table 8: Current account deficit (% GDP) consistent with stable NIIP/GDP

NIIP/GDP (%)	Nominal GDP growth			
	4.5	5.0	5.5	6.0
80	3.4	3.8	4.2	4.5
100	4.3	4.8	5.2	5.7
120	5.2	5.7	6.3	6.8

Source: Reserve Bank of New Zealand

74. All the illustrative combinations of NIIP/GDP ratios and nominal GDP growth rates in Table 8 involve a lower CAD than New Zealand currently has. The CAD is thus not sustainable at its current level. But New Zealand's CAD likely reflects some temporary and cyclical factors (discussed below) including a degree of excess demand in the

⁵⁶ Lane and Milesi-Ferretti (2006).

economy and a real exchange rate well above that expected to prevail over the long term.

The Current Situation and the Nature of Adjustment to External Imbalance

New Zealand's current cycle and CAD reflect an unusual combination of events

...

75. The current cycle has been characterised by an unusual combination of events. In particular, the contribution of housing market buoyancy to domestic demand pressures, inflation and the exchange rate has been more marked than during the mid-1990s cycle. The current housing cycle is large by New Zealand standards and with what seems to be a strong connection to housing wealth and consumption. Key factors contributing to the importance of housing during this cycle were the initial low mortgage interest rates in 2002 and 2003, a strong rise in net immigration, expectations of high investment returns from housing, and strong employment growth accompanied by expectations of sustained household income growth.
76. Coming after a period of financial market liberalisation, many of these factors are consistent with the intertemporal approach to the current account discussed above. Overall, some of the developments may be cyclical (strong cyclical growth in domestic demand, low banking lending margins, low levels of international interest rates and risk premia) which can be expected to reverse. Domestic mortgage market innovations and the global savings glut may be more persistent. However, disentangling the extent of any intertemporal behaviours versus transitory effects, either cyclical or caused by "overshooting" of expectations regarding future incomes and asset values, is difficult.
77. The RBNZ and Treasury held a conference in June 2006 (i.e., the Macroeconomic Policy Forum) to examine policy questions such as whether greater external balance and smaller swings in the exchange rate can be achieved while maintaining or enhancing overall economic prospects. The issue of whether the external sector adjustment will be gradual or an abrupt "sudden stop" was also discussed. To quantify the risk of a sudden stop, Edwards (2006) utilised a cross-country data set to estimate the determinants of the probability that a country would experience an abrupt current account reversal (defined as a reduction in the deficit of at least 3% of GDP in a one year period). Applying the model to New Zealand for the early 2000s and then for 2005-06 when the deficit was larger, Edwards found that the probability of an abrupt reversal had increased, but remained modest.
78. Whether current account adjustments are gradual depends on underlying institutions - flexible exchange rates, capital mobility, sound fiscal policy and good quality domestic product, labour and financial market regulatory arrangements. New Zealand is well placed on these fronts. In addition to fiscal policy, the broader economic and regulatory frameworks built up over the last 20 years reduce the vulnerabilities that might otherwise be associated with a large CAD.

Impact of Increased National Saving on Macroeconomic and Economic Development Outcomes

...but a higher structural level of national saving over the longer term is likely to see a reduced long-term current account deficit and a lower equilibrium exchange rate ...

79. Over the longer term, changes to New Zealand's long-run CAD will ultimately be determined by the quantity and quality of investment and saving. A higher structural level of national saving over the longer term, for given levels of investment, would see a reduced long-term CAD, and a lower equilibrium exchange rate. For this reason, it is

important to assess how far any policy change intended to lift private savings will lift overall national savings.

The impact of a reform on national savings must take account of a number of channels ...

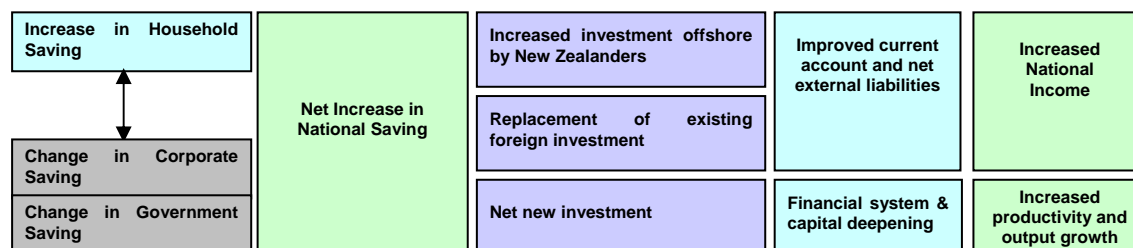
80. Since national saving is the aggregate of government saving, business saving and household saving, there are a number of channels through which a reform could impact on national savings. Thus it is necessary to take into account the effect of the reform on:

- *Government saving* – depends on fiscal cost of the reform and how the government is funding it (whether by decreases in other planned or actual expenditure, or by increased government borrowing, etc).
- *Household saving* – depends on:
 - Response of private saving to the change in government saving – based on the extent people respond because they perceive that the government is saving or dissaving on their behalf (Ricardian equivalence).
 - Amount of new saving arising directly from the reform (e.g., from compulsion or tax incentives).
 - Response of private voluntary saving to the new saving induced by the policy.
- *Business saving* – if the business sector is required to contribute to employees' saving this will impose a cost on businesses to the extent that it cannot be passed on as a decrease in wages or an increase in prices (although the latter is constrained). If the cost to business increases, then business saving may decrease.

81. If there were a sustained increase in national saving it could have several potential flow-on effects on investment and financial system development. These are not discussed in detail in this paper but in a companion paper (refer to T2007/486 forthcoming). In general, higher domestic saving could (see Figure 2):

- Increase offshore investment by New Zealand (as more saving will flow into managed funds and superannuation funds which will invest overseas and domestically).
- Replace existing foreign funding of onshore investment as there will be a larger supply of domestic savings.
- Increase onshore investment in net terms.

Figure 2: Savings and investment linkages



Source: Treasury

Longer-term Macroeconomic and Economic-Development Benefits from Sustained National Savings

After a sustained period, increases in national saving could produce a range of long-term macroeconomic and economic-development benefits for New Zealand...

82. The experiences of Australia and Chile suggest that the full benefits of increased savings take a number of years to come through. After a sustained period (say 15-20 years), increases in national saving could produce a range of long-term benefits. In the macroeconomic and economic-development spheres the potential benefits could include:
- A reduction in the long-term CAD and equilibrium exchange rate.
 - A reduction in New Zealand's net external liabilities. In turn this would mean:
 - New Zealanders pay foreigners less in the way of interest and dividends so that national income will be higher.
 - Lower payments to service the smaller stock of external debt will further improve the current account.
 - A lower country risk premium thereby lowering the cost of capital.
 - Deepening of the financial system, particularly the stock market and the market for corporate debt, with beneficial knock-on effects on firm growth and productivity.
 - Increased investment, depending on the extent to which firms currently face finance constraints.
 - Some reduction in the tendency of the housing market to overheat in response to shocks (such as terms of trade and/or migration) and create excess demand during the associated cycle (particularly if complementary measures to reduce tax biases that favour housing are implemented).
83. It must be noted that despite an extended period of compulsory superannuation, Australia still has a large current account deficit (the trend estimate of the balance on current account for the December quarter 2006 was a deficit of \$14,250 million or 5.5% of GDP).⁵⁷ Nonetheless Australia's current account deficit is much lower than New Zealand's (which was over 9% of GDP for 2006) and has remained relatively stable over the past twenty years while New Zealand's current account deficit has fluctuated. It could be argued that Australia's CAD would have been greater if compulsory superannuation had not been introduced and raised the saving rate. Neither has Australia been immune to increases in property prices (for example, real house prices increase by 5.6% per year in Australia over the 1995-2005 period, compared with 5.75% in New Zealand for the same period).⁵⁸

Conclusions

84. Despite the volume of new work and recent data on saving, drawing out policy conclusions on saving remains difficult for three main reasons. First, high-quality data about saving in New Zealand (at both macro and micro levels) remain elusive and

⁵⁷ Australian Bureau of Statistics (2007).

⁵⁸ OECD (2006).

there are still lively and ongoing debates. Secondly, evidence about the effectiveness of possible interventions to lift savings is often not unambiguous. Thirdly, even interventions that are effective in achieving one objective usually have downsides measured against other objectives - for example, compulsory schemes may lift saving but they tend to be inflexible in the form and timing of saving and therefore cannot be responsive to widely varying individual circumstances and preferences.

85. These difficulties mean that, when it comes to policy on saving, there tend not to be obvious answers, so judgements and trade-offs are called for. Bearing this in mind, our overall key conclusions on saving in New Zealand are as follows:

- Saving involves reducing consumption today in order to increase it in the future. The act of saving also releases resources which might be invested in the productive capacity of the economy. In open economies, any shortfall in domestic savings compared to domestic investment can be made up by borrowing from abroad. This shows up as a CAD and an addition to net external liabilities. Economic models (including those that frame the determinants of saving in terms of income, returns to saving, and underlying preferences about consumption now versus later; and those that include “behavioural” approaches emphasising the roles of myopia, inertia and potentially inconsistent preferences over time) offer useful insights into the determinants of saving.
- There are a range of potential benefits and costs of saving. Potential benefits include improved financial resilience for individuals, better macroeconomic outcomes under some circumstances, and financial market development. Costs include the sacrifice of current consumption, and distortions and fiscal costs in the case of possible interventions such as compulsion or tax incentives.
- There are varying weaknesses across the different macro flow measures of household saving in New Zealand - none can be fully relied on and they give different pictures about both levels and trends. The HIOA measure - put out by SNZ as an 'experimental' rather than official series shows household saving rates declining since the early 1990s and becoming strongly and increasingly negative since around 2001. An alternative flow measure produced by the Reserve Bank of New Zealand⁵⁹ also shows a declining trend into negative territory but to a lesser extent than the HIOA measure. On the other hand, Scobie and van Zijll de Jong (2006) develop a measure based on adjusting changes in households stocks of wealth for changes in house prices. This indicates positive levels of household saving and no negative trend.
- A high priority should be given to the goal of improving New Zealand's institutional sector accounts so that a reliable indicator of household saving can be developed as soon as possible.
- Official figures on overall national saving (the aggregate of household, business and government saving) are more robust than the sector figures. They show New Zealand national saving is positive but low compared to most other OECD countries and has been declining in the last few years.
- Household wealth has increased significantly driven by house prices rising even faster than the rapid rise in household debt. Many people appear to be saving adequately for retirement but a significant minority are not. Low to medium income earners as a group contains a relatively high proportion who are not saving adequately. While people in the lowest income decile generally do not

⁵⁹ Hodgetts, Briggs, and Smith (2006).

save, this is rational given their expectation that NZS will give them a higher level of income from age 65. Micro data and estimates of saving rates tend to suffer from inadequacies and uncertainties in a similar fashion to macro data and estimates.

- By contrast data on current account and net external liabilities are more reliable and certain. New Zealand's CAD has continued to grow and is now at level that would make it impossible to sustain our present (very high) ratio of net external liabilities to GDP. But there are several unusual cyclical factors that have contributed to the high CAD (such as the strength and persistence of the current exchange rate cycle) and it is difficult to disentangle the overall CAD into cyclical and structural components.
- International evidence suggests compulsion and tax incentives induce more private saving in the prescribed form but people offset this to some degree by reducing their other saving or taking on more debt. Offsetting is most marked (and can reach around 100%) in the case of tax incentives that high income earners disproportionately take up because they gain most from them. There is least offsetting when schemes impact on low to middle income people who have limited offset opportunities. Whether higher private savings lift national saving depends on the specific interventions and how the fiscal cost of any intervention impacts on government saving.
- An intervention that substantially lifts national saving would help over time to lower the structural CAD and equilibrium real exchange rate. We would also expect the large increase in household holdings of financial assets to help develop financial markets which in turn could be positive for firm productivity and growth.

86. In 2005 we advised the adoption of a suite of policies that take account of macroeconomic vulnerabilities and err towards supporting private saving, including:

- facilitation of work-based savings and financial education,
- better regulation across the financial services sector,
- measures to improve access to investment finance where there are identifiable blockages,
- a broad-based tax system that does not distort saving choices, and
- maintaining the strength of the fiscal position and a longer-term focus in fiscal reporting.

87. The Government has already taken a number of measures that fit with this advice - KiwiSaver, the Retirement Commission's financial education campaign, the current regulatory review of financial products and providers, the tax treatment of portfolio investment entities, the business tax package, and long-term fiscal reporting - and we substantially agree with these steps. However, in the light of the recent data, evidence and analysis mentioned above we think that further or stronger pro-saving action is now justified.

88. This judgement for further pro-saving action rests on a least-regrets approach in the light of data uncertainties, the economy's tendency to macroeconomic imbalances and the possibility that individuals are basing saving decisions on long-run expectations that

could be mistaken. On the last point, policy needs to take account of potential biases that mean people may be under-saving relative to what is desirable over the long term. One possible bias is people's probable lack of awareness of the fiscal strains that are likely to appear in the long term as the New Zealand population ages. If trends do not change, these strains could mean that programmes like NZS have to become less generous in the future. Another bias could be people's unrealistic expectations about the future course of property prices. Higher private saving would be a way to mitigate these outcomes should they come to pass, whereas waiting until they become more certain could be leaving it too late.

89. A well designed reform package going beyond the current KiwiSaver scheme would be a sensible option to consider in order to further encourage private savings. Any scheme should be designed in accordance with a number of guiding principles derived from the experience of other countries about the effectiveness of schemes and the particular features of New Zealand's current situation, including:

- Tax incentives should avoid generous benefits to high income earners who are already saving and will be most likely to simply switch between different forms of saving. Rather, because low to middle income earners tend to have low savings and have less ability to offset saving induced by an intervention, the scheme's incentives should strongly impact on this group. This is based on international evidence which suggests that although compulsion and tax incentives induce more private saving in the prescribed form, people offset this to some degree by reducing their other saving or taking on more debt. Offsetting is most marked (and can reach around 100%) in the case of tax incentives that high income earners disproportionately take up because they gain most from them. There is least offsetting when schemes impact on low to middle income people who have limited offset opportunities.
- Savings should be locked in for an extended period – given that fiscal strains and property price uncertainties may take many years to resolve.
- Given evidence supporting the effectiveness of behavioural mechanisms such as automatic enrolment, the scheme's design should exploit these.
- Since most benefits of higher savings rest on higher national saving the fiscal cost of tax incentives or other subsidies involved in the scheme should substantially not come at the expense of government saving. This means substantially funding any cost within a fiscal plan that keeps to the current gross debt track.
- Although compulsory schemes can be effective in lifting private and national saving they suffer the disadvantage of inflexibility that is likely to be costly in the face of varying individual circumstances. It is desirable to avoid such inflexibility.
- The property boom is a significant contributor to current low household saving and macroeconomic pressures. Any saving scheme should be designed as far as possible to reduce rather than stimulate the demand for property, and is likely to be more effective if accompanied by complementary measures to slow speculative demand for property.
- To maximise the beneficial impact of higher saving on financial system development, a scheme should require households to invest in financial assets through a range of flexible and well-managed superannuation funds.

- The large increase in the flow of saving into managed funds highlights the need for a sound and robust system of fund regulation and good financial education for savers.

REFERENCES

- Ando, A. and Modigliani, F. (1963), 'The life cycle hypotheses of saving: Aggregate implications and tests', *The American Economic Review*, 53:55-84.
- Attanasio, O. P. and DeLeire, T. (2002), 'The Effect of Individual Retirement Accounts on Household Consumption and National Saving', *The Economic Journal*, 112(July):504-38
- Attanasio, O. P. Banks, J. and Wakefield, M. (2005), *Effectiveness of Tax Incentives (retirement) saving, OECD Economic Studies, Special Issue: Tax Favoured Retirement Saving*, no.39, pp.145-172.
- Australian Bureau of Statistics (2007), *Balance Of Payments and International Investment Position* (Cat. No. 5302.0), Dec Qtr 2006, Australia.
- Australian Bureau of Statistics (2001), *Balance Of Payments and International Investment Position* (Cat. No. 5363.0), Australia.
- Barro, R. J. (1974), 'Are government bonds net wealth?', *Journal of Political Economy*, 48(6):1095-1118.
- Bascand , G., Cope, J. and Ramsay, D. (2006), *Selected Issues in the Measurement of New Zealand's Saving(s)*, Statistics New Zealand, prepared (by Statistics New Zealand) for Reserve Bank of New Zealand Workshop on Saving on 14 November 2006.
- Beshares, J., Choi, J.J., Laibson, D. and Madrian, B.C (2006), *The importance of default options for retirement saving outcomes: evidence from the United States*, <http://www.som.yale.edu/faculty/jjc83/turin.pdf>
- Cheronzhukov, V. and Hansen, C. (2004), 'The Effect of 401(k) Participation on the Wealth Distribution: An Instrumental Quantile Regression Analysis', *The Review of Economics and Statistics*, 86(3):735-51.
- Claus, I., Jacobsen, V. and Jera, B. (2004), *Financial systems and economic growth: An evaluation framework for policy*, New Zealand Treasury Working Paper 04/17.
- Coleman, A. (2006), *The Life-Cycle Model - Savings and Growth*, Reserve Bank of New Zealand, Paper prepared for Reserve Bank workshop entitled Housing, Savings, and the Household Balance Sheet, Wellington on 14 November 2006.
- Connolly, E. and Kohler, M. (2004), 'The impact of superannuation of household saving', Research Discussion Paper 2004-01, *Economic Research Department of the Reserve Bank of Australia*.
- Corbo, V. and Schmidt-Hebbel, K. S. (2004), *Macroeconomic Effects Of Pension Reform In Chile*, Central Bank of Chile.
- de Melllo, L., Kongsrud, P. M. and Price, R. (2004), *Saving Behaviour and the Effectiveness of Fiscal Policy*, OECD Economics Department Working Papers no.
- Duflo, G., Gale, W., Liebman, J., Orzag, P. and Saez, E. (2005), 'Saving Incentives for Low-and-Middle-Income Families: Evidences from a Field Experiment with H&R Block', Working Paper no.11680, Cambridge, MA: National Bureau of Economic Research.

- Edey, M. and Simon, J. (1996), 'Australia's Retirement Income System: Implications for Saving and Capital Markets', NBER Working Papers 5799, *National Bureau of Economic Research*.
- Edwards, S. (2006), 'External imbalances in New Zealand' in *Testing stabilisation policy limits in a small open economy: proceedings from a macroeconomic policy forum* held by the Reserve Bank of New Zealand and The Treasury, Wellington.
- Edwards, S. (2001), 'Does the current account matter,' *University of California and National Bureau of Economic*, research paper prepared for presentation at the NBER's conference on "Crisis Prevention," Florida, January 2001.
- Engelhardt, G. V. (1996), 'Tax Subsidies and Household Saving: Evidence from Canada', *The Quarterly Journal of Economics*, 111(4):1237-68.
- Engen, E. M. and Gale, W. G. (2000), 'The Effects of 401(k) Plans on Household Wealth: Differences across Earnings Groups', Working Paper no.8032, Cambridge, MA: National Bureau of Economic Research.
- Engen, E. M., Gale, W. G. and Scholz, J. K. (1996), 'The Illusory Effects of Saving Incentives on Saving', *Journal of Economic Perspectives*, 10(4):113-38.
- Hodgetts, B., Briggs, P., and Smith, M. (2006), *Household savings and wealth*, Reserve Bank of New Zealand.
- Hungerford, T. L. (2006), *Saving incentives: What may work, what may not* (RL33482), Washington, DC: Congressional Research Service.
- Kim, K., Hall, V. and Buckle, R (2006) "Consumption-smoothing in a small, cyclically volatile open economy: Evidence from New Zealand", *Journal of International Money and Finance*, Volume 25, Issue 8, pp. 1277-1295.
- Lane, P. R. and Milesi-Ferretti, G. M. (2006), *The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities 1970-2004*, IMF Working Paper WP/06/69, IMF.
- Le, T., Scobie, G. and Gibson, J. (2007), *Are kiwis saving enough for retirement? Preliminary evidence from SOFIE*, *New Zealand Treasury*, Paper prepared for the 8th Annual Super-Funds Summit, Wellington, 15-16 March 2007.
- McCulloch, B. (2002), Crown financial management policy, Treasury internal paper.
- Modigliani, F. and Brumberg, R. (1954), 'Utility analysis and the consumption function: An interpretation of cross-section data', in K. K. Kurrihara (ed) *Post-keynesian economics*: Rutgers University Press: 388-436.
- Munro, A. and Sethi, R. (2006), "The Present Value Model and New Zealand's Current Account", *Reserve Bank of New Zealand*, Discussion Paper 2006/12.
- OECD (2006), *Are House Prices Nearing A Peak? A Probit Analysis For 17 OECD Countries*, Economics Department Working Papers No. 488 (ECO/WKP(2006)16) by Paul Van Den Noord, Paris.
- OECD (2007), *Economic Survey of New Zealand 2007*, Paris.

Poterba, J. M., Venti, S. F. and Wise, D. A. (1996), 'How retirement saving programs increase saving', *Journal of Economic Perspectives*, 10(4), pp.91-112.

Reinhardt, S. and Steel, L. (2006), *A brief history of Australia's tax system*, Paper presented to the 22nd APEC Finance Ministers' Technical Working Group meeting in Khanh Hoa, Vietnam on 15 June 2006.

Scobie, G. and Le, T. (2004), *The Impact of Workplace and Personal Superannuation Schemes on Net Worth: Evidence from the Household Savings Survey*, New Zealand Treasury Working Paper 04/08.

Scobie, G. and van Zijll de Jong, M. (2006), *Housing: An analysis of Ownership and Investment Based on the Household Savings Survey*, New Zealand Treasury Working Paper 06/07.

Scobie, G., Le, T. and Gibson, J. (2007), *Housing in the Household Portfolio and Implications for Retirement Saving: Some Initial Finding from SOFIE*, New Zealand Treasury Working Paper 07/04.

Statistics New Zealand (2003), *The Net Worth of New Zealanders – A report on their assets and debts* (based on 2001 data), Wellington.

Toder, E. and Khitatrakun, S. (2006), Final Report to Inland Revenue "KiwiSaver Evaluation Literature Review" (IR/2006/022/EVA/T), *Tax Policy Center*, Washington.

Treasury (2003), *Saving in New Zealand: A Synthesis (Report to Periodic Group)*, Wellington (www.treasury.govt.nz/prg/background/prg-tsy-snzs.pdf).

Treasury (2005), *Briefing to Incoming Government 2005 – Sustaining Growth*, Wellington (www.treasury.govt.nz/briefings/2005/).

Treasury (2006), *New Zealand's Long-Term Fiscal Position*, Wellington. (www.treasury.govt.nz/longtermfiscalposition/).