

**Did Monetary Policy
Reduce the New Zealand Savings Rate?**

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Did Monetary Policy Reduce the NZ Savings Rate?

Introduction

New Zealand had a similar economic experience to a number of other developed countries in the first decade of the 21st century. These included a long period of rising spending, high growth in borrowing, a rising deficit in the current account of the balance of payments, and a rapid rise in property prices. The spending boom eventually culminated in a financial crisis and recession. In the New Zealand case the boom which began around 2002-03 had come to an end by early 2008, somewhat prior to the peaking of the international financial crisis in late 2008.

Discussion on the New Zealand developments has often focused on two linked themes, apparently low domestic saving and massive overseas borrowing. This paper analyses the available statistics, and also looks at the issue of whether monetary policy during the boom period contributed to an inadequate level of domestic saving.

Saving

In National Income terms saving is the difference between income and expenditure. A “savings deficit” for the whole economy is a situation where total national expenditure (current and capital) exceeds national income. This reflects in a deficit in the current account of the balance of payments and the need to borrow abroad net to fund part of the national economic activity.

The concept of Saving may refer to either a stock or a flow. The cumulative impact of a positive savings flow usually shows up as a rising stock of net assets, while a cumulative flow of net dis-saving usually shows up in the form of a declining stock of net assets or as rising debt levels. However, changes in asset prices may mask underlying trends on a year to year basis.

The terms “**saving**” and “**savings deficit**” also need to be carefully distinguished because aggregate saving may still be positive but insufficient to fund actual economic activity. Another way of describing a savings deficit is to classify it as a situation where national saving is insufficient to fund national investment. This situation applied to New Zealand in the first decade of the 21st century, and still persists.

Up till nearly the end of the decade the saving shortfall in New Zealand was wholly a phenomenon of the private sector. Until 2008-09 the central government sector was a net saver, and was repaying debt in addition to funding its capital investment from its own revenue surplus. Since then the government sector has moved into deficit, and government debt and borrowing levels have become a key policy issue.

Does a Savings Deficit Matter?

In some circumstances a substantial savings deficit in a national economy need not be a cause of concern. An example would be a high growth economy with high rates of return on investment which was borrowing to fund much of this growth. In these

circumstances the additional growth in national output funded by the external borrowing could be expected to be substantially greater than the growth in debt service obligations. Borrowing to fund additional investment and thereby to generate a savings deficit would then make eminent sense. New Zealand was such a case in the 19th century period of colonial development.

However, New Zealand in the 21st century is not such an economy. It is a modest growth economy with an ageing population and high external debt levels in relation to Gross Domestic Product. Accordingly the perspective taken in this paper is that a large structural savings deficit which maintains or further raises the external debt to GDP ratio is undesirable. Instead, a reduction in this ratio is to be preferred and is part of a necessary restructuring of the economy. This implies the need for more domestic savings in relation to any given economic growth rate. Hence, if it is the case that the monetary policy framework has been reducing savings ratios, then a further reason for re-evaluating this framework exists.

Overseas Debt and the deficits

The statistics of the Current account of the Balance of Payments for the period since the year ended March 2000 are shown below:

Table 1 – Current Account Balance of Payments

Year ended 31 March	Balance on Current Account \$ million	% of GDP
2000	-7,075	-6.4
2001	-4,391	-3.7
2002	-3,408	-2.7
2003	-4,128	-3.1
2004	-6,132	-4.3
2005	-9,342	-6.1
2006	-13,923	-8.7
2007	-13,349	-7.9
2008	-14,384	-7.9
2009	-14,723	-7.9
2010	-4,458	-2.4

Source Statistics New Zealand Infoshare tables- Balance of Payments and GDP in current prices (production basis).

New Zealand was in continuous current account deficit throughout the decade irrespective of the state of the economic cycle. However, the current account deficit was falling in the early part of the decade when expenditure expansion was still moderate. This pattern changed from 2002-03 as expenditure growth accelerated, and up till 2008 the deficits kept growing as the expenditure boom continued. The current account deficit fell again in 2009-10 as 2 years of depressed economic conditions cut both imports and the local profits of overseas owned enterprises. However, this latter period largely falls outside the main period of analysis.

Current account deficits do not translate exactly into changes in the measured gross or net international investment position of the country on a year to year basis. The main reasons for the differences include:

- Changes in exchange rates
- Variations in actual Equity values,
- Changes in the basis or coverage of reporting
- Possible errors and omissions in the estimates

New Zealand International Debt

However, the medium term trend in the international investment position clearly reflect the cumulative impact of deficits. The following figures show the gross and net international investment position for New Zealand since the year 2000

Table 2 - New Zealand International Assets and Liabilities - \$million

At as 31 March	Assets	Liabilities	Net Liabilities
2000	72,001	159,086	87,085.
2001	93,530	181,443	87,914
2002	96,490	193,053	96,563
2003	96,113	195,923	99,811
2004	102,938	211,331	108.393
2005	109,648	228,708	119,060
2006	120,531	248,961	128,430
2007	124,573	265,715	141,141
2008	140,478	289,958	149,480
2009	145,069	312,044	166,975
2010	143,669	304,650	160,981

Source Statistics NZ Infoshare tables Balance of Payments. New Zealand Assets and Liabilities

When these figures are expressed as a percentage of Gross Domestic Product (Production basis) in the years ended 31 March the trend is as follows;

Table 3 - NZ International Liabilities as % of GDP

March Year	Gross Liabilities	Net Liabilities
2000	143.1	78.3
2001	154.4	74.8
2002	152.8	76.4
2003	147.5	75.2
2004	148.8	76.3
2005	150.4	78.3
2006	155.1	80.0
2007	157.5	83.7
2008	159.1	82.2
2009	168.2	90.0
2010	162.7	86.0

Source Statistics New Zealand. Infoshare tables.

In the early part of the decade net debt ratios appeared to be stabilising or even dropping slightly with the growth in net debt being roughly in line with or a little under money GDP growth. However, as the spending boom gathered pace net debt ratios began to climb again until two years of recession and low domestic borrowing finally dented the debt expansion.

By OECD standards New Zealand is a highly indebted economy. Unlike the situation in some other indebted OECD countries most of the overseas debt has been incurred by the private sector. Since 2009 however the government sector has been the major borrower.

The National Income Sector Accounts and Saving Rates

At the time this paper was prepared national income sector accounts were available for the private producer sectors up to 2007-08, and for the government and household sectors up to 2009-10. The private producer sector accounts allow the developments up to the crisis to be examined, while the government and household sector accounts provide at least a partial picture of what has happened since.

The national income figures analysed in the sector accounts do not of course give a complete picture of the real economic position. Indeed, amongst economists there has been an ongoing debate on apparent anomalies between negative household savings shown in the accounts for recent years, and apparent net increases in household equity over the same period. However, no comprehensive Household Net Wealth survey has been held since 2001.

Causes of Discrepancies

Factors which may explain the apparent discrepancy between national income and provisional household asset estimates include:

- undeclared domestic income
- undeclared overseas income of NZ residents
- capital gains which are not treated as income
- Tax allowances for depreciation overstating the real economic depreciation of assets
- The cost of some asset improvements being written off as expenses by businesses
- unrecorded “do it yourself” capital improvements by unincorporated business and households
- Inheritance of the assets of deceased persons by ongoing households
- Inflation of the value of existing assets

The available data for the boom period 2002-2007, indicate that rapid asset price inflation was the most important component in the apparent discrepancy over that period. However, some of the other factors are not negligible.

- Government has moved to abolish depreciation allowances for buildings with an expected life of more than 50 years. Well constructed and well maintained buildings experience little if any real depreciation over the decades, and in reality their nominal value usually rises.
- One factor which has emerged every time the NZ Government has signed a bilateral social security agreement with other countries involving the mutual exchange of pension information and other data is that large number of resident immigrants or returning New Zealanders are found to have overseas social security or social insurance pensions which have not been declared to the NZ social security authorities. The main reason that these incomes are not declared seems to be that if they are known about, then their value operates as a direct deduction from the NZ Superannuation entitlement.
- Other individuals may not declare overseas income for tax avoidance reasons.

Most of these factors suggest that true household economic income and real investment and savings are somewhat higher than the official national investment figures show. Even so, while true **saving** may be higher than the national income figures show, there is still a substantial **savings deficit** leading to the need to borrow heavily abroad to fund aggregate local spending.

For the economy as a whole all indicators (national income figures, balance of payments figures, and net overseas debt figures) tell the same story. Whatever the true level of the aggregates actually is, Saving in New Zealand is substantially less than Investment, even when the economy is in an investment recession. This indicates that the economy has a structural savings deficit.

The Structural Savings Deficit in the private sector

As far as the majority private sector is concerned this structural savings deficit has had two main components:

- A business culture where profit ploughbacks to fund investment were relatively low, and new equity capital raisings inadequate to compensate. During the boom in particular an ever increasing proportion of corporate profits were paid out in dividends or entrepreneurial withdrawals, and debt ratios were ratcheted up to fund investment as well as to fund non-investment working capital requirements such as a rising trade debtor levels, or extension of consumer credit to customers. Other borrowing was needed to fund mergers and acquisitions where these involved net cash payouts to shareholders in the companies taken over.
- A household culture of spending more than net earnings. Rising debt levels mortgaged mainly against rising house prices funded the bulk of the difference. However, in part this household “aggregate” figure also hides a difference between house buyers who became geared up with high mortgage debt levels to buy their homes or investment properties at inflated prices, and house sellers, who were able to spend part of the proceeds on extra consumption. The later category includes heirs of deceased estates.

Both these behavioural patterns were severely impacted by the financial crisis and the end of the property price boom. A major concomitant since then has been the cutback in business investment, and more cautious spending by households, leading to a fall in the recorded ratio of consumer spending to household income.

In the sections which follow the sector account figures are analysed separately for private corporate sector producers, for private non corporate sector producers, and for households. The central government and local government statistics are also analysed.

The private corporate sector

The sector accounts for the corporate sector merge together ordinary companies and those entities which Statistics NZ still refers to as Producer Boards. (The largest of these is the Dairy Industry entity Fonterra). It would provide more information if these two categories were split, since it is probable that the producer board pattern of distributing most surpluses biases downwards the relationship between saving and income for the total corporate sector in some year. Nevertheless, while corporate sector aggregates have to be treated with some caution because of this, the trends shown in the aggregates are still informative.

The gross income of the private corporate sector including producer boards rose from \$39.41 billion in the year ended March 2000 to \$72.073 billion in the year 2007-08, the last year before the recession. This was an increase of nearly 83 per cent. The beginning and end figures are not entirely comparable as there is a discontinuity in the sector account figures due to the inclusion of new data from 2003. Probably a more accurate impression is the 40.2 per cent rise from a gross income of \$51.407 billion in 2002-03 to \$72.073 billion in 2007-08. This latter period roughly coincides with the main economic boom.

The increased reliance on debt financing by Corporate New Zealand in the latter part of the decade saw debt service ratios rise sharply. In 2003-04 interest on borrowings amounted to 20.8 per cent of total gross corporate income. By 2007-08, the last year of the boom, interest payments had risen to 29.4 per cent of gross corporate income. The combined effects of higher debt levels and rising interest rates had thus become critically large at a time the economy was poised to plunge into a recession.

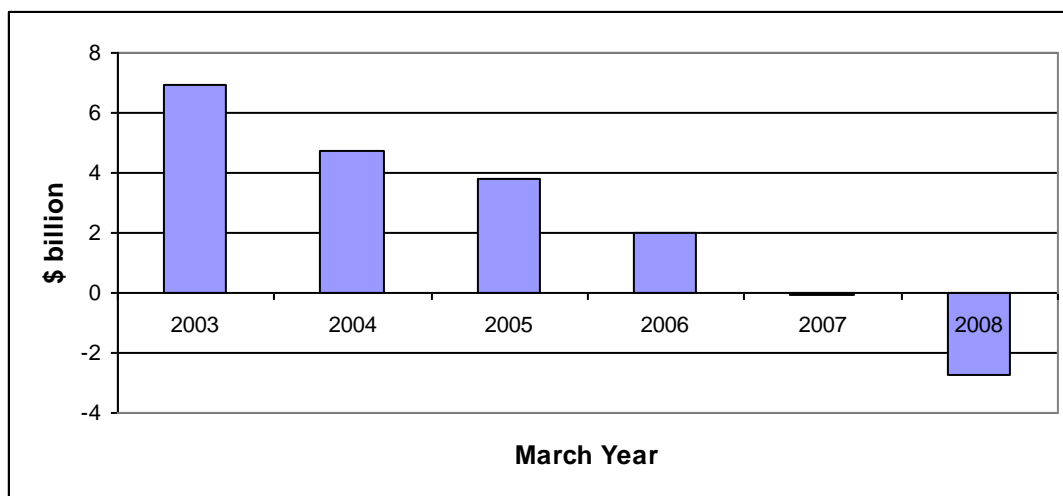
Equally striking was the extent to which companies were paying out an ever increasing proportion of their net income in dividends and “entrepreneurial withdrawals.” Profit payouts as a proportion of net income after interest, taxes, depreciation and other charges rose from 70.4 per cent of net corporate income in 2002-2003 to 109.9 per cent by 2007-08. Net profit ploughbacks declined continuously throughout this period and became negative despite rising corporate income and investment.

Table 4 - Net Corporate profit ploughback - \$ billion

2002-03	6.955
2003-04	4.734
2004-05	3.826
2005-06	2.026
2006-07	-0.083
2007-08	-2.738

Source Statistics NZ Sector Account table 2

What these figure indicate is that many boards of directors of companies in the boom period adopted a corporate strategy involving ever increasing reliance on borrowing to fund expansion. This is an approach which involves high financial risk, and as a by-product declining corporate savings. Most of the rising borrowing level appears to have been funded by bank loans, including some offshore borrowing.



Graph 1 - Net Corporate Profit Ploughback

The inevitable shakeout followed when a recession in sales and the financial crisis hit. Bank credit suddenly became much harder to obtain as the banks put the brakes on lending. The lack of corporate sector accounts for the years after 2007-08 does not permit a detailed analysis of what then happened. However, from other sources it would appear that many companies had to change tack abruptly to cope with the new bank lending constraints. Strategies included:

- reducing dividends (including promoting dividend reinvestment schemes)
- replacing bank lending with corporate debentures and notes
- obtaining fresh equity
- cutting investment
- selling out to overseas buyers

Company collapses were most prominent in the finance company and property developer sectors, though some well known manufacturing companies such as Feltex also went under. Others such as Fisher and Paykell Appliances had to seek equity from overseas investors, in the F and P case from the Chinese company Haier.

An interesting aspect of the decline in corporate profit ploughbacks during the boom was that the magnitude was very similar to the size of the deterioration in the current account of the balance of payments. This does not of course indicate a one to one correspondence of cause and effect, with the increased dividend and drawings inflow into local disposable incomes in turn flowing directly into increased consumption and in part into the current account deficit.

- To begin with some dividends go overseas, and are not part of local disposable income.
- Secondly, it is not clear that dividend recipients who are a generally higher income group have the same propensity to spend as households on the average.

Nevertheless, the decline and shift into negative in corporate profit ploughbacks did play a significant role in the decline in measured saving in national income terms, and at least some of the disproportionate increase in dividends and drawings flowed into increased consumption.

Unincorporated businesses

If the financial strategy of much of Corporate New Zealand during the boom raises eyebrows, the borrowing upsurge by unincorporated enterprises was even more extreme. In assessing the figures it should be noted that much of the huge rise in borrowing and associated debt service related to borrowing undertaken to finance land price escalation in the farming sector. Unfortunately the sector accounts do not distinguish farm and non-farm enterprises.

Private non corporate business income rose from \$13.985 billion in the year 1999-2000 to \$20.413 billion in the year 2007-2008, a rise of 46 per cent. However net income after interest, taxes and other charges rose only from \$10.711 billion to \$12.719 billion, an

increase of only 19 per cent, a growth which was less than the 23.9 per cent rate of inflation over the period and much lower than money GDP growth..

The main reason for the differential was the huge rise in indebtedness and debt service. In the year 1999-2000 interest absorbed 21.3 per cent of private non-corporate gross income. By 2007-08 the debt service ratio had moved up to 38.3 per cent of gross income. In the farm sector in particular farmers who had over-extended themselves buying up their neighbours land ended up struggling to service their mortgages despite high prices for many farm products, particularly in the dairy sector.

A consequence of these trends was that the unincorporated business sector also had a large savings deficit, the bulk of which occurred over the period 2004-2005 to 2007-2008.

The Household Sector

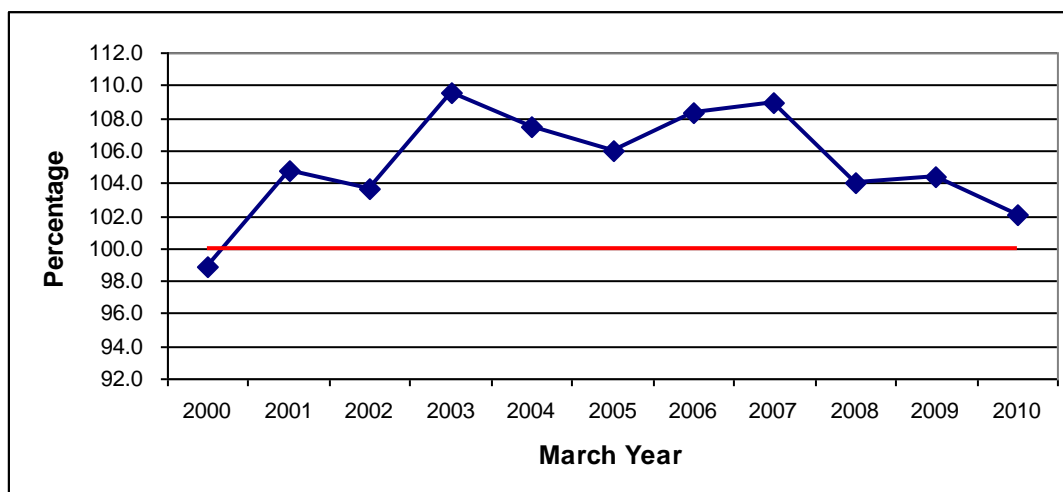
The Household sector is the largest of the sector groupings by income level. Gross earnings of households registered a rise of 58 per cent from \$96.096 billion in the year 1999-2000 to \$151.967 billion in 2007-08.

The most striking characteristic of the household sector as revealed in the sector accounts is its continuous pattern of spending more than 100 per cent of disposable income on personal consumption. The last year in which there was any recorded net saving by the household sector was 1999-2000. Since then net dis-saving by the sector has fluctuated between 2.1 and 9.5 per cent of disposable income. Statistically, the household sector was the biggest single source of measured dis-saving in the economy in the boom period. Preliminary estimates for 2010-11 (not shown because they are not Statistics NZ figures) are that the consumption rate may finally have dropped below 100 per cent of Household disposable income for the first time since 1999-2000.

As noted in the introduction, this is not a full description of economic reality because of limitations in national accounts coverage. Household income as defined does not include undeclared income nor capital gains. Accordingly household real capital formation and hence real savings may be larger than the national income figures show.

These factors are important as analysis of household asset over time reveals the puzzling pattern of rising net equity of households in periods when the sector accounts show households to be net dis-savers. Another factor which is also important in explaining this anomaly is the impact of inheritance. The assets of deceased persons are redistributed to living individual heirs, and the unspent portion of the inheritance recorded amongst their household assets.

However, the biggest contribution to rising household assets during the boom which came to an end in 2008 was the escalation in house and farm land prices. The Reserve Bank asset series show the impact of rising house prices in particular as swamping the impact on the net equity of households of rising debt and declining net financial assets.



Graph 2 – Household Consumer Spending as Percentage of Household Income

In effect inflation which includes asset price escalation transfers wealth to borrowers with escalating assets and away from lenders and new entrants into the housing market. In the New Zealand case many of the lenders are overseas domiciled. However, once the asset price boom comes to an end, the borrowers cannot effectively capitalise interest into rising nominal debt levels and have to fund high real debt service levels out of current income. This is where the impact is now being felt.

Table 5 - Household Consumption Spending as a Percentage of Household Disposable Income

March Year	%
2000	98.9
2001	104.7
2002	103.6
2003	109.5
2004	107.4
2005	106.0
2006	108.3
2007	108.9
2008	104.0
2009	104.4
2010	102.1

Source. Statistics New Zealand . National Income sector accounts for households

Central Government Sector

The New Zealand Central Government ran large and normally growing fiscal surpluses throughout the decade up till 2007-08. Thereafter the surplus shrank and then turned into a growing deficit. A faster rise in spending including some new programmes such as KiwiSaver towards the end of the decade coincided with the economic downturn and the 2008 and 2009 income tax cuts. The 2010 fiscal measures lie outside the period covered, but the continued weakness in the economy plus the economic impact of the

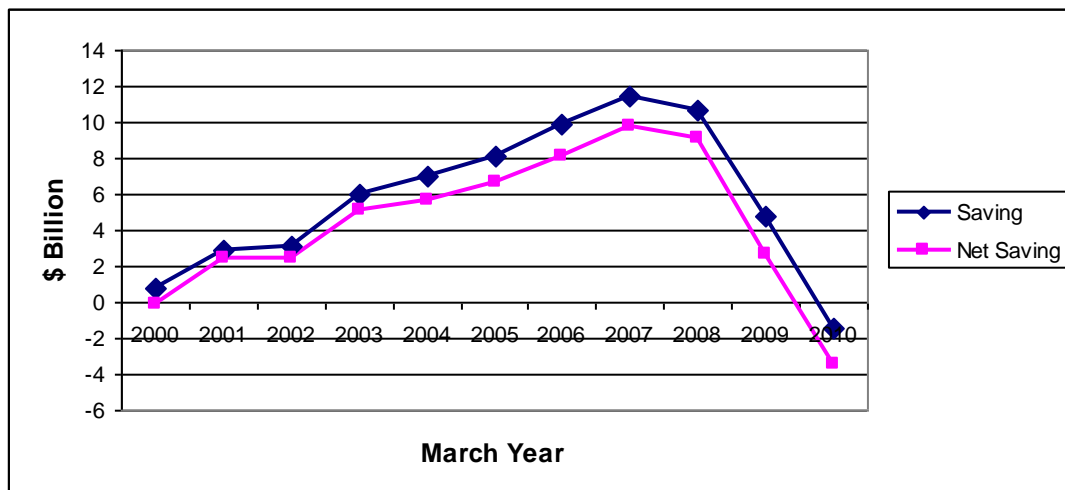
Christchurch earthquakes have since further worsened the fiscal situation on that shown for 2009-10.

While the fiscal shift helped cushion the economy from a more severe recession, it has also meant that the government sector has now become a large net borrower. Ironically, the inflow of government borrowing is probably helping to prop the New Zealand dollar up at a level which is making it harder for the non-farm sector to contribute to a necessary rebalancing of the economy through a net shift into exports.

The aggregate trends in the fiscal outturn are shown in the next table. It should be noted that these figures are put in national income format rather than the perhaps more familiar budget format. Hence they exclude some activities such as those relating to the funding of government owned corporations which are included in the standard budget format. Also the year used is the national income year ending in March rather than the fiscal year ending in June.

- the income figures included all taxation and other current revenues
- the current expenditure figures include all benefits and transfers and debt interest as well as other current spending, but do not include government capital spending
- Net Central Government saving is the current surplus less capital consumption (depreciation)
- The savings deficit or surplus is net saving less government capital spending

The dramatic drop of \$4.396 billion in Central Government revenue between 2007-08 and 2009-10 was a consequence of a fall from \$39,574 million to \$33,466 million in income tax receipts. The \$6.108 billion reduction more than offset modest growth in some other revenue sources such as GST.



Graph 3 – Central Government Surplus or Deficit

Table 6 - Central Government Fiscal Outcomes - \$million

March Year	Income	Expenditure (current)	Current surplus	Capital Consumption	Saving
2000	38,039	36,062	1,977	1,208	769
2001	40,605	36,467	4,138	1,289	2,849
2002	42,583	38,154	4,429	1,317	3,112
2003	46,481	39,155	7,326	1,325	6,001
2004	49,709	41,335	8,374	1,360	7,014
2005	53,476	43,864	9,612	1,450	8,162
2006	58,862	47,421	11,441	1,590	9,851
2007	64,784	51,578	13,206	1,726	11,480
2008	68,150	55,647	12,503	1,850	10,653
2009	67,642	60,901	6,741	1,983	4,748
2010	63,754	62,984	639	2,043	-1,404

Source Statistics NZ Website. Central government sector accounts

If central government sector fiscal outcomes are expressed in terms of the savings surplus or deficit (i.e. saving less net investment), the figures are as follows. "Net Investment" is gross investment less capital consumption which has already been deducted to calculate the saving figure

Table 7 - Central Government Savings Surplus or Deficit

March Year	Net saving	Net Investment	Saving Surplus or deficit
2000	769	843	-74
2001	2,849	408	2,441
2002	3,112	693	2,419
2003	6,001	932	5,069
2004	7,014	1,325	5,689
2005	8,162	1,548	6,614
2006	9,851	1,697	8,154
2007	11,480	1,681	9,799
2008	10,653	1,585	9,068
2009	4,758	2,083	2,655
2010	-1,404	2,065	-3,469

Source Statistics NZ website. Central government sector accounts.

From 2000-01 to 2008-09 the central government had a savings level which exceeded its net investment outlays, hence producing a saving surplus for the rest of the economy. This allowed government debt to be paid down. At its peak in 2006-07 central

government saving was equal to 6.8 per cent of GDP, and net saving after capital investment equal to 5.8 per cent of GDP.

By 2009-10 however, the shrinking surplus had turned into a deficit, and the central government sector had become a large net borrower.

Local Government sector

The local government sector is a much smaller component of the NZ economy than central government. Total local government current and capital expenditures in 2009-10 amounted to 4.1 per cent of GDP in 2009-10 compared to 35.8 per cent for the central government sector. However, in drawing the comparison it needs to be noted that 43.5 per cent of central government spending representing 15.6 per cent of GDP consisted of transfers to other sectors, primarily social security benefits and pensions paid to households plus debt interest. For the local government sector transfers (mainly debt interest and subsidies) amounted to 16.8 per cent of total current spending in 2009-10.

The local government sector in New Zealand has normally run relatively modest current surplus involving some net saving after capital consumption (depreciation) is deducted. However, rising capital expenditures have meant a growing savings deficit requiring the local government sector to be a net borrower. Overall, the net savings deficit of the local government sector was much smaller than the central government surpluses prior to the crisis.

Table 8 - Local Government Sector Accounts - \$ million

March Year	Revenue	Current Spending	Current surplus	
2000	3,593	2,609	362	
2001	3,708	2,736	308	
2002	3,994	2,882	412	
2003	4,068	3,001	318	
2004	4,445	3,271	340	
2005	4,816	3,639	302	
2006	5,110	3,911	248	
2007	5,665	4,311	234	
2008	6,031	4,807	117	
2009	6,210	5,137	-111	
2010	6,732	5,335	166	1

Source Statistics NZ website. Local authority sector accounts.

Once net capital expenditures are added in the savings deficit figures are as follows:

Table 9 - Local Government Savings Deficit - \$million

March Year	Saving	Net Investment	Savings deficit
2000	362	500	-138
2001	308	641	-333
2002	412	821	-409
2003	318	744	-426
2004	340	1,041	-701
2005	302	1,120	-818
2006	248	1,474	-1,226
2007	234	1,650	-1,416
2008	117	1,995	-1,878
2009	-111	1,996	-2,107
2010	166	2,051	-1,885

Source Statistics NZ website. Local government sector accounts

Explaining household sector dis-saving

While there are legitimate doubts about the actual level of saving or asset accumulation in the household sector, it is clear from all of the statistics that the household sector has a **savings deficit**. Total current and capital spending by households exceeds household disposable income. This may or may not be more than compensated for in asset holding terms by household ownership of assets in unincorporated business. However, until the next Household Savings Survey is conducted this matter cannot be satisfactorily resolved.

A net savings deficit in the household sector is unusual in a growing economy. Normally it could be expected that households would be net savers, with part of the savings going into funding capital expansion in the corporate business sector, either directly or more commonly via net savings channelled into financial intermediaries. This is not the New Zealand situation. Households appear to be net borrowers from the financial intermediaries, who in turn fund much of this lending by overseas borrowing.

For households to be able to fund a savings deficit it is necessary for them to have some reason to keep expanding their net borrowing. The most plausible cause would appear to be a wealth effect caused by rising house and land prices during the boom. Up till 2007 both house and farm land prices rose much more rapidly than disposable incomes or consumer prices. Hence, property owners with or without mortgages would have seen their net apparent equity rising rapidly. This would provide a financial basis for expanding spending.

Not all household outcomes from a property price boom are favourable to an increase in spending. For one group of households the reverse would be the case. New entrant homeowners would face higher debt service costs in relation to their income, cutting their

margin of disposable income for other spending. There would not be a counterpart rise in the disposable income of local interest payment recipients since a substantial part of New Zealand housing borrowing is funded from overseas borrowing, while another part of the interest payment would go into income tax receipts. This disadvantaged group would tend to grow in relative importance during the asset price boom, but in the early stages would act as only a very minor brake on consumption expansion.

With this significant exception, most other groups involved in property ownership would stand to gain in apparent household equity and ability to fund extra spending from the asset price inflation:

- Existing home owners could remortgage their properties to obtain funds for other types of spending. For most, the general inflation of prices and incomes would mean that their debt service obligations were declining in relation to their incomes, while their net equity was growing more rapidly than if would have done if housing prices merely kept pace with general inflation.
- Home sellers and exiting landlords would have a larger surplus after paying off any mortgage debt due. Some of this may end up in other forms of consumption
- The net assets of deceased estates would be substantially higher, giving heirs more money to spend.

Hence on theoretical ground it could be expected that wealth effects would boost measured household consumption in relation to disposable income when property prices were rising significantly faster than other prices and incomes. Conversely, measured consumption ratios would fall when real asset prices were falling.

Do the statistics support this?

A perusal of the consumption ratios for households in the earlier table tends to support this interpretation. Measured consumption ratios in relation to disposable incomes were at their highest between 2003 and 2007 when the housing price boom was at its height. Since then as house prices have eased the measured consumption ratio has dropped. From a ratio of 108.9 per cent of disposable income in 2006-07, the ratio had fallen back to 102.1 per cent by 2009-10. Preliminary indications for 2010-11 are that a further decline may have occurred.

An issue is why the measured ratio had not fallen even further by 2009-10, since the much milder economic downturn at the end of the nineteen-nineties saw the measured household consumption ratio drop below 100 per cent. Possible factors other than understatement of real economic income include:

- The export recovery in the rural sector, notably the renewed dairy boom.
- Monetary policy, with a record low official cash rate causing housing mortgage interest rates to drop, and easing debt service ratios for many households, particularly those with floating mortgages.

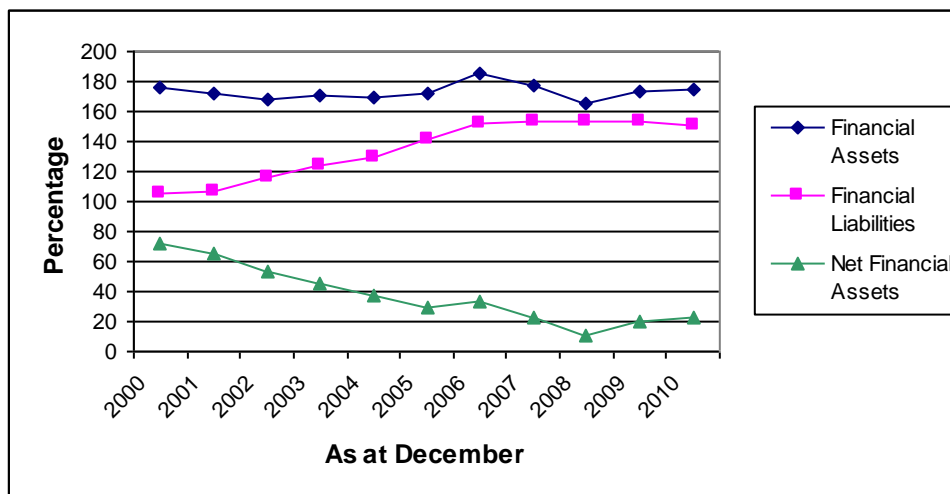
Lower mortgage interest rates for housing however may also have limited the extent of the downward adjustment in real house prices towards a more normal relationship to

incomes. A lesser downward adjustment in real house prices would have limited the negative wealth effects impacting on consumption

What the Reserve Bank Series Show

Household Assets and Liabilities

The Reserve Bank produces an annual estimate of household financial assets and liabilities plus housing assets. The series does not include equity in unincorporated businesses, nor household durables or motor vehicles, so is not a full tally of household assets and liabilities. Student Loans are not shown as financial liabilities, but are included in the net asset calculation. Despite its restrictions in coverage, the series is a valuable indicator of how most households are faring in financial terms. In particular it sheds light on housing-linked perceived wealth trends which may impact on household spending behaviour.



Graph 4 – Household Financial Assets and Liabilities as Percentage of Net Household Income

What the figures show is a pattern up till 2008 of financial liabilities growing faster than financial assets, but with total household wealth still growing up till 2007 because of the rapid rise in the value of the housing stock. In 2008 a downward correction in house prices saw household wealth fall. However, the dramatic fall in interest rates between 2008 and 2009 seems to have cushioned housing values in the following year. Some of the rise in housing values up to 2007 was a result of an increase in the number of houses, and possibly also some upgrading of the housing stock. However, most was simply a result of rising housing prices in the period. Between December 2000 and December 2007 the value of housing calculated for the Reserve Bank series rose by 165.8 per cent, while the house price index rose 120.3 per cent.

Table 10 - Household Assets and Liabilities \$ billion

As at December	Financial assets	Financial Liabilities	Net FA	Housing	Net Wealth
2000	125	75	51	231	278
2001	129	80	49	247	292
2002	128	88	40	282	316
2003	140	102	38	370	406
2004	152	117	34	429	456
2005	163	135	28	506	527
2006	186	152	34	559	585
2007	197	170	26	614	631
2008	190	177	13	568	571
2009	205	182	24	606	620
2010	213	184	28	599	616

Source Reserve Bank website Household Financial Asset and Liabilities

The fall in the value of household net financial assets during a housing boom is exactly what would be expected in an economy where much of the expansion in housing lending was being funded by overseas borrowing.

When the figures are related to household disposable incomes, the pattern appears even more sharply.

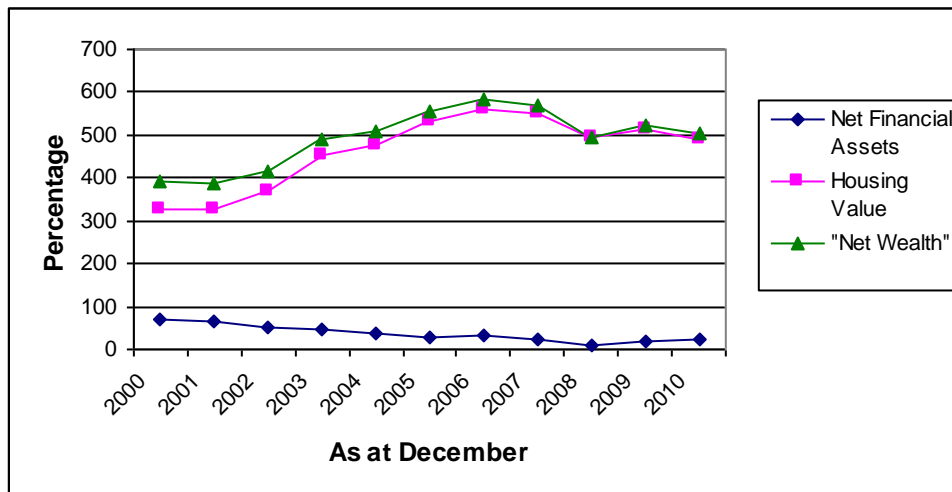
Table 11 - Household Assets and Liabilities as a percentage of Household Disposable Income

December	Financial Assets	Financial Liabilities	Net FA	Housing	Net Wealth
2000	176	106	72	325	392
2001	172	107	65	329	389
2002	168	116	53	371	416
2003	171	124	46	451	490
2004	169	130	38	477	507
2005	172	142	29	533	555
2006	186	152	34	559	585
2007	177	153	23	553	568
2008	165	154	11	494	497
2009	174	154	20	514	525
2010	175	151	23	491	505

Source Reserve Bank of NZ website. Household Assets and Liabilities.

Household holdings of financial assets were a similar percentage of income in 2007 as in 2000. However, the ratio of financial liabilities to disposable income had risen nearly 50 per cent in that period. Apparent household wealth changes however were

dominated by changes in housing values. The “wealth effect” helps explain the high ratio of measured consumption to income over the boom period, as well as the abrupt change after 2007-08. Households have since become more cautious in their spending as they seek to rebuild their net wealth and trim debt service obligations now the housing price boom seems to be over.



Graph 5 – Household Net Financial Assets + Housing Value as Percentage of Household Disposable Income

In 2010 the value of the housing stock fell in relation to household disposable incomes, and so acted as a negative wealth effect on household spending. this pattern may persist for some time ahead.

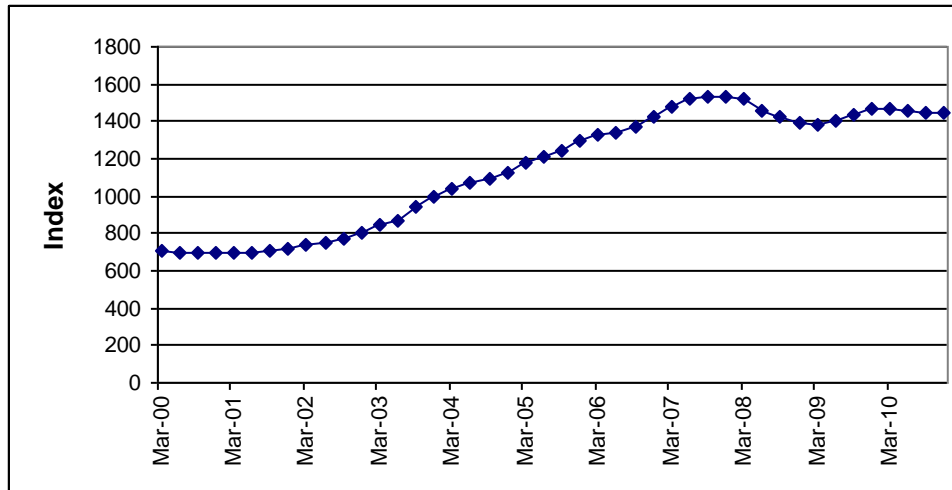
**Table 12 - NZ Quarterly House Price Index
December Quarter 2003 = 1000**

Year	Mar	June	Sept	Dec
2000	703	696	696	696
2001	700	698	705	717
2002	736	751	774	801
2003	844	873	938	1000
2004	1041	1067	1092	1122
2005	1181	1213	1245	1294
2006	1326	1338	1371	1420
2007	1481	1522	1527	1533
2008	1523	1455	1424	1396
2009	1382	1408	1439	1469
2010	1471	1456	1446	1445

Source Quotable Value NZ

In the seven years between the December quarter of 2000 and that of 2007 house prices rose over 120 per cent. Thereafter they fell through 2008, but recovered a little in

2009, but have since fluctuated a little downwards. In the December quarter of 2010 House prices were 5.7 per cent below the 2007 peak. Adjusted for consumer prices, the real house price fall since December 2007 has been 11.4 per cent. In relation to disposable income the fall was 11.2 per cent.



Graph 6 – Housing Quarterly Price Index

What the Monetary Statistics Show

In order for assets to be sold and purchased at higher prices, it is necessary for some form of funding to be available. Reserve Bank statistics show a pattern of very rapid credit growth in the New Zealand economy taking off around 2002, and moving into a pattern of double digit expansion until the financial crisis of October 2008. Thereafter credit expansion stopped. In real terms adjusted for prices credit fell for the next two and a half years. The cessation of credit expansion coincides with the end of the asset price boom, and the downturn in the ratio of consumer spending to disposable incomes

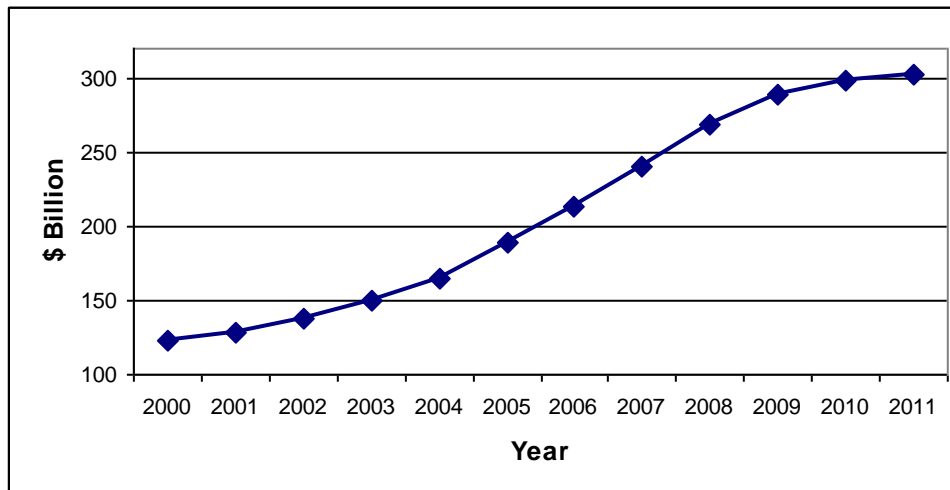
A useful indicator series is the total of Resident Private Sector Credit in NZ dollars granted by the M3 Credit institutions. This series covers most forms of institutional domestic lending to the resident private sector. The series used excludes lending to other M3 institutions. The figures as at the end of March each year were as follows:

Table 13 – M3 Credit

March	Resident Lending \$ billion	% Growth
2000	122.953	8.3
2001	127.950	4.1
2002	137.964	7.8
2003	150.023	8.7
2004	165.324	10.2
2005	189.364	14.5
2006	213.676	12.8
2007	240.377	12.5
2008	268.141	11.6
2009	289.201	7.9
2010	297.842	3.0
2011	301.927	1.4

Source Reserve Bank website Table C2.

In comparing these figures with income trends it may be noted that money GDP grew at a compound average of 5.4 per cent annually over the decade, and real GDP at 2.5 per cent. The GDP figures are heavily impacted by the recession at the end of the decade. Even so, a 3 per cent real output growth rate and an average inflation rate of say 2 per cent in the middle of the 1-3 per cent Reserve Bank target band would still give a target growth rate for money GDP which was fairly similar to the actual outcome. What happened over the decade was that real output grew a little less than expected, while inflation averaged a little more than the Reserve Bank target. Overall, money GDP grew at about the expected rate, but asset prices and credit expansion vastly outpaced this growth.



Graph 7 – Resident Lending

Even with a stable pattern of economic expansion without an asset price bubble there need be no necessary exact correlation between money GDP growth and credit growth, especially on a year to year basis. Factors which could affect the ratio include:

- increased or reduced financial intermediation in the economy,
- real investment booms and slumps,
- shifts in the proportion of overseas trade being financed domestically.

However, a crude rule of thumb for the NZ situation is that credit expansion rates which exceed 6 per cent annually need to be looked at more carefully to see if an inflationary situation is building up.

In practice, NZ monetary policy allowed credit growth rates well in excess of this for 8 years in a row, with 5 of them involving double digit growth. This allowed an asset price bubble to build up, and the balance of payments to move into a massive deficit situation as the exchange rate appreciated. Other collateral damage included a decline in the output of significant parts of the non-rural tradeable goods sector, notably manufacturing.

Sector Credit

An alternative set of credit measures which is wider than the M3 statistics is the Reserve Bank Sector Credit series. This showed the following pattern over the decade. The classification divides lending into Agriculture, Business, Housing and Consumer credit. figures shown are as at March,

Table 14 - Sector Credit - \$billion

March	Agriculture	Business	Housing	Consumer
2000	12.119	35.107	63.287	6.299
2001	12.687	37.250	67.030	7.064
2002	15.322	39.534	72.315	7.745
2003	18.207	41.466	80.075	8.682
2004	21.143	43.190	93.557	9.544
2005	23.855	50.261	108.307	10.376
2006	28.063	56.145	124.862	11.172
2007	31.706	65.186	142.668	11.798
2008	37.009	73.858	158.704	12.523
2009	45.012	79.838	163.647	12.411
2010	47.458	72.944	169.277	11.929
2011	47.480	73.091	171.588	11.828

Source Reserve Bank of NZ website Table C5

When these figures are expressed as percentage annual growth rates the following pattern emerges.

Table 15 - Sector Credit annual percentage growth

March	Agriculture	Business	Housing	Consumer
2000	5.0	10.0	9.5	8.2
2001	4.8	6.2	5.9	12.2
2002	21.0	6.2	8.0	10.0
2003	18.7	5.0	10.7	12.5
2004	16.1	4.4	16.9	10.6
2005	12.9	16.6	15.9	9.3
2006	17.0	11.3	15.5	6.0
2007	13.0	16.0	14.1	4.2
2008	16.7	13.0	11.2	5.3
2009	21.7	8.1	3.1	-1.4
2010	5.4	-8.5	3.4	-4.0
2011	0.0	0.1	1.4	-0.9

The earliest shift into double digit growth occurred in the consumer credit category, although this is a relatively small aggregate. Housing and Farming lending then accelerated, with business lending growth kicking into high gear from the middle of the decade. The tail end situation as credit growth ground to a virtual halt after late in calendar 2008 saw business lending fall sharply, and consumer lending also fall.

The categorisation used by the financial institutions relates more to the nature of the security than the actual end use of the funds borrowed. In particular, the housing lending category includes an unknown volume of lending for:

- Households remortgaging their property to indulge in big ticket consumer spending
- Unincorporated businesses using housing as collateral for borrowing intended to fund business expansion.

Impact on the Banks

The bulk of the credit expansion during the boom period came from the banks, though finance companies also played a significant role in some sectors.

The banks and other financial institutions were able to fund a massive expansion in lending in the absence of sufficient local saving by resorting to overseas borrowing. The following statistics show the change in the overseas liabilities of the banks and other financial institutions included in the M3 definition of the money supply. In the period 2003-2009 over 42 per cent of the expansion in domestic lending by M3 Credit institutions was funded by overseas borrowing by these institutions.

Table 16 - Non resident Liabilities of M3 Institutions _ \$billion

March	NZ Dollar Liabilities	Foreign currency Liabilities	Total Non resident
2000	14.538	34.373	48.911
2001	20.520	37.588	58.109
2002	28.198	35.800	63.988
2003	29.415	31.865	61.280
2004	27.402	36.995	64.397
2005	31.330	47.508	78.838
2006	35.643	52.068	87.711
2007	40.882	54.310	95.192
2008	37.896	74.343	112.239
2009	39.796	81.553	121.349
2010	36.258	85.948	122.206
2011	37.043	81.477	118.520

Source Statistics NZ website table C4.

Between March 2000 and March 2009 the banks expanded their external liabilities by \$72.4 billion dollars. From 2003 to 2009 alone the rise was over \$60 billion. After this the expansion slowed and went into reverse. However, the rise between 2007 and 2009 incorporates the fact that borrowing from associates ballooned by \$13.46 billion in those two years. The Australian banks which hold 89 per cent of banking assets in New Zealand seem to have had to prop up their NZ subsidiaries when other sources of funding became more difficult to get as the financial crisis built up. This along with the government deposit guarantees helped ensure that no bank crisis occurred in NZ

During the expansion period the spending boom proved to be very profitable for the banks. Reserve Bank statistics show that between 2000 and 2008 registered bank profits before tax rose 128.3 per cent compared with 63.6 per cent for money GDP. Thereafter the banks experienced short term financial grief as the consequence of improvident lending came out in the form of massive rises in provision for credit impairment to cover expected bad debts. With this and the general economic downturn, bank profits plummeted and remained low for around 5 quarters. The Bank funding problems were compounded by losing tax cases in the Courts which resulted in an extra \$2.2 billion in tax arrears being assessed. They also had to accommodate to tighter Basel III rules over capital adequacy ratios.

More recent figures show bank profits recovering. The banks have recovered interest margins and profitability by reducing their lending rate by less than the fall in borrowing costs which followed the reductions in the OCR. This differential was particularly marked for business lending interest rates, which are still above 10 per cent per year. Housing mortgage lending rates which have always been lower than business lending rates fell more significantly, though also not quite as much as the OCR.

Table 17 - Registered Bank Profits and Credit Impairment - \$ million

Year ended March	Credit Impairment	Profits before tax
2000	147	2,225
2001	117	2,552
2002	195	3,149
2003	173	3,979
2004	606	3,329
2005	238	3,933
2006	180	4,049
2007	182	4,660
2008	333	5,080
2009	1,381	4,263
2010	2,145	969

Source Reserve Bank of NZ website table G3.

The bank pattern of heavy losses followed by a recovery shows up even more sharply in the quarterly figures for 12 month moving totals.

Table 18 -12 months moving total

Year to Quarter	Credit Impairment	Profits before tax	
2008			
	Mar	333	5,080
	Jun	429	4,936
	Sep	627	4,666
	Dec	881	4,665
2009			
	Mar	1,381	4,263
	Jun	1,901	3,035
	Sep	2,317	958
	Dec	2,397	1,185
2010			
	Mar	2,145	969
	Jun	1,661	2,223
	Sep	1,198	4,255
	Dec	1,009	3,949

Source Reserve Bank of NZ website table G3

Monetary Policy

Monetary policy in New Zealand is implemented by the Reserve Bank which has as its primary target a consumer price inflation rate of 1 to 3 per cent annually. Policy changes focus on changes in the Official Cash Rate which determines the borrowing rates facing the banks. In turn the Official cash rate tends to influence the actual interest rates charged or granted by the banks.

The monetary policy framework also has some other dimensions, notable the Basel III requirements for ensuring financial institution stability. In these areas the Reserve Bank has moved to require the banks to have a more stable long term source of funding. However, this issue lies largely outside the topic of this paper.

Much criticism of the Reserve Bank policy stance within its monetary policy framework focuses on the fact that it reacted rather belatedly with OCR changes when faced with double digit lending growth and the accompanying inflation in asset prices. Indeed, it was still reducing the OCR in 2003 when the asset price boom was already under way. However, OCR figures show that, if belatedly, it did in fact react with significant interest rate hikes prior to the crisis.

Table 19 - Official Cash Rate at end of quarter – percentage

Year	March	June	Sept	Dec
2000	5.75	6.50	6.50	6.50
2001	6.25	5.75	5.25	4.75
2002	5.00	5.50	5.75	5.75
2003	5.75	5.25	5.00	5.00
2004	5.25	5.75	6.25	6.50
2005	6.75	6.75	6.75	7.25
2006	7.25	7.25	7.25	7.25
2007	7.50	8.00	8.25	8.25
2008	8.25	8.25	7.50	5.00
2009	3.00	2.50	2.50	2.50
2010	2.50	2.75	3.00	3.00
2011	2.50			

Source. Reserve Bank website table B2.

These OCR hikes however turned out to be ineffective in taming the asset price boom because of several fundamental flaws in the design of the monetary policy framework itself.

- The first problem was that the system design had not registered the implications of open international money markets. New Zealand has very close connections with these external funding sources, in part because most of the New Zealand registered banks are overseas owned, but more generally because financial capital is now very mobile internationally.

Once New Zealand interest rates were moved up above those in overseas fund source countries, it became profitable to ship more funds into New Zealand to take advantage of the profit differential. Hence each OCR hike and lending interest rate increase over the range of the actual changes introduced during the boom period was not accompanied by a contraction in funds lent, but to the reverse. The banks then had more money to lend and proceeded to lend it out.

- A second fundamental design problem was that the OCR system assumed that interest rate changes would control the effective local demand for funds. Intuitively this seems plausible, as interest rates clearly affect willingness to borrow. However credit demand is not affected only by interest rates, but also by conditionality. With more funds to lend because of the capital inflow from abroad the banks and other financial institutions were able to offset the effects of higher interest rate by conditionality changes such as dropping deposit ratio requirements, lending higher percentages of loans to assets, and extending repayment terms.
- The third design flaw was the failure to consider potential collateral damage to the real economy from very large interest rate hikes and in particular their

impact on exchange rates . The logic of a floating exchange rate system is that if net capital inflow rises, then the current account must deteriorate to compensate. In practice the main mechanism which achieves this effect is an appreciation of the exchange rate. This cuts the incomes and incentives of exporters, and cheapens imports to the detriment of local producers.

The New Zealand trade weighted exchange rate appreciated by over 44 per cent between December 2000 and December 2007. The consequences of this showed up in the massive deterioration of the current account, and a severe decline in output in the manufacturing sector. This fell over 20 per cent between the September quarters of 2005 and 2009.

**Table 20 - Quarterly Manufacturing Output in constant Prices
Seasonally Adjusted**

Year	March	June	Sept	Dec
2004	4,912	4,857	4,864	4,924
2005	4,907	4,917	4,987	4,904
2006	4,802	4,709	4,637	4,535
2007	4,640	4,643	4,593	4,654
2008	4,638	4,641	4,529	4,300
2009	4,045	4,042	3,985	4,141
2010	4,216	4,031	3,985	4,086

Source Statistics NZ Website Infoshare Tables

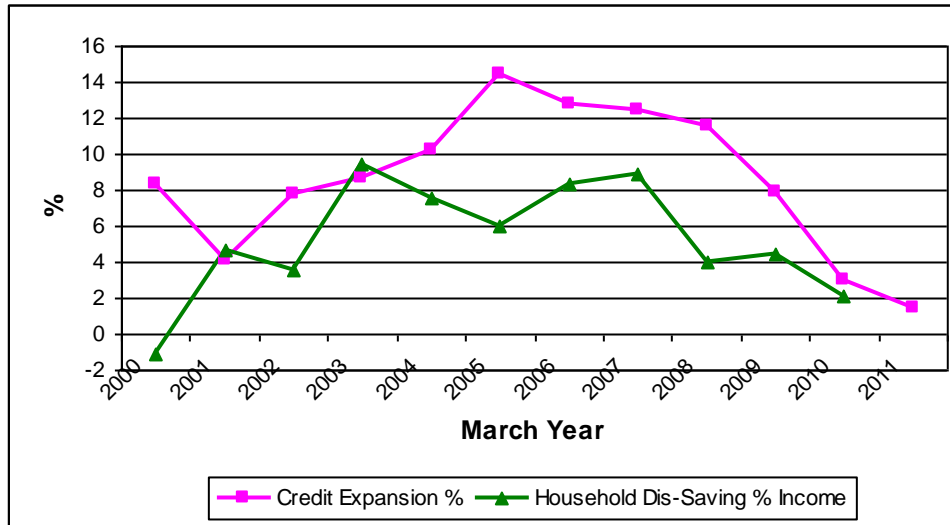
A fundamental problem in dealing with an asset price bubble is that once an inflationary psychosis takes over, extremely high interest rates are needed to offset in property investors eyes the potential of major non-taxable capital gains. However, high interest rates also do considerable damage to normal producers, especially in the tradeable sector. The tradeable sector is squeezed both by higher interest rates and by the impact of exchange rate appreciation.

The Reserve Bank might have been able to curtail the property boom if it had raised the OCR into the double digit range relatively early in the property price boom. However, the recession in the real economy which would have followed would probably have been even worse than the current one

This of course raises the issue as to whether a more rational monetary policy framework would have additional instruments as well as the interest rate mechanism linked to the Official Cash Rate. This could include mechanisms to control the actual rate of credit expansion in addition to the interest rates being charged on this credit. It could also include selective mechanisms aimed specifically at the property purchase sector such as minimum deposit ratios and maximum loan to asset ratios.

Did Monetary Policy Boost Spending and Cut Savings?

What emerges from the national income sector accounts, household asset statistics, balance of payments figures, and monetary and credit measures for the period up to 2008, is a fairly consistent story. A rising ratio of asset prices to incomes allowed households and businesses to borrow more and spend more. The asset price escalation and accompanying increased consumption expenditure was funded by a major expansion in domestic lending. In turn much of this lending was funded from abroad.



Graph 8 – Household Dis-saving and Credit Expansion Rates

Correlation is not necessarily causation, but at a minimum the data support the contention that monetary developments accommodated a rise in consumption (and hence a reduction in saving) which could not otherwise have been of the same large magnitude.

How much of this development can be attributed to Monetary Policy?

- If the question is defined in terms of the **intentions** of monetary policy stance measured in terms of OCR changes, then the answer would be very little and then mostly in the early stages of the asset price boom before the OCR began to be moved upwards. The history of OCR changes since the middle of the decade does not support the idea of any deliberate intention of the Reserve Bank to pump up credit expansion and thereby boost spending at the expense of saving.
- However, if the question is posed in terms of the actual **impact** or perhaps the **lack** of any effective braking impact of monetary policy on monetary developments, then the answer is a great deal. In practice monetary policy was massively accommodating to the asset price surge, and allowed credit to expand at double digit rates for 5 years in a row. Monetary developments were so accommodating that they swamped the impact of a restrictive fiscal policy and funded an unsustainable spending boom.

Indeed, one possible interpretation of the figures for the period between 2003 and 2007 is that OCR changes mainly followed rather than led market pressures, and to a considerable degree legitimated interest rate changes that would probably have occurred anyway if on a slightly different timing. If the intention had been to control credit expansion, then official monetary policy might just as well have not existed for all the effect it had in actually restraining growth in credit aggregates as distinct from the effect on the Consumer Price Index. The later impact was purchased at the cost of the balance of payments current account...

From 2008 onwards the situation is a little different, with a record low OCR and two deposit guarantee schemes helping to prevent a financial panic and accompanying credit crunch. However, lower interest rates have not re-ignited investment because other economic factors have been more important. Also, it is no longer very profitable to ship funds into New Zealand as distinct from sending them into the booming Australian economy.

In terms of consumption- the anti-matter twin of saving- the de facto if unintended monetary accommodation up to 2007-08 had two main consequences:

- Household perceived net wealth and net equity in relation to disclosed incomes rose, and allowed aggregate households to spend more than their incomes, including some borrowing against housing assets
- The ease with which extra credit flowed into the corporate sector during the boom allowed companies to distribute an ever increasing share of profits as dividends and hence boost spending at the expense of saving.

Since 2008 the very low OCR has helped limit the fall in housing prices and hence also limited the fall in the share of household income consumed. This would reduce the ratio of household saving to household income. Whether it thereby also reduced aggregate saving is less clear because of uncertainty about what the counterfactual would have been.

Implications for the Monetary Policy Framework

What is clear from the events of the period up to 2007 that the monetary policy framework does not work in the ways its designers expected. That is, assuming that they intended the OCR to actually influence monetary developments in the traditional sense of the term, which may not be the case. An alternative way of looking at this is that New Zealand has a monetary policy framework which was designed for very different circumstances, and cannot deal with current monetary policy issues..

In practice the OCR on its own is not a sufficient instrument of monetary policy if it is assumed that monetary policy is actually supposed to moderate fluctuations in money and credit growth. Perhaps to use the more recent terminology, New Zealand needs to look again at the needs of “macro-prudential regulation”

Translating the expression into more traditional terminology, this means having a monetary policy framework and additional monetary policy instruments which actually allow the volume of credit growth to be significantly affected by monetary policy. It may

also mean having sector specific monetary policy instruments which could restrain the development of asset price bubbles. Examples include minimum deposit ratios for property purchase loans from financial institutions, and maximum loan to asset ratios.

In the short term the absence on an effective monetary policy framework in New Zealand is not an immediate problem since credit expansion has been weak since late 2008. Credit growth rates have been lower than the money GDP growth rate, and housing prices have fluctuated downwards. The pattern produced has been one of weak domestic demand with economic space being created to allow a net shift into exports. Ironically however it is now high government borrowing which is helping to keep the exchange rate up at a level which makes some of this shift more difficult to achieve.

In the longer term if the monetary policy framework is not sufficiently strengthened, New Zealand governments will find it very difficult to manage the economy in a way which allows the economy to be rebalanced in an economically sustainable way once the next economic upturn finally arrives.

While there are a number of macro policy reasons for New Zealand to “reinvent” a more comprehensive monetary policy framework, it would appear that helping to achieve a higher savings rate is one of them..

Annex Table 1 - Trade Weighted Exchange Rate

June 1979=100

Year	March	June	Sept	Dec
2000	53.94	52.21	48.29	49.60
2001	49.87	49.97	49.59	49.91
2002	52.33	56.50	53.87	57.71
2003	60.91	61.46	62.19	65.09
2004	66.28	64.17	67.12	69.02
2005	70.72	71.03	70.30	71.95
2006	65.64	62.34	65.66	68.03
2007	68.58	73.59	68.33	71.58
2008	71.58	68.11	63.82	55.17
2009	53.84	60.32	64.32	66.66
2010	65.07	67.18	66.75	68.74
2011	65.20			

Source Reserve Bank website table B1. (monthly averages)

Annex Table 2 - Retail Interest Rates 2006 onwards %

Date	Housing (Floating)	Business (Basic)	6 Month Term Deposit
2006 Mar	9.55	11.00	6.85
Jun	9.55	11.07	6.87
Sep	9.55	11.07	6.96
Dec	9.55	11.04	7.23
2007 Mar	9.79	11.31	7.20
Jun	10.29	11.82	7.98
Sep	10.55	12.11	7.99
Dec	10.55	12.15	8.37
2008 Mar	10.71	12.25	8.22
Jun	10.90	12.42	8.46
Sep	10.40	12.32	7.52
Dec	8.12	11.23	4.81
2009 Mar	6.44	9.92	3.62
Jun	6.44	9.91	3.83
Sep	6.16	9.97	4.24
Dec	5.90	9.93	4.24
2010 Mar	5.90	9.89	4.62
Jun	6.14	9.90	4.61
Sep	6.39	10.10	4.71
Dec	6.39	10.22	4.63
2011 Mar	5.90	10.12	4.19

Source RBNZ website Table B3

**Annex Table 3 - Household Financial Assets and Liabilities
and Housing value. as at December \$ billion**

	2002	2003	2004	2005	2006	2007	2009	2009	2010
Bank deposits	47	50	55	61	70	79	90	93	98
Non Bank deposits	7	8	10	12	12	12	9	9	7
Sub total	54	59	65	73	82	90	99	101	105
Other Fixed Interest Assets	10	12	13	13	14	17	19	21	21
Superannuation	19	19	20	20	22	23	20	22	28
Life Insurance	7	8	8	8	8	8	7	6	6
Managed Funds	23	25	25	28	33	34	29	31	30
Direct Domestic Equities	11	13	16	14	19	17	12	15	16
Direct Overseas Equities	4	5	5	6	8	9	5	7	7
Total Household Financial Assets	128	140	152	163	186	197	190	205	213

Annex Table 3 continued.**Liabilities**

Bank Loans	80	92	105	121	137	154	164	171	174
Non bank Loans	7	9	11	12	14	15	12	10	9
sub total	87	101	116	134	150	169	176	181	184
Life, Super and Managed Funds	1	1	1	1	1	1	1	1	1
Solicitors trusts	0	0	0	0	0	0	0	0	0
Total Liabilities	88	102	117	135	152	170	177	182	184
Net Household Financial wealth	40	38	34	28	34	26	13	24	28
Less Student Loans	6	6	7	7	8	9	10	10	11
Housing value	282	370	429	506	559	614	568	606	599
Household Net Wealth	316	402	456	527	585	631	571	620	616

Source Reserve Bank of NZ Website. Household Financial Assets and Liabilities, Housing Value and Net Wealth.