Trends in household assets and liabilities since 1978

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Financial data that are comprehensive and consistent over a sufficiently long time span to support analysis of longer-run economic behaviour of households for monetary policy and other purposes, have been lacking until now. This article extends work at the Bank published in the early 1990s, to provide an overview of household financial assets, liabilities and housing wealth from 1978 to the present.

1 Introduction

This article presents for the first time a long-run annual series of the financial assets and liabilities of New Zealand households, from 1978 to date. It breaks new ground in several ways, but builds on earlier work on extended household asset and liability series, published in *Bulletins* in 1992, 1993 and 1994.[1] Apart from the length of the series now available, the data put forward here is more comprehensive, in terms of coverage, than has appeared previously, and some of it relies on a greater degree of estimation than has been customary. We think that the benefits gained from an attempt to provide a comprehensive picture outweigh the risks of error in estimation of some of the components. We will update these series annually, and conduct further work on them in co-operation with Statistics New Zealand. We hope the publication of this data will stimulate informed comment on various components, and we will introduce revisions annually, if and when improved estimates become available.

The Reserve Bank limits the scope of its financial surveys to minimise the costs of data collection incurred by the institutions required to provide it. Surveys are conducted to obtain only information that might reasonably assist it in performing its statutory functions. By comparison with many other countries, the scope of official financial sector surveys is less extensive in New Zealand. However, where household finances are concerned, the relatively high degree of concentration in our financial markets has made it possible to collect inexpensively quite comprehensive data for this sector of the economy.

1 See A Boaden and B Hodgetts (1992, 1993, 1994).

2 Why collect financial data?

There are several reasons for collecting high quality financial sector data, all of which apply to household financial data. First, a good understanding of households' financial assets and liabilities is necessary to assist the Bank in carrying out its primary function of formulating and implementing monetary policy. Information about households' borrowing and saving behaviour enters the mix of indicators that informs judgements about the state of the economy and the appropriate stance of monetary policy.

Secondly, given its supervisory and monetary policy responsibilities, the Reserve Bank, like other central banks, seeks to maintain a broad understanding of the workings of the financial system; for example, who is using it, how funds flows are evolving, and the structure and business performance of its component parts. The long timespan and fairly comprehensive perspective of household financial assets and liabilities assembled here responds to this objective. In a separate article in this *Bulletin*, data collected from registered bank disclosure statements are presented in a regular annual review, providing another perspective on financial market structure and operations.

Two other relatively important reasons for collating this data are the value of data series that assist in assessing households' saving trends, and their usefulness to financial markets in scoping the size and structure of the markets they operate in. The level and composition of financial savings, and trends in saving, are important policy issues.

The remainder of this article is organised in three parts. In the next section, we introduce the core data and discuss the financial environment and other key issues that have influenced the major trends revealed in household financial data since 1978. In section four we provide examples of some uses of household financial data for monetary policy formulation. In section five, we consider some tentative implications for household saving behaviour that can be drawn from the long-run data.

3 The data and its context

Data sources

The data on New Zealand household assets and liabilities examined here are drawn from several sources. The largest proportion is obtained from Reserve Bank surveys, conducted to assist it in monitoring financial markets. The principal survey is a monthly one designed to enable the production of money and credit aggregates, which are derived by measuring the funding and claims (loans) of large financial institutions, mainly banks.[2] Household deposits and loans are the largest subset of total funding and claims in this survey, accounting for 45 percent of net funding (M3) and about 50 percent of net loans (private sector credit, or PSC). The Bank also conducts a quarterly survey of managed funds, whose assets are almost exclusively obtained from the household sector, being life insurance, pension fund, and other longer-term savings held in vehicles such as unit trusts. Data on household lending by financial institutions and other lenders too small to contribute to the aggregates come from a supplementary monthly 'household claims' survey. A fourth Reserve Bank survey contributing to the series assembled here is an annual statistical return (ASR), introduced from December 1999. It covers over 30 small financial institutions servicing households not included elsewhere.

For the New Zealand data series presented in this article, other sources of information include reports to Parliament by statutory bodies, Statistics New Zealand, the New Zealand Institute of Economic Research (NZIER) and private organisations serving the financial industry.[3] Importantly, where official or comprehensive industry data are missing, we have worked with market participants to make estimates of values of household financial assets and liabilities. Data in the series presented have been more accurately and comprehensively surveyed since the early 1990s. For the period prior to 1990 in particular, a greater degree of estimation has been required in an attempt to establish a long-run perspective. It is important that readers recognise that the data are not all from official data sources, and that even official sources have their limitations. Most totals are purposely rounded to the nearest billion dollars to emphasise this, and even at this level of aggregation, caution is required.

An overall view of household financial assets and liabilities is presented in two tables. Table 1 shows the financial assets and liabilities of households in greater detail for 1978 and 1999 than the longer-run data that follows. Where estimation has been involved, the accompanying note will indicate the basis for this. Financial asset data series for households require more estimation than for liabilities. By their nature, they may be held in diverse ways that can only be efficiently assessed using techniques such as cross-section household surveys. Such a survey is being developed by Statistics New Zealand for implementation in 2001, with results due late in 2002. It is likely that households' financial assets are underestimated. Reasons for this are discussed later, and in notes to the tables.

Household financial liabilities, comprising mainly loans for housing, are now offered predominantly by large financial organisations regularly surveyed by the Bank, so leading to more comprehensive coverage than was achieved twenty years ago. However, data for housing lending cannot easily be separated from small business loans secured by residential mortgage. Because reliable estimates over time of the degree to which this occurs cannot be made, household liabilities are almost certainly overstated here. Recent estimates of the extent of this overstatement are discussed later.

Table 1 shows what institutions and financial assets and liability classes contributed in 1978 to the aggregated sub-totals, bolded in table 1, that are presented in the long-run perspective in table 2 (overleaf). The number alongside each line refers to a note in the appendix explaining the data derivation and treatment in some detail – these explanations apply to both tables. The discussion that follows is confined to broad structural trends and data relationships that are revealed in, and lie behind, both tables.

2 See Collins S, C Thorp and B White (1999).

3 See appendix for sources.

Table1
Household financial assets and liabilities: 1978 and 1999

As at December , $m		1978	1978 in 1999 $m	1999
Household assets				
1	Household shar e of notes and coin (est), not in totals	270	1112	1038
2	Trading banks	1732	7132	
3	Private savings banks	853	3514	
4	Trustee savings banks	1302	5360	
5	Post Of fice Savings Bank	1568	6456	
6	Building societies	663	2730	
7	Finance companies	593	2442	
8	Stock and station agents	44	180	
9	Household sector funds with M3 institutions	6754	27813	42764
10	Other deposit-taking institutions (fr om ASR)	58	237	2347
11	Credit unions	40	163	335
12	Total with deposit-taking institutions	6851	28212	45446
13	Gover nment and local authority bonds	356	1466	1000
14	Funds with solicitors and contributory mortgages	1100	4530	850
15	Property syndication	0	0	
16	Retail bonds	50	206	
17	Deposits in trust accts	400	1647	
18	Total in other fixed interest assets	1906	7848	7750
19	Gover nment Superannation Fund (GSF- funded)	529	2178	3600
20	All other superannuation	1600	6588	17500
	Total superannuation	2129	8767	21100
21	Life insurance-r elated funds	2350	9677	9670
22	Managed funds	300	1235	17000
23	Life, super and managed funds	4779	19679	47770
24	Direct domestic equities	1600	6588	12600
25	Direct overseas equities	400	1647	11100
26	Total household financial assets	15536	63975	124666
Household liabilities				
27	Trading banks	308	1270	
28	Private savings banks	287	1183	
29	Trustee savings banks	550	2263	
30	Post Of fice Savings Bank	17	70	
31	Building societies	471	1938	
32	Finance companies	108	444	
33	Housing Corporation	1369	5637	
34	Te Puni Kokiri	137	564	
35	Housing loans fr om M3 institutions	3247	13371	57011
36	‘Other’ personal loans fr om M3 institutions	506	2082	5086
37	Housing loans fr om household claims survey			3305
38	Other personal loans fr om household survey			947
39	Total large institution loans	3753	15453	66349
40	Housing loans fr om ASR	0	0	237
41	Other personal loans fr om ASR	100	412	1302
42	Housing loans fr om cr edit unions	11	45	100
43	Other personal loans fr om cr edit unions	25	103	200
44	Total loans from annual surveys	136	560	1839
45	Life, super and managed funds loans	538	2215	660
46	Solicitor and contributory mortgage loans	900	3706	250
47	Student loans	0	0	3118
48	Total household financial liabilities	5327	21934	72216

Source: See appendix

Table 2

Household financial assets and liabilities, 1978 to 1999

	$ billion As at December	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99
	CPIX		*16.7*	*16.1*	*15.3*	*14.3*	*3.5*	*9.3*	*14.5*	*18.7*	*8.6*	*5.0*	*7.6*	*4.7*	*2.0*	*2.2*	*1.6*	*2.3*	*2.1*	*2.4*	*1.6*	*1.1*	*1.3*
	Household financial assets																						
49	Total with deposit-taking institutions	7	8	9	10	11	13	15	17	20	24	25	27	31	32	33	34	38	41	44	45	45	45
	share of total, percent	*44*	*45*	*44*	*43*	*43*	*39*	*37*	*37*	*31*	*36*	*38*	*37*	*43*	*41*	*40*	*37*	*39*	*40*	*41*	*40*	*39*	*36*
50	Total in other fixed inter est assets	2	2	3	3	4	5	5	5	5	6	5	7	7	7	7	8	8	8	8	8	8	8
	share of total, percent	*12*	*13*	*13*	*13*	*15*	*14*	*12*	*10*	*8*	*8*	*8*	*9*	*10*	*9*	*9*	*8*	*8*	*8*	*7*	*7*	*7*	*6*
51	Life, super and managed funds	5	5	6	6	7	9	12	15	19	23	24	26	25	27	30	34	36	37	40	42	44	48
	share of total, percent	*31*	*29*	*28*	*27*	*29*	*28*	*30*	*31*	*29*	*35*	*36*	*36*	*35*	*34*	*36*	*37*	*38*	*37*	*36*	*38*	*38*	*38*
52	Direct domestic equities	2	2	3	3	3	5	7	9	18	12	10	10	7	9	9	13	10	11	12	10	11	13
	share of total, percent	*10*	*10*	*12*	*13*	*10*	*16*	*17*	*19*	*28*	*18*	*15*	*14*	*9*	*11*	*11*	*14*	*11*	*11*	*11*	*9*	*10*	*10*
53	Direct overseas equities	0	1	1	1	1	1	2	2	2	2	3	3	2	3	3	4	4	5	5	7	9	11
	share of total, percent	*3*	*3*	*4*	*4*	*3*	*4*	*4*	*3*	*3*	*3*	*4*	*4*	*3*	*4*	*4*	*4*	*4*	*4*	*5*	*6*	*7*	*9*
54	Total household financial assets	16	18	21	24	26	34	41	47	65	67	67	72	73	79	82	93	96	101	109	112	117	125
	Household financial liabilities																						
55	Total large institution loans	4	4	5	6	7	8	9	10	13	16	19	22	25	27	30	34	38	44	50	56	60	66
	share of total, percent	*70*	*71*	*71*	*71*	*72*	*72*	*74*	*76*	*79*	*82*	*86*	*86*	*89*	*90*	*91*	*91*	*92*	*92*	*93*	*93*	*92*	*92*
56	Total loans from annual surveys	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2	2	2	2
	share of total, percent	*3*	*3*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*
57	Life, super & managed funds loans	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1
	share of total, percent	*10*	*9*	*8*	*7*	*8*	*7*	*7*	*7*	*6*	*5*	*4*	*3*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
58	Solicitor and contrib mtge loans	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	0	0	0
	share of total, percent	*17*	*18*	*18*	*19*	*18*	*18*	*17*	*15*	*14*	*11*	*9*	*9*	*7*	*6*	*5*	*4*	*3*	*2*	*1*	*1*	*1*	*0*
59	Student loans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3
	share of total, percent															*0*	*1*	*2*	*2*	*3*	*3*	*4*	*4*
60	Total household financial liabilities	5	6	7	9	9	10	12	14	16	19	22	25	28	30	33	37	42	47	54	60	65	72

Source: See appendix.
Totals may not add due to r ounding.

Overview of trends in the data

Key trends in the data from 1978 to 1999 include the following:

- Household debt remained below 50 percent of personal disposable income from 1978 to 1987, then climbed steadily to exceed a 100 percent level by 1997. Household liabilities increased from 24 to 39 percent of the value of housing from 1979 to 1999.
- Managed (including life and pension) funds are now the largest repository of households' financial assets, their share having risen from 31 to 38 percent over the period, while that of deposit-taking institutions fell from 44 to 36 percent.
- Other fixed interest assets fell from 12 to 6 percent of financial assets, as the solicitors' mortgage market declined sharply from the late 1980s.
- The share of equities in total household financial assets (including those in managed funds) rose from 15 to 35 percent.
- The share of household financial assets held offshore rose from around 3 percent to over 20 percent.
- As a percentage of personal disposable income, household net financial wealth (financial assets less liabilities) rose from around 90 percent in 1978 to 120 percent in the mid-1980s, fell below 100 percent by 1995, and closed the century in an estimated range of 90 to 95 percent.

Institutional and policy change

The substantial changes in the disposition of households' financial assets and liabilities can only be understood in the context of the radical transformation of New Zealand's financial institution and market structure since 1978. These data series start in 1978, mainly because by then they begin to capture the impact of change driven by measures begun early in 1976 to liberalise financial markets. From that point the loosening of controls was incremental, but from mid-1984 financial markets in New Zealand were almost completely freed from interest rate and quantitative controls, as part of a broad programme of economic liberalisation that began with financial sector freedoms.

The exchange rate was floated in March 1985. Traditional direct controls on financial institutions were replaced with indirect controls and the framework for monetary policy was radically altered. By the end of the decade, a single target of maintaining low inflation was in place. Contemporaneously, legislative changes were implemented to allow institutional change in financial markets to respond to the market forces in finance, with a new registered bank regime operational by 1987. Statutory restrictions on the nature of the business particular financial intermediaries could undertake were removed. Trustee banks became registered banks, many building societies merged to become a registered bank and several public financial institutions were privatised. Over the decade from 1985, the financial landscape in New Zealand changed almost beyond recognition.

The trends in household financial asset and liability allocation revealed in table 2 for this period must be seen also in the context of economic events subsequent to the 1984/5 reforms. For more than two years after the currency floated, inflation continued at double-digit pace, and an 'asset bubble' occurred across housing, commercial property and financial asset prices. When the global equity market correction of October 1987 struck, New Zealand financial and real asset markets fell disproportionately. The New Zealand Stock Exchange index rose 100 percent in the 1986 calendar year, and lost half that gain in 1987, mostly in the last quarter, not recovering the December 1987 level until 1993.

Deposit-taking institutions

Deposit-taking institutions, progressively freed from interest rate controls, became able to attract more deposits competitively, with a consequent increase in housing loans from them. The housing loan flow was augmented by steady reductions in the proportion of their deposits required to be invested in government bonds. Until 1986, a third or more of total housing lending was contributed by government-owned lenders, principally by the Housing Corporation, but with a rapidly increasing amount in the 1980s from the Post Office Savings Bank (POSB). From then, they lost market share sharply as banks rapidly gained ground in deposit and lending markets. In 1989, the POSB was sold to a registered bank, and the Housing Corporation's mortgage portfolio was progressively sold and securitised during the 1990s, until today it is of negligible proportions.

For the first half of the period covered by table 2, the mortgage market conducted through solicitors (the 'solicitors' market'), unlike financial institutions, had uncontrolled interest rates (except in 1983 and 1984). It brought together lenders (generally older people with savings) and borrowers unable to obtain loans at lending institutions at a lower interest rate (because their deposit rates were controlled, making them uncompetitive). We estimate the solicitors' market to have funded more than a third of total housing loans at its height in the early seventies. It is put at about a fifth of total residential mortgage market loans outstanding in 1978, or 18 percent of total household liabilities. The solicitors' market is estimated to have held or slightly exceeded that level until the mid-1980s, from when a decline in its relative position accelerated as banks began to compete vigorously for deposits and loans.

Household borrowing

Although the economy experienced no real growth in the five years following the 1987 'crash', a remarkable feature was the continued strength of household borrowing. The rate of growth of house prices slowed, and they fell in 1991 when unemployment peaked at 11 percent. Inflation (CPIX) slowed from a GST-boosted 18.7 percent in the year to December 1986 to two percent in the year to December 1991. Yet in the five years to 1992, household borrowing increased $14 billion, or over 70 percent, albeit at a declining pace to 1991, as households increased their debt to income ratio from 48 percent to 70 percent. The absolute increase in household financial assets at $15 billion matched liabilities, but their growth was little more than 20 percent. By comparison with other OECD countries with similar institutional structures (see figure 2 in the next section), New Zealand households did not have high debt levels. From 1985, banks could fund household borrowers at market rates. Starting from a position of relatively low indebtedness, the household sector, unconstrained by borrowing regulations for the first time in decades, appears to have decided to support expenditure on housing and other goods and services beyond immediate income growth, by borrowing.

Market concentration

An expected outcome of the financial market liberalisation was some market concentration, and re-intermediation, or the return of financial flows from markets such as the solicitors' mortgage market to core financial institutions. Today's five 'banking groups' had roughly a 20 percent share of the $16 billion household financial asset market in 1978. By 1999, the new competitive freedoms to attract household liabilities had seen their share rise to well over a third of the $125 billion total. Now, households' financial liabilities are almost entirely with banks and other deposit-taking institutions, with solicitors' market lending having declined rapidly from 1985 after the removal of controls. In 1978, the same five banking groups (now registered banks) had a share of just under 20 percent of total household liabilities of about $5.3 billion. Excluding student loans, their share in 1999 of the $69 billion market is over 85 percent. But while loans to households grew $64 billion, deposits from them increased only $38 billion.

The divergence in total household deposits and loans at banks began from about 1987. The point at which household borrowing began to exceed saving in deposit-taking institutions occurred towards the middle of the 1990s, and the imbalance grew sharply from then. Banks have made up the shortfall in household deposits by borrowing overseas, hedging the currency risk.

Hire purchase and credit cards

An outcome of these household financial data series has been the estimation of a long-run series of household hire purchase (HP) borrowing, shown in conjunction with the growth of credit card debt outstanding in table 3. These two forms of lending are highlighted because they are of interest to the market. The share of HP borrowing in total liabilities grew to over 10 percent in the period of strong economic growth and limited lending freedoms in the early 1980s, and then subsequently declined, in part because it became possible to 'put the car on the house'. Household HP loans are still predominantly for vehicles, split about two-thirds for cars and one third for other consumer items.

There is a degree of substitution possible between credit card and HP borrowing for consumer goods. 'International brand' credit cards were introduced in 1979 and will have taken some of the market share that consumer HP borrowing might otherwise have retained. For 1999 only, it has been possible to estimate a total of 'store credit', including store credit cards, of about $700 million, with hire purchase loans funded directly by retailers an estimated $200 million of that. For total HP and credit card borrowing, market share is about half its mid-1980s peak, a major reason being the ease with which loans secured on mortgages can be accessed and re-accessed. About one quarter of credit card borrowing is not subject to an interest rate charge, being the 'float' during the 'free credit' period. The float on credit cards has increased slightly since loyalty programmes, such as 'air points' were widely introduced in 1998.

Long-term savings institutions

The life, superannuation and managed funds industry has captured the largest share of growth in household financial assets since the removal of controls, despite the loss of taxation incentives for investing with it. Its share of household financial assets rose from 31 to 38 percent by the mid-1990s, but has not increased since. Of course, registered banks have bought or built managed funds groups, and the largest life company has registered a bank: we focus here on the channels for households' financial assets and liabilities rather than the ownership of financial groups.

Until the mid-1980s, life companies held between 7 and 10 percent of household liabilities. The government imposed a requirement on them to hold a minimum percentage of housing loans in their asset portfolios. They quickly stopped building this business following the 1984/5 changes. Life insurance companies and superannuation funds comprised over 85 percent of the long-term savings industry until the 1990s. The Government Superannuation Fund (GSF) for government civil servants, and the National Provident Fund (NPF) catering mainly for other public servants, comprised about half the assets of the pension industry in the late seventies. The GSF is not a fully-funded pension scheme: only the funded portion is referred to above. The life industry, private managers and large firms with self-managed pensions comprised the remainder of the pension industry.

Following the 1984/5 liberalisation of financial markets, existing financial services groups, registered banks, life insurance

Table 3

Household hire purchase borrowing estimates and credit card liabilities, 1978 to 1999

$ million

	As at December	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
61	Hire purchase loans	300	400	500	600	700	900	1300	1500	1700	1800	1500	1400	1300	1200	1300	1400	1800	2400	2700	2500	2700	2800
	as percent of total household liabilities	*6*	*6*	*7*	*7*	*8*	*9*	*11*	*11*	*10*	*9*	*7*	*6*	*5*	*4*	*4*	*4*	*4*	*5*	*5*	*4*	*4*	*4*
62	Credit cards	0	20	95	153	230	317	428	484	613	693	790	882	951	1028	1056	1129	1290	1482	1726	1898	2067	2403
	as percent of total household liabilities	*0*	*0*	*1*	*2*	*2*	*3*	*4*	*4*	*4*	*4*	*4*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*
63	Store cards and non-HP store credit[1]																						500
	Total	300	420	595	753	930	1217	1728	1984	2313	2493	2290	2282	2251	2228	2356	2529	3090	3882	4426	4398	4767	5703
64	*as percent of total household liabilities*	*5.6*	*6.7*	*8.3*	*8.8*	*10.0*	*11.6*	*14.5*	*14.6*	*14.2*	*13.0*	*10.5*	*9.0*	*7.9*	*7.3*	*7.1*	*6.9*	*7.4*	*8.2*	*8.2*	*7.3*	*7.3*	*7.2*

[1] 1999 data only. Not included in percent of total liabilities calculation. Source: See appendix.

companies and others began to develop a managed funds industry that sought long-term retail funds from the public, principally through unit trusts and retail superannuation products (now 40 percent of total registered superannuation funds). Unit trust funds and personal savings managed under other mandates provided over a third of the total 'managed funds' industry in 1999, having contributed less than 10 percent fifteen years earlier. These developments occurred many years after they had proved their market relevance overseas. The entire 'managed funds' industry has grown faster than deposit-taking institutions for the last 15 years, but since the mid-1990s it has ceased to make market share gains, and is as yet less influential than in a number of OECD markets.

Other fixed interest assets

Other financial assets held by households are represented in these tables by a fairly diverse category of fixed interest assets. These include direct ownership of mortgage loans (the solicitors' market), deposits held indirectly in solicitors' (and others') trust accounts at banks, ownership of government, local authority and corporate bonds, and funds in property syndication, for example. In the first five or six years of the period under review, the share of total household financial assets held in these types of investment was about 12 to 15 percent. This was largely because of the importance of the solicitors' mortgage market, which was an outlet for savers seeking returns higher than were paid by banks, at levels of risk perceived to be low.

Over the course of two decades, this largely non-institutional market has fallen to 6 percent of the total. The major reason has been the fall in the importance of the solicitors' and contributory residential mortgage market (although there remains some demand for commercial loans through it). However, government debt is also less widely held directly, with retail issues like inflation-adjusted savings bonds having been withdrawn.

Equities

Total direct holdings of equities by households, both in the domestic market and overseas, are estimated to have risen from around 13 percent of total financial assets at the beginning of the period to 19 percent today. The household share of the value of equities held directly in the domestic market is estimated to have fallen from over 70 percent in 1978 to around 20 percent now. The value of overseas shares held directly is estimated to have been about a quarter of directly held domestic market shares in 1978, the level inhibited by overseas exchange regulations, phased out only by the end of 1984. Now, driven mainly by global sharemarket gains in the last three years and a recent fall in the value of the New Zealand dollar, the value of households' overseas direct equity holdings is estimated to be approaching that of direct domestic market holdings.

In 1978, life office and pension fund equity holdings were not very significant, partly because the authorities required them to hold high proportions of their assets in government and local authority bonds, and partly because of the overseas exchange regulations. It is more relevant to consider the overall growth of equities in households' financial asset portfolios by adding direct shareholdings to the equity investments of managed funds. Measured this way, the value of equities in households' financial asset portfolios is estimated to have risen from 15 percent to over 35 percent, as households' use of managed funds for investment increased, in the 1990s especially.

The equity estimates used have been discussed with some market participants, but are acknowledged to be subject to a wider degree of error than is likely for other financial asset classes, prior to 1995, and particularly for direct overseas equity holdings. A Reserve Bank survey of New Zealanders' holdings of Australian shares in the first half of 1985 provides a useful benchmark for the earlier period (it revealed a billion dollars of equity in 30 large Australian companies alone).[4] For the 1990s, the estimates reflect exchange rate-adjusted value increases based on the Australian 'All Ords' index and the Morgan Stanley Capital Index (MSCI). Several large retail brokers indicate that lately at least half the shares bought for personal clients are offshore, and some have given an indication of their total client share ownership split between overseas and domestic stock exchanges. Further-

[4] (1985) "A survey of New Zealand shareholdings in companies listed on the Australian stock exchange," *Reserve Bank of New Zealand Bulletin*, 48, 6, pp 308-09.

more, overseas shares may be acquired without using a domestic broker. The estimates of direct ownership of overseas shares appear reasonable in relation to the more reliable estimates that are made of direct domestic share ownership, and the asset allocation decisions of fund managers revealed in the Bank's managed funds survey since 1995.

From 1995, the equity market in New Zealand has been flat. This outcome has been all the more noticeable given the strong gains in global equity markets. The performance of overseas shares in the last few years, enhanced by New Zealand dollar depreciation since 1997, has encouraged more offshore equity investment lately. This combination of factors explains the bulk of the rise in value of overseas equities shown in table 2, but in the last five years it is clear there has been an acceleration of new funds offshore.

The 1990s

In the second half of the 1990s, the financial system has been characterised by a relatively stable structure. Several mergers have occurred, but they have been among similar institutions, not affecting the form taken by households' financial assets and liabilities. Significant new developments have included: an accelerating trend in the growth of financial services groups operating in all household financial asset markets; the use of securitisation for household debt; borrower adoption of residential mortgages with interest rates fixed for a term (almost all for original terms under five years); and gains in the value of financial assets held with the managed funds industry and overseas equity markets.

From 1993 to 1996, economic growth was strong. Inflation pressure was restrained by a firm monetary policy, which produced an inverse yield curve (higher short- than long-term rates) and high real rates of interest. Household deposits at banks grew strongly as a result, during 1995 and 1996 especially. As interest rates have fallen since, and the yield curve has flattened and turned positive, household deposits at banks have not grown. The pace of household borrowing slowed somewhat from 1996, but surged in 1999 after interest rates fell sharply late in 1998.

Over the five-year period to December 1999, borrowing by households increased by $30 billion, or by 70 percent. Since their introduction in 1992, tertiary loans for students have grown relatively rapidly to more than $3 billion, and are now about 4 percent of total household financial liabilities. Household financial assets increased by $29 billion, or 30 percent. Sixty percent of this increase is estimated to have been in equities, more than 75 percent of it offshore. Only a quarter of the increase occurred in deposits and other direct fixed interest assets, and all of this gain occurred by 1997. With the relatively slower rate of growth of financial assets, household net financial wealth declined over the period, with gains in overseas equity values restraining the fall.

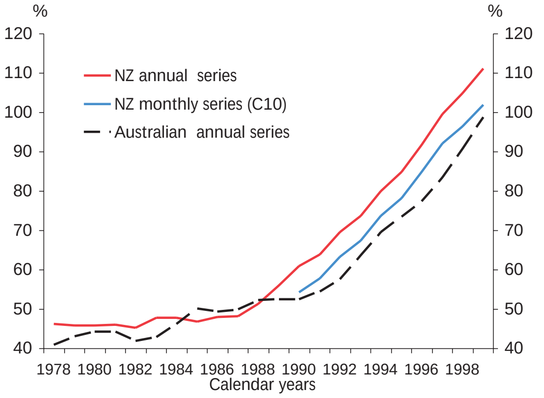
4 Household financial data and forecasting

Information about the balance and distribution of financial assets and liabilities, and the financial activity of consumers in borrowing and lending, is useful to monetary authorities in formulating monetary policy. The Reserve Bank has long made use of household financial data in short-term forecasting, and has incorporated it in models and judgements about medium- to longer-term economic behaviour.

Household debt ratios

For example, over the past few years the Bank has illustrated the degree to which households have become increasingly indebted. This development has led to the conclusion that households are likely to modify their spending behaviour in response to interest rate changes to a greater degree than in the past. Until now, household liability data underpinning this analysis was not comprehensive and a consistent series was available only from 1990. The new series supports further analysis in two ways. It has confirmed our estimate that the monthly data used for shorter-term forecasting covers 95 percent of household debt excluding student loans, and thus is more than comprehensive enough to be meaningful. It also allows a longer-term assessment of the relationship between household debt and other variables. Figure 1 demonstrates the ratio of total household financial liabilities to personal disposable income over the past two decades, and superimposes for comparison the less comprehensive data for the nineties used for a recent

Figure 1
Household debt as a percentage of personal disposable income



Source: Reserve Bank of New Zealand (RBNZ), Statistics New Zealand (SNZ), Reserve Bank of Australia (RBA).

Monetary Policy Statement (MPS), and the equivalent ratio for Australia.

The Bank implements monetary policy by influencing short-term interest rates. If it is seeking to reduce inflationary pressures, it causes interest rates to rise. One effect of this is that banks have to increase residential mortgage interest rates (as well as other rates). In such a scenario, households with debt will need to set aside more of their income for mortgage interest, leaving less to purchase goods and services, so reducing their demand for them, and lessening inflation pressure. Mortgage interest payments of course are mainly a transfer of funds from borrowers to savers, so as the latter earn more interest, their command over resources increases and offsets, to an extent, the reduction in demand from borrowers. But as already noted, in New Zealand, households are not equally represented on either side of the housing lending/depositing link: foreigners' deposits in effect support much bank housing lending. The transfer effect that usually offsets and moderates the restraint imposed by higher interest rates on demand may not be as strong here as in countries where there is domestic balance between the two groups.

Wealth effects and monetary policy

While the effect of interest rates directly on the demand for goods and services is generally thought to be the most important way that monetary policy affects activity and then inflation, it can also influence activity through its impact on the value of household assets. Changing the wealth of households through an impact on their balance sheets, borrowing costs and associated asset prices (principally their house and equity holdings) consequent on interest rate changes, will influence their economic behaviour to a degree. Just how that will occur is likely to vary in relation to the composition of their financial assets and liabilities, and real wealth.

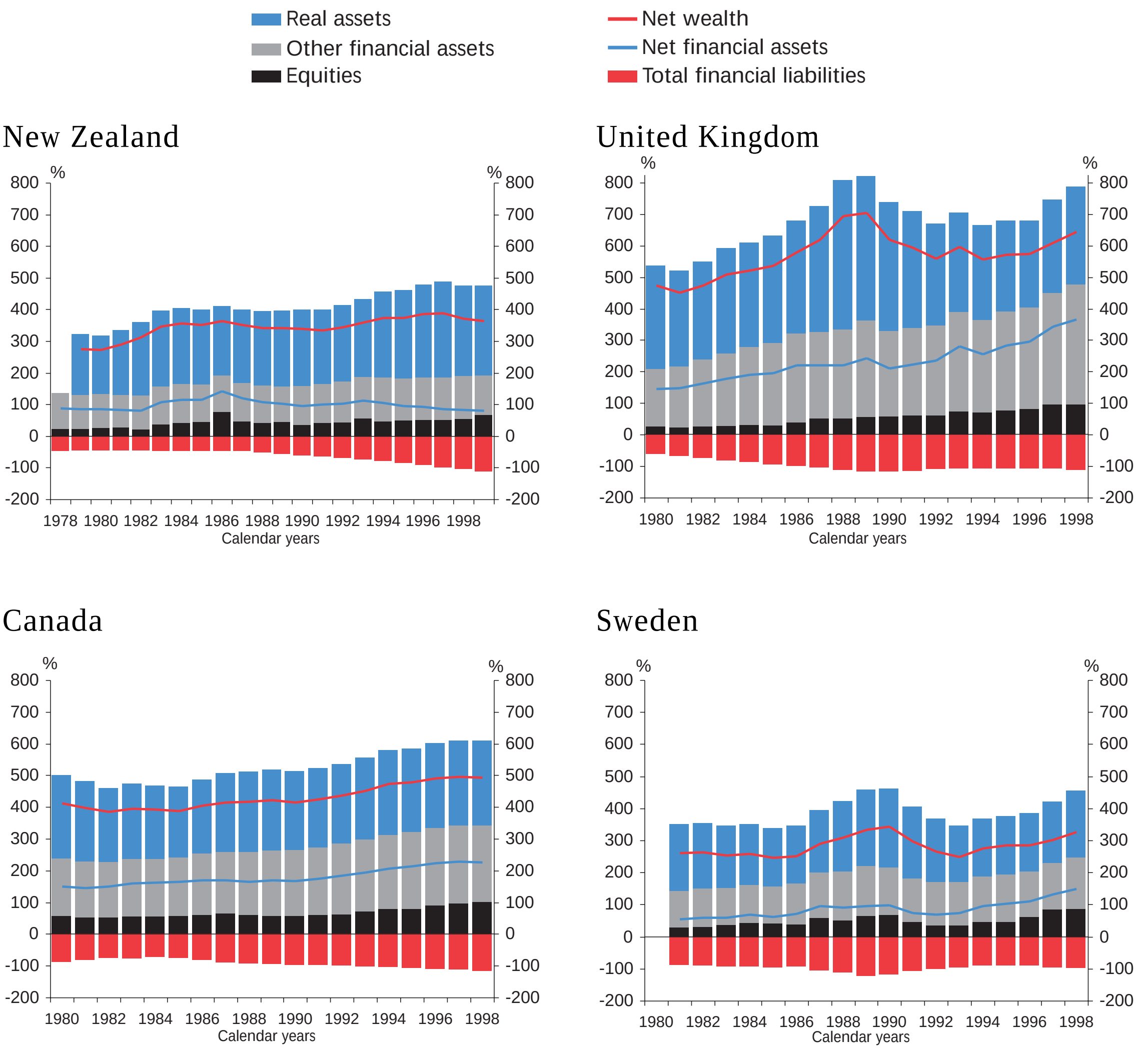
In a recent study,[5] economists at the OECD have considered the different make-up since 1980 of the financial assets and liabilities of businesses and households in several member countries. Their comparison is facilitated by representing household financial assets and liabilities as ratios (in percent) of personal disposable (after tax) income. The completion of the long-run household series for New Zealand enables our household data to be compared to the results of this OECD work. As figure 2 shows, the differences are marked.

It is important to recognise that these ratios do not provide comprehensive coverage of household wealth. For example, direct ownership of real assets such as businesses, outside the equity market, is not recorded. Real housing wealth is included in the charts because of its close relationship to the financial liabilities contracted by households, and the considerations of the impact of monetary policy on households, given the importance of housing as a share of household wealth, and the 'gearing' evident in the data. Real assets for some OECD countries discussed below may include more than housing (for New Zealand they are housing alone), although housing will be by far the bulk of it. Levels of home ownership in New Zealand are higher than the OECD average, but not far from those for the UK and Canada, with only Sweden having a markedly lower owner-occupier ratio, which is reflected in figure 2.

For the eight OECD countries they consider, the authors make the point that while for most of them, household debt is about 100 percent of disposable income, it is relatively small in relation to the value of financial assets, and of the value

[5] See Mylonas P, S Schich and G, Wehinger, (2000).

Figure 2
Household assets and liabilities, 1980 to 1998
as a percentage of personal disposable income



Source: RBNZ, OECD.

of housing wealth securing most borrowing. This is particularly so in countries where asset values have risen strongly recently, as illustrated by the UK. Net financial wealth for several OECD countries has more than doubled as a ratio of personal disposable income over the last twenty years. Most of this gain has occurred over the past decade.

New Zealand's housing and net financial wealth

For New Zealand, the net financial wealth ratio (financial assets less financial liabilities) began the eighties at about 85 percent, rose over 100 percent by 1983 and held or exceeded that level until 1994, falling below 85 percent by 1998 (see table 4). The composition of New Zealand households' wealth is strongly biased towards housing. At around 280 percent of personal disposable income, this ratio is in line with the UK and Canada in recent years, and greater than for the USA and Sweden. But the share of our household net financial wealth to net wealth (including housing) is very different. Our net financial wealth is about 22 percent of total net wealth. For 1998, the share for Canada and Sweden was 46 percent, and for the UK, over 55 percent. The US ratio was 65 percent by 1998, driven by strong rises in equity values.

The long period from 1970 to 1987, when inflation in New Zealand exceeded 10 percent per annum on average, is like-

Table 4

Household net financial wealth and net wealth, 1978 to 1999

$ billion

	As at December	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99
65	Equities	2	3	4	5	4	8	10	13	26	18	18	20	16	20	21	29	25	28	31	32	35	43
	Memo: total overseas equities	*0*	*1*	*1*	*1*	*1*	*1*	*2*	*2*	*3*	*4*	*5*	*6*	*5*	*6*	*7*	*9*	*9*	*11*	*12*	*15*	*17*	*23*
66	Other financial assets	13	15	17	19	22	26	31	34	39	48	49	52	57	59	61	64	71	73	78	80	82	81
67	Total household financial assets	16	18	21	24	26	34	41	47	65	67	67	72	73	79	82	93	96	101	109	112	117	125
68	Household financial liabilities	5	6	7	9	9	10	12	14	16	19	22	25	28	30	33	37	42	47	54	60	65	72
69	Household net financial wealth	10	12	14	16	17	24	29	34	48	47	46	46	44	48	48	56	54	54	55	52	52	52
70	Housing value	na	26	29	38	48	52	60	69	75	92	99	108	113	111	115	122	141	155	172	184	179	184
71	Household net wealth	na	37	42	54	64	76	89	103	123	140	145	154	157	159	163	178	196	209	227	235	230	237
72	Personal disposable income	11	14	16	19	21	22	25	29	34	40	42	45	46	48	47	50	52	56	59	61	62	65
	As a percentage of personal disposable income																						
	Equities	*21*	*21*	*26*	*26*	*21*	*36*	*40*	*45*	*75*	*46*	*42*	*44*	*34*	*42*	*44*	*57*	*49*	*50*	*53*	*53*	*56*	*67*
	Other financial assets	*114*	*110*	*107*	*104*	*106*	*120*	*124*	*117*	*115*	*122*	*117*	*114*	*123*	*124*	*128*	*129*	*136*	*131*	*132*	*132*	*132*	*125*
	Total financial assets	*135*	*131*	*133*	*130*	*127*	*157*	*164*	*162*	*190*	*168*	*159*	*158*	*156*	*166*	*172*	*186*	*185*	*181*	*185*	*185*	*188*	*192*
	Financial liabilities	*46*	*46*	*46*	*46*	*45*	*48*	*48*	*47*	*48*	*48*	*51*	*56*	*61*	*64*	*70*	*74*	*80*	*85*	*92*	*100*	*105*	*111*
	Net financial wealth	*89*	*85*	*87*	*84*	*82*	*109*	*116*	*115*	*142*	*120*	*108*	*102*	*95*	*102*	*102*	*112*	*104*	*96*	*93*	*85*	*83*	*81*
	Housing value	*na*	*190*	*185*	*205*	*231*	*238*	*240*	*237*	*221*	*232*	*235*	*239*	*243*	*233*	*242*	*246*	*271*	*278*	*293*	*303*	*287*	*283*
	Net wealth	*na*	*275*	*272*	*289*	*313*	*347*	*356*	*352*	*363*	*351*	*342*	*341*	*339*	*334*	*344*	*358*	*375*	*374*	*386*	*388*	*370*	*364*

Source: See appendix.

Totals may not add due to rounding.

ly to have influenced decisions to invest in real assets such as housing, rather than non-equity financial assets, where real returns were sometimes negative. A combination of the longer experience here of the ravages of inflation on savings in financial assets, controls on financial market development until 1985, and the major fall-out in the equity market following the 'crash' in 1987, could well explain some of the bias in the relative share of household assets towards housing in New Zealand.

In New Zealand, unlike some larger OECD economies, it would seem possible therefore that, at current levels of equity holdings, there will not be as significant a wealth effect from rising equity values as may be experienced elsewhere, and less risk of a significant contraction in consumption should they fall sharply. In the US, because equity values in 1999 were around 150 percent of personal disposable income and rising, it is readily understandable why the Chairman of the Federal Reserve has expressed concern about the consequences for growth from a rapid (and perceived permanent) reduction in share values. It is posited that people would increase their saving to try to restore wealth, cutting consumption sharply and thus precipitating a recession. Given the impact of rising interest rates on equity values and the relatively widespread ownership of equities in the US, this has been more of an issue to this point for monetary policy in that country than, say, the value of housing.

The OECD study notes that, since home ownership is widespread, and unrealised equity in homes represents the bulk of most households' total assets, wealth effects from changing house prices may have the potential to be much larger than for equivalent changes in equity prices. Figure 2 suggests that any wealth effect is more likely to emerge here in the housing market. Indeed, New Zealand experienced a wealth effect of rising house values on consumption during the 1993 to 1996 period. This effect operated procyclically, that is, in concert with other elements of the business cycle, tending to reinforce it.

The Reserve Bank seeks to restrain inflation pressure by raising interest rates. While this has its intended effect on both the business and household sectors, restraining the pace at which they demand resources, the impact on household balance sheets may be the more significant. It is not unambiguous though. One of the developments in data collection implemented by the Bank in the last few years is the collection of information on the extent, and pattern of use, of residential mortgage loans with interest rates fixed for a period. In 1995 and 1996, for reasons specific to circumstances at the time, short-term interest rates were higher than long-term rates by a considerable margin. Housing borrowers were shielded from the full impact of the monetary policy tightening for longer than would have been the case if only floating rate mortgages had been available.

5 Saving and savings

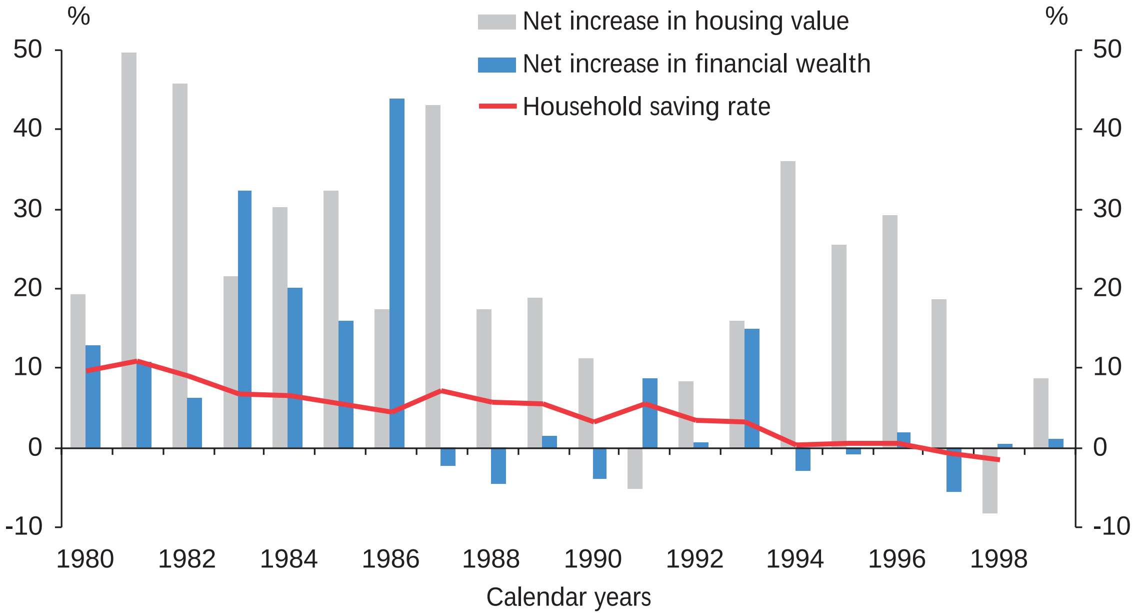
Saving is the difference between the 'flow' of income and expenditure. For households, the published saving rate is a relatively small residual between two large flows, themselves derived in part using estimation techniques. Because of the inherent measurement difficulties involved, experienced in all countries, reservations are sometimes expressed about the accuracy of household saving data. When, as in New Zealand, the saving residual is very small, concerns become more acute. There is no dispute however that our household saving rate is low, or that the trend in it has been falling this decade. Figure 3 shows the saving rate as a percentage of personal disposable income, compiled by Statistics New Zealand for March years (recorded in the graph as at December of the previous calendar year).

Figure 3 also shows the annual increase in the net financial wealth of households, and in the value of their housing, as a percentage of personal disposable income. The total of net financial wealth and housing value is called 'net worth' in figures 2 and 3, and broadly is the stock of 'savings' of New Zealand households. For net financial assets, apart from four years in the 1980s and 1993, when equity gains of households boosted net financial savings markedly, there is a correspondence in this trend with the saving rate. The appearance of a negative saving rate recently would appear to be confirmed by the lack of growth in net financial assets since 1993. Given that the two independent data sources and methodologies produce results that broadly correlate, which is to be expected if data estimation is adequate, a further degree of confidence is gained about the overall picture from the household financial assets and liabilities series.

The extent to which the annual increase in net financial

Figure 3

Annual saving and changes in net wealth, as a percentage of household disposable income, 1980 to 1999



Source: RBNZ, SNZ.

wealth has fallen will, however, be affected by several factors. There are household financial assets that will not have been picked up in these data series. For example, the measurement of 'other' (non-institutional) fixed interest financial assets, domestic and external, has been deliberately conservative, and may be under-estimated by more than a billion dollars. Direct investment in forestry is not included. If there has been a change in the tendency to hold these assets, the declining trend will be exaggerated. On the other hand, gains in offshore equity markets in the last three years have shored up the net financial asset performance.

For household liabilities, there is a problem both in level and trend. An unknown proportion of the stock of loans secured on housing, estimated by some large banks as possibly between 10 and 20 percent, is for business purposes. Most bank data recording systems do not differentiate business and housing purposes for the stock of loans recorded as secured by residential property. If, on average, 10 percent of housing loans were in fact business loans, the net financial wealth percentage for 1998 in tables 4 and 5 would be 92 percent instead of 83 percent. More importantly for this discussion of trend, the tendency for small business loans to be secured on housing has accelerated in recent years, and will undoubtedly have exaggerated the downward slope of the net household financial wealth ratio.

Figure 3 illustrates clearly how, in all but two of eighteen years to 1998, households have added to their wealth through gains in the value of their housing. The size of these gains in most years has far exceeded actual saving out of income. The falling saving ratio can be argued to some extent to be an outcome of households' perception of gains in wealth in their homes. This phenomenon is by no means limited to New Zealand, with the United States and the UK, for example, exhibiting similar trends. New Zealand households' experience of gains in wealth through housing over the past three decades may help explain their slower and more limited accumulation of financial assets than in a number of OECD economies. In table 5, OECD and RBA data from 1980 to 1998 show that the stock of net wealth of New Zealand households has increased more than that of five of the seven countries for which consistent data are available, but that this is entirely a result of an increase in the value of housing.

Table 5
Household sector wealth as a percentage of personal disposable income, 1980 and 1998

	Percent levels of				Percent growth
	Net financial wealth		Total net wealth		in net wealth
As at December	1980	1998	1980	1998	
Canada	151	226	414	494	*19*
Sweden[1]	54	148	262	326	*24*
France	87	249	417	520	*25*
USA	255	389	472	595	*26*
Japan	124	259	504	645	*28*
UK	147	366	474	643	*36*
Australia	61	136	336	525	*56*
NZ	87	83	272	370	*36*

Source: OECD, RBNZ, RBA.

[1] From 1981

Together with the housing value series, the financial data presented here illustrate clearly over time changes in key components of households' balance sheets. While our level of household indebtedness has doubled since the late 1980s, the OECD data suggest that we may have simply been catching up to levels already taken for granted in several countries. Despite the limitations of the data, the relatively low level of net wealth in New Zealand stands out. In particular, net financial wealth is low. In marked contrast to other countries in table 5, the level appears to have fallen over two decades. However, allowing for the measurement issues discussed above, which were not material in 1978, the 1998 net wealth ratio is more likely to be in a 90 to 95 percent range. The issues surrounding the relative value of accumulation of wealth in housing compared to financial assets are complex, but the extreme New Zealand position revealed in table 5 suggests that a greater equilibrium would be desirable.

An optimistic view might be that having lifted borrowing to income ratios to levels comparable with the more indebted OECD household sectors, New Zealanders may now turn their attention to increasing their net financial wealth. It needs to be remembered however that part of the financial asset accumulation illustrated for all countries in figure 2 has been driven by 'baby-boomers' in their prime earning and saving years. With similar demographics here, it is questionable whether New Zealand households' net financial wealth can in future approach levels comparable to those of most other countries in table 5.

6 Summary

This long-run data set on New Zealand households' financial assets and liabilities has only just been compiled. The principal objective of this article has been to define the data, explain its derivation, and to set it in context. The data's availability will facilitate the analysis of a wide range of policy issues and financial market trends. No more than a few have been raised briefly here. Future articles updating these data series annually will present an opportunity for greater focus on their analysis. Over time, we expect this long-run series will make a useful contribution to our understanding of the ways monetary policy may affect economic activity and inflation.

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See appendix for other data sources.

Appendix

Note: Reference is made in the appendix to 'C' tables. These are tables published monthly by the Bank and derived principally from the money and credit aggregates survey. They are available on the Bank's website.

1. *Notes and coin in the hands of the public*. Source: Reserve Bank. Currency in the hands of the public is a financial asset. While not totalled in tables, it is shown to acknowledge its value. Households have been allocated half the total on the grounds their deposits are about half of total net banking system deposits.

2. *Trading banks*. Source: Reserve Bank. The deposit totals to 1980 are estimates, based on ratios derived from published figures from 1981, when deposits were first collected by sector. In 1978 there were five trading banks. Their more numerous modern equivalents are registered banks, and their household funding is published in table C8.

3. *Private savings banks*. Source: Reserve Bank. Private savings banks were established as wholly-owned subsidiaries of trading banks in the mid-1960s. Following the mid-1980s market liberalisation, their balance sheets were progressively run down and the parent banks assimilated their 'savings bank' business in 1993/94.

4. *Trustee savings banks*. Source: Reserve Bank. Excludes solicitors' trust account deposits. By 1990, 11 of these 12 banks were represented by two registered banks, following mergers.

5. *Post Office Savings Bank*. Source: Reserve Bank.

6. *Building societies*. Source: Reserve Bank. Building societies were not included in the M3 definition until 1987, but are in the total here for continuity.

7. *Finance companies*. Source: Reserve Bank. Estimates, assuming 75% of the published total of deposits, debentures and notes were held by households, the balance by business. From 1987, these totals were incorporated in a generic 'M3 institution' survey, with household sector funding identified.

8. *Stock and station agents*. Source: Reserve Bank. Fixed deposits only of these institutions.

9. Household share of M3. Source: Reserve Bank. Total of 2 to 8 above for 1978. From 1987, the Bank implemented a new standardised M3 survey, which incorporated the institutions surveyed previously: 'M3 institutions' are those whose funding and claims comprise the money and credit aggregates. The M3 survey sample size was reduced in June 1998 (see 10 below), and the 1999 figure is from table C8, which presents the household deposits of M3 institutions. During the period 1987 to 1997, some estimation has been required to cope with reporting difficulties in this series.

10. Other deposit-taking institutions from the Annual Statistical Return (ASR). Source: Reserve Bank. The ASR has two components. The first tracks the institutions removed, because of their size (under $500 million) from the M3 survey in June 1998. Their deposits are the bulk of the 1999 deposit total from this survey shown in table 1. A second ASR component picks up small deposit-taking institutions, mostly finance companies, not surveyed in the 1990s. Total deposits for these institutions have been backdated for previous years in the same proportion to M3 household deposits as for 1999.

11. Credit unions. Source: Report of the Registrar of Friendly Societies and Credit Unions (B.18). Data for March or June year reports relate to various balance dates the previous year, and are shown at December of that year. 1999 estimated.

12. Total deposit-taking institutions. Source: as above. This total is as consistent as possible a composition from 1978 to 1999 in table 2.

13. Government and local authority bonds. Source: Reserve Bank and estimates. Government bond-holdings by individuals are obtained from the register and published quarterly in table D2. Retail stock issues, like Kiwi Bonds, are included. Local authority totals are as published to 1987, then estimated.

14. Funds with solicitors and contributory mortgages. Source: Reserve Bank estimates. This category represents private investors' financial assets, lent to borrowers through their solicitor. In the late 1970s, the Bank surveyed solicitors and made unpublished estimates of totals lent, guided by flow data from the Land Transfer Office and estimates of duration for these short-term loans. Financial assets of households with solicitors are greater than their liabilities, as this market lends for commercial and farming purposes as well. The risk with the funding estimate is greatest on this account, and it may be too low in early years especially. Such lending predominates today. Estimates for funds with contributory mortgage lenders are included.

15. Property syndication. Source: Reserve Bank estimate. This market began in the late 1980s, and an estimate of growth and current totals has been made after industry discussion. Figures are not published but included in total 18, partly for reasons of commercial sensitivity and partly because the estimation error is best kept to the aggregate.

16. Retail bonds. Source: Reserve Bank estimate. Data from the industry has been used. The market was relatively insignificant in the 1980s. Recent data are not published separately for the same reasons given for property syndication.

17. Deposits in trust accounts. Source: Law Society and Reserve Bank estimates. These are estimates of household deposits in banks, mostly in trust accounts of solicitors, but implicitly including accountants' and real estate agents' accounts also, for example. From 1990 to 1996, solicitors' trust account totals were provided by the Law Society and published by the Bank, with the total of these deposits assumed to be from households. The 1999 total was obtained from most banks, but is not published, to assist with the confidentiality objective cited for categories 15 and 16. Prior to 1990, the total is a constant and similar ratio of 1990/96 totals for solicitors' trust account deposits, to M3 institutions' household deposits.

18. Total other fixed assets. Source: as above.

19. Government superannuation fund. Source: Report of the Government Superannuation Fund (B.20). Data for March or June year reports relate to various balance dates the previous year, and are shown at December of that year. The relevant Bank quarterly Managed Funds Survey (MFS) superannuation growth rate has been applied to the 1998 figure to estimate 1999. This figure is the part of central government's civil service past service pension obligations which are funded, or invested in financial assets.

20. All other superannuation. Source: Report of the Government Actuary and Reserve Bank estimates. From data for balance dates in 1989, the Government Actuary's report is the source, with an estimate for 1999 based on the MFS results. Prior to 1989, unofficial estimates from the office of the Government Actuary have formed the basis of estimates by the Bank.

21. Life insurance-related funds. Source: Reserve Bank surveys and estimates. The Bank has surveyed life offices for longer than the span of these series, but until December 1986, pension-related funds were not separately identified, necessitating an estimate, based on the 1986 life/superannuation split, for earlier years. In 1995, the life office survey was discontinued, as its respondents were included in the MFS begun that year, and data is from this survey from that date.

22. Managed funds. Source: Reserve Bank MFS and estimates. From 1995, the figures are from the MFS, and comprise the unit trust and 'other funds' totals, boosted by supplementary data for 1999 to restore comparability to the MFS series from 1995 to 1998. Prior to 1995, data is estimated, guided by retail unit trust totals published by Morningstar.

23. Life, super and managed funds. Source: as above.

24. Direct domestic equities. Source: from 1989 onwards, this data is that published in WestpacTrust HSI indicators, as compiled by NZIER and Morningstar. These totals are similar to other market estimates, but have been chosen by virtue of their consistency, methodology and quarterly availability to the public. Unlisted equity is not included. Earlier years: Bank estimates, derived from applying an estimate of direct household equity holdings to market capitalisation, following discussion with market participants. Guidance for this percentage includes work on household direct shareholdings for 1974 and 1979 by G Fogelberg, published by NZIER, *ibid.*

25. Direct overseas equities. Source: Reserve Bank survey and estimates. In 1985, the Bank surveyed New Zealand shareholdings in 30 large companies listed on the Australian Stock Exchange (Reserve Bank Bulletin, *ibid*). The survey revealed a total of almost $NZD1 billion of equities held by New Zealand residents. The Bulletin article stressed the degree to which this total would be an underestimate. Based on this figure, the series adds half that amount for equities held in all other markets and projects these totals forward to 1990 adjusted for the All Ords and MSCI indices, without additional funds injection. Totals prior to 1985 have regard to the All Ords index. From 1990 to 1999, about $3 billion in additional funds is estimated to have been invested directly overseas, two thirds of this since 1995. The 1999 estimate implies New Zealanders own about 4% of the shares directly held in the Australian equity market (individuals' Australian market holdings estimated at 27% of the total market).

26. Total household financial assets. Source: as above. Total of 12,18,23,24 and 25.

27. Trading banks. Source: Reserve Bank. In 1978, the banks' personal lending was roughly equally split between lending for 'housing purposes' and for 'other' purposes. The housing purpose lending is shown here, while a similar amount is incorporated in the figure for item 36, 'other personal loans from M3 institutions', below.

28. Private savings banks. Source: Reserve Bank. Lending for housing: very little other purpose personal lending was undertaken.

29. Trustee savings banks. Source: Reserve Bank. Lending for housing. Lending for other personal purposes was limited until the 1990s.

30. Post Office Savings Bank. Source: Reserve Bank. The POSB had in 1978 only just been allowed to begin lending for housing: the data for 1978 is second mortgage loans.

31. Building societies. Source: Reserve Bank. Based on contemporary Bank estimate that 93% of total 'advances on mortgage' was for housing purposes.

32. Finance companies. Source: Reserve Bank. In 1978, the 'other' personal loan total was about double this housing figure and is incorporated in 36, below. This ratio increased in the 1980s.

33. Housing Corporation. Source: Prior to 1989, March year totals, applied to the previous December, of housing loans from annual reports to Parliament of the Housing Corporation of New Zealand. From 1990, Reserve Bank data in C10 includes Housing Corporation lending.

34. *Te Puni Kokiri.* Source: Annual reports to Parliament, successively, of the Department of Maori Affairs, Iwi Transition Agency and Te Puni Kokiri, until 1990. From then, included in C10.

35. *M3 housing loans.* Source: as above. Total of 27 to 34.

36. *'Other' personal loans from M3 institutions.* Source: as above. In 1978, these loans were extended mainly by the trading banks and finance companies. Over time 'other' loans in relation to housing loans have become a smaller proportion, as lending for consumer items and cars could increasingly be incorporated in one or several loans secured by mortgage. Credit card lending by bank subsidiaries is included here. The 'other' category is not comparable over the full period because of loan classification changes.

37. *Housing loans from household claims survey.* Source: Reserve Bank. This monthly survey, begun in June 1998, reports lending by 'non-M3 institutions' in table C10. This survey retains the significant household lending institutions that were below about $500 million in assets at June 1998, when the M3 survey (see 9 above) was reduced in scope. It also includes securitised lending to households.

38. *Other personal loans from the household claims survey.* Source: Reserve Bank. The great majority of this is car loans. In 1978, the corresponding amounts would have been mainly part of finance company lending, and in item 36.

39. *Total large institution household loans.* Source: Reserve Bank. To 1990, as described for 27 to 38. From 1990, table C10 (a May 2000 revision has amended C10 levels slightly).

40. *Housing loans from ASR.* Source: Reserve Bank. Total of housing lending obtained from the ASR in 1999. Prior to 1990, the comprehensive nature of the Bank's M3 survey in principle meant that such lending was included in 35, above.

41. *Other personal loans from ASR.* Source: Reserve Bank. For non-mortgage liabilities, the 1999 ASR results by their nature are felt likely to have been outside the pre-1990 M3 survey, so the 1999 results are backdated from then to 1978 as a proportion of total household liabilities, for completeness.

42. *Housing loans from credit unions.* Source: Data from Annual Report of the Registrar of Friendly Societies and Credit Unions (B.18), applied to the preceding December. Split between housing and non-housing is estimated from 1985, when the registrar ceased to publish the distinction. Estimated for 1999.

43. *Other personal loans from credit unions.* Source: as above.

44. *Total loans from annual surveys.* Source: as above for 40 to 43.

45. *Life, super and managed funds loans.* Source: Reserve Bank. Superannuation fund and managed fund (unit trust) residential mortgage investments are estimated prior to 1995. Not all mortgages which back household financial assets in managed funds are recorded in this category. A significant amount is included in the household claims and M3 survey data, published monthly in C10.

46. *Solicitor and contributory mortgage loans.* Source: Reserve Bank estimates. See note 14 for comments on the funding of these loans, which also cover the estimation procedures used for lending. Solicitors are understood now to lend little for housing, and contributory mortgage companies focus on lending for commercial purposes.

47. *Student loans.* Source: Crown half-year financial statements. It should be noted that not all of this debt is likely to be repaid.

48. *Total household liabilities.* Source: as above. Note the data for component categories, while shown rounded to $ billion, is added to all major totals in $ million, and the total may not add at the $ billion level due to rounding. In early years there were loans for housing from government departments, GSF and various public and private sector employers that are not picked up in this tabulation, and will have amounted to more than $100 million, or at least 2% of the total. This degree of tolerance must be acknowledged also in some of the official data however, as recording systems cannot always respond to official definitions. Now, the tendency to report some small business loans as household loans will be a greater source of error in levels in this series than, say, an under-estimation of the solicitors' mortgage market loans (see text).

49. Total with deposit-taking institutions. Source: From 12 above. Since 1998, the total comprises household funding from table C8, together with results from the ASR and credit union funding. From 1990 to 1997, the total is based on table C8, with credit union totals, but there has been some estimation to account for reclassification during the period. The total does not include household funds in solicitors' trust account deposits, as they are held indirectly. From 1978 to 1986, Reserve Bank surveys provide detailed deposit data. From 1987 to 1989, when a new survey replaced many specific institutional surveys, there were difficulties in collating funding by sector. Estimation techniques have been used to interpolate data points, with reference in particular to the likely share of household deposits in M3 funding, a total that remained well-anchored through the survey changes.

50. Total in other fixed interest assets. Source: as for 18 above. For the government and local authority component, the source is the Reserve Bank, with data as published. Publication of local authority direct holdings was discontinued after 1987, and an estimate has been made for this (very small) component.

51. Life, super and managed funds. Source: as for 23 above. For 1999, the Bank's quarterly managed funds survey has been supplemented by aggregate data obtained by Morningstar from smaller funds, using the Bank's data template. Use of this data has enabled the backdating of the published MFS totals to 1995 for a marginal gain in totals. This, together with the inclusion of funded GSF totals and use of the Government Actuary's annual report data for superannuation totals (because of its long run value), will make reconciliation with the published MFS diffficult. In addition, a small proportion of MFS funds is not from households, and an estimate, based on new 1999 data, has been made for this in backdating the series.

52. Direct domestic equities. Source: as for 24 above.

53. Direct overseas equities. Source: as for 25 above.

54. Total household financial assets. Source: as above. Whether the degree to which financial assets may have been omitted from this total is greater in earlier years or more recently is not easy to judge. While the greater freedoms of modern markets might suggest recent totals would be more understated than earlier ones, more rudimentary recording early on, and greater incentives to leave financial assets offshore given exchange controls and the absence of retail managed funds, may offset this. An underestimation of 2 or 3 percent is quite possible.

55. Total large institution loans. Source: as for 39 above. Table one shows many separate data sources in early years, and these remained until 1987. For that year, the new generic survey instituted struck difficulty in recording loans by sector. From then to 1989, estimates have been made. The total for the core of this series is very similar to that published by *Boaden* and *Hodgetts, ibid,* for 1989 and 1990. From and including 1990, the total is the same as for table C10, published monthly by the bank.

56. Total loans from annual surveys. Source: as for 44 above. Loans in the ASR include securitised consumer HP loans. Inter-institutional double-counting has been avoided in recording the securitised loans.

57. Life, super and managed funds loans. Source: as for 45 above. Residential and other household loans have been obtained through the MFS survey since 1995. Only those loans not included in C10 by reason of their requirement to appear on bank balance sheets (some banking groups have fund management subsidiaries) are included in this period. Prior to 1995, the quarterly life office survey is the main source, with estimates for pension and unit trust household lending.

58. Solicitor and contributory mortgage loans. Source: Reserve Bank estimates, as for 14 and 46 above.

59. Student loans. Source: as for 47 above.

60. Total household financial liabilities. Source: as above. As noted in the text, liabilities of households are likely to be overstated because of reporting difficulties in the second half of the 1990s in particular, with increasing use of household loan products for small business lending, which few banks distinguish systematically. Apart from this problem, it is likely that a very low proportion of household borrowing is omitted from the survey over this period. In the early years, the main source of uncertainty about the level of liabilities is the solicitors'mortgage market. The estimation error is unbiased in our view. The trend in outstanding loans in this market has been guided by official loan registration data to 1989, and estimated thereafter to the 1999 level in table 1.

61. *Hire purchase loans.* Source: Reserve Bank estimates. A personal HP estimate has been made using the Statistics New Zealand quarterly HP survey, conducted until 1991. This has been correlated with lending data from the Reserve Bank's quarterly finance company survey to 1987. From there, loan data disaggregated from the Bank's new generic survey implemented in 1987 has been used to underpin estimates made to 1998, when the new ASR survey has established current HP levels for 'non-store' funded HP credit ($2600 million in 1999). The 1987-1998 trend has been guided strongly by car lending data obtained through regular bank surveys. Note that with the exception of 'store-funded' HP credit (estimated at $200 million in 1999), these credit totals are incorporated in total household liabilities in other tables.

62. *Credit cards.* Source: Reserve Bank. The Bank began publishing credit card outstandings from March 1981, and this data is from table C12 (includes AMEX and Diners 'charge' cards also). The first credit cards were issued in 1979, and an estimate has been made for that year. These totals are included elsewhere in components of household liabilities totals.

63. *Store cards and non-HP store credit.* Source: Reserve Bank estimates. The 1999 estimate for this category is based on industry information and Bank estimates. The values for store cards are in components of household liabilities totals — only the store-funded credit component is not. Estimating backdated values is not warranted.

64. *Total of 61, 62 and 63 as percent of total household liabilities.* Source: Reserve Bank.

65. *Equities.* Source: Reserve Bank estimates as above in 52 and 53, and from MFS survey and Statistics New Zealand. The equity holdings of the life, super and managed funds industry have been surveyed by the Bank and Statistics New Zealand since 1995 and these totals have been added to direct holding estimates for this category. Prior to 1995, the quarterly life office survey conducted by the Bank is the primary source for total equity holdings, and trend. Equities offshore were not identified in this survey prior to 1986, but amounts would have been negligible because of exchange control regulations in place to 1984. The estimated overseas equity totals, direct and indirect (ie in managed funds), are shown in italics. They are a memo item, already incorporated in line 65.

66. *Other financial assets.* Source: Reserve Bank. All financial assets not equities, in the total of household financial assets.

67. *Total household financial assets.* Source: table 2.

68. *Household financial liabilities.* Source: table 2.

69. *Household net financial wealth.* Household financial assets less liabilities.

70. *Housing value.* Source: From New Zealand Treasury estimates provided under contract by NZIER, with a particular valuation option chosen by the Bank for the purposes of this table.

71. *Household net wealth.* Total of net financial wealth and housing value.

72. *Personal disposable income.* Source: Statistics New Zealand. The March year data is shown as at December of the previous year. The 1999 figure is a Reserve Bank estimate.