

NEW ZEALAND RESIDENT MONEY AND CREDIT AGGREGATES

In this article, Alan Boaden introduces the new resident-based money and credit aggregates.

Introduction

This article introduces New Zealand resident measures of M3, Private Sector Credit (PSC) and Domestic Credit (DC). These new statistics are similar conceptually to the official, full New Zealand dollar (NZD) measures of M3, PSC and DC, except that they include only NZD funding from, and claims on, New Zealand residents. They exclude NZD funding from, and claims on, non-residents. The new series, denoted by M3(R), PSC(R) and DC(R), are shown in Table A6 in the statistical tables.

The publication of the resident money and credit aggregates is one result of the Bank's ongoing work to improve the range and quality of financial statistics in New Zealand. This article:

- provides an account of the development of the new series;
- specifies the composition of each series;
- compares the statuses of alternative measures of money aggregates;
- describes trends in the new statistics; and
- comments on the significance of the new measures as monetary policy indicators.

Development of NZ Dollar and NZ Resident Aggregates

In the early 1980s, a formal Review of Finance Statistics was undertaken by representatives of the main producers and users of financial statistics. The Review led to the rationalisation of financial sector surveys and associated statistics in New Zealand. The report of the Review Committee, published in January 1983, contained detailed recommendations regarding the compilation of monetary and credit aggregates. Generally, these have been followed. However, the Committee's report made no distinction between NZD and foreign currency, or between resident and non-resident, deposits and lending. This was because the Committee's work was carried out before the extensive deregulation of financial sector activity from 1984 onward.

In 1987, the Reserve Bank introduced the new monthly Standard Statistical Return (SSR). The SSR survey covers all 'M3 Financial Institutions' (M3FIs). These include registered banks, the Reserve Bank, finance companies, merchant banks and building societies. All M3FIs are New Zealand resident organisations. When the Reserve Bank designed the new survey, it intended moving towards compiling money and credit aggregates that would include only NZD funding from, and claims on, New Zealand residents. However, the split between residents and non-residents was not initially possible, as some banks were unable to supply the data required. The Reserve Bank

decided, therefore, that, for the time being at least, the official aggregates should include NZD funding and claims of both residents and non-residents.

The new official money and credit aggregates were published for the first time in the September 1987 Reserve Bank Bulletin. Detailed accounts of the new aggregates and other related statistics can be found in articles in the June and September 1987 Bulletins.

The September 1987 article (page 227) indicated that New Zealand resident measures would be published when this became possible. However, some of the larger banks in particular needed considerable time to change their information systems to provide all the data required for the SSR. It was not until June 1990 that full resident-based aggregates could be constructed and only in June 1991 could annual changes be calculated - although estimates of the resident aggregates have been prepared back to March 1989.¹ Even after June 1991, some uncertainties remained regarding some banks' figures. The data problems which came to light during the development period have now been resolved, and it is now possible to publish the new resident-only statistics.

The publication of the resident monetary and credit aggregates is part of the Bank's ongoing work to improve the range and quality of financial statistics in New Zealand. In October 1991, for example, the Bank started publishing weekly estimates of M1, M3 and PSC. In the June 1992 Bulletin, extended measures of household and business credit were published, and the Bank intends to update these from time to time. Earlier this year, the credit card survey was reviewed and a wider range of credit card statistics are now being published (see table H3).

A further area of work planned is to investigate the availability of data on, and issues related to, New Zealanders' financial assets that are outside M3, but that are readily convertible into cash. These would include, for example, investments in unit trusts. It may be possible in future to construct a broader, quarterly measure of the financial assets of New Zealanders, even if only on an informal and indicative basis (as with the extended measures of credit referred to above).

Definitions of Resident Monetary and Credit Aggregates

The formal definitions of the resident aggregates are as follows:

M3(R) comprises:

- New Zealand notes and coins on issue;
- less those held by M3FIs;
- plus New Zealand dollar funding of M3FIs from New Zealand residents;
- less inter-institutional funding and funding from central government.

PSC(R) comprises:

- New Zealand dollar claims of M3FIs on the New Zealand (resident) private sector;
- less inter-institutional claims.

¹ Data prior to June 1990 are estimated, as one bank was not able to supply a split before that date. However, a high proportion of that bank's subsequent figures were for residents, so the estimates are likely to be reasonably accurate.

DC(R) comprises:

PSC(R), plus M3FIs' claims on central government and on marketing and stabilisation authorities.

As already noted, these aggregates differ from the official, full M3, PSC or DC in that the official measures also include New Zealand dollar funding from, or claims on, non-residents.

The Status of the Alternative Monetary Aggregates

Both the normal, full NZD aggregates and the New Zealand resident series will be published each quarter in the Bulletin. They will also be published in the Bank's Weekly Statistical Release as they become available each month. However, the full NZD series will remain the official measures of the money supply and the credit aggregates in New Zealand for the foreseeable future. An important advantage of these familiar measures is that monthly time series back to January 1981 are available. Also, the weekly estimates of M1, M3 and PSC, which are compiled from a survey of the 30 largest M3FIs, are constructed on the same basis, i.e. including non-resident NZD funding and claims.

Statistics users will need to consider which series will be most suitable for their own purposes. For example, there are some conceptual reasons why M3(R) might be more appropriate for some purposes: it may be that non-residents hold NZD deposits mainly for short-term investment purposes, while residents' deposits may be more closely related to domestic economic activity and inflation. There is currently insufficient historical data on M3(R) to formally test such propositions, and users will have to make their own judgments on the data for the time being.

In addition to the two published sets of series, it will probably also be possible in future for the Reserve Bank to construct a New Zealand resident series that includes residents' foreign currency funding and claims, as well as their New Zealand dollar funding and claims, at domestic M3FIs.² If these series are compiled, statistics users would need to consider their interpretation in terms of issues such as whether or not foreign currency deposits of New Zealand residents at local M3FIs are likely to be held mainly for investment purposes and for expenditure overseas. In general, though, a rise in foreign currency holdings of New Zealand residents would presumably represent an increase in the wealth and liquidity of New Zealanders and therefore might be expected to have some relationship to domestic economic activity.

Trends in the Resident Aggregates and their Significance as Monetary Policy Indicators

Time series of the new resident aggregates are shown in Table A6 of the statistical tables. The most notable feature of the resident aggregates is the significantly slower growth of M3(R) over the last two years or so, compared to (official) M3. Since late 1990, strong growth in non-resident New Zealand dollar funding has caused M3 to rise substantially faster than M3(R). This is shown in Figure 1. Since June 1991, the annual change in

² Such series have not been constructed yet because some analysis of unallocated components and revised series will be necessary. To date priority has been given to the resident NZD series.

M3(R) has only once risen significantly over 5 per cent. Over the same period, annual M3 growth has generally varied between 6 and 9 per cent, rising to 11 per cent on two occasions.

The influence of non-resident NZD funding on M3 is also shown in Figure 2. This shows that since mid-1991 there have often been significant differences in the monthly (seasonally adjusted) changes in M3 and M3(R), reflecting the changes in non-resident funding. Interestingly, Figure 2 also suggests that on a seasonally adjusted basis, M3(R) is not obviously more stable month to month than is M3.

Figure 1
Annual Growth in M3 and M3(R)

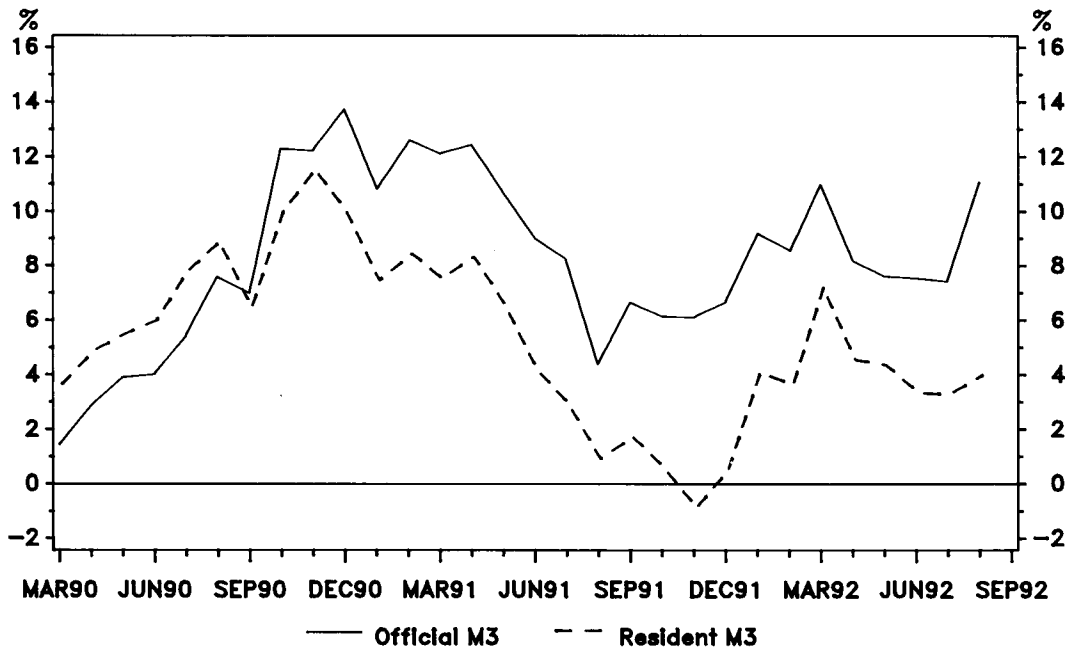
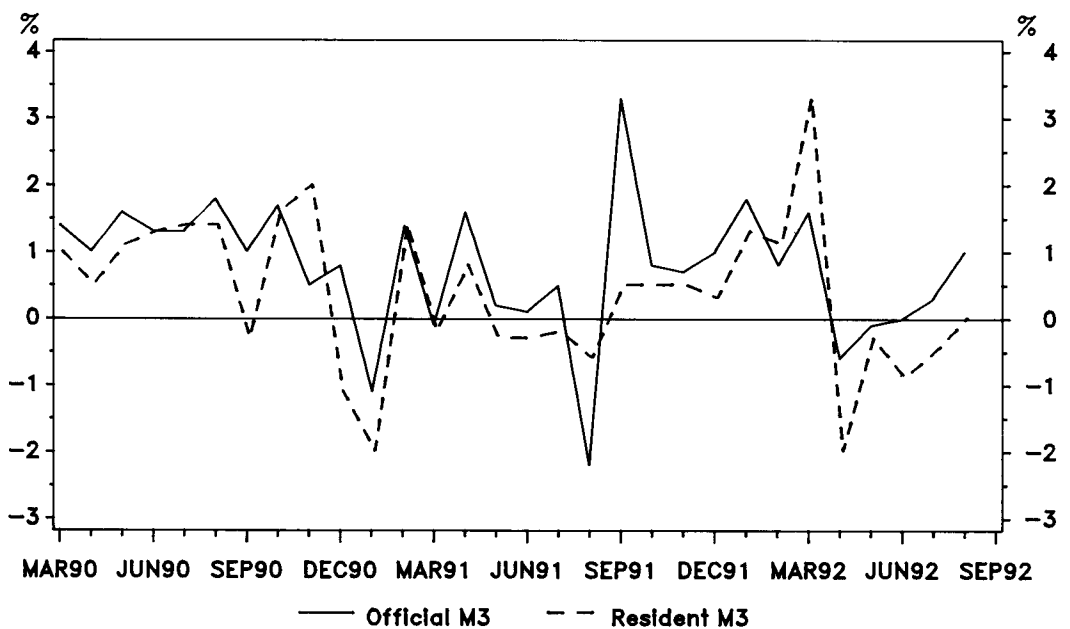


Figure 2
Monthly Growth Rates of M3 and M3(R)
(Seasonally Adjusted)



Figures 3 and 4 show that the growth rates of PSC(R) and DC(R) follow those of PSC and DC much more closely. This is not surprising as M3FIs' NZD claims on non-residents make up only about 1 per cent of their total NZD claims. At the end of August, they were \$595 million out of a total of \$65,122 million. By way of comparison, NZD funding from non-residents in August was \$9,126 million, or 14 per cent of total NZD funding.

Figure 3
Annual Growth in Private Sector Credit

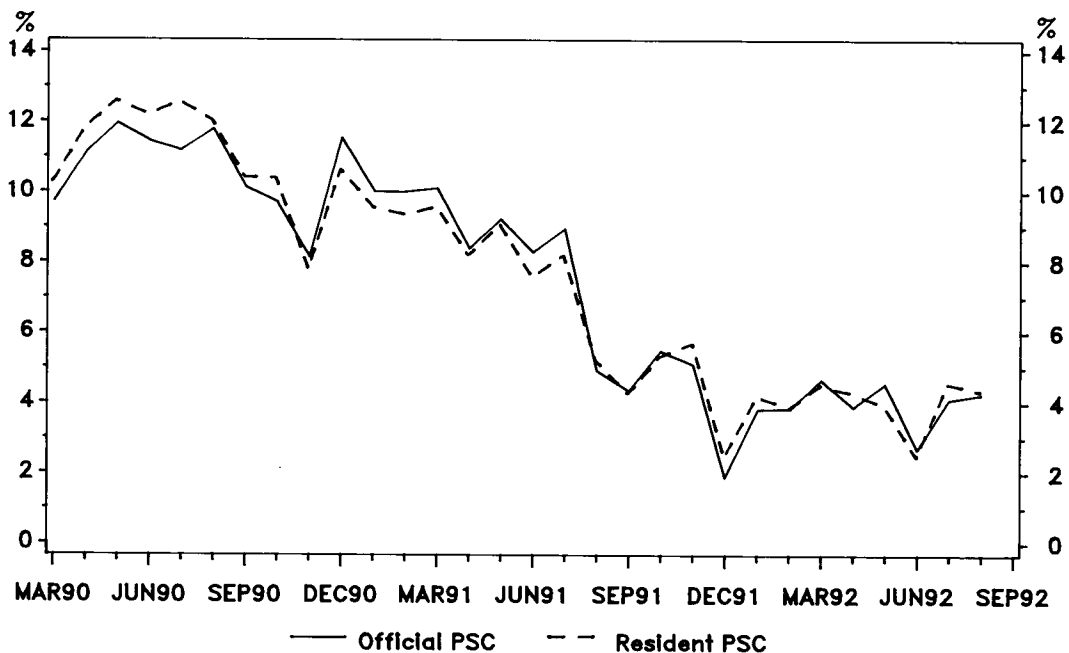


Figure 4
Annual Growth in Domestic Credit

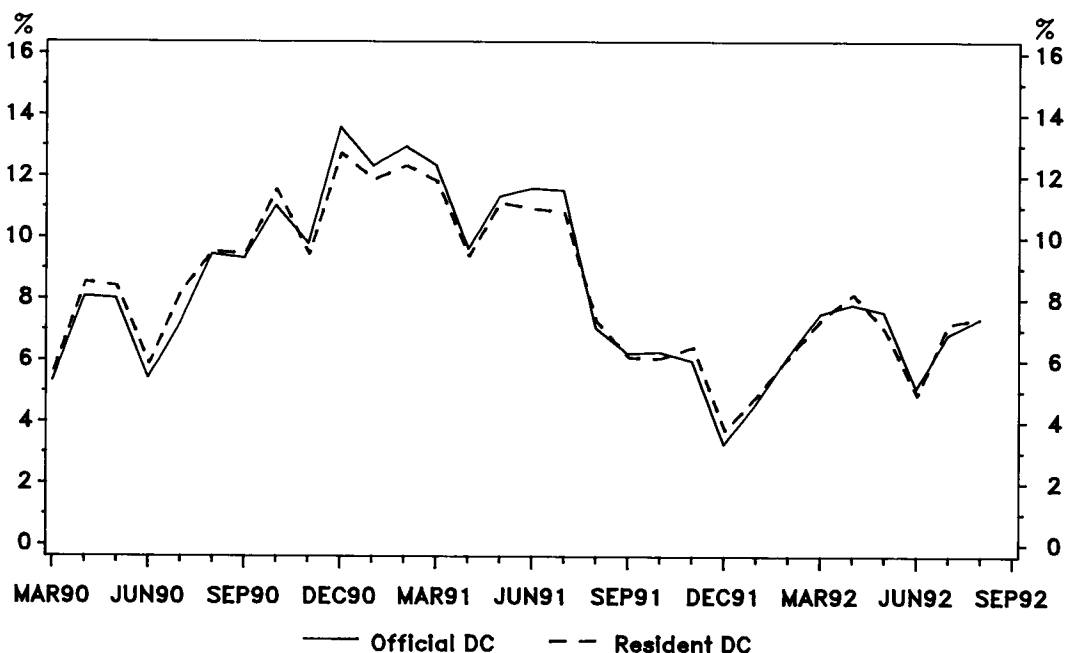


Figure 5
Annual Growth in M3, M3(R) and Nominal GDP

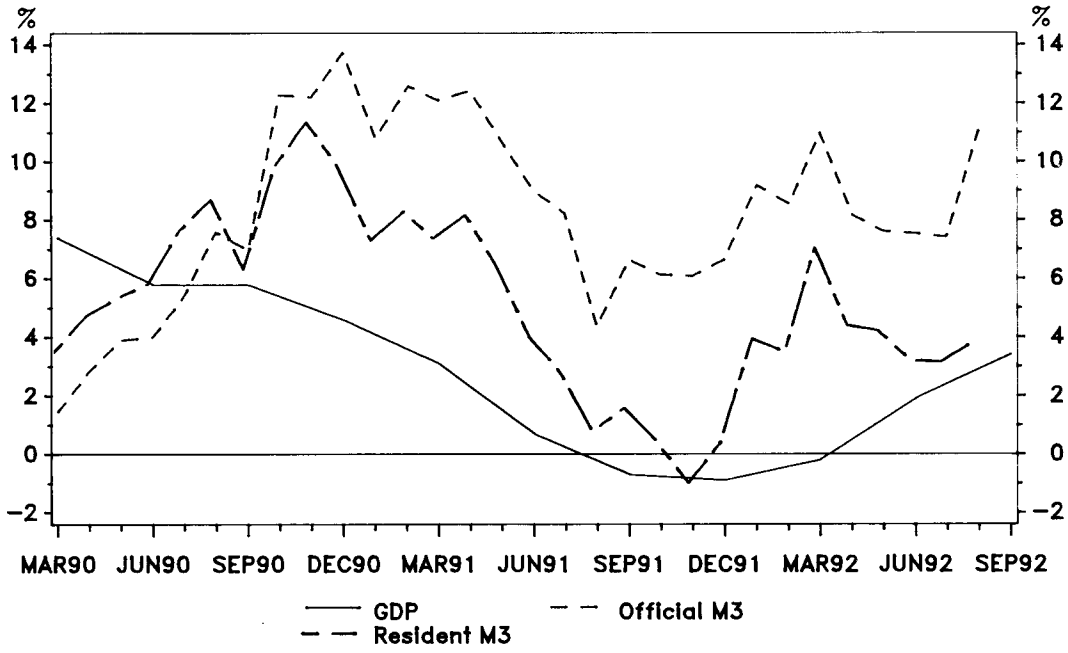
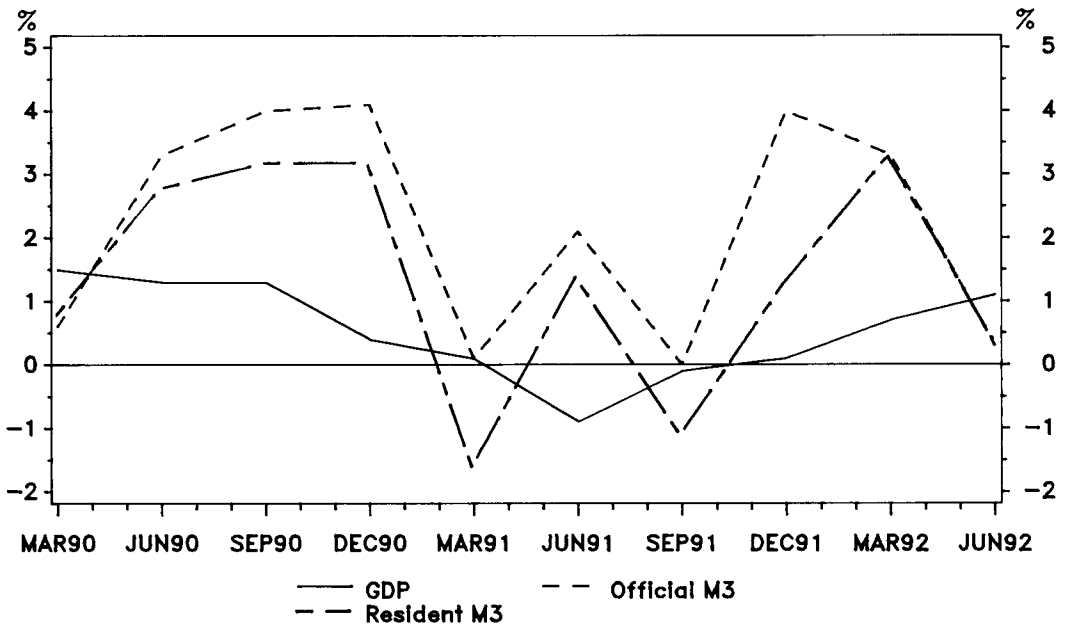


Figure 6
Quarterly Growth Rates of M3, M3(R) and Nominal GDP
(Seasonally Adjusted)



In terms of the relevance of the new resident aggregates for monetary policy, it is important to reiterate that since the mid-1980s, the Reserve Bank has monitored a wide range of financial and economic indicators. The relative weights given to different indicators has changed somewhat over time, but throughout the last few years the more important indicators for guiding day-to-day monetary policy have been the exchange rate and the level and structure of interest rates (against the background of the target inflation rate).

The (official) monetary and credit aggregates have also been included in the checklist of indicators, because money and credit creation are importantly linked to the process of inflation. The Bank, and others, have conducted several studies to investigate these linkages in New Zealand. The overall conclusion from this group of studies is that the long-run relationship between nominal income and the narrow monetary aggregates, e.g. M1, and also the credit aggregates, is generally weak or ill-defined³. On the other hand, a number of the studies found that M3 tracked nominal income well over long periods of time. However, the short-term relationships between nominal income or inflation and each of the aggregates, including M3, have not proven strong. In particular there has not been a consistent leading indicator relationship, which would have been desirable if any of the aggregates was to be central to ongoing monetary policy formulation.⁴ A high weighting has not, therefore, been attached to the monetary and credit aggregates for day-to-day policymaking, though the trends in these aggregates are still monitored closely. In particular, if most of the aggregates are moving in a similar fashion, and especially if these movements are consistent with trends in other indicators, then the Reserve Bank will incorporate this information into its monetary policy decisions.

In respect of the resident aggregates, it will not be possible to undertake similar sorts of research until longer time series are available. It will not be clear for some time, therefore, whether they will prove to have closer, or more consistent, relationships with important economic variables. Factors such as financial deregulation and innovation, and major interest rate and taxation changes, are generally believed to have altered the public's demand for various categories of money and credit, and thus affected linkages to other economic variables. These influences would have operated on the resident series as well as the official statistics.

Comparing the official and resident M3 measures on a less formal basis, Figure 5 suggests that the relationship between M3(R) and nominal Gross Domestic Product (GDP) in recent years has probably not been either significantly better, or significantly worse, than that between M3 and nominal GDP. During 1990, the annual growth rates of M3 and M3(R) followed a generally upward trend while GDP growth was declining. In 1991, M3 and M3(R) growth rates turned down while GDP growth continued to decline. Then, from late 1991 and through 1992, all three growth rates rose. However, there was often a wide and variable margin between either of the money growth rates and

3 There is some evidence, however, of a relationship between narrower aggregates (currency or M₁) and consumption measures, albeit complicated by other factors.

4 For more detail see "The New Zealand Monetary Aggregates" by A. Wong and A. Grimes, Chapter 2.1 of "Monetary Policy and the New Zealand Financial System - 3rd edition", published by the Reserve Bank in 1992.

Figure 7
Annual Growth in M3, M3(R) and CPI

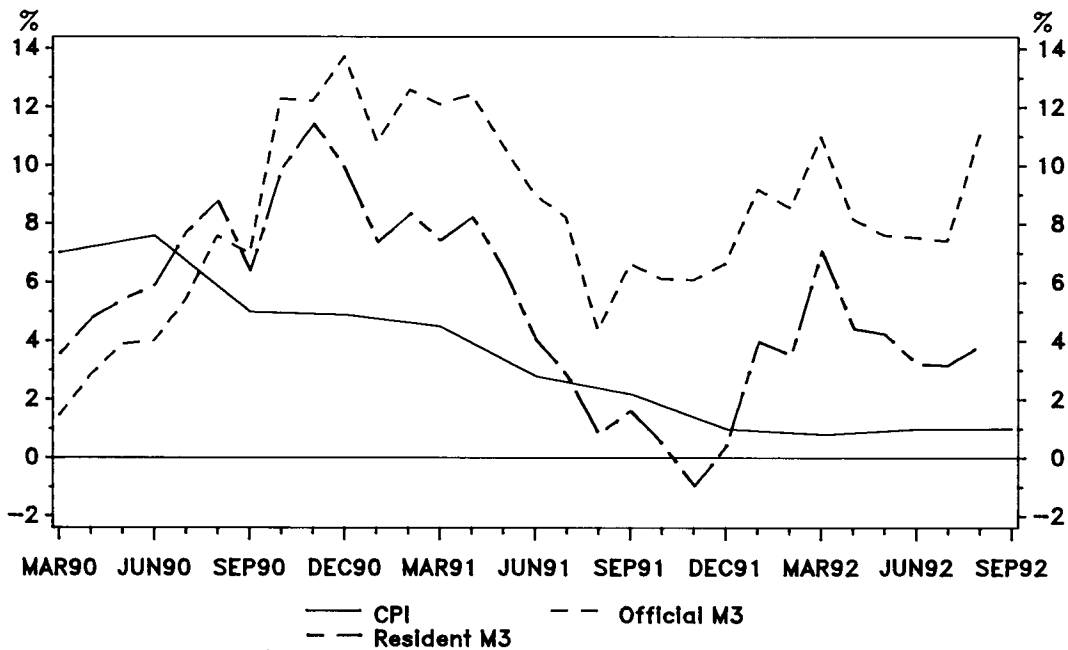
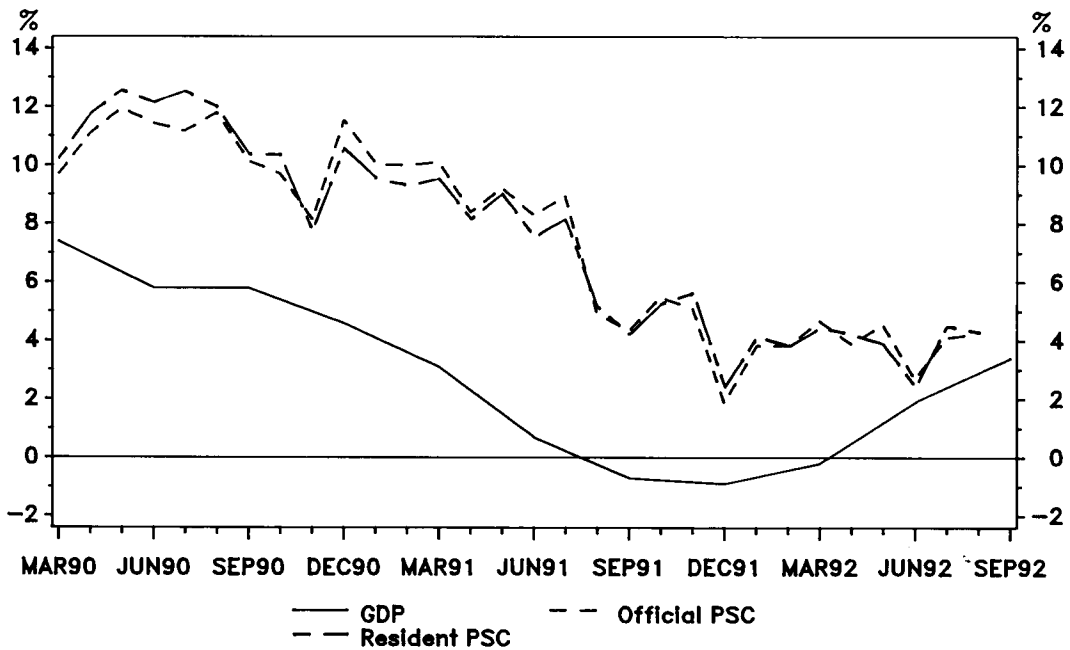


Figure 8
Annual Growth in PSC, PSC(R) and Nominal GDP




GDP growth.

Figures 6 and 7 point to similar conclusions. The quarterly (seasonally adjusted) growth rate of M3(R), in Figure 6, does not appear to have had a closer relationship with the corresponding growth in nominal GDP than has M3. And the growth rates of the M3 measures and the CPI, shown in Figure 7, also suggest M3(R) is no more closely related to CPI movements than M3.

Figure 8 shows the annual growth rates of PSC, PSC(R) and nominal GDP. The growth rates of PSC and PSC(R) follow very similar paths, as already noted and shown in Figure 3, which indicates that PSC(R) will not show significantly closer relationships to important economic variables than does PSC.

Conclusion

In the near future, at least, the resident-only versions of the money and credit aggregates are unlikely to be considered any more important as monetary policy indicators, by themselves, than the normal, full (resident and non-resident) money and credit aggregates. Indeed, the familiar money and credit aggregates (rather than the resident-only versions) will continue to be considered as the 'official' measures for some time to come. Nevertheless, the publication of the new resident-only series should assist in the ongoing interpretation of developments in money and credit, and as a longer history of the resident series builds up over time, it will become possible to assess more formally the relative merits of the different measures. 

SUMMARY OF ECONOMIC FORECASTS
(Annual percentage changes of annual totals of averages)

	Actual	Estimate	Forecasts	
March years	1991	1992	1993	1994
<i>Real Expenditure on GDP</i>				
Final Consumption Expenditure:				
- Private	-0.9	0.2	2.1	2.5
- Public authority	1.2	-1.5	-1.0	-1.5
- TOTAL	-0.5	-0.2	1.5	1.7
Gross Fixed Capital Formation				
- Market Sector:				
- Residential	1.2	-13.9	4.5	2.2
- Business	-2.0	-16.8	2.9	8.1
- Non-Market Government Sector	-1.6	-17.2	-5.7	0.6
- TOTAL	-1.4	-16.3	2.5	6.4
Final Domestic Expenditure	-0.7	-4.3	1.7	2.7
Stockbuilding ¹	-0.4	-1.7	1.0	0.8
Gross National Expenditure	-1.1	-5.8	2.7	3.5
Export of goods and services	8.8	6.2	5.3	2.7
Imports of goods and services	3.4	-7.3	4.2	3.7
EXPENDITURE ON GDP	0.2	-1.0	3.0	3.1
(Expenditure on GDP, March qtr to March qtr)	-2.2	1.4	2.9	3.2
<i>Government Accounts²</i>				
Financial balance (\$m)	-2559 ³	-3162	-2990	-2440
as a % of GDP	-3.5 ³	-4.2	-3.8	-3.0
Primary Balance as a % of GDP	2.0 ³	0.6	1.0	1.9
<i>External Account</i>				
BOP current account balance (\$M)	-2090	-330	-40	-170
as a % of GDP	-2.8	-0.4	-0.0	-0.2
SNA Terms of trade	-5.4	-3.4	2.4	1.1
<i>Incomes</i>				
Real household disposable incomes	-2.2	1.8	0.6	3.0
<i>Inflation⁵</i>				
Consumer price inflation	4.5	0.8	1.2	1.0
Underlying CPI Inflation	3.6	1.3	1.9	0.9
<i>Labour Market⁵</i>				
HLFS employment	-0.5	-0.9	1.5	1.8
HLFS Official Unemployment ('000's)	160.4	180.9	183.6	192.2
HLFS Official Unemployment Rate (%)	9.9	11.1	11.1	11.4
¹ Percentage point contribution to growth rate of GDP. ² June years ³ Excludes proceeds from the sale of Crown Forestry Assets. ⁴ Includes estimated revaluation effects on the Government's foreign currency assets.				