

SURVEY OF EXPECTATIONS

This article, prepared by Andrew McDouall and Robin Clements, presents the results from the December 1989 quarter Reserve Bank of New Zealand Survey of Expectations.

Introduction

The RBNZ Survey of Expectations for the December quarter 1989 was conducted by MRL Research Group on Wednesday, 15 November 1989. Note that the results of the survey represent expectations held by *respondents* and in no way represent views or forecasts of the Reserve Bank.

As appears to be a regular feature, some of the survey results have again been affected by a significant announcement near to the survey date. In this case, major revisions to the current account statistics were foreshadowed immediately following the survey date which, in combination with an earlier revision subsequent to the September survey, make the current account expectations difficult to interpret.

A summary of the results appears below, with discussion of the Government Financial Balance now re-

placing that of the Table 2 Balance. Likewise this change is reflected in the following tables.

Sample Composition

The response rate for this quarter was 68 per cent, with 179 of the 262 respondents in this quarter's sample having returned their completed questionnaires to MRL Research Group by the cut-off date.

Of the respondents whose completed questionnaires were received by the cut-off date, the distribution across the activity groups was:

Financial	74
Business	61
Agricultural	19
Labour	8
Other	17
TOTAL	179

Summary of Results

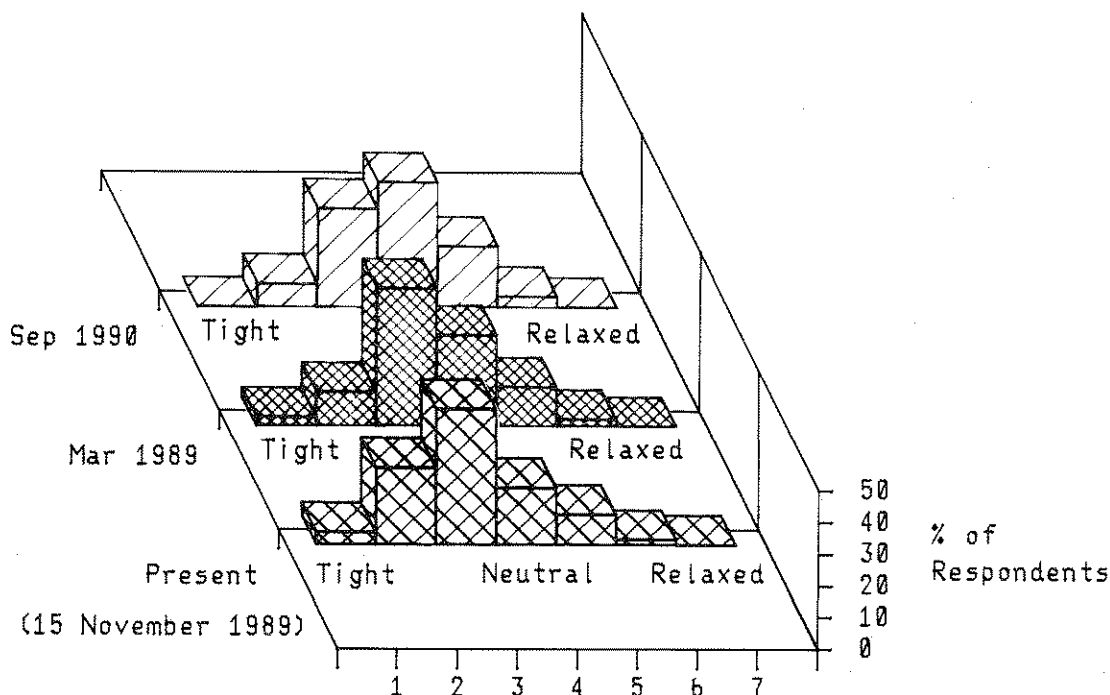
• Perceptions of tighter current and prospective monetary conditions.

There has been a movement towards perceptions of tighter monetary conditions in each of the time periods surveyed. In particular, some 71 per cent of respondents consider that current monetary conditions are tighter than neutral; this is 15 per cent above the September quarter survey but still below the June quarter figure. Similarly, both the one quarter ahead and year ahead figures reflect a shift in favour of an expectation of tighter monetary conditions. However, nearly 40 per cent of respondents still expect monetary conditions to be neutral by September 1990, practically unchanged from the previous survey.

The expectation for the current quarter annual M3 growth rate has

Figure 1

Perceptions of Current and Future Monetary Conditions



remained the same as in the September quarter survey at 5.6 per cent while the M3 growth rate expected in the year ahead has fallen from 6.4 per cent to 5.8 per cent.

• **Little change in long-term inflationary expectations.**

The CPI is expected to rise by 1.5 per cent in the December 1989 quarter and 1.3 per cent in the March 1990 quarter, taking expected annual inflation to 7.5 per cent and 7.7 per cent respectively. With an expected outcome of 5.5 per cent in the year to September 1990, average increases of 1.3 per cent in each of the June and September 1990 quarters are implied. Despite a higher outcome in the September quarter than expected in the last survey, the expectation for the CPI rise in the December quarter has risen only slightly since the last survey as has the two year ahead expectation.

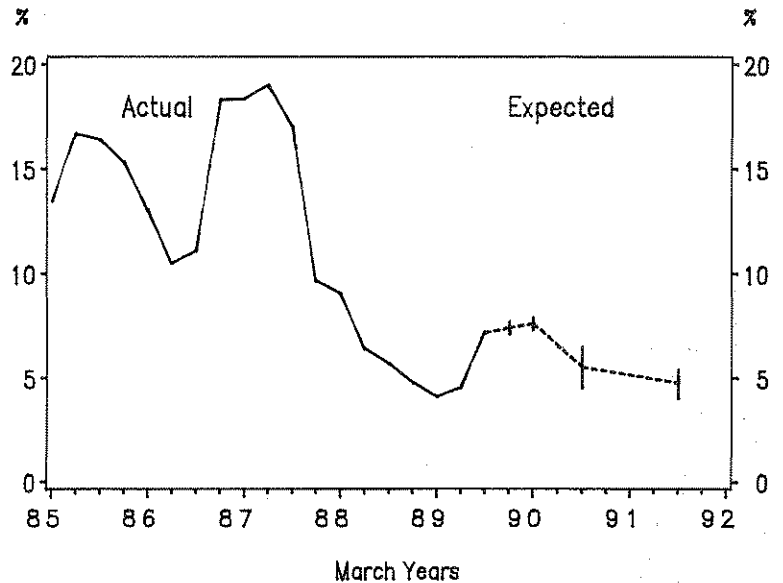
• **Interest rates still expected to decline.**

Expectations for short-term interest rates have risen from the September survey, with the expected end of quarter bank bill rate rising nearly 1 per cent to 13.5 per cent. However, declines in interest rates are still anticipated over the next 12 months and the expected path for government stock yields is virtually unchanged. The expected yield gap for the current quarter has risen from around 0.5 percentage points in the September quarter survey to 1.1 percentage points anticipated by the end of December 1989, before falling slightly to 0.8 percentage points by September 1990.

• **Trade Weighted Index expected to be stable.**

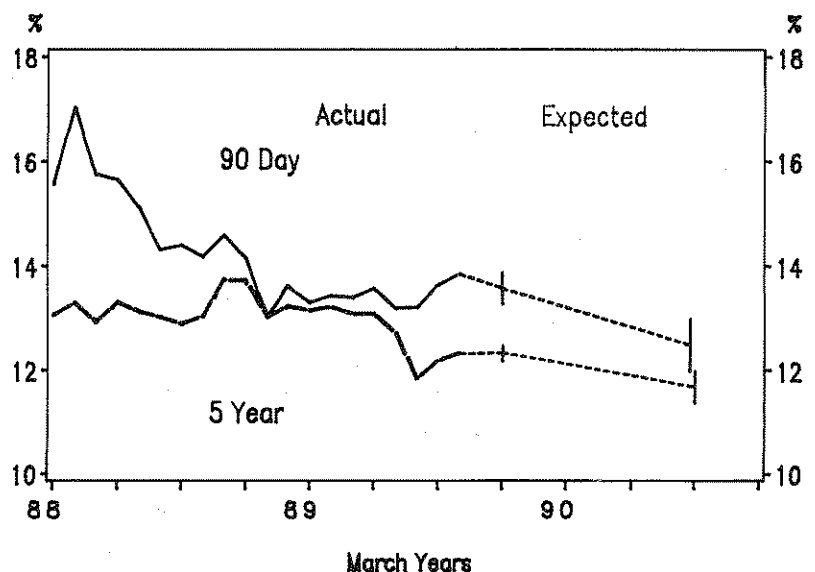
A depreciation of all the major cross rates is expected over the next year with the exception of the Australian dollar, where an appreciation of around 2 per cent is anticipated in

Figure 2
Actual And Surveyed Expectations Of The Annual Percentage Change In The Consumers Price Index



Note: 25% of Expectations fell above and below the band shown

Figure 3
Actual And Surveyed Expectations Of 90 Day Bank Bill And Five Year Government Stock Interest Rates



Note: 25% of Expectations fell above and below the band shown

the coming year. However, the TWI is not expected to alter much over the next twelve months with increases of 0.1 per cent or less in each of the next two quarters and no change over the year ahead.

- **Growth in real activity still expected.**

The degree of optimism shown in the September survey seems to have receded slightly in the short run but a growth rate of 1.3 per cent is still expected for real GDP over the next year. In the September quarter survey a growth rate of 0.4 per cent was expected for the September 1989 quarter. However, respondents are now less confident about the September quarter with no growth anticipated but with the December quarter expected to produce a 0.4 per cent rise.

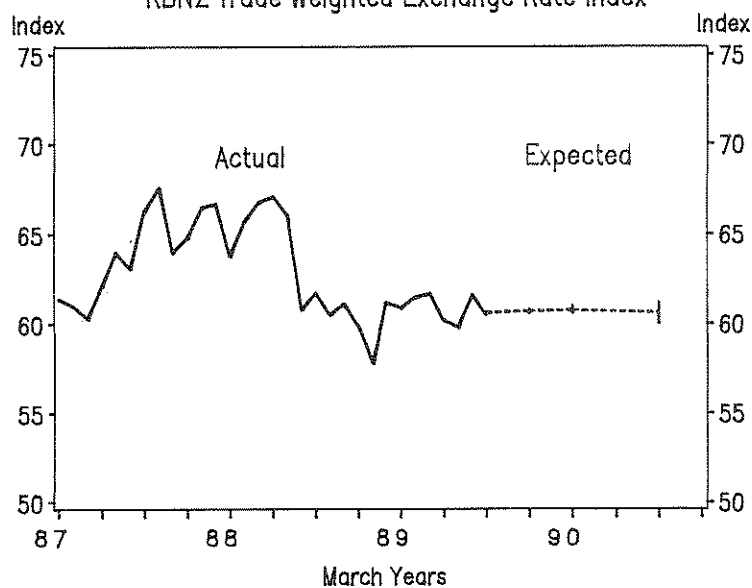
- **Worse current account anticipated.**

Assuming that these expectations were formed on the basis of the statistics which suggested a current account deficit in the order of \$250 million in the year to March 1989, they indicate a much worse outlook than portrayed in the September survey. The current account is expected to deteriorate in the year to December 1989 and to remain at that level in the ensuing year. (Further major revisions to the current account statistics were foreshadowed immediately after this survey was conducted.)

- **Expectation of an improved Government Financial Balance.**

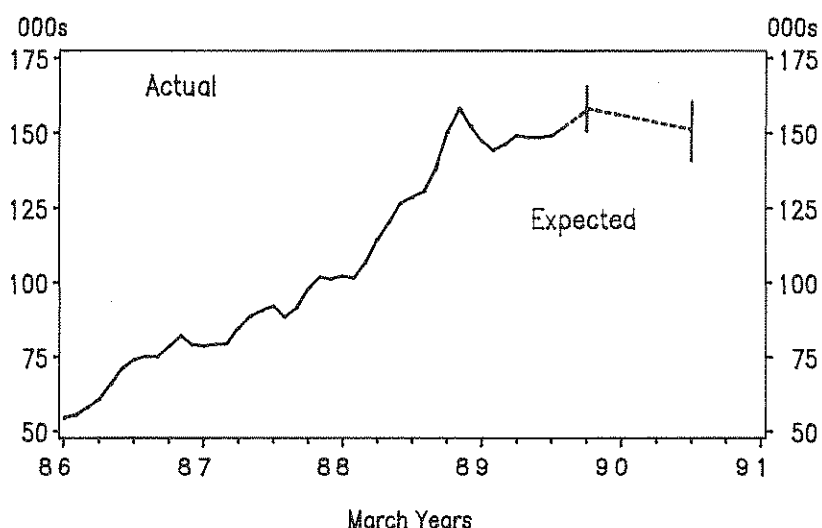
A sizeable improvement in expectations of the Government Financial Balance has occurred in this survey, with the balance in the fiscal year ending June 1990 now expected to be in deficit by \$0.4 billion; a halving of the expected deficit recorded in the previous survey and some \$0.7 billion less

Figure 4
Actual And Surveyed Expectations Of The RBNZ Trade Weighted Exchange Rate Index



Note: 25% of Expectations fell above and below the band shown

Figure 5
Actual And Surveyed Expectations of the number of Unemployed Persons registered with the Labour Department



Excludes persons on Special work schemes and vacation workers
Note: 25% of Expectations fell above and below the band shown

than that expected in the June 1989 survey. A further improvement is expected in the fiscal year to June 1991 when the deficit is expected to be \$0.2 billion.


- **Average wage rates are expected to rise by 5 per cent.**

The annual percentage change in the prevailing weekly wage rates index for the year to September 1990 is expected to be 5 per cent, largely unchanged from the 4.9 per cent figure expected in the September quarter survey.

- **Unemployment still expected to fall.**

The number of unemployed persons registered with the Labour Department (excluding special work schemes and vacation workers) is expected to be 157,000 by the end of December 1989, unchanged from the end of quarter perceptions of the previous survey. By September 1990, registered unemployment is expected to have declined to 151,000, slightly below the year ahead figure expected in the September survey.

The next survey is tentatively scheduled for 14 February 1990, with the results to be presented in the March 1990 issue of the Bulletin.



**SURVEY OF EXPECTATIONS
HISTORICAL RESULTS¹**

Monetary Conditions:²

Q.1 What is your perception of monetary conditions at the present moment:

Survey Qtr	Very Tight			Neutral			Very Relaxed
	1	2	3	4	5	6	
Dec. 1988	0.5	18.0	53.4	17.5	9.5	1.1	0.0
Mar. 1989	0.5	11.2	56.3	17.0	13.6	1.0	0.5
June 1989	1.7	25.6	55.7	13.6	3.4	0.0	0.0
Sept. 1989	1.6	11.8	42.8	31.0	11.2	1.6	0.0
Dec. 1989	3.9	24.2	42.7	18.0	9.6	1.7	0.0

Q.2 What expectation do you have for monetary conditions at the end of (reference quarter):

Survey Qtr	Reference Qtr	Very Tight			Neutral			Very Relaxed
		1	2	3	4	5	6	
Dec. 1988	Mar. 1989	1.1	13.2	45.3	28.4	10.5	1.6	0.0
Mar. 1989	June 1989	1.0	8.3	34.6	35.1	15.1	5.4	0.5
June 1989	Sept. 1989	2.8	17.6	48.9	23.3	6.3	1.1	0.0
Sept. 1989	Dec. 1989	1.1	7.5	36.4	41.2	12.3	1.6	0.0
Dec. 1989	Mar. 1990	2.8	10.7	43.3	28.7	12.4	2.2	0.0
Dec. 1988	Sept. 1989	0.5	6.9	25.4	43.9	20.1	3.2	0.0
Mar. 1989	Dec. 1989	1.5	4.9	24.4	38.5	23.9	5.4	1.5
June 1989	Mar. 1990	1.1	8.0	31.4	38.9	17.1	3.4	0.0
Sept. 1989	June 1990	1.6	3.7	24.6	41.7	24.6	3.2	0.5
Dec. 1989	Sept. 1990	0.0	7.3	30.9	39.3	19.1	3.4	0.0

Q.3 What is your expectation of the annual % change in the M3 money supply for the year to (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	9.3	7.1	4.7	5.6	5.6
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	8.5	7.6	6.1	6.4	5.8

Prices:

Q.4 What quarterly % change do you expect in the Consumers Price Index (C.P.I.) for the (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	1.1	1.2	1.2	2.5	1.5
Reference Qtr	Mar. 89	June 89	Sept. 89	Dec. 89	Mar. 90
Mean	1.1	1.3	2.3	1.4	1.3

Q.5 What annual % change do you expect in the Consumers Price Index (C.P.I.) for the year to (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	4.8	4.8	6.0	6.2	5.5
Reference Qtr	Sept. 90	Dec. 90	Mar. 91	June 91	Sept. 91
Mean	4.7	4.9	4.7	4.6	4.8

Interest Rates:

Q.6 What do you expect the 90-day Bank Bill market yield to be at the end of (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	13.9	13.3	13.3	12.7	13.5
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	12.6	12.4	12.5	11.9	12.5

Q.7 What do you expect the 5-year Government Security market yield to be at the end of (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	12.6	12.8	13.0	12.2	12.4
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	11.6	12.1	12.3	11.5	11.7

Exchange Rates:

Q.8 Relative to the following currencies, what spot exchange rate do you expect for the New Zealand dollar at the end of (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
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US Dollar

Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	0.616	0.605	0.617	0.593	0.587
Reference Qtr	Mar. 89	June 89	Sept. 89	Dec. 89	Mar. 90
Mean	0.608	0.596	0.611	0.590	0.584
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	0.597	0.587	0.603	0.582	0.579

Australian Dollar

Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	0.757	0.690	0.773	0.779	0.753
Reference Qtr	Mar. 89	June 89	Sept. 89	Dec. 89	Mar. 90
Mean	0.749	0.692	0.775	0.784	0.759
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	0.744	0.702	0.775	0.780	0.767

Pound Sterling

Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	0.353	0.348	0.365	0.362	0.370
Reference Qtr	Mar. 89	June 89	Sept. 89	Dec. 89	Mar. 90
Mean	0.348	0.344	0.359	0.360	0.369
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	0.342	0.343	0.356	0.355	0.365

Japanese Yen

Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	78.5	78.5	82.3	82.2	83.8
Reference Qtr	Mar. 89	June 89	Sept. 89	Dec. 89	Mar. 90
Mean	77.2	77.1	81.2	81.6	82.8
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	75.9	75.9	80.0	80.5	81.8

Q.9 What quarterly % change do you expect in the Reserve Bank Trade Weighted Index for the (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	-0.5	-1.2	0.6	0.4	0.1
Reference Qtr	Mar. 89	June 89	Sept. 89	Dec. 89	Mar. 90
Mean	-0.5	-0.5	-0.3	-0.1	0.1

Q.10 What annual % change do you expect in the Reserve Bank Trade Weighted Index for the year to (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	-2.5	-2.0	0.0	-0.8	0.0

Others:

Q.11 What is your expectation of the seasonally adjusted quarterly % change in the real Gross Domestic Product (G.D.P.) index for the (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Sept. 88	Dec. 88	Mar. 89	June 89	Sept. 89
Mean	-0.2	-0.2	0.2	0.3	0.0
Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	0.1	0.1	0.4	0.4	0.4

Q.12 What is your expectation of the annual average % change in the real Gross Domestic product (G.D.P.) index for the year to (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	0.3	0.4	1.0	1.3	1.3

Q.13 What is your expectation of the External Balance of Payments on Current Account (in \$ billions) for the year to (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	-1.5	-0.5	-0.8	-1.1	-0.8
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	-1.4	-0.4	-0.7	-1.0	-0.7

Q.14 What is your expectation of the Government Financial Balance (in \$ billions) for the fiscal year to:

Survey Qtr		June 89	Sept. 89	Dec. 89
Reference Qtr		June 90	June 90	June 90
Mean		-1.1	-0.8	-0.4
Reference Qtr		June 91	June 91	June 91
Mean		-0.8	-0.4	-0.2

Q.15 What is your expectation of the annual % change in the prevailing weekly wage rates index for the year to (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	4.7	4.3	4.5	4.9	5.0

Q.16 What do you expect the number of unemployed persons registered with the Labour Department (excluding special work schemes and vacation workers, in 000's) to be at the end of (reference quarter):

Survey Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Reference Qtr	Dec. 88	Mar. 89	June 89	Sept. 89	Dec. 89
Mean	141	161	161	157	157
Reference Qtr	Sept. 89	Dec. 89	Mar. 90	June 90	Sept. 90
Mean	145	165	162	152	151

¹ The survey quarter refers to the quarter in which the survey was undertaken, while the reference quarter refers to the quarter (period ended or the quarter itself) for which the expectation was held.

² Results for questions 1 and 2 are in the form of percent of total responses in each category, while the remainder of the questions report the mean expectation.

AN INVESTIGATION OF MONETARY TARGETS IN A NEW ZEALAND CONTEXT 1981-1986

Discussion Paper G89/6 –
A.M.G. Coleman* and
P.F.J. Cruse

In this paper we assess the suitability of several monetary and credit aggregates as intermediate target variables of monetary policy over the period 1981-1986. The aggregates are primarily evaluated on the basis of the strength, stability and direction of causality of their relationship with nominal economic activity. Three methods of evaluation are used: Granger causality tests, St. Louis reduced form regressions (both of which test the linkages in the short run) and the cointegration technique (which tests the long run linkage). The main result from this paper is that none of the aggregates conventionally advocated as targets meet the evaluation criteria listed above (which is in contrast with previous New Zealand studies). The implication for monetary policy is that none of the monetary or credit aggregates would have been suitable intermediate target variables for monetary policy over the period 1981-1986.

We find that Domestic Credit meets some of the evaluation criteria, but has some major drawbacks as a target variable. The reduced form results for the aggregate show that it is a significant explanatory variable of nominal activity. Furthermore, the results from the analysis of the long run relationship show that Domestic Credit and nominal GDP are cointegrated (that is, they are related in the long run), with causality running both ways between the two aggregates. Most importantly, Domestic Credit is found to influence nominal GDP. A problem with the long run result is that Domestic Credit and nominal GDP do not exhibit a one to one relationship: a ten per cent change in Domestic Credit leads to a seven per cent change in nominal GDP whereas, on theoretical grounds, we would expect a ten per cent change in nominal GDP to result.

Two further caveats should be mentioned. First, no evidence of causality between the variables can be found in the short run Granger causality tests indicating that a stable short term linkage does not exist even though a long term relationship does exist. However, since this relationship is likely to be distorted by exogenous influences, a mechanical response of the price level to changes in Domestic Credit cannot be expected. Secondly, disaggregation of Domestic Credit into Private Sector Credit and Government Credit indicates that nominal GDP has a different short run response to the two components. In particular, movements in nominal GDP are negatively correlated with movements in Government Credit in the short term (although positively correlated in the long run) suggesting some form of crowding out.

The M3 aggregate also passes some of the evaluation criteria. In particular, the results from the long run analysis are encouraging, although again, a one to one relationship is not found. M3 is found to influence both nominal GDP and Domestic Credit in the long run. However, the reduced form analysis finds M3 to be a poor target in terms of its short run explanatory power on nominal GDP. The reduced form equation estimated for M3 also fails a number of *a priori* requirements. The Granger causality results also suggest that M3 has some shortcomings as a target variable.

In contrast to Domestic Credit and M3, we find that M1 is a useful short run target variable, with movements in M1 partially reflected in nominal GDP within two or three quarters. In the long run however, growth in M1 is caused by growth in nominal GDP and is therefore demand determined. This latter fact limits its use as a target variable to control inflation. However, M1 may be a useful indicator, given that nominal GDP is only measured quarterly and with a long lag, while M1 is published each month and is much more timely.

* The contribution by Andrew Coleman was made while he was still in the employ of the Reserve Bank of New Zealand.

MONEY AND CREDIT DEMAND IN NEW ZEALAND: 1973-1986

*Discussion Paper G89/7 –
Roger Greville*

Considerable attention has been paid to monetary and credit aggregates in the theoretical and empirical economics literature in recent decades. During the 1970s and 1980s many countries adopted targets for one or more aggregates on the basis of the existence of a close stable relationship between rates of growth in an aggregate and developments in the ultimate objective e.g. inflation or nominal income. More recently, such targets have been either abandoned or played down in many countries, as previously apparently stable empirical relationships have broken down.

In this paper, the New Zealand data is examined to test whether stable demand relationships for any of the aggregates existed over the sample period (1973-1986), as an indication as to whether any of the aggregates would be suitable for use by the Reserve Bank as either leading indicators or intermediate targets. Long-run equilibrium and short-run dynamic equations for the demand for various money and credit aggregates were estimated using the two-stage error-correction model estimation approach developed by Engle and Granger.

The most favourable results were found for the narrower monetary aggregates. Real consumption, short-term interest rates and technological innovation were found to be important factors in determining the long-run real demand for notes held by the public and for real M1 transactions balances. However, the real demand for notes held by the public was found to be negatively related to the real share price index and the inclusion of this variable was necessary to establish an acceptable long term relationship among the variables tested; this result could not be satisfactorily rationalised and consequently draws the results for that equation into question.

The long-run demands for M3, M3 excluding demand deposits, and Private Sector Credit were found to be related to real consumption and real investment. However, these functions were unstable and could not be adequately identified using the single equation estimation techniques which were applied. The cause(s) of the instability could not be isolated, but it was concluded that the dramatic structural changes to the financial sector and the subsequent financial innovations that have taken place over recent years were undoubtedly factors contributing to the difficulty in identifying the underlying determinants of these aggregates.

This paper concludes that on the basis of the empirical evidence, only the narrow aggregates could be considered for use as indicators of monetary conditions, and that in practical terms even these aggregates will be of little use for targeting purposes. The fact that the activity variable (consumption) included in both the notes and M1 equations moved contemporaneously with the monetary aggregates, suggested that the aggregates are not leading indicators of either changes in nominal or real economic activity. The only possible way in which these aggregates could be considered as leading indicators would be if the monetary aggregates data became available significantly more quickly than information about real and nominal activity. It was further concluded that unless the monetary authorities have reliable indicators which allow them to distinguish between changes in note or M1 demand which are due to changes in real activity (or other factors) and changes in note or M1 demand which are associated with changes in the price level, the narrow aggregates will be of little use when assessing monetary conditions. The conclusions of this research are consistent with the Reserve Bank's practice of putting relatively little weight on the monetary and credit aggregates in the monitoring and assessment of monetary conditions.

MODELLING THE FINANCIAL ASSET HOLDINGS OF THE NON-BANK PRIVATE SECTOR IN NEW ZEALAND

*Discussion Paper G89/8 –
Alfred Y-T. Wong
Arthur Grimes and
Chris S. Meads**

This paper estimates the responsiveness of the non-bank private sector's demand for financial assets to changes in financial wealth and interest rates in New Zealand. The degree of substitutability between money and other financial assets plays an important role in determining the effectiveness of a policy of monetary aggregate targeting if such a policy were to be adopted. Traditionally, monetary authorities have wished to target a monetary aggregate which has a predictable relationship to a nominal macro-economic aggregate (e.g. nominal wealth, nominal income or the price level) and which shows little, if any, responsiveness to interest rate changes or to movements in other variables. The reason why an aggregate that is responsive to interest rate changes is not suitable as a strict monetary target is that it becomes difficult, in such a case, to interpret changes in the aggregate. One cannot adopt a strict growth rate target for such an aggregate because if interest rates change, real demand for the aggregate will change and if monetary policy is used to keep the nominal aggregate on target, the result will be an undesired shift in the price level.

In estimating the responsiveness of asset demands to interest rate and wealth changes, we have utilised a portfolio specification (based on consumer theory's so-called 'Almost Ideal Demand System') which considers the interactions between all the variables concerned. Our use of the cointegration estimation technique enables the long-run equilibrium relationship between the financial variables to be estimated along with the short run dynamic relationships.

Our estimates suggest that the adoption of a strict monetary aggregate target may not be appropriate in New Zealand for two reasons. Firstly, the explanatory power of the estimated equations is not as high as would be desirable if a strict targeting approach were to be adopted. Lack of a high degree of explanatory power for the equations means that there is considerable leeway in the money-price relationship, even after accounting for the influence of other factors such as interest rates. However, based on explanatory power, one would prefer to target M1 or M3 rather than a larger aggregate which includes government security holdings.

In terms of interest rate responsiveness, M3 appears a preferable target to M1, particularly when there is an across-the-curve rise in rates. If both short and long rates rise equally by one percentage point, M3 is estimated to remain unchanged, whereas M1 falls by almost 8 per cent. However, M3 does vary if only short or long rates change (and especially if they change in opposite directions), so that M3 is not as suitable a target for monetary policy when the yield curve is tilting. The potential for interest rate changes to influence M1 and M3 holdings, together with the substantial short-run residuals that remain unexplained, points to each of M1 and M3 being retained solely as an indicator within a wider checklist of monetary conditions, rather than being elevated to the status of an intermediate target of monetary policy.

* The contribution by Chris Meads was made while he was still in the employ of the Reserve Bank of New Zealand.