REVIEW OF MONETARY CONDITIONS AND POLICY

In this article, Michael Reddell reviews the reasons why disinflationary monetary policies can involve real sector costs and then discusses recent developments in monetary conditions and policy.

Since the floating of the New Zealand dollar in March 1985 monetary policy has been directed more effectively than was previously possible towards reducing the rate of inflation. More specifically, the intention is to achieve sustainable low single digit rates of inflation, similar to or below those of New Zealand's major trading partners. However, it has always been recognised that achieving this goal would take time and that after almost twenty years of high inflation there could be potentially significant real costs associated with achieving permanent reductions in inflation. This article reviews the reasons for the costs associated with disinflation and, with this as background, goes on to consider developments in monetary conditions, inflation and inflation expectations, and monetary policy over the period from August to early November.

Monetary Policy, Disinflation and Credibility

In the world of the elementary textbook, characterised by perfect competition and perfect certainty, questions regarding the costs of disinflation and the appropriate pace of disinflation do not arise. Here a government can reduce or eliminate inflation simply by announcing and carrying through its intention to lower the growth rates of money and credit aggregates; all expectations and price-setting behaviour adjust in response to the announced change of policy without any loss of output or employment. The key questions which have faced policymakers in practice over recent years regarding the speed and costs of disinflation arise because of two main factors. Firstly, most markets are by no means perfectly competitive — most prices do not adjust instantaneously. Secondly, and probably more importantly, in a world characterised by uncertainty, government statements and policies designed to reduce inflation tend not to be totally credible to either the public or financial markets — in the light of the public's previous inflationary experiences, most governments do not start off with a reputation for being primarily concerned to reduce or eliminate inflation. That reputation has to be earned.

In discussing disinflation, relatively fixed prices are perhaps of most importance in the labour market. Wage contracts (awards) are generally negotiated for the year ahead and are only rarely renegotiated before the expiry date, regardless of any change in circumstances. Both employers and employees gain one form of certainty from these arrangements, but both face the risk that the actual inflation rate will differ from the expected rate implicitly allowed for in the wage settlement. If an unanticipated disinflationary shock occurs during the course of an award, employers face a market unable to sustain a constant volume of sales at the prices they had allowed for or expected when negotiating wages. Profit levels, and probably sales, can be expected to fall, and as these losses cannot be recouped in the short term by cutting wages, both output and employment are also likely to fall.

However, the existence of relatively fixed nominal price contracts alone cannot explain why the optimal path of disinflation in New Zealand should be spread over three or more years. Wage contracts are generally negotiated for only one year and most other prices in the economy are reviewed or adjusted over a shorter time horizon, so why wouldn't prices and wages have returned to equilibrium real levels, within a year following the introduction of a disinflationary policy, with only short-lived losses of output and employment? Furthermore, the costs of disinflation could be avoided altogether in such an environment, if the Government preannounced its intention to reduce the inflation rate, and gave all parties adequate time to adjust prices and wages to reflect the future path of nominal demand.

The principal reason for the length of the disinflationary process and for the existence of potentially high real costs in achieving a sustained reduction in the rate of inflation, is the lack of credibility frequently accorded to disinflationary policies. Having been ultimately responsible for sustained inflation in the past, governments do not readily attain a public reputation as being principally concerned with reducing inflation, even when key personnel change, or the ruling party itself changes. There are various aspects to the credibility problem.

Although all recent New Zealand governments have stated that reductions in the inflation rate are an important goal, since the mid-1960s inflation in this country has consistently exceeded 5 per cent per annum and has often been significantly higher than in our major trading partners. Thus, it is not too surprising that the current Government's repeatedly stated determination to achieve low inflation has not yet been fully reflected in either inflation expectations or behaviour. Although most economic agents may be willing to assign some probability to the prospect that the Government will achieve its stated inflation goals, they also wish to cover themselves against the historically significant risk that these goals will not be achieved. The risk of such a failure or policy reversal arises because at some point the real short-term costs might be assessed by policymakers to be no longer worth the benefits of low inflation (so that there is an easing of the disinflation policy); or because the intentions of policy might not be backed byy sufficiently tight monetary conditions and adequate monetary and credit control (i.e., the policy is not implemented properly).

Furthermore, after fifteen to twenty years of high inflation in New Zealand, large sections of the public cannot remember having experienced sustained low inflation. Even among those who can, most people pay little attention to the complexities of macroeconomic policy, and can reasonably be expected

to base their spending decisions on the assumption that the relatively high rates of inflation experienced in recent years are a good indicator of likely average future inflation. This implicit perception that a 'natural' rate of inflation exists at a relatively high level reinforces the credibility problem and the difficulty of reducing expectations.

A further possible reason for the slow adjustment in medium-term inflation expectations is that not everyone necessarily believes or understands that the particular set of policy measures directed at disinflation will actually work, irrespective of the above problems. If such people are price-setters themselves, or advisers to price-setters, there is a further reason for inflation expectations to hold up until actual reductions in inflation are experienced. Even when inflation has been reduced, doubts may persist as to whether the low inflation rates can be sustained once the recessionary phase is over, and whether full employment is in fact consistent with low inflation over the medium term.

This sort of problem seems to have particularly affected countries such as the United States and the United Kingdom when they used strict control over monetary conditions as a tool to bring about marked reductions in inflation in the early 1980s. Given the success of such policies in achieving significantly reduced inflation rates in these countries and in others subsequently (though certainly not without cost), New Zealand's efforts to overcome inflation have probably been accompanied by less widespread scepticism overseas than domestically.

As a result of these factors, expectations of the inflation rate often remain relatively high, even in the face of a monetary policy which is consistent with significant reductions in the rate of growth of nominal demand. As a result, prices, wages, and interest rates are initially set at unduly high levels, which the actual rate of growth of nominal demand cannot accommodate. Reductions in real output and employment follow, and in the short run, at least, the reduction in the actual rate of inflation may be relatively limited.

The magnitude of the costs of disinflation will depend on both the size and length of the gap between inflationary expectations and the rate of growth in nominal demand, and thus the extent to which real interest and/or exchange rates remain above long-term equilibrium levels to overcome the persistently high expectations. Accordingly, influencing inflation expectations and enhancing policy credibility are key elements in any successful disinflationary strategy. Any measures that significantly enhance the confidence of economic agents in both the political will and the monetary policy means to ensure that inflation goals are achieved, reduce the costs of disinflation and/or enable disinflation to be pushed ahead more rapidly. On the other hand, any indication that the authorities are willing to compromise the inflation objectives will erode whatever hard-won gains in reputation and credibility have already been made, and make the eventual elimination of inflation even more costly. (As discussed further below, considerations such as these were an important element behind the increase in the Bank's penalty discount margin in October.)

As governments are unable to irrevocably bind themselves or their successors to the pursuit of disinflation, some doubt will inevitably remain until a long-term track record of low inflation is established. Building and maintaining a reputation for inflation control is a classic case of a 'virtuous circle'. Increased confidence in the authorities' intentions reduces inflation expectations, minimising the costs of adjustment, and so increasing the likelihood that disinflationary policies will be consistently pursued, which in turn further reinforces the credibility of the authorities.

Although the credibility of disinflationary monetary policy is of crucial importance, there are other policy measures which can significantly reduce the real sector costs of disinflation. In the New Zealand context, these include reductions in the Government's financial deficit (i.e. the deficit before asset sales and debt repayments from SOEs), further reductions in the level of trade protection, and increased labour mobility and wage flexibility. In particular, a lower Government borrowing requirement means that less upward pressure on interest rates and the exchange rate is required to achieve a desired reduction in the rate of growth of nominal demand — for example, a voluntary reduction in government spending would take the place of involuntary reductions in private sector spending and activity.

The degree of flexibility and competition in markets is also an important influence on the real costs of adjustment and this is particularly influenced by the level and extent of trade protection, and the degree of flexibility in the labour market. For example, for those areas of the manufacturing sector which are still quite highly protected — particularly where that protection is by way of import licensing — the pressures to restrain costs and prices are considerably less. An acceleration of the process of reducing protection would help shift the burden of adjustment away from internationally competitive industries and increase the responsiveness of domestic prices and resources to changes in nominal demand, interest rates, and the exchange rate. Similarly, greater flexibility in the labour market would help ease the pressure on industries with a long-term competitive advantage, directly contribute to lower inflation, and help promote a faster redeployment of the labour force to the more productive occupations, industries and regions.

An additional point worth noting is that the direct impact of the imposition of the 10 per cent Goods and Services Tax (GST) in October

1986 may have delayed somewhat the disinflationary process by holding up the inflation expectations of some sections of the general public, who appear to have partially confused the one-off effect of GST with ongoing inflation. However, with the December 1987 quarter consumer price index figure, the GST effect will drop out of current annual inflation rates. To the extent that GST has served to hold up inflation expectations, this decline in the annual inflation figure may have a beneficial impact on expectations and interest rates.

Notwithstanding all of the above, inflation could probably have been eliminated far more rapidly in New Zealand by following a sufficiently draconian monetary policy. However, such an approach would have resulted almost inevitably in larger increases in unemployment, more permanent losses of productive capacity, and more severe economic and social dislocation due to larger numbers of factory closures, mortgagee sales and so on. Medium-term inflation expectations might still have fallen only slowly; whether because of doubts as to the political will to sustain the policy, or because of New Zealand's past inflation record, or because of fears that sharp falls in the exchange rate and interest rates would follow the initial disinflationary period and result in a subsequent upsurge in inflation. At the other extreme, there has also been the danger of pursuing disinflation so cautiously that there is little evidence of pressure on prices and thus little basis on which to expect people to alter their short and medium-term inflation expectations. Given New Zealand's relatively poor record on inflation and relatively inflexible goods and labour markets, a middle path needed to be chosen to avoid imposing intolerable pressure on the exposed sectors of the real economy. In line with this the Government has sought to achieve low single figure inflation over a medium-term time horizon of three to five years.

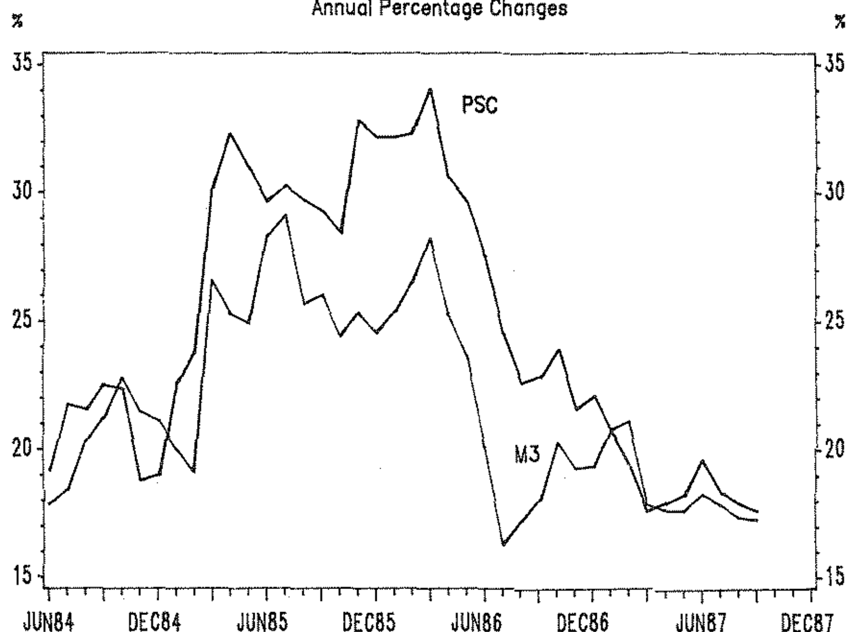
Monetary Conditions and Inflation Indicators

As will become clear below, considerations relating to the speed of disinflation and the credibility of the disinflationary process have been important over the review period. In particular, despite a tightening of monetary conditions over the second half of the September quarter (following the easing that occurred from April until August), concerns began to mount in September over the relatively slow rate of progress in reducing both inflation and inflationary expectations. These concerns culminated in an announced tightening of monetary policy in early October, in which the Bank's penalty discount margin was raised from 1 percentage point to 1.5 percentage points.

As discussed in the September issue of the *Bulletin*, immediately following the August election there were some signs that monetary and liquidity conditions were tightening, after a period of relative ease, with short-term interest rates and the yield gap starting to increase. In addition, there were reports from banks suggesting that credit demand had recently been weakening at prevailing lending rates, although the buoyancy of the commercial property market and the sharemarket complicated the task of ensuring adequate reductions in the rate of growth in credit and nominal demand. The subsequent release of monetary and credit aggregate data for June, July and August tended to confirm these impressions. The seasonally adjusted annualised rate of growth of M3 over these three months fell to little over 7 per cent, significantly lower than over the preceding three months (although the annual growth rate fell only slightly to 17.3 per cent by the end of August). Similarly, there had been a sharp reduction in the rate of growth of Private Sector Credit (PSC) over the three months to August. The annual rate of growth fell slightly to 17.9 per cent, and the (seasonally adjusted) annualised rate of growth of PSC fell to only 7 per cent in the three months to August, compared with 20.4 per cent in the three months to May, the lowest recorded since June 1986.

The post-election firming in liquidity conditions was not sustained for

Figure 1
Money and Credit Aggregates
Annual Percentage Changes



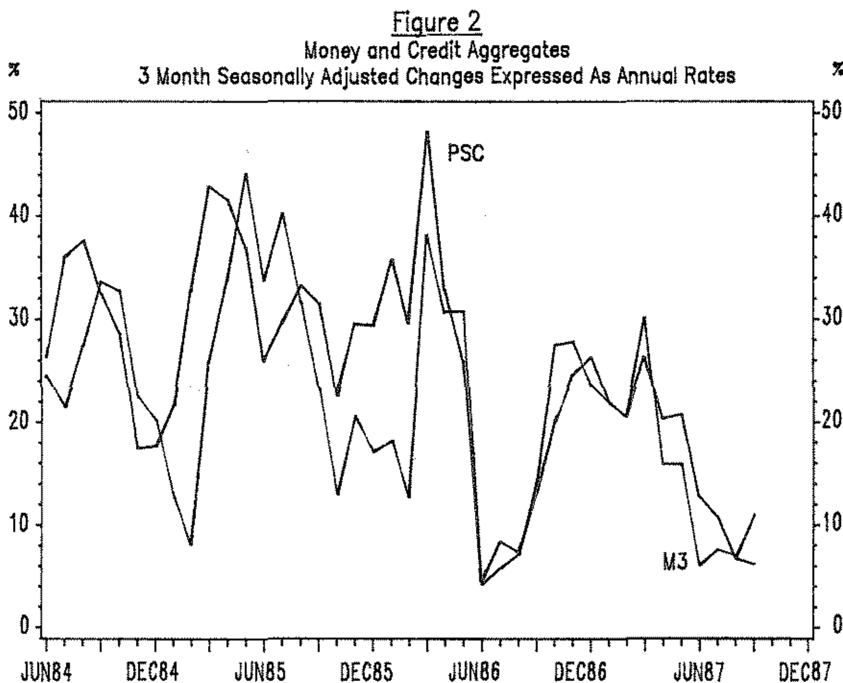


Figure 2
Money and Credit Aggregates
3 Month Seasonally Adjusted Changes Expressed As Annual Rates

long however, and the interest rate yield curve was not moving in the manner which had been expected. In particular, there was little evidence of a reversal of the move into short-term instruments which had been accepted as a plausible explanation for the easing in short-term rates prior to the election. With political uncertainty no longer a factor, the state of the indicators in early September suggested that liquidity conditions were insufficiently firm. One aspect of this was that the market appeared to have become more comfortable with the handling of liquidity conditions by the Reserve Bank, given an apparent improvement in the accuracy of the Bank's daily liquidity forecasts.

Accordingly, the Bank's daily settlement cash target was lowered from $30 million to $20 million as from 2 September 1987. Following the reduction in the cash target, there was a significant tightening in liquidity conditions in the days leading up to the tax flow period, but this pressure did not persist for long. For example, the yield gap between 90 day commercial bill and five year government stock yields rose from 2 percentage points on 1 September to peak at 3.5 percentage points on 7 September but fell back to below 2.7 percentage points by the end of the month. Similarly, shorter rates rose by up to 2 percentage points to over 20 per cent after the lowering of the cash target, but for most of the rest of the month traded in the range 19.25-19.45 per cent, and weakened further at the end of the month.

Despite the somewhat easier liquidity conditions after the first week of September, the exchange rate rose steadily throughout the month by a total of almost 8 per cent. This rise appears to have reflected strong interest in overseas New Zealand dollar bond issues, in view of the high nominal bond rates (which were becoming increasingly attractive relative to falling Australian rates), and possibly some increased overseas interest in the rising New Zealand stock market. In addition, following the election and the Bank's action in reducing the cash target there appears to have been an increased degree of confidence in foreign markets as to the commitment of the Government to continue its tight monetary policies and hence maintain a strong exchange rate.

As noted previously, the apparent confidence in foreign markets did not appear to be matched domestically, given a range of evidence which emerged about the rate at which domestic inflation expectations, and actual inflation were falling.

On the latter, although a favourable September quarter CPI increase was expected, it was by no

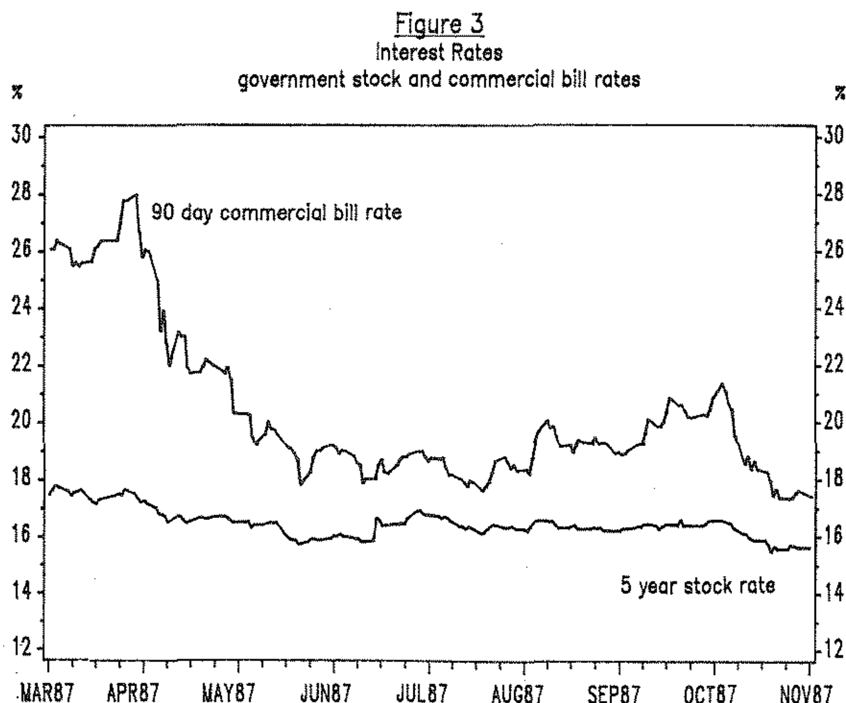


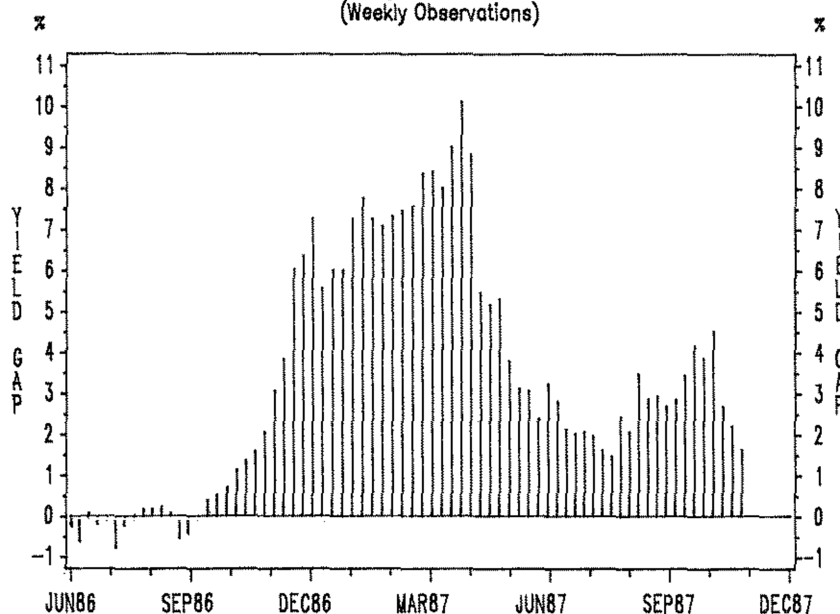
Figure 3
Interest Rates
government stock and commercial bill rates

means clear on the basis of available evidence that this would be repeated in the December quarter. Similarly the 0.3 per cent reduction in the Food Price Index for August was largely attributed to the influence of a mild winter on the prices of fresh fruit and vegetables, and a reasonably substantial increase appeared likely for September. In respect of housing, a major influence on the CPI, the Urban House Property Price Index released in September showed a 10.7 per cent increase in house prices over the first half of 1987. In addition, there was anecdotal evidence of rapid ongoing price rises in the major cities and reports of a large pent-up demand for housing finance should lending rates fall. Finally, producers prices for June showed further substantial increases.

However, the results of the Bank's late-August survey of expectations provided the clearest cause for doubt that inflation pressures and expectations had been adequately overcome. Only slightly more than 50 per cent of survey respondents regarded monetary conditions as being even moderately tight, and on average they did not expect the annual rate of inflation, as measured by the CPI, to fall to single figures until June 1988 (9.8 per cent for the June year); even by June 1989, inflation was only expected to have fallen to 8.3 per cent. These expectations appeared to be underpinned by relatively large expected increases in prevailing wages (8.7 per cent in the year to June 1988), which were higher than the 7.5 increase in the preceding year despite increasing unemployment and a high real exchange rate. Consistent with these results, the main forecasting bodies (including the Bank) announced upward revisions to their inflation forecasts.

The combination of all these factors, together with the level and slope of the interest rate yield curve, suggested that medium-term inflation expectations were sticking at a level of around 8-10 per cent.

To influence both inflation and



inflation expectations, and ensure faster rates of reduction in both variables than had hitherto been achieved, a tightening in the settings of monetary policy was decided on. It was expected that the announcement effect on expectations of an overt tightening of policy could potentially be of as much significance as the contractionary impact of the actual change in settings.

A range of options for achieving the desired tightening was considered, including reductions in the cash and/or primary liquidity targets as well as the chosen option of raising the penalty margin applying to the discounting of primary liquidity securities at the Reserve Bank. In choosing among the policy options the main criterion was the degree to which any change in the instrument settings would clearly be seen as an effective tightening of policy and thus likely to influence expectations.

Actual primary liquidity levels have been permitted to fluctuate fairly widely to meet variations in demand, while the cash target has also been altered quite frequently, again usually for 'technical' reasons, i.e. in response to a change in demand rather than as an overt tightening of policy. By contrast, the penalty discount margin of one percentage point above assessed market rates had been unchanged over the entire disinflationary period. An increase in this margin (having the effect of increasing the demand for an already reduced supply of settlement cash), reinforced by strong statements of explanation and intent, was viewed as being most likely to signal a clear tightening in the stance of policy. In addition, there were technical reasons for some increase in the margin. This was to retain the intended effective penalty on discounting, given a recent increase in the level of voluntary discounting, and a shorter average maturity expected for discountable securities in the following five months. The latter reflects the build-up in primary liquidity levels. for that period to accommodate tax flows and SOE payments to the Government.

Following the increase in the discount margin of 0.5 percentage points on 7 October 1987, Liquidity conditions firmed moderately. Com-

mercial bill rates rose to stand at over 20 per cent by 9 October 1987, reinforced by the relatively low levels of PL at the time and the slightly worse than expected 0.9 per cent September increase in the Food Price Index. Although the policy tightening was widely welcomed in the financial markets as enhancing the credibility of monetary policy, the five-year stock rates traded up, based on higher funding costs, to peak at around 16.45 per cent, before dropping back slightly to around the levels prevailing prior to the policy announcement.

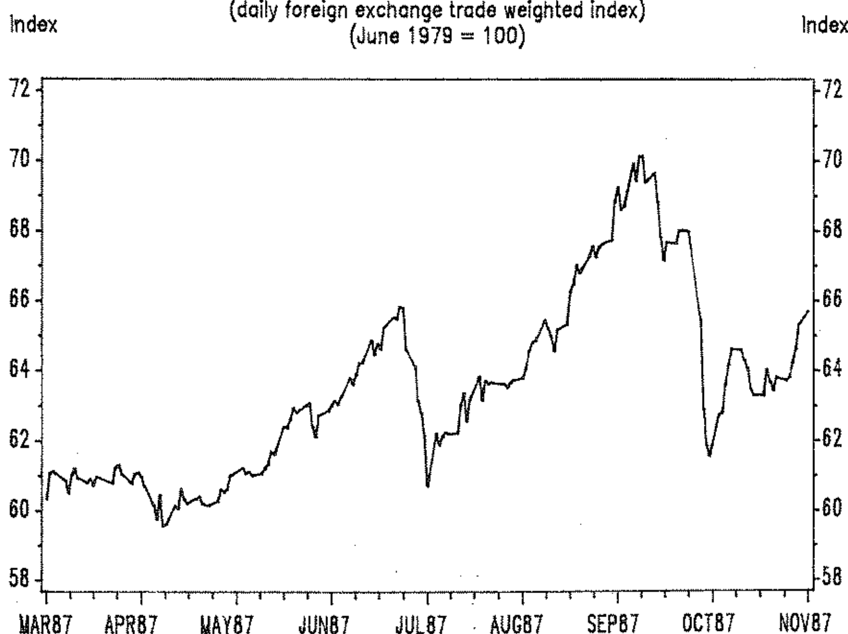
On 13 October 1987 the September quarter CPI increase of 1.6 per cent was announced. Although well below the June quarter increase, the outcome was only slightly below the anticipated range, and in money and bond markets rates declined very little before drifting back up, with the yield gap standing at around 3.5 percentage points by the end of the day. In any event, the CPI result was eclipsed by sharp movements in the exchange rate which, since the policy tightening, had been largely unchanged at around 70 on the Bank's trade weighted index. Following comments by a member of the Government regarding intervention in the foreign exchange market, and despite attempts to clarify the position, the Bank's exchange rate index fell by around 4 per cent in little over 24 hours. The markets remained extremely nervous over the following few days, with call rates rising to peak at over 23 per cent.

But this event too was soon overshadowed. The dramatic decline in both world and local share markets commencing in late October has presented a major change in the financial and economic environment. It is too early at this stage to give a definitive analysis of the likely results of the share market decline, since so much depends on the length and severity of the shake out in financial markets. This in turn depends to a large extent on near-Term policy developments in the United States (and other major economies), where a sharp loss of confidence in the commitment to address longstanding internal and external imbalances appears to have been the major trigger for the decline.

Although a full assessment of the implications for monetary conditions and policy, and for the economic outlook, will need to wait until the dust settles somewhat, a preliminary analysis can at least point to the direction of some of the likely effects. The net effect of the decline on real domestic output and expenditure is likely to be negative and this will occur through two main channels. First the reduction in domestic wealth and heightened uncertainty is likely to lead to a weakening of consumption and investment expenditures by households and businesses alike, especially in the commercial property market. Secondly, the reduction in wealth overseas and the measures that will be required to address the inbalances between the major economies will have a similar effect on spending in the economies of our major trading partners. This will result in both lower volumes and lower commodity prices, thus reducing the levels of activity and income in the traded goods sector.

While there will clearly be a overall depressive effect on economic activity, the extent of the influences described will depend on the way in which the initial shock is transmitted through the economy. In particular a significant decline in real economic activity could eventuate if the fragility in the share market were to generate severe repurcussions in other asset and financial markets; such a risk would be heightened if the reduction in confidence was reflected in actions by financial institutions to contract their lending activities too sharply as they moved rapidly to liquify their port-folios. To avert such a possibility in the wake of the falls in the share market crash the Bank has affirmed that, while reducing inflation remains the dominant goal in the medium term, the Bank has a responsibility to ensure the availability of adequate liquidity to maintain the integrity and stability of the financial system. Consistent with this approach, the Bank responded to a perceived build-up in demand for precautionary liquid balances by raising its daily cash target to $30 million on 6 November 1987, to maintain confidence and avoid any unnecessary

Figure 5
Nominal Exchange Rate
(daily foreign exchange trade weighted index)
(June 1979 = 100)



pressures on interest rates. Following this move the whole interest rate structure moved down, especially at the short end, with the yield gap falling to around 1.5 percentage points by 18 November 1987, and the five-year stock rate standing at around 15.70 per cent.

Conclusion

Both the Government and the Reserve Bank remain committed to the objective of achieving stable and sustainable low single digit rates of inflation in New Zealand within the next 2-3 years. In a world of uncertainty, where governments lack perfect policy credibility, inflation cannot be eliminated overnight, or even in a very short period of time without very serious consequences for the real sector of the economy. However, even allowing for this, progress to date in reducing inflation has probably not been as fast as desired. The inflation expectations, expenditure and price decisions of many sections of the public have been slow to adjust and do not yet fully reflect the commitment of the authorities to disinflation. Doubtless, New Zealanders' experience of high rates of inflation over the last two decades is a major reason for this.

A range of new evidence which came available over the review period pointed to the need for a policy tightening, largely to help overcome the continuing high expectations of inflation; this was achieved through an increase in the penalty discount margin announced in early October. The Bank believes that present monetary policy settings are appropriate to achieve the Government's inflation goals, and with the added impact of the sharemarket crash, it is looking for more significant reductions in the inflation expectations of the public over the next few months. Further progress in reducing the government's financial deficit, in reducing the degree of trade protection and in increasing the degree of flexibility in the labour market would also materially assist the achievement of sustainable low inflation rates by reducing the real sector costs of disinflation and enhancing the flexibility and responsiveness of New Zealand markets to changing economic conditions. These factors remain of crucial importance in the wake of the recent dislocations in world financial markets.

OPEN MARKET OPERATIONS
Period: 4 September 1987 - 15 October 1987

Date 1987	Transaction	Maturity	Volume Offered $m	Volume Bid $m	Total Amount Sold $m	Total Amount Purchased or Advanced $m	Range of Bids Received %	Range of Successful Bids %	Average of Successful Bids %
4 Sept	Sellback	15/09/87	70	207	—	70	18.85-20.57	19.62-20.57	20.09
7 Sept	Sellback	9/09/87	60	110	—	60	19.25-20.28	20.28	20.28
	Sellback	15/09/87	25	85	—	25	19.45-20.12	20.12	20.12
8 Sept	Sellback	16/09/87	10	60	—	10	19.38-20.2	20.2	20.2
9 Sept	Treasury Bills	23/09/87	10	45	10	—	19.75-20.2	19.75	19.75
10 Sept	Sellback	16/09/87	60	110	—	60	18.61-19.71	19.48-19.71	19.54
	Sellback	22/09/87	35	115	—	35	18.73-19.97	19.79-19.97	19.93
11 Sept	Sellback	21/09/87	60	65	—	60	18.49-19.83	18.57-19.83	18.8
	Sellback	22/09/87	60	65	—	60	18.61-19.81	18.61-19.81	18.89
14 Sept	Sellback	15/09/87	50	110	—	50	17.15-18.76	18.36-18.76	18.58
15 Sept	Treasury Bills	7/01/88	25	56	25	—	18.83-19.24	18.83-18.94	18.9
	Treasury Bills	8/01/88	25	48	25	—	18.83-19.27	18.83-18.97	18.91
	Treasury Bills	11/01/88	25	40	25	—	18.83-19.3	18.83-19.24	18.99
	Treasury Bills	12/01/88	25	67	25	—	18.65-19.33	18.65-18.88	18.77
	Treasury Bills	25/02/88	50	43	40	—	18.87-19.49	18.87-19.49	19.12
	Treasury Bills	26/02/88	50	36	33	—	18.87-19.49	18.87-19.49	19.13
	Treasury Bills	21/03/88	40	33	28	—	18.84-19.5	18.84-19.49	19.03
	Treasury Bills	31/03/88	250	221	204	—	18.72-19.54	18.72-19.49	19.19
17 Sept	Treasury Bills	25/02/88	10	61	10	—	19.27-19.54	19.27-19.31	19.28
18 Sept	Government Stock	15/02/88	40	22	—	5	18.18-19.0	19.0	19.0
	Government Stock	15/03/88		5	—	5	18.65	18.65	18.65
22 Sept	Government Stock	15/02/88	30	19	—	14	18.45-18.94	18.94	18.94
	Government Stock	15/03/88		9	—	4	18.39-18.75	18.75	18.75
	Government Stock	15/09/88		34	—	9	18.0 -18.27	18.2 -18.27	18.24
24 Sept	Government Stock	15/02/88	10	18	—	2	18.51-18.8	18.8	18.8
25 Sept	Government Stock	15/02/88	255	16	—	—	18.5 -18.66	—	—
	Government Stock	15/09/88		37	—	30	17.89-18.09	18.05-18.09	18.05
	Sellback	29/09/87		240	—	100	18.4 -19.08	18.8 -19.08	18.95
	Sellback	30/09/87		65	—	25	18.3 -18.75	18.63-18.75	18.7
	Sellback	1/10/87		125	—	60	18.25-19.1	18.7-19.1	18.97
	Sellback	7/10/87		95	—	40	18.25-19.3	18.99-19.3	19.18
28 Sept	Treasury Bills	27/10/87	30	224	30	—	17.97-19.0	17.97	17.97
	Treasury Bills	17/03/88	20	109	20	—	18.65-19.0	18.65-18.68	18.68
29 Sept	Government Stock	15/11/87	40	15	—	4	17.77-18.25	18.25	18.25
30 Sept	Treasury Bills	12/02/88	115	56	13	—	18.72-19.15	18.72-18.8	18.79
	Treasury Bills	26/02/88		70	17	—	18.68-19.18	18.68-18.79	18.74
	Treasury Bills	10/03/88		60	12	—	18.78-19.15	18.78-18.8	18.8
	Treasury Bills	21/03/88		47	12	—	18.69-19.0	18.69-18.8	18.75
	Treasury Bills	31/03/88		146	41	—	18.65-19.25	18.65-18.82	18.72
	Treasury Bills	7/04/88		70	0	—	18.89-19.19	—	—
	Treasury Bills	27/04/88		78	20	—	18.59-19.18	18.59-18.69	18.64
1 Oct	Treasury Bills	11/02/88	15	50	7	—	18.87-19.1	18.87-18.88	18.87
	Treasury Bills	10/03/88		43	8	—	18.83-19.04	18.83	18.83
7 Oct	Government Stock	15/02/88	30	11	—	—	18.65-18.72	—	—
	Government Stock	15/03/88		16	—	5	18.5 -18.85	18.72-18.85	18.8
	Sellback	14/10/87		135	—	20	18.78-19.17	19.08-19.17	19.09
9 Oct	Treasury Bills	13/07/88	40	115	40	—	19.73-21.05	19.73-20.2	19.96
12 Oct	Treasury Bills	8/04/88	50	68	25	—	19.49-20.49	19.49-19.7	19.64
	Treasury Bills	6/07/88		69	5	—	19.98-20.33	19.98	19.98
	Treasury Bills	14/07/88		103	20	—	20.02-20.52	20.02-20.05	20.03
13 Oct	Treasury Bills	7/04/88	20	46	18	—	19.67-20.35	19.67-19.86	19.75
14 Oct	Treasury Bills	29/04/88	35	95	7	—	19.69-20.16	19.69-19.76	19.75
	Treasury Bills	15/07/88		138	28	—	19.97-20.25	19.97-20.01	20.0
15 Oct	Treasury Bills	12/11/88	195	70	40	—	19.89-21.51	19.89-20.16	20.0
	Treasury Bills	24/03/88		62	30	—	19.79-20.15	19.79-20.28	20.10
	Treasury Bills	11/04/88		47	21	—	20.16-21.5	20.16-20.3	20.24
	Treasury Bills	28/04/88		42	19	—	20.09-21.25	20.09-20.24	20.15
	Treasury Bills	29/04/88		46	18	—	19.91-21.25	19.91-20.21	20.08
	Treasury Bills	11/07/88		86	38	—	20.3 -21.57	20.3 -20.48	20.38
	Treasury Bills	12/07/88		78	21	—	20.3 -21.25	20.3 -20.47	20.39
	Treasury Bills	21/07/88		71	8	—	20.03-20.78	20.03-20.4	20.2

OPEN MARKET OPERATIONS
Period: 16 October 1987 - 5 November 1987

Date 1987	Transaction	Maturity	Volume Offered $m	Volume Bid $m	Total Amount Sold $m	Total Amount Purchased or Advanced $m	Range of Bids Received %	Range of Successful Bids %	Average of Successful Bids %
16 Oct	Government Stock	15/11/87	15	7	—	—	19.0 -19.6	—	—
	Sellback	22/10/87		95	—	15	20.75-22.56	22.56	22.56
20 Oct	Government Stock	15/09/88	185	16	—	15	19.15-19.35	19.35	19.35
	Sellback	21/10/87		129	—	60	20.0 -21.96	20.82-21.96	21.47
	Sellback	23/10/87		157	—	50	19.75-21.89	21.63-21.89	21.73
	Sellback	3/11/87		245	—	60	19.65-21.8	21.3 -21.8	21.61
21 Oct	Treasury Bills	9/11/87	30	156	30	—	20.05-21.19	20.05-08	20.07
22 Oct	Government Stock	15/09/88	10	16	—	8	18.15-19.05	18.88-19.05	18.97
	Sellback	29/10/87	30	169	—	30	19.75-20.65	20.61-20.65	20.62
23 Oct	Treasury Bills	5/11/87	35	81	20	—	19.93-21.19	19.93-20.14	20.02
	Treasury Bills	6/11/87		81	15	—	19.94-21.19	19.94-20.05	19.99
27 Oct	Goverment Stock	15/09/88	80	8	—	—	18.15-18.6	—	—
	Sellback	11/11/87		237	—	80	19.5 -20.6	20.18-20.6	20.41
28 Oct	Government Stock	15/09/88	215	15	—	—	18.6 -18.75	—	—
	Treasury Bills	July 1988		85	—	26	19.7 -19.83	19.75-19.83	19.79
	Sellback	2/11/87		66	—	40	19.5 -20.58	20.32-20.58	20.44
	Sellback	3/11/87		71	—	40	19.5 -20.82	20.32-20.82	20.44
	Sellback	16/11/87		266	—	109	19.5 -20.53	20.17-20.53	20.4
29 Oct	Government Stock	15/09/88	110	18	—	—	18.15-18.75	—	—
	Sellback	10/11/87	110	159	—	110	19.91-20.36	20.07-20.36	20.26
30 Oct	Sellback	4/11/87	50	61	—	20	20.03-20.6	20.56-20.6	20.58
	Sellback	9/11/87		71	—	20	19.93-20.6	20.56-20.6	20.58
	Sellback	11/11/87		31	—	10	19.93-20.56	20.56	20.56
	Government Stock	15/09/88		10	0	—	18.62-19.0	—	—
2 Nov	Government Stock	15/09/88	210	14	—	—	18.17-19.35	—	—
	Government Stock	15/03/89		81	—	11	18.5 -18.9	18.86-18.9	18.88
	Treasury Bills	July 1988		75	—	27	19.5 -19.9	19.85-19.2	19.87
	Sellback	20/11/87		181	—	50	19.73-21.76	21.27-21.76	21.5
	Sellback	23/11/87		154	—	68	19.73-21.45	20.58-21.45	21.04
	Sellback	25/11/87		134	—	54	19.73-21.36	20.68-21.36	20.98
3 Nov	Government Stock	Various	40	56	—	—	18.65-18.75	—	—
	Treasury Bills	July 1988		79	—	14	19.55-19.85	19.84-19.85	19.84
	Sellback	4/11/87		70	—	26	20.56-20.78	20.62-20.78	20.68
5 Nov	Government Stock	15/09/88	45	6	—	—	18.75	—	—
		15/12/88		5	—	2	18.75-19.6	19.6	19.6
		15/03/89		32	—	—	18.5 -18.65	—	—
	Sellback	16/11/87		77	—	42	19.85-20.5	20.19-20.5	20.43