Putting Credit Back into Monetary Policy

Reconstructing the New Zealand Monetary Policy Framework

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Summary

New Zealand Monetary Policy has had as its principal objective the maintenance of a stable general level of prices. It is a subset of a wider Government economic policy focus on the promotion of a growing, open and competitive economy which provides permanently higher incomes and living standards for New Zealanders.

This paper examines the extent to which New Zealand monetary policy can be determined to have been successful. The conclusions are that in terms of the narrowly defined price objectives set in the Policy Targets Agreement between the Minister of Finance and the Governor of the Reserve Bank, the policy can be defined as having been a rather heavily qualified success over the period 1999 to early 2009.

However, if a wider definition of success drawn from the wider economic objectives is used, New Zealand Monetary Policy has performed poorly over the decade. In particular it has allowed excessive credit expansion during a boom period, the development of an asset price bubble, and exchange rate movements which have undermined part of the internationally tradeable sector of the economy. The stability of the banking system has also been put at perceived risk through excessive reliance on funding from foreign currency debt. In turn this has required the government to provide guarantees on bank deposits now that the international financial system is experiencing substantial difficulties.

A conclusion is that the current monetary policy framework itself is inadequate to cope with the wider monetary policy issues which have emerged. In turn addressing these wider objectives will need additional monetary policy objectives and tools. The paper suggests the reintroduction of a quantitative credit target, and proposes tools for making such a target operational.

The Current Monetary Policy Framework

Monetary policy administered through the Reserve Bank of New Zealand is governed by an agreement between the Governor of the Reserve Bank and the Minister of Finance set under section 9 of the Reserve Bank of New Zealand Act 1989. Section 8 of the same Act requires the Reserve Bank to conduct monetary policy with the goal of maintaining a stable general level of prices.

In practice the Policy Targets Agreement defines price stability in terms of the All Groups Consumer Price Index (CPI). The acceptable price target is currently set in a band of a 1 to 3 per cent average movement in the CPI over the medium term. Earlier

targets have also been set in CPI terms. For example in 1997 the CPI target was 0 to 3 per cent which had replaced a still earlier CPI target of 0 to 2 per cent.

The main instrument of monetary policy is the Official Cash Rate (OCR). This is the interest rate set in relation to settlement account balances held by registered banks at the Reserve Bank. These accounts are used to settle obligations between banks. The Reserve Bank pays interest on settlement account balances, and charges interest on overnight borrowing at rates related to the OCR. The Reserve Bank sets no limit on the amount it will borrow or lend at rates related to the OCR

Under normal circumstances commercial bank lending interest rates can be expected to be strongly related to the OCR rate. OCR movements thus amount to an objective of monetary policy management mainly through interest rate policy.

However, a crucial feature of the current monetary policy framework is that it has no formal quantitative monetary or credit targets, with implications which will be explored later.

The levels of the Official Cash Rate over the past decade are shown below on a quarterly basis as at the end of the quarter. It may be noted that the use of quarterly figures in the table means some changes between quarters are not shown. Also not shown is the April 2009 OCR which had further dropped to 2.5 per cent.

Table 1 Official Cash Rate by Quarters

Year	**March**	**June**	**September**	**December**
1999	4.50	4.50	4.50	5.00
2000	5.75	6.50	6.50	6.50
2001	6.25	5.75	5.25	4.75
2002	5.00	5.50	5.75	5.75
2003	5.75	5.25	5.00	5.00
2004	5.25	5.75	6.25	6.50
2005	6.75	6.75	6.75	7.25
2006	7.25	7.25	7.25	7.25
2007	7.50	8.00	8.25	8.25
2008	8.25	8.25	7.50	5.00
2009	3.00			

Source Reserve Bank of New Zealand website. "Official Cash Rate (OCR) Decisions and Current Rate."

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A Narrow Definition of Success

One measure of monetary policy in New Zealand is the extent to which the CPI targets have actually been met on an annual basis. Table 1 sets out the figures in terms of years ended in the December and March Quarters. The percentage change in the CPI shown is the change in the terminal quarter over the same quarter a year previously.

Table 2 Annual Changes in Consumer Price Index

	Year ended December	Year ended March
1999	1.5	
2000	4.0	1.5
2001	1.8	3.1
2002	2.7	2.6
2003	1.6	2.5
2004	2.7	1.5
2005	3.2	2.8
2006	2.6	3.3
2007	3.2	2.5
2008	3.4	3.4
2009	n.a.	3.0

Source Reserve Bank Website Series A3.

CPI inflation rates were within the target band in 6 years out of 10 in relation to December years, and 7 years out of 10 in relation to years ended March. The decade CPI inflation averages were 2.7 per cent and 2.6 per cent respectively.

Use of a medium term average concept would allow for some annual CPI overshooting, and the CPI outcomes can be regarded as perhaps matching this requirement. However, even using this concept the following needs to be noted:

- the CPI average trend has been near the top of the agreement band rather than near the 2 per cent mid point
- The frequency of annual overshooting increased during the decade.

Hence, in terms of the narrowly defined objectives in the Monetary Policy Agreement the actual policy outcome can be regarded as a rather heavily qualified success.

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A Wider Definition of Success

Monetary policy affects a much wider range of economic factors than the CPI alone. If some of these other important factors are considered, a rather different set of conclusions about the effectiveness of New Zealand monetary policy emerges. These are:

- Credit expansion rates
- Asset prices
- Exchange Rates and the Balance of Payments
- The stability of the financial system

How monetary policy outcomes stack up against these other considerations will now be examined.

Credit expansion

In an economy which is expanding along a stable path the rate of credit expansion could be expected to be reasonably in line with the pace of expansion in real activity plus acceptable price movements. There are of course structural situations in some economies where this would not be so, notably:

- A primitive economy shifting to from subsistence and barter arrangements for trade and exchange towards a monetised economy
- A monetised economy where a shift towards intermediation was occurring. In this case lending which was formerly directly between households or between households and businesses became increasingly channelled through the banking system.
- Some one-off shifts in funding sources such as a diversion of external trade financing from external to domestic credit.

The first circumstance is irrelevant to the New Zealand situation. The author is also not aware of any evidence that increased banking sector intermediation of New Zealand sourced funds has been occurring in 21st century New Zealand, though it is possible The reverse can also occur. Indeed since about 2008 a form of dis-intermediation has been occurring as cash constrained larger businesses unable to obtain enough funds from the equally cash constrained banking system have been borrowing directly from the New Zealand public via debentures or seeking new capital. The author is also not aware of any evidence of a shift from external to domestic funding of external trade activity.

There is however one statistical problem which needs to be kept in mind when assessing NZ credit growth statistics. This is the fact that not all lending institutions are included in the M3 monetary statistics published by the Reserve Bank. For example Kiwibank is not included in current coverage. Hence some care needs to be taken in interpreting figures, as real trends may differ to a small degree from M3 coverage statistics.

These qualifications apart, if widely defined monetary policy were operating effectively, it would be reasonable to expect the trend rate of growth of credit to the private sector to be somewhat similar to the trend rate of growth in real output plus target price movements. Since the ten year trend growth rate of the real economy has averaged around 3 per cent per year (see annex table) , and the price target is a 1 to 3 per cent inflation rate, a first approximation would be that credit to the private sector should be growing at a trend rate of around 4 to 6 per cent a year.

There will be factors which would modify this to some degree. The price deflator of GDP might be growing at a somewhat different rate from the CPI, or the public and private sector shares of the economy might be changing. Also in the shorter term during an economic upswing a somewhat higher credit expansion could be expected.

Alternatively, if the credit expansion objective were for it to be to be in line with trend growth in money GDP, then credit expansion could be expected to be close to the approximately 6 per cent trend rate of growth of money GDP in the period 2000 to 2008. However, allowing for all reasonable factors the trend rate of credit expansion should still not be much higher than the around the 6 per cent range, with some annual variation.

When we look a the actual pace of private sector credit expansion during the decade, a very different picture emerges. The percentage figures are the annual change over the same quarter of the previous year from the Reserve Bank PSC Series C2 "Credit growth" which covers lending from banks and non-bank financial institutions adjusted to correct for a series break.

Table 3 **Private Sector Credit Percentage Growth rates**

Year	**March**	**June**	**September**	**December**
1999	8.3	9.4	9.5	9.6
2000	10.6	7.9	5.0	4.9
2001	2.2	3.8	7.0	6.5
2002	8.6	8.2	7.7	9.3
2003	8.7	8.6	9.1	8.8
2004	10.6	11.9	11.5	12.6
2005	12.9	14.2	15.7	14.6
2006	13.5	12.7	12.6	12.7
2007	13.4	14.3	14.4	14.2
2008	13.5	11.8	10.3	7.7
2009	5.1			

Source Reserve Bank of New Zealand Website series C2.

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Only in the early part of the decade (and in early 2009) was private sector credit expansion constrained to anything close to the suggested provisional target range. From 2004 till late 2008 private sector credit grew at double digit rates. OCR increases between 2004 and 2007 despite being of significant magnitude appeared to have had little discernable impact on the pace of credit expansion.

Economic consequences

The economic consequences of this high rate of credit expansion are hardly surprising. Since an expanded credit volume must impact somewhere, and this somewhere was not mainly on CPI movements, other consequences must be expected. In the New Zealand case there were:

- **Asset price inflation** far in excess of CPI movements, leading to an eventual asset price bubble. For example between June 2003 and June 2007 the index of house prices as measured by Quotable Value New Zealand rose by 74.3 per cent. However, between the March quarters of 2008 and 2009 house prices then fell 9.3 per cent. The bubble effect was even more marked for share prices. Share prices as measured by the Briggs index rose 82.5 per cent over the same four year period. For 2008 ABN Amro Craig estimated a 40 per cent peak to trough fall in share prices.

- The **Balance of Payment Current Account Deficit** also blew out despite an improvement in the commodity terms of trade. Between the December years 2001 and 2008 the deficit rose from 2.8 to 8.9 per cent of GDP. This left New Zealand in a difficult position as the international financial crisis developed.

- The **real exchange rate** appreciated during most of the period when the current account was worsening. This put a disproportionate burden on the internationally tradeable sector of the economy. This development compromised a key government objective of fostering a competitive economy. New Zealand producers were made less competitive by an exchange rate appreciation not justified in terms of any shift in economic fundamentals.

- **Consumer spending** rose faster than output. This seems to have been partly induced by perceived wealth effects from asset price inflation, and from the easier availability of credit.

The Balance of Payments

In the figures which follow the terms of trade index is the average of the four quarters shown on the Reserve Bank website. Current account figures are provisional.

Table 4 External Indicators

December Year	Current Account deficit $m	% of GDP	Commodity Terms of Trade
1999	6,770	-6.3	958
2000	6,020	-5.3	1001
2001	3,429	-2.8	1034
2002	4,973	-3.8	971
2003	5,832	-4.3	1035
2004	9,429	-6.3	1081
2005	13,262	-8.5	1060
2006	14,272	-8.7	1100
2007	14,372	-8.3	1197
2008	16,073	-8.9	1219

Source Reserve Bank website series C4

The Exchange Rate

The appreciation of the New Zealand dollar exchange rate over most of the period when the balance of payments current account was deteriorating requires some explanation. Some change could have been expected from terms of trade effects. However, the magnitude of the swings in the decade, both up and down, is far greater than can be explained by terms of trade change or relative price movements. For example between November 2000 and March 2008 the U.S. dollar rate moved between 39.88 cents and 80.27 cents, effectively more than doubling. This final peak was despite the fact that the NZ current account had been deteriorating for more than five years.

The following table shows exchange rates as at March each year, both in relation to the U.S. dollar and as measured by the trade weighted index (TWI).

Table 5 **New Zealand Dollar Exchange Rates**
As at March

	$ U.S.	**TWI**
1999	0.5321	57.8
2000	0.4908	53.9
2001	0.4199	49.9
2002	0.4318	52.2
2003	0.5541	60.9
2004	0.6614	66.3
2005	0.7306	70.7
2006	0.6364	65.6
2007	0.6982	68.6
2008	0.8027	71.6
2009	0.5308	53.8

Source Reserve Bank of New Zealand website series B1.

Source of the pressures

What is clear is that the exchange rate movements over much of the period are not explicable in terms of any changes in internal NZ "economic fundamentals," nor more than partially by terms of trade movements. Neither can they be explained by fiscal policy undermining monetary policy, since the government accounts were in surplus for most of the period. Rather the exchange rate phenomenon appears to have been driven by the same development which allowed credit to expand at double digit rates. This was the massive inflow of overseas capital into New Zealand during the period of exchange rate appreciation, a high proportion of it flowing directly into the banking system.

One irony in the period is that to the extent that OCR increases had their intended effect of pushing up domestic interest rates, including bank deposit rates, the motivation for additional capital to flow into New Zealand to feed the consumption and asset price boom if anything increased. This is because the margin between New Zealand and external interest rates (e.g. in low interest rate Japan) also increased) . And when the inevitable downturn began as the international credit crisis developed, even OCR cuts of previously unprecedented size failed to halt the downturn in credit growth. As it happens, this may have been a good thing to the extent that some over-inflated asset prices began to correct, though credit slowdowns also bring adverse consequences. However, the pattern does tend to underline the extent to which the OCR, while a key economic tool, is on its own an insufficient tool of monetary control if a wider definition of monetary policy objectives is to be used.

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Bank reliance on External Borrowing

The extent to which the New Zealand banking system has become reliant on external sources of funding to support domestic lending to the private sector is now very marked. The structure of funding of the M3 institutions (most banks and non-bank financial intermediaries) as at the end of March 2009 was as follows:

Table 6 Sources of Funding of M3 Lending Institutions in NZ

	$ million	**%**
NZ Dollar funding, NZ residents	190,563	48.9
NZ Dollar funding, Non resident	39,677	10.2
Foreign currency funding, NZ residents	7,925	2.0
Foreign currency funding Non residents	81,563	20.9
Capital and reserves	20,443	5.2
Other Liabilities	49,290	12.7
Total Liabilities	389,462	100.0

Source Reserve Bank of New Zealand website series C4.

In effect over 30 per cent of the funding base of the banks and counterpart institutions relies on overseas funding. While this funding source enables the banks to expand credit at high rates when the international economy is liquid, it also makes them very vulnerable when international credit dries up, as it did in 2008-09.

The low ratio of aggregate capital to liabilities is partly a consequence of some banks holding most of their capital overseas . This may not matter greatly to the extent that the Overseas owners of the main NZ banks should be able to provide extra resources in a pinch. However, this assumes that they also are not seriously credit constrained.

The heavy reliance on overseas borrowing both from parent banks and from the “carry trade” of individual external lenders explains part of why the banks have not so far dropped lending rates as much as the OCR, though they have dropped domestic deposit rates. Their external borrowing costs are not controlled by the New Zealand OCR, and these payments still need to be made. Also the NZ banks need to make additional provision for bad or doubtful debts. The Dominion Post of April 29 noted that the Bank of New Zealand had needed to raise its charge to cover these from $30 million in the six months to March 2008 to $99 million in 2009. The following day the Dominion Post noted that ANZ National Bank had needed to raise its credit impairment charge from $93 million to $291 million. On May 7 the same source noted that Westpac increased its provision for bad and doubtful debts from $61 million to $184 million.

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Under these pressures and with a declining capital ratio the NZ banks can be expected to seek to have higher margins between domestic borrowing and lending rates to assist in maintaining profit and building their reserves.

An alternative measure of capital adequacy in respect of the 19 registered banks is the ratio of capital to assets and to what the Reserve Bank defines as "Risk Weighted Assets." Figures relate to the year ended December.

Table 7 Trends in Capital of 19 Registered Banks
As at end of March - $ million

	Total capital	% of Assets	% of Risk Weighted Assets
1999	7,332	4.6	10.3
2000	8,456	4.7	11.3
2001	8,889	4.7	10.8
2002	10,016	4.9	11.1
2003	10,074	4.6	10.3
2004	11,707	4.8	10.8
2005	13,533	5.3	10.9
2006	17,550	6.0	10.7
2007	19,497	5.9	10.5
2008	22,863	5.7	11.3

Source Reserve Bank of New Zealand website series G3.

Heavy reliance on external funding is not new for the New Zealand banking system. Foreign currency liability was actually a higher percentage of lending to New Zealand residents in 2001 than in 2009. However, the pattern is that this reliance rises as credit expansion accelerates, and falls when credit growth slows down. For example the rise in foreign currently liabilities funded about 40 per cent of the increment in M3 institution claims on NZ residents between March 2003 and March 2008. It should be noted that foreign currency liability does not include NZ currency claims on the banks by foreign residents, which funded another 7 per cent of the expansion, but does include the much smaller total of foreign currency claims by NZ residents.

A case can be made that the availability and cost of external funding provides a stronger explanatory variable for the lending behaviour of NZ banks than does the Official Cash Rate. However, changes in the NZ dollar value of foreign currency claims as the exchange rate rises and falls complicate any analysis.

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Table 8 Foreign currency funding in relation to M3 institution claims on NZ residents

March	Claims on NZ Residents $M	Foreign currency Funding $M	%
1999	109,229	27,530	25.2
2000	120,583	36,682	30.4
2001	124,682	41,813	33.5
2002	135,669	39,349	29.0
2003	145,703	35,690	24.5
2004	161,436	42,360	26.2
2005	182,897	52,977	29.0
2006	208,320	60,101	28.9
2007	236,426	63,160	26.7
2008	266,341	83,679	31.4
2009	280,168	89,488	31.9

Source Reserve Bank of NZ website

Financial system stability

New Zealand has not had the major bank failures found in a number of other developed countries. Institutional collapse as the asset price bubble began to collapse has instead been located in around 30 finance company failures. However, as the government has had to step in and provide deposit guarantees to ensure that no panic occurred, it now has a direct financial stake in bank financial stability as well as an interest in macro-economic stability. There is also the issue that deposit guarantees have the potential to create moral hazard in lending behaviour. These factors all contribute to the need for a review of the framework of monetary policy.

The existence of deposit guarantees creates a fiscal risk for the government. It also provides potential leverage to allow the government to apply additional conditionality upon deposit guaranteed institutions.

It should be noted that the assessment that a wider monetary policy framework is needed is not a criticism of the Reserve Bank. The Bank has done what successive governments have required it to do. Rather, it is an assessment that in changed conditions a different approach is needed.

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An Alternative Monetary Policy Framework

The concept of an alternative monetary policy framework has three major dimensions:

- A wider range of variables which would need to be part of monetary policy consideration
- The selection of an appropriate quantitative target or targets for measuring the extent to which policy objectives are being achieved
- Additional policy instruments to supplement the roll of the Official Cash Rate

Wider variables

The present focus of monetary policy is on the Consumer Price Index, which is also the measure of policy achievement. A wider set of variables or objectives could include as well as consumer prices:

- Trends in domestic expenditure
- Trends in asset prices
- Maintaining a sustainable trend in the balance of payments
- An exchange rate which is moving broadly in line with economic fundamentals

Having more objectives would mean that monetary policy will become much more complex, and in some cases difficult tradeoffs would need to be made.

Additional targets

A curious feature of the current New Zealand monetary policy framework is that it has no quantitative monetary or credit aggregate objectives. This perhaps reflects the problematic history of monetary targeting. The monetary system is very fungible, and focus on one legally or policy defined type of monetary or credit aggregate often leads to monetary expansion taking other forms.

However, the fact that something is difficult does not mean that it should not be attempted, especially when the present system is clearly not working well to support the wider objectives of economic policy.

Accordingly, the suggestion of this paper is that some appropriate form of monetary or credit targeting be reintroduced.

- The suggested target variable is private sector credit. Some work may still be needed on the exact definition to be used because not all banks and NBFIs are included in the current Reserve Bank M3 definition.
- The target expansion rate in this variable would be set in the Monetary Policy Agreement and determined mainly in line with expected growth in output and target growth in prices

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On the "one thing at a time" principle the issue of whether there should be formal targets for some of the other variables such as the exchange rate is for the present put to one side. If aggregate credit control works effectively the other problems should in any case become much less.

Additional Instruments- Mandatory Deposit Ratios

Having a quantitative credit target is one thing. Having sufficient instruments to achieve the target is another. Certainly the monetary history of the past 5 or 6 years indicates that the Official Cash Rate on its own is hardly likely to be sufficient to implement a credit control policy.

The key problem which needs to be addressed is how to manage the monetary impact of huge swings in monetary capital inflows. Unless this can be done New Zealand cannot achieve a genuinely independent credit growth policy. There is in fact no way that New Zealand can be completely insulated from international financial developments. However, it can do better than it did in the period 2003 to 2008.

What is proposed as an additional instrument is the power for the Reserve Bank to impose central bank deposit requirements on specified sources of external funding for registered banks and for other financial institutions covered by deposit guarantees. Hence if a major destabilising inflow of financial capital occurred, the required Mandatory Deposit Ratios would be raised, thus countering the ability of the institutions concerned to expand domestic lending. If a large destabilising outflow occurred, the ratios would be dropped to help sustain lending capacity. Under conditions like those of early 2009 the required Mandatory Deposit Ratios would drop to zero.

It is suggested that legislation permit Mandatory Deposit Ratios (MDRs) to be imposed on any type of deposit with M3 institutions. However, in practice the ratios would normally apply only to foreign currency deposits, or in some cases to NZ currency deposits of non-residents if this were the main form monetary capital inflow were taking. However, in the past these NZ currency deposits have had a much smaller quantitative impact. It would also be possible to net the foreign currency assets of the banks from their foreign currency liabilities in defining the base for MDR application.

Extending MDRs to NZ sourced deposits, while potentially a potent tool of monetary control, raises issues which are perhaps best dealt with by other means such as interest rate policy.

How the Mandatory Deposit Ratios would work

- Suppose the banking system started with $100 billion of foreign currency deposits, and a central bank deposit ratio of 2 per cent initially applied, thus reducing loanable funds from this source by $2 billion to $98 billion.
- Suppose then that $10 billion more in foreign currency deposits flowed into the banking system in the context of a situation where credit expansion was already at guideline limit rates. The Mandatory Deposit Ratio could then be raised to 11 per cent. This would sterilise approximately $12 billion, a net increase of $10 billion, blocking additional credit expansion. If another $10 billion flowed in, a further ratio increase could be applied.

Where the MDR funds would be invested

The Reserve Bank would need to have an investment policy for these MDR funds, which would be constrained by three key requirements.

- The need to ensure that the money did not flow into the domestic economy
- The need to earn income to pay the banks something for the deposits required of them.
- The need to keep these investment assets reasonably liquid

A possible option would be to invest these funds in AAA rated short term securities abroad, taking care when feasible to match the currencies of assets and liabilities.

What the banks would be paid on Mandatory Deposits

The Reserve Bank would need to maintain some margins to cover costs and risks. This could be done by setting the Mandatory Deposit interest rate at say 2 per cent below the earning rate on short dated AAA foreign bonds. Hence if this were 4 per cent the Mandatory Deposit interest rate would be 2 per cent.

Dual effect of the deposit policy

Apart from sterilising potential loanable funds flowing into the financial system, the low Mandatory Deposit interest rates provided would reduce the incentive for the banks to accept foreign currency deposits in a period of excess international liquidity, since they would gain very little from them. The logical response of the banks would then be to lower the interest rates they were offering on foreign currency deposits from the "carry trade" originating from low interest rate economies such as Japan.
This second response would strengthen the monetary control impact of the policy.

Interaction with the OCR

Banks required to borrow settlement amounts from the Reserve Bank would still be required to pay the full OCR interest rates. This would normally be much higher than the MDR interest rate. Hence, there would be little incentive to try to offset the impact of an increase in the Mandatory Deposit requirement by borrowing more from the Reserve Bank.

Under these conditions it would then become much more feasible to use the OCR to influence local interest rates without the disadvantage of capital flows expanding or contracting the monetary base of the banking system and substantially negating much of the impact of OCR changes.

Impact on the Exchange Rate

While this paper does not propose a formal exchange rate target, the MDR system would tend to moderate the size of exchange rate fluctuations. This is because it would substantially cushion the impact on the exchange rate of large flows of financial capital into and out of the economy. MDR external investment actions by the Reserve Bank would run counter to monetary capital flows.

Policy Risks

The proposed new framework is suggested as an improvement on the current monetary framework. However, it does contain some risks. The main risk to overall monetary management is dis-intermediation in relation to external sector funding. This could occur if major corporations shifted to direct borrowing abroad, and merchant banks became channels for this type of borrowing for other firms. If this occurred either further monetary policy instruments would be needed, or else greater reliance would need to be placed on fiscal policy for macro-economic management.

Risks more related to financial market stability may also occur from domestic dis-intermediation. Wider financial disclosure rules may also be needed for entities raising funds on the New Zealand market.

Potential Timing

The current situation is one where the banking system has been facing difficulties in rolling over foreign debt, and this is constraining credit availability. Hence, there seems to be no current need to apply MDRs.

However, the situation could be very different in 18 months to 2 years time. The large amount of additional liquidity being pumped into the international financial system, while a short term necessity, is a longer time monetary time bomb. If there is not a symmetrical withdrawal of much of this liquidity once international financial systems begin to normalise again, the inflationary potential is very large. In these circumstances New Zealand could once again be faced with a flood of financial capital coming into the country with serious inflationary consequences. Hence, it is a case of being prepared by setting up new monetary policy arrangements beforehand.

From a policy development point of view this potential timing is fortunate as it gives time to develop and legislate for an appropriate set of monetary policy instruments.

Conclusion

Viewed from the perspective of a narrow target focus on limiting inflation in consumer prices, the New Zealand Monetary Policy Framework has been a heavily qualified success. However, viewed from the perspective of a wider set of monetary policy objectives involving an adequate contribution to maintaining macro-economic stability and international competitiveness New Zealand monetary policy has been significantly inadequate.

The policy has not prevented double digit credit expansion, nor massive movements in the exchange rate which are far greater than could be expected from changes in economic fundamentals such as comparative costs and productivity. Consequences of this inadequacy have included an asset price bubble, and a marked trend deterioration in the balance of payments current account despite favourable terms of trade.

The key new problem which needs to be addressed is the impact on the credit system of international monetary capital flows which have a much larger impact on credit trends that does the Official Cash Rate. However, to produce a more effective monetary policy a new framework with additional monetary policy instruments is needed.

This paper proposes the use of Mandatory Deposit Ratios as a means of bringing about a more effective monetary policy framework

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Annex

Table A1. Annual Percentage Growth Rates of Money Gross Domestic Product

	Years ended March	Years ended December
1999	3.9	4.7
2000	7.9	7.2
2001	4.9	6.9
2002	7.8	4.2
2003	4.7	7.0
2004	8.4	6.9
2005	4.0	4.1
2006	4.9	6.9
2007	6.7	7.9
2008	7.0	0.3
10 year average	6.0	5.6

Source Reserve Bank website table A5.

Table A2. Annual Percentage growth in Real Gross Domestic Product
December years

	Expenditure based	Output based
1999	5.0	6.3
2000	2.5	1.5
2001	3.9	4.4
2002	5.6	5.2
2003	2.6	3.6
2004	3.7	2.7
2005	2.7	2.7
2006	3.9	2.2
2007	1.5	3.6
2008	-1.7	-1.9
10 year average	3.0	3.0

Source Reserve Bank website Table A5.

Table A3 Institution Lending Classified by Sector at March 2009
$ million

Agriculture	44,714
Business	79,179
Housing	162,962
Consumer	12,799

Source Reserve Bank website series C5.

Note The content of this series shown in annex tables 3 and 4 differs from the M3 total credit series as the institutional coverage is somewhat wider. Hence, the totals of sector credit add up to a larger figure.

Table A4 Sector Lending Percentage Growth rates - Years to March

	Agriculture	**Business**	**Housing**	**Consumer**
2000	4.9	10.1	9.7	8.1
2001	4.8	6.3	5.8	13.1
2002	21.0	6.4	7.9	10.2
2003	18.8	5.2	10.7	12.8
2004	16.0	4.0	16.9	10.9
2005	12.9	16.4	15.9	9.2
2006	16.9	11.3	15.5	6.3
2007	12.7	15.2	14.1	4.3
2008	16.3	12.6	11.2	5.4
2009	21.7	8.2	3.0	0.0

Source Reserve Bank website series C5

Table A5. M3 Institutions- Relations with Associates

As at March	Funding from Associates $ billion	Claims on Associates $ billion
1999	20.282	2.824
2000	30.246	4.997
2001	29.934	11.806
2002	30.827	14.871
2003	26.705	12.736
2004	28.636	13.570
2005	30.505	14.484
2006	35.307	7.135
2007	42.613	6.943
2008	51.822	8.382
2009	58.800	3.628

Source Reserve Bank website Series C4.

Table A6. Crown Revenue and Expenses
$million – Years ended June

Year	Core Crown Revenue	Core Crown Expenses	Total Crown (1) Operating Balance
1999	32,880	33,939	1,705
2000	34,946	34,829	1,405
2001	37,842	36,559	1,208
2002	39,945	37,513	2,286
2003	43,440	39,897	1,621
2004	46,219	41,882	7,309
2005	51,045	44,895	5,931
2006	56,951	49,320	9,542
2007	58,482	54,003	8,023
2008	61,671	56,997	2,384
2009 Forecast	58,392	62,363	-9,303

(1) Includes surpluses from state owned enterprises and crown entities, and gains and losses not reported directly.

Source The Treasury Website. Budget 2009 Economic and Fiscal Update table "Fiscal Indicators"

Table A7 Crown Revenue and Expenses as Per Cent of GDP

Year	Core Crown Revenue	Core crown Expenses	Total Crown(1) Operating Balance
1999	31.4	32.4	1.6
2000	31.5	31.4	1.3
2001	32.0	30.9	1.0
2002	31.7	29.8	1.8
2003	32.7	30.1	1.2
2004	32.3	29.2	5.1
2005	33.6	29.5	3.9
2006	35.9	31.1	6.0
2007	34.6	31.9	4.7
2008	34.4	31.8	1.3
2009 Forecast	32.7	34.9	-5.2

(1) See note in Table A6.
Source The Treasury Website. Budget 2009 Economic and Fiscal Update.