Central Banking: looking back, moving forward

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Abstract

The global credit crisis is bringing into question aspects of contemporary central banking. Questions have arisen in relation to the down-playing of asset prices compared with goods and services prices; the relative absence of attention to money and credit in monetary policy; and whether there is a need for a more macro perspective in banking supervision. These questions are pointing to the need for a more integrated framework for monetary and prudential polices. Against this backdrop, the paper reviews, at a high level, the course of development of the role and policies of the RBNZ over the past two-three decades, with a view to discerning whether and how a more integrated framework might be possible. This review points to the quintessential role of a central bank as 'banker to the banks' as providing a foundation for structuring that more integrated framework. The paper then briefly addresses some of the abovementioned current issues in central banking and, in the light of the framework proposed, speculates on how they could be resolved in the period ahead.

We must learn lessons from the events of the past two years.…two(conclusions) stand out. First, price stability does not guarantee stability of the economy as a whole. Second, the instruments used to pursue financial stability are in need of sharpening and refining.

Mervyn King, Governor, the Bank of England, at the Lord Mayor's Banquet for Bankers and Merchants of the City of London at the Mansion House, 17 June 2009

1 Introduction

Macroeconomic performance in the several years running up to the outbreak in 2007 of the global credit crisis has been described as a period of 'goldilocks' conditions (not too hot, not too cold) (Issing, 2008), and as having been NICE (non-inflationary, consistently expansionary) (King, 2004). Inflation was low and stable, and output growth was generally at or about potential, which itself was considered to have been lifted by the highly favourable macroeconomic conditions. The disturbances that did occur – notably the Asian financial crisis in the late 1990s, and the 'tech wreck' following the 'dot.com' bubble in the early 2000s – were brief and were followed by bounce-backs to what seemed to be sustainable, non-inflationary, growth.

It was also a period that has been referred to as the 'golden age' of central banking (Issing, 2008). Adroit management of monetary policy was widely regarded to have been a significant factor in creating the favourable conditions just described, and many central banks – including the RBNZ – gained greater monetary policy independence, based on explicit inflation targets. Many also gained more explicit roles in safeguarding the stability of the financial system. These developments, combined with greater emphasis on communicating their policies to the public, resulted in central banks moving much more to the centre of the economic policy stage.

For a time, therefore, it may have seemed that central bankers had found the 'holy grail' of "monetary stability". To be sure, in the year or two preceding the outbreak of the credit crisis, some inflation pressures emerged, and many central banks were cautioning that adjustment to accumulating imbalances could be associated with some turbulence, but there was little to indicate that that the monetary system was at risk of 'crashing'.

Yet now the world is in the midst of the worst episode of monetary instability, and economic contraction, since the 1930s. While it is still early days, it seems possible that this episode will come to be known as something like the Great Collapse, and will go

alongside the two economic "Greats" of the 20th Century, the Great Depression and the Great Inflation.

So inevitably there are questions, and debates, about 'what went wrong' and about what now needs to be changed? The purpose of this paper is to take a step back, to review some suggested basics of central banking and, in the light of those, to review the course of developments during the past couple of decades. Then, against that backdrop, the paper offers some thoughts on some of the issues now being confronted. The paper attempts to do that in reasonably general terms, but also with specific reference to New Zealand.

2 Some foundations

It is sometimes said that central banking is about money. Paul Tucker, a Deputy Governor at the Bank of England, recently captured the essence of the business as follows:

> It starts with monetary policy being directed, of course, to ensuring that the value of central bank money in terms of goods and services is stable. But most money in economies everywhere is private money: deposits with commercial banks. In significant degree, financial stability is about safeguarding the stability of private money (deposits with the banking system) relative to central bank money. Prosaically, depositors with banks have to be confident that they can exchange their deposits at face value for our (central bank) money – our notes; or that they can switch to another bank where they can be confident of that. At the level of the system, we need an 'exchange rate' of unity for private money and central bank money. And we need wholesale funders of banks to be confident of that too. When that is secured, demand for our (central bank) money is low, and society reaps the efficiency benefits of the private sector banking system. Absent that confidence, the payments system simply would not work (Tucker, 2009).

Some 20 years earlier, Gerald Corrigan, then President of the Federal Reserve Bank of New York, made the same points in similar terms:

> My own vision of the role of the contemporary central bank – framed by a sense of history, by my experience in the United States, and by my utter conviction as to the importance of the efficiency and stability of the financial system – is one in which the central bank houses a trilogy of functions. At the centre of the trilogy is, of course, monetary policy. But there are two other crucial functions of the contemporary central bank that are closely related to monetary policy and constitute a single theme. These two functions are broad oversight of the financial system, and the oversight of, and/or direct participation in selective aspects of the operation of the payments systems. These are the functions, but the single theme is stability – stability in the purchasing power of the currency of the country and stability in the workings of the financial system including the payments system. This single theme of stability is a package deal in that each of the parts is mutually dependent on the other parts (Corrigan, 1990).

Those two extracts, to my mind, capture the essence of the business of central banking; as being about 'ensuring the value of central bank money in terms of goods and services', and 'about safeguarding the stability of private money (deposits with the banking system)

relative to central bank money.' Both exchange rates, that is, the exchange rate between central bank money and goods and services, and the exchange rate between central bank money and its commercial counterpart, matter. And they matter in a way that makes what have come to be known as the monetary policy and the financial stability functions of central banks joined at the hip.

One way to think about how the two functions are joined in that way is in terms of what is required to anchor a modern, fiat, monetary system. Nowadays, central banks issue their liabilities not directly in exchange for, and thus directly anchored to, something real, such as gold, but rather for (intermediate) financial claims over an underlying basket of goods and services. And, as noted by Tucker, money nowadays, overwhelmingly, is private money, that is liabilities issued by commercial banks, rather than those issued by central banks.

Thus, two anchors are needed: one that binds private money to central bank money, and the other that binds them both to real goods and services. Absent the former, the policy followed by the central bank in issuing its own liabilities – what has come to be known as monetary policy – by itself, cannot be effective in anchoring the entire monetary system, at least not stably so.

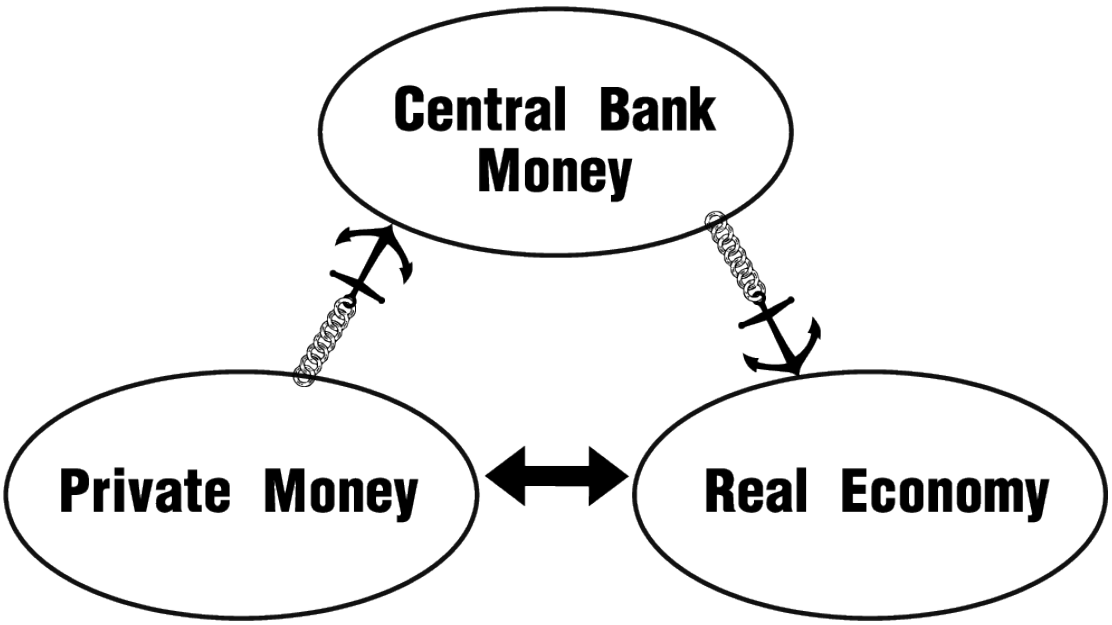
What then is it that anchors private (commercial bank issued) money to central bank money? In other words, what is it that underpins the fixed parity between central bank money and commercial bank money? The answer to that question, of course, is the solvency constraint. Commercial banks represent their liabilities as being payable in central bank money at a fixed parity, and, as we know, for one currency credibly to be pegged to another – such that the interest rate of the anchor currency is transmitted to the pegged currency[2] – it is necessary for the issuer of the pegged currency to maintain sufficient asset backing actually to be able to convert its liabilities at the fixed parity. For a commercial bank, that means it must have sufficient assets that can be converted into central bank money so as to be able to pay its liabilities in central bank money. Which is just a long-winded way of saying it has to be solvent.

How the central bank's liabilities are anchored to real goods and services is perhaps more familiar territory. Over the past decade or two, inflation-targeting central banks have calibrated the terms on which they issue their liabilities, in exchange for financial claims, with reasonably direct reference to a defined bundle of goods and services (the representative consumers' 'shopping basket' in the case of those central banks that have adopted a CPI inflation target). This approach to monetary policy can be thought of a more broad-based version of the gold standard-type anchors of yester-year. The main differences are that the anchor nowadays comprises a basket of goods and services, rather than a single commodity; and that the 'policy contract', to maintain the stated parity between central bank liabilities and real goods and services, is rather more flexible. It is also a non-deliverable contract; the central bank does not actually stand in the market ready to exchange its liabilities for a bundle of consumer goods and services, but it does

[2] Subject to a risk premium that takes account of the risk of the parity being broken

have to give account for outcomes under the contract, and, at least in principle, the Governor's job is on the line.

These inter-relationships between central bank money, private money, and the money price of real goods and services are illustrated in the figure below. While few of the transactions in a modern monetary economy involve the central bank directly, for the system to work, it is vital that both the commercial financial system, and the money prices of real goods and services, are well-anchored to the central bank's standard of value and unit of account. As put by Tucker (above), "when that is secured, demand for our (central bank) money is low, and society reaps the efficiency benefits of the private sector banking system."



While spelling out this nexus between central bank money, commercial money, and the money price of real goods and services might be regarded as no more than stating the obvious, they are connections that feature little in most treatments in the central banking literature. Rather, the 'monetary policy' and 'financial stability' functions of central banks have tended to be characterized, and implemented, as being quite separate, with few, if any, connections,

In relation to monetary policy, the work-horse framework in recent years has been that summarized by the Taylor rule, a framework in which adjustments to the interest rate at which the central bank issues its liabilities is a function of the deviation of inflation from target and of output from potential output. The financial system does not get much, if any, of a look in. Implicit is an assumption that either the credit terms on which banks – both the central bank and the commercial banks – issue their liabilities are invariant, or if they are not, the variations that do occur do not matter. And prudential supervision of

banks' solvency – that is, of the fixed parity between central bank money and commercial bank money – generally has come to be regarded as a role that, if it belongs in the central bank at all, is only a secondary function, not an inherent part of the central banking business.

While, at least up until very recently, central banks in issuing their own liabilities generally have maintained steady and conservative credit standards, that can hardly be said of commercial banks. There is considerable evidence to indicate, rather, that commercial banks' credit policies tend to vary over the economic cycle, easing during economic expansions, and tightening during down-swings. Unless these swings in credit policies are offset by adjustments to the price of risk – that is, to risk premia – they amount to an easing or tightening of monetary policy, albeit the monetary policy of the commercial banks rather than of the central bank.

The easing of credit standards, and the under-pricing of risk that occurred in the three to four years in the run up to the global credit crisis and the exceptionally sharp curtailment of risk appetite, and the corresponding blow-out in credit spreads, that has occurred since, clearly fit this picture. During the upswing, central banks' generally raised their own interest rate, albeit typically gradually and modestly, as a counter-measure to the easing of the policies being followed in the commercial financial system. And, and in response to the dramatic tightening in market credit conditions since, they have sharply cut their rates. Indeed the severity of the tightening in the policies of the private banking system has been such that central banks have moved, in an unprecedented way, additionally to ease their own credit standards, moves which the Federal Reserve explicitly has described as a 'credit easing', as distinct from a normal monetary policy easing (see Bernanke, 2009).

Against the back-drop of these developments, the question whether and, if so how, central banks should adjust their own policy settings in response to fluctuations in the commercial banks' credit standards has become a key policy issue. It is being addressed in a number of guises:

- is inflation targeting based on a Taylor rule-type framework sufficient, or is something more, that takes account of commercial banks' credit policies, needed (as in the case of the two pillars framework of the ECB)?; and, related to that,
- should credit-funded asset price inflation be taken into account along with consumer prices? and if so:
- what instruments should be used? Should the central bank adjust its (riskless) interest rate as a countervailing instrument when risk is judged as being under-, or over-priced? For example, should the Reserve Bank have increased the OCR by more in the run-up to the credit crisis when it was assessing risk as being under-priced, and has it lowered it sufficiently now that risk premia have 'blown out'? Or should more active use of prudential instruments – either capital requirements that cover risk, and hence the pricing of risk, or more direct interventions to contain swings in risk-taking itself, such as minimum loan collateral, or borrower equity requirements, be preferred?

These questions have the potential to re-open much of what, in central banking circles, three or four years ago, seemed to have been settled: monetary policy as the sine qua non or, as reflected in most modern central banking statutes, as the "primary" function; implementation of monetary policy (solely) through adjustment to the central bank's interest rate; and banking supervision as an 'elective', that is, a function that is not inherently a central banking function, but may just as well, or preferably, be performed by a separate agency.[3] It seems unlikely that once the current crisis is over, it will be a case of "as you were". The break-down of financial systems, globally, has been on such a scale, and has resulted in such a massive economic and fiscal cost, that some regime change seems inevitable.

If change is afoot, it is perhaps useful, before looking forward to consider the shape that change might take, to look back and consider where we have come from. The next section provides a (very brief) review of the evolution of central banking – in New Zealand – during the past 2-3 decades, against the backdrop just sketched. While the focus is on New Zealand, the pattern of evolution, at least at a high level, is not all that dissimilar from that in a number of like countries, though obviously there are important differences across countries in the detail, as well as in the timing. Also of course, New Zealand was to the forefront of some of the major developments in central banking during the last few decades, particularly in relation to the development of the inflation-targeting framework for the conduct of a central bank's monetary policy, and the role of public disclosure in banking supervision.

3. A step back through recent New Zealand history

This section focuses in on how, in New Zealand, the framework for maintaining monetary stability – both price stability the stability of the commercial banking system – has evolved, against the backdrop of the foundations just outlined. For the purposes of organization, the section is structured both chronologically and by function (monetary policy and prudential policy). The two functions are considered together for the first part of the period under review, that is, up until the commencement of the major reforms in mid-1984, since, as will become evident, at the time they were scarcely separate. But in the mid 1980s, there was a fork in the road, with what is now regarded as monetary policy going down one path, and the Reserve Bank's financial stability (prudential) role branching out on another.

3.1 The 1970s - central banking by regulation

Central banking in New Zealand – and to a greater or lesser extent, in most countries – in the 1970s and into the first half of the 1980s, involved mainly the administration of statutory regulations. The raft of regulations in New Zealand included:

- restrictions on the business different categories of financial institution could undertake;

[3] If banking supervision is considered to be needed at all. Singleton et al (2006) reports that the RBNZ, in 1993, 'could envisage a day when banks were (sic) regulated in exactly the same way as other issuers of debt securities (eg, finance companies)" (p 226).

- compulsory investment (reserve ratio) requirements for financial institutions, which tended to be adjusted counter-cyclically, in response to fluctuations in credit growth; and
- exchange controls on cross-border capital transactions, to protect a pegged exchange rate, which then, arguably, was the nominal anchor for the system, albeit one that tended not to hold at all firmly.

These restrictions were applied in an environment where many, and at times most, interest rates also were subject to regulatory control. This control of interest rates meant that generally there was an excess demand for credit, which the other regulations were designed to contain. But, inevitably, the excess demand tended to spawn new channels of intermediation, beyond the scope of the regulations, a process that came to be known as 'disintermediation'.

There were also major impediments to competition within the financial system, for example:

- an Act of Parliament was required to obtain a banking license;
- there was the '30 day rule', which prevented interest from being paid on any deposit with a maturity of less than 30 days, and thus provided protection for trading banks and official money market dealers; and
- there were restrictions on dealing in foreign exchange, which made this area of business the (profitable) preserve of the then four trading banks.

As a result of these barriers to competition, the business of finance was cozy and profitable, and there was little incentive for banks to compete for business to grow their balance sheets. Then, housing finance was *hard* to obtain: you really did have to have a 3-4 year record of saving with your bank, and be interviewed personally by the bank branch manager, before it would even consider giving you a mortgage, and then at only a two-thirds loan to value ratio! In this environment, competition-driven financial expansion of the kind that could cause financial stability problems was much less an issue than it is today.[4]

A greater source of monetary instability at that time was the large-scale injections, and withdrawals, of liquidity into/from the banking system on account of purchases/sales of foreign exchange by the Reserve Bank, arising from the pegged exchange rate regime. External shocks, such as the boom in commodity prices in the early 1970s, and the oil shocks in 1973 and 1979, therefore, impacted quite directly on banking system liquidity. These influxes of, and drains on, banking system liquidity, in turn, resulted in expansions

[4] Interestingly, Ian Macfarlane, a recent Governor of the Reserve Bank of Australia, has credited the so-called 'four pillars' policy in Australia as having been a major factor in Australia (and by implication , New Zealand, given that the major banks in New Zealand are owned by the major Australian banks) having avoided the worst of the credit crisis. In a recent interview, he stated that "It's hard to avoid the conclusion that the difference was there was no competition for corporate control (of major banks) in Australia, which saved us from the worst excesses that characterise banking systems overseas." http://www.abc.net.au/lateline/business/items/200903/s2505524.htm

and contractions in bank lending, which accentuated the shocks to the macro economy through the effect of the shift in the external terms of trade on real incomes.

Policy responses tended to involve a range of ad hoc measures. These included countervailing adjustments to the financial regulatory instruments (described above) and fiscal policy adjustments ('mini-budgets'). There was also an array of 'stabilisation schemes'. These involved deposit account schemes at the Reserve Bank, mainly for primary sector exporters, who could use them to buffer income and associated income tax expense fluctuations, with a corresponding smoothing effect on banking system liquidity (though these schemes generally were on a scale such as to make their effects no more than marginal).

Also, fiscal policy, despite ad hoc efforts to use it as a counter-cyclical stabilisation instrument, on the whole, was more a source of monetary instability than stability.[5] Fiscal deficits were large and variable, and controls on interest rates undermined the ability of the government to finance those deficits without resorting, either directly or indirectly, to the Reserve Bank's balance sheet.[6] About the only way the government sustainably could finance its deficit, without resorting to the Reserve Bank, was by compelling a range of institutions (eg, superannuation funds, life insurance companies, and finance companies), to hold the below-market-yielding government bonds, but these requirements undermined the ability of those institutions to compete for funds, and spawned the disintermediation process already mentioned.

The flow of funds to the fringes of the financial system, to institutions with less experience, and less financial and reputational capital, was also a source of financial instability. While the core of the financial system was constrained to such an extent as to make the risk of failure remote, institutions closer to the fringes of the system were more prone to failure, and some did fail: for example Securitibank in 1976 and the PSIS in 1979. Each of these lead to a legislative reform or intervention of some kind, the Securities Act 1978 following the Securitibank failure, and special statutory management legislation for the PSIS, which was the forerunner of the statutory management regime contained in the Reserve Bank and the Corporations (Investigations and Management) Acts of today.

[5] Fiscal policy affects the liquidity of the banking system if the Government banks with the central bank. Where this is the case, payments in and out of the Government's account, whether in respect of government revenue, expenditure or financing transactions, result in an expansion or contraction of the amount of the central bank's liabilities on issue to the banking system (in the same way as do sales/purchases of foreign exchange by the central bank).

[6] Direct financing from the Reserve Bank – that is, the Government running up its overdraft – generally was not the issue, since it was not difficult to issue government debt to the banks where the alternative for the bank's was to hold the proceeds in their deposit accounts at the Bank, bearing zero interest. But with government bonds being issued at below market-clearing rates, the banks faced every incentive to substitute those assets with new lending, funded by discounting the bonds back to the Reserve Bank, something the Bank had little ability to resist given the constraints it faced on raising its interest rate. Effectively the Reserve Bank was financing the Government via the 'back door'.

By the early 1980s, however, more market-based approaches to monetary policy were being attempted, albeit in a regulatory environment that was still far from conducive to the operation of financial markets. The main focus was on finding ways to fund the by then very large fiscal deficits without recourse to the Reserve Bank. The main techniques adopted were:

- to pitch government debt sales directly to retail investors, by setting yields on retail bonds, such as Kiwi Savings Bonds, that were competitive relative to the regulated rates that could be offered by institutions;
- the commencement of issuance of government debt by tender, although with a semi-formal cap on permissible yields, which meant that the early tenders were under-bid; and
- by making the Reserve Bank's discount window arrangements less accommodative.

While the interest rate controls then in place constrained the initial effectiveness of these initiatives, they established the key elements of the architecture for market-based monetary policy operations once interest rates, and the financial system, were deregulated in the mid 1980s. They marked the beginning of the end of an era characterized by:

- a focus on banking system credit (and money) aggregates;
- a monetary quantity rather than interest rate-based policy framework;
- policy that was implemented by (statutory) regulation;
- the absence of a distinction between monetary policy and financial stability policy.

3.2 A new era in financial policy – post 1984

Following the election of the fourth Labour Government in July 1984, there were rapid and far-reaching changes in financial sector policy. In the space of the following year or so, virtually all financial controls (over interest rates, balance sheets, and foreign exchange transactions) were removed, to be replaced with a market-based approach to monetary policy. At the same time, it was signaled that the existing legislative barrier to entry to the banking sector would be replaced by a new regime that would allow any financial institution satisfying a small number of qualitative criteria to be registered as a bank, but with some ongoing prudential supervision. At this point, the 'monetary' policy and 'financial stability' policy roles of the Reserve Bank commenced travelling down different paths.

Monetary policy

Deregulation of the financial sector did not necessitate any changes in the manner of operation of monetary policy; on the contrary, it enabled more effective implementation of the more market-based approach that had commenced a few years previously. As already noted, what changed was that policy settings were stepped up a gear (or three), with a more singular focus on achieving the monetary restraint required to bear down on inflation and, in time, achieve price stability.

Interest rate and compulsory government bond investment requirements and, a few months later, exchange controls, were removed and the exchange rate was floated, the latter having the effect of insulating the Reserve Bank's balance sheet (and liability issuance) from foreign exchange transactions (on both the current and capital account). At the same time, the government moved to fully, and at times over- , fund the fiscal deficit by issuing bonds to the market through the tender programme, and the terms on which the Reserve Bank would purchase bonds at the discount window were significantly tightened. These policy actions, taken together, provided an environment within which the authorities asserted much stronger control over the amount and terms of Reserve Bank liability issuance. There was a near complete shift in monetary policy from reliance on regulatory restraints on the lending side of financial institutions' balance sheets, to near complete reliance on restraint on the Reserve Bank in issuing its liabilities – and associated hikes in interest rates – to achieve the authorities' inflation objective.[7]

For the first two to three years, however, the tighter monetary policy was thwarted by an upsurge in economic confidence, and in risk appetites, and a corresponding surge in the issuance of credit (and thus money) by commercial banks.[8] This surge in credit expansion occurred despite short-term interest rates that prevailed at levels around 20% for much of 1985-87. The surge in credit growth and, as it turned out, under pricing of risk, was arrested around the time of, and by, the October 1987 share market crash. At that point, the solvency constraint, which for two to three years had scarcely been binding, strongly reasserted itself, with a significant proportion of the financial system (including the Bank of New Zealand, the DFC and NZI Corporation) insolvent, or near insolvent. A sharp curtailment of, and a re-pricing of risk – a credit crunch – followed.

Since the mid 1980s, there has also been significant evolution in the operating framework for, and instruments of, monetary policy. Initially the transition was from monetary policy by regulation, to monetary policy implemented via the fiscal financing programme. With the government's bank account at the Reserve Bank, shifts in the amount of government debt issuance, relative to the government's financing requirement, impacted on the amount of the Reserve Bank's liabilities on issue to the private sector (in particular the banking system). This provided a lever by which the authorities could control the amount of monetary accommodation or otherwise provided by the Reserve Bank. The fulcrum on which this lever operated was the terms (interest rate) on which the Reserve Bank would buy (discount) government bonds to replenish shortages of

[7] This was prior to the enactment of the Reserve Bank Act 1989; hence monetary policy was still under the control of the Minister of Finance, although it was also a period when the Minister and the Bank were closely aligned on monetary policy goals and on the actions required to achieve them.

[8] Another factor driving the surge in credit expansion likely will have been relaxation of lending standards by incumbent banks seeking to secure, and increase, their market share ahead of the anticipated entry of new banks, including some of the worlds largest banks with capacities to compete aggressively for business in what, in New Zealand, had been a very sheltered market.

Reserve Bank liabilities (cash) in the market brought about by the government bond sales programme.[9]

Over time the focus of policy also shifted from monetary quantities to financial prices, ie, interest rates and the exchange rate. This transition occurred globally, although in New Zealand with something of a lag. And whereas most countries made a reasonably direct transition from operating regimes that were quantity based, with interest rates adjusting to whatever level cleared the market, to calibrating operations to achieve a target interest rate, the RBNZ went through a period during which its main 'instrument' was public statements on the appropriateness of the level of market interest rates and/or the exchange rate – so called 'open mouth operations. While resort to actual operations using its balance sheet were infrequent, the lack of precision achievable through use of words resulted in 'open mouth' operations becoming cumbersome and uncertain in their effect. They became increasingly frequent, and eventually it seemed more sensible for the Bank simply to set the rate at which it would stand in the market, that is, to set the OCR.

Thus, from a position in the 1970s when monetary policy was implemented almost entirely by applying *regulations* to the *commercial banks'* balance sheets, and was focused mainly on the rate at which they extended *credit*, by the late 1990s there had been a near complete transition, to implementation of monetary policy by the Reserve Bank setting its *interest rate* and using its *own balance sheet.*

Prudential policy

The Reserve Bank's formal role as a bank prudential supervisor commenced with the coming into force of legislation in early 1987 that provided both for the opening up of the banking market to competition from new entrants, and for prudential supervision of banks.[10] The initial policy, however, confined the role essentially to prudential *monitoring*, and to being well-placed to deal with failures or stresses – essentially a 'mopping up' only role. Preventative rules and regulations were to be kept to a minimum, and then were to be qualitative rather than quantitative in character. The underpinning for prudent risk management by financial institutions was seen as being provided by the incentives facing shareholders, directors and depositors. Consistent with that, and with establishing a 'level playing field' between banks and other organizations raising funds on the market, bank deposits were brought within the scope of the legal definition of a 'debt security' under the Securities Act, and regulated under that

[9] In effect monetary policy was implemented through what might be described as 'reverse fiscal dominance', that is, the opposite of the monetary laxity that results when government deficits are financed by the central bank. This was at a time when monetary policy was still the responsibility of the Minister of Finance (before enactment of the Reserve Bank Act 1989); although also a time when the Minister had established a firm objective of achieving lower inflation, and was committed to policy being managed accordingly.

[10] A small number of other large ('specified') financial institutions also were made subject to prudential supervision, but the new Reserve Bank Act 1989 narrowed the scope of supervision to registered banks only.

legislation as a risk *investment*. Protecting *depositors* expressly was not an objective of the bank supervision function.

By the time the new prudential policy regime was actually implemented, from about early 1988, however, the initial policy conception had already begun to evolve, with newly registered banks made subject to a capital adequacy requirement (based on the, then forthcoming, Basel framework), a requirement that was subsequently extended, following legislative amendment, also to the four existing trading banks. And further steps both to extend (preventative) risk-based supervision were developed following serious threats to the stability of the financial system that arose following 1987 share-market crash. These included the imposition of limits on credit exposure concentrations, and the development of guidelines on risk management systems and controls, to serve as a basis against which the Bank could require banks to commission audits of their risk management. These further extensions of the Bank's prudential supervision role were incorporated into the Reserve Bank of New Zealand Act 1989. At the same time, provision was made for banks' deposits to cease to be regulated as debt securities under securities law, and to be made subject to (more comprehensive) disclosure requirements that would be integrated with the Bank's prudential supervision regime.

But second-thoughts emerged shortly after those provisions were enacted, and a major (internal) review of the Bank's approach to prudential supervision was undertaken. That review resulted in the policy regime being refocused (see Ledingham (1995)). Prudential rules and engagement with banks by the Reserve Bank were scaled back, such that the only prudential standard retained was the capital adequacy requirement (and, related to that, limits on 'connected lending'). The Bank adopted a policy of not normally seeking information from banks directly, but instead of relying solely on that which was publicly available. In that connection, public disclosure requirements were extended and strengthened, within the framework of the disclosure provisions that had already been incorporated into Reserve Bank Act 1989.[11]

Subsequently, from about 2003, the Bank commenced 'refreshing' its banking supervision policies and practices, and began once again to adopt a more active role. Steps taken since have included the introduction of a requirement for the Reserve Bank to approve appointments to banks' boards of directors and senior management positions, restrictions on the 'out-sourcing' and 'off-shoring' of operationally critical functions, the introduction of minimum liquidity standards, and greater direct engagement with banks, including to obtain information not publicly available. The scope of the Reserve Bank's supervisory role also is being extended, to encompass supervision of non-bank deposit takers and insurance companies.[12] In terms of institutional scope, these extensions take

[11] Serious losses incurred by some banks in the wake of the share and property market crashes had brought to light the potential, in financial stress situations, for conflict between the between continuous disclosure and related obligations under securities law, and the Reserve Bank's statutory 'crisis management' role and responsibilities.

[12] Non-bank deposit takers (and insurance companies) will be supervised as separate classes of institution, subject to prudential standards tailored to their respective lines of business. However, the regime being developed for non-bank deposit takers has close parallels with that for banks.

the Bank's role back close to that in 1984, before the process of financial deregulation commenced. And the direction of the Bank's supervisory policies and practices has reverted, broadly, to those being developed in the first half of the 1990s.

A further broadening of the RBNZ's financial stability role is reflected in the Bank, in 2004, having commenced publishing a *Financial Stability Report.* These documents analyse and report on most elements of the financial system. They also set the analysis within the context of macro-economic developments and, in that sense, provide a bridge between the macro-economy and the financial system. However, to date it has been a rather narrow, and mostly a one way, bridge. Whilst developments in credit markets do help to inform monetary policy decisions, albeit in most cases no more than at the margin, developments in the macro economy have had little bearing on the setting of prudential instruments.

4. Rediscovering the macro-financial nexus

The RBNZ is only one of many central banks that that over the past decade has commenced publishing financial stability reports. One of the catalysts for that development was the Asian financial crisis, a crisis that crossed thresholds in terms of scope and scale, and which resulted in the IMF spear-heading the development of macro-prudential analysis and surveillance, including through the establishment of its Financial Sector Assessment (FSAP) programme.[13, 14]

Any impetus to forge greater integration of monetary and prudential policies, however, seemed to lose momentum once the stresses associated with the Asian financial crisis began to fade. The macro-prudential role to date has involved little more than surveillance, and has had little, if any, bearing on policy settings – neither supervisory, nor monetary policy settings. Monetary policy at most central banks, at least those that have operated with some kind of (explicit or implicit) inflation target, has remained centred on a Taylor Rule-type framework, with the effect of shifts in the 'monetary policies' of commercial financial institutions having been no more than a marginal

[13] Although the Asian financial crisis was not the first such episode – Japan, Australasia and Scandinavia each experienced financial crises, with macroeconomic consequences, in the late 1980s/early 1990s, but each of these was more confined in terms of country scope. The Asian financial crisis was more regional, in terms of both the financial contagion that occurred from one country to another, and in terms of its regional macroeconomic impact. The elevation of focus by the IMF on financial stability issues caused some at the time to quip that IMF changed from meaning 'It's Mainly Fiscal', to 'It's Mainly Financial'!

[14] Another catalyst for the development of a macro-prudential focus may have been the removal of banking supervision from some leading central banks – notably at the Bank of England and the Reserve Bank of Australia. In both cases, at about the same time the bank supervision function itself was removed, the central banks were assigned a "systemic stability" role. This role has been interpreted in terms of maintaining surveillance of the system as a whole, including its interconnections (particularly payment systems), and in terms of the interconnections and feedbacks between the financial system and the macro economy. It is a role that now features in the mandates, either formally or informally, of most central banks.

consideration.[15] Prudential instruments, such as capital, liquidity or provisioning requirements have not to date been utilized as macro-stabilization instruments (unlike how reserve ratio requirements were used in a counter-cyclical manner in an earlier era).

The current global credit crisis, however, has brought the interactions between the financial system and the macro-economy to centre stage. Central banks have aggressively eased the terms – both the interest rate and, unprecedentedly, the credit terms – on which they issue their own liabilities, as antidotes to the sharp tightening of terms, blow-out of risk premia, and outright cessation of issuance (lending), in the commercial monetary system.

On the prudential supervision side, cognizance of the macro picture has become a necessity. While an early restoration of prudential standards might be thought highly desirable by prudential supervisors, there is a concern that could exacerbate the already sharp tightening in credit availability, at a time when central banks are seeking greater monetary accommodation. In New Zealand, for example, the Reserve Bank is allowing a lengthy phase-in period over which banks will be required to comply with its new liquidity requirements, so as not to cause a premature tightening of monetary conditions in what remain difficult macro circumstances.

4.1 A macro stabilization role for prudential policy?

Even though central banks and prudential authorities, in responding to the current credit crisis, have adopted elements of a macro-prudential approach, this has occurred more in the specific context of the present crisis, and perhaps reflects 'necessity as being the mother of invention' more than the beginnings of a more broadly based, macro-prudential, approach. Wider questions about whether more active use of prudential instruments could have helped to moderate the surge of credit expansion during the run-up to the crisis, and whether they should become part of the standard macro economic tool-kit, remain open issues.

The argument for using prudential instruments to lean against shifts in risk appetite can be made on the basis that the adjustment associated with 'correction' of resulting 'imbalances' – particularly if they involve impairment of the operation of the financial system – tends to be costly in terms of macro-economic instability.[16] While it may not be *necessary* actively to use prudential instruments to ensure that the commercial financial system remains *anchored* – since the solvency constraint can be relied on to bind sooner or later[17] – a rigid approach, under which prudential standards are invariant over the

[15] The ECB has been something of an exception, having adopted two pillars policy framework comprising both an inflation target and a money/credit target.

[16] See Hunter et al (2006) for an exposition of a framework for thinking about financial stability that has risk and the pricing of risk at its centre.

[17] Provided that central banks do not 'lighten the anchor' by extending their credit to insolvent institutions. That can result in debasement of their currency just as much as can occur where central banks lend to insolvent governments.

cycle, may result in macro-economic instability. The argument runs that better outcomes might be achieved if the 'stretch' in the solvency condition that establishes the fixed parity between commercial and central bank liabilities is prevented, during economic upswings, from going so far as to risk an abrupt 'snap back' when risks begin to crystallize and when insolvent bank's close, and their liabilities are written down.

This argument has a close parallel in monetary policy. While rigidly fixing the value of the central bank's liabilities to, say, another (low inflation) currency, or directly to something real like gold, can provide a reliable *anchor*, it is widely considered, at least amongst inflation-targeting central banks, that a *flexible* exchange rate and a policy of '*constrained discretion*' in adjusting the central bank interest rate with reference to a *medium-term* inflation target enables better macro-economic outcomes to be achieved. Rigid anchors, nowadays, find less favour amongst monetary policy makers than they have in former eras. So might a similar, more flexible, role for prudential policy, operated within a framework of constrained discretion, help to stabilize swings in risk appetites over the economic cycle?

Two counter-factuals against which such a strategy might usefully be assessed are either (a) to do nothing in response to swings in risk appetite (whether by way of the central bank's monetary policy, or prudential policy), but to stand ready to 'mop up' when the solvency constraint reasserts itself or (b) to offset fluctuations in market risk appetites/risk-premia with adjustments to the (riskless) rate at which the central bank issues its own liabilities, ie, to assign monetary policy a role in maintaining financial stability.

The first of these approaches – stand ready to clean up the mess – is probably not as attractive an option as, until recently, it was widely thought to be, so it is not pursued further here.[18] At the least, the current crisis indicates a need for careful evaluation of alternatives.

A broader role for monetary policy, or a macro role for prudential policy?

Whether monetary policy should have a role in leaning against, or being calibrated to avoid, out-sized credit and/or asset price fluctuations is a matter of current debate. One line of argument is that confining the focus of monetary policy to only goods and services prices laid the ground in the mid part of this decade for the ensuing bubble in house prices, and that CPI inflation targets should be augmented with measures of asset price inflation (see, for example, Borio and White (2004)). However, others have argued that, while out-sized fluctuations and credit growth and asset prices are a problem that call for a policy response, monetary policy is not the appropriate instrument, and have pointed to prudential instruments as being more 'fit for purpose' (see, for example, King (2009a).

Lying behind this debate, perhaps, is a question about what drives the big surges we see from time to time in the credit and asset markets? On that point, it seems reasonable to conclude that sometimes those kinds of development will be the 'leading edge' of an

[18] For an analysis of this strategy see Blinder and Reis (2005).

inflation dynamic, reflecting that credit and asset markets are inherently more flexible than goods and services markets, and therefore that policy mis-judgments by central banks will tend to show up there first. But at other times, credit and asset bubbles will have shifts in *risk appetite* as their main source. And possibly most instances of credit and asset market instability will entail elements of both. It is not difficult to conceive of a situation where an initial monetary policy mis-judgment, perhaps in conjunction with other, even quite small, shocks, provides the spark for a shift in risk appetites, and sets of a 'financial accelerator' type process (Bernanke and Gertler, 1998). It also seems unlikely that the same diagnosis will have equal application in every situation.

If that is the case, then both arms of the monetary authorities' policy role, monetary policy and prudential policy, probably have potential roles to play, with the challenge being to align the policy response with the correct diagnosis. It points to possible extensions of monetary policy, to take account of credit and asset market developments when that is appropriate, and also for prudential policy to play more of a counter-cyclical role. A number of factors also point to it as being important that instruments are correctly assigned according to the diagnosis. In particular, adjusting monetary policy, that is, the central bank's *riskless* rate, to counteract credit and asset bubbles that stem from shifts in appetite for, and mis-pricing of, risk, may result in unintended consequences.

One of those unintended consequences, at least in the case of a small open economy, is the potential for the choice of policy instrument to influence the channel through with the effect of policy is transmitted, in particular as between market interest rates and the exchange rate and thus as between the tradables and non-tradables sectors of the economy. If, as experience suggests, flows of cross-border portfolio capital in response to interest differentials are concentrated toward the low risk end of the credit/counterparty risk spectrum, owing to the inherently greater difficulty investors face in assessing and managing credit risks from afar, then using the central bank interest rate to offset mis-pricing of risk can be expected to result in unnecessary movement in the exchange rate; unnecessary in the sense that it could have been avoided if a different policy instrument had been used.[19]

But can it work?

Reservations have also been expressed about broadening monetary regimes along the lines sketched above, mainly on what seem relatively practical grounds. A good summary of the arguments is provided in Ng (2008).

Ng questions how effective prudential instruments can be in countering credit and asset price cycles. He shows how it could be necessary to adjust bank capital requirements by what seem implausibly large amounts to make a material difference to the pricing of risk.

[19] Evidence pointing to cross-border portfolio flows being concentrated at the low counterparty risk end of the risk spectrum includes large swings in the proportion of New Zealand government bonds held by offshore holders over the interest rate cycle. Similarly, swings in capital flows associated with euro-kiwi/uridashi bonds (bonds issued by highly rated, internationally recognized, names, but denominated in NZD) have been widely associated with the wide swings experienced in the exchange rate.

He also raises concerns about how large increases in capital requirements during upswings could result in the intermediation of credit to borrowers shifting outside of the institutions subject to the requirements, including offshore.

Following Ng's methodology, and on making some plausible assumptions, it can be shown that doubling bank's 'tier one' capital requirements, from 4 % to 8%, would add no more than about 60bpts to a 'standard' loan (or half that to a loan, such as a residential mortgage, carrying a 50% risk weight).[20] Experience indicates that shifts in the pricing of credit of that magnitude are scarcely sufficient to materially affect the rate of credit expansion in the face of the swings in risk appetite that occur over the economic cycle.

There are, however, some counterpoints. An obvious one is that the magnitude of the credit losses that come to light during economic downswings often are of such as to indicate that risk appetites may shift, over the cycle, by considerably more than is generally thought. That points to a possible need to adjust our notions of what constitutes the 'plausible' range over which prudential instruments might, appropriately, operate. Experience indicates that it is not all that exceptional for an institution that expands aggressively ultimately having to write down its assets by at least 10%-20%. That tends to indicate that a doubling of the capital requirement for such an institution during the upswing, from 8% to 16%, would be too little rather than too much. Perhaps just as central banks had to move outside of their comfort zones in the 1980s to achieve disinflation, by being willing to push interest rates to unprecedented levels (to around 20%), they also will need to move outside of their comfort zones to maintain financial stability in a world of deregulated finance?[21]

Ng also raises concerns about how use of prudential instruments would prompt diversion of funds to unsupervised, or more lightly supervised, channels of intermediation. This a more difficult issue to deal with. Money is fungible and the ability of intermediaries to find ways to circumvent barriers to matching up willing lenders and willing borrowers should not be underestimated.

That said, we should be careful not to *overstate* the potential problem. For one thing, it can hardly be that prudential instruments are too weak to materially influence institutions' credit pricing and policies (as above), yet would create sufficiently strong incentives for funds to flow outside of the supervised channels of intermediation.

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[20] And arguably, those calculations may overstate the effect if, as seems likely, risk-capital itself tends to become cheaper in upswings and, as seen recently, markedly more expensive in down-turns.

[21] Of course, banks in New Zealand (and Australia) during this credit crisis have not experienced loan losses on nearly the same scale as have banks in the US and Europe, This, perhaps, indicates that the credit expansion here was fuelled less by increased risk appetite, and more by other factors that caused (credit-worthy) households to gear up their balance sheets. This contrasts with the mid 1980s when New Zealand (and Australia) experienced a credit bubble that, following the October 1987 share market crash, *did* result in banks incurring very substantial losses, whereas on that occasion the banking systems of North America and Europe were little affected.

Secondly, the scope for prudential constraints to be circumvented clearly is related to the availability of alternative *but broadly equivalent* channels of intermediation. Arguably tendencies for supervisory constraints to be by-passed would be lessened if the authorities were able to make *abundantly clear* the differences in the protections afforded as between supervised deposit-takers and (unsupervised) risk investments. In New Zealand, the tendency, if anything, has been for the authorities to blur, and to play down, rather than play up, these distinctions. If prudential instruments are to be used to address swings in, and/or mis-pricing of, risk within the financial system, more active efforts to draw clearer boundaries between those institutions that are subject to supervisory requirements, and those that are not, would seem to be necessary.[22]

The potential for a redirection of intermediation via offshore channels – say, via Australia – points to a need for either cross-border harmonization of supervisory regimes, or, *if that is not possible*, possibly for barriers to access to financial services from abroad. Recent developments in the New Zealand banking supervision regime have included elements of both and, overall, have strengthened the basis for adopting more of a macro approach to the setting of prudential instruments.

A further frequently cited concern about the monetary authorities adopting a more active role in countering, or leaning against, swings in and or/mis-pricing of, risk-taking is that it is inherently difficult reliably to distinguish these situations from where surges in asset prices and credit are driven by 'fundamentals'. The case for eschewing policy action on these grounds, however, appears to have been over-stated. Virtually every central bank that published a *Financial Stability Report* in the years running up to the current crisis identified mis-pricing of risk as a potential source of financial instability. While the severity of the ensuing adjustment was not anticipated, the underlying source of the disruption was *widely* diagnosed. It is not obvious that the difficulties in gauging when prudential policy adjustment would be warranted are any more challenging than those faced by central banks when using a Taylor rule-like framework for informing its interest rate decisions. Neither output gaps nor risk mis-alignments are directly observable – both have to be inferred, and drawing inferences on one is probably about as difficult as it is for the other.

4.2 Location of the supervision function – inside or outside the central bank?

A (perennial) issue that arises from the above discussion concerns whether the banking supervision function should be housed in, or separately from, the central bank. If prudential instruments are to be adjusted counter-cyclically, whose role would it be to assess where things are at in the cycle? Is it better that separate assessments are made by independent agencies, each taking account of the policy stance of the other (the current

[22] Note that the issue here is not the same as that sometimes raised about how in the US supervisory requirements were by-passed *by the banks themselves*, by holding, or shifting investments in a range of securitised assets into off-balance sheet vehicles (against which capital was not required to be held). That is better described as a failure of, rather than a circumvention of, supervisory policy, a policy failure that New Zealand avoided.

model for monetary-fiscal policy co-ordination), or should there be a single agency that pulls all the macro levers?

Over the past decade or so, the tendency had been for monetary policy and banking supervision to be seen as separate functions – one being essentially a macro economic policy role and the other much more a micro (accounting and legal) role – such as to make institutional separation increasingly preferred. But the events of the last year or so have put that question right back on the table. The credit crisis has also highlighted co-ordination challenges in the context of the central bank's role as lender of last resort, and in crisis management, at least in the United Kingdom where the tripartite arrangement amongst the Financial Services Authority, the Bank of England and the Treasury does not seem to have worked as well under strain as in 'peace time'.

One thing that has become clear, if it was not already, is that 'while you can take supervision out of the central bank, you can't take the central bank out of supervision'. Irrespective of the formal institutional arrangements for prudential supervision, the central bank remains banker, and lender of last resort, to the banks. In the latter role, the central bank can be thought of as having provided each bank with a stand-by line of credit – subject to a solvency covenant. Thus the central bank, unavoidably, is involved with solvency assessment, and risk management, even if the prudential supervision function has been assigned to a separate agency.

While, as a banker, and as a lender of last resort, the central bank, theoretically, can defer to the judgment, and act on the advice/instruction, of a separate supervisor, independent central banks, rightly, have a tendency to protect their own balance sheet more jealously than that. They tend, ultimately, to want to make their own judgments (like any good banker should), and to involve themselves in banking system stability policy matters, not least because any instability in the banking system is an exposure for the central bank.[23] Hence, questions about the location of the bank supervision function are not simply a matter of deciding between location 'inside or outside' the central bank. They necessarily involve more complicated issues of co-ordination.

Questions about whether supervision should be integrated with the central bank monetary policy role, to include an element of macro-stabilisation, therefore, bring another dimension to what is an already existing co-ordination problem. Prima facie, it would seem that co-location of both functions would make that macro co-ordination easier to achieve, although alternative models can be envisaged. For example, it is possible to conceive of the central bank providing a stand-alone supervisory agency with the 'macro parameters' within which prudential instruments would be required to be set, such that the central bank would 'pull the macro levers', and the supervisory agency would do the

[23] In this connection, it is instructive that historically, prudential supervision often had its origins in the central bank's role as banker to the banks. Indeed, in the United Kingdom, it was only comparatively recently, with the enactment of the Banking Act 1979 (in the wake of the 'secondary banking crisis') that banking supervision came to be recognised, formally, as something more than what is involved in a central bank's banker-customer relationship.

micro supervision. Or the supervisory agency might remain in charge, but be required to consult with the central bank.

While the analysis in this paper points mostly to the central bank being assigned an overall responsibility for maintaining monetary stability – encompassing both monetary policy and prudential policy – making such an arrangement work effectively may not be easy. Whilst monetary policy has micro-foundations, it nonetheless is mostly a macro discipline. And whilst this paper has argued that prudential policy needs to take more account of the macro economy, it will always remain mostly a micro discipline.

Thus, the skills, perspectives, and even the personalities and temperaments, needed for each role tend to be quite different. That presents significant management, and governance, challenges if the two functions are to be housed in the same institution. The differences in culture required make for an inherent tendency for the two areas of operation to become siloed, rather than integrated, or for one to crowd out the other. Careful design of governance, management and accountability structures is needed if co-location is to result in the benefits of integration being captured. Absent that, it may be that separation would deliver better outcomes.

A further consideration might be how the choice with respect to the location of the supervision function could influence the 'style' of supervision, as between supervision that has more of the character of a banker's approach to risk management, as against a regulators administration of 'black letter law'. However, as both central banks and specialised supervisory agencies, invariably, are public sector institutions, the differences in style as between a central bank and a government agency probably should not be over-stated. Both are subject to the requirements of public sector administration (eg, judicial review of decision-making process) and hence always will tend be relatively rule-bound.

5. Summary and conclusion

This paper has set out to do a number of things.

First, it sets out a basis – and suggests that there is a need – for a more integrated framework for monetary and prudential policy. That framework would recognize that a modern, fiat, monetary system needs two anchors: one that ties the value of the central bank's liabilities to the real economy (an inflation target), and another that ties those issued by commercial monetary institutions to those issued by the central bank (the solvency constraint). During the past decade or two, these two aspects of central banking have tended to be seen as separate, and separable, rather than as two strands of an integrated framework for maintaining monetary stability.

It then looks back at the course of developments in central banking in NZ during the past few decades. There has been a striking transition in the policy framework and instruments: from regulating the asset side of commercial monetary institutions' balance sheets, with no distinction between the monetary policy and financial stability roles; to quite separate macro-monetary and micro-prudential policies, based, respectively, on

setting the (interest rate) terms on which the Reserve Bank issues its liabilities, and regulating, in the main, the liability (capital and funding) side of banks' balance sheets.

Against these analytical and historical backdrops, the remainder of the paper considers recent proposals that have emerged out of the current global credit crisis for prudential instruments to be used within a macro-stabilization framework.[24] Within such a framework, one could expect to see central bank's periodically adjusting, for example, financial institutions'capital requirements.[25] There would appear to be sound analytical reasons for central banking to move in this direction, and some practical issues that have been raised may be more apparent than real, although doubtless many others would need to be addressed at the detailed design and implementation stage.

There would also be legislative questions, including whether such an evolution in the Reserve Bank's role would fit comfortably within the framework of the existing Reserve Bank Act 1989. The current Act takes the Bank's *primary function* as being "the formulation and implementation of monetary policy directed to the economic objective of achieving and maintaining stability in the general level of prices"; with the prudential role something of a 'clip-on' (in keeping with the initial conception of that being a very 'light-handed' role). Whether the decision-making, autonomy, accountability, reporting and governance structures built around that formulation would also be apt for a more integrated formulation, under which the central bank's primary function would be to achieve and maintain 'monetary stability' are also questions that would need to be addressed.

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[24] Amongst a wide range of other proposals. For an outline of a more comprehensive agenda of possible reforms prompted by the crisis, see the Bank of England's most recent *Financial Stability Report* (Bank of England (2009))

[25] Though there would be many questions of detail: for example, with what frequency? And should adjustments to prudential requirements be applied uniformly, or applied in a way that takes account of how the risk profiles of individual banks can evolve quite differently from each other?

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