

The crisis and the Reserve Bank's stabilisation role

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1 Introduction

The global financial crisis and subsequent recession have highlighted the huge costs that financial imbalances can impose on an economy. Because the financial crisis was in large part the result of specific vulnerabilities in the banking sector, reform proposals are accordingly focused on improving the resilience of the global financial system by ensuring that financial institutions' risk management adequately takes account of systemic risks. While our banks have emerged relatively unscathed from the crisis, New Zealand has suffered a long recession. The fact that sizeable imbalances in asset prices and unsustainable increases in debt levels accumulated in the context of overall price stability has also led to renewed debates around whether monetary policy should have leaned more strongly against those imbalances, and whether the policy toolkit for macroeconomic stabilisation needs to be expanded.

This article discusses these debates in both the global and New Zealand context. The crisis has arguably strengthened the case for policymakers to err on the side of a more proactive response to asset price movements and increases in leverage across the economy. At the same time, the recent cycle has shown that the impact of policy rate increases on lending and housing market activity can be limited, particularly in the context of small open economies such as New Zealand. Furthermore, the recent cycle has demonstrated the important stabilisation role of fiscal policy to provide a stable and sound environment for firms and households, and future work needs to enhance our understanding of the role of fiscal policy for stabilisation purposes. Much work remains to be done before it will be clearer what policy measures are best placed to supplement policy interest rates, and how the resulting set of policy tools should be operated. Existing research suggests that the impact of prudential measures on the supply of credit (as opposed to the risk exposure of financial institutions) may be modest. Significant measurement, calibration and operational challenges would also need to be met in order

to use such measures successfully to assist stabilisation policy in addition to their financial and prudential purposes.

Section 2 of the article reviews the origins, characteristics and performance of monetary policy in New Zealand and elsewhere over the past 20 years. Section 3 discusses the policy debates. Section 4 concludes.

2 Twenty years of monetary policy under inflation targeting

The monetary policy framework in place in New Zealand and most industrialised countries today has its origins in lessons learned during the high inflation of the 1970s and 1980s. It is now widely accepted that the high inflation of the 1970s was due to monetary policy errors.¹ By the early 1980s, there was a growing public consensus that this high inflation was unacceptably costly, distorting economic decisions and leading to inequitable redistributions of wealth. For their part, economists had become increasingly conscious that persistent attempts to push output above the economy's underlying productive potential, while tempting in the short term, would eventually lead to higher rates of inflation as inflation expectations adjusted upward, without any clear long-run benefits for economic growth.² Restoring price stability therefore depended on successfully managing the public's inflation expectations, and this in turn required a disciplining framework for monetary policy.

These insights initially led to attempts to find hard 'anchors' for monetary policy. Some economies chose to peg their exchange rate to a currency perceived to be governed by relatively 'good' monetary policy, notably the German mark; others targeted measures of the money supply. However, each of those intermediate targets turned out

¹ See Clarida, Gali and Gertler (2000), for example. A number of reasons have been proposed for policy decisions at the time, including an over-estimation of the sustainable level of output (Orphanides 2001), and a tendency to attribute high inflation outturns to non-monetary factors (Nelson and Nikolov 2004).

² See Friedman (1968) and Barro and Gordon (1982) for the seminal arguments.

to have a weak link to inflation outcomes, and tended to contribute to macroeconomic instability more generally. In particular, exchange rate pegs led to persistent inflationary or recessionary pressures if economic conditions in the two countries differed. Furthermore, if this led the market to expect the currency peg to be realigned, currencies were left vulnerable to speculative attack.³ Monetary targets turned out to be highly unreliable in a period where financial deregulation and innovation led to unstable relationships between monetary aggregates, economic activity and inflation.

Inflation targeting, introduced in New Zealand in 1989 and in many other economies in the course of the 1990s, was a way of providing the policy discipline needed to restore public confidence in price stability, while still allowing policy to respond flexibly to evolving economic conditions. The framework has the following key features:

- a public commitment to price stability defined in terms of a measure of the price level (in New Zealand, via the Reserve Bank Act 1989 and the Policy Targets Agreement (PTA) between the Minister of Finance and the Reserve Bank Governor);
- operational independence granted to the monetary authority to achieve that goal;
- specific monitoring mechanisms to ensure accountability (in New Zealand, through reports to the Reserve Bank Board and Parliament's Finance and Expenditure Committee, and regular *Monetary Policy Statements*).

This framework purposely does not specify how day-to-day policy should be conducted. In practice, inflation-targeting

central banks have generally operated by moving a short-term interest rate to 'lean against' forecasts of persistent deviations of inflation from target, relying on the financial transmission mechanism via the yield curve and the exchange rate to influence economic activity and price setting.⁴ This always left considerable room for judgement regarding the speed with which to return inflation to target and guide economic activity back to sustainable levels – and the latitude was felt to increase as central banks developed a reputation for running policy consistent with medium-term price stability. As a result, modern monetary policy can more accurately be termed 'flexible inflation targeting'. The desire for macroeconomic stabilisation in the context of a longer-term inflation target is reflected in the language of the current PTA, notably in clause 2(b), which specifies the inflation target as a 'medium-term' goal, and in clause 4(b), which instructs the Reserve Bank to avoid unnecessary instability in output and other macroeconomic variables.

Inflation-targeting regimes have been adopted by over 20 countries since 1989.⁵ How has flexible inflation-targeting monetary policy performed over the past 20 years? In terms of restoring price stability, it can broadly be said to have been a success. In New Zealand, the initial (March 1990) PTA specified that inflation should be within the target band by December 1992. In the event, inflation fell unexpectedly quickly, to 2 percent by the end of 1991 (figure 1) and has been broadly stable since then. Surveyed inflation expectations have remained within the target range (figure 2). Similar patterns can be seen in other industrialised economies.

When it comes to macroeconomic stability in a broader sense, the record has been more mixed. In New Zealand and internationally, the return to low and stable inflation did coincide with a stabilisation in output growth and other measures of the business cycle.⁶ There is an ongoing debate

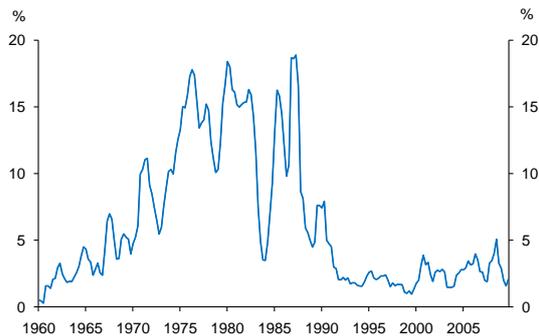
³ The UK and Sweden were forced out of the European Monetary System (EMS) in this way in 1992. It is worth noting that most countries with fixed exchange rates today have either entered currency unions or 'hard' pegs with no option of realignment (e.g., the euro area and Hong Kong), or have operated in the context of persistent current account surpluses and large foreign exchange reserves (e.g., Singapore). Generally, these economies have had recourse to significant non-monetary means of macroeconomic adjustment, such as fiscal policy and administrative measures.

⁴ See Drew and Sethi (2007) for details. The Reserve Bank's control of its interest rate instrument has become more transparent and effective over time. Under the current 'corridor' system, the Reserve Bank directly sets the price of settlement cash for banks, standing ready to accept cash at the

OCR and to lend out cash at 0.5 percent above the OCR (see Nield 2008). Before 1999, the Bank had relied on a combination of communications ('open mouth operations') and adjustments of commercial banks' settlement cash targets to influence short-term interest rates, and had also briefly targeted a Monetary Conditions Index (a combination of short-term interest rates and the TWI exchange rate).

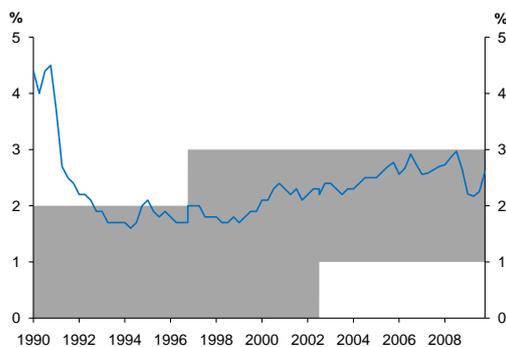
⁵ While the US has not adopted a numerical inflation target, its conduct of monetary policy has most features in common with that in inflation-targeting economies.

Figure 1
New Zealand CPI inflation, 1960 – 2009



Source: Reserve Bank of New Zealand.

Figure 2
New Zealand inflation targets and 2-year-ahead expectations, 1990–2009



Source: Reserve Bank of New Zealand.

about the extent to which this ‘Great Moderation’ was due to a change in monetary policy regime, as opposed to changes in the economy’s structure (such as improvements in inventory management) or simple good luck (in particular, the low oil prices, rapid global economic integration, and technological improvements of the 1990s, which led to subdued inflation amid strong growth). On balance, monetary policy probably played a significant, though not an exclusive role. While statistical studies have generally concluded that good luck was the dominant factor, others (e.g. Bernanke, 2004 and Benati and Surico, 2009) have pointed out that these studies may well have misinterpreted as a reduction in unexplained ‘shocks’ what was in fact a stabilisation in the public’s inflation expectations, thanks to a change in monetary policy. Consistent with this, Gürkaynak *et al.* (2006) show that the ‘inflation premium’ on long-term bond yields has remained less responsive to economic surprises

⁶ See McConnell and Perez-Quiros (2000) for the US case, and Stock and Watson (2002) for other major economies.

in countries with an explicit inflation target than in the US, and became more stable in the UK after independence was granted to the Bank of England in 1997. This suggests that it is likely that the return to an environment of price stability, and relative certainty about future inflation, removed a source of economic volatility.

However, the past two decades also saw large swings in asset prices, including the dot-com boom in the 1990s and real-estate booms in the US and many other OECD countries in the 2000s. Meanwhile, household debt in many countries rose sharply and external imbalances grew, with growing current account surpluses in emerging market economies funding growing current account deficits in the US and other Western economies.⁷ Beginning in 2003, New Zealand saw its largest house price cycle since the 1970s, along with large movements in the exchange rate, record current account deficits, and growing household and external debt.

At the time, there was considerable argument about the extent to which these asset price movements and credit flows reflected fundamental economic developments, such as the impact of lower inflation on borrowing costs, the implications of demographic trends for current account balances in Asia, and the growth opportunities afforded by the IT revolution. With hindsight, however, and looking back from the financial crisis in particular, it is clear that by the late 2000s financial markets and many economies were in the grip of a classic financial or credit cycle, as described by the Bank for International Settlements in 2001:

“At the root of ‘financial’ cycles typically lies a wave of optimism generated by favourable developments in the real economy. This optimism contributes to the underestimation of risk, overextension of credit, excessive increases in asset prices, overinvestment in physical capital and, in some cases, overly buoyant consumer expenditures. Eventually, when more realistic expectations emerge, the imbalances built up in the boom need to be unwound, sometimes causing significant disruption to both the financial system and the real economy.”⁸

⁷ Hunt (2008) explores the nature of these international imbalances.

⁸ BIS Annual Report, 2001, p. 123. This narrative of financial cycles goes back to the economist Hyman Minsky (see Kindleberger, 1996 for a fuller treatment).

The monetary policy regimes in place over the past 20 years did not prevent this cycle, and the resulting financial crisis, from occurring. What policy shortcomings has the financial crisis revealed, and what changes are likely to be made?

3 Policy lessons

With the financial crisis bringing to light a range of vulnerabilities and shortcomings in financial systems, particularly within banking sectors, international reform efforts in prudential supervision are currently focused on making the financial system more resilient to shocks. The reform proposals include measures to improve the quality and risk coverage of Basel II capital requirements, improving global liquidity standards to make financial institutions less vulnerable to fluctuations in short-term wholesale funding, and reducing the build-up of financial system leverage.⁹ The new architecture for supervision and regulation has been labelled 'macro-prudential' in nature – that is, the focus is on maintaining the soundness and resilience of the financial system as a whole and its interconnecting parts rather than just the solvency of individual financial institutions. Much effort is also being focused on managing the inherently 'procyclical' nature of the financial system – the tendency for changes in risk appetite on the part of financial institutions to amplify the business cycle.¹⁰

The simplest way of accounting for these systemic risks would be to strengthen regulatory requirements across the board. More ambitiously, regulatory requirements would be calibrated to reflect the greater systemic risk arising from particular institutions and during particular periods. For example, a large systemically important bank may need more

stringent regulatory buffers than a smaller player. Similarly, larger buffers may need to be built up in boom times in order to offset a greater tendency for banks collectively to take on risk.

In New Zealand, while the major banks have not been as badly affected as elsewhere and remain well-capitalised, the crisis exposed a vulnerability to global liquidity shocks. In response the Reserve Bank introduced a liquidity policy for banks in October 2009, building on work in train prior to this point that implied the Reserve Bank was well-positioned to introduce this policy. The policy requirements include a minimum core-funding ratio which will require banks to hold the bulk of their funding in the form of retail deposits or longer-dated wholesale funds. As explained in Hoskin and Irvine (2009), the Reserve Bank has taken steps to ensure that the risk models used by the major New Zealand banks to assess their capital requirements for the purposes of Basel II are based on long-run, 'through-the-cycle' assumptions about risks and losses in the key areas of home mortgage and farm lending.

Even in the absence of disruption to the provision of financial services, however, debt-fuelled asset price cycles can contribute to economic volatility: asset prices, economic activity and the supply of credit are often mutually reinforcing, on both the upswing of the cycle and in downturns (box 1 outlines a number of reasons for the procyclicality of credit creation). Furthermore, if burst asset bubbles leave behind a legacy of debt on household and corporate balance sheets, they can depress economic activity for years. The experience of the past two years has therefore revived two debates that simmered over the past decade: should monetary policy expand its focus to respond more strongly to asset price rises and credit creation, and are short-term interest rates an adequate tool for doing so?

Should the focus of monetary policy be expanded?

Through the past decade there was a debate whether inflation-targeting monetary policy makers should respond more strongly to asset price movements and, in particular, 'lean against' signs of incipient asset bubbles and other

⁹ See **Bank for International Settlements (2009)**. Reform proposals have also been issued by national institutions such as the Bank of England and the UK FSA (see **Reserve Bank of New Zealand (2009)**, p 41-43 for a summary).

¹⁰ While the impetus for a macro-financial approach to prudential supervision already began in the aftermath of the Asian financial crisis in the late 1990s (as witnessed by the widespread publication of financial stability reports and organisational changes within central banks, such as the establishment of financial stability departments), much work still needs to be done to find an agreed conceptual basis for measuring systemic risks, and workable macro-prudential policies. **Bank of England (2009)** provides an assessment of how operation of such policies might work in practice.

financial misalignments, over and above the immediate implications for output and inflation. The debate was also framed in terms of the appropriate horizon for monetary policy accountability (e.g., Bean 2003): should it be the standard 'medium term' of one to three years, or should the inflation-targeting horizon be extended to allow policy to take into account longer-term inflation risks resulting from unwinding financial excesses?

An influential position, associated particularly with the US Federal Reserve, has been that monetary policy should only respond to asset price movements in so far as they signal changes in expected inflation.¹¹ This approach was based on three main considerations:

- The difficulty of identifying misalignments: It would be prohibitively difficult to distinguish asset price bubbles from sustainable booms (i.e. price movements reflecting genuine profit opportunities) sufficiently early for policymakers to respond effectively.
- The costs of leaning against a potential misalignment: In the context of low risk perceptions and large expected capital gains, it was argued that significant policy tightening would be required to dampen an asset boom, with deleterious effects on the non-bubble sectors of the economy. This would be very difficult to defend in view of the uncertainty of any benefits further down the track. There was also the risk of eroding public confidence in the inflation target.
- Ease of 'cleaning up' a burst bubble: By contrast, the fall-out from a burst bubble could always be 'mopped up' by cutting interest rates and providing the financial system with adequate liquidity.

Others (the Bank for International Settlements for example) acknowledged the practical difficulties, and accepted that it was most probably unwise for policy to 'target' specific asset prices, but argued that future asset price busts were nevertheless sufficiently predictable for monetary policy

occasionally to lean against signs of misalignment.¹² The difficulties of identifying financial imbalances were, in this view, not different in kind from those of identifying output gaps. There was also concern that the asymmetry of a policy approach that responded to asset busts more aggressively than to the preceding booms would encourage risk-taking by market participants. A systematic tendency to 'lean against the wind' of financial imbalances could reduce these incentives and therefore have a dampening effect on the build-up of financial imbalances, over and above the direct effect of any particular policy tightening. New Zealand was broadly in this camp, with the Reserve Bank expressing the view that tightening policy to insure against future asset price busts would be difficult, but occasionally appropriate (see Bollard, 2004).

Over the past two decades, support for the Federal Reserve's approach appeared to come from relatively swift recoveries in the United States from periods of speculative excess, including the late 1990s dot-com boom. The experience of Japan was also interpreted in this light: it was argued that the Japanese 'lost decade' was largely due to attempts by monetary policymakers to burst an established bubble in 1989, and their failure to respond sufficiently aggressively to deflationary pressures after the bubble had burst (Bernanke and Gertler, 1999). Following the financial crisis, however, a somewhat more proactive approach is likely to gain force. Certainly the option of 'cleaning up afterwards' now looks considerably less attractive. While the unprecedented policy support measures put in place across the globe since late 2008 stemmed the financial panic, the losses in wealth and output have been enormous. Furthermore, the policy measures have come at the cost of considerable increases in fiscal debt burdens, have pushed monetary policy operations beyond its conventional limits in some economies (notably the US and UK), and have raised growing political concerns about bail-outs of the financial sector. It would be surprising if future policy risk assessments were not more likely to err on the side of prevention.

¹¹ See, for example, Greenspan (2002), Bernanke (2002), Kohn (2006), Mishkin (2008).

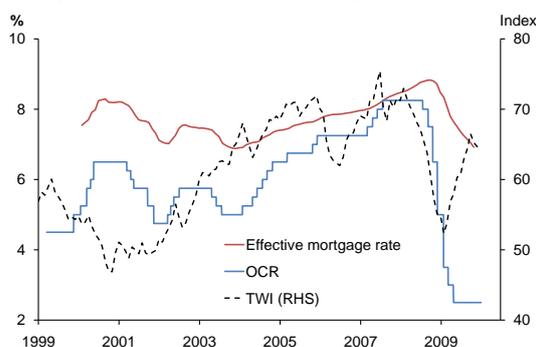
¹² Research suggests that indicators such as credit growth and the ratio of residential investment to GDP have some predictive power for future asset price busts (Borio and Lowe, 2002 and IMF, 2009).

Does stabilisation policy need more instruments?

Even if policy might want to lean against strong signs of overheating in asset markets, this leaves the question whether adjustments to short-term interest rates are the best way of doing so. In practice, the Reserve Bank has always given consideration to housing market developments in its monetary policy deliberations, reflecting a strong empirical association between New Zealand house prices, and consumption and domestic inflation pressures more broadly.¹³ However, over the tightening cycle beginning in 2004, rising policy interest rates took a long time to feed into longer-term mortgage rates and affect housing market activity, whereas the New Zealand dollar rose rapidly, putting pressure on the traded goods sector and sharpening external imbalances (figure 3).

One reason for this was increased competition for mortgage loans among New Zealand banks, with the margin of mortgage rates over 2-year wholesale funding rates dropping noticeably in 2004-2005 and widespread reports of a 'mortgage war'. In addition, however, global wholesale interest rates were themselves unusually low. Some (e.g., Taylor, 2009) have argued that this was due to overly expansionary monetary policy in the US, but risk premia were also at very low levels, and it is also likely that global interest rates were kept low by high savings and a fall in domestic investment in Asian economies following the collapse of the Japanese bubble and the 1998 East Asian Crisis (figures 4 and 5). Whatever the cause, for small open

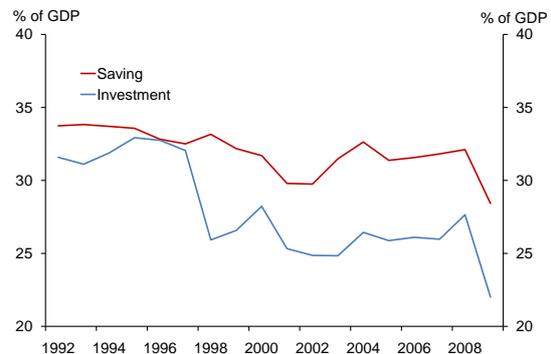
Figure 3
New Zealand official cash rate, effective mortgage rate and TWI exchange rate



Source: Reserve Bank of New Zealand

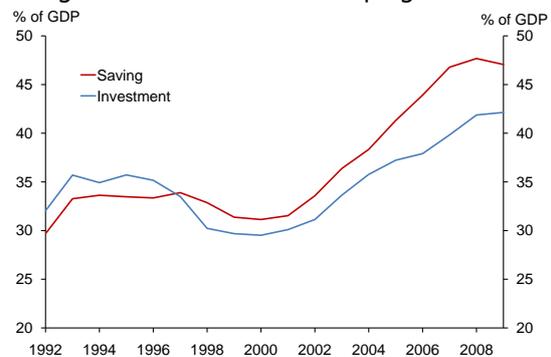
¹³ See both Hargreaves et al. (2006) and De Veirman and Dunstan (2008).

Figure 4
Saving and investment in newly industrialised Asian economies



Source: IMF

Figure 5
Saving and investment in developing Asia



Source: IMF

economies such as New Zealand, this meant that policy interest rate increases tended to attract capital inflows, and that tightening monetary conditions were reflected in a rising exchange rate, while the impact on lending rates was much more muted.

This limited apparent impact of monetary policy tightening on the housing market led to calls for additional tools that might more directly affect the housing and credit market. A joint report by the New Zealand Treasury and the Reserve Bank explored a range of relevant measures, including policies affecting the demand and supply for housing (such as the tax treatment of housing), a better tailoring of prudential bank capital requirements to cyclical risks, and measures designed to directly influence credit supply, such as discretionary loan-to-value ratio limits (see Blackmore et al., 2006).

The general conclusion of the report and follow-up research (e.g., Ng 2009) was that there were no 'silver bullets', and that

any measure by itself was unlikely to eliminate credit cycles without causing significant adverse side-effects. However, the state of knowledge is still very limited. International research and debate on such measures is likely to grow as a result of the financial crisis and many countries' experiences with housing booms that turned out to be unsustainable. The remainder of this article canvasses what we know about some specific policies and discusses the main operational issues that their use would raise.

Prudential policies as stabilisation tools

The Reserve Bank Act requires the Bank to exercise its prudential powers with the objective of promoting a sound and efficient financial system and avoid significant damage to the financial system that can result from the failure of a registered bank. However, some prudential policy tools might also have the effect of dampening the credit cycle in addition to promoting soundness and efficiency within the financial sector. If this were so, such tools could potentially have a role to play in broader macro-economic stabilisation. This would depend on the strength of the link between changes in prudential requirements and credit creation and/or other macro-economic variables such as activity or asset prices. Although international interest in this field is growing, research to date on the viability of such instruments as macro-stabilisation tools has been mixed. Nevertheless, work in this area is continuing apace.

Most existing research is in the realm of time-varying capital requirements. This would involve raising bank capital requirements as signs of excessive credit creation mount, and relaxing them in order to free up lending in a downturn. These time-varying capital requirements could be tailored to particular risk classes; for example, by varying Basel II risk weights over the cycle (the risk weight applied to residential mortgages could be raised during a boom, for instance).¹⁴ Such counter-cyclical capital buffers are being recommended as part of a macro-prudential framework that would reduce the risk exposure of the banking system (e.g., Bank for

International Settlements, 2009, Bank of England, 2009). How strongly they would affect the lending behaviour of banks is a separate question.

Finance theory says that under certain conditions (perfect information and capital markets, and no distortionary taxes), a corporation's funding structure should not impact upon its cost of capital, and hence its business decisions. In practice, of course, these conditions are not met and so the cost of raising capital tends to be significantly higher than the cost of raising debt. Most notably in the case of banks, deposit insurance or perceived implicit government guarantees of bank debt would make it costly for banks to hold more capital, other things being equal. The transactions costs of issuing capital also tend to be higher than those of raising debt or deposits.

However, the shifts in bank capital ratios required to achieve a given change in bank lending costs might be large. To illustrate this, Ng (2008) assumes that debt costs 8 percent per annum and equity 20 percent per annum, and calculates that an increase in funding costs of about 25 basis points would then require a shift of 2 percent of each housing loan from debt funding to equity funding. To put this in perspective, banks are currently required to hold about 2 percent of a normal housing loan as equity capital. Furthermore, the impact of changes in regulatory minimum capital requirements on banks' actual capital holdings might be quite muted, given that banks' capital ratios are typically well above Basel II minima (the major New Zealand banks hold Tier One capital of about 8 percent of total risk-weighted assets, as against the current regulatory requirement of about 4 percent). International studies do find an association between capital requirements and banks' actual capital ratios, but it may not be very large. For example, looking at a sample of UK banks and building societies, Alfon *et al.* (2004) estimate that only about half of the change in capital requirements is translated into changes in the actual ratio – and that the effect becomes smaller the larger the bank's initial capital buffer. Reducing capital requirements in a severe downturn may also lack bite if nervous financial markets demand higher capital levels, or if doing so is seen to communicate a heightened level of financial system risk.

¹⁴ **Broad attempts to influence credit creation across a whole range of assets could have significant undesired consequences in terms of distorting financial institutions' asset allocation decisions and causing avoidance more generally.**

Another example of a potentially counter-cyclical prudential policy is the 'dynamic provisioning' accounting method used by Spanish regulators. This requires banks to provision against expected losses through the cycle, rather than as they occur. Dynamic provisioning has potential financial stability benefits, as loans written during the peak of the cycle may have a much higher probability of default, even though actual loss rates may be low. In addition, dynamic provisioning may smooth profits and hence bank lending policies through the cycle. However, as noted in Bank of England (2009), the dynamic provisioning policies introduced in Spain in 2000 did not prevent a doubling in the ratio of Spanish private credit to GDP, or a very large housing and construction cycle, although they may have increased the resilience of Spanish banks to the downturn and hence limited the scale of the recession.

While minimum capital requirements are an integral part of the Basel II framework, and dynamic provisioning methods have been used in a range of jurisdictions,¹⁵ liquidity requirements are a recent response to vulnerabilities revealed during the financial crisis, when banks in many countries, including New Zealand, faced a protracted period of liquidity stress following the failure of the investment bank Lehman Brothers. This liquidity stress forced banks to reduce credit supply, thereby intensifying the economic downturn. The core funding ratio requirements introduced by the Reserve Bank to strengthen banks' liquidity buffers may limit excessive credit growth during cyclical upswings, by constraining banks' ability to borrow in short-term wholesale markets.¹⁶

Other stabilisation tools

Blackmore et al. (2006) discuss a range of other possible policy options to affect housing and credit more directly,

¹⁵ **Until the adoption of International Financial Reporting Standards (by October 2005, for the major New Zealand banks), New Zealand accounting practices focused on an 'expected loss' provisioning concept akin to dynamic provisioning. The IFRS uses an 'incurred loss' concept focusing on current losses. (See Reserve Bank of New Zealand 2006, box 6.)**

¹⁶ **The long-run impact on bank funding costs and lending behaviour is uncertain, although it is likely that a transition to the new core funding ratios will be reflected in higher lending costs, other things being equal.**

including tax policy in so far as it interacts with the demand for housing and measures to reduce frictions in housing supply. On the credit front, measures they examine include discretionary loan-to-value ratio (LVR) limits and a levy imposed on interest paid on mortgage loans. An LVR limit would place a cap on the leverage taken on by mortgage borrowers (some countries require the purchase of mortgage insurance when the LVR exceeds a certain value). This would limit the funding available to finance a housing boom and also limit the financial exposure of households to a downturn in house prices. A mortgage levy would raise domestic borrowing costs (or reduce bank profits) for given wholesale interest rates, and thereby potentially take pressure off the exchange rate during a housing boom.

These measures may well have a bigger impact on the cycle than capital based prudential measures (and as a side-effect they would also tend to reduce the risk exposure of banks). Restrictions on LVRs for residential mortgages are used in a range of countries, predominantly in Asia, and Blackmore et al. (2006) report that average LVRs do appear to be lower in countries with restrictions. To date, the discretionary adjustment of measures such as LVR limits during a housing boom has been most common in countries with managed or fixed exchange rates such as Singapore and Hong Kong, and may have played a role in limiting the peak of the boom. In considering the possible use of these tools in New Zealand, Blackmore et al. (2006) concluded that the impact of these measures on the cycle could be material, but noted substantial administrative hurdles and enforcement challenges for implementation.

Operational issues

Introducing additional tools for cycle stabilisation, and using them specifically to dampen the credit cycle and associated asset misalignments, would raise a number of operational challenges. Some of these challenges are similar in kind to those facing monetary policy currently, but others would be new.

In particular, attempting to influence the credit cycle would require gauging whether credit and asset price imbalances were emerging, and measures would need to be timed and

Box 1

Market failures that cause credit conditions to be procyclical

The Financial Stability Forum (now the Financial Stability Board) gives two fundamental reasons why the supply of credit may fluctuate in a procyclical way: limitations in risk measurement and distortions in incentives (see Financial Stability Forum, 2009). The former source refers to the tendency for risk measures and risk perceptions to move in a procyclical manner:

- Lenders' hubris may cause them to become overconfident during prolonged periods of economic stability. Similarly, if quantitative estimates of the risk of default and losses given default are based on limited data spans, they will tend to be highly procyclical. This may affect market and regulatory discipline as well as lenders' own risk assessments. For example, concern has been expressed regarding the potential interaction of procyclical risk assessments with Basel II capital requirements, through risk weights. As noted earlier, the Reserve Bank has put in place measures to ensure adequate 'through-the-cycle' assessments of risk are used for Basel II purposes.

The second source (distortions in incentives) refers to conflicts of interest involving asymmetric information, and to incentives that may be rational from the point of view of an individual lender but result in sub-optimal outcomes when undertaken by banks collectively. These distortions lead to a number of sources of procyclicality:

- Financial accelerator and collateral effects. Bernanke and Gertler (1989) show that asymmetric information between borrowers and lenders can result in procyclical lending to corporates because a firm's net worth, which increases during economic upswings and falls during downturns, reduces agency costs and therefore the cost of external (bank) financing relative to internal funding costs. Similarly, Kiyotaki and Moore (1997) show that in an environment of asymmetric information, changing asset prices affect the amount of secured credit that lenders provide. In other words, more collateralised borrowing is possible as asset prices rise. To the extent that asset prices move positively with the economic cycle, this induces procyclicality in lending (particularly mortgage lending for housing).
- Short horizons in incentive contracts. Performance evaluation based on recent past performance may incentivise managers in lending institutions to focus on near-term risks, rather than risks over the full credit cycle.
- Competitive-strategic effects. Mandelman (2006) finds that the countercyclical nature of bank margins impacts the economy in a procyclical way. He explains this with strategic behaviour by oligopolistic banks: during upswings, banks cut margins to deter new entrants and maintain market share. During downswings, there is less pressure on margins because the cost to entry is higher.

calibrated appropriately. Even among those commentators who believe this is feasible, there is an unresolved debate whether the process for doing so should rest on simple rules, or whether a system of 'constrained discretion' akin to inflation targeting would be more appropriate. The main problem with a rule-based approach is that, at best, simple indicators such as aggregate credit growth are only partially successful in predicting emerging bubbles (just as indicators such as money growth will only sometimes be harbingers of inflation pressures), and good policy decisions will therefore depend on judgments based on a much wider set of information.

On the other hand, total policy discretion would be undesirable, as it would both potentially cause uncertainty among market participants and risk an inadequate policy response to the build-up of imbalances in good times due to political pressures. However, constraining that discretion through a system of accountability measures – similar to that currently used to constrain monetary policy – would present special challenges. This is because the goal is less clearly defined than the price stability goal under inflation targeting (there is no agreed numerical target corresponding to 'an absence of housing market imbalances', for example),

and because the time horizon over which credit cycles tend to play out is much longer than the horizon over which inflation pressures normally build.

The discretionary control of multiple instruments would give rise to added policy coordination and communication difficulties. Because a discretionary prudential stabilisation policy would be expected to influence the economic cycle, monetary policy settings would need to take it into account. Furthermore, potential conflicts between price stability and macro-stabilisation goals would not disappear. Typically inflation and credit cycles move together and so policy responses are unlikely to clash. But this may not always be the case. For example, the bursting of an asset price bubble could coincide with a positive inflation shock. Indeed, this is what happened in 2008, when rising oil prices led to elevated inflation pressures just as sub-prime mortgage delinquencies in the US were beginning to lead to broader financial stability concerns. If prudential measures were used for stabilisation purposes, conflicts might also arise between macro-stabilisation policy and micro-prudential objectives. An example would be at the peak of the cycle when credit growth should ideally be reined in. If any individual bank at this time was already in a stressed state, tighter macro-prudential policy could aggravate that stress.

4 Conclusion

Monetary policy over the past 20 years has been remarkably successful in taming the inflation of the previous two decades. That has removed a major source of macroeconomic volatility. Inflation targeting has also proven to be a framework that combines the discipline needed to ensure long-term price stability with considerable operational flexibility in the near term. However, as the events of recent years have shown, it has not ensured financial stability or, ultimately, macroeconomic stability.

In part, this was because of deficiencies in the global financial regulatory framework. In future, monetary policy may also occasionally take the risk of future financial bubbles into account to a greater degree than in the past. Central banks and other international agencies are continuing to look into the properties of a variety of instruments that might

assist in this task, and while there are practical challenges to be overcome, it is possible that some could be found to have a role to play in the future. However, the deeper lesson from recent experience may turn out to be that those who expected monetary policy – or any other policy – to guarantee stability were expecting too much. If this is so, the best outcome will be an environment in which lenders, borrowers and economies are better able to bear the brunt of shocks. If policies that improve their ability to do so also improve macroeconomic stability, so much the better.

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