
The relationship between monetary and financial stability

Leni Hunter¹

The Reserve Bank of New Zealand takes distinct actions in order to pursue its goals of monetary and financial stability. However, it is necessary to have coordination between actions taken towards each goal, as the achievement of each depends on the other – inappropriate monetary policy can threaten financial stability, and the maintenance of price stability requires a stable financial environment. Policy actions taken for both goals should be consistent and mutually reinforcing where possible. For example, in some circumstances monetary policy may be used to proactively counter potential asset bubbles, and the use of financial stability tools may lend support to monetary policy's function of stabilising the business cycle.

1 Introduction

The Reserve Bank's recent *Financial Stability Reports* have documented the dislocation that has arisen in the global financial environment following the crisis in the US sub-prime mortgage market.² In line with other central banks, the Reserve Bank of New Zealand has responded with extended arrangements for providing liquidity to the financial system.³ Other countries, more directly affected by the crisis, have also loosened monetary policy settings for interest rates.

The current episode presents the latest demonstration of interactions that arise between monetary and financial stability. These interactions have of course been demonstrated many times before, as financial crises have typically had severe macroeconomic consequences. With this backdrop, we clarify what the Reserve Bank means by monetary and financial stability, and discuss the overlap between the analyses that the Reserve Bank takes for monetary policy and financial stability purposes. We consider situations where monetary policy might respond to an episode of financial instability, and the extent to which tools to promote financial stability might contribute towards achievement of the central bank's monetary policy goals.

Characterising monetary and financial stability

The Reserve Bank of New Zealand Act 1989 (the Act) states that the Reserve Bank shall act as the central bank for New Zealand (section 7), and accordingly gives the Reserve Bank specific powers and functions.⁴ Two broad functions are:

- to formulate and implement monetary policy to maintain price stability (section 8); and
- to promote the "maintenance of the soundness and efficiency of the financial system" (sections 10, 68, 156B, 156K).

Price stability is defined in the Policy Targets Agreement (PTA). This is an agreement signed by the Governor and the Minister of Finance that documents how price stability is defined and, in broad terms, how the Reserve Bank should go about achieving price stability.

The Reserve Bank's financial stability objectives are set by the Act without a supplementary agreement comparable to the PTA. The Act requires the Governor-General, the Minister, and the Reserve Bank all to exercise their powers for the purposes of promoting the maintenance of a sound and efficient financial system, and avoiding the significant damage to the financial system that could result from the failure of a registered bank.

The Reserve Bank has stated its conceptual understanding of financial stability in a previous *Bulletin* article: the financial

¹ This article has benefited from comments from many Reserve Bank colleagues, including Michael Reddell, Ian Nield, Grant Spencer, Willy Chetwin, Alistair Henry, and Tim Ng.

² <http://www.rbnz.govt.nz/finstab/fsreport/>

³ <http://www.rbnz.govt.nz/news/2008/3330850.html>

⁴ For example, including the sole right to issue bank notes and coins in New Zealand.

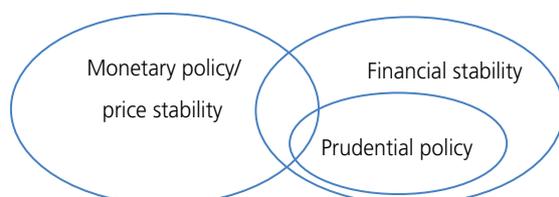
system is stable when financial system risks are adequately identified, allocated, priced and managed.⁵ We view these conditions as necessary to ensure that the financial system is resilient to a wide range of economic and financial shocks and is able to absorb financial crisis losses with least disruption.

Assessment of financial system stability uses both quantitative and qualitative methods. Quantitative assessment of risks to financial stability employs numerous indicators, discussed below. It is possible to combine indicators into a single model such as an 'early warning system'.⁶ However, at present there is no single numerical measure of financial stability that central banks typically use to state when a financial system is, and is likely to remain, stable.

Monetary and financial stability analysis

Figure 1 provides a simple depiction of the relationship between the analyses of monetary policy and of financial stability. Monetary policy and targeting price stability are shown as not necessarily involving financial stability concerns, just as many aspects of financial stability are shown as not affecting the maintenance of price stability.⁷ Prudential policy is shown as a subset of financial stability with some, but not most, matters in common with monetary policy. The area where monetary policy and financial stability (including prudential policy) overlap identifies matters of concern to all three. It is in this space that the worst downturns in the economy are prone to occur.

Figure 1
Monetary policy and financial stability



Outside of the prudential policy area, figure 1 also provides for risks from the financial system that may not involve the failure of a financial institution or pose risks to inflation. An example here could be volatility in equity markets. However, if prolonged and excessive, volatility would be likely to impact on the stability of the macroeconomy and financial institutions.

The Reserve Bank, in common with other central banks, carries out quantitative assessment of the state and robustness of the financial system and its institutions – eg, through supervisory assessments and stress-testing, and through work on financial stability indicators. Financial crises come in many different forms, with different triggers. Because of this, researchers often emphasise the use of indicators that have been common to different crises when attempting to forecast future crises. Common indicators may be either symptoms or underlying causes of crises, and often include macroeconomic indicators. Macroeconomic variables such as those that form part of the International Monetary Fund (IMF)'s Financial Soundness Indicators list, are routinely monitored for monetary policy analysis.⁸ Variables used in IMF early warning systems have included real exchange rate overvaluation, the current account balance, reserve losses, export growth, and the ratio of short term debt to reserves.⁹

In a general sense, we could think of the business cycle as an indicator. Demand-driven inflation pressure rises during expansions and falls in contractions, and is therefore procyclical (by definition). Financial crises are also procyclical; for example, strong credit growth can amplify a business cycle upswing and create conditions for a crisis, and a crisis can be triggered by or precipitate a business cycle contraction.

Development of early warning systems for financial crises has been hindered by having only limited data on crisis episodes, and is complicated by differing definitions of what constitutes a 'financial crisis'. Assessments of early warning system models have yielded mixed results regarding their ability to add to more comprehensive, but perhaps less structured, analysis.¹⁰

⁵ Hunter, Orr and White (2006).

⁶ As in, for example, Davis and Karim (2008).

⁷ See also discussion of how asset bubbles can coincide with low inflation in Borio and Lowe (2002), and Borio and White (2004).

⁸ <http://www.imf.org/external/np/sta/fsi/eng/fsi.htm>.

⁹ Kaminsky, Lizondo, Reinhart (1998).

¹⁰ For example, see Berg, Borensztein and Pattilo (2005).

Figure 2
Monetary policy and financial stability¹²

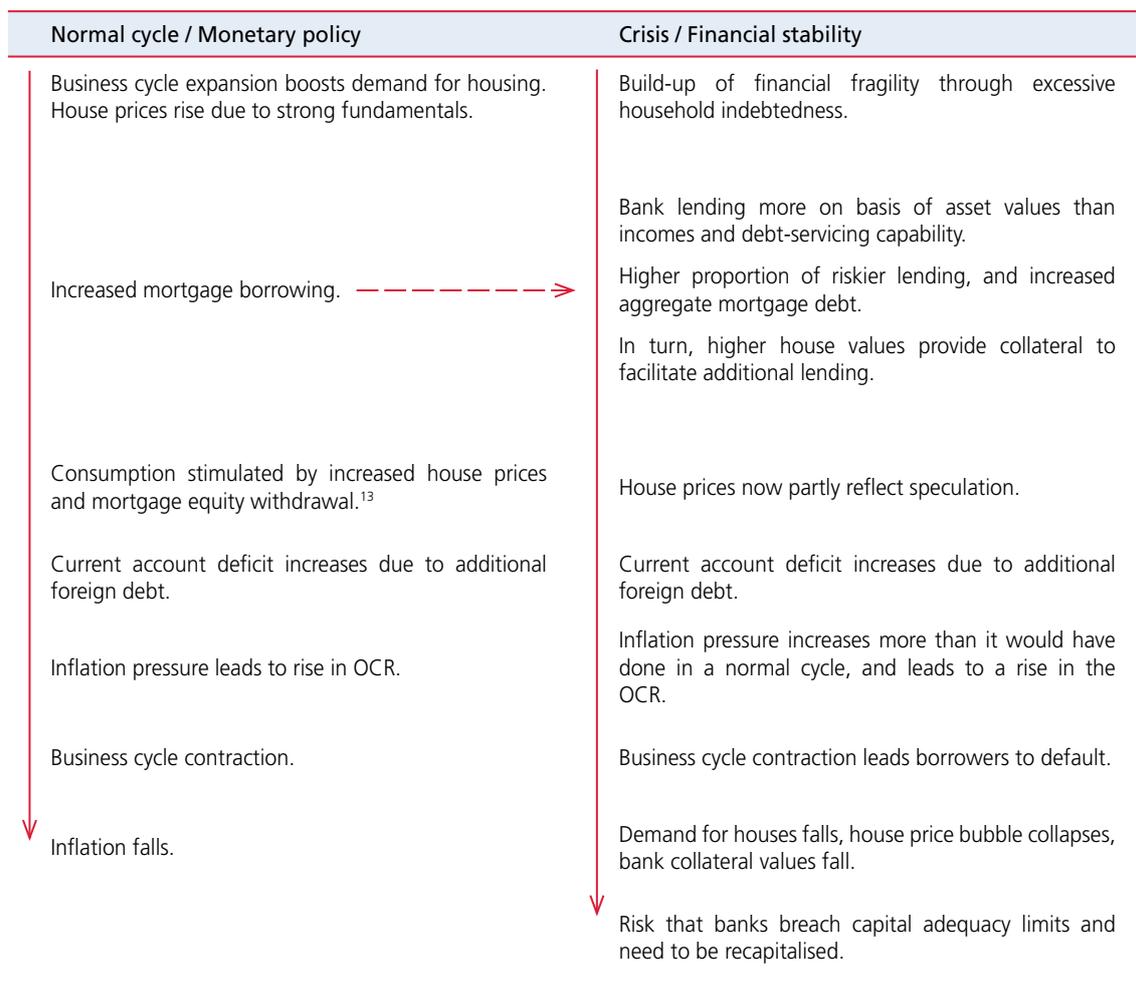
Monetary policy		Financial stability		
Monetary policy target	Indicators 'more for' monetary policy	Common indicators ~ Macroeconomy	Indicators 'more for' financial stability	Financial stability target
Policy Targets Agreement: future CPI inflation between 1 and 3 percent on average over the medium term	Eg, Inflation measures, CPI components, inflation expectations, core inflation measures Labour market Business monitoring Fiscal policy External trade Commodity and factor markets Terms of trade	Eg, Balance between aggregate demand and supply Interest rates Aggregate saving-investment balances Credit growth Credit spreads Exchange rate levels and volatility Equity and other asset prices Debt distribution, debt servicing ratios. Sectoral balances:	Eg, Capital adequacy ratios Asset quality Earnings and profitability Liquidity ratios Financial institution balances and risk indicators Credit ratings Financial market positioning / liquidity	Avoid financial system instability/ stress Objective not quantified
Monetary policy instruments				Financial stability instruments
Official Cash Rate (OCR)		<ul style="list-style-type: none"> household sector business sector agricultural sector 		Reserve Bank actions aimed at prevention or correction of instability (footnote 12)
Publication	<i>Focus on forecasting the mean, and describing the range of uncertainty around the forecast</i>	External debt Hedging and risk management practices Global economic and financial conditions	<i>Focus on risk assessment – eg, tail events, volatility, thresholds that may indicate financial system stress</i>	Publication
Quarterly Monetary Policy Statement (MPS) (appendix A1)				Semi-annual <i>Financial Stability Report</i> (FSR) (appendix A1)

However, positive results have been attained by authors regarding the use of credit growth to predict banking crises. For example, using the deviation of credit growth from trend, Borio and Lowe (2002) were able to predict 80 percent of crises that occurred in a set of 34 countries between 1960 and 1999.¹¹

¹¹ In addition, Borio and Lowe (2002) found that adding asset prices as an indicator reduced the likelihood of mistakenly predicting a crisis, but also reduced the probability of predicting a crisis.

¹² Preventative actions include: prudential regulation (bank registration and supervision), oversight of payment and settlement systems, provision of liquidity to the banking sector, holding a portfolio of foreign reserves for intervention purposes, publishing the *Financial Stability Report* and *Monetary Policy Statement*. Corrective actions include: foreign exchange intervention, maintaining price stability, imposing prudential requirements on banks and ability to alter conditions of registration. Crisis management actions include: acting as lender of last resort, statutory management, foreign exchange intervention.

Figure 3
Stylised timeline: House price cycle



While financial and monetary stability analyses share many indicators, some indicators are more specific to each objective. For example, monetary policy aims to forecast future inflation using more detailed analysis of the economy than would typically be used for financial stability analysis. In contrast, financial stability policy involves close analysis of financial market data, and sectoral and institutional balance sheets. Overlap and differences are drawn out in figure 2, which anticipates the discussion of tools in the following section. In addition to indicator variables, respective targets and instruments are included in this figure and appear in the extreme left and right side boxes.

There is also differentiation in how variables are used. Monetary policy is more concerned with using indicators to make statements about events that could occur with relatively high probability and regularity. By contrast, in detecting crises, financial stability policy is concerned with low probability, irregular events. Financial stability analysis uses volatility or threshold measures – as is done using the types of early warning systems mentioned above. For example, we use exchange rate forecasts for inflation forecasting and monetary policy, but for financial stability purposes we would be particularly interested in the probability of sudden and significant change in the exchange rate.

The stylised timeline in figure 3 shows an example of how an episode of financial instability could develop from an event that, in times of lesser stress, would only have monetary policy implications. While the example considers household indebtedness, excessive debt in any part of the

¹³ **Rising house prices redistribute wealth such that house owners become relatively wealthier while others become relatively less wealthy. This means that in the long term, consumption should not be affected by rising house prices. However, rising house prices facilitate mortgage equity withdrawal, which stimulates consumption in the short term.**

financial system may result in a similar chain of events. The timeline reflects that crises do not usually appear out of the blue. There is typically a period over which imbalances and fragilities build up, during which agents adjust their assessment of risk and eventually learn that risk is mis-priced. There is no discrete point in time at which the system 'becomes' unstable; incremental shifts in stability are difficult to assess in real time.

As agents come to the realisation that the financial system is in a period of instability or crisis, the way they respond is crucial. The actions of market participants as they attempt to protect themselves have often resulted in asset fire-sales, contagion and bank runs, all of which spread and magnify the effects of the original crisis.

To summarise, while crises are procyclical, fortunately they do not appear in every cycle. However, the irregularity in their timing and nature means that identifying when crises will appear is difficult. Whether a given cycle will evolve into a financial and economic crisis depends on the shocks that the system is exposed to, and the underlying system stability. The latter will be determined in part by existing financial balances, regulatory practices and policies, and the behavioural responses of market participants and policymakers. Needless to say, shocks and behavioural responses are difficult to predict. Hence central banks typically focus on identifying sources of risk that may be building in the system, and types of shocks to which the financial system may be particularly vulnerable.

2 Policy tools and approaches

The purpose of monetary policy tools is to maintain price stability, and the purpose of financial stability tools is to ensure financial stability. Nonetheless, irrespective of the intention with which an instrument is used, it is artificial to partition that instrument's effect to the respective spheres of either monetary or financial stability. Households and firms draw no partition between the effects of central bank policy actions on their activities. Hence, monetary policy actions affect the financial system and its stability; financial stability actions have consequences for macroeconomic cycles and monetary policy.

This section considers how monetary and financial stability instruments can work together for cyclical stabilisation purposes. The section outlines some of the current policies and options as examples and as suggestions for further in-depth analysis. Extensive coverage of all options has not been attempted. The discussion takes as given that policies are more effective when simple and hence more easily understood, and when applied in advance rather than reactively.

While the Reserve Bank of New Zealand has responsibility for both monetary and financial stability, different arrangements exist in other countries. Irrespective of the specific institutional arrangements, it is vital to have coordination between regulators and clarity regarding exactly who has authority and responsibility to exercise particular legislative powers.¹⁴

Monetary policy tools to assist financial stability: leaning against asset price bubbles

The Reserve Bank takes a flexible and forward-looking approach to inflation targeting. In accordance with this approach, monetary policy responds to future inflation risks, including risks created by events that threaten financial stability. For example, an asset price cycle that creates financial instability can create longer-term risks to inflation that the central bank will need to respond to. Hence, precautionary adjustments to monetary policy settings occur from time to time as a normal part of a flexible approach to inflation targeting.¹⁵

A long-running debate has considered how central banks can respond to asset price cycles, but as yet there is no agreement on best practice due to several unresolved issues. The main difficulty lies in discerning whether asset prices are driven by fundamentals or bubble behaviour. If monetary policy attempts to correct an asset price cycle that has been wrongly diagnosed as a bubble, overly-tight monetary policy can slow the economy unnecessarily and prevent the efficient allocation of resources.

¹⁴ See also Appendix A2.

¹⁵ At times precautionary adjustments may be sudden and unscheduled. While not taken in response to asset prices, an example of this in New Zealand was the cut in the OCR that followed the events of September 11, 2001.

Worse, the attempt could prove counter-productive if mistimed. Attempting to prick an asset price bubble could leave monetary policy excessively tight at the time when the bubble bursts. On the other hand, a central bank that anticipates a bubble collapse would find it difficult to proactively ease at the right time, without further fuelling the bubble. A further complication arises if the bubble collapse coincides with a period of positive shocks to inflation, creating conflict between financial stability and monetary policy objectives.

Even if the asset price cycle is correctly diagnosed and the central bank's timing is correct, monetary policy actions can still be rendered ineffective. This can happen, for example, by market participants taking a strong contrary view in support of further asset price rises – perhaps due to a belief that the cycle is driven by economic fundamentals. Such beliefs may cause agents to be unresponsive to monetary tightening.

Even more simply, there is a risk that during an episode of financial fragility, adjustments in the OCR may not readily transmit to retail interest rates. While cuts to the US Federal Funds Rate have positively impacted on confidence measures and equity prices in the US, they have been slow to pass through to mortgage rates. In a similar way, New Zealand mortgage rates have been significantly affected by higher funding costs faced by banks in offshore markets.

Compounding all of the above is the political difficulty involved in leaning against an asset cycle – especially under conditions of disagreement about whether the cycle has become a bubble or not. These difficulties are perhaps more pronounced during a period of low and stable CPI inflation, which ensures transparency in downward adjustments of relative prices. Ineffectiveness in leaning against an asset cycle also carries the risk of erosion in central bank credibility, which could make central bank actions less effective in future.

Some commentators have suggested that due to these issues, central banks should focus on responding when an asset bubble collapses, rather than on preventing the bubble in the first place. While this avoids the problem of distinguishing a normal asset cycle from a bubble, it can also encourage risk-taking on the expectation that easy monetary policy settings will cushion investor losses when the asset bubble bursts.¹⁶

Essentially, monetary policy becomes predictably reactive and asymmetric: it accommodates the development of the bubble but leans against the consequences of the collapse.

There is also the risk that supportive policy actions that respond to downside risk may compound longer-term problems. For example, stimulatory monetary policy in the wake of the 'tech wreck' is thought to have contributed to the boom in the US housing market.¹⁷ Low interest rates, coupled with large global imbalances, sparked a 'search for yield' that resulted in investment demand and high prices for relatively more risky classes of assets. Low borrowing costs, and 'teaser' mortgage interest rates encouraged increases in sub-prime mortgage borrowing. These issues combined with regulatory arbitrage, agency and moral hazard issues.¹⁸ However, together these factors set the conditions under which innovations in financial products spread problems in the US sub-prime market to global financial institutions and investors.

The likelihood of moral hazard and asymmetric policy effects argue in favour of a more proactive and symmetric monetary policy approach to asset price cycles. The proactive approach should not be overstated: given difficulties involved in attempting to 'pop' an asset bubble that is well under way with monetary policy, it seems that this will rarely be an advisable course of action. But it is possible to explicitly adjust monetary policy settings to take 'insurance' by leaning against asset price cycles that may become bubbles. This could involve marginal adjustments to policy settings, and would clearly communicate the central bank's view of the risks inherent in the cycle to market participants.¹⁹

Different types of asset bubbles can have different impacts on the economy depending on, for example, how widely the asset is held, how liquid the asset is, and whether debt has been used to buy the asset. Taking these points into consideration, housing busts may have greater and broader impact on the economy than busts in markets for other,

¹⁶ The usual term for this is moral hazard, which refers to the prospect that when a person or institution is insulated from risk, they may behave less carefully.

¹⁷ Borio and McGuire (2004) have looked at this issue in the context of industrialised countries.

¹⁸ IMF Global Financial Stability Reports provide detailed discussion of these issues. See www.imf.org

¹⁹ See Bollard (2004).

more narrowly-held, assets. Housing differs from other assets due to the use of real estate as collateral for bank lending. Housing is typically at least, if not more, important as a consumption good than as an investment asset. Also, in practice, the inability to short-sell housing hinders the operation of arbitrage in the housing market.

Given the potential for house prices to affect the cost of living, it has been argued that house prices should be included more directly in the CPI. However, a review of the CPI undertaken in 2004 found that the CPI should be prioritised to measure 'inflation' in the prices of acquired goods, above functioning as an index of the cost of living.²⁰ New Zealand's CPI is measured using an 'acquisition' approach, as opposed to a payments-based approach that would record monetary outlays on owner-occupied housing. A feature of the chosen price measurement framework for the CPI is that it curtails the extent to which the effects of a housing bubble on household expenditure can show up in CPI inflation. Hence, in the case of a house price bubble, inflation may arise in the prices paid for goods consumed that have not been recorded in the CPI.

Leaning against a broader concept of inflation that included the cost of housing in a more direct way could require slightly different monetary policy choices. But even without shifting our definition of inflation, a proactive monetary policy approach to house price cycles has been supported by recent research. The IMF recently reported that "innovations in housing finance systems have increased the scale of spillovers from the housing sector to the general economy". The IMF work used high loan-to-value ratios (LVR) to represent more developed mortgage markets. High LVRs were found to amplify the effects of financial shocks, as they facilitate the ability of house owners to borrow against collateral for any level of house prices. Hence, "a positive housing demand shock would require a larger increase in the policy rate of interest in an economy with a higher LVR than an economy with a low LVR".²¹

Regarding identification, a common argument is that central banks cannot diagnose bubbles because they have no informational advantage over market participants – if market participants think prices are justified by fundamentals, then what information does the central bank have to say otherwise? Of course, participants do not need to decide whether prices are justified by fundamentals – they only need to consider whether they will be able to on-sell the asset to other market participants at a higher price.²² Also, the central bank does not need to be certain that a bubble exists when it takes insurance by leaning against the cycle. And, additionally, there has been some empirical success in using credit expansion as a signal of potential crises. As noted by others, the 'efficient markets hypothesis' is less likely to apply to housing than to equities (Cecchetti, 2006).

The premium for this insurance is slower growth, and the potential consequences of policy errors resulting from misdiagnosed bubbles – leaning against a misdiagnosed asset price cycle will slow resource allocation. However, if demand for the asset is well supported by economic fundamentals, gradual monetary policy will only slow the cycle, and is unlikely to prevent the efficient allocation of resource over the long term.

Timing problems still present difficulties, and on balance suggest avoidance of pre-emptive easing and readiness to act quickly once the negative consequences of a bust become clear. Again, this can only be symmetric if coupled with monetary policy tightening during the upswing.

New Zealand's inflation targeting arrangements include safeguards in the form of transparency and accountability. The rationale for changes to policy settings need to be clearly explained in the *Monetary Policy Statement*, and monetary policy must be formulated in accordance with the PTA, which dictates that in pursuing its price stability objective the Reserve Bank should not cause "unnecessary" volatility. This aspect of the PTA raises the burden of proof required for monetary actions, putting the onus on the Reserve Bank to explain why it has deemed it necessary to lean against an asset cycle. The Board of the Reserve Bank

²⁰ The review committee repeated a recommendation from the 1997 review, that a cost of living index be developed. This recommendation has not been carried out, due to resource constraints.

²¹ International Monetary Fund (2008).

²² Those buying assets could be 'outsiders' who trade on less understanding of the market's dynamics than better-informed 'insiders'. See Kindleberger's discussion of Hyman Minsky's model.

has the function of monitoring the Governor's performance against the requirements of the PTA. Central banks are in general incentivised to avoid costly errors, due to credibility concerns noted above.

Financial stability tools with counter-cyclical properties

Promoting and maintaining financial stability requires tools that lean against the precursors to crises in expansions, and provide support during crises to mitigate an accompanying contraction. In this way, financial stability tools can have beneficial counter-cyclical effects that assist monetary policy.

The Reserve Bank has tools and systems in place for responding to banking crises, and exchange rate intervention capacity to draw on in a currency crisis. Tools to lean against the development of potential crises include monitoring, supervision and prudential requirements. These last tools are applied in the same way through both business cycle expansions and contractions, and provide a base level of regulatory risk management for financial institutions.

In general, the application of policy tools need not adjust over the course of an economic cycle for the tools to be counter-cyclical in effect. To take an example from fiscal policy, automatic stabilisers such as income tax have counter-cyclical effects while remaining fixed over the business cycle. Nor is it necessary for an instrument to be individually counter-cyclical; a counter-cyclical impact may be achieved by a combination of separate instruments. A conservative liquidity policy for bank funding could, for example, be combined with a safety net in the form of ability to raise short-term cash with the central bank if money markets become illiquid, with the ultimate safety net being provision of lender-of-last-resort facilities.

In some areas, care needs to be taken to reduce the potential for financial stability tools to be procyclical. An example is the effects of the "Basel II" bank capital requirements. While Basel II is intended to improve bank risk management,

it may have a procyclical impact because the framework may inadvertently encourage banks to hold more capital during an economic downturn, and less capital during an upturn.²³ However, bank practices of holding excess capital buffers are likely to reduce the procyclicality of Basel II. Basel II-induced procyclicality may also be attenuated if risk is measured over complete economic cycles as opposed to at each point in time.

Additionally, in New Zealand the practice of linking LVRs to risk weights will introduce an element of counter-cyclicality into Basel II. By increasing the risk weight on high-LVR mortgages, these mortgages attract a relatively higher capital charge. Banks may be particularly likely to extend high LVR lending during periods of strong house price inflation – due to increased borrower demand, and the likelihood that capital gain will assist in the building of equity. To the extent that this occurs, as house prices and LVRs rise, the capital charge on banks also increases and hence has a counter-cyclical effect.

Most financial stability tools are fixed through time; central banks generally do not adjust financial stability tools in a counter-cyclical manner, although much attention is being given to doing so. Attempts are being made to formulate the lessons learned from the sub-prime crisis into policies that will improve the regulatory environment. Many commentators and institutions have already put forward thoughts on changes, including calls to create and actively use counter-cyclical financial stability stabilisation tools. As risks materialise in downturns but can build during upswings, some proposals for counter-cyclical measures have included increasing capital requirements (or provisioning) in upswings, and reducing them in downturns.

Ng (2008) considered this type of counter-cyclical implementation of capital-to-asset requirements in the New Zealand context.²⁴ Following Borio and Lowe (2004), Ng used housing lending and house prices as cyclical indicators. However, Ng suggests that very large changes in capital requirements would be needed to offset the procyclical component of changes in bank margins over the cycle "...probably to levels where disintermediation would be

²³ Some authors have also expressed concern that new international accounting standards will have a procyclical impact by reducing firms' ability to provision against expected future losses. See discussion in Viñals (2004).

²⁴ <http://www.rbnz.govt.nz/research/workshops/10dec2007/index.html>

encouraged. In New Zealand, branches of offshore parent banks could quite easily take over the New Zealand lending business...escaping local capital requirements altogether.” As a rough estimate, Ng finds that 100 percent increases in capital could be required. While this seems large, the case is being made for increases in capital requirements, and in some cases, large increases have been argued for.²⁵

The Reserve Bank’s work on ‘supplementary stabilisation instruments’ (SSI) reported on the use of financial stability tools for macroeconomic and monetary stabilisation purposes.²⁶ Amongst other options considered, the report suggested a discretionary and temporary maximum LVR for bank mortgage lending. That is, a temporary limit would be placed on the size of mortgage loan a bank can extend in comparison to the value of the house that the mortgage is taken out for. The SSI report noted several implementation issues with a cap on LVR, including the need for legislation. The application of a temporary cap could result in some borrowing and house purchases “brought forward (perhaps irrationally so) to avoid being caught if and when the LVR limit power was invoked”. The SSI report also noted the difficulty of judging the cycle so as to appropriately choose when to impose a temporary LVR limit.

Many factors require careful consideration when implementing a policy measure such as a fixed LVR cap. We use the example of an LVR cap to outline some of the main factors in the following paragraphs. A fundamental consideration is that an efficient market should be able to allocate resources to their optimal uses, and governments should accordingly minimise interventions in the private sector. This is an important principle. Policy over-reaction, for example to the current sub-prime situation in the form of overly rigid regulations, could stifle financial innovation and the financial system, with seriously negative implications for resource allocation and economic growth.

However, banks have special status within the financial system and the economy, due to their provision of transaction

and intermediation services. These services mean that if a bank fails, the impacts are felt far more widely than the failure of other types of firms. The importance of banks to the financial system means that public resource is devoted to avoiding their failure. Therefore, banks are regulated and supervised differently to other firms, and the inevitable externalities involved in banking justifies the limits on banks’ activities that are already in place. The broad parameters of those limits are for governments to decide.

A second consideration is the cost of preventing potential disintermediation and avoidance. For example, an LVR cap could be avoided by borrowing from a foreign lender of a jurisdiction without an LVR cap, or by using borrowed funds from a second mortgage as a deposit. However, disintermediation may be less of a problem as the use of second mortgages is likely to involve additional cost to the borrower. New Zealand’s historical experience has shown that these costs can be significant. The increased borrowing cost would still provide a counter-cyclical effect.

Third is the potential for unintended negative consequences for parties either directly or indirectly affected by the policy. For example, an LVR cap could result in banks taking more risk in other parts of their portfolios.²⁷ Policymakers would need to ensure that the regulatory and supervisory framework was sufficiently coherent to manage these risks.

There is also a potential negative impact on first-time buyers. Without an LVR cap, first-time buyers can choose to take high-LVR loans offered by banks. During an upswing in house prices, there may be an expectation that capital gain will reduce initially-high LVRs. As these buyers enter the housing market, demand pressure on house prices makes the assumption of capital gain self-fulfilling. This is undoubtedly good for some, but aggregate debt is increased through higher house prices. Also, the interest repayment over the life of the loan increases, with lower-income borrowers extending mortgage duration. While house prices remain high, the increase in aggregate liabilities is offset by higher-valued housing assets. But if the house price undergoes a sharp downward adjustment, some borrowers – in particular

²⁵ King (2008) notes that “requiring financial institutions to hold more capital to act as a shock absorber, while reducing the procyclical nature of existing capital requirements, may offer a balance between excessively burdensome regulation and risk-taking”. Smithers and Wood (2007) have suggested a 40 percent increase.

²⁶ <http://www.rbnz.govt.nz/monpol/about/2505127.html>

²⁷ Another simple example is the idea of restrictions on credit growth. If such a policy were applied in a blanket fashion, it could disadvantage new-entrant banks with relatively smaller balance sheets.

first-time buyers – could find themselves in a negative equity position.

On the lenders' side, banks can manage credit risk resulting from low-equity lending through lenders' mortgage insurance. However, banks may waive low-equity insurance fees. On the borrowers' side, low-equity borrowers have no instruments with which to hedge against the risk of a fall in the value of their house. Basel II will link risk assessment to LVR ratios but, as noted in the SSI report, the counter-cyclical effect may be quite limited.

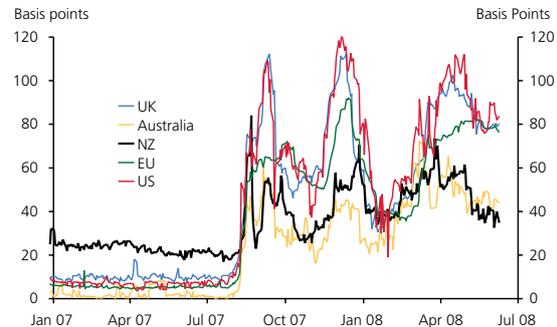
A simple way to reduce these risks could be to impose a fixed LVR cap. The SSI report notes that restrictions on LVRs for residential mortgages are relatively common in OECD and other developed countries. New Zealand banks effectively imposed an LVR cap of approximately 75 percent in the early 1990s. A fixed LVR cap could have prudential benefits by lowering the cost to banks in the event of default, and would avoid some of the difficulties of a temporary cap that were discussed in the SSI report. Prima facie, an LVR cap could have stabilising effects on the housing cycle.

The Reserve Bank is also working on a liquidity policy for banks that will cover the maturity and diversity of their funding sources. A liquidity policy can be counter-cyclical in its effect by causing banks to manage their liquidity and funding risk more conservatively. More conservative risk management would act as a constraint on banks during times when funding markets are operating normally, but it would also reduce the potential for macroeconomic spillovers from liquidity or funding crises.

The liquidity policy for banks needs to be seen in conjunction with the Reserve Bank's liquidity management operations. This has been an area in which financial stability tools have been successfully lending support to monetary policy. As noted earlier, New Zealand banks have faced illiquidity in the short-term money market. Figure 4 shows how the cost of short-term debt has been pushed higher, and out of line with expectations for the cash rates set by central banks. Recent changes to the bank's liquidity management operations aim to improve the effectiveness of the OCR as the instrument of monetary policy by tightening the link between the OCR and market interest rates.

Figure 4

Spread between the interbank LIBOR and OIS rates (bank bill rates in the case of New Zealand and Australia)



Changes to domestic market operations were summarised in the November 2007 *Financial Stability Report*, with further measures announced in the May 2008 *Report*. The main change announced in May was that the Reserve Bank has extended the range of securities that it will accept as collateral when it lends cash to the commercial banks. These securities now include AAA-rated Residential Mortgage Backed Securities (RMBS), and securities issued by New Zealand government agencies, state-owned enterprises and New Zealand local authorities that are rated AA- or higher.²⁸

Liquidity support from central banks has been a key factor in alleviating money market pressures and has assisted in providing financial markets with sufficient confidence to continue operations in a relatively normal fashion, albeit with elevated prices for risk. However, these actions transfer a greater degree of risk to central bank balance sheets, and in the process a clear 'moral hazard' issue arises. Goodhart (2008) points out that by providing assistance to commercial banks, the central bank lessens the impetus on commercial banks to bear the costs of managing their risk independently – though this comes down to appropriately pricing the facilities. Over the longer term, short-term policy responses will need to be balanced by measures aimed at resolving the underlying issues of credit and liquidity risk management.

²⁸ For a detailed list of eligible securities for domestic market operations see <http://www.rbnz.govt.nz/finmarkets/domesticmarkets/index.html>

3 Summary

This article has touched on aspects of the Reserve Bank's thinking regarding how financial stability and monetary policy work together. In particular, we have noted overlap in the analyses used for financial system and monetary stability purposes, and considered the extent to which tools used for both purposes could be mutually reinforcing.

The discussion in the article includes implications for monetary policy. As noted by others, there are reasons why cycles in house prices may have a particularly broad impact on the economy. Given the potential importance of housing cycles to the economy, there are good reasons for monetary policy to lean against housing cycles in order to manage the risk of a bubble/bust cycle.

Regarding financial stability – financial stability tools should be applied primarily for financial stability purposes, but cyclical stabilisation properties in these tools should be recognised and used where possible. While counter-cyclical application of capital-to-asset ratios and liquidity policy may prove useful, more work on these is required. A fixed cap on the LVR has been briefly discussed as an example of a prudential tool that could potentially contribute to reduced risk of bubbles in housing.

The main point of this article is the importance of a unified conception of different aspects of central banking. By being responsible for both monetary and financial stability, the Reserve Bank is well positioned to ensure that appropriate coordination takes place in working towards both its monetary and financial system stability objectives.

Appendices

A1: The *Financial Stability Report* and the *Monetary Policy Statement*

Discussion of financial system risks is presented in the six-monthly *Financial Stability Report* (FSR). The FSR also aims to explain how the Reserve Bank is responding to these risks, in the same way that the *Monetary Policy Statement* (MPS) explains policy actions taken in order to maintain price stability. Overlap between the FSR and the MPS arises particularly through discussion of macroeconomic developments. The FSR discussion focuses on the vulnerability (or resilience) of the macroeconomy to economic/financial shocks, and the likelihood for shocks to arise from the economic and financial environment. The MPS focus would be the likely inflationary consequences of shocks and the possible implication for future monetary policy decisions and the OCR.

A2: Operational independence

Many central banks, including the Reserve Bank of New Zealand, are independent when it comes to making decisions regarding monetary policy actions. The Reserve Bank of New Zealand does not have independence to choose its own goal, but rather has 'operational independence', which means that the Reserve Bank Governor decides how to set the monetary policy instrument (the OCR) in order to achieve the inflation target specified in the PTA.

The Reserve Bank of New Zealand does not have complete operational independence when it comes to decision-making for financial stability purposes. In practice, the Reserve Bank independently operates liquidity management, oversees the payment system, and carries out day-to-day supervision of banks. However, the Reserve Bank is currently working with other government agencies such as the Ministry of Economic Development and the Securities Commission on changes to regulatory and supervisory arrangements for non-bank deposit-takers and insurers. And in the event of an institutional failure, while the Reserve Bank provides advice on failure resolution, the government has a key role in decisions taken.

References

- Basel Committee on Banking Supervision (2008) "Liquidity risk: management and supervisory challenges", Bank for International Settlements.
- Berg, A, E Borensztein and C Pattilo (2005) "Assessing early warning systems: how have they worked in practice?", IMF Staff Papers Vol.52 Number 3.
- Bollard, A (2004) "Asset prices and monetary policy", speech to Canterbury Employers Chamber of Commerce, 30 January.
- Borio, C and P Lowe (2002) "Asset prices, financial and monetary stability: exploring the nexus", Bank for International Settlements, *BIS Working Paper* No. 114.
- Borio, C and P Lowe (2004) "Securing sustainable price stability: should credit come back from the wilderness", *BIS Working Paper* No. 157.
- Borio, C and P McGuire (2004) "Twin peaks in equity and housing prices", *BIS Quarterly Review*.
- Borio, C and W White (2004) "Whither monetary and financial stability: the implications of evolving policy regimes", Bank for International Settlements, *BIS Working Paper* No. 147.
- Buiter, W (2008) "Restraining asset and credit booms", May 25 2008 <http://blogs.ft.com/maverecon/2008/05/restraining-asset-and-credit-booms/>
- Carney, M (2008) "Principles for liquid markets", Remarks to the New York Association for Business Economics, New York, 22 May 2008.
- Cecchetti, S (2006) "Measuring the macroeconomic risk posed by asset price booms" *NBER Working Paper* 12542.
- Davis, E P and D Karim (2008) "Comparing early warning systems for banking crises" *Journal of Financial Stability*.
- Ewing I, Y Ha and B Mai (2004) "What should the Consumers Price Index measure?", Consumer Price Index Revision Advisory Committee, Statistics New Zealand <http://www.stats.govt.nz/developments/2004-cpi-revision.htm>
- Goodhart, C (2008) "Lessons from the crisis for financial regulation: what we need and what we do not need", <http://www.rgemonitor.com/financemarkets-monitor>
- Hunter, L, A Orr and B White (2006) "Towards a framework for promoting financial stability in New Zealand" Reserve Bank of New Zealand *Bulletin* Vol 69, No 1.
- International Monetary Fund (2008) "The changing housing cycle and the implications for monetary policy", World Economic Outlook, Chapter 3.
- King, M (2008) "Banking and the Bank of England", Speech to the British Bankers Association, London, 10 June.
- Kindleberger, C (1996) *Manias, panics and crashes: A history of financial crises*, John Wiley and Sons, Inc. Third Edition.
- Ng, T (2008) "'Automatic' cycle-stabilising capital requirements: what can be achieved?" *RBNZ Discussion Paper* 2008/04.
- Smithers, A and G Wood (2007), "Do banks have adequate access to capital?", Smithers and Co.Ltd, Report No. 298.
- Viñals, J (2004) "Procyclicality of the financial system and financial regulation", Banco de España conference paper.