The interaction between monetary and macro-prudential policy

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The Reserve Bank has recently developed a macro-prudential policy toolkit. This article considers how macro-prudential policy could interact with the Reserve Bank's monetary policy function. While these policies are set with the differing objectives of financial and price stability, respectively, there is the potential for material spill-overs between them. Preliminary conclusions about how they should be set in conjunction with each other are discussed, touching on the interactions between the speed limit on high loan-to-value ratio (LVR) lending and monetary policy.

1 Introduction

The experience of the Global Financial Crisis (GFC) has again highlighted the significant costs to the real economy associated with financial instability. Following the crisis, a new framework has been developed to help the Reserve Bank in promoting financial stability, known as 'macro-prudential policy' (Rogers, 2013a). Macro-prudential policy enhances the broader framework of prudential regulation by actively varying prudential instruments over time.[2] The objectives of macro-prudential policy are to help reduce the potentially damaging effects of asset and credit booms, and increase the scope for banks to continue lending following a period of financial stress. This article focuses on how macro-prudential policy could interact with monetary policy.

The introduction of a macro-prudential speed limit on high-LVR mortgage lending in October 2013 put the issue in focus.[3] The Reserve Bank believes that the speed limit, by dampening inflation pressures associated with housing and credit demand, may have allowed the monetary policy tightening cycle to begin somewhat later. In turn, the recent tightening of monetary policy, alongside further tightening projected in coming years, is expected to support the financial stability objective of the speed limit. The speed limit is a temporary measure, and there could be further implications for monetary policy when the speed limit is removed.

There are distinct objectives and processes for macro-prudential and monetary policy (section 2). There can, however, be significant interactions between the two policy areas. Macro-prudential policy, in pursuing financial stability, can have implications for monetary policy (section 3), and likewise monetary policy can have implications for financial stability (section 4). These potentially complex interactions mean that it can be useful, in some circumstances, to co-ordinate the two policy decisions, while retaining the focus of each policy on its primary objective (section 5).

2 Institutional frameworks for monetary and macro-prudential policy

The institutional frameworks for macro-prudential and monetary policy define the objectives, tools and responsibilities for each area, and therefore the scope for co-ordination between them. Monetary policy decisions are typically made by independent central banks, although the details of governance frameworks vary (Aldridge and Wood, 2014). However, there is significant variation across countries in the institutional arrangements for the relatively new area of macro-prudential policy.

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[2] This broader framework for prudential regulation is sometimes referred to in the literature and overseas as 'micro-prudential' regulation. Traditional micro-prudential policy has an institution-only focus. In New Zealand, prudential policy has always had a system rather than an institution focus.

[3] An FAQ page on the speed limit is available on the Reserve Bank's website: http://rbnz.govt.nz/financial_stability/macro-prudential_policy/5393159.html

The choice of institutional framework for macro-prudential policy is typically influenced by the existing institutional framework for micro-prudential and monetary policy. In most countries, central banks have some involvement in macro-prudential policy (Nier *et al*, 2011). Three main models can be distinguished (IMF, 2013):

- *Model 1*: The macro-prudential mandate and decision-making powers are assigned to the central bank. This results in decision-making powers for both monetary and macro-prudential policy sitting with the central bank. This model has typically been adopted by countries where the central bank previously had responsibility for prudential regulation, such as the Czech Republic and New Zealand.
- *Model 2*: The mandate for macro-prudential policy is assigned to the central bank, but a dedicated decision-making committee for macro-prudential policy is set up within the central bank structure. This committee includes representatives from other institutions (sometimes in a non-voting capacity), such as the Treasury, financial conduct regulator and/or separate prudential regulator. The United Kingdom is an example of this institutional framework.
- *Model 3*: The macro-prudential mandate and decision-making powers are assigned outside the central bank, with a wide range of potential institutional configurations. Decision-making powers can lie with a particular institution, such as the executive arm of Government (as in Switzerland's Federal Council) or a separate prudential regulator. The latter model applies in Sweden and Australia, with extensive information-sharing with other institutions. Alternatively, decision-making powers could lie with a committee comprising representatives from several institutions, including the central bank, as in the case of the Financial Stability Oversight Council in the United States.

In New Zealand, a Memorandum of Understanding (MoU) on macro-prudential policy between the Reserve Bank and the Minister of Finance was signed in May 2013. The MoU affirmed that the Reserve Bank has decision-making powers for macro-prudential policies, in addition to those already in place for monetary policy and prudential regulation (model 1). This framework has a number of advantages in the New Zealand context. First, it allows the Reserve Bank to leverage its existing expertise with banking regulation and macroeconomic and financial surveillance. Second, it allows for decisions on macro-prudential policy to be made independently, after consultation with the Government.[4] Finally, with both prudential and monetary policies already within the institution, there is improved scope for taking account of spillovers across the different policy areas.

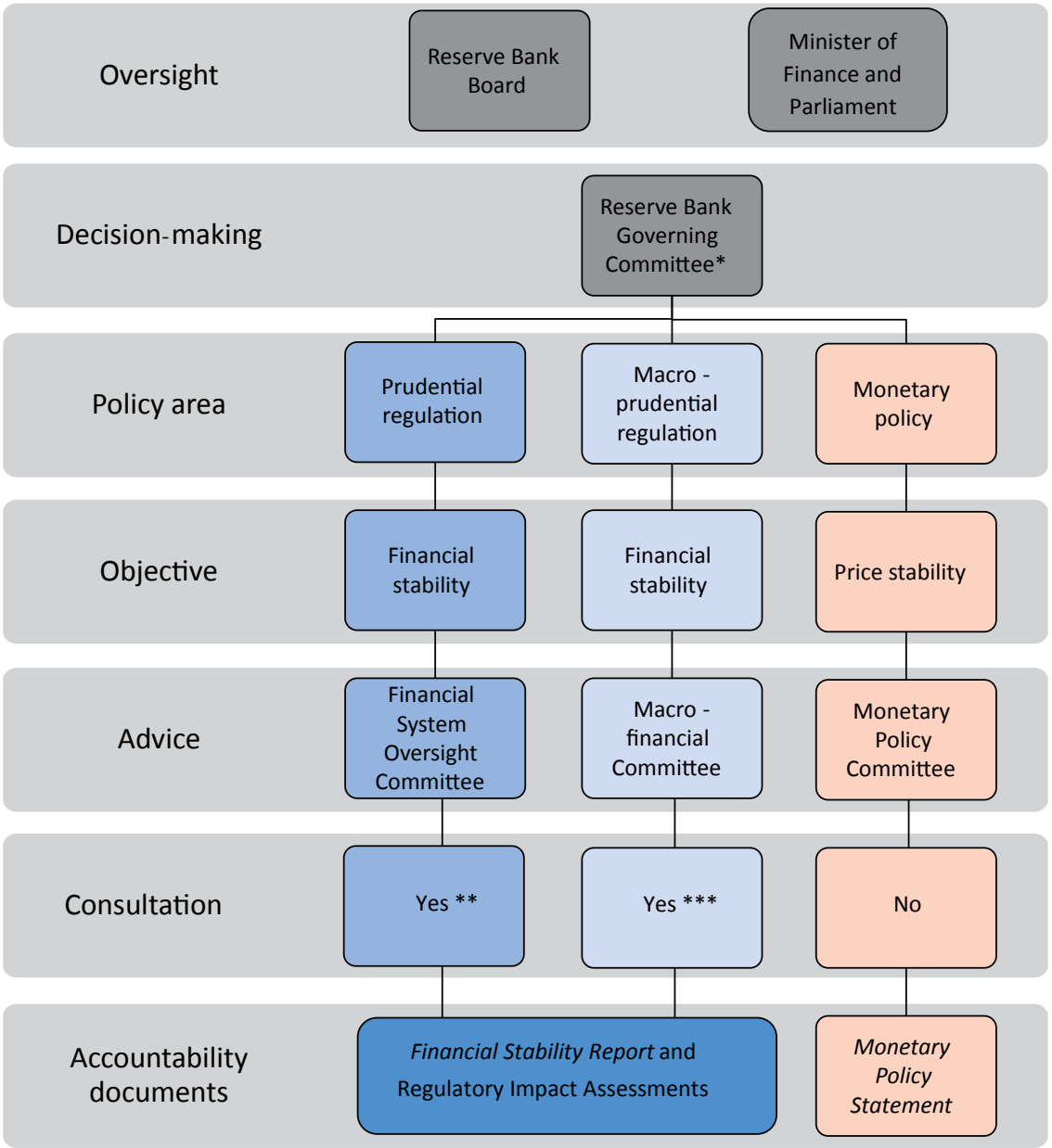
Despite being overseen by the same decision-making committee within the Reserve Bank, there are distinct objectives and policy processes for monetary and macro-prudential policy (figure 1). The policies have differing objectives of price and financial stability (with both objectives set by the Government), and there are separate streams of advice from internal committees relating to each policy area. The reasons for policy decisions are outlined in separate accountability documents, and oversight by the Minister of Finance, Parliament and the Reserve Bank Board is undertaken separately. As discussed in section 5, these distinct processes and objectives help mitigate the risk that ownership of multiple functions by the Reserve Bank could reduce the credibility, transparency and accountability of each policy area.

The legislative basis for the financial stability objective of macro-prudential policy is the same as for the Reserve Bank's long-standing prudential regulation function. The MoU provides additional wording that helps

[4] Under the MoU, the Reserve Bank agreed to keep the Minister and Treasury regularly informed on significant developments in macro-prudential policy, and to consult with these parties where macro-prudential intervention is under active consideration. All of the current macro-prudential tools would be implemented by changing or adding to registered banks' regulatory requirements. The Reserve Bank must also consult banks prior to the deployment of a macro-prudential policy instrument. Note, a new MoU would need to be agreed if the existing set of instruments were to be applied to a wider set of regulated entities, or if new tools were added.

Figure 1

The New Zealand policy framework for prudential and monetary policy



* The Governor is accountable for achieving price and financial stability under the Reserve Bank Act. However, in practice these decisions are made by consensus through the Governing Committee, comprising the Governor, Deputy Governors and Assistant Governor (Wheeler, 2013).

** The precise mechanisms for implementing a change in prudential requirements varies by the regulated sector (banks, deposit-taking non-banks and insurers) and the nature of the requirements. In all cases, however, there is consultation on the detail of the proposed requirements, giving regulated entities and other stakeholders an opportunity to comment on the potential changes. The Government is also generally consulted, except for very minor and technical matters.

*** In addition to the existing consultation requirements associated with changing the relevant prudential reguilation, the Reserve Bank has agreed to keep Treasury and the Minister of Finance regularly informed on significant developments in macro-prudential policy. See footnote 4 for more detail.

to clarify the financial stability objective in the context of macro-prudential policy. In particular, the MoU sets out an expectation that the Reserve Bank will consider tightening macro-prudential policies during periods of rapid growth in asset prices or leverage. The objective of such tightening is to: (i) build the resilience of the financial system, thereby giving the system greater capacity to continue lending during a downturn; and (ii) seek to dampen the credit and asset price cycle, thereby reducing the severity of the eventual downturn. Clearly, these objectives

remain somewhat open to interpretation compared to the quantitative inflation target set for monetary policy. In the MoU, the Reserve Bank must consider any interaction with monetary policy when implementing macro-prudential policy, and explain the implications for monetary policy in the *Financial Stability Report*.

While maintaining the clear primary objective of monetary policy as price stability, the most recent Policy Targets Agreement (PTA) includes explicitly the long-standing statutory requirement that monetary policy have regard for financial stability (Kendall and Ng, 2013). As was the case under the previous PTA, monetary policy must also have regard to avoiding unnecessary instabilities in the exchange rate, interest rates and output. Adding the wording around financial stability clarifies that, in situations where the primary objective of medium-term price stability is not threatened, monetary policy could adjust to reflect financial stability concerns. For example, this could imply a slower than normal return of inflation to the target mid-point to account for financial stability risks.

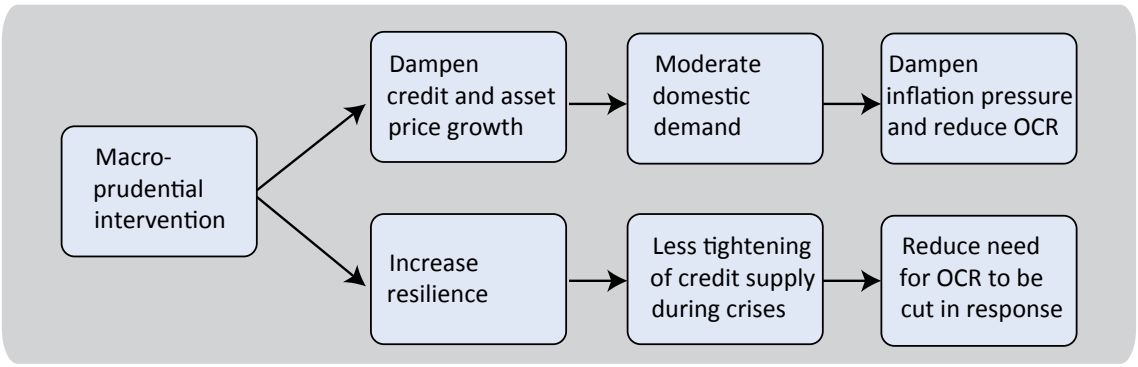
3 Effects of macro-prudential policy on monetary policy

In pursuing the objective of financial stability, macro-prudential policy can, at times, have implications for the appropriate setting of the Reserve Bank's policy interest rate, the Official Cash Rate (OCR). As noted above, macro-prudential policy aims to (i) increase the scope for banks to continue lending during a period of rising loan losses and/or reduced liquidity, and (ii) dampen the credit and asset price cycle. Depending on the macro-prudential tool that is used, the effect on these two objectives will vary, with differing implications for monetary policy (figure 2):

- Of the current suite of macro-prudential tools, restrictions on high-LVR lending are most likely to help dampen rapid growth in credit and asset prices. Any such dampening would likely reduce domestic demand, and thereby affect the inflation outlook at the time of intervention. LVR restrictions are therefore likely to have greater implications for monetary policy settings than other tools.
- The other three capital and funding-based macro-prudential tools are more geared towards building financial system resilience. These instruments are a counter-cyclical capital buffer, sectoral capital buffers and changes in the core funding ratio. By releasing macro-prudential capital and funding buffers during periods of financial stress, these macro-prudential policies provide additional scope for banks to continue lending and reduce the need for the OCR to be cut in response to a tightening in bank credit supply that typically occurs during periods of financial stress.

The implications of LVR restrictions and other macro-prudential tools for monetary policy are discussed separately below.

Figure 2
Stylised impact of macro-prudential policy on monetary policy



3.1 Restrictions on high-LVR mortgage lending

Several international studies suggest that LVR restrictions can have a significant dampening effect on credit and asset price growth. By reducing the ability of households and investors with a low deposit to purchase housing, such restrictions directly reduce housing market turnover and credit growth. Reduced effective demand for housing, combined with the potential to moderate house price expectations, can help dampen house price inflation and result in a further weakening in household credit growth (Rogers, 2013b).

The potential for LVR restrictions to dampen rapid growth in house prices played a strong role in the Reserve Bank introducing a speed limit on high-LVR lending (RBNZ, 2013a). At the time the LVR restrictions were introduced, the Reserve Bank estimated they would have the effect of reducing house price inflation by 1-4 percent, and credit growth by 1-3 percent, over the first year the policy was in place. Data released since then suggest that the impact has been broadly in line with these estimates. For example, Reserve Bank modelling implies that house price inflation, in the year to March 2014, was around 3.3 percent lower than in a counterfactual scenario without the LVR speed limit (Price, 2014).

The dampening effect of the speed limit on credit and asset prices is likely to have reduced domestic demand through a number of channels: lower house prices may have reduced consumption via a wealth effect; the restrictions are likely to have limited the ability of leveraged households to finance consumption by topping up their mortgage; and declining house sales may have resulted in a reduction in durables spending (particularly in the furniture and hardware categories). The size of these effects will vary depending on the role that high-LVR credit is playing in stoking consumption at the time of intervention.

The Reserve Bank estimates that, in relation to the impact on inflation pressures, the speed limit has resulted in the OCR being 25-50 basis points lower than otherwise (Spencer, 2014). However, given that the speed limit is targeted directly at the housing sector, it would have taken a much larger increase in the OCR to generate the same impact on house price inflation. Thus, the speed limit may have allowed for easier monetary conditions in non-housing sectors, and a slightly lower exchange rate. Finally, the speed limit has also reduced the need for monetary policy to contemplate tightening in response to housing-related financial stability concerns. This experience suggests that LVR restrictions can delay, but by no means substitute for, a monetary policy tightening cycle (tightening cycles sometimes require OCR increases exceeding several hundred basis points).

LVR restrictions create incentives for high-LVR lending to be undertaken outside the regulatory perimeter, shifting to products, markets or institutions not subject to the regulation ('regulatory leakage'). If significant amounts of lending are undertaken outside the regulatory perimeter, this would undermine the effectiveness of the restrictions in dampening house price and credit growth. The resilience and allocative efficiency of the financial system could also be undermined if lending shifts to institutions with weaker credit risk management practices than banks. To date, there have been few signs of an increase in household lending designed to circumvent the speed limit (RBNZ, 2014). However, the incentive to profit from avoiding the regulation will likely increase the longer it is in force. Similarly, repeated attempts to micro-manage the credit cycle using LVR restrictions could see mechanisms for avoidance quickly emerge after the restriction is reintroduced or tightened.

The Reserve Bank always intended that the speed limit would be temporary, reflecting the likelihood that regulatory leakage would undermine their effectiveness if they were in place for several years. A decision to ease or remove LVR restrictions will be based on financial stability considerations and, in particular, evidence of a sustained moderation in the risks associated with house price inflation. Removal could also have implications for monetary policy settings. For example, both price and financial stability would be undermined if LVR restrictions were removed in an environment of strong housing demand, resulting in a significant rise in high-LVR lending.

3.2 *Funding and capital-based tools*

The other three macro-prudential instruments would work by increasing the capital or funding buffers of banks during periods of rapid credit or asset price growth. The counter-cyclical capital buffer would involve temporarily increasing aggregate bank capital requirements. Sectoral capital requirements would temporarily increase capital required to fund specific sectoral exposures. The core funding ratio, used as a macro-prudential tool, would involve banks temporarily increasing their use of retail and long-term wholesale funding. While part of the toolkit, these instruments have not yet been used by the Reserve Bank.

By increasing banks' use of relatively expensive liabilities, these tools could, in principle, increase bank lending rates and help dampen the credit cycle (Rogers, 2013b). However, previous research indicates that any impact via this channel is likely to be fairly limited. Firstly, to the extent that funding costs increase, there is no certainty that banks would pass on increased funding costs to end borrowers. Pass-through could be particularly limited because macro-prudential instruments are likely to be imposed during periods of strong competition for new lending. Secondly, overall funding costs may not increase substantially. For capital-based tools, increased capital buffers should be reflected in reduced risks for debt holders, and hence a decline in the cost of this funding. The cost of raising new capital or core funding is also likely to become compressed during periods where macro-prudential intervention is under consideration, as occurred in the period prior to the GFC.

Ha and Hodgetts (2011) conclude that the effect of a plausible tightening of aggregate capital and funding buffers in the pre-GFC period, while uncertain, would likely have increased lending rates by less than one OCR hike. In 2013, the Reserve Bank considered the use of sectoral capital requirements on housing lending to help address financial stability concerns associated with rising house prices (RBNZ, 2013a). However, this instrument was estimated to have a relatively small dampening effect on house prices, equivalent to less than a 10 basis point increase in the OCR. This played a strong role in the policy decision to instead introduce LVR restrictions.

The use of macro-prudential capital and funding buffers may have implications for monetary policy during a sharp economic or financial downturn. For example, during periods of financial stress, when banks may be drawing down their existing capital to absorb loan losses, raising new capital may be difficult, extremely expensive, or both. As a result, banks are likely to significantly tighten the availability of new credit to conserve capital, further reinforcing the economic downturn. If counter-cyclical capital buffers were applied during the upturn, these buffers could be released, potentially reducing the incentive for banks to cut back on lending. In this way, the release of macro-prudential buffers could reduce the extent to which the OCR needs to be cut during periods of financial instability.

4 Monetary policy and financial stability

Monetary policy can have implications for financial stability through its dampening effect on the credit cycle. By setting the benchmark short-term interest rate, monetary policy influences a wide range of interest rates throughout the economy. For example, a tightening of monetary policy usually has a powerful influence on mortgage rates. This can help moderate credit growth and asset prices as borrowing to fund consumption and business investment becomes less attractive, the debt servicing capacity of new and existing borrowers is reduced, and long-term assets (such as residential property) become less attractive. Unlike macro-prudential policy, these effects on financial stability are not limited to institutions within the regulatory perimeter (Stein, 2013). A tightening of monetary policy to rein in inflation pressures has at times brought an end to credit and asset price booms (Drehmann and Juselius, 2012).

The economic and financial literature is still developing an understanding of how monetary policy can influence risk-taking behaviour (Borio and Zhu, 2010). Studies have found that an extended period of low interest rates tends to be – with the benefit of hindsight – associated with a decline in the underlying asset quality of

bank lending (Jimenez, 2014). Intuitively, low interest rates increase the debt servicing capacity of borrowers, and this can make banks more comfortable offering loans to customers at elevated debt-to-income ratios. The increase in debt servicing capacity could also add to destabilising growth in asset prices and credit. These effects can be particularly problematic if households and lenders develop an unwarranted expectation that interest rates will remain at low levels for a protracted period.

In the wake of the GFC, many countries are considering how to manage the potential financial stability effects of an extended period of low interest rates. For example, authorities in Sweden, Canada and Norway, have expressed concerns about the financial stability implications of strong house price growth underpinned by a low interest rate environment. As a result, these countries have introduced measures to tighten access to risky mortgages (RBNZ, 2013b). In New Zealand, the recent extended period of historically low mortgage interest rates appeared to play some role in encouraging the sharp rise in high-LVR mortgage lending between 2012 and late 2013. Thus, the low interest rate environment contributed to the emerging financial stability risks in the housing market, which ultimately led to the introduction of the speed limit on high-LVR lending.

As a small open economy, global financial conditions can have a significant impact on the transmission of monetary policy to both price and financial stability in New Zealand. Firstly, the value of the New Zealand dollar tends to be positively correlated with measures of global risk appetite (Cassino and Wallis, 2010). An appreciation of the exchange rate tends to reduce tradables inflation, putting downward pressure on domestic interest rates. Secondly, there is a strong positive relationship between global and domestic long-term wholesale interest rates, especially at terms greater than two years (Lewis and Rosborough, 2013). Finally, New Zealand banks source a significant portion of their funding from offshore, and conditions in offshore funding markets typically have a strong influence on domestic bank lending rates.

As noted above, the Reserve Bank must have regard to financial stability when setting its monetary policy. There is ongoing debate among policymakers and academics regarding the degree to which price stability oriented monetary policy frameworks should take into account financial stability objectives. In particular, there are opposing views on the appropriateness of tightening monetary policy on financial stability grounds during credit

Table 1
Different views of the role of monetary policy in achieving financial stability

	Clean	Lean
Monetary policy	Framework does not need to reflect financial stability. Limited spill-over effects on credit and risk-taking. Blunt instrument to deal with asset market imbalances. Difficult to identify credit/asset price booms in real time. Leaning dilutes price-stability objective.	Financial stability a valid secondary objective. Supports macro-prudential by 'getting in all the cracks'. Slowing asset prices consistent with long-run price stability.
Macro-prudential policy	More targeted and effective than monetary policy.	Can be ineffective against systemic asset market imbalances.
Interactions	Clear separation of objectives and policy decisions.	More policy co-ordination required.

Source: Adapted from Smets (2014).

or asset booms. Broadly speaking, there are two opposing views in this 'lean versus clean' debate:

- The clean view was dominant prior to the GFC, and proposes that monetary policy should not respond to asset or credit booms, except to the extent that they influence inflation pressures. It assumes that policymakers have difficulty identifying credit/asset price booms; that the tightening in monetary policy required to lean against a credit or asset price boom would create unacceptable costs for the wider economy; and monetary policy is effective in 'cleaning' up the impact on the real economy if the financial cycle turns. Proponents of this view sometimes assume that prudential instruments can effectively limit the extent of financial system damage during periods of financial instability.
- The lean view proposes that monetary policy should actively lean against credit booms for financial stability purposes. It is assumed that monetary policy that leans against credit booms is consistent with long-run price stability, and increased interest rates can be effective in limiting a credit boom with limited costs for the wider economy. Proponents of this view sometimes assume that prudential policies alone are unlikely to be sufficient to contain the build-up of systemic risk.

Sweden provides an interesting case study of the difficult trade-offs for monetary policy that can arise between price and financial stability goals. As noted above, Sweden has experienced high and rising household indebtedness in recent years, alongside an environment of low interest rates. In response to the financial stability risks associated with household debt, the Riksbank has set monetary policy at somewhat tighter levels than if based purely on a price stability objective. This decision has not been without controversy, with critics arguing that the reduction in financial system risks achieved by tighter monetary policy has had significant costs in terms of a sustained period of inflation below the target mid-point and higher unemployment (Ekholm, 2014).

Research is continuing in this area. The lean view has become more influential in recent years, reflecting both the experience of the GFC and the influence of research from the Bank for International Settlements (Borio and Lowe, 2003). There is an emerging consensus that financial stability is a valid secondary objective and that there are instances where monetary policy should respond to financial stability concerns, so long as these actions are consistent with the primary price stability objective (Smets, 2014).

5 Co-ordinating monetary and macro-prudential policy

The previous two sections suggest that there can be material interactions between macro-prudential and monetary policy. This section discusses the appropriate degree of co-ordination between the two policy decisions to take account of these interactions. The two policy decisions will typically be undertaken with each policy focusing on its own primary objective, taking into account the impact of the other policy objective. But, in some circumstances, the interactions are more complex and a greater degree of co-ordination may be beneficial.

The degree of co-ordination required will partly depend on the interaction between the business and credit cycles (table 2). When the cycles are in sync, policy actions will be complementary (north-east and south-west corners of table 2). For example, periods of strong growth and inflationary pressures are often associated with booming asset prices and credit growth. Monetary policy will be tightening in response to growing inflation pressures, so that monetary settings are not likely to be exacerbating financial stability pressures. And the possible introduction of macro-prudential measures in response to financial stability risks could help to lean against strong inflation pressures. Assuming that each policy is able to achieve its primary objective, there should be limited need to co-ordinate the policy decisions.

In situations where the business and credit cycles are out of sync, the primary objectives of the two policies need to be carefully balanced (north-west and south-

Table 2

Interactions between macro-prudential and monetary policy actions depending on outlook for price and financial stability

		Outlook for inflationary pressure		
		Weakening	**Stable**	**Strengthening**
Asset and credit price cycle	**Exuberance**	Conflicting	Primary objectives are independent	Complementary
	Stable	Independent	Independent	Independent
	Contraction	Complementary	Primary objectives are independent	Conflicting

east corners of table 2). The theoretical literature has identified a risk that a lack of co-ordination could reduce welfare in these situations, as each policy seeks to overly counteract the impact of the other on its own objective (De Paoli and Paustian, 2013). For example, a loosening of monetary policy in response to a weak inflation outlook could exacerbate rapid growth in credit and asset prices. As noted above, a number of countries, including New Zealand, have faced live trade-offs along these lines in recent years. It is also possible that trade-offs could emerge if the release of macro-prudential instruments were contemplated at a time of rising inflation pressure.

Macro-prudential instruments can become ineffective in achieving financial stability if a significant amount of lending is undertaken outside of the regulatory perimeter. In this situation a tightening of monetary policy could be particularly helpful for achieving financial stability, as it would increase the cost of credit for all borrowers (including those avoiding the macro-prudential intervention). The case for tightening monetary policy on financial stability grounds would be particularly strong if low interest rates were adding to the build-up of systemic risk. Before responding to financial stability concerns, monetary policy would need to be assured that its primary objective of medium-term price stability is not threatened. A temporary period of inflation below the target mid-point may be appropriate in some circumstances. However, a sustained period of inflation below the target mid-point could risk de-anchoring inflation expectations and threaten medium-term price stability.

Monetary policy can also face constraints and difficult trade-offs in meeting its price stability objective. In these circumstances, macro-prudential intervention could be particularly helpful from the perspective of monetary policy. The potential trade-offs facing monetary policy are illustrated by the tightening cycle between 2004 and 2007, coinciding with rapid growth in asset prices and credit. During this period, long-term interest rates were persistently below short-term interest rates, prompting borrowers to lock in longer term fixed term mortgages. The reduced traction of monetary policy on mortgage rates meant that OCR increases, required to control inflation, appeared to work in large part through a higher exchange rate dampening tradables inflation. By contrast, the tightening appeared to have less of an impact in dampening rapid house price inflation and associated inflation pressures in the non-tradables sector. Buoyant conditions in global financial markets may have contributed to the elevated exchange rate, low long-term wholesale interest rates and exceptionally low bank funding costs during this period.

At the time, there were loud calls for the use of an alternative policy instrument to assist monetary policy in dampening non-tradables demand, without putting further upward pressure on the exchange rate (Treasury and RBNZ, 2006). To the extent that they are able to dampen rapid asset price and credit growth, macro-prudential instruments could provide support for monetary policy during such periods. As discussed in section 3, any such dampening effects would somewhat reduce, rather than supplant, the need for monetary policy tightening. Moreover, the use of macro-prudential tools must be

justified on financial stability grounds. Hunt (2013) argues that this test would have been met prior to the GFC, if the tools had been available.

As discussed in section 2, monetary and macro-prudential policy have distinct objectives and policy processes. Keeping the focus of each policy area on its primary objective helps to mitigate the risks that could be associated with co-ordinating the two policies from within the same institution. If monetary policy became too focused on financial stability, there is a risk that the transparency, accountability and credibility benefits of the inflation targeting framework could be reduced (Svensson, 2011).[5] Similarly, the focus of macro-prudential policy on financial stability helps to ensure that the reasons for policy decisions are clear, and that the Reserve Bank can be held accountable for these decisions. Finally, an activist use of macro-prudential instruments to support monetary policy goals would likely reduce the effectiveness of the tools in achieving financial stability. The Reserve Bank is required to explain its policy decisions in its *Monetary Policy Statement*, *Financial Stability Report*, and Regulatory Impact Assessments, and outline how these decisions support the primary objective of the relevant policy.

6 Conclusion

This article discusses the potential interaction between the Reserve Bank's monetary and macro-prudential policy decisions. Macro-prudential policy, set in pursuit of financial stability, can at times have implications for monetary policy. These effects are likely to be largest when macro-prudential intervention dampens inflation pressures associated with the credit cycle. Monetary policy, in pursuing price stability, can have significant effects on financial stability, particularly if regulatory leakage is reducing the effectiveness of macro-prudential policy. There can be a case for tightening monetary policy on financial stability grounds, as long as doing so does not pose a threat to medium-term price stability.

The presence of these interactions means that it can be useful, in some circumstances, to co-ordinate the two policy decisions. Nevertheless, each policy area retains distinct primary objectives, advisory committees, and accountability processes. This approach helps ensure that the credibility of the inflation target of monetary policy does not deteriorate due to monetary policy becoming too focused on financial stability; that the accountability and transparency of both policy frameworks are not marred by the primary policy objective being unclear; and that the regulatory leakage that could be associated with attempts to micro-manage the credit cycle with macro-prudential tools is kept to a minimum.

The interaction between monetary and macro-prudential policy is an ongoing area of research. Active areas of research include the size of the spill-over effects between the two policies, the degree of synchronisation between business and credit cycles, and the potential credibility risks of co-ordinating the two policies. The Reserve Bank will continue to draw on this work for its macro-prudential and monetary policy decision-making.

References

Aldridge, T and A Wood (2014) 'Monetary policy decision-making and accountability structures: some cross-country comparisons', Reserve Bank of New Zealand *Bulletin*, 77:1.

Borio, C and P Lowe (2003) 'Asset prices, financial and monetary stability: Exploring the nexus', BIS *Working Paper*, 114.

Borio, C and H Zhu (2008) 'Capital regulation, risk-taking and monetary policy: A missing link in the transmission mechanism?' BIS *Working Paper,* 268.

Cassino, E and Z Wallis (2010) 'The New Zealand dollar through the global financial crisis', Reserve Bank of New Zealand *Bulletin*, 73:3.

De Paoli, B and M Paustian (2013) 'Co-ordinating monetary and macro-prudential policies', Federal Reserve Bank of New York *Staff Reports*, 653.

Drehmann, M and Juselius M (2012) 'Do debt service costs affect macro-economic and financial stability?', BIS *Quarterly Review*, September 2012.

[5] Ueda and Valencia (2012) show that the credibility of the inflation target can be damaged if the central bank becomes too focused on financial stability, as the private sector develops an expectation that monetary policy will allow higher inflation to help repair private sector balance sheets following periods of financial stability. This, in turn, can reduce the incentives for macro-prudential tools to be used.

Ekholm, K (2014) 'Role model or warning example? Swedish experiences of taking indebtedness into account in monetary policy decisions', speech delivered to the Confederation of Swedish Enterprise, http://www.riksbank.se/Documents/Tal/Ekholm/2014/tal_ekholm_140314_eng.pdf

Ha, Y and B Hodgetts (2011) 'Macro-prudential instruments for New Zealand: a preliminary assessment', paper prepared for Reserve Bank workshop on macro-prudential policy, Wellington, 21 March, http://www.rbnz.govt.nz/research_and_publications/seminars_and_workshops/march2011/4344140.pdf

Hunt, C (2013) 'The last financial cycle and the case for macro-prudential intervention', Reserve Bank of New Zealand *Bulletin*, 76:2.

IMF (2013), *Key aspects of macroprudential policy*, June 10, 2013, http://www.imf.org/external/np/pp/eng/2013/061013b.pdf

Jimenez, G, *et al* (2014) 'Hazardous times for monetary policy: What do twenty-three million bank loans say about the effects of monetary policy on credit risk-taking?', *Econometrica*, March 2014, 82:2.

Kendall, R and T Ng (2013) 'The 2012 Policy Targets Agreement: an evolution in flexible inflation targeting in New Zealand', Reserve Bank of New Zealand *Bulletin*, 76:4.

Lewis, M and L Rosborough (2013) 'What in the world moves New Zealand bond yields', Reserve Bank of New Zealand Analytical Note, AN 2013/08.

Nier, E, *et al* (2011), 'Institutional models for macroprudential policy, IMF Staff Discussion Note, SFN/11/18.

Reserve Bank of New Zealand (2014) 'LVR effectiveness monitoring', *Financial Stability Report*, May 2014, Box A.

Reserve Bank of New Zealand (2013a) Regulatory impact assessment: Restrictions on high-LVR residential mortgage lending, http://rbnz.govt.nz/financial_stability/macro-prudential_policy/5407434.pdf

Reserve Bank of New Zealand (2013b) 'Recent macro-prudential actions in advanced economies', *Financial Stability Report*, May 2013, Box B.

Rogers, L (2013a) 'A new approach to macro-prudential policy for New Zealand', Reserve Bank of New Zealand *Bulletin*, 76:3.

Rogers, L (2013b) 'Unpacking the toolkit: the transmission channels of macro-prudential policy in New Zealand', paper prepared as background to Reserve Bank of New Zealand consultation on 'Macro-prudential policy instruments and framework for New Zealand', March http://www.rbnz.govt.nz/financial_stability/macro-prudential_policy/5169081.pdf

Price, G (2014) 'How has the LVR restriction affected the housing market: a counterfactual analysis', Reserve Bank of New Zealand Analytical Note, 2014/03.

Smets, F (2014) 'Financial stability and monetary policy: How closely interlinked?', *International Journal of Central Banking*, June 2014.

Stein J (2012) 'Lean, clean and in-between', speech presented to the NBER research conference: Lessons from the financial crisis for monetary policy, http://www.federalreserve.gov/newsevents/speech/stein20131018a.htm

Spencer, G (2014) 'Coordination of monetary policy and macro-prudential policy', speech delivered to Credit Suisse Asian Investment Conference in Hong Kong, http://rbnz.govt.nz/research_and_publications/speeches/2014/5671407.html

Svensson, L (2011) 'Monetary Policy after the Crisis', speech given at the Federal Reserve Bank of San Francisco, http://larseosvensson.se/files/papers/LS111129e.pdf

Treasury and RBNZ (2006) *Supplementary Stabilisation Instruments: Initial report*, http://www.rbnz.govt.nz/monetary_policy/about_monetary_policy/2452274.pdf

Ueda, K and F Valencia (2012) 'Central bank independence and macro-prudential regulation', IMF Working Paper, WP/12/101.

Wheeler G (2013) 'Decision making in the Reserve Bank of New Zealand', speech delivered to the University of Auckland Business School, http://rbnz.govt.nz/research_and_publications/speeches/2013/5173515.html