28 August 2013

Westpac Institutional Bank

In their footsteps

Macroprudential tools: the international experience

- **In this article we review four international case studies of macroprudential tools, in order to shed to light on New Zealand's recently announced loan-to-value ratio restrictions.**
- **The overseas results have been mixed. While LVR restrictions have probably slowed the rate of growth in house prices and household debt, the impact has tended to be modest and short-lived.**
- **The implication for New Zealand is that the restrictions announced last week are unlikely to be the final word.**

Last week's decision by the Reserve Bank to impose limits on loan-to-value ratios (LVRs) marks the first use of its long-gestating macroprudential toolkit. The aim of macroprudential policy is to reduce the financial system's vulnerability to future shocks, either by building up safety buffers within the system or by leaning against excessive growth in asset prices and credit. While macroprudential tools are still far from mainstream, they are increasingly popular among those countries facing similar conditions to New Zealand, particularly in the post-Global Financial Crisis environment.

In our previous article "Lowering the boom" (20 August) we looked at the expected impact of LVR restrictions from a theoretical point of view; here we consider the international evidence on the use of LVR limits and other macroprudential tools. The outcomes have generally been consistent with our theoretical framework, bearing in mind that the structure of the housing market and the ways in which macroprudential tools have been applied differ across countries.

We've taken a case study approach, focusing on four countries that have faced or are facing similar conditions to New Zealand today, and drawing together some common themes. The second section of this article goes into the details of each country's experiences; those who are interested only in the broad themes need not read beyond this introduction. Our main findings are:

- The effects of macroprudential tightening tend to be modest and short-lived, with most of the impact occurring in a three- to six-month window.
- The downward impact has been on the rate of growth, rather than the level, of house prices and household credit. Households have generally continued to leverage up after restrictions were introduced, though perhaps less than they might have otherwise.
- The use of macroprudential policy has rarely if ever been a one-off; there tend to be multiple tightenings over the course of several years. That doesn't prove that these tools are ineffective; rather, it suggests that they're difficult to calibrate and that regulators have probably erred on the side of caution.
- Price-based measures – those that alter the cost of credit – appear to be more effective than quantity-based measures. Put another way, changing the financial incentives faced by borrowers and lenders seems to work better than limiting the number of people who can act on those incentives.
- There is often some underlying factor that contributes to the excessive heat in the housing market (aside from low interest rates). An under-supply of new housing is a common feature, though not a universal one. Other factors include regulation of the rental market, or a favourable tax treatment or other forms of government support for property ownership. Macroprudential policy can't fix these underlying factors, and at worst could sap the resolve of policymakers to address them. That raises the risk that macroprudential restrictions, rather than being used in a time-varying manner, could end up becoming a permanent feature.

The main lesson for New Zealand is that last week's LVR restrictions probably shouldn't be viewed as a one-off measure. Both the international experience and our own modelling suggest that the impact on house prices and credit growth will be modest and short-lived. As this becomes apparent, it's possible that the RBNZ will either tighten the LVR 'speed limit' further, or complement it with other forms of macroprudential tightening – and monetary tightening, to the extent that the inflation outlook allows.

Four case studies

We have selected four countries whose experience with macroprudential policy we think is most relevant to New Zealand: South Korea, Canada, Israel and Sweden. These are (mostly) small open economies, none of whom suffered a severe housing market correction or a banking collapse during the Global Financial Crisis. High exchange rates and low inflation have required those countries to keep interest rates low, which has consequently pushed house prices up from already-elevated levels.

We've excluded countries with fixed or managed exchange rates – namely Hong Kong and Singapore, as well as much of the developing world where macroprudential tools are more common. The reason is that macroprudential tools tend to be used in these circumstances because other options aren't available – in a fixed exchange rate regime it's not possible to run an independent interest rate policy. For similar reasons we haven't addressed New Zealand's own experience with LVR restrictions in the 1970s.

Finally, bear in mind that it's hard to declare the success or otherwise of macroprudential tools. For one thing, financial crises are infrequent, and the absence of a crisis doesn't prove that macroprudential policy prevented it. Second, we don't know how the costs and benefits of macroprudential tightening might have compared with other options, such as raising interest rates. The overseas literature, largely written by those who use or advocate macroprudential tools, is distinctly silent on this matter.

The charts for each country show the two series that the RBNZ has identified as its measures of success: growth in house prices and household credit. The grey bars represent the timing of macroprudential tightening (positive) or loosening (negative).

South Korea

South Korea experienced explosive growth in household credit in the late 1990s and early 2000s as the financial sector was deregulated. In 2002 the Bank of Korea introduced limits on loan-to-value ratios (LVRs) for housing loans, and in 2005 these were combined with caps on debt servicing to income ratios. Together, these restrictions were tightened 12 times and loosened 5 times between 2002 and 2010, though only some of these changes applied at the national level. The rest were more finely graded, such as tighter restrictions on lending in 'speculative zones' like the Gangnam district in Seoul.

With its relatively long track record of macroprudential policy, South Korea provides the best opportunity to formally test its impact. Studies by the Bank of Korea have concluded that the tightening measures that applied at the national level helped to slow the rate of increase in house prices and household debt over a three- to six-month horizon.[1] There is also some evidence that they reduced loan delinquency rates for banks.

Macroprudential policy has not been the only policy influence on house prices in this time. In 2006 the government introduced transfer taxes on the sale of second homes, ranging from 6% to an eye-watering 60%. And in 2010-11 the Bank of Korea raised its cash rate from 2% to 3.25%, as the housing market and the economy more generally began to bounce back from the GFC.

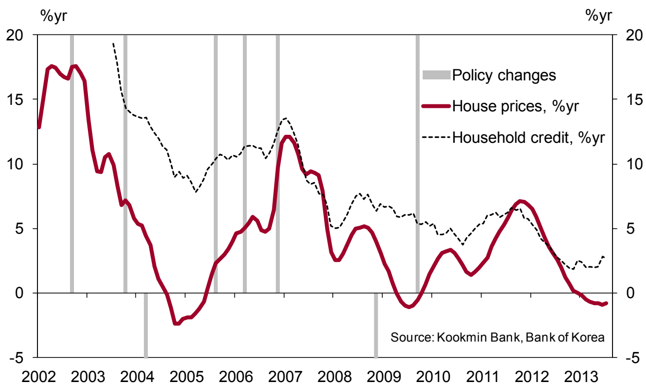
Canada

Canada's banks are required by law to buy lender's mortgage insurance (LMI) for home loans with an LVR above 80%. The main provider of this insurance is the Canada Mortgage and Housing Corporation (CMHC), a government-backed agency. From 2004 to 2007, as the housing market boomed, the CMHC progressively eased its underwriting standards to compete with private sector insurers.

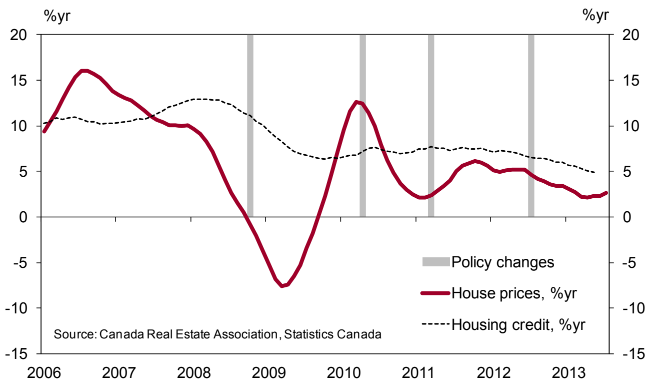
Rising house prices were accompanied by a surge in housing construction, leading to concerns about overbuilding; IMF calculations suggest an oversupply of houses from 2002 to 2008, and again since mid-2011.

The government became increasingly concerned that banks may be using the CMHC to offload their risk onto the taxpayer, and even more so following the GFC. In October 2008 the Finance Minister began to tighten the CMHC's underwriting standards, lowering the maximum LVR for insured loans from 100% to 95%. This is considered to have been widely evaded through measures such as cash-back offers (banks give borrowers cash equal to 5% of the value of the house, in exchange for a higher interest rate), support from family (treated as a gift even if it's really a loan) or borrowing from retirement savings (also a loan but not recognised as one).

South Korea



Canada



There were three further rounds of macroprudential tightening from 2010 to 2012, this time aimed at raising the effective cost of borrowing. The refinancing of a loan is now capped at 80% of the home's value, which limits the extent to which homeowners can convert unsecured personal loans into cheaper secured mortgage debt (with taxpayer-funded protection for the lender). In addition, the maximum repayment period for new loans has been lowered from 40 years to 25 years, which works by increasing the minimum repayment size, much like a rise in interest rates would. One analyst, quoted in *The Economist,* calculated that the most recent round of restrictions in July 2012 was equivalent to a 1% interest rate hike.

The evidence on these measures is mixed. A recent IMF study found that the LVR cap imposed in 2008 had no lasting impact on house price or credit growth, but that the more price-based measures in 2011 and 2012 (or perhaps the cumulative effect of four rounds of tightening) were more successful.[2] However, that study was based on data up to the end of 2012; since early this year, house price growth has started to pick up again, house sales have risen 11% and building permits have rebounded to a new record high.

Canadian households continued to leverage up after macroprudential tools were introduced, with the ratio of household debt to disposable income rising steadily from 150% in 2008 to 165% today. The IMF study concluded that this ratio would have reached 170% in the absence of macroprudential restrictions.

1 See www.imf.org/external/np/seminars/eng/2013/macro2/pdf/ck2.pdf

2 See www.imf.org/external/pubs/ft/scr/2013/cr1340.pdf

Israel

Unlike the other countries reviewed here, Israel's house price boom doesn't appear to have started from already-elevated levels. House prices previously peaked in 2002 and were broadly flat from 2004 to 2007, but began to rise rapidly from 2008 as the Bank of Israel cut interest rates in response to the GFC. During this time there was also a marked shift towards floating-rate mortgages, where rates fell as low as 1.75%, amplifying the effect of looser monetary policy on the housing market.

In 2010 the Bank of Israel required banks to hold more capital and make larger provisions against home loans with an LVR above 80% (this was extended to all home loans in early 2013). In May 2011, the floating-rate portion of a home loan was limited to one-third of the total. In November 2012, LVRs were capped at 50% for investors, 70% for those upgrading their homes, and 75% for first-time buyers (this differential was purely for political reasons). And from September this year, repayments for new loans will be capped at 50% of income, and repayment periods will be limited to 30 years.

We're not aware of any formal studies of the impact of these measures. But visually at least, only the May 2011 measure appears to have had a substantial impact on credit growth. Notably, this was the only measure that directly affected the cost faced by borrowers, by forcing them to take out at least two-thirds of their loan at higher fixed-term rates.

Israel has had strong population growth in recent years, and the government has been slow to release land for development, resulting in a severe shortage of housing. Rents have also been rising sharply since 2008, though not as quickly as house prices.

Sweden

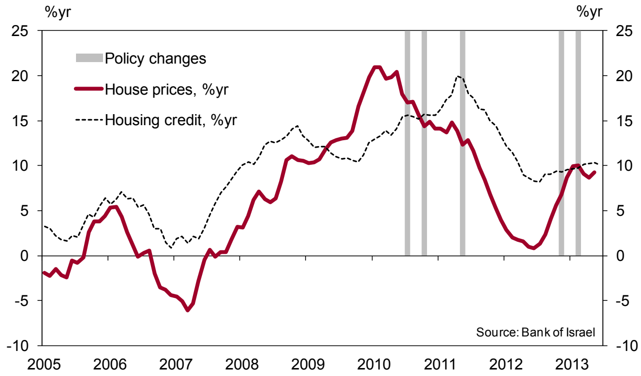
After a severe housing bust and banking collapse in the early 1990s, Swedish house prices have been rising rapidly since 1995, averaging around 10% annual growth between 2001 and 2007. House prices briefly fell during the GFC, but quickly rebounded as interest rates were slashed. There was also a marked rise in the popularity of interest-only loans. Household leverage also rose rapidly in this time. By 2012 the average ratio of household debt to income had reached 173%, compared to a ratio of 100% in 2000 and a peak of 130% before the early 1990s bust.

Housing construction has remained low as a share of GDP over recent years, with the central bank (the Riksbank) citing a highly regulated rental market, land scarcity and onerous development procedures.

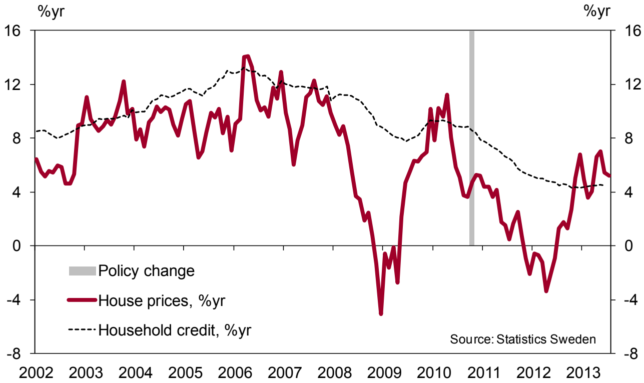
In October 2010 the banking regulator introduced an 85% LVR limit on new home loans; at the time, it was estimated that about a third of new loans exceeded this level. The most visible response was an explosion in unsecured top-up loans, albeit at higher interest rates than for secured loans. This type of 'leakage' is usually seen as tolerable, as long as it shifts the risk away from the systemic players in the banking sector. However, that wasn't the case here: the top-up loans were often provided by the same bank that provided the secured portion of the loan.

The effect on house prices and credit is hard to disentangle, as the Riksbank had begun raising interest rates in July that year, and house price growth was already slowing by that point. House prices fell slightly in 2011, but as the euro zone debt crisis dragged on and the Riksbank lowered interest rates again in 2012, house prices started to rebound.

Israel



Sweden



The banking regulator is currently considering further macroprudential measures, such as lowering the LVR cap below 85%, and tripling the minimum risk weights used to calculate bank capital requirements for mortgage lending. Given that the current minimum is just 5%, a threefold increase would still leave it well below the weights used in many other developed countries (risk weights for New Zealand banks are around 25-30%).

The Riksbank has also investigated countercyclical capital buffers (CCB), an integral part of the new 'Basel III' international standards for bank capital (and one of the RBNZ's four macroprudential tools). The Riksbank calculates that if the CCB had existed in the past, it would have been applied to all of the major Swedish banks continuously since at least 2000.

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