

Box 6 International experience with macroprudential mortgage product instruments

In recent years there has been increasing use of macroprudential policies to reduce risks associated with the provision of mortgage debt. Instruments used have included various limits on loan to value (LTV) ratios, loan or debt to income (L/DTI) ratios, debt-servicing ratios (DSRs) and loan tenors.⁽¹⁾ A range of national authorities have deployed such policies: an IMF survey of 42 countries found that more than one third had implemented product tools on mortgages, including two thirds of EU countries.⁽²⁾ **Table 1** sets out some examples of the use of such instruments.

Objectives and design features

The IMF survey suggests that macroprudential mortgage product instruments have most frequently been used to tackle risks from household overindebtedness. These risks include direct losses on mortgage lending in the event of a shock but also losses on lending more broadly as a result of reduced consumption and economic activity. Some authorities have used product instruments to mitigate the risks associated with an easing of lending standards during booms, or to reduce speculative activity and overheating in particular market segments. A few countries have noted the potential for these policies to reduce the sensitivity of bank loan losses to changes in house prices.

The choice of, and in some cases combination of, instruments deployed has varied across countries, depending on the source of risk that the authorities have been seeking to control.

Both LTV and L/DTI limits have been used, often in combination, to mitigate risks from household indebtedness, albeit from different angles. LTV limits lower the likelihood that borrowers will get into negative equity, where the value of a property falls below the value of the original mortgage loan. L/DTI and DSR limits seek to reduce risks associated with changes in affordability and the volatility of spending. From the perspective of bank resilience, LTV limits help lower bank losses in the case of a mortgage default while L/DTI and DSR limits can reduce the probability of default.

Several countries, particularly in South East Asia, have placed limits on the total exposure individual banks may have to the property sector. New Zealand recently introduced a 'speed limit' policy, to restrict the proportion of new mortgage loans that banks can make at high LTV ratios.

The application of these policies can be temporary or permanent. Permanent caps give certainty to consumers and provide ongoing insurance against future risk. In other cases, authorities intend to vary the settings of their mortgage product instruments depending on their assessment of the risks.

Examples of mortgage product instruments

New Zealand: In October 2013 the authorities introduced a limit which restricts the proportion of new mortgage lending

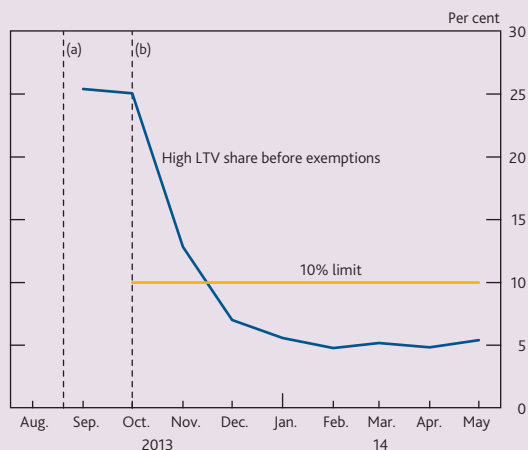
Table 1 Selected macroprudential policies

Country	Action	Motivation	Implementation	Impact
Canada	LTV cap, DSR and loan tenor cap for government-insured mortgages.	Limit household vulnerability and protect the government against losses on mortgages it insures.	Introduced in 2008 but tightened several times since.	Dampened growth in household debt.
Hong Kong	Multiple LTV limits, applied cyclically. DSR limit includes an interest rate stress.	Reduce borrower defaults on mortgages and bank vulnerability to a house price shock.	Multiple limits, differentiated by property value. Frequently co-ordinated with fiscal measures.	Low defaults compared to international levels, and defaults are less sensitive to house price fluctuations.
Israel	Limiting variable interest rate component, LTV limit, DSR limit, maximum term limit, increased capital requirements.	Reducing bank losses in the event of a housing or economic downturn, by restricting the supply of risky mortgages.	Taken measures while both loosening and tightening monetary policy.	Considerable reduction in the proportion of high-risk loans. No reduction in house price increases or mortgage expansion.
New Zealand	Only 10% of new loans may be at 80% LTV or above.	Strengthen household and bank balance sheets and reduce the impact of future interest rate increases on debt-servicing ability.	Close supervision to ensure compliance with 'spirit of regulation'. A few exceptions for desirable lending (eg construction lending).	High LTV lending is now well below the 10% limit. Fall in new housing loan approvals and house sales.
Norway	Guidelines on LTV, stressed DSR and LTI limits.	Address high household debt, including risk of spillovers to corporate loans.	These are guidelines to banks, rather than strict limits.	Evidence that lending standards tightened but household debt remains high.
South Korea	LTV and DTI limits. Banks have targets to increase the proportion of fixed interest rate loans.	To reduce cyclical in the mortgage market and reduce speculative purchases; and to reduce risks from household indebtedness.	LTV and DTI limits are differentiated by area, property value and tenor of the loan. Regulations expanded to cover non-banks following leakages.	Prevented defaults as house prices fell from 2008. Expectations of housing as a speculative asset are said to have decreased.

Sources: Bank of Canada *Financial System Review* (June 2013); Hong Kong Monetary Authority (2011), 'Loan-to-value ratio as a macroprudential tool — Hong Kong's experience and cross-country evidence', *HKMA Working Paper No. 01/2011*; Igan, D and Kang, H (2011), 'Do loan-to-value and debt-to-income limits work? Evidence from Korea', *IMF Working Paper No. 11/297*; Israel Article IV (2014); Norges Bank *Financial Stability Report* (2010); and Rogers, L (2014), 'An A to Z of loan-to-value ratio (LVR) restrictions', *Reserve Bank of New Zealand Bulletin*, Vol. 77, No. 1, pages 3–14.

above 80% LTV to 10% of a bank's total mortgage lending by value. The authorities were concerned that strong house price growth had increased the vulnerability of banks and borrowers to a possible house price fall, particularly as household indebtedness was already near record highs. Prior to the introduction of this policy, the proportion of new mortgage lending above 80% LTV had been around 25%. Following implementation, this proportion fell sharply (**Chart A**), with lending significantly below the limit, partly due to much lower use of exemptions than expected, and potentially large sanctions for breaching the limit.⁽³⁾ The authorities expect the risk of avoidance to be mitigated by the approach of allowing some high LTV lending to continue.

Chart A New Zealand: new lending at above 80% LTV before and after the speed limit



Source: Reserve Bank of New Zealand.

(a) 20 August — 10% limit was announced.
(b) 1 October — 10% limit was implemented.

While the authorities have noted that it will be some months before the impact can be reliably estimated, house sales, new house loan approvals and house price expectations appear to be softening. Banks have tended to increase the price of lending above the 80% LTV limit and decreased the price of lending below it. Initial estimates suggest that the price of lending above 80% LTV is 1 percentage point higher than lending at below 80% LTV.

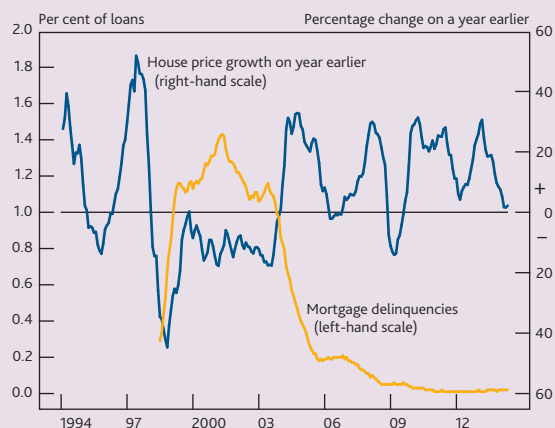
Norway: In March 2010 Finanstilsynet (the Norwegian bank supervisor) issued guidelines for mortgage lending. These included limits on LTI multiples (3 times) and on stressed debt-servicing capacity (after an interest rate increase of at least 500 basis points) as well as a maximum LTV ratio (90%, since changed to 85%). These measures were motivated by concerns about increasing household debt burdens, and the potential wider economic impact of a future reduction in household demand. The policies were designed to insure against future risks as the prevailing low interest rate environment meant that households' capacity to service debt was strong at the time. There were indications that banks

changed their internal lending policies and reduced high-risk lending as a result of the policy. Since then, Norges Bank has also activated the countercyclical capital buffer, citing high house price to income ratios as a factor, and Finanstilsynet has increased the loss given default floor on residential mortgages, effectively raising some risk weights.

Israel: Since 2009 Israel has introduced a number of policy measures including limiting the variable-rate component of loans, limiting LTV, DSR and maximum term and also changing capital requirements for a subset of housing loans. These measures have been aimed at increasing bank resilience in the event of a downturn, limiting risky loans and reducing the sensitivity to interest rate increases. The policies appear to have had success in reducing the risks to the financial system as high LTV and high DSR loans have fallen considerably, though house prices have continued to increase.

Hong Kong: LTV caps are a long-standing policy instrument in Hong Kong. The cap was reduced to 70% in 1991 and left largely unchanged, for most properties, until 2009. In recent years, the authorities have tightened the policy several times in response to emerging risks, differentiating the use of the instrument across particular segments of the market: residential LTV limits range from 30% when borrower income is derived from abroad to 70% for lower-value properties. The authorities have also introduced DSRs, including an interest rate stress — which has since been tightened — and maximum tenors for borrowing.⁽⁴⁾ The motivation of these policies has been primarily to reduce the sensitivity of delinquency rates to house price fluctuations. This appears to have been successful; mortgage delinquencies have remained very low by international standards, despite large swings in property prices, including during the Asian financial crisis, and they did not rise in the years following the global financial crisis (**Chart B**).

Chart B Hong Kong: house prices and residential mortgage delinquencies^(a)



Sources: BIS Residential Property Price database www.bis.org/statistics/pp.htm, Hong Kong Monetary Authority, national sources and Bank calculations.

(a) The fall in delinquencies in the mid-2000s likely reflects an improving macroeconomic situation rather than being attributable to any policy change.

Effectiveness and lessons learned

These policy measures appear to have typically reduced risk in the financial system and made it more resilient to shocks. In particular, low LTV ratios have helped to reduce the fall in property prices after a housing bust and have lowered bank loan losses and mortgage defaults.⁽⁵⁾

Although mortgage product instruments have not typically been aimed directly at house price growth, there is some evidence of a *modest* effect on house price growth, with a lag of about a year.⁽⁶⁾

Experience suggests, however, that there can sometimes be unintended consequences associated with the implementation of such policies. For example, the Canadian authorities initially had a three-month lag between policy announcement and implementation — this led to a bringing forward of housing transactions to avoid the restrictions; the policy implementation lag has subsequently been reduced to two weeks. The Reserve Bank of New Zealand had a six-week gap between announcement and implementation but did not see pre-emptive lending activity. They attribute this to the setting of clear supervisory expectations of compliance with the spirit of the measure.

Another unintended impact of product instruments has been leakages into other sectors or types of lending, as borrowers seek to avoid the measures. One example has been households supplementing mortgages with an unsecured loan. While leakage is usually small, unchecked it can be significant: in Slovakia banks offered ‘other housing loans’ to bypass the limits on housing loans, undermining the intent of the policy. In Korea, regulators were cognisant of this risk and therefore expanded the scope of regulation following increasing activity by non-banks. Circumvention and non-compliance has also tended to be less of a problem when exposure limits have been used since they allow some portion of the targeted lending to continue.

-
- (1) Loan to value limits require borrowers to make a minimum down-payment before getting a loan. Debt-servicing ratios limit the repayment on a loan to a certain proportion of a borrower's income. Loan to income (LTI) and debt to income (DTI) limits differ slightly in that DTI limits take into account the borrower's *total* debt, not just the loan in question. DTI limits are more often used internationally; they require good information about a borrower's total debt.
 - (2) In a few cases this is an ‘implicit cap’ as the cap applies for mortgages in pools backing covered bonds.
 - (3) Exemptions average around 1% of new loans compared to projections of 5%.
 - (4) The interest rate stress was tightened from 200 basis points to 300 basis points on 22 February 2013, as part of a package of tightening measures.
 - (5) IMF (2011), ‘Housing finance and financial stability — back to basics?’, *Global Financial Stability Report*, April, and Hong Kong Monetary Authority (2011), ‘Loan-to-value ratio as a macroprudential tool — Hong Kong's experience and cross-country evidence’, *HKMA Working Paper No. 01/2011*.
 - (6) Lim, C, Columba, F, Costa, A, Kongsamut, P, Otani, A, Saiyid, M, Wezel, T and Wu, X (2011), ‘Macroprudential policy: what instruments and how to use them’, *IMF Working Paper No. 11/238*; Ahuja, A and Nabar, M (2011), ‘Safeguarding banks and containing property booms: cross-country evidence on macroprudential policies and lessons from Hong Kong SAR’, *IMF Working Paper No. 11/284*.