Hong Kong's property market and macroprudential measures

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Abstract

As property market bubbles could have huge repercussions on financial and macroeconomic stability, flexible policies to lean against the wind are vital. Hong Kong SAR has long relied on macroprudential measures, particularly caps on loan-to-value (LTV) ratios, to contain banking sector risks that may arise from these bubbles. This note attempts to broaden the understanding of the implementation of macroprudential policies by sharing Hong Kong's experience. In particular, our research shows that macroprudential policies, especially LTV policy, is effective in strengthening banks' resilience to property price shocks through reducing borrowers' leverage. However, decisions on the timing and intensity of LTV tightening and loosening require a considerable degree of judgment and discretion. This calls for property market activities, as well as potential risks to the banking sector, to be frequently and comprehensively monitored.

Keywords: banking, Hong Kong SAR, loan-to-value, macroprudential policy, mortgage, property market

JEL classification: E58, G21, R31

Introduction

As property market bubbles could have huge repercussions on financial and macroeconomic stability, flexible policies to lean against the wind are vital. In the absence of independent monetary policy, Hong Kong SAR has long relied on macroprudential measures, particularly caps on loan-to-value (LTV) ratios, to contain banking sector risks that may arise from real estate bubbles.

The implementation of macroprudential policies is challenging for two reasons. First, unlike monetary policy, the implementation of macroprudential policies is not based on a clear set of rules; on the contrary, it requires an assortment of monitoring and assessment tools to guide the timing and intensity of policy adjustments. Second, the transmission mechanism of macroprudential policies is not yet fully understood.

This note attempts to broaden our understanding of the implementation of macroprudential policies by sharing Hong Kong's experience. Section 1 outlines how macroprudential measures in Hong Kong contributed to a more resilient banking sector in terms of property price risks during and after the 1997–98 Asian financial crisis (AFC). Section 2 summarises the tools adopted by the Hong Kong Monetary Authority (HKMA) to monitor the property market (we focus particularly on this market because of its unmatched role in affecting banking stability in Hong Kong). Section 3 outlines the findings of our recent research in an effort to shed light on the transmission mechanism of LTV policy, a key property-related prudential measure adopted by the HKMA. Section 4 concludes.

The effectiveness of macroprudential policies – evidence from Hong Kong during the AFC

Macroprudential policies are not new to Hong Kong. In 1997, the AFC triggered an unprecedented property market crash in Hong Kong that forced the jurisdiction into a deep recession and saddled it with six consecutive years of deflation. Prior to the start of the crisis, however, the HKMA had tightened macroprudential measures to protect the banking sector from the risks of the property price bubble.[1] Thus, while Hong Kong's banking sector was certainly hard hit by the crises, as was most of East Asia, it did not experience systemic failures.

Data presented in Graph 1 suggest that Hong Kong's economy tends to fare better than other economies in terms of financial stability during real estate crises, particularly when examining mortgage delinquency rates.

Following the start of the AFC, Hong Kong's home prices plunged by nearly 70% between 1997 and 2003. Throughout this same period the mortgage delinquency ratio stayed below 1.5% (panel A). These figures stand in contrast with those of the United States in the aftermath of the collapse of Lehman Brothers (the so-called spark that set off the Great Financial Crisis (GFC)). Between 2007 and 2012, the mortgage delinquency ratio shot up to more than 10% following a 31% drop in property prices (panel B). The experience in Europe was similar. In Ireland, for example, the mortgage

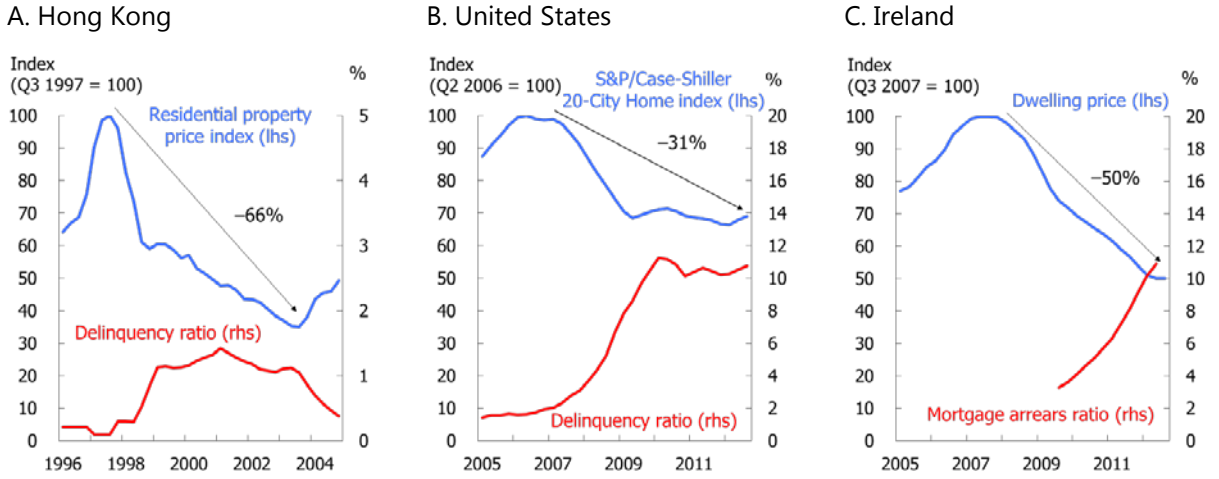
[1] Wong et al (2015).

delinquency rate rose to more than 10% when property prices dropped by 50% during the same period (panel C).

The figures show, in short, that the mortgage delinquency rate in Hong Kong rose by much less during the AFC than that of other economies during the GFC, even though its property price drop was much more severe. Hong Kong's experience can be taken as suggestive evidence that macroprudential policies can protect banks from the disruptive effects arising from credit asset price spirals.

Residential property price indices and delinquency ratios[2]

In per cent — Graph 1



Sources: HKMA; Hong Kong Rating and Valuation Department; US Federal Reserve; Standard & Poor's; BIS; Datastream.

Monitoring the property market

The current state of the property market cycle

Over the past few years, Hong Kong has once again been experiencing a rapid spike in property prices. This latest up-cycle is the longest it has ever experienced; it began around 2003, recovering from the trough that followed the AFC, and continued to rise until the GFC, which caused a short lived six-month blip before it resumed its rapid increase until late 2015.

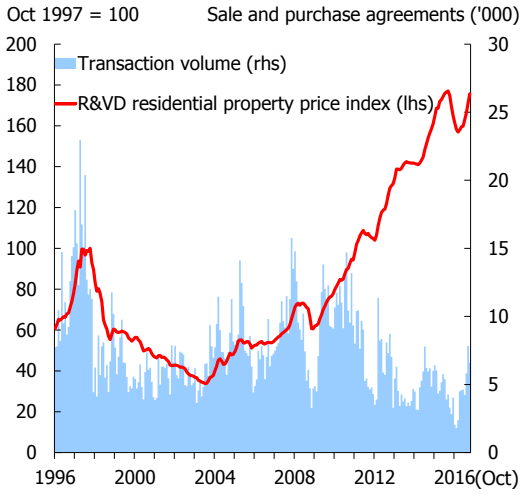
Panel A in Graph 2 shows official property prices and transactions data. While property prices rose sharply after the GFC until late 2015, a global market sell-off (which saw a turn in market sentiment) in August 2015 led to significant price corrections. However, property prices have rebounded significantly since the second quarter of 2016. Data from real estate agents (panel B), which are timelier in reflecting current market situations due to shorter time lags, show no clear signs that property

[2] Delinquency ratios are computed based on those loans past due 30 days or more. The mortgage arrears ratio is based on loans past due 90 days or more, but data are only available from Q3 2009 onwards. There remain differences in the definitions from one economy to another, so they are not directly comparable.

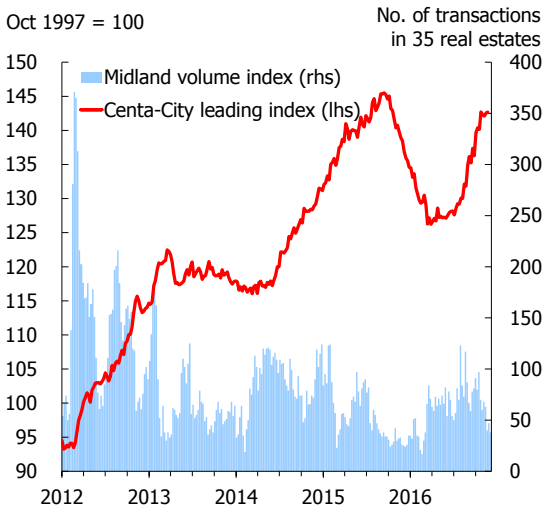
prices have stabilised. Property transactions, meanwhile, have declined over the past several years, mainly reflecting the effects of our prudential and tax measures. However, signs of an uptick in the volume of transactions have been appearing since 2016. Given the imbalances in the property market, we have been monitoring the situation closely.

Residential property prices and transactions — Graph 2

A. Official data



B. Agency data



Sources: HK Rating and Valuation Department; HK Land Registry; Centaline Property Agency; Midland Property Agency.

Monitoring tools

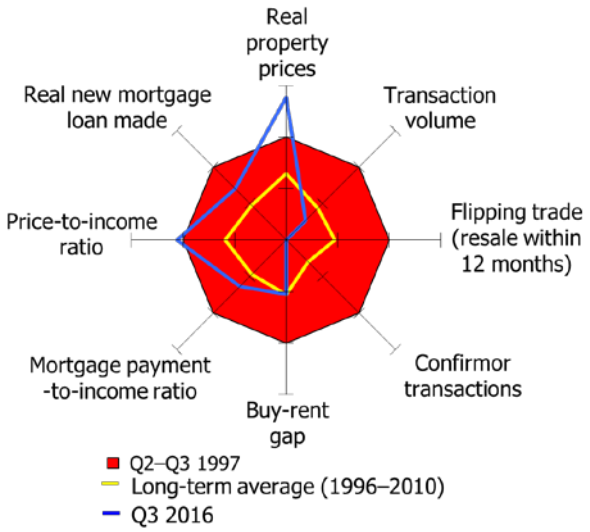
The lessons learned from Hong Kong's property bubble burst in 1997 have served as a useful reference in identifying and detecting property market pressures. The HKMA has developed a graphical framework that condenses the most relevant indicators of property market pressures and allows for the continuous assessment and monitoring of risks and vulnerabilities. Indicators (as shown in Graph 3) include those related to property market activities (ie price and transaction volumes and new real mortgage loan made); speculative activities (ie flipping trades and confirmor transactions[3]); affordability (ie the price-to-income ratio and mortgage payment-to-income ratio); and user-cost measures (ie the buy-rent gap).

The red area in Graph 3 shows the situation in 1997, when the property market was at its peak. The yellow border highlights the historical average and the blue border the recent situation in Q3 2016. Both real property prices and the price/income ratio have surpassed the 1997 peak. However, the transaction volume is no higher than the long-term average, while speculative activities are almost non-existent, partially reflecting the tax and macroprudential measures in place.

[3] Confirmor transaction refers to cases in which the property is resold before the original transaction is completed.

Surveillance of key property market indicators

Graph 3

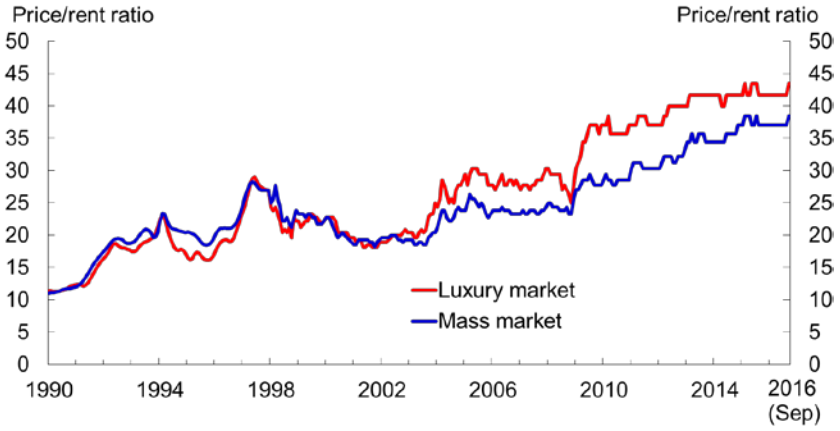


Source: HKMA.

The HKMA has also developed models to assess property price pressures. As detailed in Leung et al (2008), the co-integration method is being used to estimate the long-run equilibrium of property prices, which are based on supply and demand side fundamentals, including real GDP per capita, real interest rates and flat supply. This model helps to detect deviations from fundamental property prices. Meanwhile, a statistical method (Yiu et al (2013)) is also being used to detect housing bubbles through the price-rent ratio. As shown in Graph 4, the price-rent ratio has surged in the past few years and is currently much higher than its previous peak in 1997. This points to an overheating property market.

Residential property price/rent ratio

Graph 4



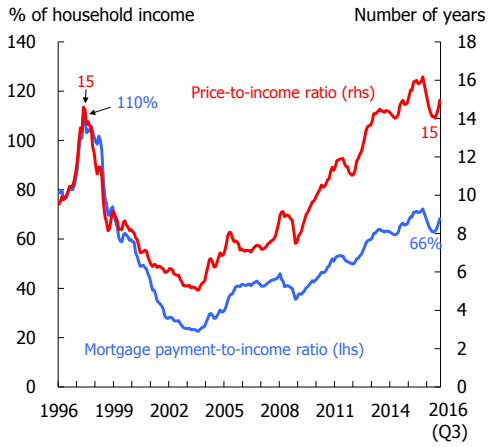
Source: HKMA.

In deploying these tools, we need to be mindful of possible distortions under the ultra-low interest rate environment. The price/income ratio rose rapidly over the past

few years to stay at a high level of 14–15, close to the 1997 peak. Nevertheless, when compared with the price/income ratio, the mortgage repayment/income ratio (blue line in Graph 5) rose at a less rapid pace. This is mainly due to the low prevailing mortgage rate, now at 2% compared with the long-term average of 5%. After the bubble burst in 1997, the mortgage rate actually dropped by some 9 percentage points, which alleviated the mortgage burden and led to lower mortgage delinquency (Graph 6). However, this time around, the current ultra-low interest rate has little room to move further down. Mortgage rates can only go up, which would put borrowers under significant stress.

Price/income ratio and mortgage payment/income ratio

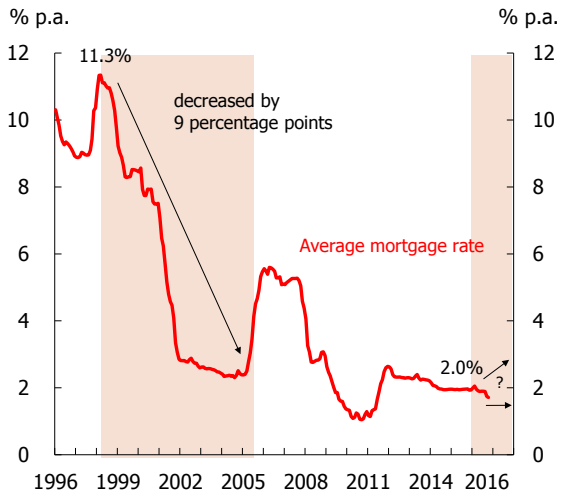
Graph 5



Source: HKMA.

Average effective interest rate of new mortgages approved

Graph 6



Source: HKMA.

Property market measures in Hong Kong

Macroprudential measures

In an effort to contain risks related to property bubbles, the HKMA has introduced countercyclical prudential measures specifically targeting the property market. An important lesson learned from the AFC is that authorities must act early in the cycle, as expectations of price increases are difficult to reverse once they become entrenched. Since October 2009, the HKMA has introduced seven rounds of macroprudential measures, mainly by gradually lowering the caps on the LTV ratio and debt service ratio (DSR) and by extending the prudential target from luxury homes to investment properties, and later to those where borrowers repay their debt with foreign income or have multiple mortgages.[4]

Other property market measures

While the HKMA continues to focus on macroprudential measures to maintain financial and banking stability, there is also a need to coordinate with fiscal and land authorities. As a long-term solution, land authorities have introduced land and housing supply measures to redress property market imbalances.

The fiscal authority has also introduced a number of demand management measures to dampen speculative activities in order to buy time for supply side measures to take effect. For example, in November 2010, the Hong Kong government introduced a special stamp duty (SSD) of 15% for properties resold within two years. In October 2012, it raised the SSD rate to 20% for properties resold within three years. It also introduced a 15% buyer's stamp duty (BSD) on residential properties acquired by companies and non-locals. In February 2013, the government doubled the rates of the existing ad valorem stamp duty (also known as DSD) for transactions of all types of property, except for first-time local resident home buyers. In November 2016, the government increased the stamp duty to 15% for all residential property acquisitions by individuals or companies except for first-time local resident home buyers.

Exit strategies for countercyclical measures

Although current property market conditions may suggest that a tightened stance on macroprudential policies should be maintained, it is important to remain forward-looking in terms of when and how one might exit from countercyclical measures under a systematic framework. This task can be just as difficult as calibrating the measures during the up-cycle. First, we need to be clear that the policy objectives of easing the measures should include:

1. facilitating an orderly adjustment during a downturn;
2. avoiding self-reinforcing, downward spirals arising from negative feedback loops between credit and asset prices; and
3. returning the macroprudential policy stance to neutral.

[4] For instance, on 27 February 2015, the HKMA announced in its seventh round of prudential measures that it would be lowering the following caps: the LTV cap (from 70% to 60%) for self-use residential properties with a value below HK$7 million; the DSR caps (from 50% to 40%) for borrowers who buy a second residential property for self-use and mortgage loans on all non-self-use properties; and the respective stressed DSR caps (from 60% to 50%).

When there are signs of a correction in property prices, two key questions must be asked. Is the property market in a down-cycle? And are property prices still overvalued despite the correction? The types of exit strategy to implement must then be evaluated, ie radical or gradual ones. Determining such strategies involves taking into account cycle asymmetry, ie down-cycles tend to be shorter and the window of time for easing is narrower than that for tightening. The adjustments could be temporary, orderly or disruptive. When the adjustment is disruptive, a radical exit strategy is a more straightforward response. However, when authorities see only a mild adjustment, it can be difficult to tell whether it is orderly or only temporary. In these cases, we have to determine whether we should act early using a gradual exit strategy, or wait until a down-cycle is confirmed before implementing a more radical approach. This will involve an evaluation into the costs associated with Type I and Type II policy errors and how to mitigate them.

The transmission mechanism of LTV policy

LTV policy is a major property-related prudential measure that the HKMA uses as a tool to mitigate the amplification of credit asset price spirals and to protect banks from the disruptive effects. Authorities using this tool in pursuit of financial stability need to first determine the optimal targets of LTV policy. Specifically, is the policy targeting household leverage, credit growth and/or property prices? The answer crucially depends on the transmission mechanism of LTV policy – particularly the extent of the policy pass-through on these three variables – and their respective contributions to financial stability.

We have used some empirical models to shed light on this issue. First, we studied the short-term policy impact on property market activities for three selected economies, namely Hong Kong, Korea and Singapore (Wong et al (2015)). The econometric evidence for the dampening effect of tightening LTV caps on property market activities is mixed: for Hong Kong, although we find that the tightening of LTV caps would reduce property price growth marginally, the policy effect on the property price gap and property transactions is statistically insignificant. Statistical evidence for Korea and Singapore also supports the conclusion that LTV caps have a limited impact on property prices.

Instead of affecting property market activities, LTV policies are more effective in strengthening banks' resilience to property price shocks. We also conducted empirical studies to examine the pass-through of LTV policy to borrowers' leverage and credit growth and their respective contributions to financial stability (Wong et al (2015)). Our findings, based on econometric analyses of panel data from 13 economies, suggest that countries with LTV policies tend to have a lower sensitivity of mortgage default risk to property price shocks.[5] The sensitivity of the mortgage delinquency ratio to property prices is found to be negative and lower (in absolute terms) in economies with LTV policies than in those without LTV policies. A 1% drop in property prices would increase the delinquency ratio by 0.35 basis points in economies with

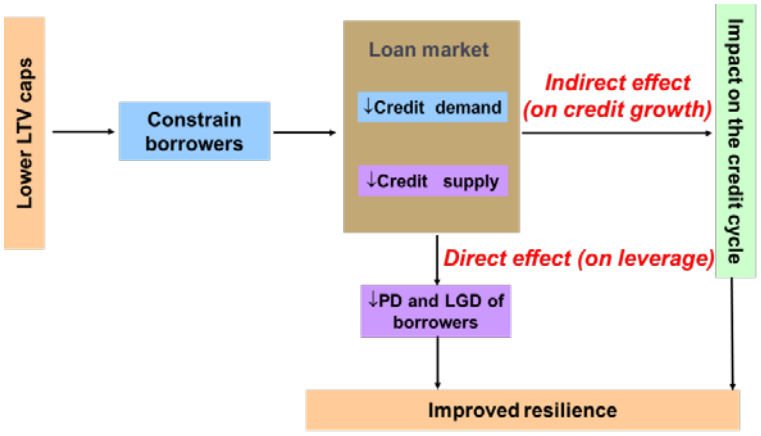
[5] The 13 economies include: Australia, Canada, Greece, Hong Kong, Korea, Malaysia, the Philippines, Portugal, Singapore, Spain, Thailand, the United Kingdom and the United States. Of these, Hong Kong, Korea, Malaysia and Singapore have adopted an LTV policy, according to the BIS (2010) and information obtained from their respective central banks/supervisory authorities.

LTV policies, and by 1.29 basis points in those without. Overall, the findings are consistent with the evidence presented in Section 1.

To understand how LTV policy helps to increase banks' resilience to property price shocks, Graph 7 outlines the transmission mechanism of LTV policy. Theoretically, it works through both direct and indirect effects (CGFS (2012)). The direct effect improves the resilience of banks by lowering leverage, because mortgagors would hold a larger equity buffer at origination, contributing to a lower likelihood of negative equity and thus a lower default risk. The indirect effect works through lower credit growth by preventing banks from underwriting excessively fresh mortgage loans, which are generally subject to higher default risks due to a relatively low portion of equity.

Transmission mechanism of LTV policy

Graph 7



Source: A simplified version of Graph 3.3 from CGFS (2012).

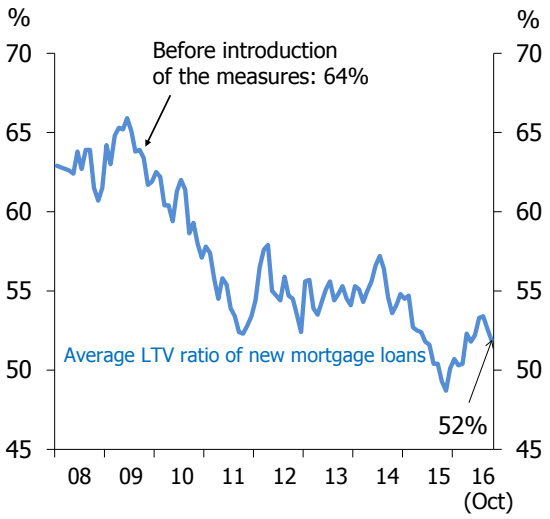
In fact, the countercyclical macroprudential measures have helped to contain household leverage and build a substantial buffer for banks against a sharp correction in property prices. Panel A of Graph 8 shows that, due to several rounds of tightening of the LTV ratio, banks can now absorb, on average, a 50% drop in property prices before incurring default losses (compared with 36% in 2009). Panel B shows a lessening of the repayment burden of the borrowers after the DSR was reduced to 34% from around 41% in 2010.

Average LTV ratio of new mortgage loans and the DSR

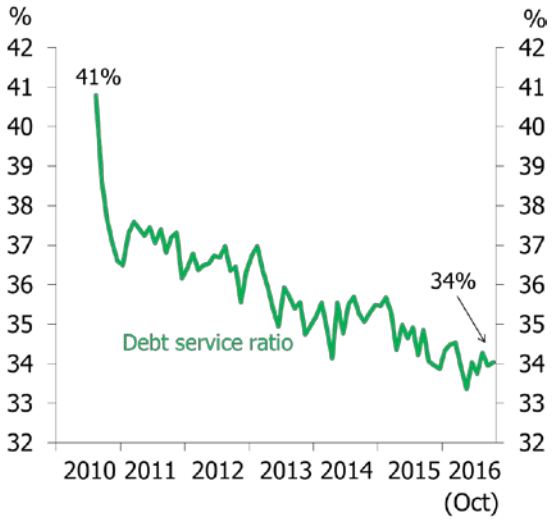
In per cent

Graph 8

A. Average LTV ratio of new mortgage loans



B. Debt service ratio



Source: HKMA.

We also try to quantify the contribution of the direct and indirect effects to strengthening the banking sector's resilience to property price shocks (Wong et al (2015)). We apply an econometric model to estimate the problem loan ratio from Q1 2013 to Q4 2014 under the actual and "no policy" scenarios, assuming there is a significant adverse economic shock in the eight quarters starting from Q1 2013.[6] Chart 9 shows that the problem loan ratio in the actual scenario (denoted by d_A) would increase from 0.03% in Q4 2012 to around 0.95% in Q4 2014. By contrast, the problem loan ratio in the counterfactual scenario (denoted by d_C) would be much higher at 2.32%.

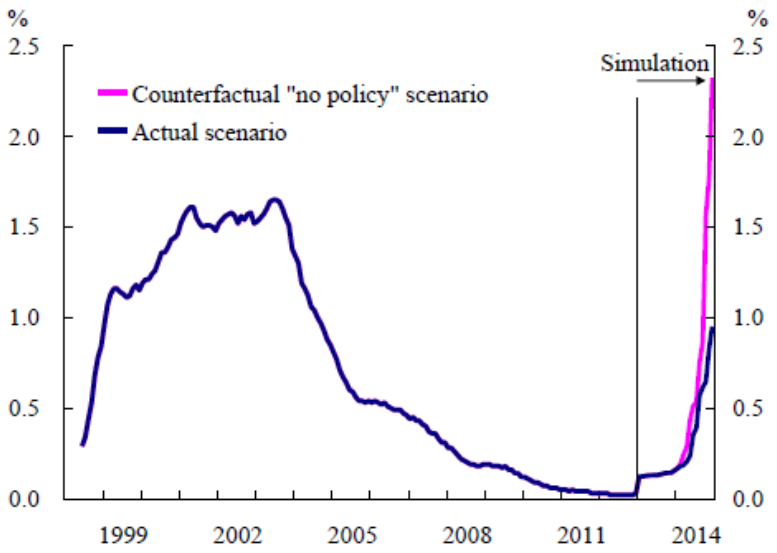
The results show that the five rounds of LTV cap tightening improved the banking sector's resilience to a severe property price shock. Our core interest, however, is the relative contribution of the direct and indirect effects of the LTV cap tightening to the 1.37 percentage point reduction in the estimated problem loan ratio from the counterfactual "no policy" scenario to the actual scenario. To this end, we estimate the direct and indirect effects separately. Table 1 shows that the effect of LTV policy on reducing the sensitivity of mortgage default risk to property price shocks is mainly through direct effects. These findings suggest that tightening LTV caps would reduce household leverage, and that the effect on leverage plays the primary role in reducing the mortgage default risk. The effect of LTV policy would be transmitted mainly through the impact on the household leverage rather than on property market activities.

[6] This shock includes a 60% drop in property prices; a 300-basis-point increase in the reference interest rate; a 20% decline in household income; and the unemployment rate increasing to 8.5%.

Estimated stressed delinquency ratio for mortgage loans under the actual and counterfactual scenarios

In per cent

Graph 9



Source: Wong et al (2015).

Estimated problem loan ratio under different scenarios

Table 1

Scenarios	Estimated problem loan ratio at end–2014 (%)
1. Actual (both the direct and indirect effects)	d_A = 0.95
2. Only the direct effect	d_{NI} = 0.98
3. Only the indirect effect	d_{ND} = 2.03
4. Counterfactual ("no policy")	d_C = 2.32

Source: Wong et al (2015).

Conclusion

Property market bubbles can have huge repercussions on financial and macroeconomic stability and therefore implementing policies to lean against the wind is important. Macroprudential policies, especially LTV policy, are effective in strengthening banks' resilience to property price shocks through reducing borrowers' leverage. However, decisions on the timing and intensity of LTV tightening and easing need a considerable degree of judgment and discretion. This calls for frequent and comprehensive monitoring of property market activities and of the potential risks to the banking sector.

References

Bank for International Settlements (2010): *80th Annual Report*, June.

Committee on the Global Financial System (2012): "Operationalising the selection and application of macroprudential instruments", *CGFS Papers*, no 48.

Leung, F, K Chow and G Han (2008): "Long-term and short-term determinants of property prices in Hong Kong", *HKMA Working Paper*, no 15.

Wong, E, K Ho and A Tsang (2015): "Effectiveness of loan-to-value ratio policy and its transmission mechanism: empirical evidence from Hong Kong", *Journal of Financial Perspectives*, vol 3, no 2, pp 93–102.

Yiu, M, J Yu and L Jin (2013): "Detecting bubbles in Hong Kong residential property market", *Journal of Asian Economics*, vol 28, pp 115–24.