

Special Report

Asian housing: Ride the cycle



Highlights

- Housing cycles are playing a major role in Asian economies, with some markets experiencing a rollercoaster ride. We assess the outlook for house prices and construction in China, Hong Kong, Korea and Singapore and weigh the economic implications.
- We estimate the slump in house-building in China accounts for half of the GDP slowdown since 2010, taking into account linkages with related sectors. The construction sector should start recovering after 2017. China still needs to build 150mn housing units by 2030.
- Hong Kong and Singapore are conforming to the 18-year price cycle often seen in housing markets. With Fed rate hikes looming we expect Hong Kong's prices to fall 10-20% in the next two to three years. In Singapore prices are already down and a further 5-10% fall is likely. These corrections should be manageable as economic fundamentals are sound and US rate rises will likely be small.
- Asian governments are very active users of macro-prudential policies. China and Korea have eased policy to try to boost housing demand and economic growth. Singapore and Hong Kong are still running tight policies but could ease if house prices fall too far.

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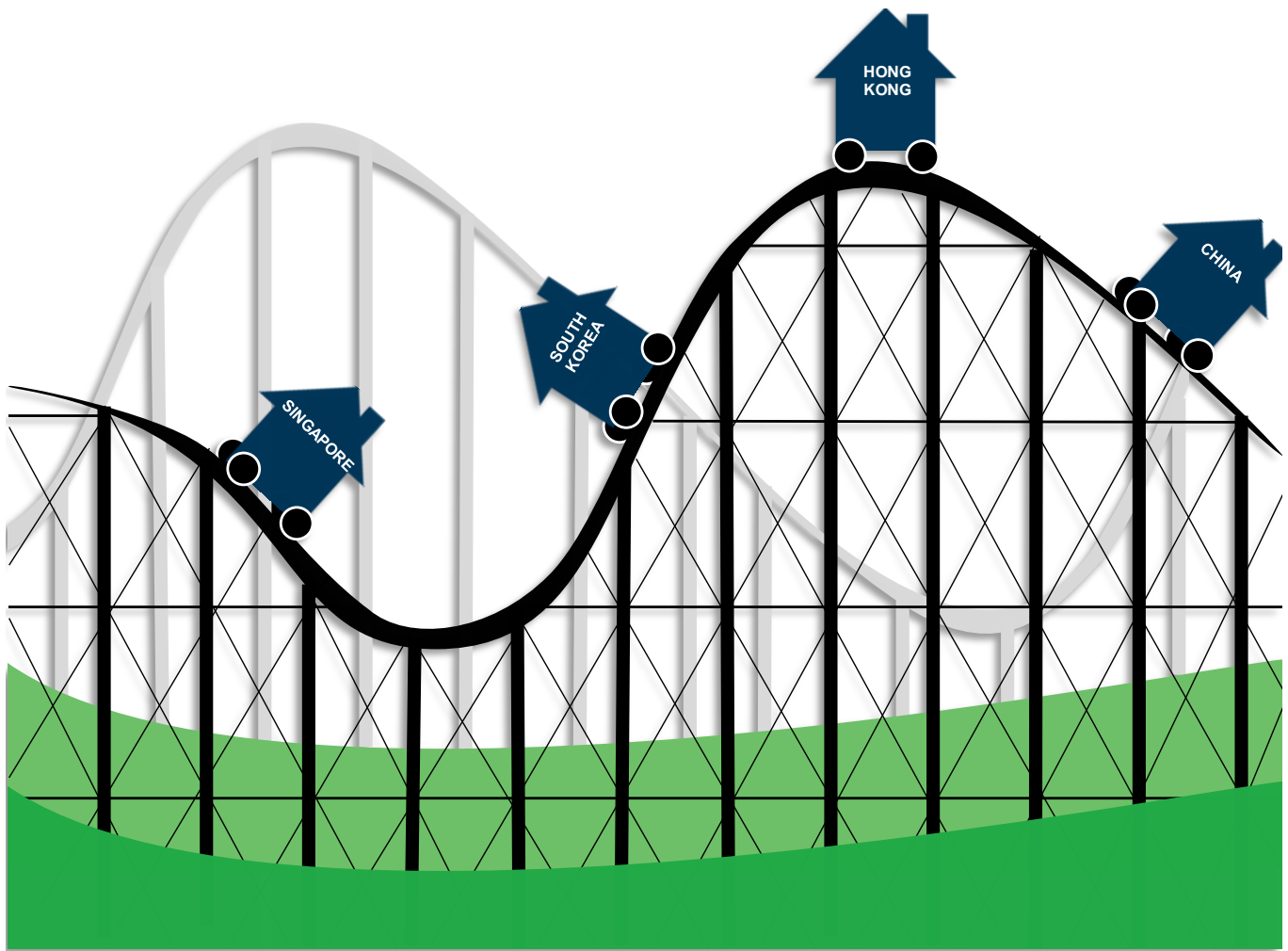
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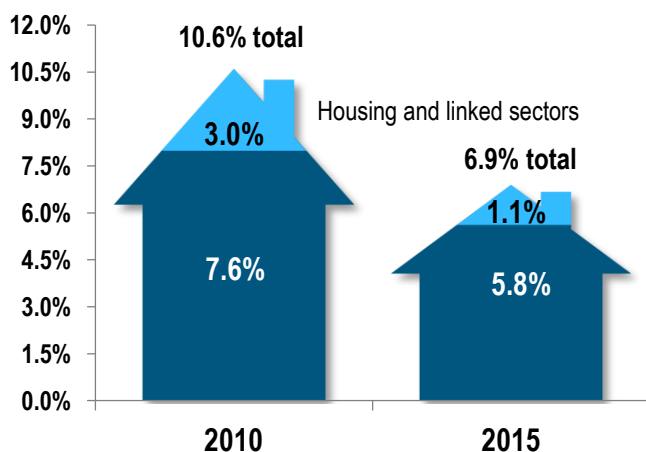
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The housing cycle: Only Korea is heading up

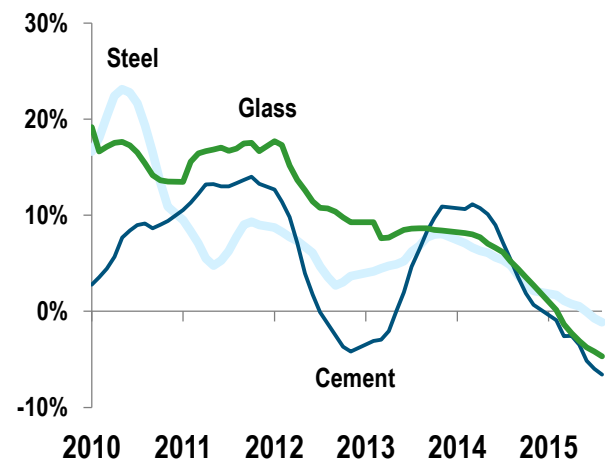


China's weak house-building is hitting GDP growth

Housing accounts for half of the slowdown



Output is falling in linked sectors



Source: Bloomberg, Standard Chartered Research



Executive summary

Why housing is so important

The world is watching China's housing market

Housing-market trends play a key role in the economic outlooks of China, Hong Kong, Korea and Singapore. In China home-building has slumped in the face of a glut of unsold properties and falling prices, pulling down the country's GDP growth rate and impacting commodity markets globally. China's volatile housing sector may be the single most important sector in the world economy at present.

Expected Fed rate increases are hanging over housing markets in Singapore and Hong Kong, compounded by fears that Hong Kong housing is in a bubble. Prices have already peaked in Singapore and are likely peaking in Hong Kong now. Both countries have used macro-prudential policies (MPPs) to try to limit their vulnerability, with mixed success. Korea is in the expansion phase of the cycle. It too has used MPPs extensively, both to tighten and ease conditions. It eased policies in 2014 in a bid to support house prices and boost economic growth.

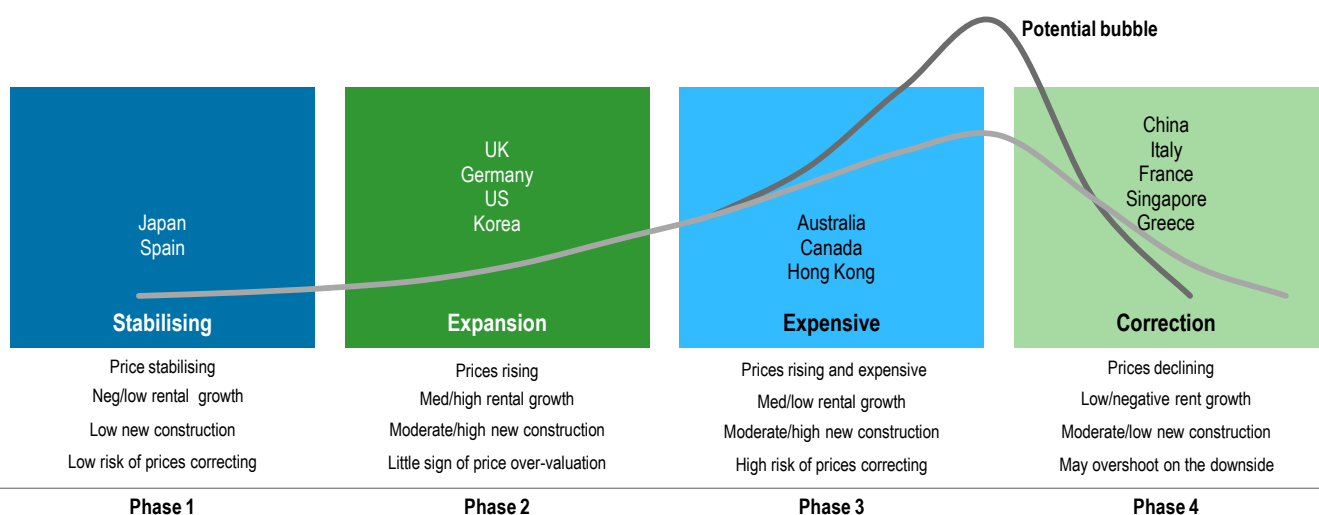
We provide detailed views on what to expect using our cycle approach. We also provide a checklist of how to identify bubbles and an appraisal of the success of macro-prudential measures. We tap into our on-the-ground analysts (see country profile section for their assessment of the outlook) as well as our credit analysts (see the latest monthly report on Chinese developers, *On the Ground, 'Monthly China property market update – Oct 2015'*), and our Asia team's extensive work on Asian leverage (see *On the Ground, 'Asia leverage update – Focus on external risks'*).

The real estate cycle

Housing seems to move in cycles of about 18 years

In the US and UK there is evidence of major housing-market cycles with average duration of c.18 years, and a range of 15-20 years. The most recent peaks in 2006 and 2007, respectively, came right on schedule, 18 years after prior peaks in 1989-90. Housing cycles are longer than economic cycles, probably because they are driven by price expectations, especially speculative activity. After a major price decline it takes time for speculative activity to re-emerge as memories slowly fade and a new generation comes along. The cycle can be divided into four phases – Stabilising, Expansion, Expensive and Correction – based on an assessment of prices, valuations and trends in rental markets and construction (Figure 1).

Figure 1: The long-term housing cycle



Source: Standard Chartered Research

Hong Kong and Singapore have peaked

Hong Kong and Singapore fit the 18-year pattern

We find similar cycles in Hong Kong and Singapore, where housing markets are peaking now, about 18 years after the last peaks in 1996-97. The history of Korea's housing market does not fit as neatly into this long-cycle pattern, while China's private housing market is too new to model effectively against a long-term model. However, we argue that China is in a correction phase while Korea fits best in the expansion phase.

China's housing sector plays an important role in the economy

China: Fall in house-building is a key reason for the GDP slowdown

In our view China has not suffered a general price bubble. There have been price bubbles in some regions but rising house prices have largely been offset by strong income growth. However, the ready availability of land has generated a bubble in house-building, creating serious oversupply, especially in Tier 3 and 4 cities (Figure 2). Housing starts have fallen 28% in the last two years. This slowdown is gradually feeding through to weaker residential construction activity.

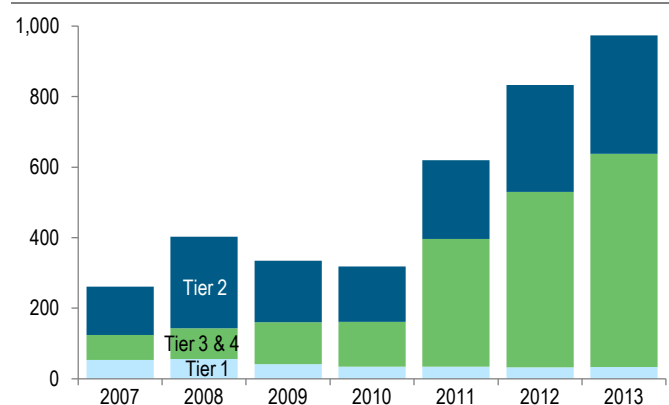
Millions of vacant homes will weigh on construction activity and GDP growth

Housing and sectors dependent on housing accounted for 3ppt of GDP growth in 2010. But activity has slowed sharply and we estimate this contribution dropped to 1ppt in 2015. With GDP growth down to just below 7% in 2015 from 10.6% in 2010 according to official data, housing accounts for half the slowdown. Much of the weakness in industries such as cement, steel, glass and copper is attributable to the housing slump and in total we estimate that housing and its inputs and related sectors account for 20-25% of GDP. That said, the story of the GDP slowdown is more complicated; commercial construction and investment in new heavy industrial capacity have also slowed, as has some export manufacturing, while service-sector growth has accelerated.

The path of adjustment will be crucial for GDP growth

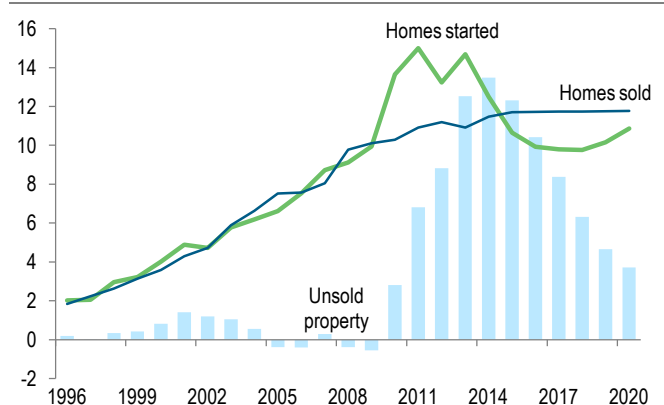
We estimate the excess inventory of unsold properties was around 9mn homes in 2014. In addition we estimate that between 40-50mn homes have been sold but are being held vacant as investments. The government is trying to boost demand by relaxing MPPs, as well as through easier monetary policy. Meanwhile rising incomes, and price falls in lower-tier cities are making housing more affordable. We estimate housing starts could fall a little farther before picking up, as the excess unsold inventory is reduced (Figure 3). This slowdown will continue to drag on GDP.

Figure 2: China oversupply by region
Millions of square metres



Source: IMF, Standard Chartered Research

Figure 3: China's required inventory correction
Millions of homes



Source: IMF, Standard Chartered Research

Special Report: Asian housing: Ride the cycle

Substantial long-term demand for housing in China

The long-term demand for modern homes in China will remain high, driven by continuing urbanisation, higher incomes and the relaxation of hukou rules on residency. We expect sales to trend higher in the next few years before easing in the 2020s as the population peaks and urbanisation slows. We forecast 175mn new homes will be demanded by 2030.

Housing starts have likely already peaked. After accounting for unsold property and some reduction in the number of vacant, sold homes we expect construction of about 150mn homes by 2030. Meanwhile, China's household debt is relatively low at 58% of incomes and we expect an expanding mortgage sector to be an important contributor to China's transition to a consumer-led economy in the medium term.

Hong Kong: A bubble but a manageable deflating

The expensive stage of the cycle does not always turn into a bubble. However, house prices in Hong Kong have risen an astonishing 190% since 2008 (Figure 4) and Hong Kong meets almost all our criteria for a bubble, including high valuations (Figure 5), rising indebtedness, a 'new element driving prices' (mainland Chinese money), avid media and public attention and very easy monetary policy.

That said, Hong Kong is unlikely to face anything like the pressures of the Asian Crisis which led to a 65% fall in prices at the end of the previous cycle. Economic fundamentals are strong and we expect the Fed to increase rates by less than 1ppt in 2016-17. Our expectation is a manageable correction of 10-20% over two to three years, with valuations reduced further by continuing wage growth of 4-5% p.a.

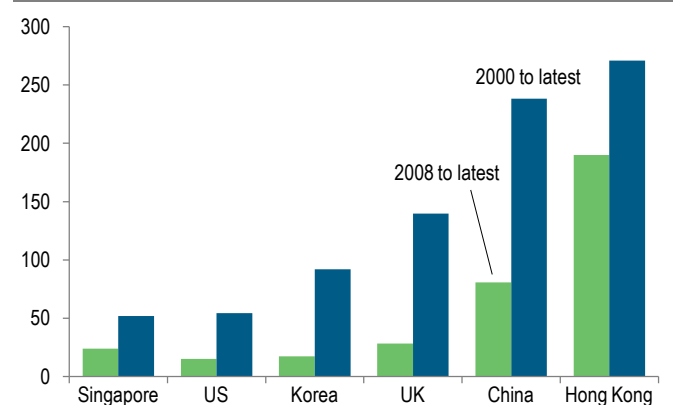
A rate rise more than 300bps would be cause for concern

We also consider a risk scenario where the Fed hikes aggressively and China weakens more than expected and devalues the yuan (CNY). But only a rate rise of 300bps or more would cause major stress on income gearing ratios in our view (Figure 6). Moreover, a large rise in US rates is very unlikely if China's economy is particularly weak or if the CNY is devalued significantly.

Singapore: Correcting slowly

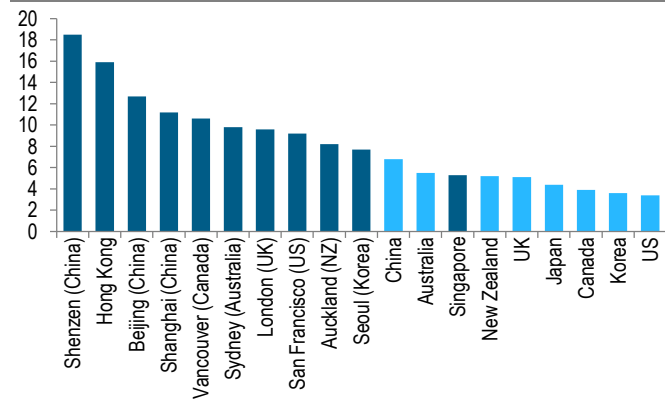
Prices have fallen about 8% since 2013 under the pressure of tightening macro-prudential measures and a sharp slowdown in immigration. Singapore does not tick as many boxes in our bubble checklist; in particular valuations are much less stretched than in Hong Kong. Also the market is much less vulnerable to the China slowdown and a sharper-than-expected US rate rise due to more flexible monetary policy (Figure 7). That said, we see a further decline of up to 10%.

Figure 4: Hong Kong's spectacular price bubble
House prices; cumulative % change



Source: CEIC, Bloomberg, Standard Chartered Research

Figure 5: China's cities are expensive
Price-income ratios



Source: Demographia, Nationwide, Standard Chartered Research

Korea: Enjoying an expansion phase

All four Asian countries that we include in our analysis are keen users of MPPs but Korea has been perhaps the most active, repeatedly easing and tightening. Starting in 2014 MPP was eased. This, together with low mortgage rates, is encouraging a mild upturn in prices which should help to support the otherwise sluggish economy.

Falling house prices and the economy

Corrections in housing can significantly impact GDP growth

Lower house prices impact the economy via wealth effects, turnover effects (e.g., the incomes of mortgage brokers and household furnishers) and construction investment, as we see in China. IMF estimates suggest that historically, a 10% fall in house prices in Asia has been associated with c.2.5ppt lower GDP growth. This is a very sizeable effect, though lower GDP was impacting house prices as well as vice-versa, making the exact cause unclear.

In our view the effects are likely non-linear so a moderate fall in house prices has proportionally less impact on GDP than a larger fall. This is one reason we believe the moderate declines in prices we expect in Hong Kong and Singapore will not cause a recession. Another reason is that a sizeable share of consumption goods comes from overseas, dampening the impact of wealth effects on the economy. But if house prices adjust more than we expect both Hong Kong and Singapore can expect a sizeable drag on their economies.

Have MPPs worked?

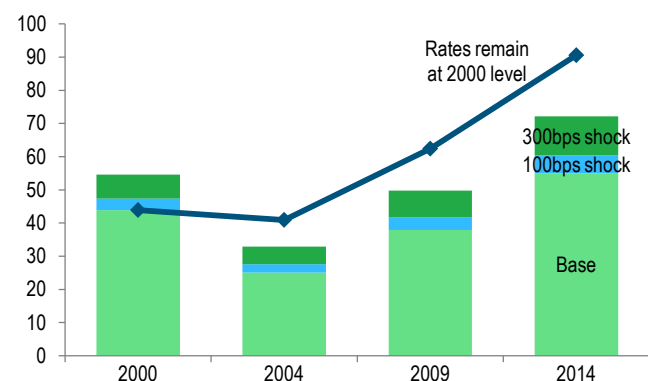
Asia is leading the way in macro-prudential policies

Asian countries are the most active users of MPPs globally. The most common measures have been maximum loan-to-value (LTV) ratios and stamp duty taxes, the latter often targeting non-residents and short-term holders.

There is clear evidence of a direct price response to new measures, though sometimes it appears to be temporary, requiring further action by the authorities. In the case of Hong Kong tighter MPPs did curb foreign money and speculation and have lowered LTV ratios, but did not prevent prices rising to very high valuations. This suggests that MPPs can only do so much if the monetary policy setting is inappropriate. Studies by the IMF and Hong Kong Monetary Authority (HKMA) do suggest, however, that MPPs help limit credit growth and reduce debt distress in a downturn. Moreover, we believe the authorities in Hong Kong and Singapore will relax MPPs if prices fall too sharply.

Figure 6: Hong Kong at risk if interest rates rise a lot

Mortgage payment as a % of household income

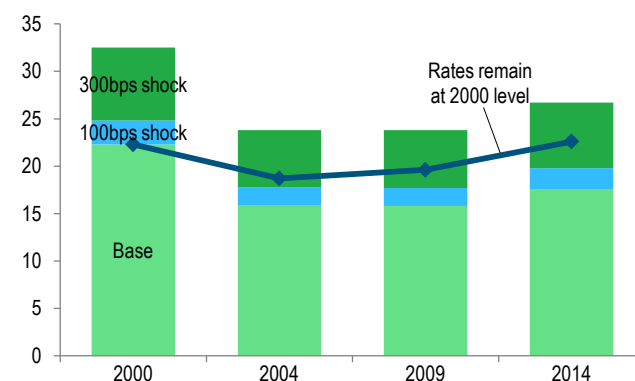


Source: CEIC, Standard Chartered Research

Based on 70% LTV, 50sqm apartment (apartment sizes are smaller than Singapore thanks in part to tight regulation), interest rate is based on a typical mortgage rate of 3M HIBOR +100bps. Typical maturity of loan is 20 years.

Figure 7: Singapore's homebuyers only mildly at risk

Mortgage payments as a % of household income



Source: CEIC, Standard Chartered Research

Based on 80% LTV (maximum allowed on first mortgages since Feb 2010), price for a 90sqm private apartment (median size), household income used is from the non-landed segment, interest rate is based on a typical mortgage rate of 3M SIBOR+100bps. Typical maturity of loan is 25 years.



Defining the cycle

Evidence for an 18-year cycle

Hong Kong and Singapore conform to the long housing-cycle pattern

In the US and UK major housing market cycles have occurred with an average duration of 18 years and a range of about 15-20 years. The first evidence goes back to Homer Hoyt's classic study of Chicago land prices (Hoyt 1933). The approximately 18-year pattern has been found in many other markets since (Figure 8). The US and UK housing cycles have conformed closely, with peaks in 1973, 1989 and the latest peaks in 2006-07. Housing cycles are longer and more volatile than economic cycles because they are driven by price expectations, especially speculative activity. After a major price decline it takes time for speculation to re-emerge as memories slowly fade and a new generation comes along.

In Asia substantial private housing markets are relatively new but we can already observe long cycles in Hong Kong and Singapore, with major peaks in 1981-82, 1996-97, and, most likely 2013-15. Singapore prices peaked in 2013, 17 years after the last peak, while there are strong signs that Hong Kong is peaking now too (Figure 9). But Hong Kong and Singapore are on a different time-track to the US. This is likely because periods of ultra-low US interest rates, such as the early 1990s or since 2008, have provided a powerful boost to property prices in Singapore and Hong Kong.

South Korea and China do not

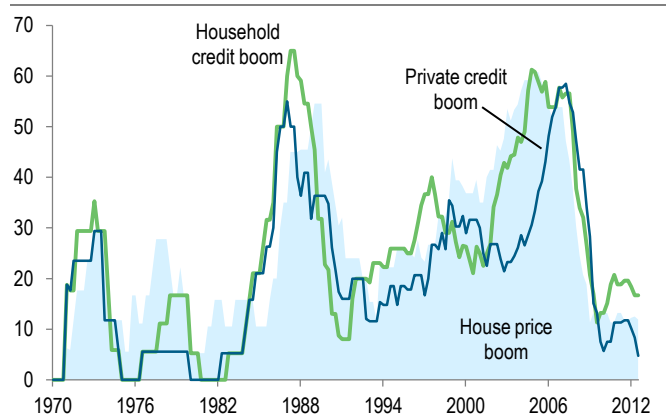
It is hard to find a 15-20-year cycle in Korea. Nominal and real house prices rose strongly from the mid-1970s (when the data begins) to 1991, but then fell significantly during the 1990s before resuming a modest upward trend since about 2001, though prices rose in real terms only from 2005. Prices in nominal terms have nearly doubled since 2001, with only a very small interruption during the global financial crisis (GFC).

We see two possible reasons why Korea is not conforming to the usual long cycle. (1) The transition from an emerging to a developed country has upset the pattern. Korea developed from a fast-growing emerging economy in the 1970s and 80s to a much slower-growing developed economy by the 2000s. This brought a bubble period (in the 1980s) and then a long correction. (2) Korea's very active use of MPPs, combined with high household debt has kept prices from expanding freely.

For China it is simply too early to find a long cycle in the data, as the government began to privatise much of the country's urban residential housing stock only in 1998.

Figure 8: The long cycle in housing

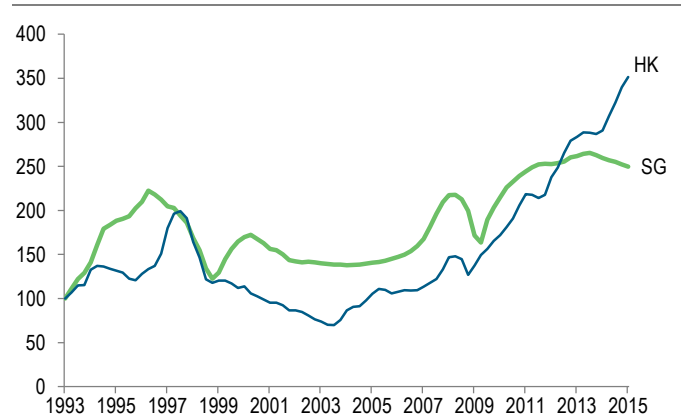
% of 53 developed and emerging markets countries involved



Source: IMF, Standard Chartered Research

Figure 9: Singapore and Hong Kong house prices

Nominal prices (1993=100)



Source: HKMA, MAS, Standard Chartered Research

Four phases of the cycle

The housing market cycle can be divided into four phases based on analysis of prices, valuations and trends in house-building and the rental market. It starts with a stabilising phase, turning slowly into expansion with rising prices, followed by a period when homes become expensive and then a correction (Figure 10).

Housing bubbles are common but not inevitable

Cycles do not always end with a bubble, but bubbles are common because of the lags in building cycles and also because the decision to purchase is often based heavily on price expectations. When a bubble occurs the expensive phase turns into a mania, typically with a final sharp up-move, amid widespread euphoria and speculation. Prices then fall back, with the potential for important negative effects on the economy and financial markets.

Japan is an example of the stabilising phase

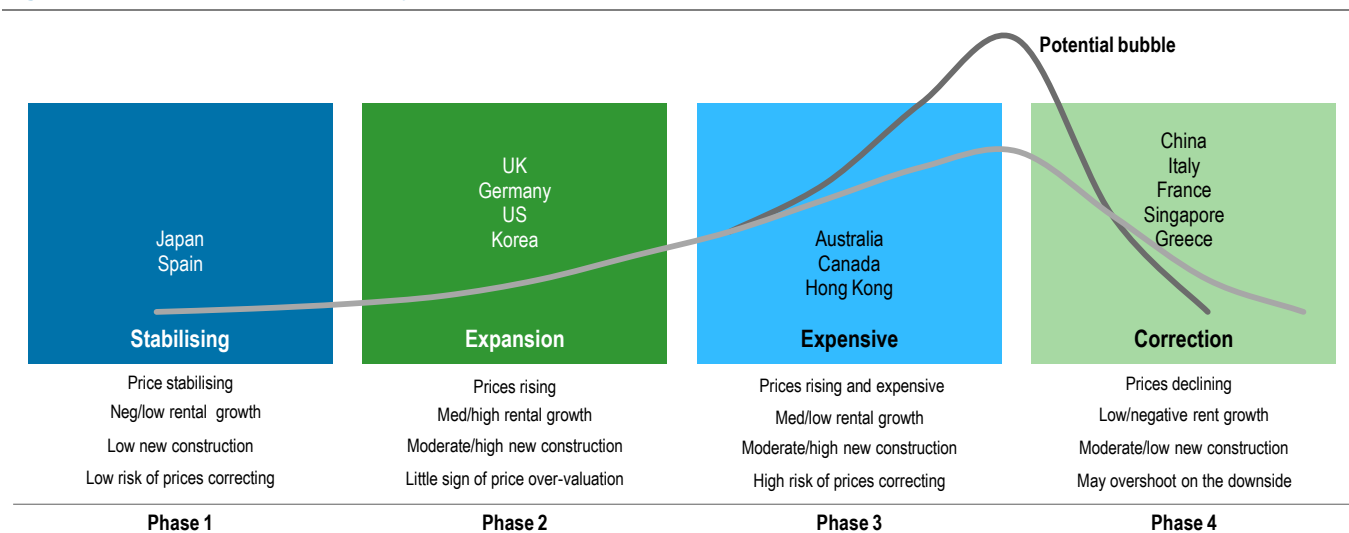
At the start of the cycle home prices are near their lowest point but the market does not usually jump immediately from the correction period to the next upturn. A phase exists in which various economic factors are catching up with each other and prices gradually stabilise. Home prices may rise a little in this stage, usually led by high-end properties, but prices in real terms are fairly flat. Construction activity will be soft. Interest rates are usually low but credit availability may still be tight.

Japan is showing signs of transitioning into expansion phase

Japan's 1980s housing bubble peaked in 1991, and a painful correction phase followed lasting 12-15 years before stabilising in the early 2000s. A brief expansion phase from about 2003-08 (more in valuations than nominal prices) was quickly snuffed out by the GFC and prices and valuations fell again during 2008-09. The decline was modest (about 10%), reflecting the absence of a long expensive phase.

House prices are now showing early signs of picking up, led by the high end in Tokyo and supported by low valuations and low interest rates. Housing starts have been on an uptrend since 2009. We would expect Japan to transition into the expansion phase in coming years, supporting the economy.

Figure 10: The four phases of the cycle



Source: Standard Chartered Research

Expansion phase in Korea

During this phase the economy is stronger, and typically has been expanding for some time. Confidence in the property market starts to grow. Home prices begin to rise on increasing demand as incomes and employment grow. Credit conditions and availability to households usually ease and interest rates may start to move up but are not high.

Recent data suggests Korea's housing market is strengthening, supported by low interest rates

Korea saw a major low in nominal prices in 1998, though measured in real terms the low did not occur until 2005. If we took 1998 as a low, the long cycle should point to a new low around now, or at the latest within two to three years. We find that implausible. Either Korea is not conforming at all to the long cycle or we should take the 2005 date as the major low. We believe it makes sense to place Korea in the expansion phase. The most recent data suggests a strengthening housing market supported by low interest rates, and a modest relaxation of macro-prudential measures.

Expensive phase in Hong Kong

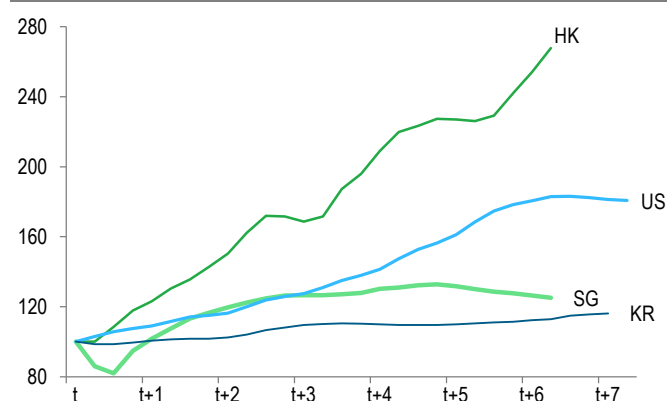
The third phase is characterised by high valuations relative to general inflation, rents and incomes. House-building is usually strong, driven by high house prices as well as a long period of price growth. Credit conditions and availability are usually very easy in the third phase. Interest rates may be moving up though, so far, bullish expectations override higher costs.

At this point speculative behaviour tends to increase and there is the risk of a bubble developing. Purchases can be regarded as speculative when the primary motivation is capital gains rather than rental income or own-use. This can range from homeowners buying a larger property than they really need, more young people purchasing rather than renting, 'flipping' (a purchase aiming at a quick sale), or, as is frequently the case in China, buying unfinished property and leaving it vacant.

Hong Kong's residential property prices have risen 422% since 2003

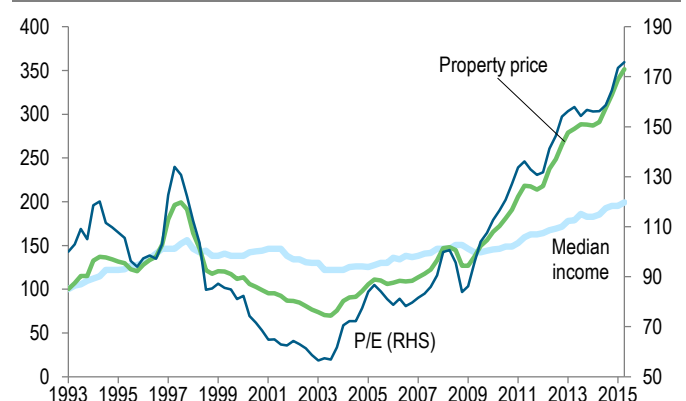
Home prices in Hong Kong were bubbly in the 1990s, then crashed 65% following the 1997 peak, the fall exacerbated by the severe conditions of the Asian Crisis and then SARs respiratory disease. Prices have risen rapidly in recent years (Figure 11). Home valuations are also now at historical highs relative to income and rent (Figure 12). Since the low in 2003 prices have risen an extraordinary 422%, though they fell briefly 20% during the 2008 crisis. The relentless uptrend in Hong Kong is striking compared with other countries in Asia (Figures 13 and 14).

Figure 11: Ballooning Hong Kong home prices
Nominal prices, Q4-2008=100; US (Q1-2000=100)



Source: CEIC, Standard Chartered Research

Figure 12: Hong Kong's high home price to earnings ratio
March 1993 = 100



Source: CEIC, Standard Chartered Research

Correction phase in China and Singapore

In the final phase property prices are soft and this period may last several years. The size of the decline depends on the extent of overvaluation, the depth of any accompanying economic slowdown, the path of interest rates and whether underlying wage inflation can provide a cushion. Central banks usually cut policy rates and nowadays may relax MPPs. In cases where they do not move quickly to cut rates (perhaps because they are defending an exchange rate as in Hong Kong in the late 1990s) a particularly large decline in prices may occur.

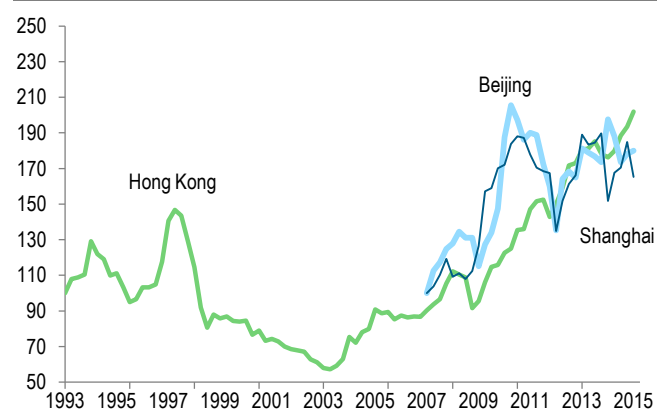
China is now in the correction phase, with prices soft in Tier 3 and 4 cities. Prices are rising modestly in some major cities but more slowly than earnings. With wages still growing at around 10% p.a. affordability is improving. The correction is showing up most in construction where over-building has led to excess inventories, again particularly in Tier 3 and 4 cities (Figure 15). A barrage of government support measures since September 2014, including a series of interest rate cuts and lower down-payment requirements, is helping to support the market.

In Singapore valuations are not nearly so stretched as in Hong Kong

Singapore's cycle is also in the correction phase. It conformed closely to the 18-year cycle with a prior peak in 1996, a decline until the early 2000s and a pick-up after that, interrupted briefly by the GFC. But prices increased much less than in Hong Kong and valuations are not nearly so stretched. Prices have been sliding since Q3-2013 with slackening transaction volumes (Figure 16).

Figure 13: Asia real house prices

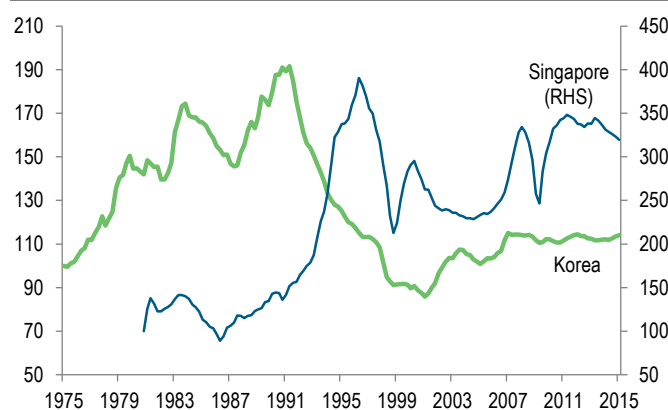
Hong Kong 1993 = 100, Beijing and Shanghai 2007 = 100



Source: CEIC, Standard Chartered Research

Figure 14: Asia real house prices

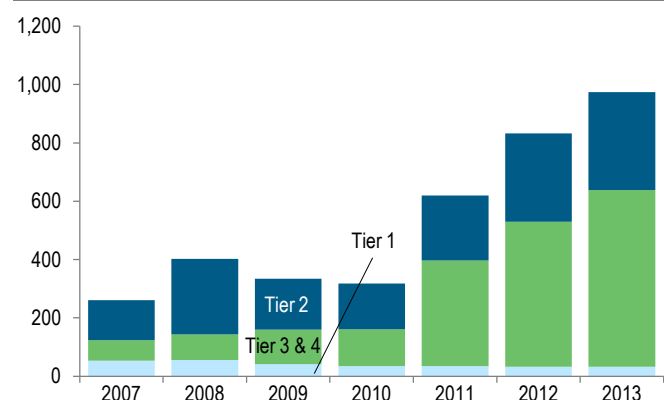
Singapore (RHS) 1975 Q1 = 100, Korea (LHS) 1980 = 100



Source: CEIC, Federal Reserve Bank of Dallas, Standard Chartered Research

Figure 15: China over supply is mainly in Tier 3 and 4

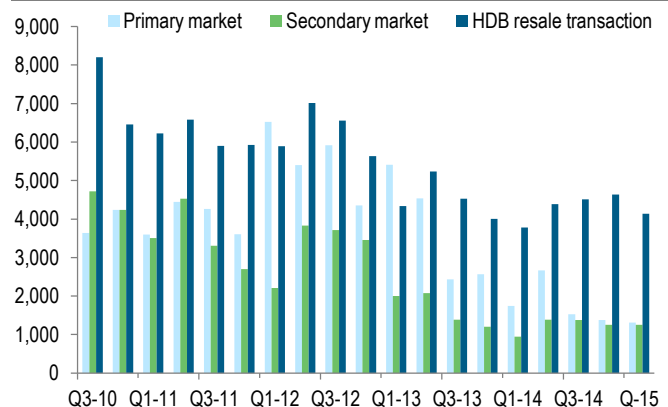
Millions of square metres



Source: IMF, Standard Chartered Research

Figure 16: Singapore residential transactions are down

Number of units



Source: IMF, Standard Chartered Research

Identifying bubbles

Identifying bubbles before they burst is difficult; most simple metrics either fail to spot them or find them in markets which do not subsequently collapse. We use a checklist of 18 typical characteristics of a bubble, which includes rising prices and high valuations but goes well beyond (Figure 17). When all or most of these are present we can say that conditions are 'bubbly' and there might be a bubble developing.

Several items in the checklist focus on the 'story' being told for why the market is rising, for example the presence of new investors, government support or lack of supply. Often there is considerable media focus and house prices are on everyone's lips. Innovations such as new lenders or mortgage arrangements are important, as is the path of debt. Bubbles are usually associated with accommodative monetary policy and frequently accompany a period of low consumer price inflation, a strong exchange rate and falling savings.

Hong Kong is bubbling but the correction should be manageable

Hong Kong is sounding alarm bells

Our heatmap shows Hong Kong meeting most of the characteristics of a bubble. Price to income and rent ratios are at least 65% above their long-term historical averages and are currently at record highs. The 'new element' in this bubble is mainland China investors. There is little doubt that popular and media interest in the boom has been very high, although increasingly accompanied by fears that the bubble is about to burst. Many analysts are projecting a correction soon, given likely rate increases. The question is how large.

Figure 17: Bubble heatmap

Characteristics of a bubble

	China (national)	Hong Kong	Korea	Singapore
Rapidly rising prices				
High expectations for continuing rapid price rises				
Overvaluation compared to historical averages				
Overvaluation compared to reasonable levels*				
Several years into an economic upswing				
Some underlying reason or reasons for higher prices				
A new element**				
Subjective paradigm shift***				
New investors drawn in				
New entrepreneurs in the area				
Considerable popular and media interest				
Major rise in lending				
Increase in indebtedness				
New lenders or lending policies				
Consumer price inflation subdued (so central banks relaxed)				
Relaxed monetary policy				
Falling savings rate				
A strong exchange rate				

Source: "When Bubbles Burst" John P. Calverley, Standard Chartered Research; Red = meets criteria, Green = does not meet criteria, Grey = neither or unknown

* Reasonable levels = are returns/yields above or below what is considered reasonable after taking into account compensation for inflation and credit risk premium

** A new element = Is there a new element like immigration which can justify higher prices

*** Paradigm shift = Is there the perception of a shift/change in patterns which is being argued energetically by some leading opinion formers

We believe a price correction up to 20% in Hong Kong is plausible

Our view is that house prices are likely to correct modestly by 10-20% over two to three years. This, together with rising wages and prices, would bring a significant improvement in affordability over the next few years. Still, with relatively high valuations, Hong Kong is vulnerable and the risk of a major correction remains.

We would emphasise that even if a market can be identified as 'bubbly' or a bubble, it does not mean we think it will collapse immediately. A collapse usually requires an economic recession and/or a sharp rise in interest rates. Bubbles often expand far longer and farther than seems likely, discrediting early whistle-blowers even though they prove correct in the end.

In Hong Kong the situation today is very different from 1997 when the impact of the Asian Crisis brought both recession and high interest rates. US and Hong Kong interest rates will likely rise only very gradually in the next few years. Our forecasts suggest a rise of less than 1ppt and few anticipate a large increase. We expect Hong Kong's economic growth to remain healthy in 2016 and unemployment to remain fairly steady around 3%. Those commentators expecting prices to tumble by more than 20% from their peak expect economic conditions to deteriorate, with the unemployment rate rising above 4%. We think this scenario is unlikely.

The risk scenario

If our economic outlook proves too optimistic and especially if external shocks hit Hong Kong, the property market is vulnerable. A hard landing in China is one candidate, though not that likely in our view. Another poor outcome would be unexpectedly sharp rises in US key policy interest rates. Both together would be enough to send prices crashing, though the Fed is much less likely to raise rates aggressively if China is very weak. A final worry would be if China devalued sharply. In our view this too is unlikely, but we cannot rule it out and, given that other Asian currencies would likely sink further too, the Hong Kong dollar (HKD) could come under pressure. However, the authorities withstood the pressures in the late 1990s and would likely do so again.

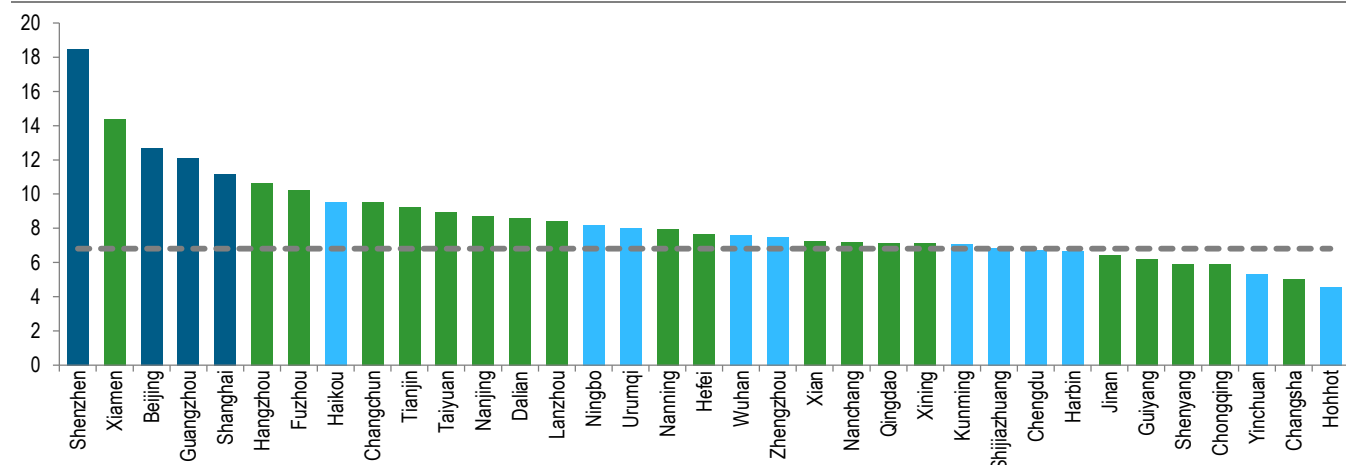
China's property prices up 80% since 2008; urban household per capita income has risen more

China has a house-building bubble not a price bubble

Since 2008 China's property prices have risen by 80% but urban household per capita income has increased by more. House prices are soft in China today; in our view this is not because it has experienced a major national price bubble which is now bursting, but because supply has over-extended.

Figure 18: Chinas home price to earnings ratio

Data for 2014, 35 cities, dark blue = Tier 1, green = Tier 2, light blue = Tier 3, line is national average



Source: CEIC, Standard Chartered Research

Some parts of China's property market look somewhat bubbly

That said, affordability has deteriorated significantly in major cities in recent years and, despite the recent downturn, prices still seem stretched relative to the fair value warranted at current incomes. Tier 1 cities therefore do look somewhat bubbly on this measure (Figure 18). There have also been plenty of anecdotal claims of bubbles in individual segments, e.g., luxury property in Shanghai. Lower-tier cities do not seem to be in bubbly territory, but prices are now soft due to the excess supply of property. While there has been no major bubble in prices we do see a bubble in house-building, particularly in Tier 3 and 4 cities (more on this below).

Singapore bubbly but not a bubble

Singapore is not ringing as many alarm bells as Hong Kong because valuations are not overly stretched. The rapid rise in incomes in Singapore, faster than in Hong Kong, encourages our view that valuations are less extreme (Figure 19). The ratio of home prices to incomes has remained significantly below the peaks of the mid-1990s. Pricing relative to rents also does not suggest valuations are significantly stretched. In Singapore the price-to-rent ratio has returned to 2005 levels since 2010, after dipping temporarily between 2006 and 2009. In Hong Kong the ratio rose 60% by end-2014.

Mainland China money has become an increasing force in Singapore

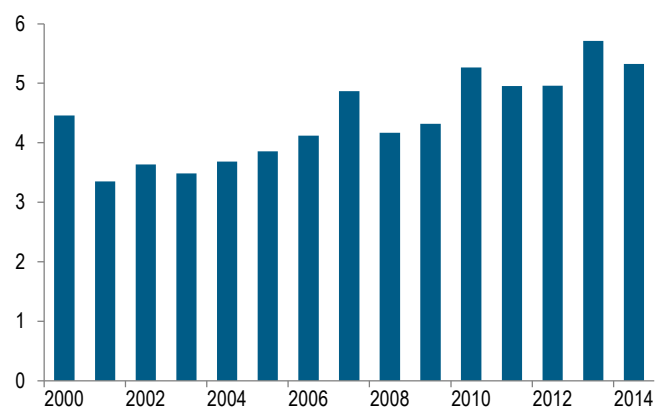
Singapore did have some bubbly elements (until the downturn started in 2014), including rapidly rising debt and low mortgage rates. Like Hong Kong, the new element was foreign buyers. In addition to the traditional Indonesian and Malaysian investors, mainland China money has become an increasing force. We expect prices to fall by 10-20% from their peak over two years.

Singapore is much less vulnerable than Hong Kong to China's slowdown and a sharper-than-expected US rate rise, given its weaker links to China's economy and greater exchange rate flexibility. Like other Asian countries, the government can also potentially support the market by rolling back the strict prudential regulations imposed since 2009.

No bubble in Korea

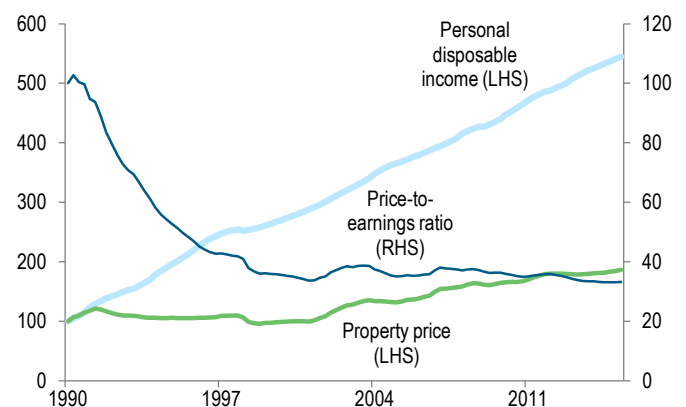
Our heatmap shows no sign of a bubble in Korea. Property valuations are on a firm footing compared with income and rents. Growth in personal disposable income has significantly outrun property values. This is true both at the national level and for Seoul. Price-to-income ratios are at historical lows (Figure 20). Meanwhile, the price-to-rent ratio is close to its long-run average.

Figure 19: Singapore valuations up modestly
Ratio of house prices to earnings



Source: IMF, Singapore Statistical Agency, Standard Chartered Research

Figure 20: Korea valuations have fallen
(1990 = 100)



Source: Federal Reserve Bank of Dallas, Standard Chartered Research



The spectre of higher US rates

Mortgage rates have been exceptionally low

Interest rates have been exceptionally low in developed Asia since the GFC. Without this sizeable adjustment down in borrowing costs affordability would have deteriorated much more (Figures 21 and 22). It is also unlikely that property prices would have moved up as much, and a correction in Hong Kong might have already materialised.

Mortgage rates are still low in Singapore and Hong Kong

When rates are so low investors can easily cover interest rate costs, even with rental yields in the 2-4% range, which is usually considered very low (i.e., prices high). In Hong Kong and Singapore interest rates have already moved up from their lows but mortgages are still available at interest rates of around 2% and 2.5%, respectively. In Korea rates have also been low, reflecting the sluggish economy and policy aimed at keeping the Korean won (KRW) competitive

Hong Kong is most at risk

The prospect of Fed rate hikes hangs over Hong Kong and Singapore. In our view Hong Kong is most at risk, since its interest rates are the most closely linked to US rates and therefore a rate rise could come at an inappropriate time for the domestic economy. Singapore has more flexibility and Korea and China have complete flexibility. They are running current account surpluses and have large FX reserve positions, which makes a currency crisis very unlikely, in contrast to the position for many Asian countries in 1997. The KRW actually appreciated during the market 'taper tantrums' over US Fed policies in 2013.

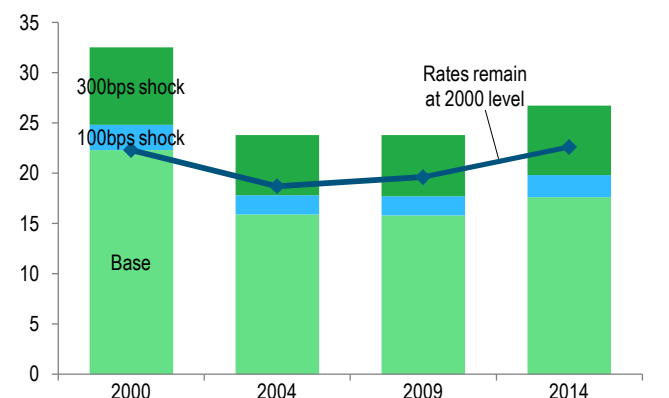
Rate rises of 300bps or more would cause concern

Stress tests by the HKMA and Monetary Authority of Singapore (MAS) suggest that it would take a 300bps rise in rates to put real pressure on homeowners. In Hong Kong this would increase monthly mortgage payments by about 30% and push up the income gearing ratio (mortgage payments over household income) to over 90% from around 70% in Q2-2015, significantly above the long-term average of 50% but still below the 110% peak of 1997.

The MAS estimates that the percentage of over-leveraged households (those with a monthly debt-servicing burden greater than 60% of their income) could rise from 5-10% of total borrowers in 2013 to 10-15% should mortgage rates rise by 300bps.

Figure 21: Singapore income gearing ratio

Mortgage payments as a % of household income

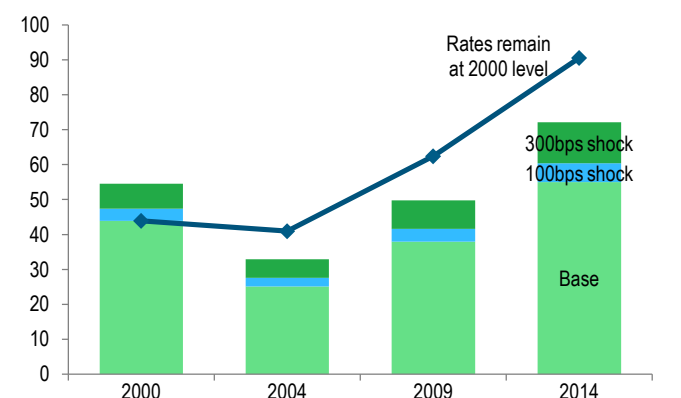


Source: CEIC, Standard Chartered Research

Based on 80% LTV (maximum allowed on first mortgages since Feb2010), price for a 90sqm private apartment (median size), household income used is from the non-landed segment, interest rate is based on a typical mortgage rate of 3M SIBOR+100bps. Typical maturity of loan is 25 years

Figure 22: Hong Kong income gearing ratio

Mortgage payment as a % of household income



Source: CEIC, Standard Chartered Research

Based on 70% LTV, 50sqm apartment (apartment sizes are smaller than Singapore thanks in part to tight regulation), interest rate is based on a typical mortgage rate of 3M HIBOR +100bps. Typical maturity of loan is 20 years

Expected US rate increases will not trigger a major correction

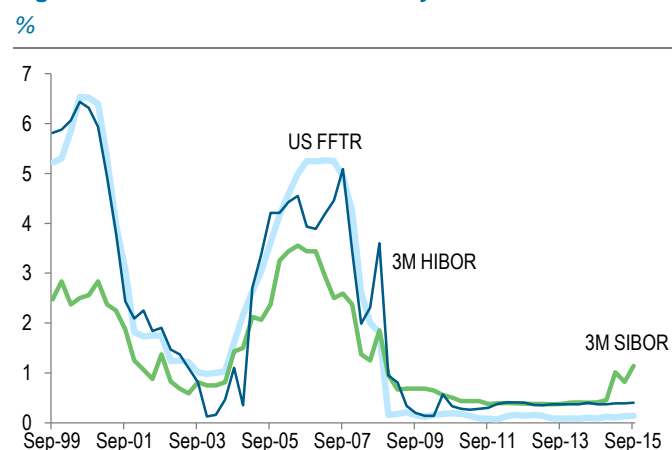
In our view likely US rate rises may be enough to cool both markets, but not sufficient to cause major stress:

- 1) Household interest costs are still very low and we forecast the federal funds target rate to remain low for an extended period despite some rate increases in the near term (Figures 23 and 24).
- 2) US rate increases are dependent on the world economy, including China, doing reasonably well.
- 3) Easy global liquidity conditions will remain supported by continued monetary expansion in the euro area, Japan and China.
- 4) Cooling measures implemented in both Hong Kong and Singapore to improve financial prudence could help temper the impact of rising borrowing costs.
- 5) Macro-prudential measures can be eased if the correction in house prices becomes too severe.

Hong Kong's mid-1990s experience is interesting. When the Fed first lifted rates in 1994 the Hong Kong market crashed, driven down by fears of an aggressive tightening cycle. Once the Fed completed its tightening cycle house prices rebounded to new highs. One reason for this is that Hong Kong's inflation rate is relatively high, which means that mortgage rates in real terms are likely to remain in negative territory unless US rates rise far more than expected. We forecast consumer price inflation at around 3.5% in the next few years, with wages growing faster.

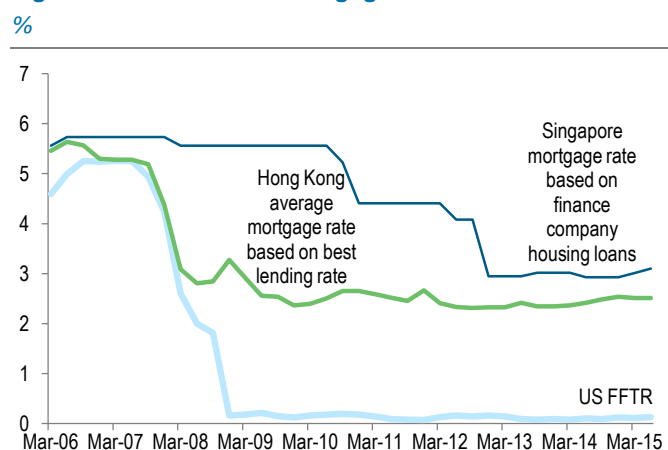
That said, we do not expect a rebound in prices this time, after the Fed has hiked. The point is that moderately higher US rates in the context of a growing economy and healthy Hong Kong economy is not a bad background for Hong Kong house prices and suggests a major correction is unlikely.

Figure 23: Interest rates are still very low



Source: Bloomberg, Standard Chartered Research

Figure 24: Fed rate and mortgage rates



Source: HKMA, MAS, Standard Chartered Research



Structural trends

Three major demographic trends

Demographics affect the housing market via their influence on the number of households, household size, and internal and external migration. Three particular trends are worth noting in our four markets:

1. Population growth is slowing, dramatically in Singapore

Population growth is slowing in all four countries (Figure 25). Singapore is experiencing a particularly sharp slowdown as immigration has been cut back. Whereas the population rose 2.6% p.a. from 2000-10 on average it is likely to rise only 1.5% p.a. from 2015-20 and then decelerate further. We expect China's population growth to slow to zero by the late-2020s, with Korea close behind.

2. Ageing will cut demand for housing

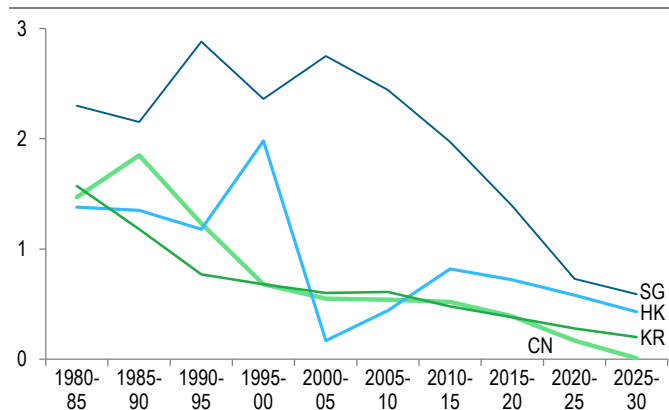
A recent study by the Bank for International Settlements (BIS) which analysed 22 advanced economies from 1970 to 2009 found that a 1% increase in the old-age dependency ratio was associated with a 0.66% drop in real house prices (Figure 26).

3. Urbanisation in China will continue to boost demand

Government policy aims to raise China's urbanisation rate to 60% by 2020 and 70% by 2030, from 54% in 2014. The rate of urbanisation is slowing but the numbers involved are still huge. Moreover, the easing of hukou rules means that more people currently living 'illegally' in cities will be able buy property to more easily.

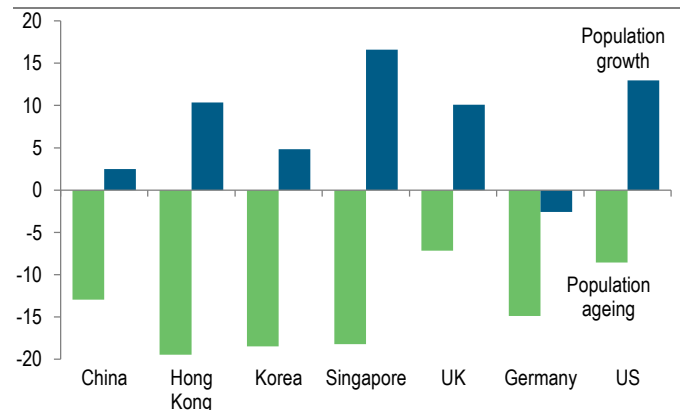
We expect China's urban population to increase by more than 200mn by 2030

Figure 25: Population growth is slowing
%



Source: UN, Standard Chartered Research

Figure 26: Impact of population dynamics
Cumulative drag on real house prices by 2035



Source: BIS, UN, Standard Chartered Research



Demand and supply in China

Substantial long-term demand

Conditions will continue to support high demand for homes in China

We estimate that between now and 2030 the cumulative demand for new homes will be between 150-200mn. China's urban population is likely to grow to close to 1bn by 2030 from around 760mn today. With an average of about three people per household this translates into 70mn homes. Many people today live in old, poor-quality buildings which are likely to be redeveloped as incomes grow. The average lifespan of the older buildings is only about 25 years; their redevelopment over the next 15 years will add 50-75mn to demand.

Further, many young people still living in dormitories or sharing accommodation – often due to hukou restrictions – will demand apartments, especially as the population ages. There should also be more demand for second homes (again, as incomes rise), though we assume that the number of investment homes (left empty and unfinished) will diminish (see below). The exact numbers will depend on many factors, including the pace of economic growth and the path of house prices, but we assume a total of 175mn homes needed by 2030. Demographic trends mean housing demand is likely to peak somewhere between 2020 and 2025 and then decline as population growth and urbanisation slow, though only very gradually.

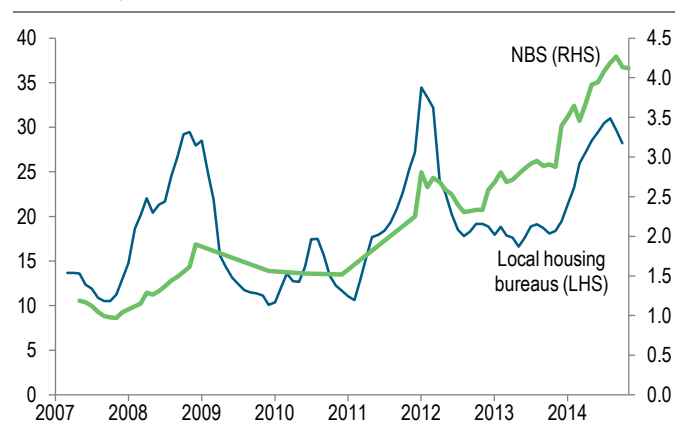
Excess supply has to be absorbed

While we estimate total demand to be 175mn units we expect the number built over the next 15 years to be somewhat less as China's excess supply is absorbed. Estimates of the scale of this inventory vary widely (Figure 27). The IMF estimates excess supply of unsold homes in 2014 was around 1.3bn square metres, which translates into about 13 million homes (Figure 28). Some inventory would be normal (though developers do aim to sell homes before completion).

40-50mn vacant sold homes in China

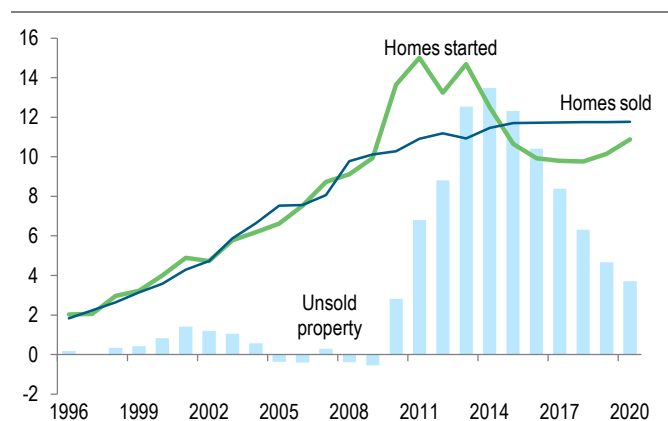
Meanwhile there are also a large number of vacant sold homes, up to 21-23% of property in many cities, according to official estimates; this translates into 40-50mn homes. Some of these are in so-called 'ghost cities'. The idea of a ghost city has to be interpreted carefully (Shephard 2015). When the authorities plan a new city it is inevitable that many apartments are built before people want to move in. Jobs need to come, as well as other services. The problem of financing development, which takes several years (even in China) is solved partly by selling the apartments to investors who leave them empty and unfinished until people are ready to move in.

Figure 27: China residential real estate inventory ratio
In months, 3mma



Source: IMF, Standard Chartered Research

Figure 28: China's required inventory correction
Millions of homes



Source: IMF, Standard Chartered Research

The question is whether there will still be 40-50mn such homes in 2030, or more, or whether the number will fall. We think it will fall because as the financial system is deregulated and capital controls are removed investors will increasingly have other investment options. Also, as the overall urbanisation rate begins to slow the creation of new cities is likely to give way more to expansion of existing ones. That said, rising incomes mean more investors will be able to afford investment property. But we think China will become a more normal housing market with people renting out properties and collecting income rather than leaving them empty (which implies increased supply of homes). We therefore expect about 20mn units of the demand for homes to be supplied from this source.

150mn homes will need to be built from now to 2030 to satisfy demand

This leaves us with around 150mn homes to be built, with starts dipping well below sales for a few years as the inventory is absorbed. From the peak building of just under 14mn homes in 2013 we expect building to decline by about one-third by 2017 to allow time for demand to catch up with supply. Then it will pick up again slightly, before likely falling off again during the 2020s.

Hong Kong's supply is tight but not for long

Restrictions on land use are a major factor in the high volatility of Hong Kong property prices

House prices react more strongly to changes in demand when the supply of homes is constrained, whether due to the physical limitations of a location, zoning regulations or other headwinds to property construction. Nowhere have these limitations been more binding than in Hong Kong (Figure 29); this has contributed to the steep property price rises in recent years. Only 9% of the land area is used for residential housing, with the private market accounting for one-third of this subset. This is the main reason why home sizes are tiny compared to other advanced economies in the region (Figure 30).

Land to build private housing is only available from the government in periodic land auctions (Figure 31). This is an important source of revenue for the government, and helps to keep other taxes very low. But it can create problems, given the lag between auctions and buildings being finished. Completions averaged 21,300 from 2000-08 amid low prices but fell to an average of 11,400 from 2010-14 despite soaring prices (Figure 32).

Increased supply of homes in the pipeline could pull prices down

Today the government is aiming to increase housing supply by a cumulative 480,000 by 2025, which is an 18% increase from the current total housing stock. Private housing will account for 190,000, which could boost supply to about 19,000 p.a. If Hong Kong is entering a correction phase as we believe, this could pull prices lower. Some people believe plans may be modified but, again, the lags make auctions difficult to fine-tune to market conditions.

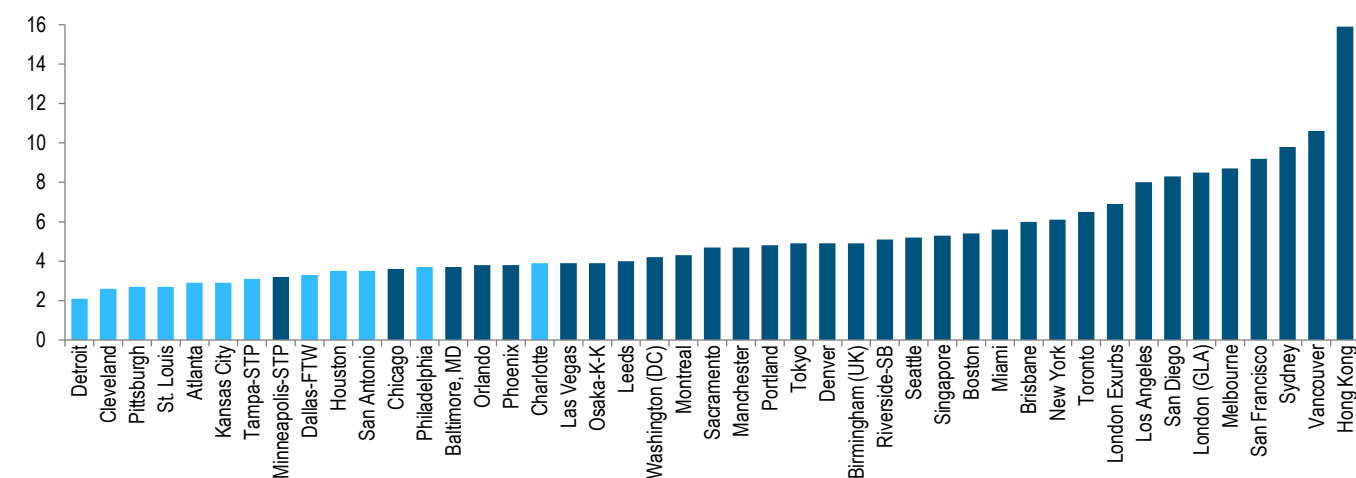
Singapore has rising supply but slowing demand

Singapore has already significantly boosted the supply of homes expected in the near term. Past supply bottlenecks reflected rapid population growth and limited new housing construction. These conditions look set to ease as a pipeline of housing supply is expected to come on the market in the next two years. Meanwhile the sharp slowdown in population growth due to changing rules on immigration means that demand is likely to grow much more slowly in coming years.

Special Report: Asian housing: Ride the cycle

Figure 29: Regulation makes housing less affordable

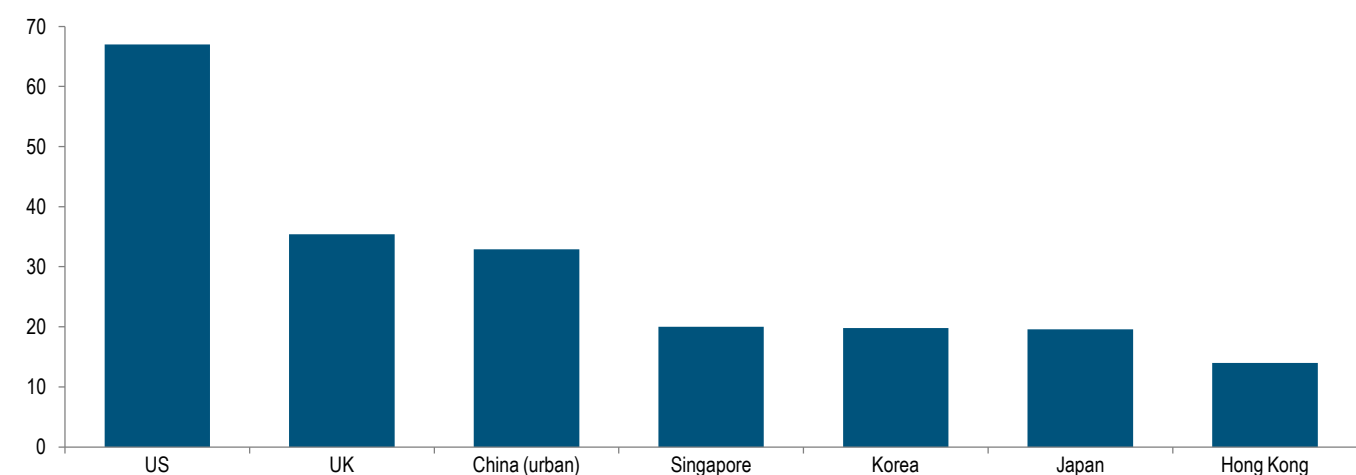
Price to earnings ratios. Dark blue = regulations that severely limit residential building



Source: Demographia International, Standard Chartered Research

Figure 30: Hong Kong's tiny apartments

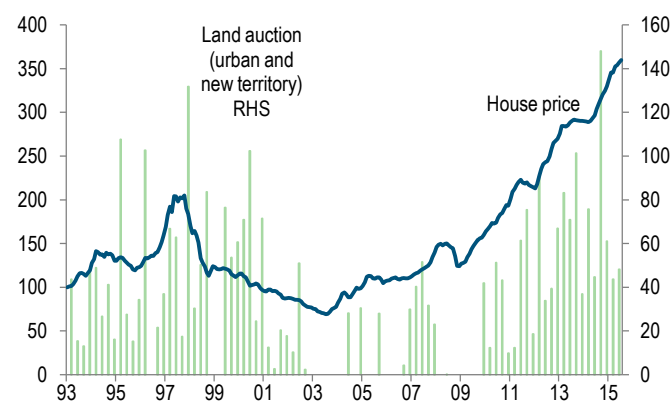
Square metres per person



Source: IMF, Standard Chartered Research

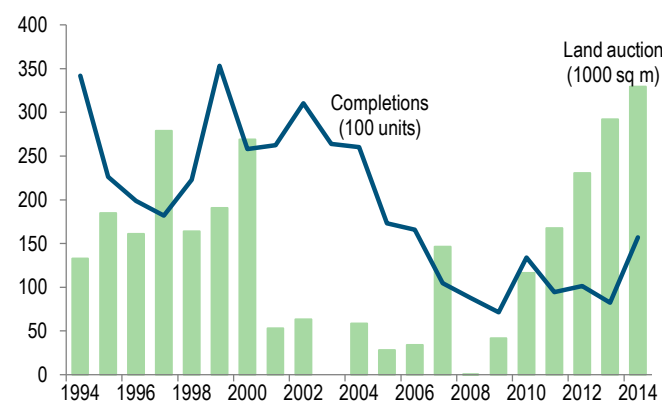
Figure 31: Hong Kong home price and urban land supply

Price (LHS, Jan 1993 = 100), Land auctions (1000 sq m, RHS)



Source: Hong Kong Land Department, Rating and Valuation Department, Standard Chartered Research

Figure 32: Land supply and residential apartment supply



Source: Hong Kong Land Department, Rating and Valuation Department, Standard Chartered Research

Mainland Chinese buyers are a major influence in Hong Kong and Singapore, especially in the luxury home segment

Mainland Chinese buying has boosted prices

Mainland Chinese buyers' interest in Hong Kong's real estate market peaked in 2011, when they bought 14% of total unit sales and 24% in terms of transaction value. The higher value reflects a preference for more expensive properties, which is also reflected in their purchase of 41% of luxury units sold and 55% in value terms in 2011 (Figure 33). Since then interest has waned (partly reflecting MPPs, see below) but Chinese buyers still account for an important share of the Hong Kong market.

In Singapore the impact of Chinese investors has been felt in some segments of the market. One-fifth of Singapore's housing market in the country is accessible to outsiders, with around 80% of residents living in public housing where purchases are open only to Singaporeans. Foreign buyers made up around 27% of total sales of available property in Q4-2014 (c.5% of the total housing market). These figures include foreigners living in Singapore (Figure 34). The Chinese maintained their position as the top overseas home-buyer group in Singapore, contributing to one-third of foreign home-buying activity. Malaysian purchasers made about one-quarter and Indonesian and Indian buyers about one-tenth each.

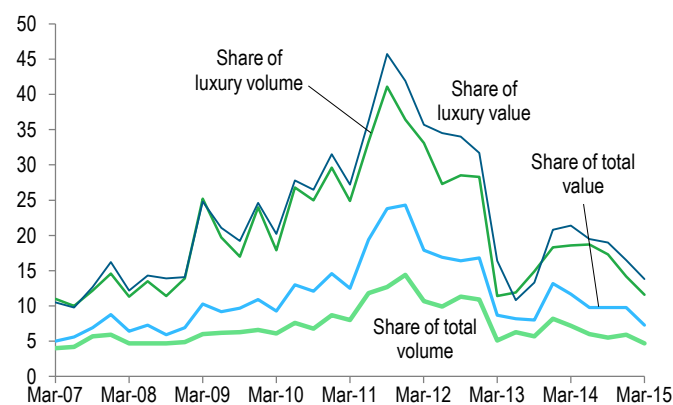
Official data on China outflows for property purchases likely underestimates the true levels

China's official data on outflows to buy property probably underestimates the true levels and governments in other countries mostly do not collate data. Colliers International estimates outbound investment from China of c.USD 3bn in 2010 versus the official estimate of just over USD 1.5bn (Albert Cao, 2015). Colliers estimates the number ballooned to over USD 16bn in 2013. That would imply 16,000 properties, on the assumption of USD 1mn on average, spread among range of countries including Australia, Canada, the US and Japan, as well as Hong Kong and Singapore.

The 'world cities' effect boosts valuations

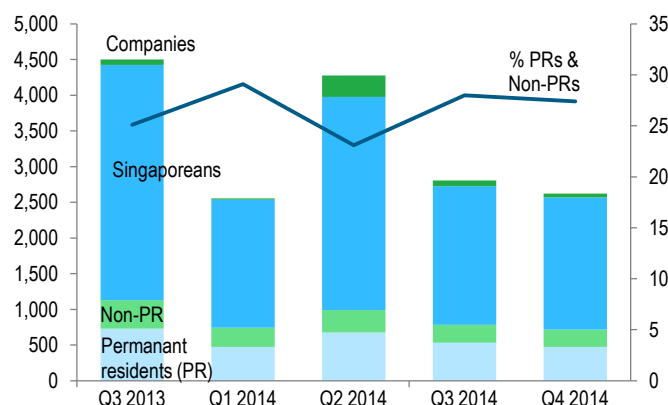
Several cities around the world are considered 'world cities' because they are attractive from a living and/or investment perspective for non-residents to own properties. New York, San Francisco, Vancouver, Toronto, Sydney, Melbourne and London fall into this category, as do Hong Kong and Singapore. Full data on non-resident purchases and holdings is not available but it has become increasingly important this century. As we see in the next section, this has often led to MPPs specifically targeted at deterring non-residents. These cities are also very popular with nationals of the country who frequently own a second property there. A second home in a major city is also an important phenomenon in China, where Beijing and Shanghai are the most favoured choices. This phenomenon helps to explain why valuations relative to incomes are often so high in some cities.

Figure 33: China's share of Hong Kong private property
%, mainland buyers high-end and total market



Source: Centaline, Standard Chartered Research

Figure 34: Profile of private home buyers in Singapore
Total number of buyers



Source: Knight Frank, Standard Chartered Research

Macro-prudential policies

Asia leads the world

Countries in Asia actively fine-tune MPPs to smooth volatility

Asian countries are the most active users of MPPs globally (Figure 35). Hong Kong has used LTV ratios since 1991, partly because the USD link makes monetary policy ineffective. Other Asian countries have also used these measures extensively, especially since the Asian Crisis, when over-exuberant lending to real estate contributed to the crisis. Moreover, countries actively fine-tune policies, easing in response to market weakness as well as tightening to contain exuberance.

MPP divides into two types:

1. System-wide policies to influence overall lending in the economy such as reserve requirements, counter-cyclical capital buffers or caps on loan-to-deposit ratios;
2. Property-specific policies, like maximum LTVs or debt-to-income (DTI) ratios.

We focus mainly on the property-specific measures. In Asia the most commonly used are caps on LTV or DTI ratios and transaction taxes (Figure 36).

Hong Kong has repeatedly tightened MPP

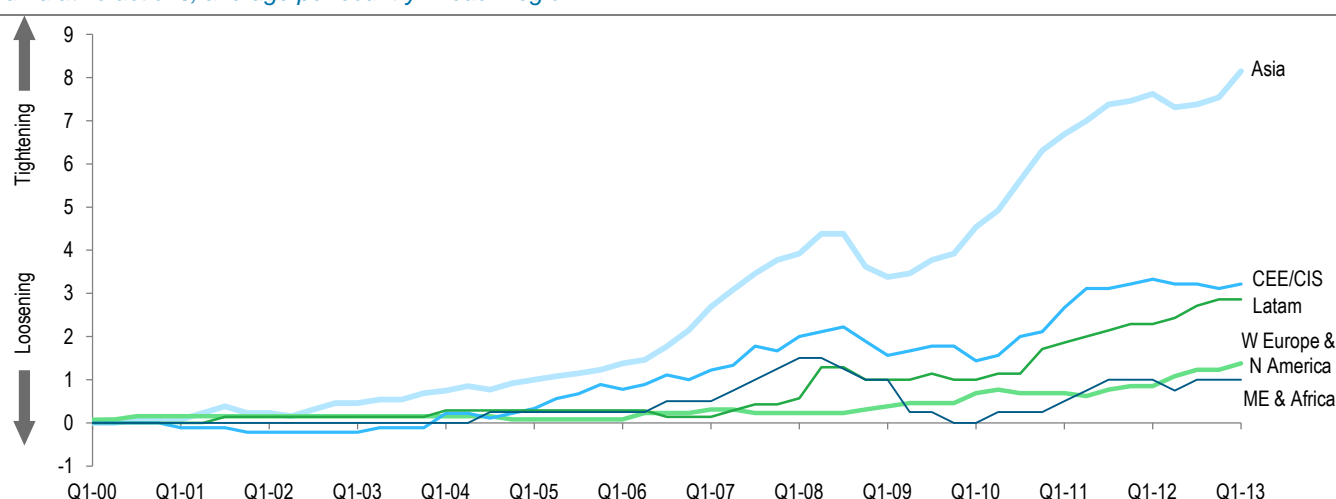
Some MPP measures specifically target non-residents

Hong Kong has tightened its MPP many times since 2009 (Figures 36 and 37). The LTV ratio has been lowered gradually, new restrictions on purchasers have been introduced and the scope of the measures has been expanded to the overall market from the luxury segment. In response to concerns that mainland Chinese money could swamp the market, some measures were aimed specifically at non-residents, who now face higher stamp duty tax. Measures to deter speculators have also been introduced. They include a special stamp duty (SSD) payable if the property is held for less than a certain time (e.g., 15% if sold within six months, dropping to 5% between 24 and 36 months).

While MPP has not stopped prices rising, LTV ratios and household debt-service ratios should provide a buffer to the financial system as property prices correct. Measures such as stamp duty could be eased if house prices fall more than expected.

Figure 35: Macro-prudential policies – Asia leads the way

Cumulative actions, average per country in each region



Source: IMF staff calculations; Notes: Index summing up housing-related measures, credit measures, reserve requirements, dynamic provisioning and core funding ratio. Simple average across countries within country groups.

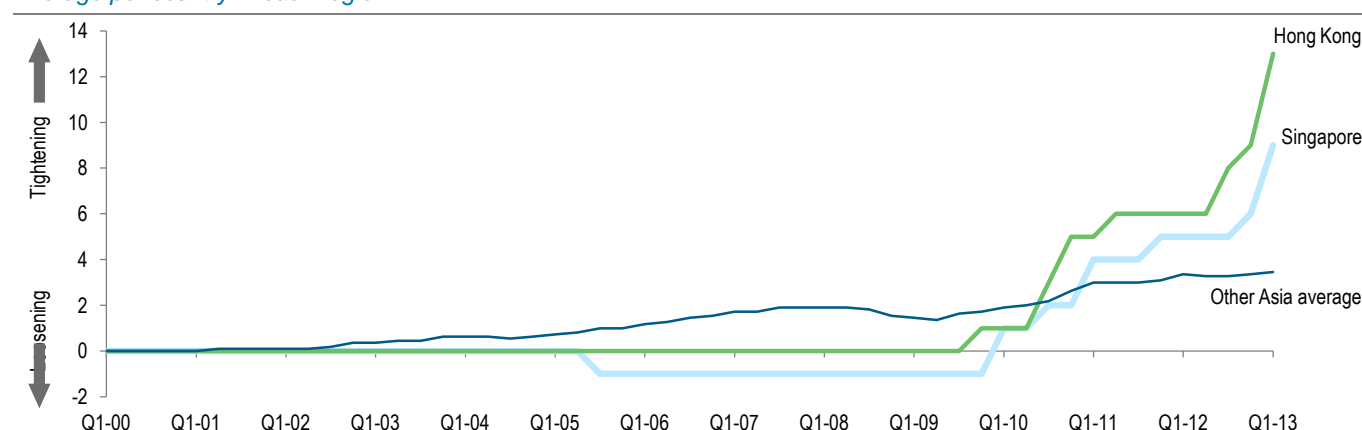
Figure 36: Highlights of MPP measures in select Asian countries since the GFC

Measures	
China	• Lower LTVs to limit leverage and property-market access
	• Higher interest rates on second-home mortgages, and a tighter definition of 'second homes'
	• Prohibiting mortgages on third homes
	• Introducing residency requirements for buyers
	• Clamping down on developers' financing
	• Penalising developers who hoard land (i.e., fail to develop land within specified time frame)
	• Experimental schemes to tax home ownership in Shanghai and Chongqing
	• The requirement that local governments set property price targets
	• Expansion of housing supply, especially at the lower end of the market (social housing)
Hong Kong	• Lower LTVs and cap on maximum loan amount
	• Tighter debt-servicing ratios
	• Higher stamp duty for short-term property ownership
	• Tighter regulations on the selling process to improve transparency
	• Expansion of housing supply
Singapore	• Countercyclical capital buffers
	• The lowering of LTVs on second mortgages and loans for real-estate purchases
	• Prohibiting interest-only loans
	• Raising stamp duty
	• Extension of the holding period for the imposition of stamp duty to four years from three
	• Discontinuing developers' support programmes
	• Expansion of housing supply
	• The tightening and relaxing of LTVs
	• The tightening and relaxing of DTIs
Korea	• Expansion/control of housing supply
	• Abolition of ceiling on sales price
	• Reduction of sales tax on multi-house ownership
	• Reduction of acquisition tax for first time house buyers

Source: Local regulators, Standard Chartered Research

Figure 37: Macro-prudential policies related to housing: cumulative actions

Average per country in each region



Source: IMF staff calculations, Notes: Index summing up housing-related measures. Simple average countries within country groups. Other Asia includes Australia, China, Indonesia, Malaysia, Philippines, Thailand, Korea, Taiwan, India, Vietnam and NZ.

MPPs in Singapore have pulled home prices lower

Singapore's measures have helped bring about a correction

Singapore has used a similar range of measures to Hong Kong, including lower maximum LTVs and increasing transactions taxes, particularly for foreigners and speculators. In Singapore's case these measures are credited with lowering prices over the last year. As in Hong Kong, stamp duty could be relaxed if there are signs of excessive house price declines.

China has relaxed MPP since 2014 to boost the market

China's State Council introduced tightening measures starting in April 2010; these became progressively stricter in subsequent announcements before being relaxed from 2014. The emphasis was on restricting LTVs, particularly for those who already owned one property. But implementation varied considerably between regions and cities, making it difficult to assess the effects.

China has been progressively relaxing MPP for more than a year in response to the construction-sector slowdown and growing oversupply of housing. In March 2015, the authorities introduced a package of measures including increasing the maximum LTV ratio for second mortgages to 60% from 40%. They have reduced the minimum period for housing sales tax exemption to two years of residency from five. They have also encouraged banks to expand mortgage lending.

Korea has alternated between easing and tightening MPP

In Korea the authorities regularly tighten LTV and DTI ratios when the housing market strengthens, and relax them when it weakens. For example, the government relaxed LTV and DTI ratios in 2008 in the midst of the GFC, then tightened them again in 2009 as the housing market accelerated. It then lifted the DTI regulations in September 2010 to address renewed housing-market weakness, before reintroducing them again in April 2011. Most recently, in August 2014 the LTV and DTI caps were again relaxed as the new government sought a firmer housing market to support economic growth.

Do MPP measures work well?

People may find ways around them

MPP measures require constant monitoring and adjusting to be effective

A key concern is that people may find ways around restrictions and taxes, making them ineffective (and also breeding corruption). Different measures have their own advantages and disadvantages (Figure 38). For example, individuals may borrow money for a large deposit using a different type of loan (e.g., a personal loan) so the purchase and the risk are still there. In countries with a significant shadow banking sector, restrictions on bank lending may be circumvented. These complications help to explain why the authorities frequently change the rules.

MPP may encourage moral hazard

MPPs may encourage a false sense of security that may only encourage risk-taking. For example, if investors expect authorities to influence asset prices, including preventing their collapse, they will continue to fuel asset bubbles, believing the risk of a major correction is low.

The risks of interfering with markets

A final drawback is that identifying vulnerabilities and implementing effective MPP requires good judgement on the part of regulators. There is a risk of judgment errors and political interference. Housing markets can be highly politically charged.

Judging the effectiveness of MPP measures

There is clear evidence that MPP measures can impact property markets, at least in the short term. For example, when China's State Council introduced measures to curb property prices in April 2010, prices dipped for nearly a year before rising again (Figure 39). With incomes rising at around 10% annually, this pause – albeit short – represents a significant success in controlling valuations.

MPP measures also seem to have an effect on borrowing. In Korea measures to ease and tighten policy directly influence credit growth (Figure 40). An IMF study found that on average, a tightening in housing-sector macro-prudential tools reduced credit growth in Asia by 0.7ppt after one quarter and by 1.5ppt after a year (Zoli, IMF 2014). A boom in housing is often associated with a rapid rise in credit to buy houses. According to a recent study by the IMF the presence of a household credit boom almost doubles the probability of a real estate boom to 57%, from 29% when there is no credit boom (IMF 2015).

MPPs impact markets in the short term but do not eliminate booms and busts

Macro-prudential measures have not always halted housing price booms, with Hong Kong the most extreme example. In Hong Kong this may simply be because such measures can only do so much if monetary policy is inappropriate for the pace of the economy and the level of inflation. This was the case in the 1990s owing to the USD link and again since 2008. Hong Kong has tended to have a faster inflation rate than Singapore, so mortgage rates have been significantly negative for a long time. However, property prices in Hong Kong might have increased even more without MPPs.

Figure 38: Macro-prudential instruments for housing markets

Tool	Strengths	Weaknesses
Loan-to-value (LTV) caps	<ul style="list-style-type: none"> • Reduce lending to risky sectors thus preventing the build-up of systemic risk • Limit speculation as speculators need more equity and face lower returns • May limit the risk of property bubbles • Intervention is targeted, thus quite effective and with limited side-effects • Easy to implement and tweak according to developments in the market without losing credibility 	<ul style="list-style-type: none"> • Difficult to implement in a financial system with large shadow-banking sector, or deep credit markets • Can be circumvented by borrowers topping up their mortgages with other personal loans • Potential for policy errors • May be perceived as discriminating against less wealthy people so politically challenging
Debt-to-income (DTI) caps	<ul style="list-style-type: none"> • Only qualified borrowers get access to credit • Less reliance on asset collateral 	<ul style="list-style-type: none"> • Can be pro-cyclical, as personal income correlates with economic cycle • May not prevent defaults in a downturn for borrowers who suddenly find themselves out of a job
Property taxes	<ul style="list-style-type: none"> • Increase holding cost of property or transaction costs, thus limiting demand 	<ul style="list-style-type: none"> • May discourage home-ownership for less privileged
Prohibitions on risky products (e.g., multiple mortgages by the same person, interest-only mortgages)	<ul style="list-style-type: none"> • Direct limit on leverage 	<ul style="list-style-type: none"> • Can be circumvented by taking out loans in different buyers' names • Interventionist, may encourage corruption
Differential interest rates on risky products	<ul style="list-style-type: none"> • Increase the cost of speculation 	<ul style="list-style-type: none"> • Enforcement
Sector-specific risk-weights, loan-loss provisioning, capital or reserve requirements	<ul style="list-style-type: none"> • Build buffers against losses on risky loans • More targeted than system-wide measures, thus likely to be more effective 	<ul style="list-style-type: none"> • Could encourage creative accounting • Difficulty of categorising 'risky' sectors • Complexity in implementing
Caps on a single counterparty or asset-class exposure	<ul style="list-style-type: none"> • Direct limit on risk exposure • Limit concentration risk 	<ul style="list-style-type: none"> • Could be seen as a form of direct lending • Inefficient allocation of resources in case of policy errors

Source: Standard Chartered Research, BIS, Brookings Institution, FSB

LTV and DTI measures have had success in reducing the build-up of leverage

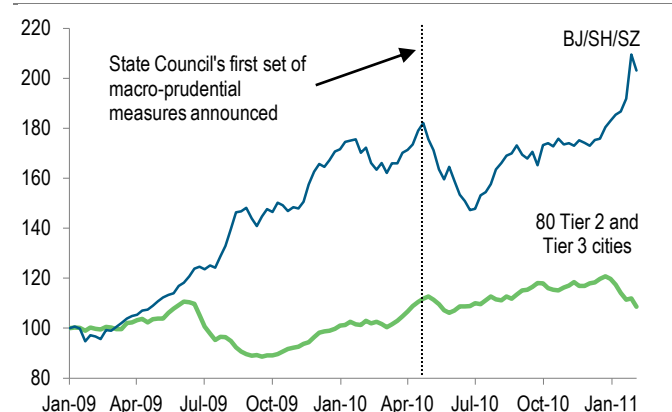
MPP increases the resilience of the financial system

The authorities often suggest that their main objective is to protect the financial system, rather than prevent bubbles. In Hong Kong the decline in average LTV ratios of new loans is striking. From a range of 60-65% for much of the 2000s the most recent figure is only 50% (Figure 41). A study by the HKMA found that a 1ppt decline in GDP increases the mortgage default ratio by 3bps for countries that use LTVs, and by 5bps for those that do not (Wong, 2011).

Measures such as LTV and DTI limit the build-up of leverage even if they do not always prevent property bubbles. This makes the banking system more resilient during downturns. This is already very worthwhile if the main goal of MPP is financial-system stability. That said, mortgages outstanding have increased significantly in Hong Kong and Singapore over the last few years, but less so in Korea (Figures 42, 43, 44 and 45), raising concerns over household debt.

Figure 39: China's price growth was slowed by MPPs

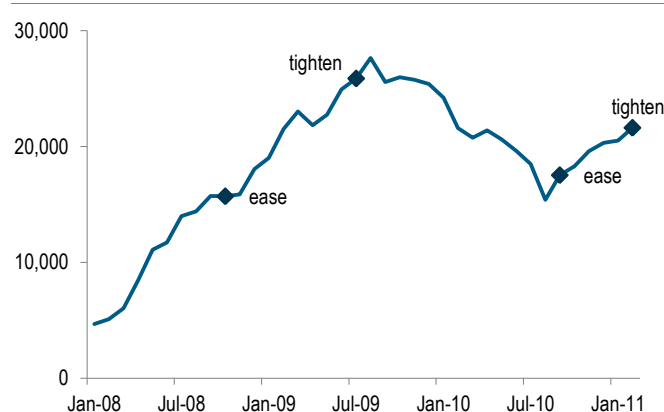
Beijing, Shanghai and Shenzhen vs 80 others



Source: Bloomberg, Standard Chartered Research

Figure 40: Korea mortgage lending reaction to MPP

Rolling 12M sum, KRW bn



Source: Datastream, Standard Chartered Research

Figure 41: Hong Kong LTV ratios have come down

New loans NSA, %



Source: Bloomberg, HKMA



Household debt worries

Singapore has the highest household debt burden of the four countries we analyse, at 152% of household income, followed by Korea at 142%. Hong Kong's ratio is only 91% and China's stands at 58% (Figure 46 and see also [On the Ground – Asia leverage update – Focus on external risks](#)). Levels in Korea and Singapore broadly compare with the US at its 2007 peak, though they are somewhat lower than Australia and Canada today. The latter also face concerns over expensive housing markets.

Korea's unusual 'Jeonse' system

Korea's household debt is higher than official estimates

An additional concern for Korea is that the debt figures do not include 'Jeonse' (or Chonse) debt that accrues from the Jeonse housing rental system, because that debt is considered an agreement between individuals. If added to housing loans, household debt would be higher. According to the IMF, the average LTV ratio would climb to over 75% from just under 50%, the regulated limit (IMF, 2015).

In the Jeonse rental system, the tenant loans a large sum to the landlord (typically amounting to 60-70% of the value of the property) for a two-year term, and then lives rent free. The landlord derives a return through earnings on this deposit. With interest rates low the deposit required has risen in recent years and landlords have also tended to take more risks with the money. Jeonse currently accounts for almost half of Korea's rental housing market, or about 20% of properties, and Jeonse-related loans have almost doubled since 2009 (IMF, 2015).

Hong Kong's household debt is concentrated

Hong Kong's household debt is modest at 91% of income but this largely reflects the lower home owner-occupier levels, around 50%, compared with 90% in Singapore, and means that debt is relatively concentrated. That said, owner-occupiers in Hong Kong are mostly higher earners with high savings and strong financial assets. Lenders can also take comfort from the fact that mortgage loans are full-recourse, while low LTV ratios (imposed by macro-prudential measures) mean that owners have plenty of 'skin in the game'. In the 1997-2003 property crash mortgage delinquencies remained low, considering the 65% house price decline.

China's household debt is modest

Among our four countries China's household debt is the least concern. China's debt excesses lie in the corporate sector not the household sector. Mortgage LTV ratios are typically modest and many people buy property with cash. A greater availability and take-up of mortgage debt in coming years could be an important source of economic growth for China as well as helping to bring down the savings rate.

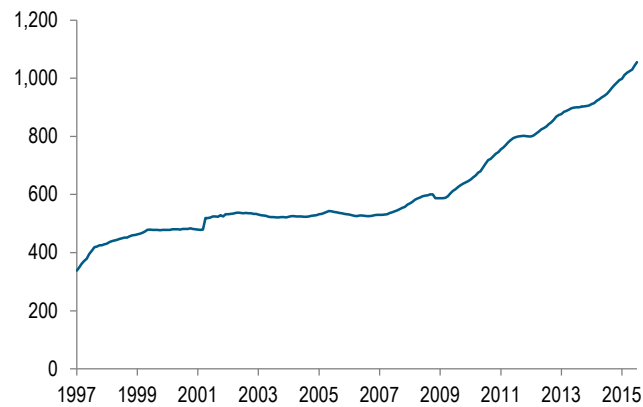
Singapore: High debt but low interest burden

Singapore's household debt is relatively high but this is balanced by high assets, with the 90% owner-occupier ratio plus strong financial assets. The interest service burden is relatively modest at 5% and we expect Singapore's interest rates to rise only very gradually in 2016.

Special Report: Asian housing: Ride the cycle

Figure 42: Hong Kong's mortgages surge

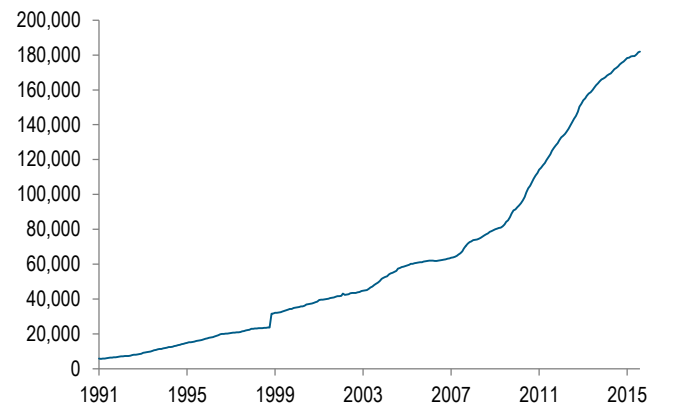
Value of outstanding mortgages, HKD bn



Source: Bloomberg, HKMA

Figure 43: Singapore mortgages also up

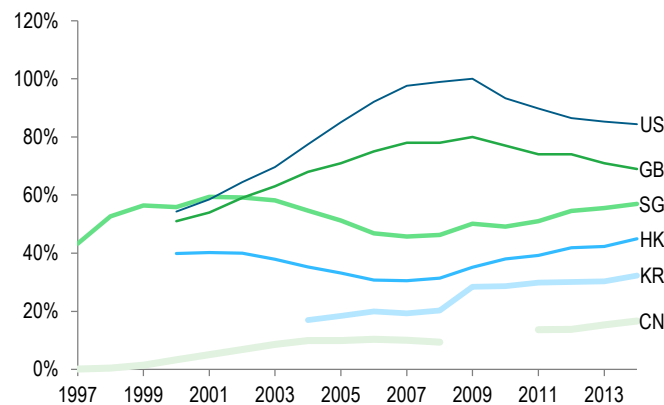
NSA, SGD mn



Source: Bloomberg, MAS

Figure 44: Asia's mortgage markets smaller than the West

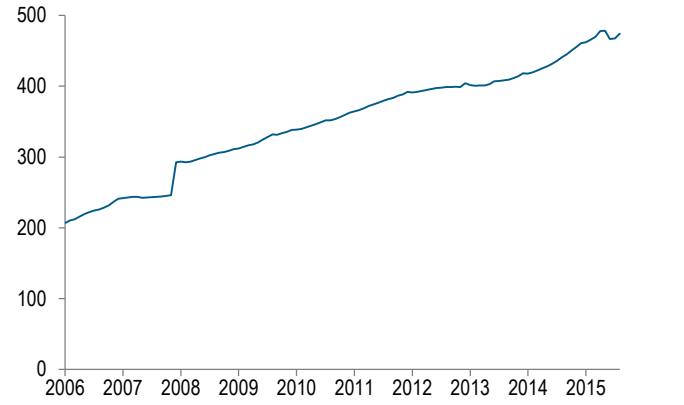
Mortgage debt as % of GDP



Source: CEIC, Standard Chartered Research

Figure 45: Korea mortgages outstanding have jumped

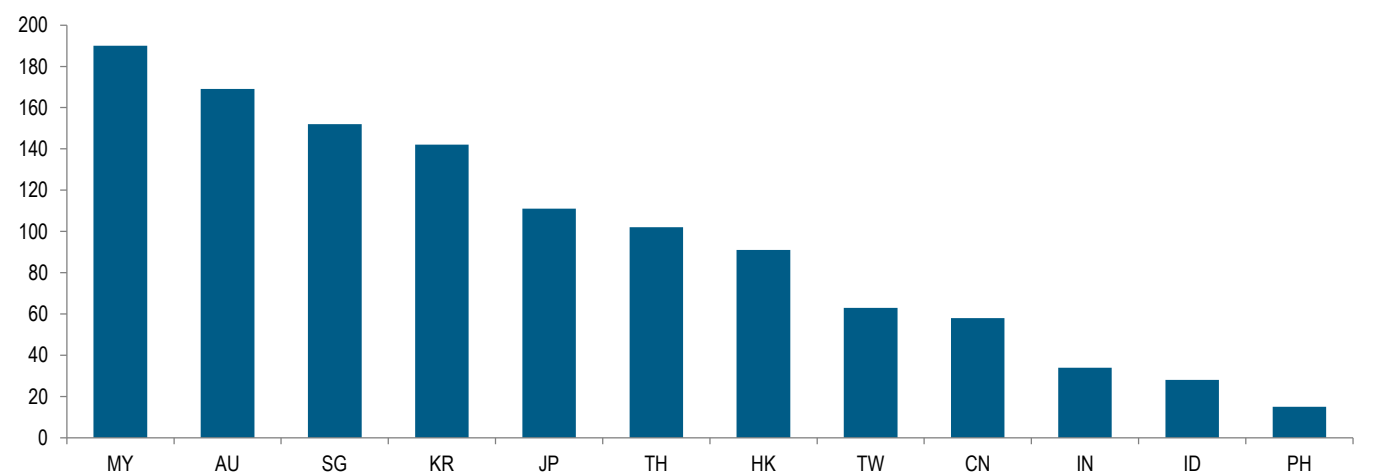
KRW tn



Source: Bloomberg, Standard Chartered Research

Figure 46: Low household borrowing in China

Borrowing/household income, %



Source: Bloomberg, Asia leverage update – 11 June 2015, Standard Chartered Research



The housing cycle's effect on the economy

Three drivers

Housing markets are a key driver of economic growth on the upside but can also be a major drag when house prices fall substantially. There are three main channels:

- 1) Wealth effects on consumption as prices rise and fall.
- 2) Construction investment.
- 3) Turnover effects – activity in sectors linked to the level of sales including the incomes of real estate agents and mortgage brokers, as well as household goods sales such as kitchen equipment and furnishings.

Wealth effects are significant for Hong Kong and Singapore

Property price corrections could trigger a fallout in private consumption

Studies by the ECB (2009) and HKMA (2001) suggest that a 10% fall in house prices in Hong Kong reduces consumer spending by 0.7ppt or 1ppt, respectively. The ECB study found a much bigger effect for Singapore, a 1.55ppt fall in consumer spending for the same price fall. That said, since Hong Kong and Singapore import a high proportion of consumption goods the impact on GDP is reduced, with the drag felt more overseas. For example, the HKMA study found that the 35% fall in house prices in 1998 trimmed both consumer spending and investment by 3.5ppt, yet GDP was reduced by only 1.25ppt

Wealth effects are likely to be significant in China and Korea too. China has an exceptionally high share of home ownership. Nine in every 10 homes is owner occupied. Residential property is a major asset on the household balance sheets for both countries. About 43% of household wealth in China is in real estate, compared to 9% in equities. The equivalent measure for the US is 23% in real estate and 36% in equities.

Construction investment

Construction sector is a major swing factor in terms of GDP

We estimate investment in residential construction is equivalent to about 10% of GDP in China, 7.3% in Singapore, 7% in Hong Kong and 3.9% in Korea. For China and Korea, most of the building materials are produced domestically, adding to the importance of construction in the economy. In China, estimates vary on the actual level of residential real estate investment. We believe that after directly contributing 1.4ppt to GDP growth in 2010, the construction sector (based on official data) will likely make no contribution in 2015-16. This swing is enough to account for a major part of the slowdown in GDP growth. Adding in the linkages to sectors such as steel, cement, copper and glass, the effect is even greater. Housing and linked sectors contributed 3ppt to GDP growth in 2010 and 1ppt in 2015.

Our developer survey (*On the Ground, 'Monthly China property market update – Oct 2015'*) suggests funding conditions remain a pressure point and appear to have deteriorated recently. Defaults are not commonplace but companies reported rising default risk. We expect consolidation in the construction sector as many smaller developers struggle to compete.

The outlook for the construction sector in Singapore and Hong Kong is favourable. Governments in both locations are focusing on boosting housing supply in the coming years. Similarly, in Korea there are strong signs of recovery in construction activity. The number of home construction permits increased by 10.8% y/y in 2014 to 8,566 units and has continued to rise in 2015.

The impact of housing is magnified through linkages to other key sectors

Turnover effects can be significant

Buying and selling tends to slump in a downturn and so all the service activities associated with this, as well as purchases of household furnishings and equipment, slow too. In the US housing-sector collapse some 350,000 real estate agents and mortgage brokers lost their jobs during 2007-10, about 0.25% of total employment. Adding in other groups (such as those employed in retail stores selling furniture and furnishings and other household goods) would likely double the figure at least. In the case of Hong Kong and Singapore many household goods would likely be imported; but in China and Korea many would be produced domestically, impacting manufacturing too.

IMF finds large risk to GDP

Combining these three drivers we can assess the impact of swings in the housing cycle on GDP. IMF estimates of the impact of a house price correction are quite high. Across an average of Asian economies (excluding Japan) it finds that a 5% decline in house prices could lower GDP growth by an average of 1.3ppt relative to the base case after one year (IMF, Regional Economic Outlook 2015). The study does not provide country detail but does note that there is a considerable range and that the impact in China is only half this average.

A report by Moody's found a similar impact. In its study of the historical experience of 50 housing corrections, every 10% fall in house prices was associated with GDP falling 2.5ppt below its pre-peak path on average in emerging markets and over 4ppt in developed markets. Clearly, there is a question of causation here; house prices usually fall during recessions but may not be the main cause of the decline in GDP, just part of the process. In other words, if house prices correct moderately in Hong Kong and Singapore without an accompanying recession, as we forecast, the drag could be much less.

Beware price falls of 20% or more

A correction of more than 20% could reduce GDP by at least 3-4ppt

That said, a large fall could have more impact. In our view homeowners or investors scarcely even notice a 5-10% fall in house prices and we would view a 10-20% correction as being 'mild', especially for Hong Kong, which is accustomed to large swings. A 10-20% correction would result in a modest drag on GDP growth but is very unlikely to cause a recession on its own. However, a correction of more than 20% could have a more severe impact, potentially reducing GDP by 3-4ppt or more.

In the absence of a recession or very large rise in interest rates, a correction greater than 20% is unlikely, even in Hong Kong which is the most vulnerable of the four countries in our analysis. The risk is if there is a major economic shock of some sort that causes a recession and/or much higher interest rates. Then a major house price correction is possible, exacerbating the downturn. Markets often overshoot on the downside, so the decline could take valuations well below average. However, this is where a relaxation of MPP measures could help.



Country profiles



China's housing market has been correcting since 2014

China: The housing slump has severely impacted growth

The slowdown in China's house-building has been a major economic headwind since 2014. Real estate and construction contributed around 13% of GDP in recent years, of which about 10% is residential construction. Adding the indirect impact on up-stream and down-stream sectors – like cement, glass, metals, furniture and white goods – the real estate slowdown affects around 20-25% of GDP. Investment in the real estate sector accounts for about 25% of total investment in China. Proceeds of land sales contribute about 30-40% of local government revenue. Also property and land parcels are used as collateral for bank credit; market estimates suggest they account for about 30% of total collateral.

Following the build-up of inventories in the boom years and the tightening of housing policy since 2010, China's property market began a severe correction from early 2014. Real estate investment growth dropped to 2% y/y in mid-2015 from 20% in Q1-2014 (Figure 47). Residential floor space sold contracted for 15 months from February 2014. The official 70 cities new home price index fell 6.3% y/y by April 2015, though the pace of decline has tailed off in recent months. Land sales growth plummeted 30% y/y in H1-2015.

MPP measures have eased but sentiment remains weak

This round of housing-market correction is a major factor in the economic slowdown, putting the 7% growth target at risk. Policy has reversed since H2-2014 to ease MPPs; this has gradually taken effect and fed into a recovery of sales in Q2-2015. However, market sentiment remains weak. Our latest developers' survey in July-August 2015 showed weak construction activity, with a negative outlook due to the stock overhang and financing concerns. Developers' land-buying appetite also weakened and land prices have been flat. Apartment sales have improved mildly in response to a price correction and policy easing measures, although inventory remains a concern for developers. Apartment selling prices seem to have bottomed, as purchase incentives have become less widespread. Even as funding costs have declined alongside benchmark interest rate cuts, access to financing remains a problem for developers and default risk appears to be rising.

Figure 47: Real estate investment has been a major headwind for China's growth
Investment growth, % y/y



Source: CEIC, Standard Chartered Research

We expect to see a mild recovery in China's housing market on a favourable policy stance and improving credit conditions

The outlook

We see the policy stance, credit conditions and inventory trends as the main drivers of the housing market outlook. Since H2-2014, the central government has called for more measures to accelerate the absorption of inventory, including adjustments to mortgage rates and down-payment requirements. At the local government level, almost all of China's cities (except Tier 1 cities) have officially confirmed that they intend to abolish or loosen purchase restrictions. Some cities have announced other loosening measures, including mortgage loan adjustments, lower down-payment requirements, purchase subsidies and the use of housing provident funds to support local transactions. These measures have gradually fed through and translated into a mild pick-up of housing sales since Q2-2015 (Figure 48).

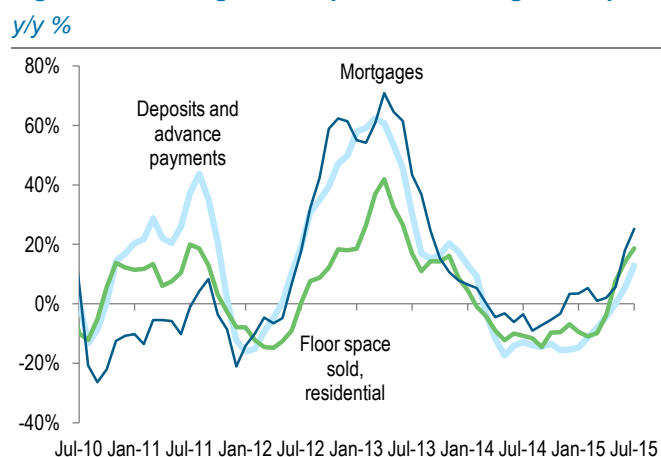
The People's Bank of China (PBoC) has asked commercial banks to approve more loans and accelerate mortgage approvals for first-time buyers since mid-2014. The central bank has also lowered the mortgage rate (along with benchmark rate cuts) four times since November 2014. Our latest survey showed average mortgage rates of c.4.8% for first-time buyers and c.7.2% for second-home buyers, down from 6.3% and 7.3%, respectively, in the January survey. Most developers expect this to support future sales.

Given the recovery in sales, inventory levels have also come down from the peak, despite divergence between large and small cities. The recent pick-up in sales and prices is limited chiefly to Tier 1 cities (Beijing, Guangzhou, Shanghai and Shenzhen) and a handful of other coastal metropolises. The inventories in Tier 1 and top Tier 2 cities are around 10 and 14 months of sales. In smaller cities, we believe the already substantial overhang of excess apartments continues to swell, pointing to further declines in house-building as discussed above.

Tier 1 and 2 cities are likely to lead the recovery; housing starts and land sales will likely remain weak

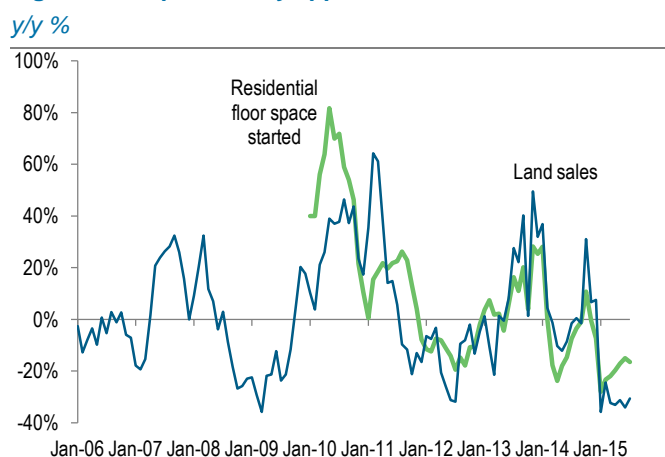
All these factors support a near-term mild recovery of China's housing prices in the next 6-12 months, led by Tier 1 and 2 cities. China's continued urbanisation, stable household income growth and low household leverage ratio will also support the market. However, demand for new construction will be limited to migrant influxes to cities and replacement of old homes, with less speculative and investment activity. This means China's house-building is unlikely to see another surge as large as in the boom years before the current correction. Housing starts and land sales will likely remain weak (Figure 49).

Figure 48: Housing sales improve, benefiting developers



Source: CEIC, Standard Chartered Research

Figure 49: Expansionary appetite remains weak



Source: CEIC, Standard Chartered Research



Hong Kong: The bubble should deflate gently

Weathering external headwinds

A growing economy and tight labour market will limit price correction

Hong Kong's housing market is under pressure from very high prices, a weaker economy and the threat of higher US rates. China's slowing economy and subdued Western demand have kept Hong Kong from returning to its 3-4% trend growth since 2013. If anything, external headwinds appear to have intensified this year. Hong Kong's exports contracted 0.6% y/y on average from January-August 2015 (-6.1% in August), versus +3.7% in the same period last year. Better shipments to the US and ASEAN have failed to offset the drag from exports to China, Japan and the EU. Tourist arrivals from mainland China fell 6.2% y/y in August, the slowest since 2009; this reflected China's slowdown, tighter visa requirements, and ongoing social tensions with local residents that deterred travellers.

However, domestic households are still spending – private consumption expenditure (PCE) was the biggest Q2 GDP surprise, contributing 4.2ppt to the 2.8% y/y headline growth rate (Figure 50). Households have the ability to spend, too, thanks to a still-tight labour market supporting nominal wage growth (4.6% y/y in Q2-2015). Unemployment has hovered close to its 17-year-low of 3.1% since H2-2011. Hong Kong also has a sizeable fiscal war chest – and hence room for more economic relief measures – to cushion any further external shocks.

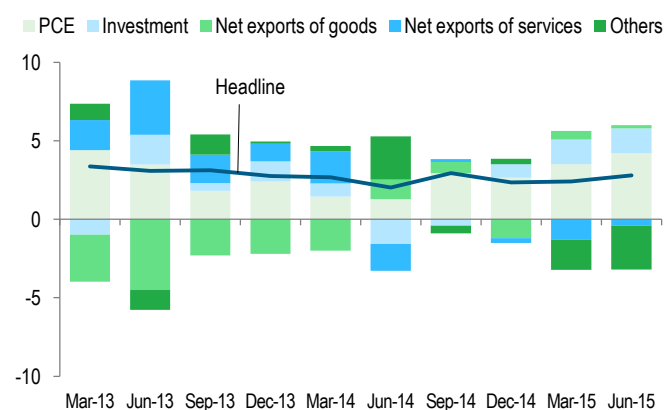
An unfazed residential market so far

Hong Kong's official property price index is up 190% since its 2008 trough

The rise in residential prices since the 2007-08 GFC is best described as 'relentless'. The official property price index is up 190% since its 2008 trough, weathering not just China's slowdown but also QE tapering by the Fed, the euro-area debt crisis, and successive rounds of property-cooling measures by local authorities. Initially supported by the influx of mainland investors fuelling the luxury segment, small- and medium-sized flats have taken over as the main market driver since 2012 (Figure 51). The former at one stage led to more supply of larger flats at the expense of smaller ones, causing subsequent shortage in the latter. Since 2012, punitive stamp duties have also successfully discouraged speculative activities, while discriminative tightening in mortgage rules have made smaller flats much more accessible to domestic buyers than larger ones.

Figure 50: PCE doing the heavy lifting

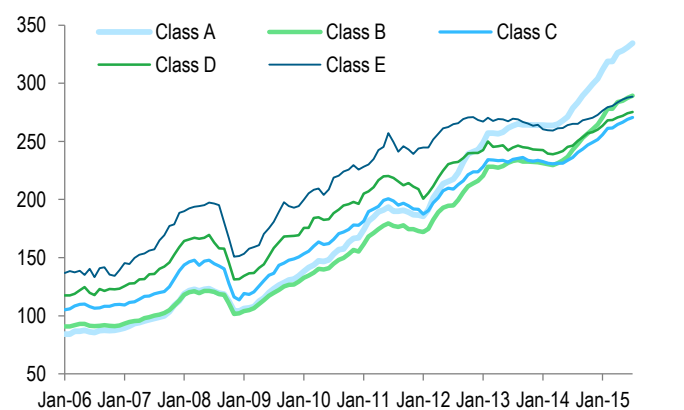
Contribution to headline GDP growth, ppt



Source: HK Census and Statistics Dept, Standard Chartered Research

Figure 51: The shift in residential market drivers

*Official residential property price index by class**



Source: CEIC, Standard Chartered Research

* Class A being the smallest (less than 40sqm), and Class E the largest (160sqm or above)

We expect a price correction of 10-20% over two to three years in Hong Kong

Ultra-accommodative US monetary conditions have also contributed to the resilience of the Hong Kong residential market so far. Because of Hong Kong's Linked Exchange Rate System (LERS), HKD interest rates have mirrored their USD counterparts by hovering at near-zero levels; this, in turn, has capped mortgage costs, limiting the deterioration in the affordability ratio despite rapid rises in residential prices and hence mortgage values (Figure 52). There is little sign of capital outflows either; if anything, we have seen bouts of *de facto* capital inflows in recent years. Persistent HKD strength in recent years has prompted the HKMA to intervene from time to time at 7.75, the strong-side of the Convertibility Undertaking threshold, injecting HKD liquidity into the banking system and boosting the monetary base as a result.

Downside risk is likely to be manageable

We believe a correction in prices is inevitable given the extent of the rise in recent years. We expect a decline of about 10-20% over two to three years, but it will be orderly. Short-term fundamentals still appear supportive of the residential market thanks to a tight labour market, strong pent-up demand and perceived supply tightness. More importantly, macro-prudential measures have not only helped limit speculation but also household leverage. Higher down-payment requirements and more stringent mortgage approval thresholds have helped create a buffer in case of future shocks.

Impending hiking cycle is likely to have a limited impact on Hong Kong's housing market

The market is bracing for the imminent first US interest rate hike since 2006; yet we expect the hiking cycle to be shallow, with a strong possibility of cuts again by the end of next year (Figure 53). A corresponding modest HIBOR uptrend should have only a limited impact on the mortgage-servicing burden, housing affordability and residential prices in Hong Kong. The authorities can also consider retracting some or all of the property-cooling measures when deemed necessary.

Longer-term challenges stem mainly from the projected increase in supply, especially of smaller flats, which also happen to be the most frothy. The government expects 20,000 private residential units to be completed in 2016 (around 70% more than the average of the past 10 years), and 83,000 units in total over the next three to four years. The government's target is to provide 480,000 new flats in a decade, 60% of which will be public housing and the rest private. Supply mismanagement could potentially exacerbate an otherwise manageable market correction.

Figure 52: Subdued HIBOR helps affordability

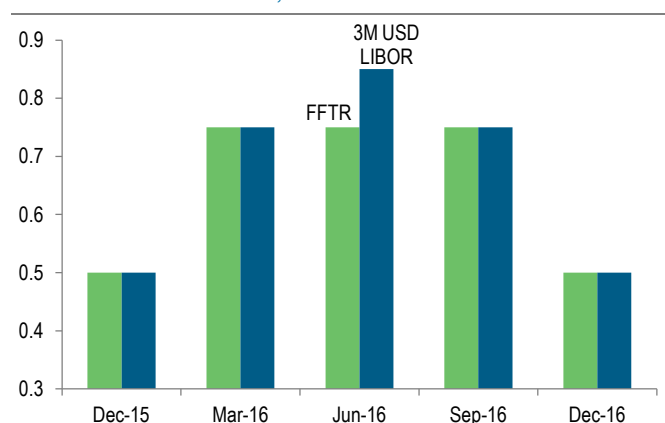
Affordability ratio and 3M HIBOR, %



Source: CEIC, Standard Chartered Research

Figure 53: Modest US rate rise expected

Our interest rate forecast, %



Source: Standard Chartered Research

Low interest rate and inflation environment support the housing market

Korea: Boosting housing to support the economy

Sluggish economy, firm housing market

The authorities hope that a firm housing market will support economic activity. Economic growth momentum has picked up since the 2008-09 GFC but the rate has slowed to 2-4% y/y in recent years from the 7% level in 2010. While growth remains higher than its OECD peers, the Bank of Korea's (BoK's) repeated downward revision of forecasts for 2015, now to 2.7% y/y and 2.5% by our estimate, suggests dwindling momentum. Slower global growth has resulted in less global demand for exports, a major driver of Korea's growth. China's slowdown is of particular concern as it is Korea's largest trading partner, accounting for c.26% of trade.

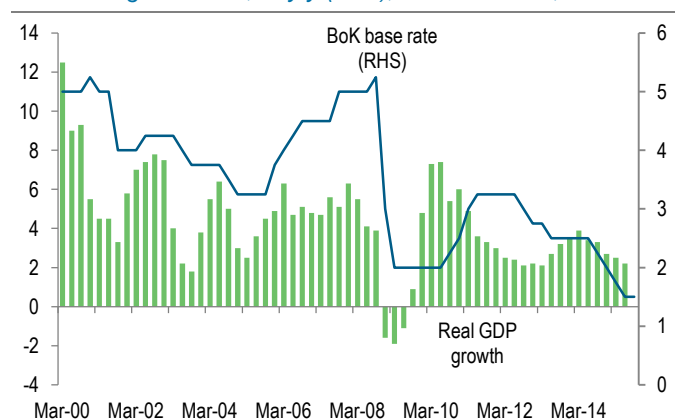
Economic activity data is mixed. The record-low policy rate of 1.5% supports the current favourable business environment and the investment revival. Facilities investment has been recovering throughout this year by a solid 8% y/y on average (January-September); and construction investment has picked up by 5.7% y/y during the past three months since the BoK's last rate cut. However, the labour market faces the challenge of high youth unemployment (8.5% in September) compared with the stable below-4% overall unemployment rate. CPI inflation remains low, with deflationary pressure due to lower global commodities prices. Structural issues such as demographic pressure from the ageing population, the lowest fertility rate among OECD countries (1.19) and a contracting core workforce anticipated from 2016, are potential risks to sustainable economic growth in the mid to long term.

Policy measures reflect the importance of the real estate market in the domestic economy

Recent housing-market trends

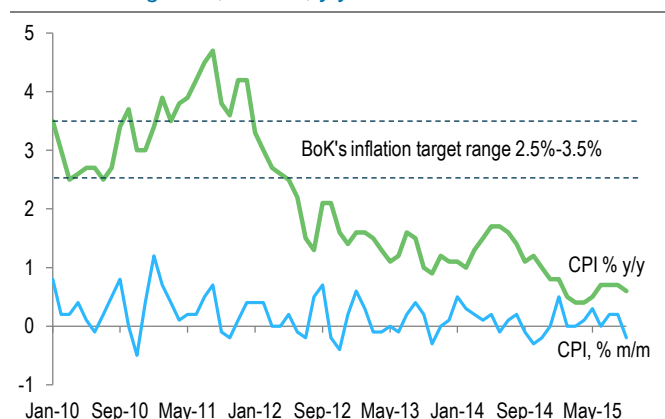
In the current low interest rate and low inflation environment, South Korea's housing market appears to be expanding steadily (Figures 54 and 55). House prices have perked up almost everywhere since the dip in 2004-05 linked to the credit card crisis, (which we take as the low of the long cycle); they corrected only mildly during the GFC and have been firm in recent months. We believe Korea is now in the expansion phase of the housing cycle. The recent firmness is mainly attributable to the government's deregulation drive on house purchase financing methods. Finance Minister Choi's first major policy drive following his appointment was to loosen real estate regulation in August 2014, reflecting the importance of the real estate market in the domestic economy. He raised the LTV ratio to 70% nationwide and fixed the DTI ceiling at 60% from 50-60% previously.

Figure 54: Korea's interest rate cut as growth slowed
Real GDP growth rate, % y/y (LHS), BoK base rate, %



Source: Standard Chartered Research

Figure 55: Korea's inflation well below target
CPI inflation growth, % m/m, y/y



Source: Bloomberg, Standard Chartered Research

Jeonse prices are up

As a side-effect of rising house prices, Jeonse prices have surged. Unique to Korea's housing market, Jeonse is a two-year contract where tenants give landlords a large lump-sum deposit, usually ranging c.60-70% of the property's value. This is returned at the end of the contract without any interest. The landlord places the deposit at a bank or finds another investment during the contract period which provides the rental return.

Housing market supported by high Jeonse prices

However, in the current low interest rate environment, landlords have continuously raised Jeonse prices to push up returns; this has resulted in a c.19% increase in the Jeonse price index in Seoul from mid-2012 to October 2015 (at the same time the policy rate has been cut from 3.0% to 1.5%) and a c.9% increase in non-Seoul areas during the same period. Such high Jeonse prices have encouraged more people to purchase property instead in recent years, revitalising housing market activity. Despite the high price, demand for Jeonse contracts remains strong as the system is still cheaper than purchasing a property and gives more flexibility.

House prices to stay well-supported

We think the housing market will remain well-supported. We expect the low interest rate environment to continue for the next couple of years, which will support prices and transactions (Figure 56 and 57). The rise of the 'echo boomers' or 'millennials' (children of baby boomers) will continue to create demand-side momentum, in our view. Over 70% of household assets in Korea are fixed assets such as houses or building ownership. The government recognises that private consumption increases when asset prices rise. We expect ongoing deregulation in the housing and real estate market. We also expect Korea's growth rate to increase by 2017.

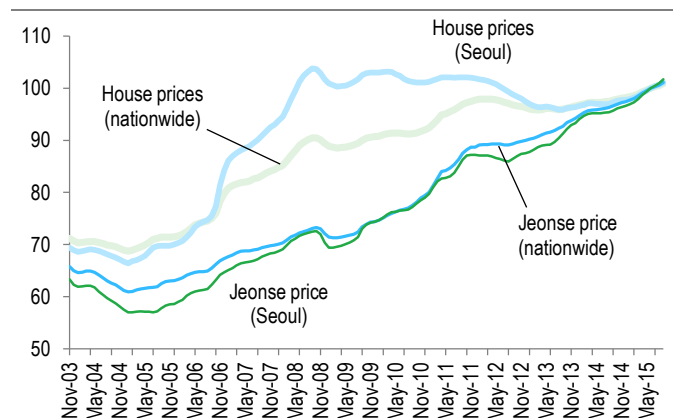
Long-term trend

MPPs will likely continue to be used to support the housing market

We expect South Korea's structural issues to limit the rate of house-price growth in the next 5-10 years. The recent demographic trend indicates a slower household growth rate than that for housing supply. Slower house-price growth will negatively impact household consumption and spending. That said, local authorities are keen to maintain buoyant house prices and they will continue to implement policies to boost the housing market, in our view. Should prices rise too fast we expect the authorities to tighten MPPs again, as they have done frequently in the past.

Figure 56: House prices are on an upward trend

House purchase price index, Jeonse rental deposit required

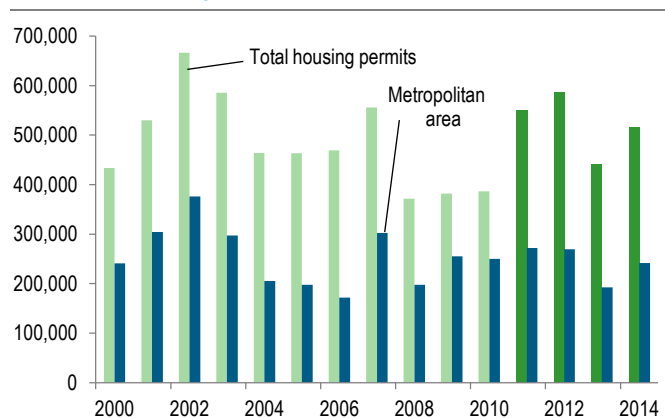


Source: Korea statistics, Standard Chartered Research

23 November 2015

Figure 57: Housing supply has picked up in recent years

Number of housing permits



Source: Korea statistics, Standard Chartered Research



Singapore: Correcting gradually

Macroeconomic environment

Singapore is currently in a restructuring phase to raise productivity

Singapore's residential prices have fallen about 8% since Q3-2013, reflecting slower economic growth, lower immigration and tighter MPPs. Economic growth averaged 5.9% from 2001-10 but slowed to 4.2% from 2011-14 and we expect around 2% growth in 2015 and in 2016. The lacklustre global economy is playing a big part in producing modest growth rates. However, Singapore's economic restructuring and macro-prudential measures are also impacting growth.

The government introduced two broad packages of economic measures that have affected the property market, either directly or indirectly. First, the host of property-cooling measures introduced since 2009. These measures were introduced to prevent a frothy property market forming and to mitigate rising household leverage. Since the implementation of the cooling measures, concerns over household leverage have eased, even as leverage levels remain high. Housing loan growth slowed markedly to about 5% y/y as of August 2015 (Figure 58). According to the MAS, the percentage of borrowers with multiple loans fell to 15% of all new housing loans in Q3-2014, versus 30% in 2011.

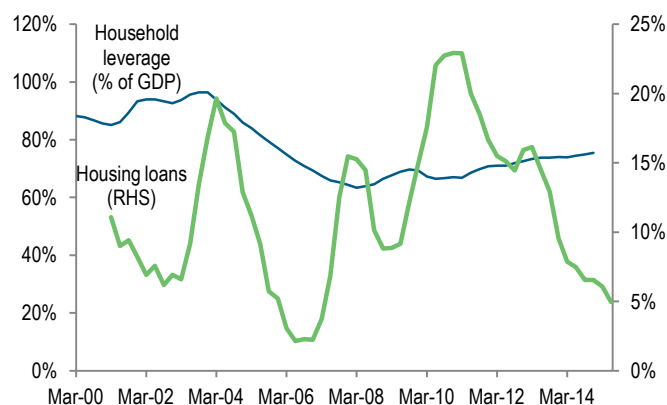
The slowdown in foreign worker inflows has affected the property market

Second, there has been a marked slowdown in the growth of foreign labour supply due to changes in immigration policy. The decision was made partly in an attempt to boost labour productivity. But the slowdown in population growth has affected the property market. Population growth eased to 1.2% in June 2015 versus the average of 2.8% from 2005-14. This was led by a slowdown in the non-resident population growth rate to 2.1% from the average of 7.9% from 2005-14. The slowdown in population growth inevitably had an impact on property demand (Figure 59).

Property market slows down moderately

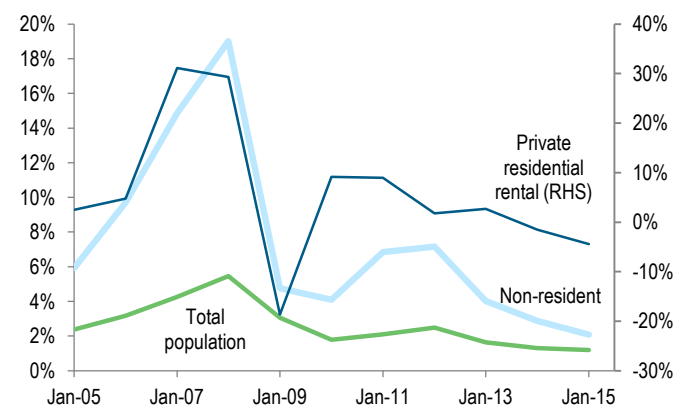
The private residential property market has moderated since the government started to cool the sector in 2009. According to the private residential rental index, rentals fell by about 6% as of Q2-2015 from the recent high set in Q3-2013. They are now back to Q1-2011 levels; but this is still nearly 20% above the low registered in Q3-2009. Slower foreign worker inflows and new residential supply (the Q2-2015 vacancy rate is about 8% of total available private resident units; this is a high since 2006) have helped subdue rises in rentals.

Figure 58: Build-up in household leverage was a concern
% y/y



Source: CEIC, Standard Chartered Research

Figure 59: Slower population growth lowers rents
% y/y



Source: CEIC, Standard Chartered Research

Transaction volume has also declined appreciably amid the cooling measures (Figures 60 and 64). Average monthly transactions of private residential units slowed to about 1,200 in H1-2015 from a high of about 3,300 in 2012. Sub-sales (which provide an indication of speculative demand) fell to 3.9% of total transactions in Q2-2015 from a high of 7.7% in Q4-2012.

Prices have been sticky despite the fall in transactions

Prices, however, have been relatively sticky (Figure 61). Private residential unit prices have eased by about 8% from the recent high in Q3-2013. On a y/y basis, prices have fallen by nearly 4%. But they are still elevated, and are up by about 51% versus the recent low in Q2-2009. This implies an increase of c.1.7% per quarter since Q2-2009, more than twice the pace of the average quarterly increase of 0.6% from 2000-08.

Low mortgage rates may have been a factor sustaining the price levels. Using 3M SGD SIBOR as a guide, the average rate was 1.7% from 2000-10; from 2011-14, it was only 0.4% (Figure 62).

Property market outlook remains challenged

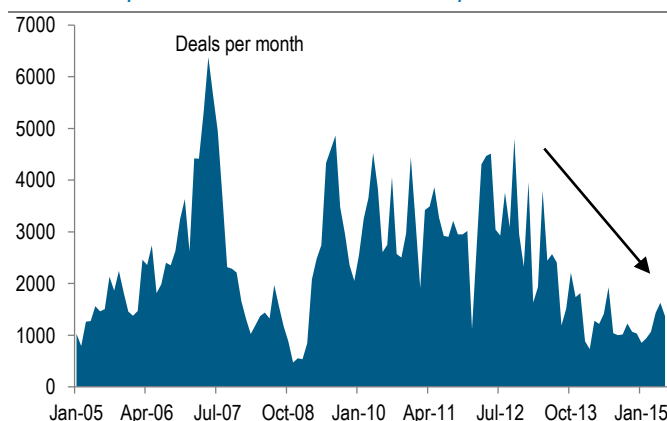
Although the property sector has enjoyed low interest rates in recent years, 3M SGD SIBOR has risen in 2015 to average 0.9% as of 10M-2015. As the Fed starts to raise rates we expect Singapore's interest rates to gradually move higher. Higher interest rates may dampen the property market going forward.

Supply, higher interest rates, a lacklustre economy and cooling measures may continue to depress the property market

In addition, the supply of new private residential units remains high. According to the Urban Renewal Authority (URA), there are about 76,000 units in the supply pipeline. Some 24,000 private residential units were unsold as of Q2-2015. 2016 should see a high of nearly 26,000 units completed, before supply eases to c.17,000 units to be completed in 2017, and 15,000 in 2018. The supply pipeline diminishes appreciably to about 4,000 units expected to be completed in 2019.

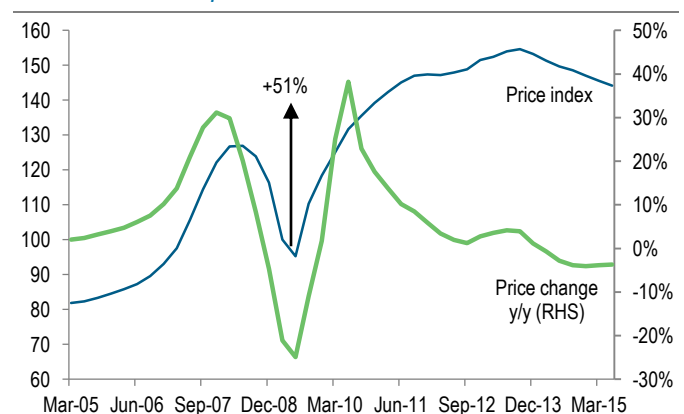
The property market outlook remains challenged over the next one to two years. The macroeconomic outlook is lacklustre. The government is likely to stay the course in trying to raise productivity. This may mean that the inflow of foreign workers remains slow compared to recent history. Along with potentially higher interest rates, the demand-side for the property market may remain suppressed. One positive development has been the decline in speculative activity (Figure 63). We expect prices to slide further, and decline by another 5-10% in the next couple of years.

Figure 60: Transactions have fallen sharply
Number of private residential transactions per month



Source: CEIC, Standard Chartered Research

Figure 61: Prices have been sticky
Private residential prices

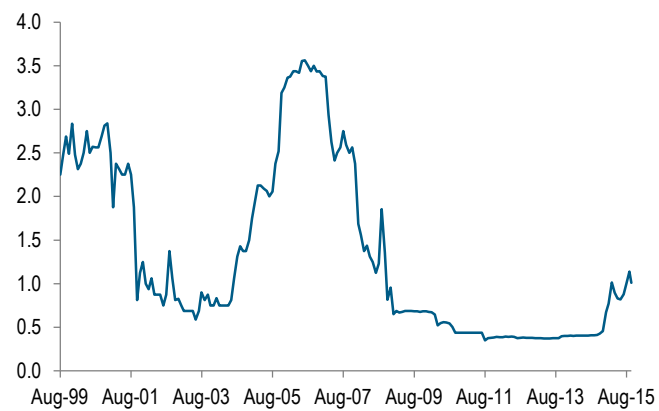


Source: CEIC, Standard Chartered Research

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Figure 62: Funding rates have been very cheap

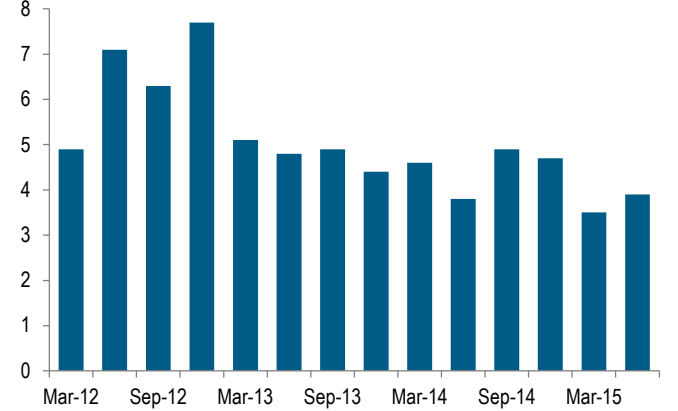
3M SIBOR, %



Source: Bloomberg, Standard Chartered Research

Figure 63: Speculative activity appears lower

Sub-sales as % of total transactions



Source: URA, Standard Chartered Research

Figure 64: Property cooling measures in Singapore

Tightening 2009-13

Date	Measures
Jun-2013	<ul style="list-style-type: none"> Total Debt Servicing Ratio (TDSR) introduced A threshold ratio of 60% is applied
Jan-2013	<ul style="list-style-type: none"> 7th round of property-market measures Additional Buyer Stamp Duty (ABSD) to be imposed on Permanent Residents (PR) buying first residential property and Singaporeans buying second homes ABSD raised 5-7% across the board
Oct-2012	<ul style="list-style-type: none"> Residential property loan tenor capped at 35Y Loans exceeding 30Y to face tighter LTV Non-individual borrowers' LTV lowered to 40% from 50%
Dec-2011	<ul style="list-style-type: none"> ABSD introduced Foreigners and non-individuals pay an additional 10%; PRs pay 3% on second and subsequent properties and citizens pay 3% on third and subsequent properties
Jan-2011	<ul style="list-style-type: none"> Holding period for Seller's Stamp Duty (SSD) raised to 4Y from 3Y SSD rates raised to 16%, 12%, 8% and 4% for holding period from 1-4Y, respectively LTV for non-individuals lowered to 50% LTV for individuals with one or more outstanding mortgages lowered to 60% from 70%
Aug-2010	<ul style="list-style-type: none"> SSD holding period raised to 3Y from 1Y LTV for second and subsequent mortgages lowered to 70% from 80%
Feb-2010	<ul style="list-style-type: none"> Introduction of SSD within 1Y of property purchase LTV lowered to 80% from 90% on all housing loans except Housing Development Board loans
Sep-2009	<ul style="list-style-type: none"> Interest absorption scheme and interest-only housing loans scrapped for private properties

Source: MAS, Standard Chartered Research

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