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China's property sector overinvestment

Part 1: The property market is the top risk.

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This is the first in a series of notes analysing property sector risks in China. In this note, we answer three questions: 1) why we believe the property sector is overinvested, and therefore, has a significant oversupply problem, 2) why property sector overinvestment is China's top risk in 2014 and 2015 over other issues like trust products and local government financing vehicles, and 3) why we need to worry about it now.

We believe China's property sector is significantly overinvested. The risk is particularly high in third- and fourth-tier cities, which account for 67% of housing under construction in China in 2013. This risk does not seem fully recognized in the market partly because data are not readily available for these cities, and some investors may be misled by the boom in first-tier cities.

We list 12 reasons why we are concerned with the property market. The main ones are:

- **Oversupply and inventory buildup.** We estimate residential floor space per registered urban resident may have reached 37 square meters by 2013, compared to 35 in Japan and 33 in UK. If the current trend holds, it will reach 51 square meters by 2017. Official data show inventory has risen by 182% from 2009 to 2013, yet land sales suggest that supply is set to rise quickly in coming years.
- **Contraction of labour force and slowdown of urbanisation.** China's labour force started to contract in 2012 after expanding for at least 16 years and should contract further. With depleting surplus rural labour and a rapidly ageing population, the pace of urbanisation has slowed; urban population growth is at its lowest since 1996 and is set to drop further in coming years.
- **An expanding media-reported list of cities facing severe oversupply problems.** In 2011 there were only two cities that were widely reported as ghost towns, but there are now more than 10 cities facing this type of problem.
- **Myriad of potential triggers.** Several macro factors could trigger a correction in the property market, including a rise in interest rates, an opening up of capital account, the introduction of a property tax, and the anti-corruption movement.

We highlight these risks for 2014 partly because we believe China is now starting to face a structural oversupply problem in its property sector following the decade-long property boom. The problem is particularly acute from a flow perspective. In 2009, for each new urban resident, residential floor space completed was 61 square meters. This rose to 113 square meters in 2013 and, if the current trend continues, would reach 203 square meters by 2017. The ballooning supply in the pipeline will likely become increasingly difficult for incremental demand to absorb.

The property sector overinvestment is the top risk in China for two reasons.

- It has become a pillar of growth for China, making up 16% of GDP, 33% of fixed asset investment, 20% of outstanding loans, 26% of new loans, and 39% of government revenues in 2013. If it slows sharply, we see no obvious replacement to support growth.
- Any policy reaction to a sharp property market correction may not be effective. The local government debt problem and the shadow banking issue have caught investors' attention, but alone they are unlikely to cause a systemic crisis in 2014, as the government can bail out troubled trust products and roll over debt. If property investment slows sharply, policy easing may not be effective, as fundamentally the sector faces a structural oversupply problem.

See Appendix A-1 for analyst certification, important disclosures and the status of non-US analysts.

Property sector overinvestment is the top risk

Investors have in recent months focussed on two key risks to China's economy, shadow banking system risk (including potential trust defaults) and the local government financing vehicle (LGFV) debt problem. We have flagged and written extensively about these issues (see *Q&A: Risks in China's trust sector*, 28 January 2014; *China's heavy LGFV debt burden*, 24 September 2013), and made clear from the beginning that these issues alone are unlikely to cause a systemic crisis because the government can intervene by rolling over LGFV debt, bailing out banks and injecting liquidity into the financial system. To be sure, these policy actions are not long-term solutions to the above-mentioned problems but they are effective in keeping them from evolving into a full-blown financial crisis, at least in the short term.

By contrast, we believe that a sharp property market correction could lead to a systemic crisis in China (see *China: Two developers sharply cut new property prices*, 24 February 2014), and we regard it as the biggest risk that China's economy faces in 2014 and 2015. Most investors we have spoken with tend to disagree and feel that the rapid pace of urbanisation will support the property market, which appears to be booming (at least in first-tier cities).

Some investors harbour long-term concerns over the property sector, but questioned why they should worry now. Indeed, the debate on whether there is a real estate bubble in China has been going on for years. The "ghost towns" in Wenzhou and Erdos were widely reported in 2011, yet the property sector continued to boom. Even if it is overinvested, why is today different from two years ago? Will there be a sharp correction soon? How can we know?

We are not the only ones who are concerned with China's property market. Interestingly, the head of the Development and Research Centre at the State Council, Li Wei, said publicly in October 2013 that "it is undeniable that the property bubble is getting bigger and has become the most unpredictable risk for China's economy[1]". Wang Shi, the Chairman of China's largest property developer, Vanke, is another who was surprisingly critical of the property sector in China. During a CBS "60 minutes" interview in March 2013, the reporter asked him whether there was property bubble. He answered "Yes, of course", and wrote on his blog on 24 September 2013 that "Property prices in China's tier 1 and 2 cities are strikingly similar to what Japan experienced in late 1980s. We should be aware of the risks!" On 10 February 2014, Wang Shi said in a book-signing ceremony that he was sure that the property bubble would not collapse in 2012 and 2013, but he is not sure about 2014, as the situation has become very difficult.[2]

Li Kashing, a business tycoon in Hong Kong and the richest man in Asia, did not comment on the property market in China, but in 2013 he sold several properties in mainland China with a total value of RMB20bn, including the RMB2.6bn Duhui Plaza in Guangzhou and the RMB9.0bn Oriental Financial Centre in Shanghai. One of his companies announced in January 2014 that it will sell its stake in the Pacific Century Place in Beijing. Li has a good track record in the property market, and we do not believe his companies would have sold mainland properties on such a scale before 2013. In a blog post dated 4 September 2013, Wang Shi stated that "Mr Li Kashing is selling properties in Beijing and Shanghai. This is a signal worth attention."

We agree with the assessments of Li Wei and Wang Shi. The property market today is similar to the trust sector in early 2013: booming with risks rising fast. In this note, we discuss why the market underappreciates the risks in the property sector and provide 12 reasons to worry. We then discuss why we are much more concerned in 2014 than in the past few years, and why we view the property market as China's top risk.

Risks are in the smaller cities, not in Shanghai or Beijing

Some investors have asked us, "If there are serious problems in the sector, then why are prices rising?" We argue that rising prices are not occurring uniformly across China. In fact, there is a rising divergence as property prices in first-tier cities soared on low

1 Li's comment was reported by China Economy Net (中国经济网) on 30 October 2013 and widely cited in China's financial websites.

2 Wang's comments were reported by Economic Journal in Hong Kong.

inventory and high demand, while prices in some third- and fourth-tier cities dropped on rising inventory.

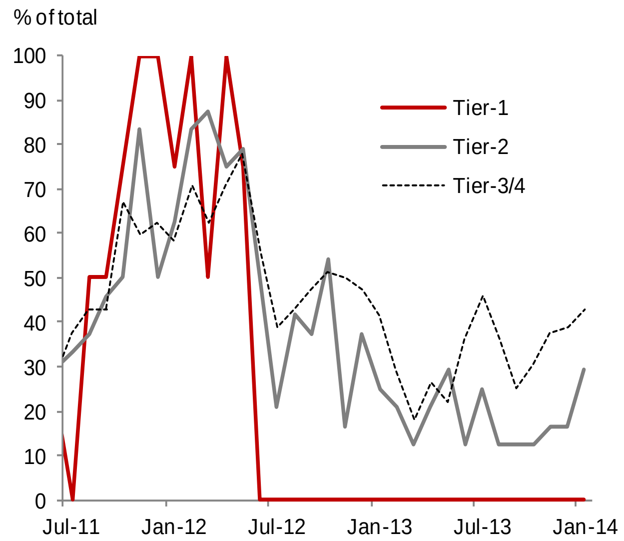
According to the China Index Academy's 100-city survey, property prices in all first-tier cities have risen persistently on a month-on-month basis in each month since July 2012, but in January 2014, prices dropped in 29% of second-tier and 43% of third- and fourth-tier cities (Figure 1). The situation may be worse at the national level due to a selection bias – there are 287 medium and large cities in China, but oversupply problems are more likely to occur in third- and fourth-tier cities, which do not have good property data and are not covered by the China Index Academy's 100-city survey.

From a macro perspective, first- and second-tier cities are much less important than the other cities. The four first-tier cities (Beijing, Shanghai, Guangzhou and Shenzhen) accounted for only 5% of housing under construction and sales (both in square meter terms) and 8% of housing investment in 2013 (in RMB terms). The 24 second-tier cities[3] (mostly provincial capitals) only accounted for 28% of housing under construction, 27% of housing sales and 35% of housing investment. The remainder, a large number of third- and fourth-tier cities, comprised 67% of housing under construction, 69% of sales and 57% of housing investment (Figure 2).

It appears most foreign investors and many Chinese investors are not aware that first-tier cities only account for 5% of housing under construction. This cognitive bias is reinforced through news articles about the Chinese property market that are dominated by information and statistics from Beijing and Shanghai, because data are readily available for these cities. Furthermore, this bias is reinforced by company-level information that is provided to equity investors, since most publicly listed developers focus their business in first- and second-tier cities.

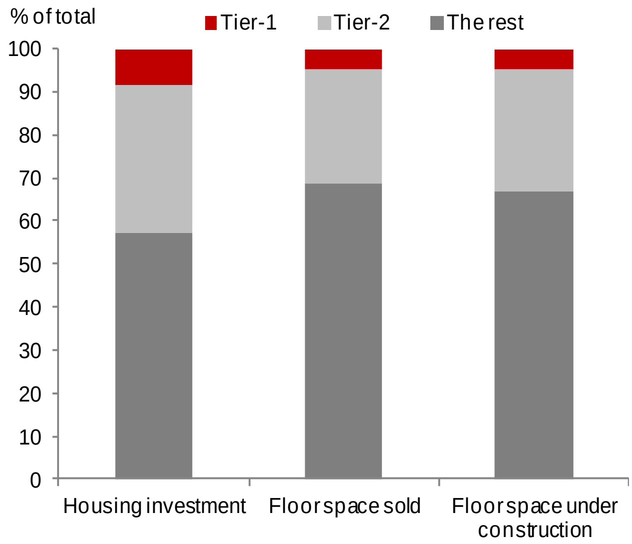
We believe this cognitive bias leads investors to underappreciate the true macro risks in China's property market. This is comparable to when the US property bubble burst, since property prices did not collapse in New York, but instead in places like Orlando and Las Vegas. In China, the true risks of a sharp correction in the property market fall in third- and fourth-tier cities, which are not on investors' radar screens, not Beijing or Shanghai.

Fig. 1: Proportion of cities with declining prices by city tiering



Note: This shows the proportion of cities experiencing a month-on-month price drop to the total number of cities within the same tiering. The total number of cities included is 100. Source: China Index Academy, WIND and Nomura Global Economics.

Fig. 2: Share of housing investment, sales and floor space under construction by city tiering (2013)



Note: Housing investment is in RMB terms, while floor space sold and under construction are in square meters terms. Source: CEIC and Nomura Global Economics

3 The second-tier cities are defined based on economic size and city size, which include: Tianjin, Shijiazhuang, Taiyuan, Hohhot, Shenyang, Changchun, Harbin, Nanjing, Hangzhou, Hefei , Fuzhou, Nanchang, Jinan, Zhengzhou, Wuhan, Changsha, Chongqing, Chengdu, Kunming, Xian , Dalian, Qingdao , Ningbo, and Xiamen.

Twelve reasons to worry about property sector overinvestment

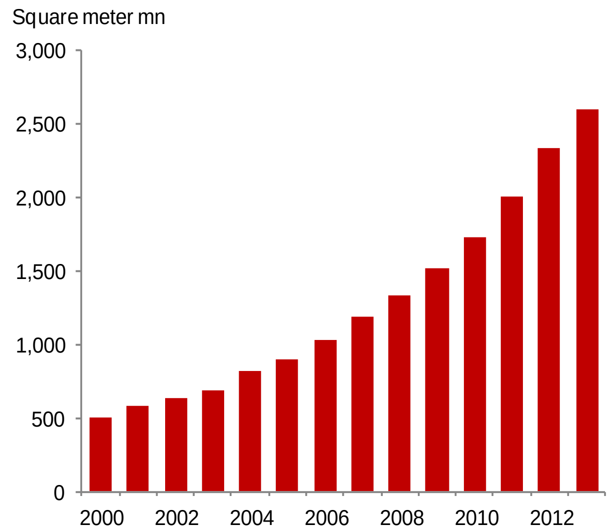
1. Oversupply

The increase in China's residential property supply has been staggering. In 2000, there was only 497m square meters of newly completed urban residential floor space, but by 2013, this number rose to 2596m square meters, an astonishing 423% increase (Figure 3). This implies average growth of 13.6% per year during this period, compared with average urban population growth of 3.7%. This trend appears set to continue in 2014, as land sales and new housing starts picked up in 2013 and floor space under construction has kept rising.

Has the rapid increase led to an oversupply of housing in China? When comparing China with other economies, there does seem to be an oversupply problem. We estimate that, in 2009, the residential floor space per capita in urban areas was 23.4 square meters, close to the level in Russia (22) but relatively low compared to those in developed economies like Japan (35), UK (33) and Italy (31) (Figure 4). One could argue that the housing market was undersupplied in 2009 and the rapid growth of property investment since is justified.

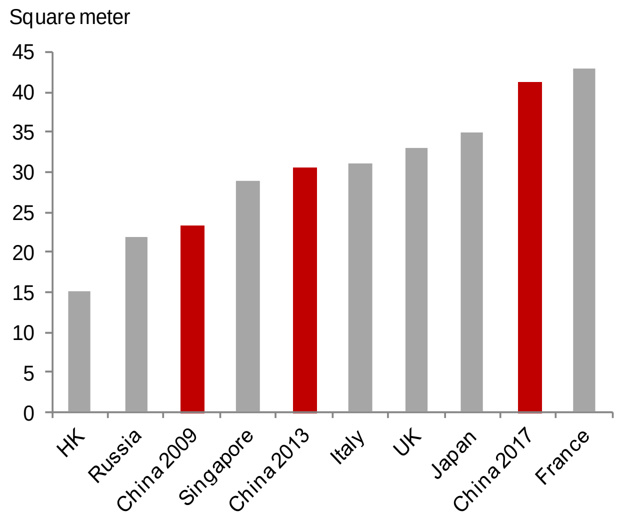
But investment has been so rapid that the property market does appear to have become oversupplied, as the average residential floor space per capita rose by 31% from 2009 to 30.6 square meters in 2013. This is already comparable to developed economies like Japan and the UK. If the current trend in property investment continues, the residential floor space per capita would reach 41.2 square meters by 2017, much higher than Japan and the UK in 2009.

Fig. 3: Newly completed urban residential floor space (flow)



Source: CEIC and Nomura Global Economics.

Fig. 4: Residential floor space per capita by country

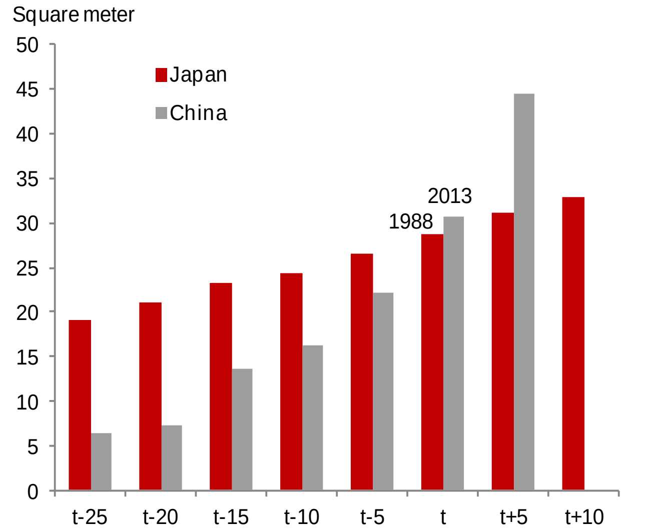


Note: All data is as of 2009 except for China (2009, 2013, 2017).
Source: CEIC, individual authorities, UN, and Nomura Global Economics.

Japan also experienced a rapid build-up of residential space during its "economic miracle" period (Figure 5). The residential floor space per capita rose from 24 square meters in 1978 to 29 square meters in 1988. Japan then suffered a financial crisis in 1989 and its property bubble burst. The similarities between Japan in the late 1980s and China today are alarming, as we estimate China just crossed Japan's 1988 level (around 30 square meter) in 2013.

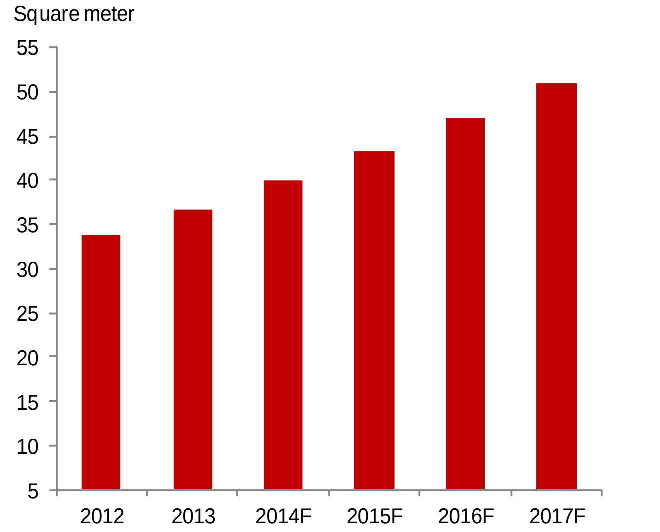
China's oversupply situation may be even worse because there are some 270m migrant workers from rural areas working in urban centres in 2013 who occupy much less floor space. Migrant workers occupied only 13.7 square meters per person in 12 cities including Shanghai in 2005, according to the survey by Chinese Academy of Social Sciences and related local statistics bureaus (Gao and Smyth, 2010). Their accommodation conditions have not improved much – an NBS 2012 survey shows that around 50% of migrant workers still lived in factory dormitory or work/construction site in 2012, similar to that in 2008. Moreover, the share of migrant workers who purchase apartments actually declined to only 0.6% in 2012 from 0.9% in 2008, and the share of migrants who lease apartments independently dropped significantly to 13.5% in 2012 from 18.8% in 2008. Nevertheless, in our calculations, we still assume the average floor space per capita for migrant workers rose steadily after 2005 – at the half speed of the overall floor space per capita though – to 17.8 square meters in 2013. This means there was 36.8 square meters of residential floor space per person available to the other 492m urban residents[4] in 2013, and this space is expected to rise to 39.9 in 2014, 43.3 in 2015, 47.0 in 2016, and 51.1 in 2017 (Figure 6).

Fig. 5: Residential floor space per capita in Japan and China



Source: Japan's Ministry of Health, Labour and Welfare, and Nomura Global Economics. Note: t is number of years and starts in 1988 for Japan, and 2013 for China.

Fig. 6: Residential floor space for registered urban residents



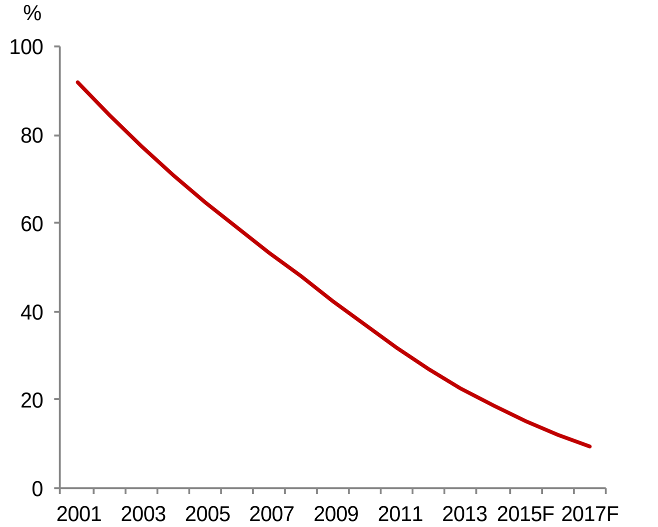
Note: Registered urban residents are those who have hukou (i.e. China's household registration system). Floor space per capita with hukou based on statistics of urban residents with hukou: *(Floor space – (total urban population – urban residents with hukou) * floor space per capita for migrant workers) / urban residents with hukou*. We use the five-year average growth rate (2007-2011) to estimate and forecast the number of urban residents with hukou in the period of 2012-2017. Source: CEIC, WIND and Nomura Global Economics.

Another popular argument against the existence of an oversupply problem is, although there is a large stock of available housing, the quality of that stock is low, and therefore there is still a limited supply of quality properties. A large share of existing properties were constructed in the 1990s; many believe that this stock is of inferior quality, and therefore owners may want to upgrade, which would generate demand for new properties. This argument may have been valid until 2007; we estimate housing constructed before 2000 comprised 53.2% of the total housing stock in 2007, but this ratio dropped sharply to 22.4% in 2013 and, if current trend holds, would drop to 9.1% by 2017 (Figure 7). Therefore, the marginal support from "upgrade" demand appears to diminish quickly.

Economists at the IMF looked at the property issue from a macro perspective and identified another alarming sign in China's property market (Zhang and Barnett, 2014). They compared the estimated ratio of residential investment to GDP with other countries and found that it reached 9.5% in China in 2012, which is higher than the recent peaks experienced in Japan, the US and Italy (Figure 8). These economies all suffered from financial crises and burst property bubbles, which is yet another sign that there may be an oversupply problem in China's property sector.

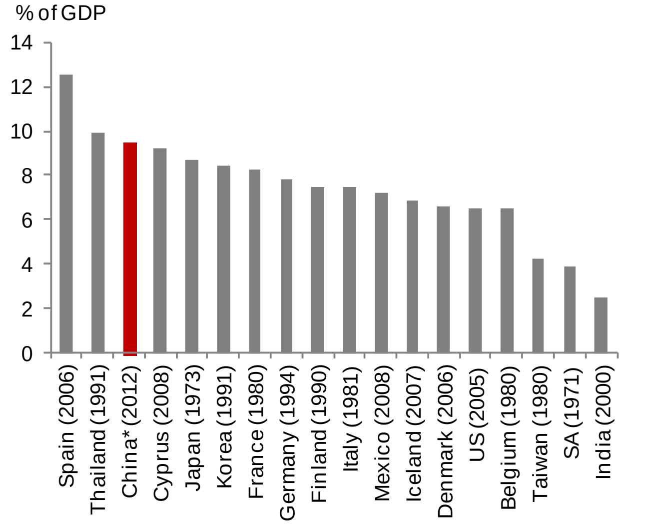
4 The sum of the number of urban residents with hukou and migrant workers is larger than the total number of urban residents, which are officially defined as the population who have lived in cities for over six months. In 2011, for instance, urban residents with hukou were 470.6m and migrant workers were 252.8m, which combined was 32.6m more than the urban population. This difference is mainly caused by the statistics of migrant workers which is usually inaccurate and includes those who have lived in cities for less than six months. We therefore measure the GFA per capita with hukou based on statistics of urban residents with hukou: *(GFA – (total urban population – urban residents with hukou) * GFA per capita for migrant workers) / urban residents with hukou*. We use the five-year average growth rate (2007-2011) to estimate and forecast the number of urban residents with hukou in the period of 2012-2017.

Fig. 7: Share of housing stock constructed before 2000



Source: CEIC and Nomura estimates.

Fig. 8: Peak residential construction investment



Source: CEIC, Haver Analytics, IMF staff calculations. Note: *Residential real estate investment for China.

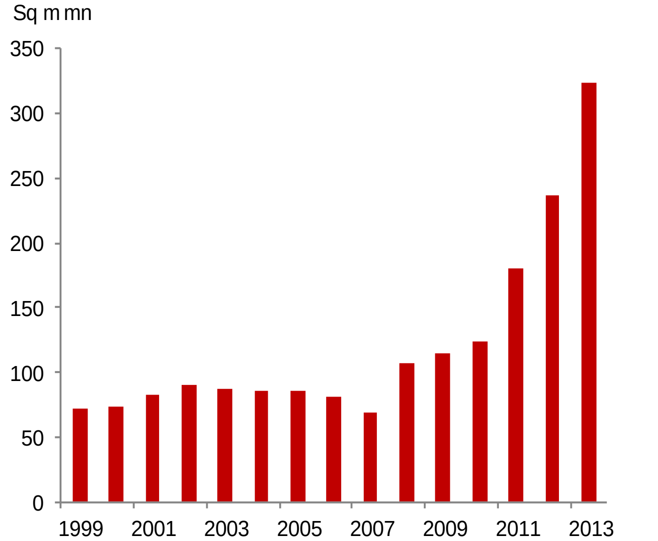
2. Inventory build-up

A typical consequence of property sector overinvestment is a rapid build-up of inventory. This is indeed happening in China. Official data show that national housing inventory was stable before 2009 but has risen sharply since to 324m square meters by end-2013, a 182% rise since 2009 (Figure 9).

However, this level of inventory is not high relative to sales – 2013 total sales reached 1,157m square meters, which implies that it would take only 3.4 months to sell the 2013 inventory. However, we believe official inventory levels may understate the true size of the inventory build-up, since property developers and local governments may be reluctant to report huge inventories in their cities. Therefore, although we believe the recent trend of this inventory data tells the true story, we are sceptical of the level.

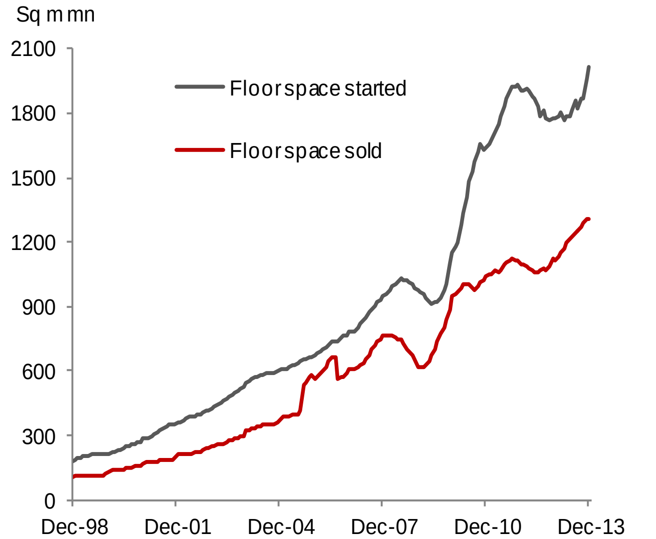
Another way to gauge inventory is to compare floor space started with floor space sold. The gap has widened significantly since 2009 (Figure 10), consistent with official housing inventory data. Unfortunately, we cannot back out the stock of inventory from this gap, because there is no data to show how much of it reflects public housing construction, which has picked up since 2009.

Fig. 9: Housing inventory



Source: CEIC and Nomura Global Economics.

Fig. 10: Floor space started and sold (12m rolling sum)



Source: CEIC and Nomura Global Economics.

3. Weakness in third- and fourth-tier cities

Property data for most third- and fourth-tier cities are not readily available, so it is difficult to gain a sufficient understanding of the current situation in these locations. Anecdotal evidence on a city level suggest the situation is worsening. In 2011, two cities were widely reported to have problematic property markets, Erdos and Wenzhou. In 2011-12, the property market in these cities experienced a sharp correction – property prices declined by more than 50% and a large number of residential and commercial properties were left unsold, according to the *Shanghai Security Journal* [5] and the *21th Century Business Herald* [6].

The sharp correction in these cities' property markets has resulted in severe economic damage. In Erdos, property investment slumped by 41% y-o-y in 2012 and dropped by a further 23% through the first ten months of 2013, which stands in stark contrast to the 63% increase in 2011. In Wenzhou, property investment growth dropped sharply from 152% y-o-y in 2011 to 1% in 2012 and -3% in the first 10 months of 2013. Furthermore, total industrial output growth also plunged in these two cities. In Erdos, total industrial output growth declined sharply from 31.9% y-o-y in 2010 and 39.6% in 2011 to 6.4% in 2012, while in Wenzhou, total industrial output declined by 2.4% in 2011 and 3.1% in 2012 after a 23.2% increase in 2010.

We did not highlight systemic risks in the property sector in 2011 because we viewed Erdos and Wenzhou as unique cases and not representative of China as a whole. There are 287 medium and large cities in China; property market troubles in only two of them would not change our macro view.

But since then, the list of cities with potential property market imbalances has kept growing, which increases our concerns. For example, Chinese media have often cited Yingkou and Changzhou as cities where oversupply has led to a massive inventory build-up. In Yingkou (population: 2.5m in 2012), data compiled by the China Index Academy shows that there were 12.9m square meters of new land transactions in 2011-12, which was almost double that of Beijing (population: 13.0m) . Furthermore, there were at least three property developers associated with 10 residential property projects in Yingkou that abandoned construction and fled, leaving prepaid home purchasers with only some partially completed buildings.[7] We believe the situation in Changzhou is less severe than that in Yingkou but there are similarities.[8] Property developers purchased 10.2m square meters of land in 2011-12, but this declined to 3.1m square meters in 2013. The huge supply of residential property may take years to digest, given the high home self-ownership ratio (over 90%)[9] in urban areas and the small population (1.8m) in Changzhou. Recently, local media reported that a property developer sharply cut prices in Changzhou (see *China: Two developers sharply cut new property prices*, 24 February 2014).

There is little official data on overall conditions in third- and fourth-tier cities. However, the 100 cities property price series shows prices in some cities have dropped (Figure 1). The financial news in China has reported that anecdotal evidence paints a bleak picture (Figure 11). Many news articles recently reported an expanding list of "ghost towns" with more than 10 cities mentioned. It is widely reported that property developers prefer to purchase land in first- and second-tier cities, considering the oversupply problem faced by other cities. We plan to provide further information on third- and fourth-tier cities in the next instalment of this series.

5 See Chinese-language newspaper *Shanghai Securities Journal*, "Weakening property market spread in 3rd and 4th tier cities, numerous small- and medium-property developers hooked deeply", 22 February 2014. (上海证券报,"三四线楼市疲软呈蔓延之势,众多中小开发商深度套牢", 2014 年 2 月 22 日)

6 See Chinese-language newspaper *21th Century Business Herald*, "Housing price halved, foreclosures occurred, over 10k units of apartments likely were left to banks", 25 September 2013. (21 世纪经济报道, "温州房价腰斩现断供弃房现象, 上万套房或丢给银行", 2013 年 09 月 25 日)

7 See Chinese-language newspaper *China Business*, "Real estate crisis in Yingkou: property developers run away, home-purchasers left nothing", 30 November 2013. (中国经营报, "辽宁营口地产危机：开发商跑路, 购房者钱房两空", 2013 年 11 月 30 日)

8 See Chinese-language newspaper *Shanghai Securities Journal*, "Weakening property market spread in 3rd and 4th tier cities, numerous small- and medium-property developers hooked deeply", 22 February 2014. (上海证券报，"三四线楼市疲软呈蔓延之势, 众多中小开发商深度套牢"，2014 年 2 月 22 日)

9 See the 2010 survey of National Bureau of Statistics on Changzhou's urban households. The result was released by the information centre of Changzhou City Statistical Bureau.

Fig. 11: Property risk event

Report date	City, province	Event
H2 2013	Wenzhou, Zheijiang Province	Media reports of prices for some residential properties in Wenzhou falling by half in 2013 from the peaks.
18-Oct-13	Jizhou, Jiangxi Province	Media reports that one real estate developer in Jizhou fraudulently fled with RMB70m because he did not have sufficient funds to continue construction of the project.
02-Nov-13	Zhoushan, Zhejiang Province	It was reported that Sichuan Trust sued Yangchengjindu Real Estate for failing to repay the trust loan. It was unable to repay the loan because construction of the property project has to be suspended due to a lack of financing.
12-Nov-13	Tongchuan, Shaanxi Province	Media reports that one real estate developer fraudulently fled with RMB2.6mn because he did not have sufficient funds to complete construction of the project.
30-Nov-13	Yingkou, Liaoning Province	It was reported that some developers ran away with home buyers' money in the Coastal Industrial Base (a new development area in Yingkou), while their residential properties were left uncompleted.
18-Feb-14	Hangzhou, Zhejiang Province	Some real estate developers announced big price discounts to the residential properties for sale.
23-Feb-14	Changzhou, Jiangsu Province	One real estate developers announced big price discounts to its high-price residential property for sale.

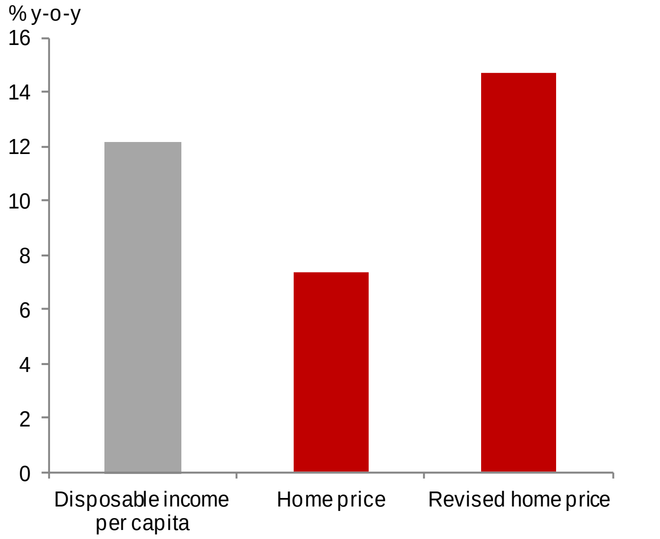
Source: Media reports and Nomura Global Economics.

4. Deterioration of affordability

Whether the affordability of housing has improved or deteriorated is a controversial issue. Indeed, optimistic investors argue that China's rapid economic growth has been associated with rapid income growth which improves the affordability of housing. Official data support this view – in the past five years, housing prices have risen by annualised 7.0% while household income has grown by an annualised 11.9%, so the price to income ratio must have declined (Figure 12).

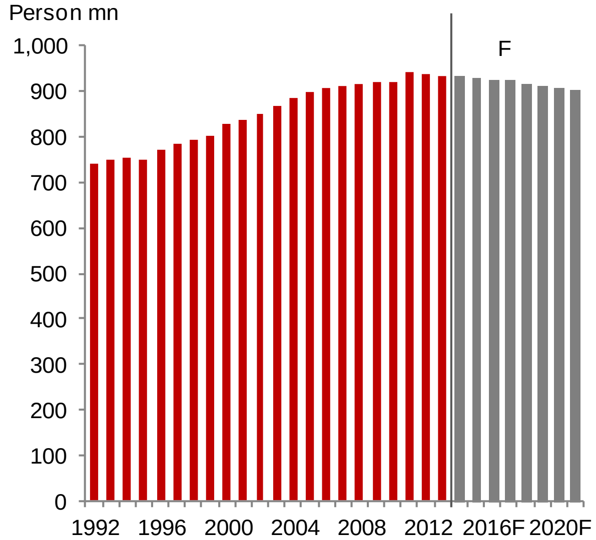
However, we believe that affordability has actually deteriorated since the official property price data understate the true inflation in housing prices. This issue has been documented by academic research (Deng, Gyourko and Wu, 2012). One way to gauge the difference between official data and true housing price inflation is to look at market-based measures for prices in large cities. We found, for the five cities (i.e. Beijing, Shanghai, Shenzhen, Guangzhou and Tianjin) in which Centaline's property price data are available, actual housing price inflation was twice as high as official data indicate.

Fig. 12: Property price and income growth



Note: The average annual growth over 2011-2013. Revised home price assumes a magnitude of 2 on national property price data officially released.
Source: WIND, CEIC and Nomura Global Economics.

Fig. 13: Working age population (aged 15-59)



Source: CEIC and Nomura Global Economics.

As market-based property price data are only available for five cities, we cannot determine precisely how fast housing prices rose nationwide. If we assume national housing price data from official sources are also biased by a magnitude of 2, implied national housing prices would have risen by a cumulative 51% from 2010 to 2013, while household income growth rose by 41% over that same period.

5. An unfavourable demographic trend

The demographic trend became unfavourable for housing demand in 2012, when the working-age population dropped by 3.45m, its first decline since 1996 (Figure 13). The NBS reported on 24 February that the working age population dropped again by 2.27m in 2013. We believe this is a result of the one-child policy and expect this trend to continue in coming years.

A decline in the labour force should have a profound impact on the property market. Other than the obvious direct impact on housing demand, there is also an indirect effect since a tighter labour market means higher inflation, especially when the government targets growth at above its potential, which pushes up interest rates. This leads to higher financing costs for house purchases.

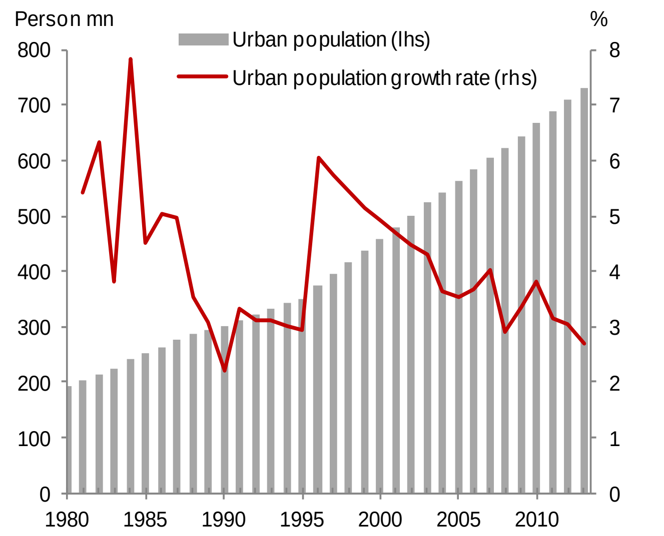
6. Urbanisation is slowing

The urbanisation story may be the most common argument against our cautious view on China's property market. If urbanisation continues at a rapid pace, properties that are vacant today may be filled by immigrants from rural areas. Indeed China's urbanisation ratio is still low at 53.7% in 2013 compared to over 80% in some developed economies. An argument can even be made that urbanisation will speed up as the government pushes it as a pillar of growth.

However, contrary to conventional wisdom, we believe urbanisation has already started to slow. The urbanisation ratio rose only by 1.16 percentage points (pp) in 2013, its slowest rise since 1996 (excluding 2008 during the global financial crisis). The size of the urban population grew by only 2.7% in 2013, its slowest rate of growth since 1996 and much lower than the average annual growth rate of 4% from 2000 to 2010 (Figure 14).

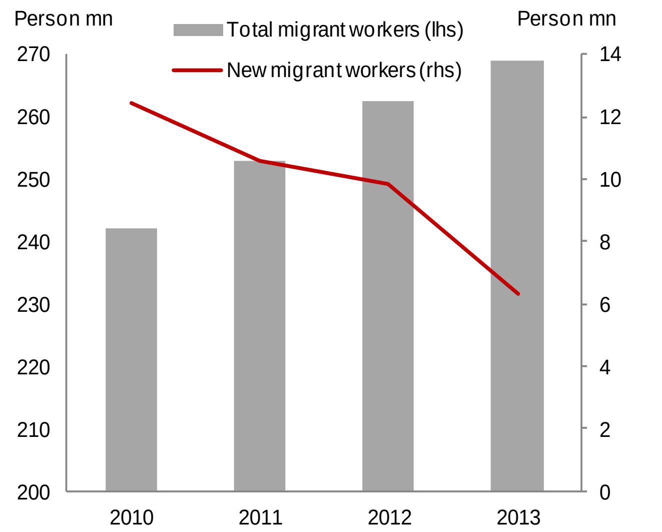
We believe urbanisation will continue to slow in coming years, as industrialisation slows, surplus rural labour is depleted, and local government attempts to expand urban areas are constrained (see *Urbanisation in China: Myths and reality*, 25 February 2014). One particularly striking factor is the declining trend of new migrant workers from 12.5m in 2010 to 6.3m in 2013 (Figure 15). If this trend continues, the total number of migrant workers may begin to contract by 2016.

Fig. 14: Growth of urban population



Source: CEIC and Nomura Global Economics.

Fig. 15: Size of migrant workers



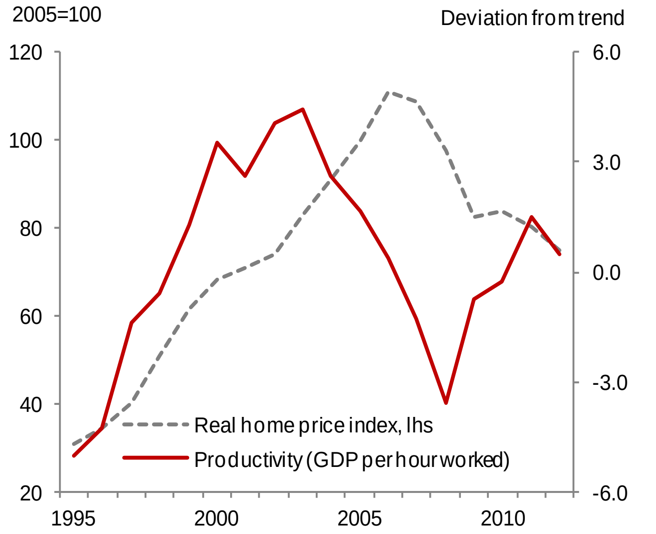
Source: CEIC and Nomura Global Economics.

7. Productivity slowdown

We have observed that sharp corrections in property markets are often preceded by, or synchronised with, a decline in productivity growth. This was true in Japan in the 1980s, as well as in Ireland, the UK and the US before 2008 (Figures 16-19). There is a long list of academic research that has documented a decline in productivity before financial crises (on US: Gordon, 2008, Brackfield and Martins, 2009; on Spain: Baily, 2008, Hernández de Cos, Izquierdo and Urtasun, 2011).

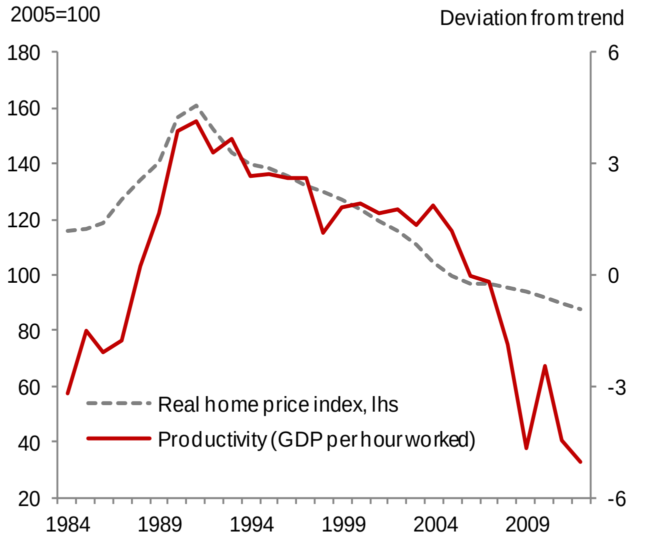
A report from the Federal Reserve Bank of New York provides a good rationale for the correlation between a productivity slowdown and crisis. Investors become desensitised during a phase of rapid productivity growth, and begin to assume that the trend will continue indefinitely. When productivity growth finally turns, it leads to sharp correction of market expectations (Kahn, 2009). In China, productivity was also in a "growth miracle" phase prior to 2008, but has since been in a slowdown phase (Figure 20) (for more on why productivity has slowed, see *China: Rising risks of financial crisis*, 15 March, 2013). Property prices have not experienced any large significant corrections, partly due to massive credit growth which has supported the economy, but this credit boom is not sustainable and has already started to subside.

Fig. 16: Real home price and productivity: Ireland



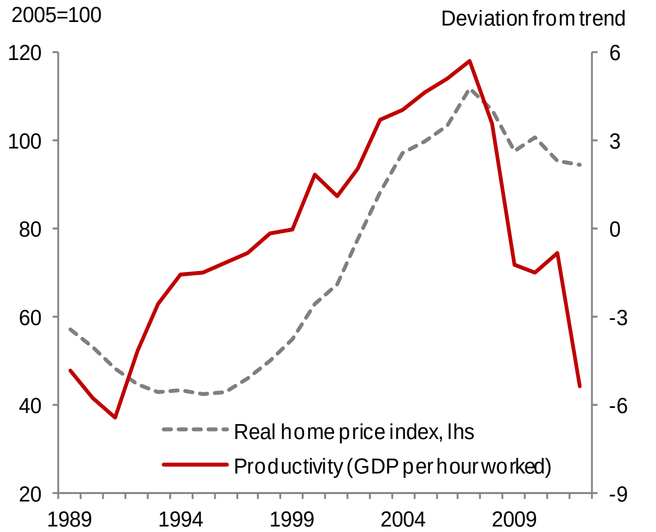
Source: US Dallas Fed, OECD and Nomura Global Economics.

Fig. 17: Real home price and productivity: Japan



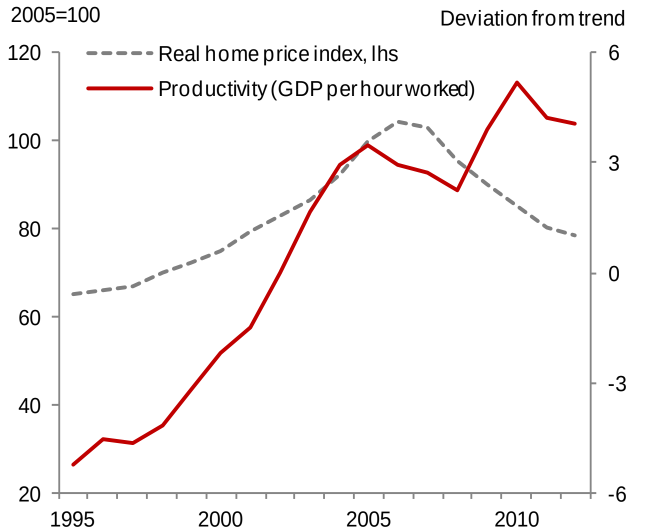
Source: US Dallas Fed, OECD and Nomura Global Economics.

Fig. 18: Real home price and productivity: UK



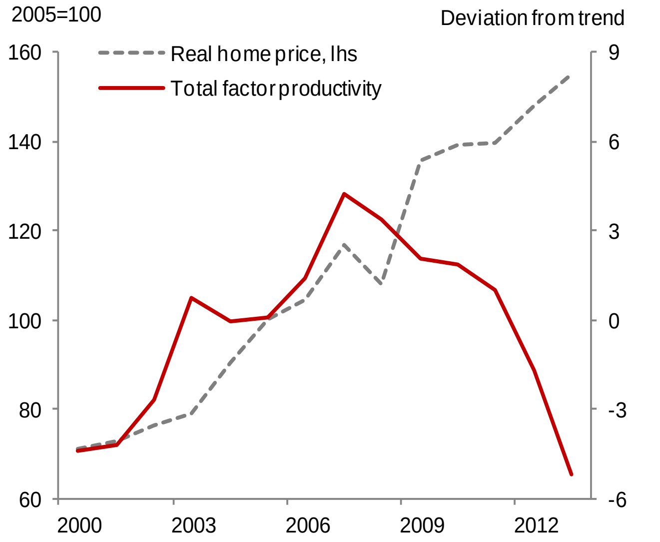
Source: US Dallas Fed, OECD and Nomura Global Economics.

Fig. 19: Real home price and productivity: US



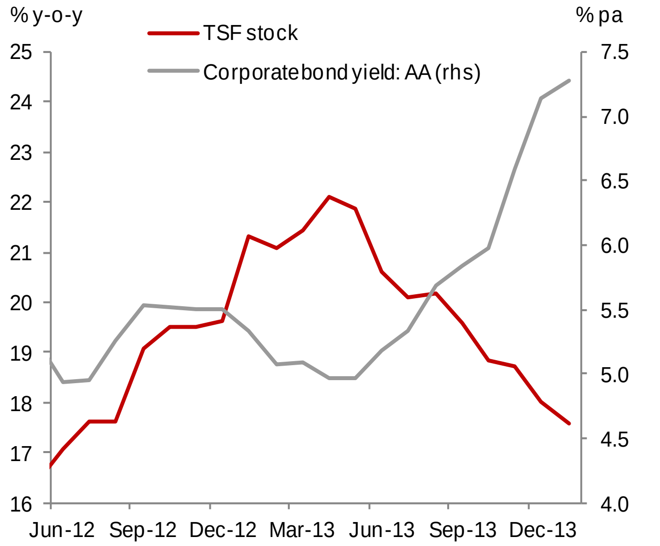
Source: US Dallas Fed, OECD and Nomura Global Economics.

Fig. 20: Real home price and productivity: China



Source: CEIC, The Conference Board Database, and Nomura Global Economics.

Fig. 21: 3-year corporate bond yield and growth of total social financing



Source: CEIC and Nomura Global Economics.

8. Interest rate liberalisation

In recent years, financial liberalisation has been an objective of the government, and recent policies have resulted in more flexible interest rates and a marked growth of wealth management products. In a National People's Congress press interview on 11 March 2014, the Governor of the People' Bank of China, Zhou Xiaochuan, indicated that the deposit interest rate will likely be liberalised in one to two years, and he expects interest rates to rise as a result of liberalisation, based on international, historical evidence. Indeed, even the partial interest rate liberalisation enacted thus far has already led to higher interest rates (Figure 21), and there are several channels through which higher interest rates can cause property prices to fall. First, banks pass on their higher financing costs to customers via higher mortgage rates. Second, highly leveraged developers are subject to increased financial pressure. Third, it reduces speculative demand in the property market, as investors begin to consider alternatives to the property market (like the bond market).

9. Capital account liberalisation

Contrary to conventional wisdom, China's capital account is actually quite volatile, despite pervasive capital controls. In fact, China's capital account volatility in 2013 – as measured by the move of the financial account balance (i.e., net capital flows) as a share of GDP on quarterly basis – was similar to India's and Brazil's (Figure 22). These massive swings indicate that China's capital account may have in fact become quite open. Furthermore, the government seems committed to making capital account liberalisation a reform priority in 2014, as part of the process of moving to a more flexible exchange rate regime.

A more open capital account allows Chinese investors to diversify their investments globally. This applies to corporates as well as households. An outflow of capital is good for investors from a risk management perspective, but increases the risks to property prices in China, which are quite high even when compared to developed economies.

Fig. 22: Gauging volatility of the balance of payments

	Brazil		Euro area		India		Japan		US		China	
	inc. FDI	exc. FDI	inc. FDI	exc. FDI	inc. FDI	exc. FDI	inc. FDI	exc. FDI	inc. FDI	exc. FDI	inc. FDI	exc. FDI
	% of GDP		% of GDP		% of GDP		% of GDP		% of GDP		% of GDP	
2005	-1.07	-2.49	-0.28	2.22	2.20	1.90	-2.78	-1.84	-5.14	-5.72	4.22	3.19
2013	3.39	0.35	-2.39	-1.17	2.66	1.78	0.96	3.67	-1.11	0.42	3.19	-0.97
1Q13	5.85	3.94	-0.98	0.03	3.78	2.56	0.15	1.90	-0.81	0.72	4.69	3.03
2Q13	3.52	-1.30	-2.23	0.09	4.78	3.29	1.95	4.60	-1.40	0.13	1.37	0.71
3Q13	2.08	0.45	-2.24	-1.08	1.23	-0.48	-0.64	3.37	-1.40	0.13	3.58	4.10
4Q13	2.24	-1.49	-4.09	-3.70	1.23	-0.48	2.29	4.74	-1.40	0.13	3.58	4.10
volatility	3.77	5.43	3.11	3.79	3.55	3.77	2.93	2.84	0.59	0.59	3.32	3.38
3Q08	3.19	1.51	1.77	4.20	8.43	6.31	-2.61	-0.89	-4.48	-4.14	0.44	0.24
4Q08	-6.11	-8.37	1.40	3.58	8.04	7.02	-3.23	0.99	-5.91	-7.15	-3.35	-3.78
1Q09	1.23	-0.75	1.93	4.53	3.51	1.94	-5.24	-4.01	-0.20	2.09	1.85	-0.08
2Q09	4.38	1.85	0.57	-0.51	5.88	4.12	-1.96	-0.81	-0.44	0.71	7.64	8.05
volatility	10.49	10.22	1.37	5.04	4.93	5.08	3.28	5.00	5.71	9.24	10.99	11.83

Source: CEIC and Nomura Global Economics.

10. Property taxes

On 24 February at the G20 meeting, Minister of Finance Lou Jiwei said that China will speed up the implementation of property tax reform. China still does not collect a property holding tax on a national level, but there are a few pilot programs, including one in Shanghai. Academic research (see Bai, Li and Ouyang, 2012)[10] found that the property tax trials in Shanghai lowered average home prices by as much as 15%. We expect a property tax to be rolled out in 2015 that is imposed on the stock of properties, with some exemptions made for first homes. We believe effects from the property tax will begin to emerge before its implementation, as speculative demand will likely weaken and secondary property market supply will increase once implementation becomes a certainty.

11. The anticorruption policy initiative

The new leadership in China has been pushing its anticorruption movement since taking over in early 2013. This has led to numerous officials being arrested on corruption charges, including the head of the State-owned Assets Supervision and Administration Commission and the head of the State Energy Bureau. Typically, these corruption cases include receiving properties as a form of bribe. We believe the risks to corrupt officials from holding properties in China have risen, as the government has developed a database to track property ownership in major cities. Indeed, we have witnessed a growing list of high-profile cases where officials who hold numerous properties are prosecuted (Figure 23).

Fig. 23: High profile corruption cases with officials owning many properties

Report Time	Name	Title	City	Properties owned
Oct-12	Bin Cai	Deputy director of the Urban Management Bureau in Panyu District	Guangzhou	22 properties
Nov-12	Weisi Zhou	Deputy Chief of Nanlian Community Office	Shenzhen	over 80 properties
Jan-13	Aiai Gong	Vice director of Rural Commercial Bank in Shenmu	Yulin	41 properties in Beijing and more in other cities
Jan-13	Guangyun Fang	Director of Zhanbei Community Office	Hefei	11 properties
Feb-13	Xiuting Zhang	Official in the Anti-Corruption Bureau in the Xi'an District	Mudanjiang	over 10 properties
Jan-14	Weizhong Lin	Vice-chairman of Houjie Township branch	Dongguan	over 20 properties

Source: Media reports and Nomura Global Economics.

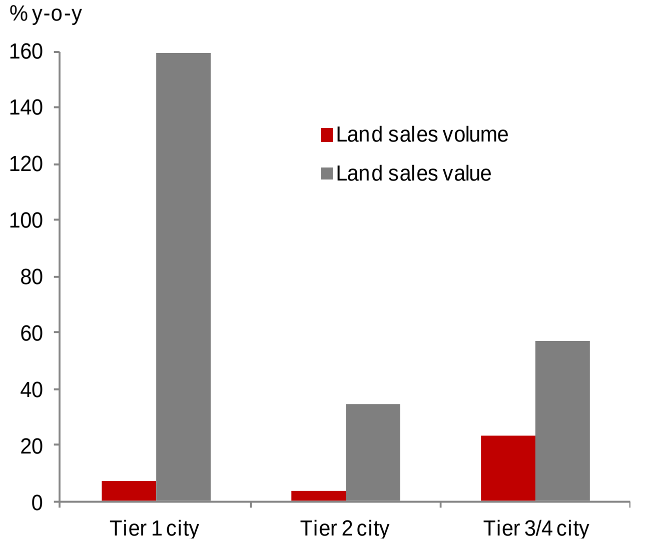
10 They argue that property prices in Shanghai rose more slowly than prices in cities without a property tax and estimate that, if there was no property tax, prices would have risen by an additional 15%.

12. The sharp rise in land sales

Land sales soared by 52.4% in 2013 in value terms, rising to above RMB4trn for the first time. We estimate that, in volume terms, land sales rose by 7.0% in first-tier cities, 3.7% in second-tier cities, and 23.2% in third- and fourth-tier cities in 2013 (Figure 24). They rose by 159.3%, 34.2% and 57.0%, respectively, in value terms. These increases partly reflect incentives from local governments aimed at boosting land sales to help ease financing pressures faced by local financing vehicles (see *China's heavy LGFV debt burden*, 24 September 2014). This raises the supply of properties in the pipeline and exacerbates the demand-supply imbalance even further.

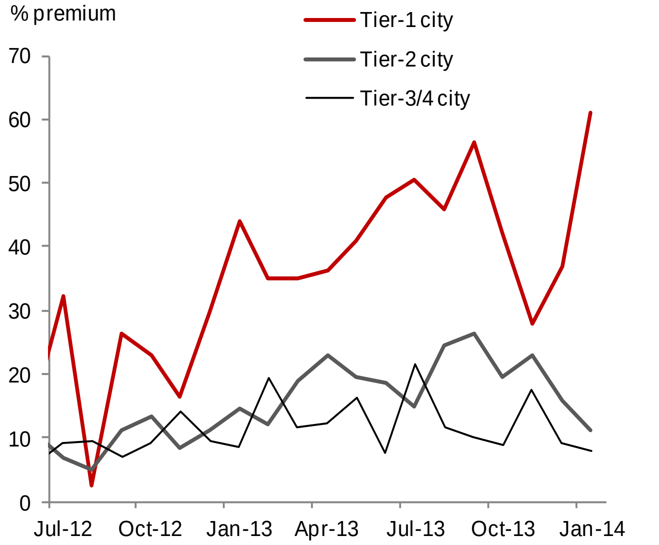
Most property developers still have a positive outlook on the sector and their demand for land remains strong, as is evidenced by land premiums paid in auctions in 2013 (Figure 25). Premiums were particularly high in first-tier cities, but land sales data show that land prices in third- and fourth-tier cities also experienced strong growth. These high land prices pose a risk to developers, as their profitability depends on rising property prices. Falling property prices would likely result in losses for most developers.

Fig. 24: Land sales growth in volume and value terms (2013)



Source: China Index Academy and Nomura Global Economics.

Fig. 25: Price premium for land sales



Source: China Index Academy and Nomura Global Economics.

How 2014 is different

The problems in China's property sector (and the overall economy) are not new. Although stories of "ghost towns" were widely reported in the media in 2011, property prices in China have still soared and the role of property investment in the economy has increased further. What makes 2014 different enough to escalate our concerns over the property sector to the forefront?

While our view on the property market is based on the 12 concerns mentioned above, some of which have been valid for several years, we believe the key difference is that property market conditions have recently transitioned from undersupplied to oversupplied. In 2011, real demand for properties in most cities was still strong. Today, this is no longer the case, as an oversupply problem appears to have materialised in many third- and fourth-tier cities, and this is set to worsen, with floor space under construction growing at a rate of 13.4% annually and land sales hitting a record high in 2013.

Another way to illustrate this point is by extrapolating the current flow of property investment. On the supply side, an estimated 2.3bn square meters of housing will be completed in 2014, while on the demand side, the total urban population is expected to increase by 18.7m. This implies 121 square meters of new floor space for each new urban resident, up from the 113 square meters in 2013 and almost double the 61 square meters in 2009. If the current trend continues, it would reach 203 square meters by 2017. We find this alarming, although part of the new supply will be met by existing urban residents who want to improve their living conditions and have larger living spaces.

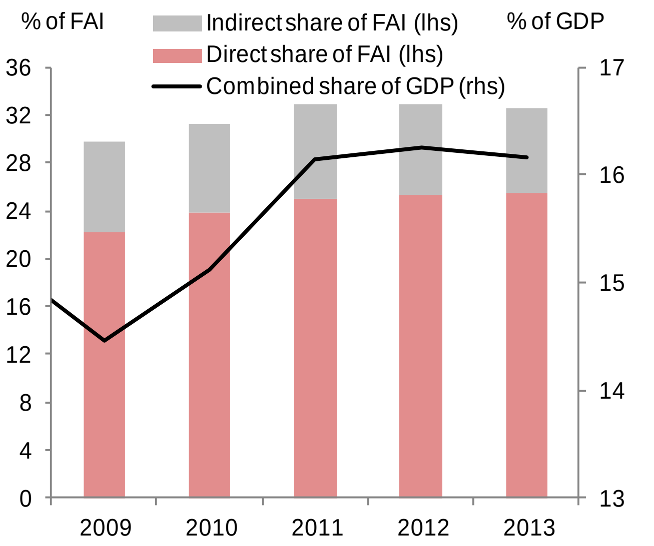
The other reasons listed above have also strengthened in 2014. An anticorruption effect should kick in as more corruption cases are disclosed. Implementation of property tax reform may pick up speed. The cumulative effect of rising interest rates is pressuring leveraged developers and the slowdown of urbanisation and productivity growth is weakening demand. Anecdotal evidence from financial news in China suggests the list of "ghost towns" has kept expanding. We are concerned because the combination of all these factors dramatically heightens risks in the property sector.

Why property sector overinvestment is the top macro risk

We view property sector overinvestment as the top macro risk because the property sector is currently the keystone of China's economy – if it slows, systemic risks rise. We highlight four transmissions through which the systemic importance of the property sector is illustrated:

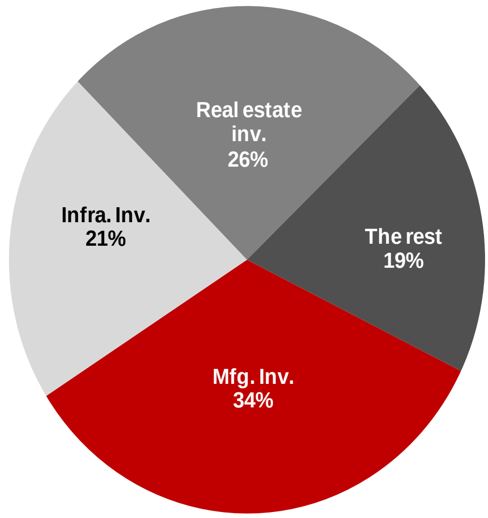
1. ***Challenging GDP arithmetic:*** Direct property investment comprised 26% of total fixed asset investment (FAI) in 2013 (Figure 26). Furthermore, the property sector is highly connected to other manufacturing and services sectors, such as construction, steel, cement, chemical, transportation and leasing industries. We estimate that 7% of total FAI was indirectly linked to property investment in 2013. Thus, an estimated 33% of total FAI was directly and indirectly attributable to the property sector in 2013, which contributed to 16% of GDP. This suggests that a 10% drop in property investment would reduce FAI growth by 3.3pp and GDP growth by 1.6pp.
2. ***Contribution to infrastructure investment***. Infrastructure investment is mostly financed by the LGFVs that depend heavily on land sales for revenue, which in turn depend on booming property markets. Infrastructure and property investment combined accounts for approximately half of total investment. We estimate that manufacturing investment accounts for 33% of investment, while steel, cement, and construction material – which are highly related to infrastructure and property investment – may account for 10% of manufacturing investment (Figure 27).
3. ***Contribution to credit and financial stability:*** In 2013, the share of property loans (including mortgage loans and loans to developers) to total outstanding loans rose to 20% from 14% in 2005 (Figure 28). In terms of new loans, property loans accounted for an even higher portion, 26%, in 2013. In addition, we believe property developers are major borrowers in the shadow banking sector, although their actual exposure is unclear (see *Q&A: Risks in China's trust sector*, 28 January 2014).
4. ***Contribution to government revenue:*** Total government revenues reached RM17.0trn (or 29% of GDP) in 2013 – which include RMB11.0trn in tax revenue and RMB4.1trn in land sales proceeds – 39% of which was related to the property market. Specifically, land sales accounted for 23% of total government revenues. Property-related taxes accounted for 23% of total tax revenue and 15% of total government revenue in 2013. Local governments are more reliant on land sales than the central government, and their fiscal conditions have become increasingly challenging.

Fig. 26: Direct and indirect impacts of property investment



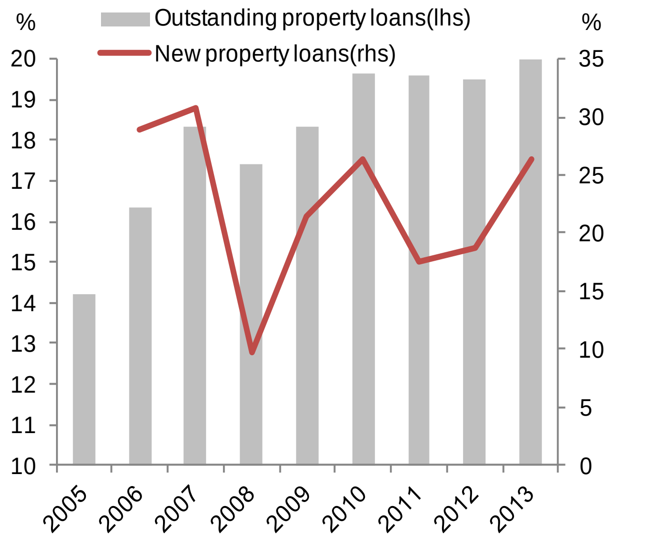
Note: The link between real estate investment and other FAIs is estimated based on the coefficients of input-output table provided in Li, et al (2014). Due to a large difference between FAI and gross capital formation (GCF), the combined contribution of real estate investment and its related FAIs to GDP is scaled by GCF/FAI. Source: Li, et al (2014), CEIC and Nomura Global Economics estimate.

Fig. 27: Breakdown of fixed asset investment, 2013



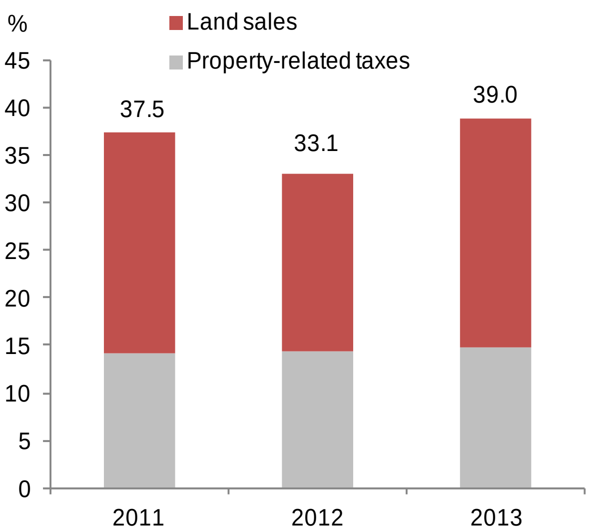
Source: CEIC and Nomura Global Economics.

Fig. 28: Share of real estate loans in total loans



Note: Property loans include property developer and mortgage loans. Source: CEIC and Nomura Global Economics.

Fig. 29: Share of property-related taxes and land sales in total government revenue (including land sales)



Note: Property-related taxes comprise income tax and turnover tax for property developers and construction companies, property tax, contract tax, urban land use tax, and land increment duty. Source: Ministry of Finance, CEIC, and Nomura Global Economics.

There are several transmission channels through which a sharp correction in the property market would affect the economy. First, it would lead to a slowdown in both infrastructure and property investment. Combined, these two items account for half of investment in China. Second knock-on effects from related industries would kick in. Third, there would be negative wealth effects from the decline in asset prices (including property, bonds, and equity) and potential defaults in shadow banking sector. Fourth, the financial system would be pressured as corporate and mortgage default rate rose in tandem, leading to a tightening of credit standards. Some financial institutions would need an explicit government bailout in this scenario.

We believe the government has every intention to keep the property market from sharply correcting to avert a systemic crisis, but this could prove to be a major challenge given that many of the above channels are interrelated and can feed off each other. Ideally, the government would introduce fiscal reforms to find alternative revenue sources for local governments and enable them to slow the pace of land sales. But in reality, the pace of reform has been too slow to reduce the reliance on land sales in 2014 or 2015. Alternatively, the government could tolerate a growth slowdown and cut its growth target significantly, but this did not happen for 2014. Therefore, we expect the oversupply problem in the property sector to worsen and heighten systemic risks.

In our view, the two key questions are: 1) when will the property sector slow sharply, and 2) when it does, what can and will the government do to address the problem. We plan to address these issues in the next instalment of this series.

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Appendix A-1

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