GavekalDragonomics

China Chartbook

Housing & Construction Review

November 2014

Table of contents

Part 1: Fundamental outlook

• Is the latest downturn in China's housing market just another cyclical correction, or the bursting of an unsustainable bubble? China has had these kind of downturns pretty consistently every couple of years, so we don't think there is anything too shocking about the latest one.

• It's more important to understand the longer-term context of these cycles. Our model of housing demand indicates that total construction volume peaked around 2011, and after having been roughly flat for the last few years, is likely to start declining around 2015. We expect annual construction volume to decline by 15-20% by 2025, though in reality cycles will make the process more volatile than the smooth trajectory in our model.

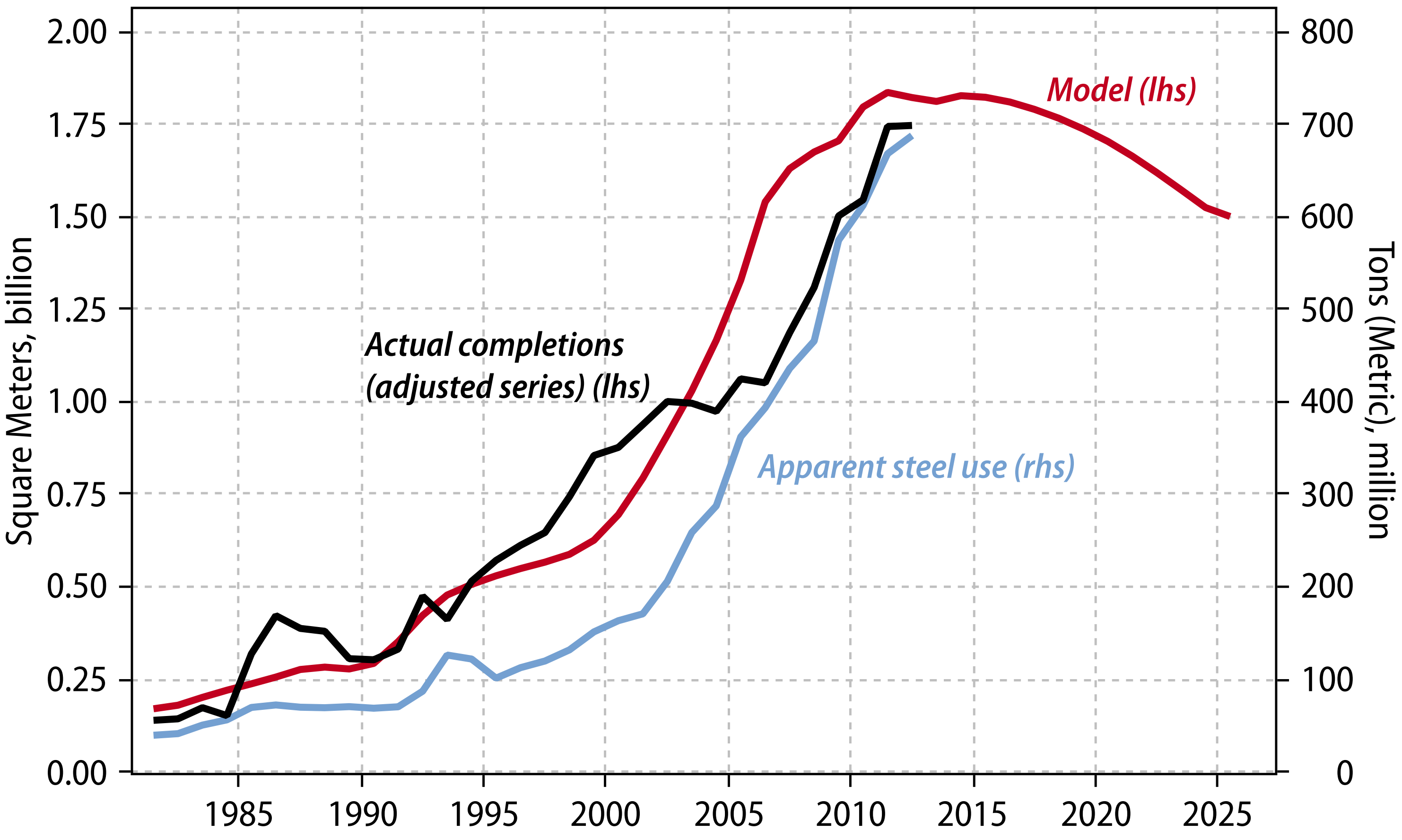
• The main reason for this decline is the evolution of upgrading demand—when existing urban residents move from old, poor quality flats into bigger modern ones. This type of demand will fall by two-thirds over the next decade. Demand created by urban population growth (including migration) has also peaked, but will remain stable for the next few years and then decline modestly as the pace of migration gradually slows.

• Housing in China is thus shifting from a growth industry to a mature and declining one. While we do expect the current downturn to eventually right itself, the shift in the fundamentals points to continued weakness in construction even when prices and sales do bounce.

Construction volume has plateaued and will start falling

China's construction and steel demand are peaking and set to decline

Gross residential completions, actual and projected, and steel use

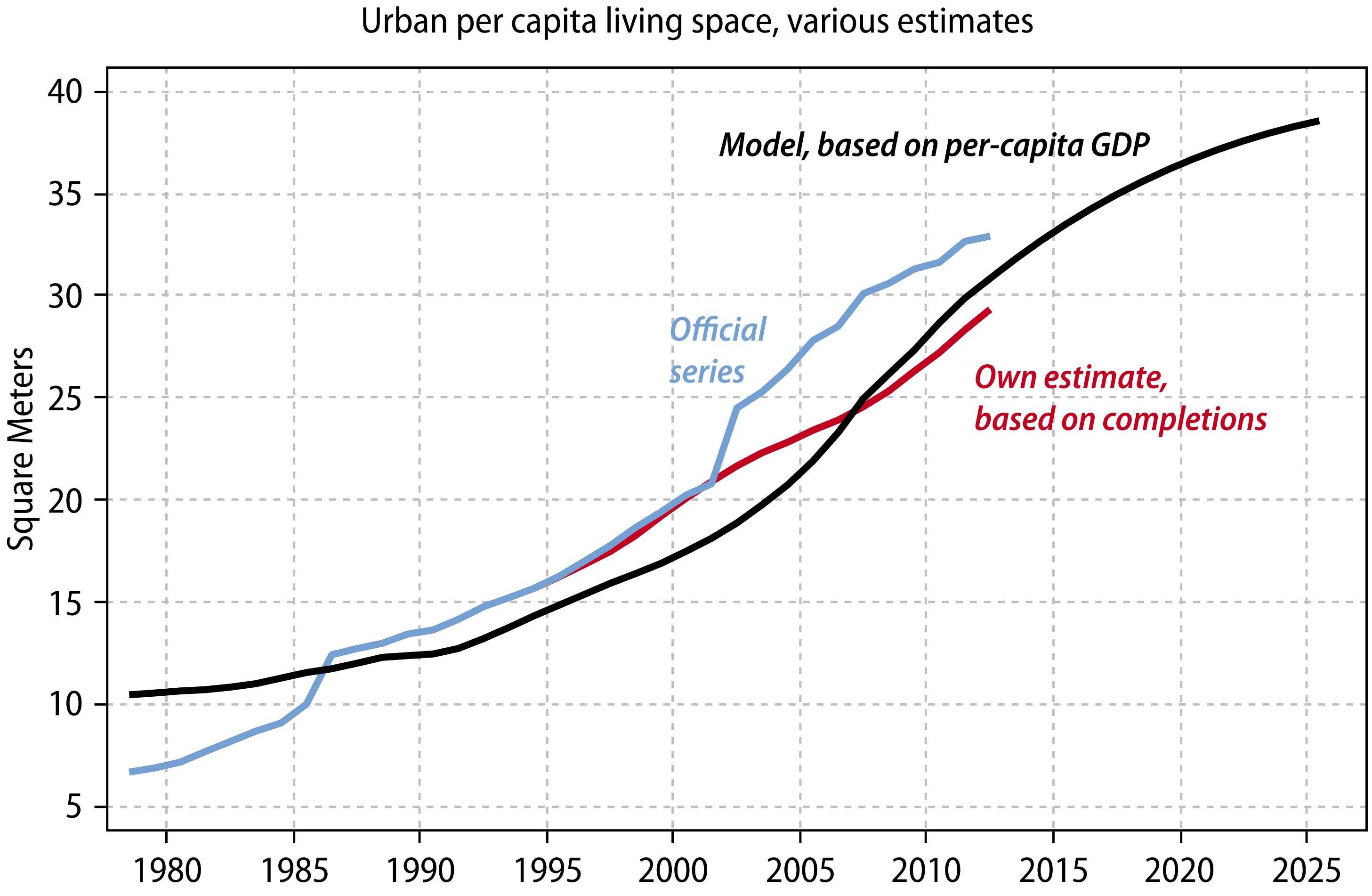


CEIC, NBS, Gavekal Data/Macrobond

China's housing market has completed its high-growth phase. According to our model, housing demand has been hovering around its peak level since 2011. In coming years total housing demand will gradually decline, with the model projecting construction volume to fall roughly 15-20% from current levels by 2025. This trajectory is a function of demand for housing getting more saturated: future increases in income will lead to smaller incremental gains in demand for housing.

Per-capita living space will continue growing but at a much slower rate

China is headed for 40 sq m of floor space per person



CEIC, Gavekal Data/Macrobond

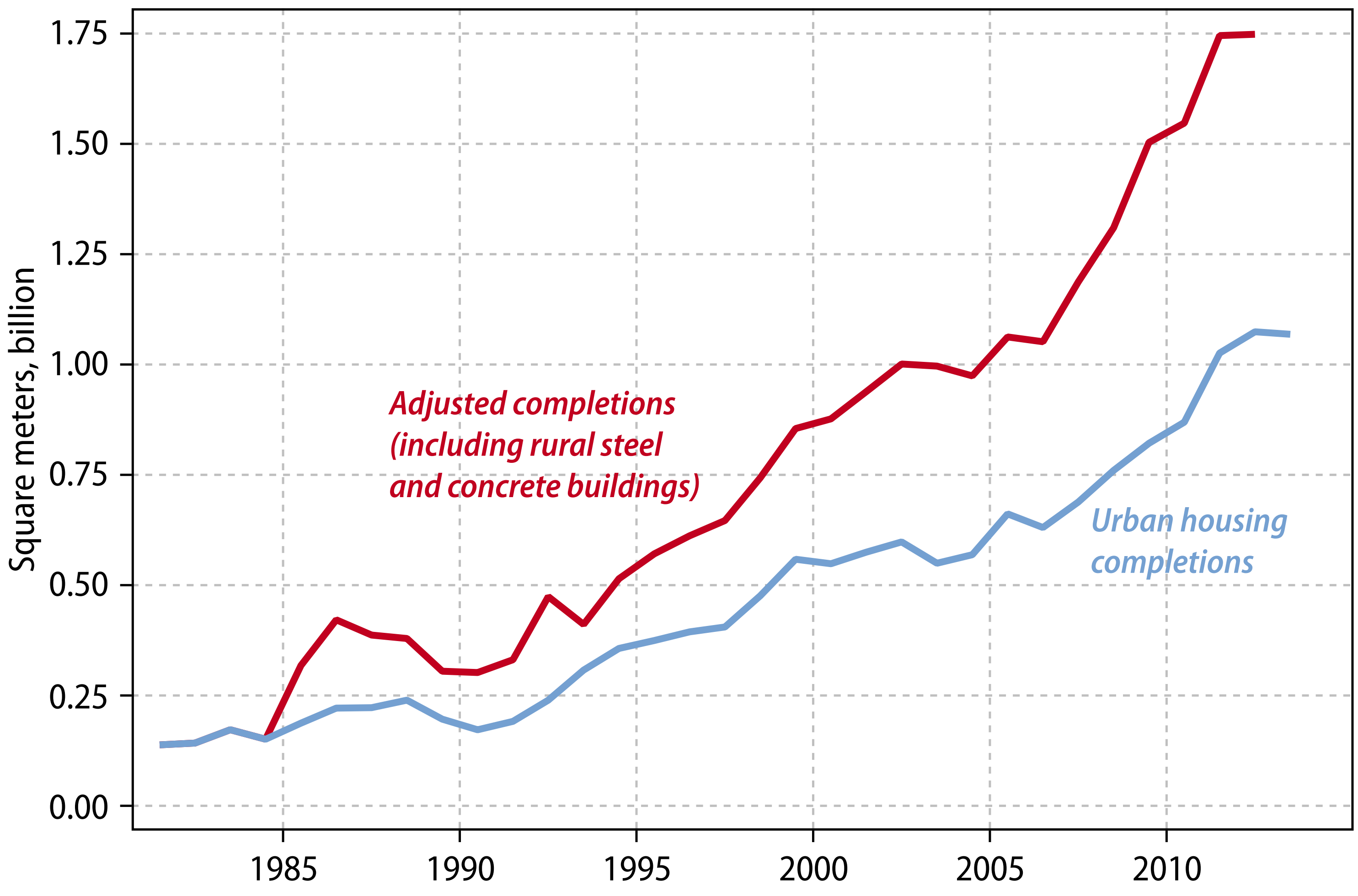
Our model treats modern urban apartments as a durable consumer good, and uses per-capita living space as a proxy for their diffusion through the urban population.

China's official data overstate the absolute level of living space but understate the speed of growth in last decade. For our model we construct an alternative measure based on construction data, which has a better link with income.

Based on parallels with Taiwan, we expect per-capita living space to reach 40 sq m by 2025, but gains to slow as we get closer to that level.

The true level of construction

China's official construction data need to be adjusted for rural activity



CEIC, Gavekal Data/Macrobond

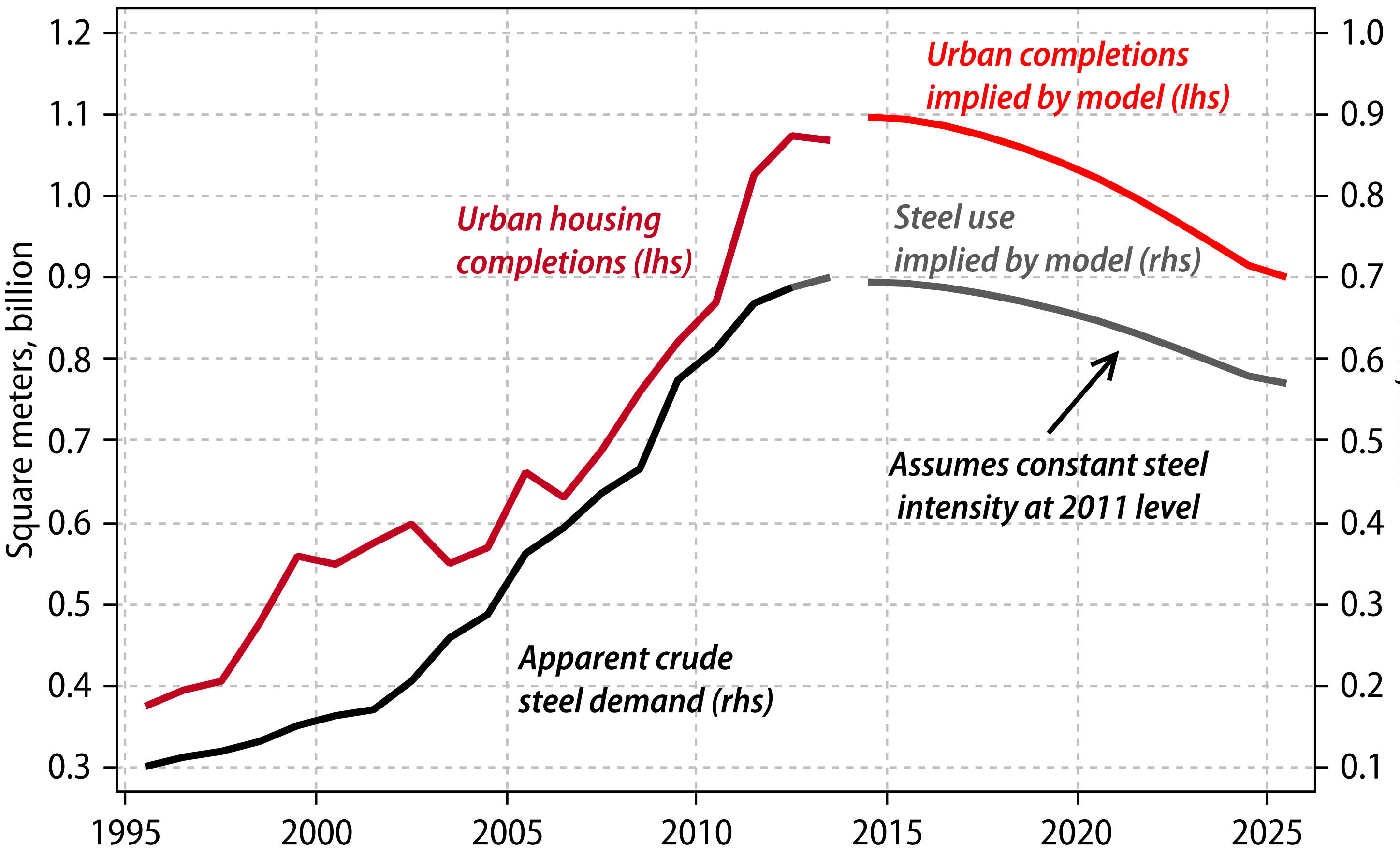
NBS urban housing completions data have understated the actual level of supply, especially in the late 2000s. The fast expansion of urban boundaries and housing built in the rural outskirts of cities (and occupied by urban residents) push up actual supply.

We adjust urban housing completions by including rural steel and concrete construction, which moves in line with urban rather than rural trends. True urban housing completions, after this adjustment, would have been nearly 1.8bn sq m in 2011-12.

Implications for construction volume and steel use

Our model points to a 15% decline in construction volume over 10 years

China construction volume indicators, actual and projected

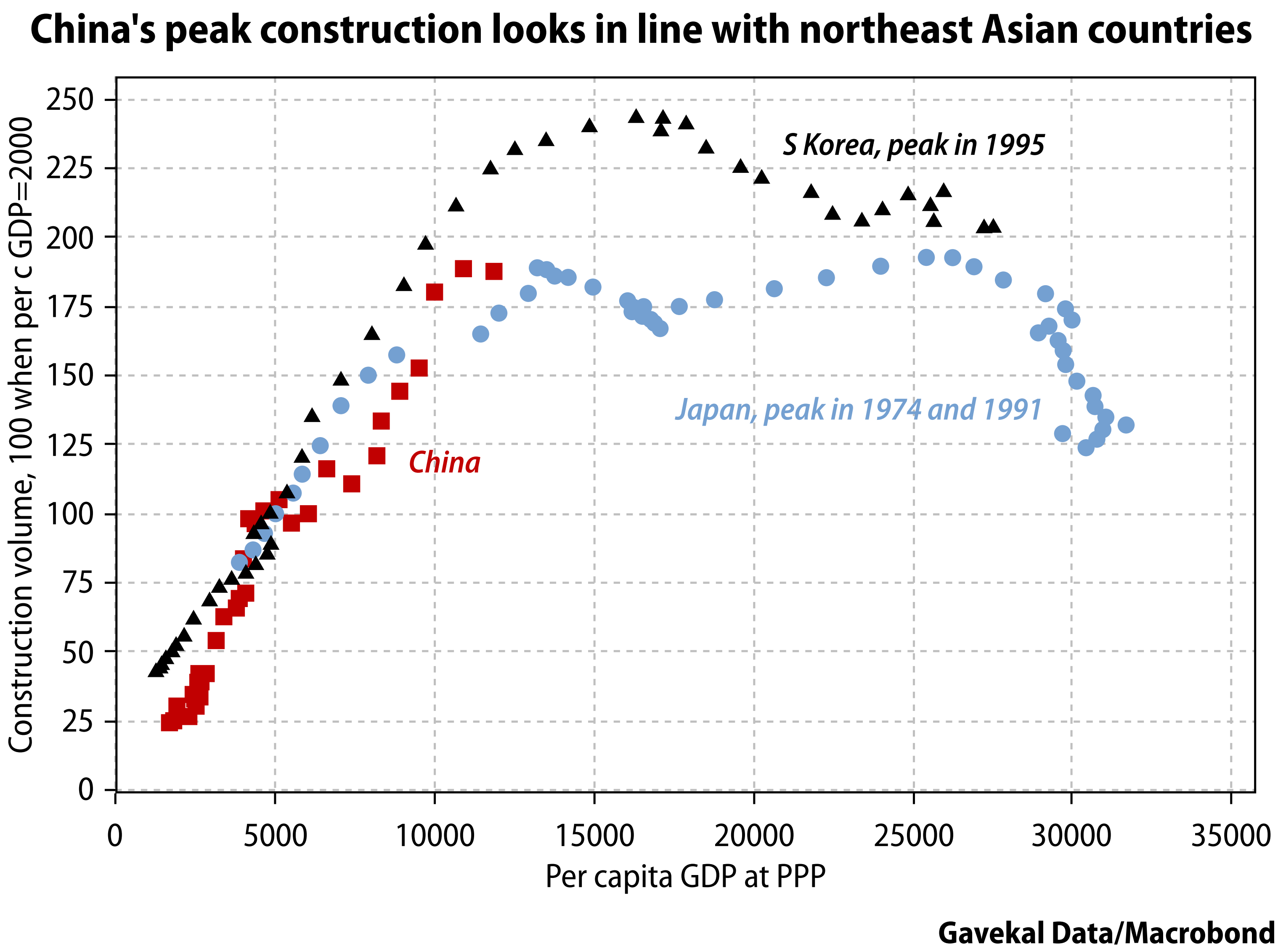


CEIC, Gavekal Data/Macrobond

Our model projects that completions will start declining in 2015, and steadily fall by 1-3% a year to 2025. In terms of the official statistics on urban housing completions, this means a drop from 1.06bn sq m in 2013 to about 900mn sq m in 2025.

If we assume steel use per unit of construction is constant, our model points to a decline in steel use from the 700mn tons in 2013 to 570mn tons in 2025. The actual trajectory may be flatter if steel intensity continues to rise. Industry forecasts of 1% growth in total steel demand over 2014-15 have incorporated this sober outlook for volume growth.

Peak construction in Asia



* Construction volume for Japan is housing starts; for Korea and China, housing completions.

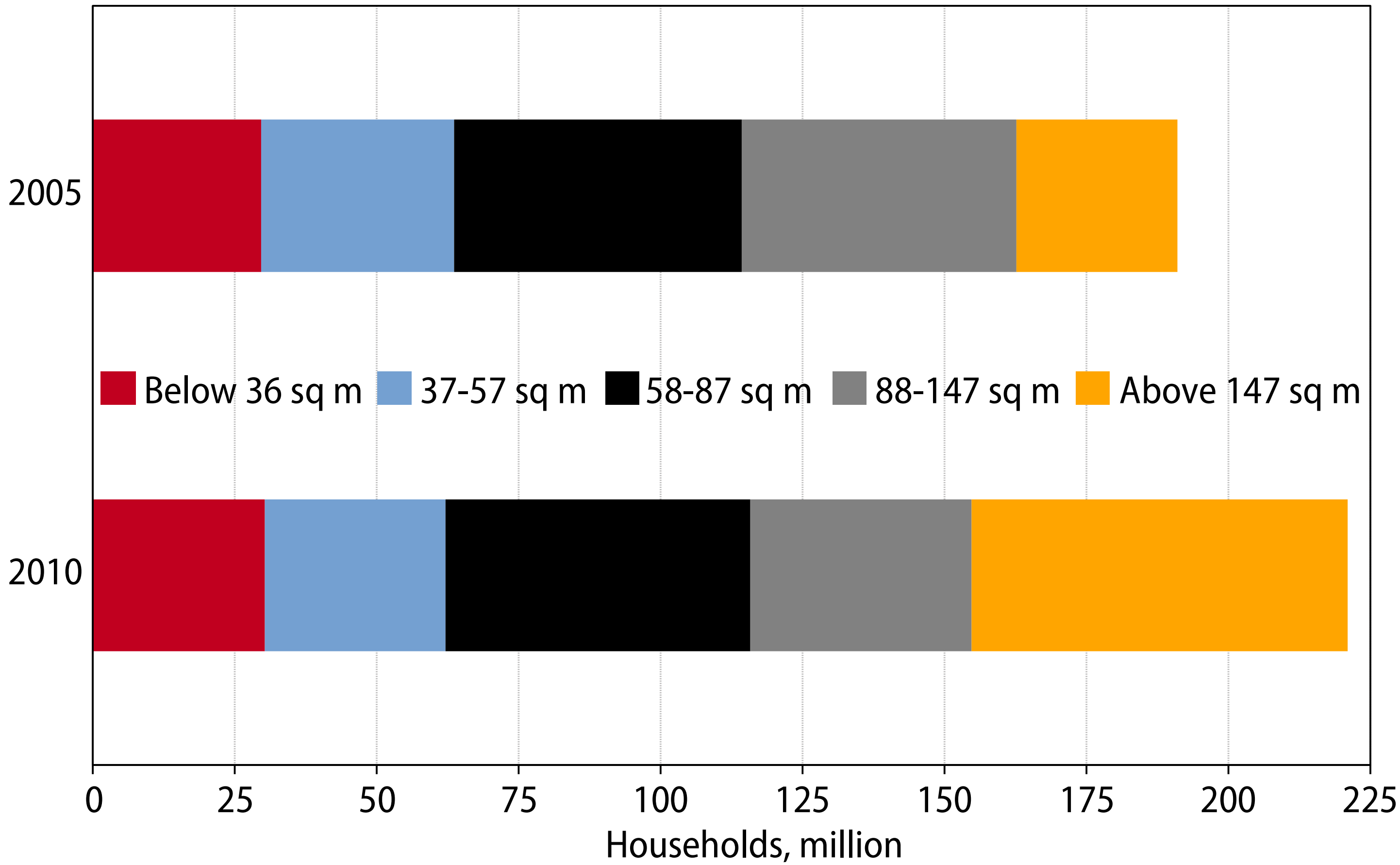
Our model indicating China is already at peak construction is reasonably in line with the experience of South Korea and Japan. Both countries reached peak construction around per capita GDP of US$15,000 at PPP. China has not quite reached this level quite yet, but current PPPs also probably somewhat understate its income.

In both Japan and Korea, GDP growth slowed after peak construction was reached. Though Japan reached its first peak in 1974, the property price bubble in 1985-1990 led to the peak being reached for a second time in 1991.

A large under-housed population still persists

China has had a big expansion of high-end housing

Number of urban households, by size of dwelling unit



NBS census data, Gavekal Dragonomics research

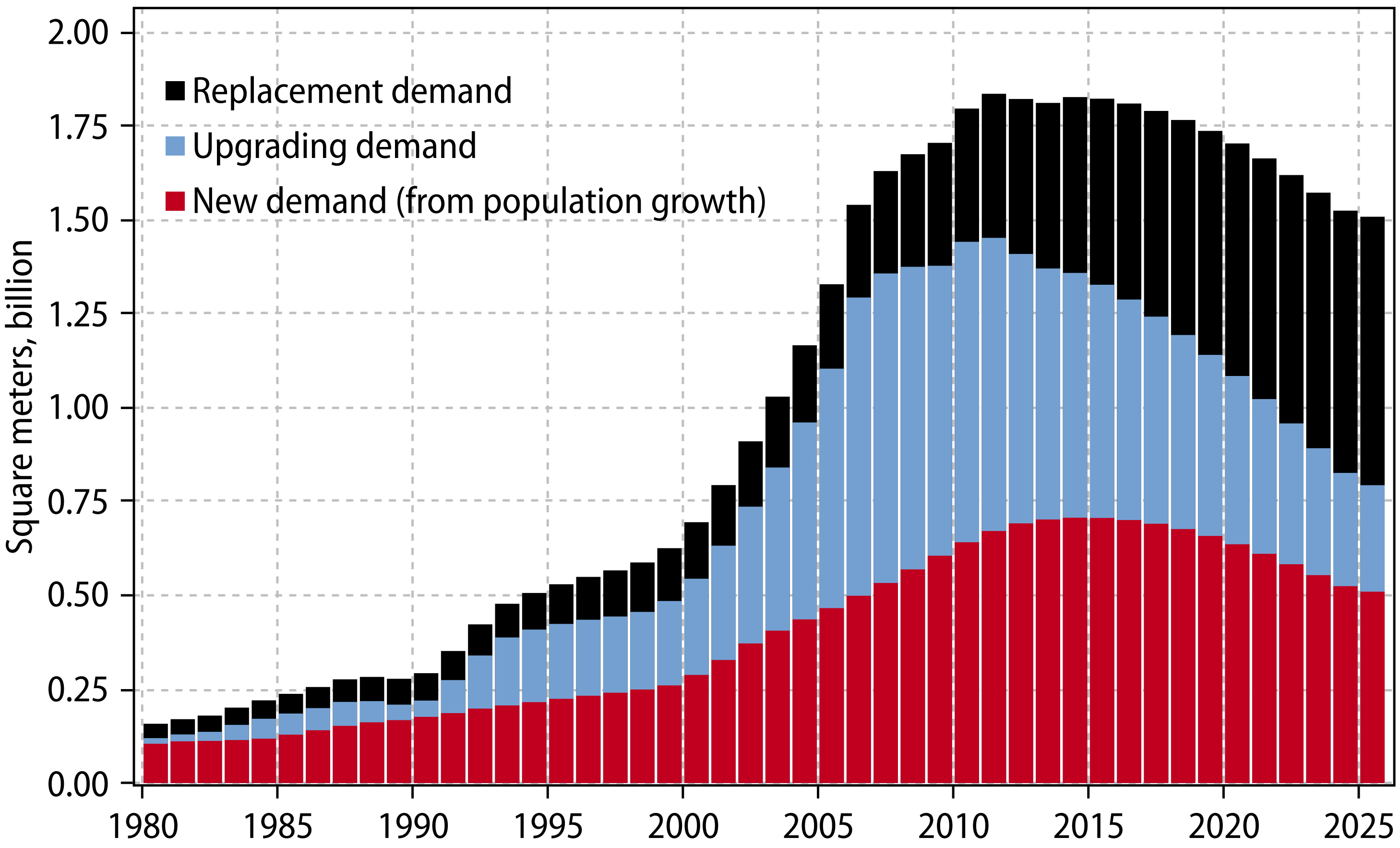
China's housing construction boom has been focused on the higher end of the market. Census data show the number of households living in large apartments increased sharply in 2005-10. But the population living in much smaller units did not change much: 50mn households live in units averaging just 30 sq m in size, a figure little changed over that period.

Construction volumes can be supported by the potential demand from households in substandard housing, but this requires greater government subsidies and better affordability.

The changing sources of housing demand

The fall in China's housing demand will come mainly from upgrading

Model of annual housing construction volume, by source of demand



Gavekal Data/Macrobond

We divide total housing demand into three components. While "upgrading," or the demand for larger housing units by current urban residents, has dominated for the past decade, future demand will come more from urban population growth and replacing old housing.

In this context, attempting to sustain housing sales at an artificially high level would be a losing strategy. But recent measures to ease migration to smaller cities and accelerate urban renewal projects are logical as they essentially attempt to strengthen migration and replacement demand.

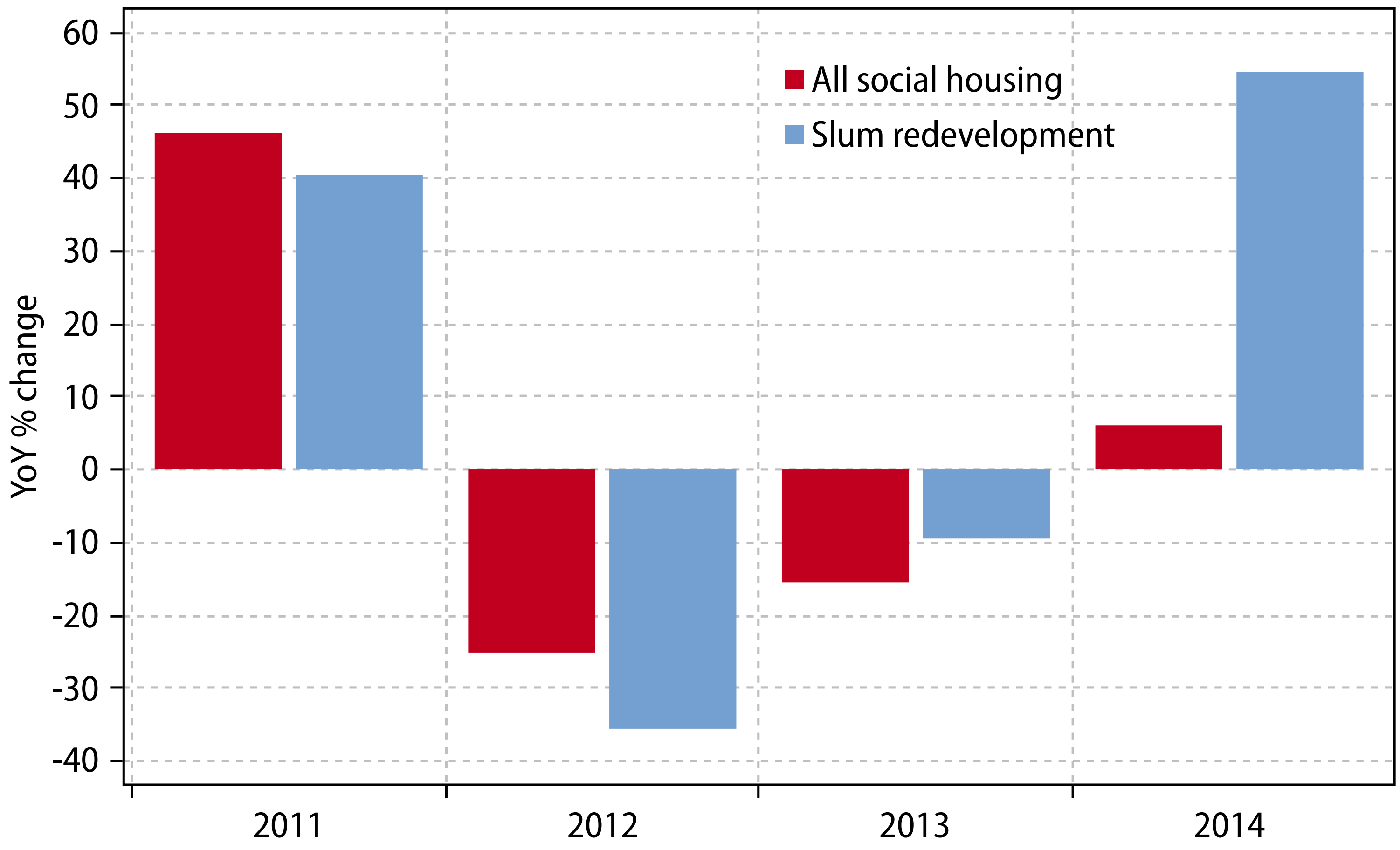
Part 2: Housing policy

- With upgrading demand fading as the main driver of the housing market, government efforts to manage housing and construction demand will increasingly need to focus on the other components: migration and replacement.
- Social housing policy has had a number of missteps but now seems to be focusing on urban redevelopment projects: tearing down substandard housing in urban areas and building new units that are higher quality but still relatively affordable. Essentially this amounts to using government policy to accelerate the depreciation of the housing stock, thus supporting construction activity. But it is also related to migration policy: the new urbanization plan calls for 100mn rural migrant workers to be entitle to subsidized social housing and other welfare by 2020.
- Lowering barriers to migration is essential to resolving the oversupply of housing in smaller cities. The new urbanization plan seems clearly aimed at dealing with this problem, as it retains restrictions on migration to large cities but eases them for smaller cities. Other reforms will also encourage migration by making it easier for rural residents to move to cities without losing their property rights in their home village.

Social housing

The focus of social housing is shifting to slum redevelopment

Change in land supply for social housing; 2014 plan or estimate



CEIC, Gavekal Data/Macrobond

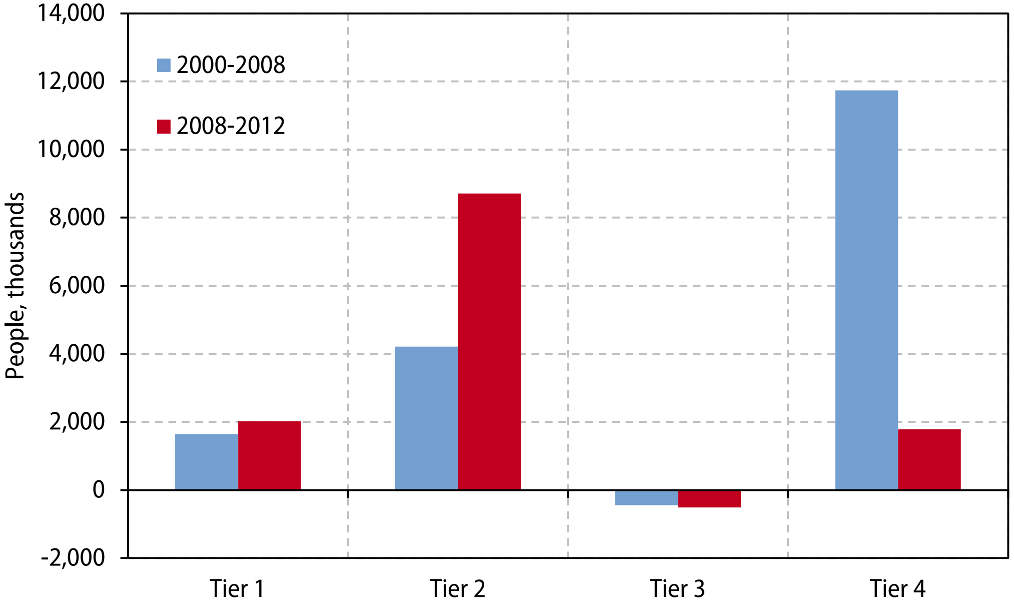
Under new urbanization policies, rural migrants will be eligible for social housing. It now seems clear that the social housing program will be extended past the end of current targets in 2015. According to NDRC, another 30mn units of social housing are still required, on top of the 36mn that will have been built by end-2015.

The new government has already shifted the focus of social housing toward redevelopment of slums (and urban villages where migrants live). These projects should have fewer planning problems since they are based on existing residential patterns.

The supply-demand mismatch in smaller cities

Population flows continue to favor big cities

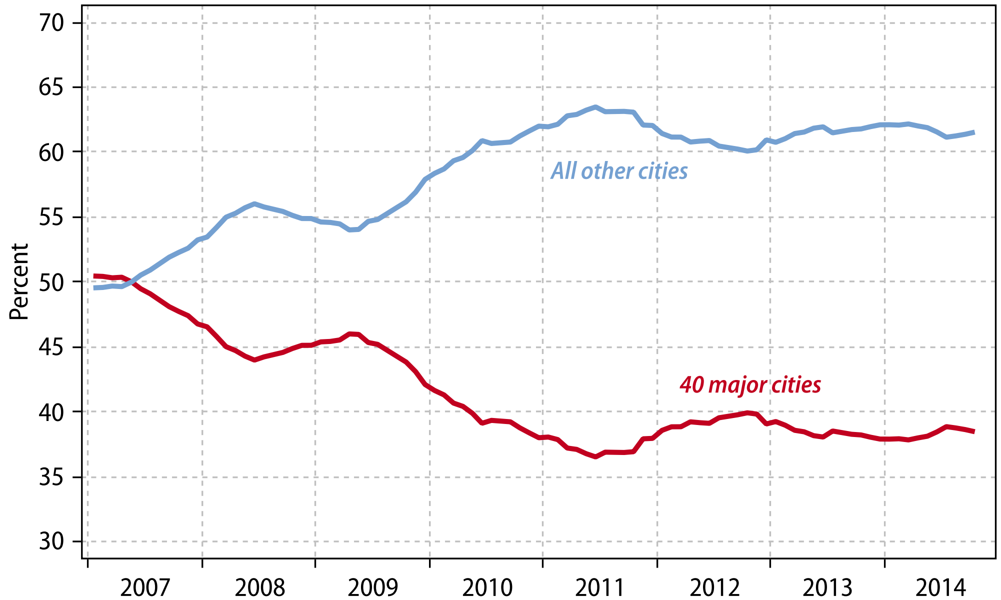
Average annual change in population, by city tier



CEIC,Gavekal Dragonomics research

China's smaller cities account account for a majority of the market

Share of total property sales



CEIC, Gavekal Data/Macrobond

While smaller (Tier 4) cities had rapid population growth in earlier years, the pace has slowed sharply since 2008. Population growth in larger cities by contrast has accelerated. Yet housing does not match these trends: supply growth in big cities is limited, while many smaller Chinese cities seem to be planning for a more rapid pace of urbanization than they are actually achieving.

Since 2008 the share of national property sales (which should be a decent proxy for construction) accounted for by smaller cities has increased significantly. This seems to point to a growing mismatch in housing supply and the fundamental demand (proxied by population growth). While data is scant, inventories are clearly high in smaller cities and fundamentals weaker.

Hukou reform

Government policy still favors small cities over large ones

Chinese cities by estimated 2014 population and migration policy

Group	Population (thousands)	Share of urban population	*Hukou* policy stance
All cities	758,360	100%	
Under 500,000	335,079	44%	"Complete opening"
500,000 to 1mn	103,030	14%	"Orderly opening"
1mn to 3mn	100,976	13%	"Reasonably determined"
3mn to 5mn	65,124	9%	"Appropriately controlled"
Over 5mn	154,151	20%	"Strictly controlled"

United Nations, State Council, Gavekal Dragonomics research

A new urbanization plan was released in the middle of 2014. The limits on migration from household registration (*hukou*) policies big cities have stayed the same, but the criteria for changing registration have become more transparent.

Given that relaxation of migration restrictions is focused on smaller cities, the intention of the plan seems to be to drive migration flows to these cities. If this policy is successful, it should help these markets digest high inventories of housing.

The pattern of future migration

A lot of future urban population growth will happen in small cities

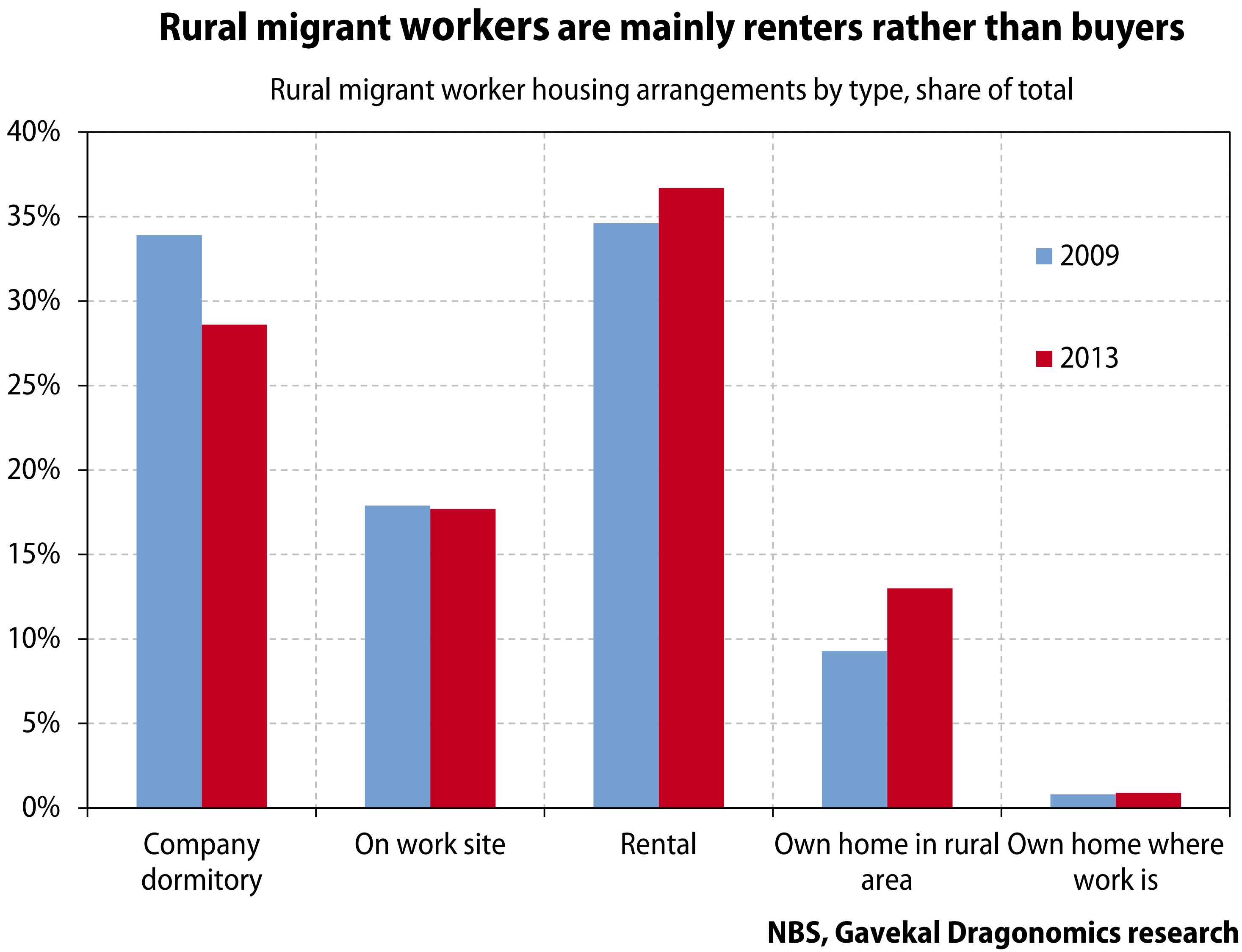
Population projections for Chinese cities, in thousands, ranked by size in 2014

Group	Population 2014	Population 2024	Change	Share of change
All cities	758,360	934,702	688,467	100%
Under 500,000	335,079	399,734	64,655	37%
500,000 to 1mn	103,030	130,864	27,834	16%
1mn to 3mn	100,976	126,259	25,283	14%
3mn to 5mn	65,124	83,688	18,564	11%
Over 5mn	154,151	194,158	40,007	23%

United Nations, Gavekal Dragonomics research

While migrants have tended to favor bigger cities because of the higher wages on offer, overcrowding and high living costs are also a deterrent. Government policy is unlikely to be successful in pushing people to move to economically stagnant or isolated towns, but not all small cities face such a fate: the standard urbanization projections from the UN show that more than half of future urban population growth will in fact happen in cities that are relatively small today (less than 1mn people).

Migrant workers



Even if migration to smaller cities does pick up, the issue from a housing market perspective is that these migrants have never been significant buyers of urban market housing. This is both because their incomes are relatively low, but also because they fear losing their ownership rights in rural land. Hukou reforms can help alleviate these worries and raise rural incomes. But ultimately much of the demand for housing from this population will have to be met by public-sector solutions rather than private markets.

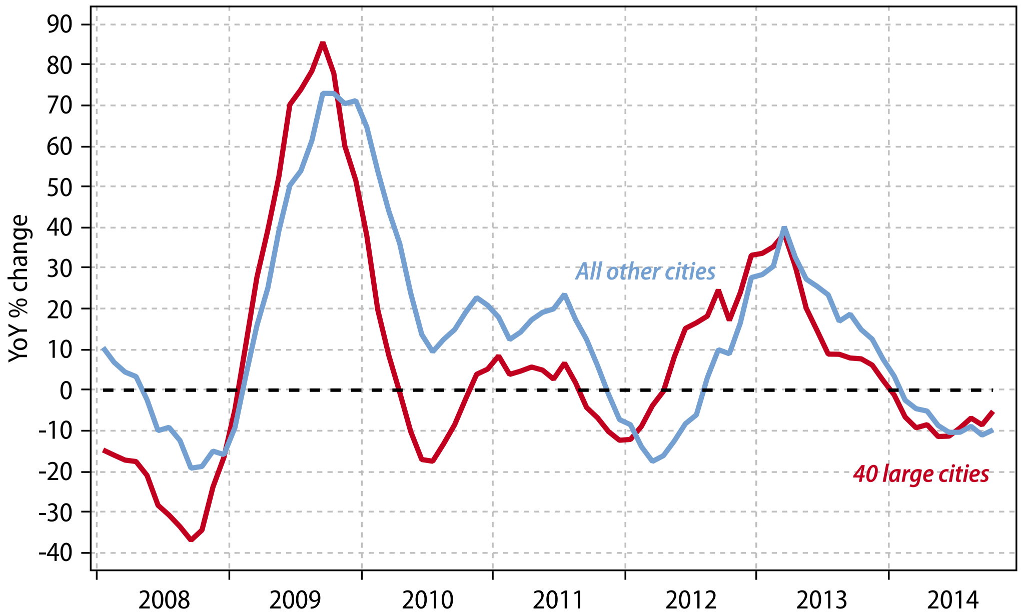
Part 3: Cyclical outlook

- In this lengthy downturn, housing policy has evolved from disguised easing at the local level, to open easing at the local level, and most recently to public loosening at the national level with looser mortgage policy and rate cuts. As a result, sales volume and prices in recent months showed early signs of bottoming out. The end-November rate cut will boost sentiment further, and a cyclical rebound in housing sales is almost certain in the coming six to nine months.
- Full year sales will fall about 5% in 2014. But the volume will still be the second-largest in history. Compared with 2010, average annual growth in sales has slowed to 4%, substantially lower then high double digits growth in early years. In our view, the trend rate of sales growth will continue slowing toward zero by 2015, which means the cyclical rebound will not be a strong one and will be followed by more declines later.
- In addition, there are still large housing inventories that still need to be digested in many markets. Therefore the expected rebound in sales is unlikely to deliver much boost to construction volumes. Starts growth has come back into positive territory mainly thanks to state-led social housing construction.
- Completions growth has been much stronger in 2014 than we expected, and is on track to be a record 1.1bn sq m. We think underlying housing demand has peaked, but completions are a very lagging indicator of this reality.

Sales

China's large cities, not small ones, are leading the sales cycle

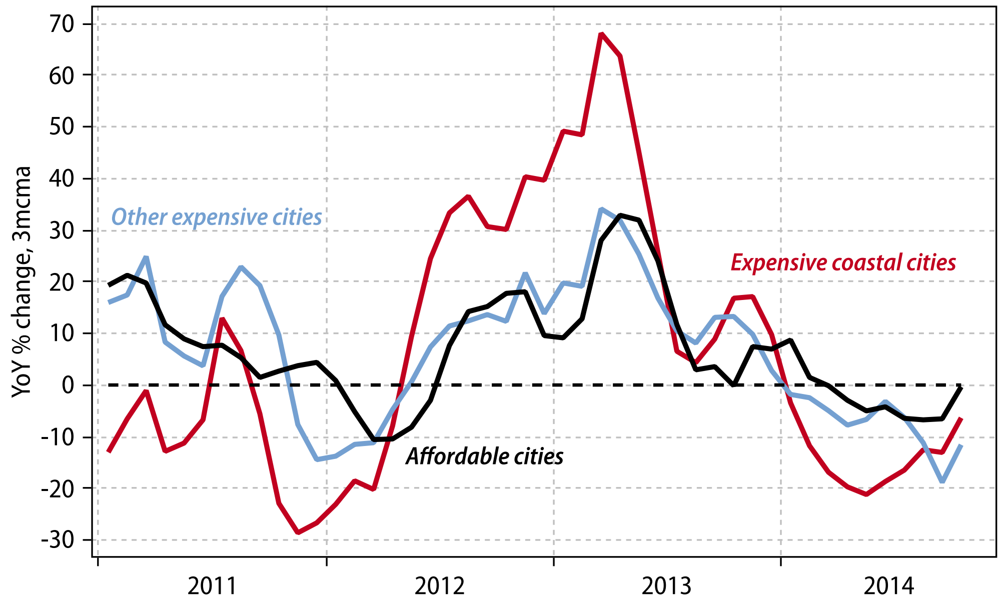
Sales volume by city group, 5mcma



CEIC, Gavekal Data/Macrobond

The cities that led China's correction also lead the recovery

Housing sales volume in 40 major cities, by groups of cities

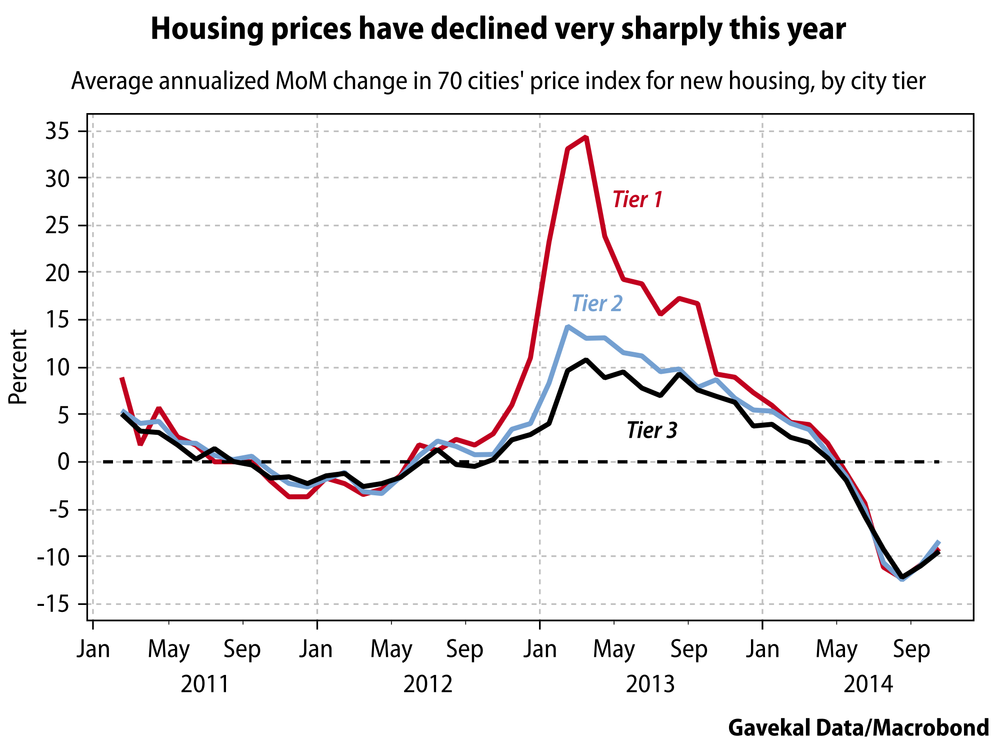


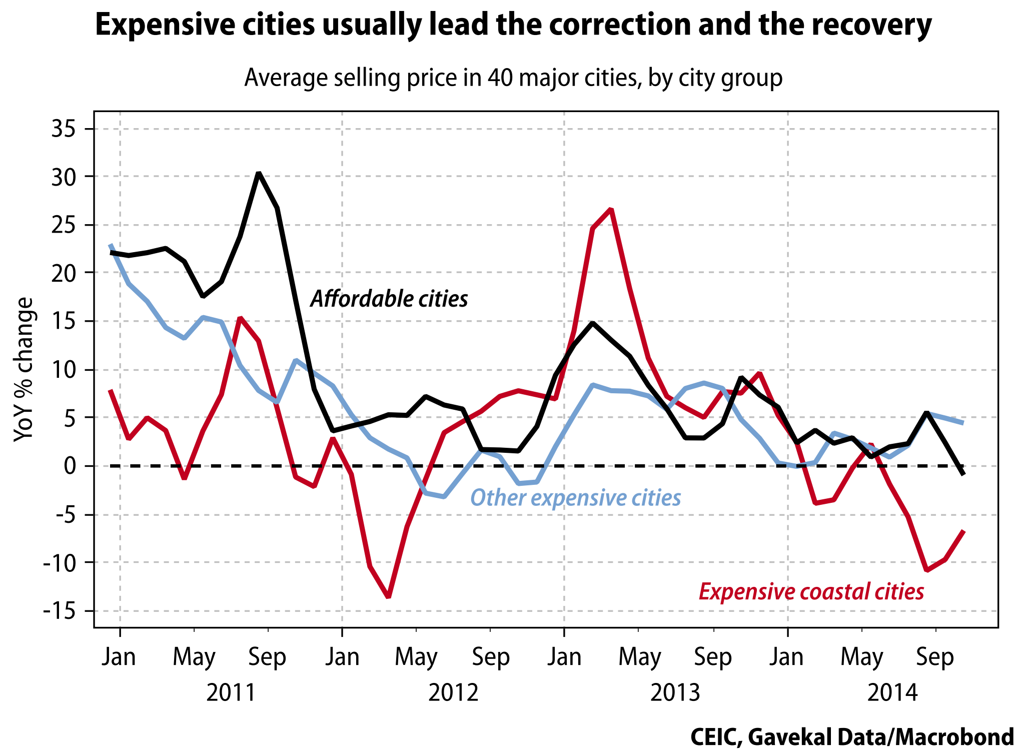
CEIC, Gavekal Data/Macrobond

The fall in property sales has been much more prolonged than the last down-cycle, but the decline narrowed sharply in September and October. The improvement came after several policy measures to encourage housing sales, though in the absence of strong credit growth. Full year sales volume in 2014 will be down 5-10% from 2013, but the level is still the second-highest on record.

Though we believe housing demand will see little growth in coming years, a cyclical rebound is now in the cards after a prolonged downturn of 20 months. The geographical pattern of sales is similar to 2012 when coastal cities with high prices led the cycle. Now these expensive cities may have already reached the bottom and other cities should follow suit.

Prices



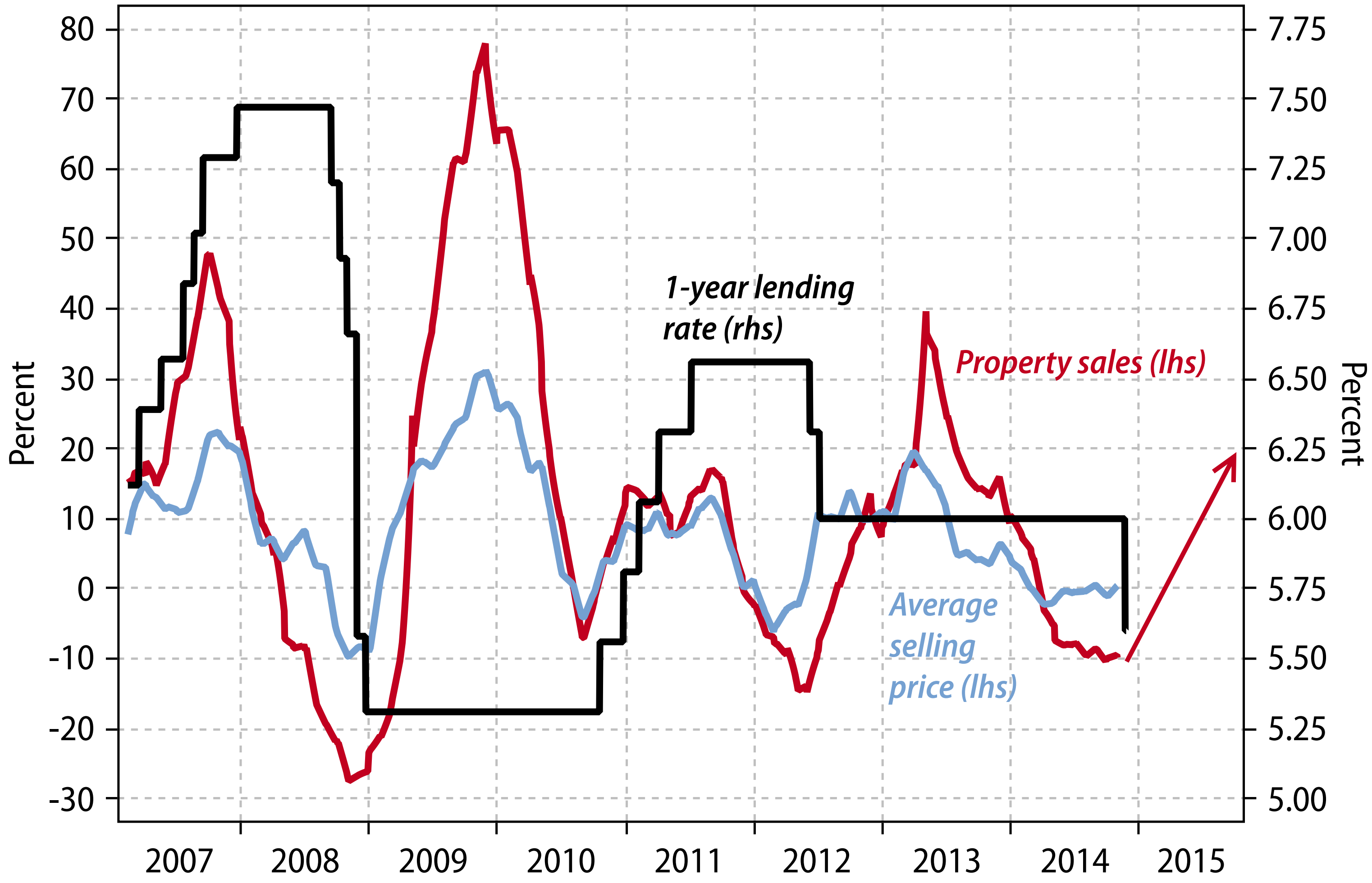


The declines in housing prices in 2014 are the deepest since 2011, and have been mainly led by Tier 1 cities and the more expensive Tier 2 cities. This means it will take longer for price growth to get back to positive territory. But signs of a bottom have appeared in Q4: NBS indexes show that the MoM annualized decline narrowed to 9.5% in Oct from 11.7% in Sep and 13% in Aug.

The price decline has been worst in expensive coastal cities, which is less concerning as their demand fundamentals remain strong for the medium term. Those markets have seen price declines bottom in recent months. Given that housing prices tend to follow the trend of housing sales, this negative trend should gradually reverse as sales continue improving.

Interest rates

Housing sales and prices rebound after rate cuts



CEIC, Gavekal Data/Macrobond

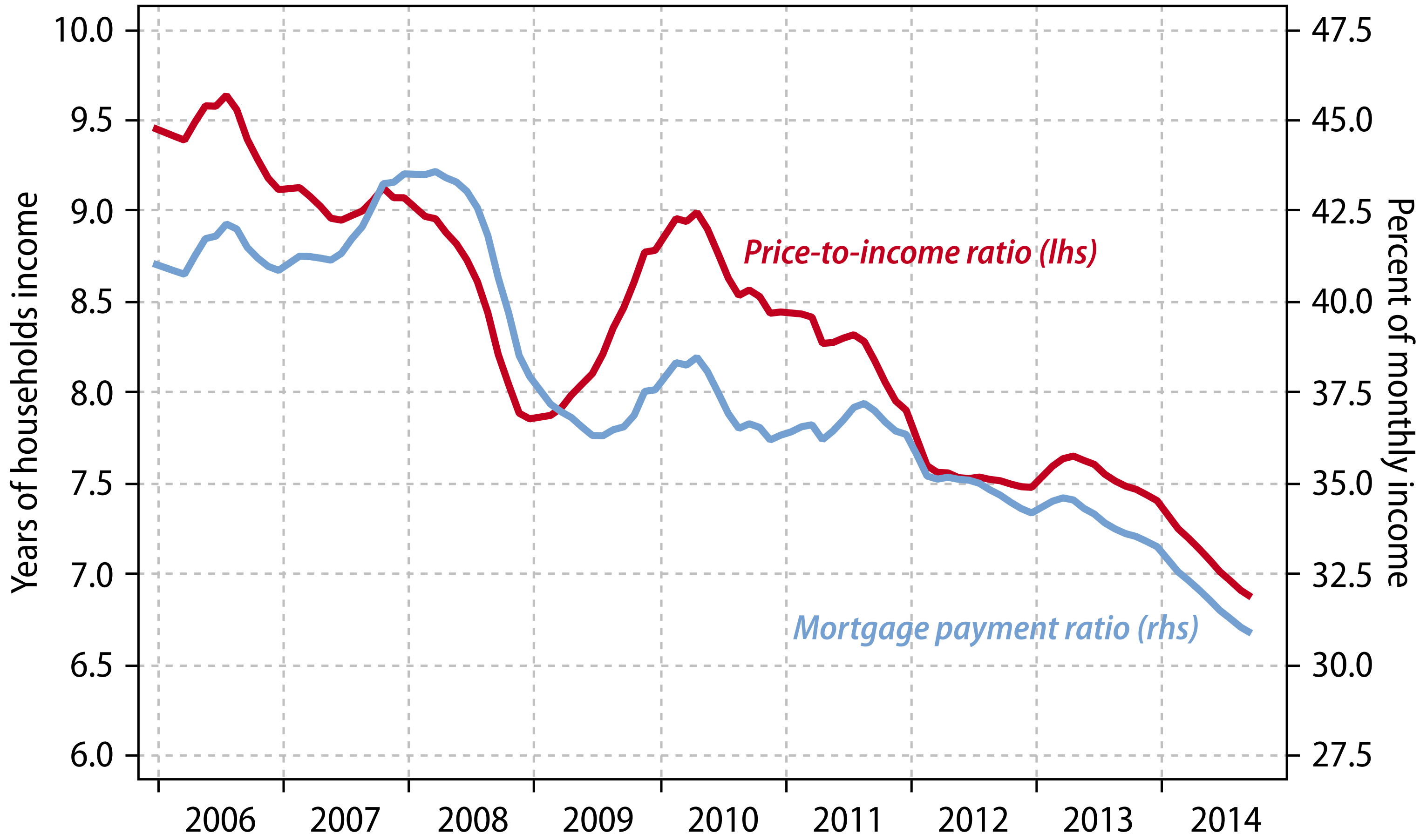
Historically the housing market has always responded positively to interest rate cuts. The latest cut in November will boost market sentiment further, so sales and prices will soon bottom out and rebound.

The question is how strong the rebound will be. Given that housing demand is peaking, sales volume in 2015 is unlikely to exceed 2013 level by a big margin. But 2015 should see YoY sales growth of around 5%, and prices will increase modestly.

Affordability

Housing in urban China is getting more affordable quickly

Affordability measures for a 100 sq m unit at the average price

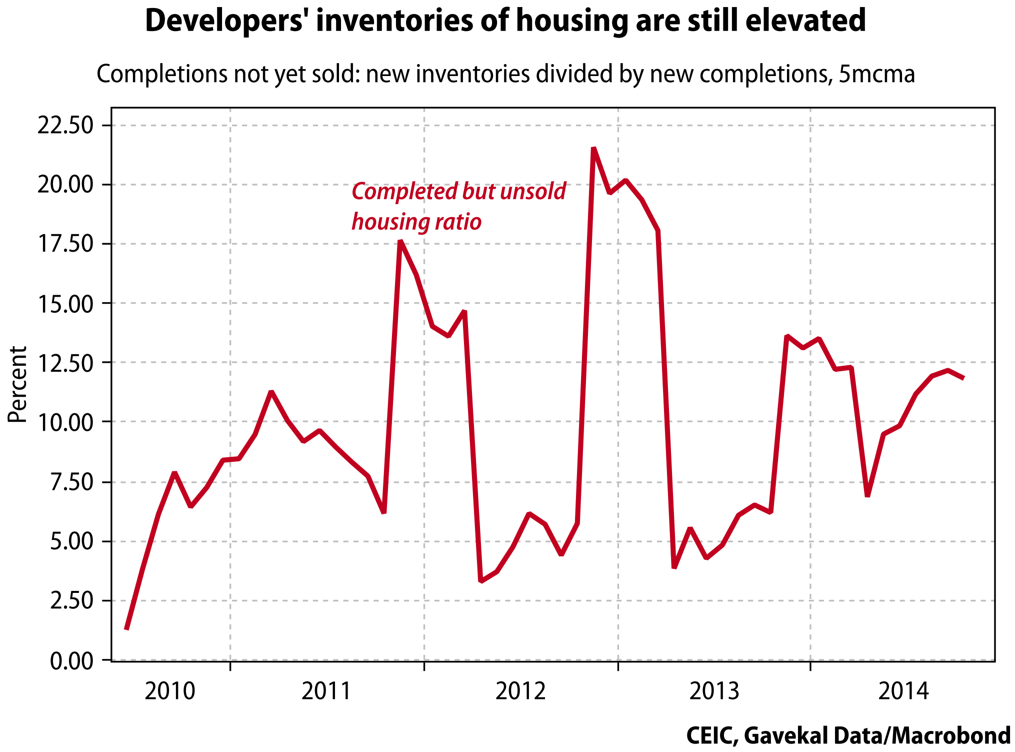


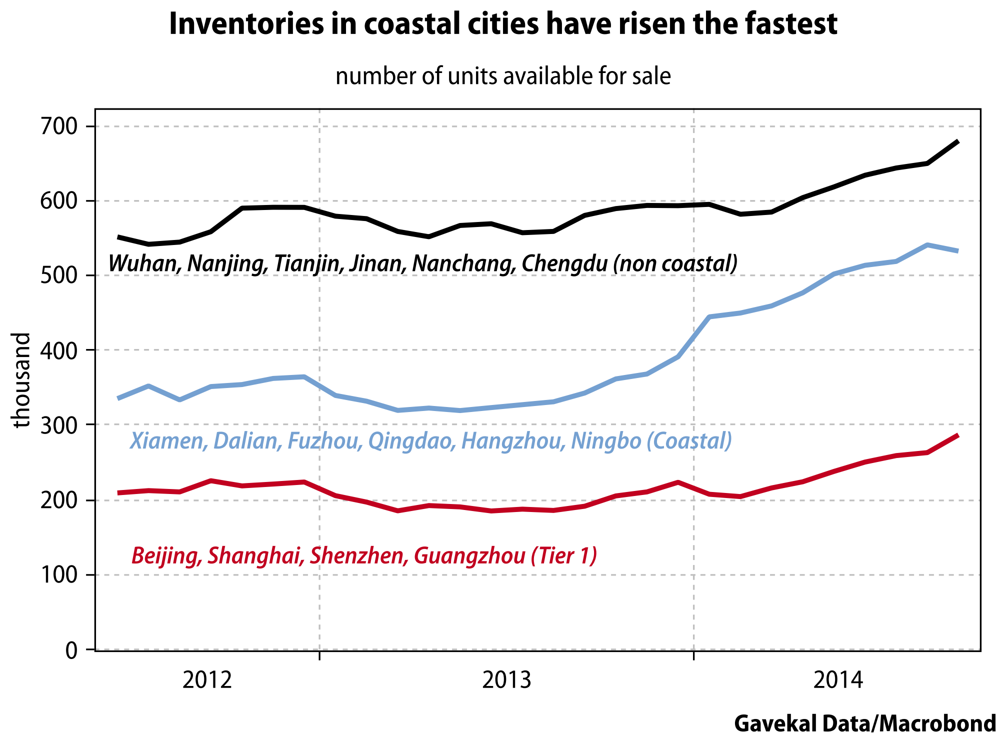
CEIC, Gavekal Data/Macrobond

The huge increase in physical housing supply and government interventions to contain demand have kept growth in housing prices contained in recent years. Affordability has been stable with price and income growth roughly in sync.

In the recent correction, average housing prices fell 10% from their peak in early 2013, while income growth kept growing by about 10%. This divergence pushed down the price-income-ratio to 6.8. Mortgage affordability measures have also improved with lower mortgage rates contributing.

Inventories





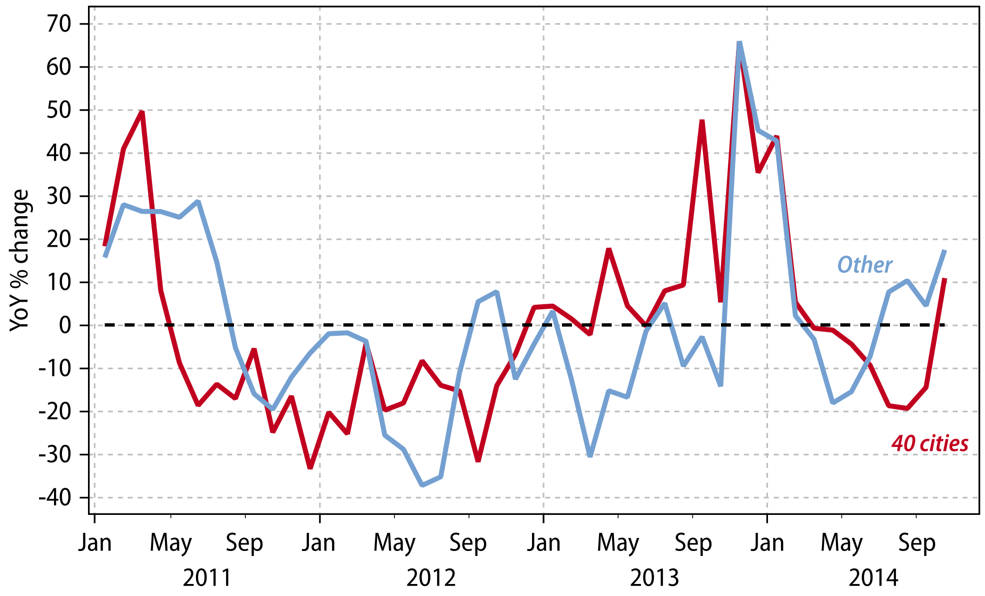
Inventory data is sketchy. One way to measure the trend is to compare the monthly change of NBS unsold units held by developers with the monthly completions. As the chart shows, the ratio has been steadily rising in the current downturn and is now about 12.5%. In other words, out of every 100 units being completed, developers have 13 left in their own hands.

City-level data measures the units ready for sale, whether completed or not, and should be a more reliable gauge. The absolute level of inventories in major cities that publish data has risen throughout 2014. Supply has run ahead of plausible estimates of fundamental demand, so inventories need to come down and construction plans need to adjust to more realistic growth expectations.

Land

Land sales in smaller cities are doing better

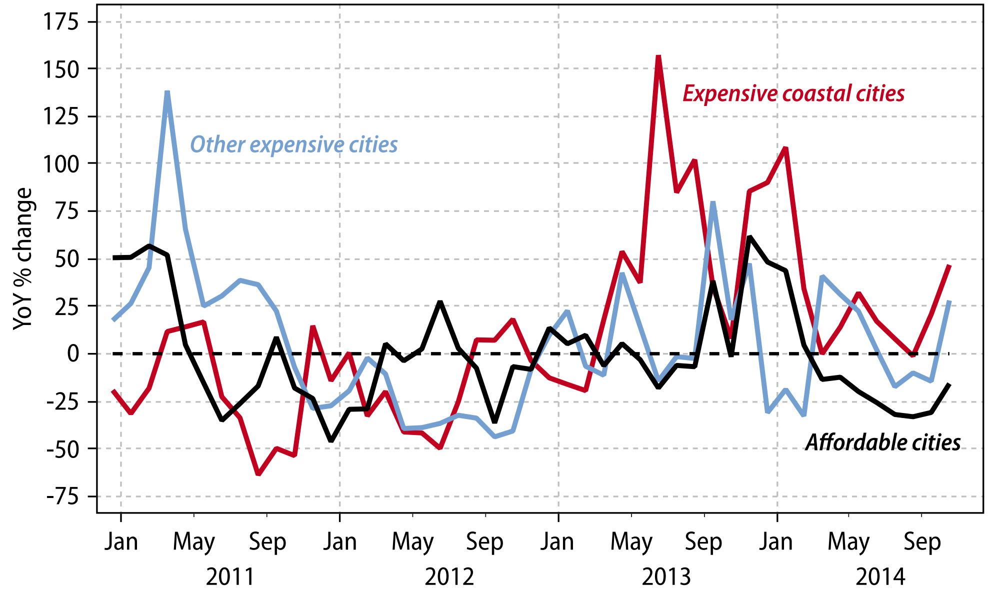
Land area sold, 3mma



CEIC, Gavekal Data/Macrobond

Land sales in the most expensive cities continued outperforming

Land area sold in 40 major cities, by city group, 3mma



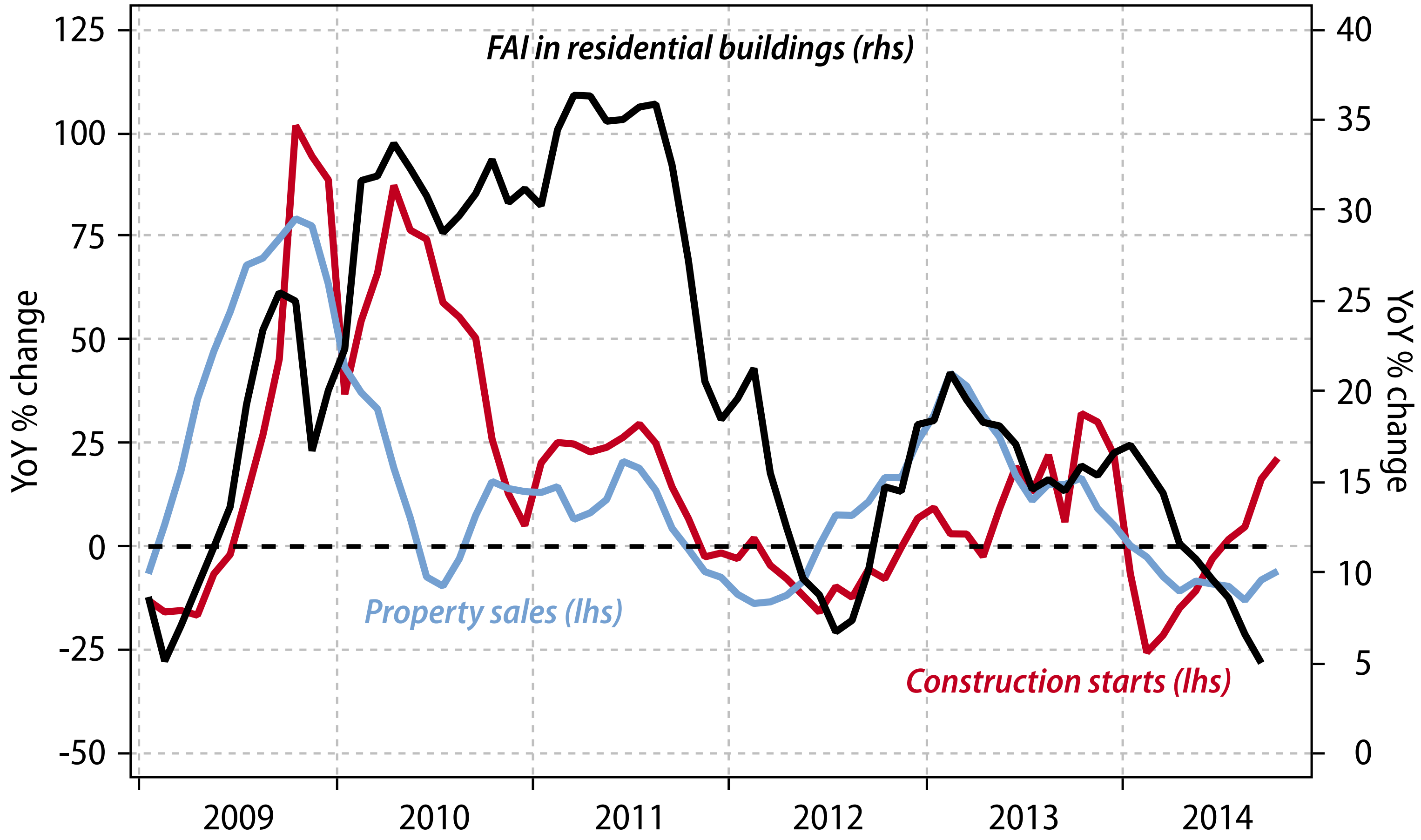
CEIC, Gavekal Data/Macrobond

Although land sales sharply in early 2014, there has been a surprising recovery, with the volume of land sales up 15% YoY in Aug-Oct. The rebound is most likely a response to relaxation of government housing policies since midyear. Smaller cities turned around earlier but big cities are still hot.

Investors' appetite is strongest for land in the most expensive cities, reflecting their solid fundamentals. In 2013, these cities had land sales growth of 70%, well above the 8.8% growth for nationwide land sales. They are likely to outperform others again though by a much smaller margin.

Rebound in starts is out of sync with weak sales and investment

Property indicators, 5mcma



CEIC, Gavekal Data/Macrobond

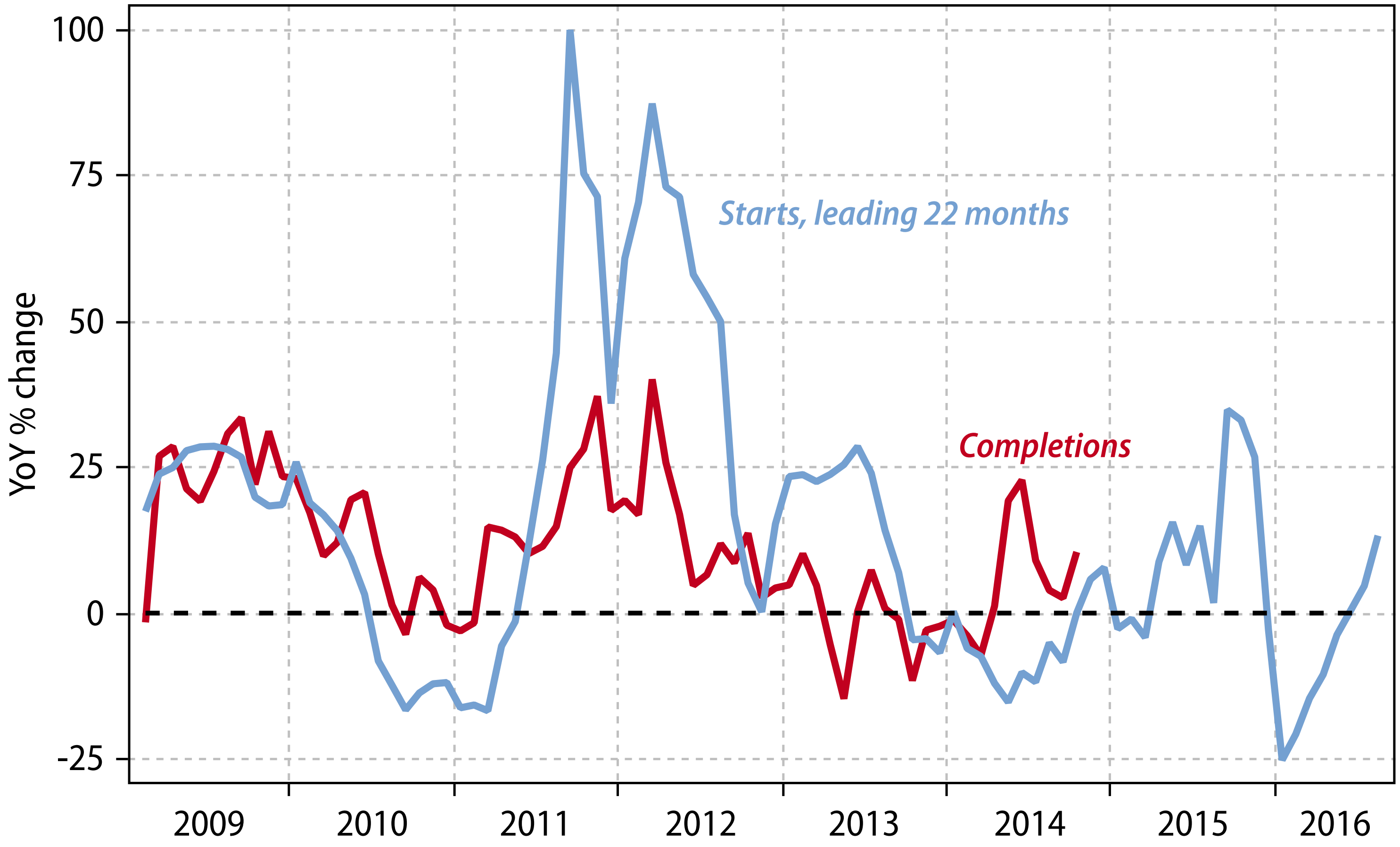
Cycles in construction are usually in line with cycles in housing sales and residential investment. The pattern this year is quite different: starts have rebounded strongly while investment keeps decelerating and sales growth stays negative.

Therefore we think the recovery in starts should be mainly driven by social housing, which responds to government policy not market signals. This support from the public sector has probably helped construction some. But a sustained improvement in starts is unlikely until sales turn around more convincingly.

Completions

Housing completions rebounded unexpectedly this year

Area of floor space started and completed, 3mma



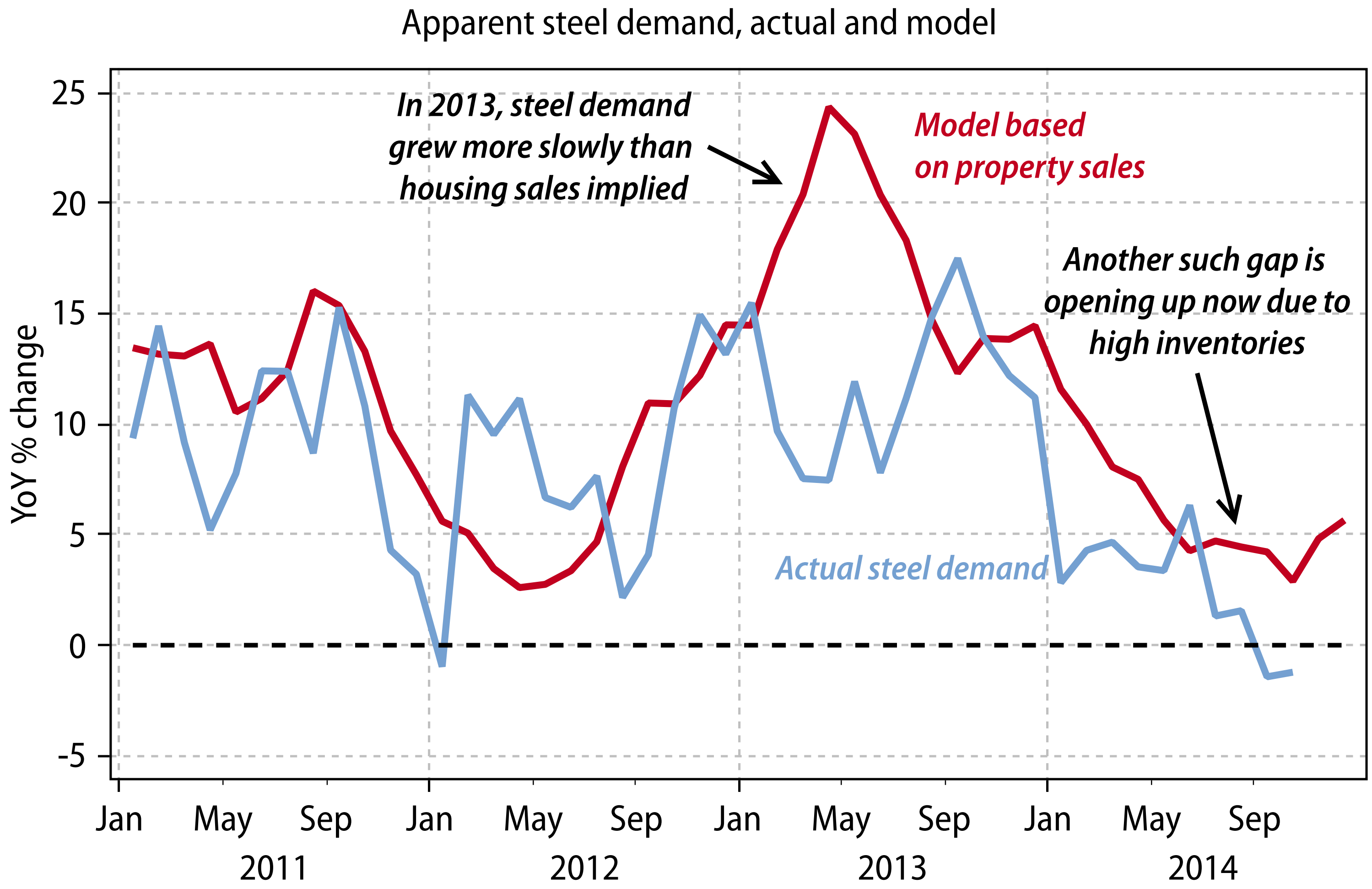
CEIC, Gavekal Data/Macrobond

This supply-side correction still has some ways to go, given that new completions have grown surprisingly fast this year: 7.6% YoY in Jan-Oct.

One explanation is that developers have extended the construction cycle as a response to high inventories, so that projects that should been have completed earlier were pushed off. But the weak starts from 4Q2011 to 1Q2013 must still show up as slower completions, so completion growth should decelerate eventually.

Steel demand

China's steel demand is unlikely to rebound when sales improve



Gavekal Data/Macrobond

Historically, steel makers have produced ahead of demand and waited for the housing market to catch up. This worked well in 2008-2011 but less so in recent years as housing sales growth slowed structurally.

The housing recovery in 2013 did not translate into strong steel demand, and we suspect the sales recovery in 2015 will show a similar pattern as it decouples from construction and steel demand growth.

Contact and disclaimer

This presentation was prepared by
China investment analyst Rosealea Yao
ryao@gavekal.com

All research is available online at: research.gavekal.com

Head Office
Suite 3101, Central Plaza
18, Harbour Road, Wanchai, Hong Kong
Tel: +852 2869 8363 | Fax: +852 2869 8131

Beijing Office
603 Soho Nexus Center
19A Dongsanhuan Beilu, Beijing 100020
Tel: +86 10 8454 9987 | Fax: +86 10 8454 9984

www.gavekal.com

For more information contact sales@gavekal.com

GavekalDragonomics

Head Office
Suite 3101, Central Plaza
18, Harbour Road, Wanchai, Hong Kong
Tel: +852 2869 8363 | Fax: +852 2869 8131

Beijing Office
603 Soho Nexus Center
19A Dongsanhuan Beilu, Beijing 100020
Tel: +86 10 8454 9987 | Fax: +86 10 8454 9984

www.gavekal.com

For more information contact sales@gavekal.com