How big is the inventory overhang in Chinese property?

China's population may be shrinking, but household formation still has room to run. Urbanisation is a weakening tailwind however, and given a substantial inventory build-up, policy makers cannot hold back a decline in underlying demand forever.

Key takeaways

- China's population may have started to decline in 2022, but this does not signal an impending collapse in underlying housing demand. China's urbanisation has further to run, and the number of households should continue to expand until 2040.

- However, underlying demand generated by both urbanisation and household formation will weaken from here. 4m additional households per year is around half the rate that was experienced between 2000 and 2010. Moreover, our modelling points to a sizeable inventory overhang having been generated over the past 10 years.

- It is possible that structural factors – such as urbanisation and limited alternative savings vehicles – keep vacancies high (~12.6%), limiting a painful adjustment from excess inventories. And policy makers have scope to delay the rebalancing within real estate – for example by launching another 'shanty town' redevelopment drive. But they cannot hold back the tide forever: weaker household formation should pull down on construction too, likely creating a substantial drag on long-run growth absent major reforms to China's growth model.

- These dynamics may be too far in the future to influence equities and credit markets now (the latter is rightly preoccupied with near-term solvency), but this reinforces our belief that slowing potential growth will largely balance out upward pressure from demographics (and associated lower savings rates) on real equilibrium interest rates (r*) and government bond yields.

Big questions remain as to the long-run outlook for the besieged real estate sector

China's real estate sector is struggling to adapt to the new regulatory landscape and this adjustment process will weigh heavily on GDP and market sentiment in the near-term. However, developers – and also policy makers – need to face up to deep-rooted structural change that will shape the sector and economy at large for decades to come. Key within this is a question of the scale of imbalances – specifically the degree to which a large inventory overhang may (or may not) have built up within the real estate sector.

Figure 1 – China's population decline is a major risk to the property sector
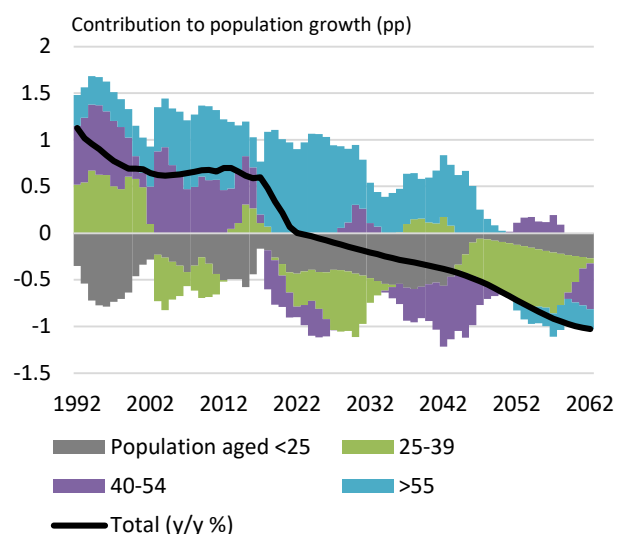
Source: United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition.

China's population has started to decline…

The UN estimate that 2022 is the first year of China's population decline. The population is expected to fall only modestly over the next 10 years (-10 million, -0.7%), but it is also the case that the 25-39 age group - often thought to be a key driver of new home purchases - is falling more rapidly (see green bars in Figure 1). However, this does not mean that household formation is set to turn negative too.

Structural drivers remain, even if they are less powerful

First of all, there is still scope for China to urbanise. At just over 60%, the share of China's population residing in cities is still well below the OECD average of 80%. There is some dispersion hidden behind the OECD average, with urbanisation rates in some countries like Japan, New Zealand and Australia stabilising at 85-90%, and the Baltics and Italy settling at 70% or so. But there are very few examples of major developed economies with urbanisation rates of below 70% and our best guess is that China should achieve an urbanisation rate of 75% or higher.

Of course, urbanisation rates can be difficult to measure and compare across countries so there is some danger of taking false comfort. However, other data corroborate the stylised fact that China's urbanisation is roughly where you would expect given its stage of development. In particular, China's urbanisation is also where you would expect given the share of agriculture in employment and GDP (see Figure 2). It is hard to believe the process of workers moving out of low productivity (and low paid) agricultural work is over, even if the pace slows.

Moreover, while China's urbanisation has been very fast – hitting a level of urbanisation that Western countries took around two centuries to achieve in only 40 years – it is not alone in this feat. Korea's rate of urbanisation was actually even faster than China, rising from just 30% in 1960 to stabilise at 80% in the late 1990s. Japan also urbanised exceptionally quickly between 1950 and 1970, catching up with the US.

Figure 2 – China still has scope to urbanise
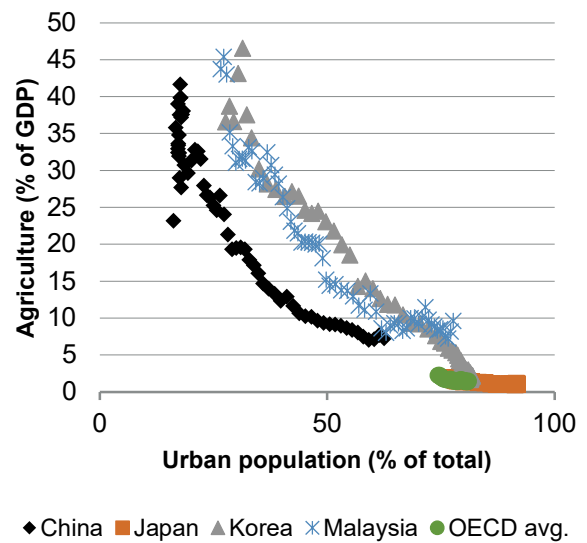
Source: World Bank, abrdn, October 2022

Development turbo-charged the need for housing, making it hard to judge the supply-demand dynamics

The exceptional contribution of the real estate sector to whole economy growth (~25%) should raise alarm bells. But rising population, urbanisation, the move away from central planning and social change are powerful drivers of housing demand, while the poor state of the housing stock – and the privatisation of the market which only began in the late 1990s – amplifies the need to build and upgrade.

Following an approach by Harvard University's Centre for Housing Studies which considers US household formation, we can model household formation in China taking account of: changing demographics, structural and social change – all of which impact housing demand to different degrees across the spectrum of population age cohorts.

Indeed, there is good reason to expect that demand for housing in China has been boosted by the impact of development on family structure. The shift from traditional intergenerational cohabitation to a model of 'living apart, but in proximity' that is typical in much of the world has occurred at breakneck speed: in 1980 households of 4 or more accounted for two-thirds of all family units. This had completely reversed by 2010, by which point two-thirds of households comprised of 3 or fewer members. Indeed, despite China still remaining well below per capita GDP levels of Western countries, Clark, Huang & Li (2022) find that co-residence in China is now as low, if not lower, than the West.

Improvements in health and life expectancy for older generations have also helped to keep demand for housing strong. Hu & Peng (2015) note that data from the 6th China census showed that more than 90% of 65-79 year olds did not require assistance. A greater availability of at-home healthcare also seems to be allowing the elderly to stay in their homes for longer.

These factors have combined to push housing demand beyond that of population growth. Between 1980 and 2020 China's population rose by 440m to 1.4bn (+45%). In comparison, the number of households more than doubled, rising by 300m to slightly over 0.5bn. Our modelling follows the official data on housing closely (see Figure 3).

Figure 3 – China's population may be falling, but household formation should continue to rise

Index, 1980=100
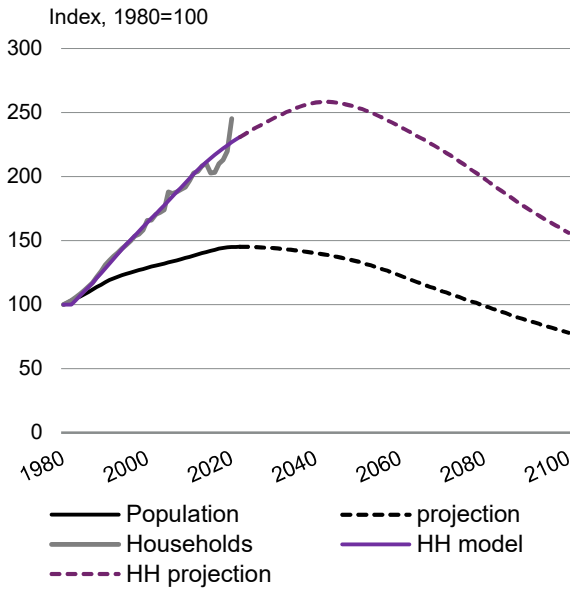
Source: abrdn Research Institute, Haver, UN, October 2022

Looking ahead, our model implies only modest scope for China's housing-to-population ratios to support underlying demand via household formation. Nevertheless, changing population composition implies that household formation in China should continue to grow at a fair pace until 2035 (adding another 4m or so households each year), while household formation overall does not peak until almost 2045 (again, Figure 3).

That said, household formation is clearly a weakening tailwind; 4m additional households per year is around half the rate that was experienced between 2000 and 2010. Moreover, while household formation should help underpin long-run demand, excess inventory - perhaps the result of developers front-running urbanisation, amplified by a lack of alternative savings vehicles for households - could still present a risk that construction needs to slow dramatically to unwind a substantial imbalance.

How large is the inventory overhang in Chinese property?

Judging the potential imbalance in Chinese real estate is particularly difficult, not least because of data limitations, perhaps themselves a reflection of the political sensitivities surrounding property.

The Beike Research Institute (BRI, a China property think tank) recently put out a report which estimated that the average vacancy rate across China was 12.1%, with a 7%

vacancy rate in Tier 1 cities, rising to 12% in Tier 2 and 20% in Nanchang, which took the unenviable bottom position out of 28 major cities considered. The BRI was however forced to apologise for an insufficiently accurate methodology, and withdraw its paper due to the furore it unleashed.

There is always a risk of taking a snapshot out of context – after all many 'ghost cities' have subsequently filled up – but vacancy rates of >20% for some cities – and for certain years - are common across academic studies. Moreover, the total vacancy estimate is only somewhat higher than that for many advanced economies, such as the US (11%). This could imply that the *excess* inventory position (i.e. actual vacancy minus steady-state) is not particularly concerning.

We can combine our household formation model with estimates of the number of properties built every year to gauge how severe imbalances may be. Unfortunately, no clean figures are available and our estimates are conducted on a best endeavours basis (calculated bv dividing residential new starts by estimates of average property size, and also adjusting for 'shanty town' development which removed housing stock).

Data limitations – including the need to infer key variables' flow and stock positions - make this assessment very uncertain, but our best guess is that after a period of relative balance spanning 2000 to 2010, excess housing inventory then began to accumulate at an alarming rate (see Figure 4). By 2021 the housing stock may have stood around 560 million, around 60m (12.6%) higher than our model of housing formation would have implied, and (as it happens) close to the BRI's vacancy rate estimate.

Vacancy estimates of between 7.5% to 15% are however plausible, depending on what assumptions one makes about housing stock being removed as part of 'shanty town' redevelopment and the initial stock of vacant properties, amongst other factors.

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Figure 4 – A slower pace of household formation could imply that the real estate adjustment is just beginning

millions
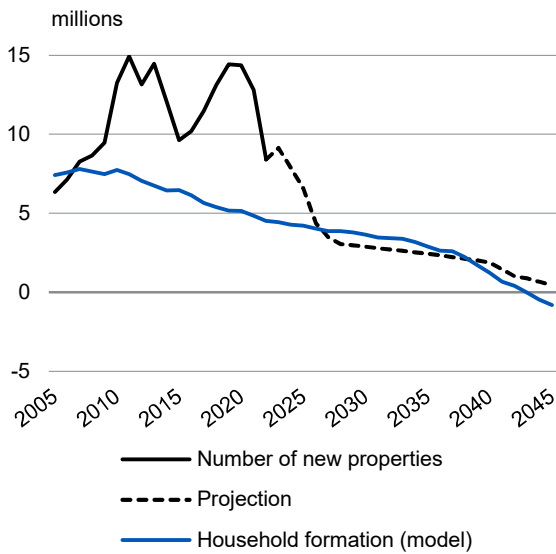
Source: abrdn Research Institute, Haver, UN, October 2022

While our central case estimate implies an *excess* vacancy rate of around 2.5 to 5% (assuming an underlying equilibrium of 7.5 to 10%), there are reasons to think that structural forces could keep vacancies high. Urbanisation could create empty homes in rural areas, keeping equilibrium vacancy rates temporarily high, while a lack of alternative savings vehicles and a reduced ability for households to move money offshore could stop rapid adjustments.

Instead it may be more instructive to consider what needs to happen to property construction to maintain the current vacancy rate. Our modelling implies that while new starts fell considerably in 2022 they may need to more than half over the next five years to keep the vacancy rate around its current level (dashed lines, Figure 4).

Of course, policy makers have scope to offset or delay the rebalancing of supply and demand within real estate. The UN estimate that 25% of the urban population continues to live in 'slums'. Redevelopment which removes old housing stock could therefore keep the real estate engine running closer to recent averages, at least over the next few years.

Moreover, we need to be cognisant of the uncertainty surrounding these projections. Population decline is relatively certain, but we could be underestimating household formation associated with urbanisation. That said, given real estate's central role in China's economic growth model, it is hard to conclude that household formation trends will not create a very significant headwind to long-term growth, absent major off-setting policy actions and reforms.

Implications for investors

- Although real estate is only 2% of China equity market cap and earnings, similar to GDP, its actual impact will be bigger given substantial upstream and downstream implications.

- Credit markets remain (rightly) preoccupied with near-term solvency challenges. But if housing development is set to decline further, credit risks may remain elevated even after developers have transitioned business models to the new regulatory environment. Major industry consolidation may be needed to realign construction trends with underlying housing demand.

- A major headwind from the property sector will likely weigh on medium-term growth, reinforcing our belief that slowing potential growth will largely balance out the impact of upward pressure from demographics on real equilibrium interest rates (r*) and yields as older populations save less. Policy makers have scope to delay the rebalancing within real estate – for example by launching another 'shanty town' redevelopment drive - but they cannot hold back the tide forever.

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