PRC Macro

Macro Update: Household Leverage Update - Upper Limits

Measuring HH Debt and Savings Rates

August 21, 2018

It is a widely shared belief that household savings rates in China have been excessively high for precautionary purposes. The result is that economic growth in China is more reliant on cheap credit, exports, and investment, and less so on consumption. Moreover, the resulting savings glut has also helped to keep interest rates low in developed economies, and was thus partially responsible for low global inflation and the debt buildup before 2008.

In this note, however, we outline how the household savings rate has more than halved (~50% to ~20%) since the Great Financial Crisis (GFC) as a result of China's worsening demographic profile, financial liberalization and rising household leverage. The combination of the declining savings rate and the accumulation of debt has led to a period of rapid growth to household leverage. By our estimates, the level of household debt relative to disposable income in China has reached the same level as was observed in the US prior to the subprime crisis. Potential deleveraging by Chinese households will not only impact domestic consumption, rates, investment and government deficits, but could also accelerate the pace of interest rate normalization in developed economies.

An additional, hidden source of cyclical strain for household finances in China comes from contingent SME debt. Commercial banks require personal guarantees and pledges of collateral (property) for SME loans, which exposes some prime households assets to the RMB 33 trillion in loans. With central regulators pushing banks to make more SME and secured consumer loans as part of current demand stabilization measures, this will further increase contingent household debt and make commercial banks even more exposed to the real estate sector via the value of the underlying collateral.

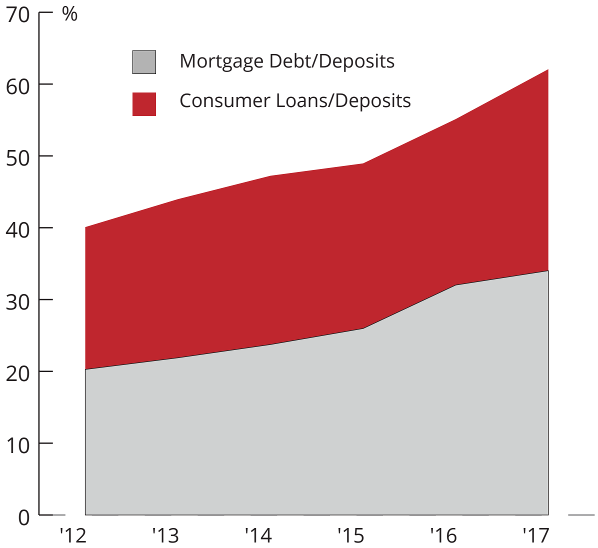
Investment Implications:

- Household debt relative to deposits has increased from 40% to over 60% during the past 5-years. Relative to nominal GDP, the household leverage ratio also doubled (from 24% to 48%) during the same period.

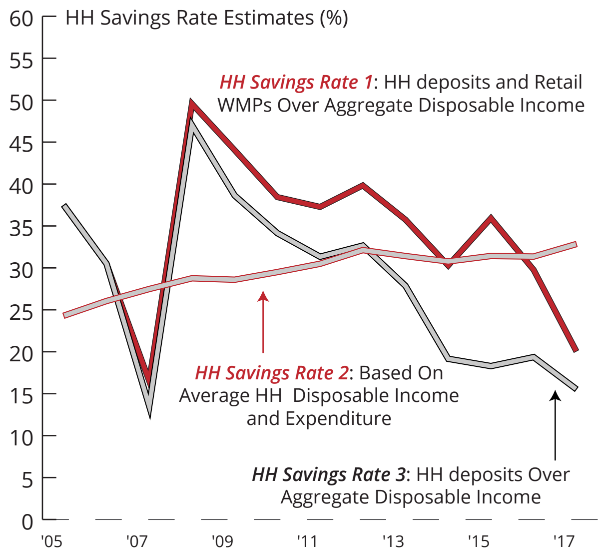
- The housing boom has contributed more than half of the increase to household leverage, in particular since 2014. Subsequently, short-term consumer debt has become the largest contributor to incremental increases to household leverage since 2016.

- The rapid increase to household leverage can be interpreted as the result of a policy shift whereby more credit was directed to households via the real estate market, in turn to support corporates and

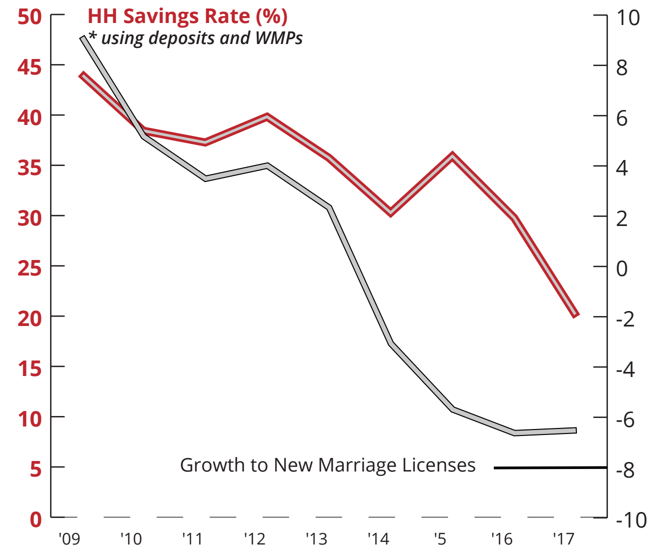
Household Debt/Deposits Has Increased by 20 Percentage Points Since 2012
Wind and PRC Macro



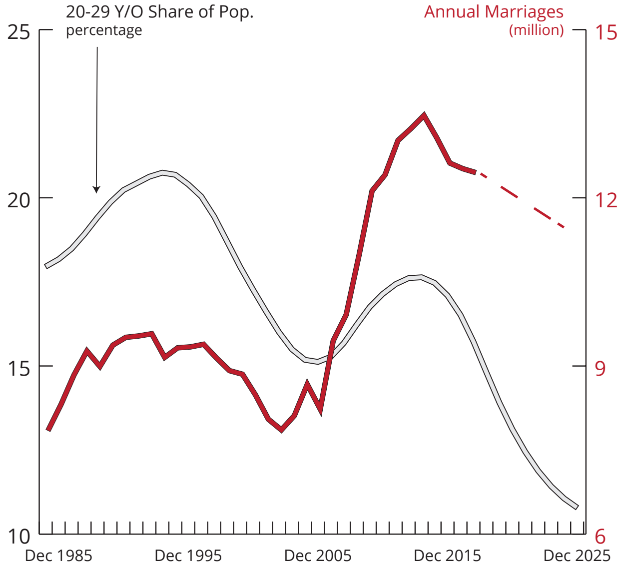
China HH Savings Rates Have Been Declining Becase of Rising Housing Prices, Debt and Living Expenses
Wind and PRC Macro



An Aging Population and Negative Family Formation Growth Has Lowered Savings Rate
Wind and PRC Macro



Share of Prime Marriage-Age Population to Drop



local governments (the fiscal-land-developer nexus). The result is that housing investment relative to GDP in China looks unsustainably high relative to the US.

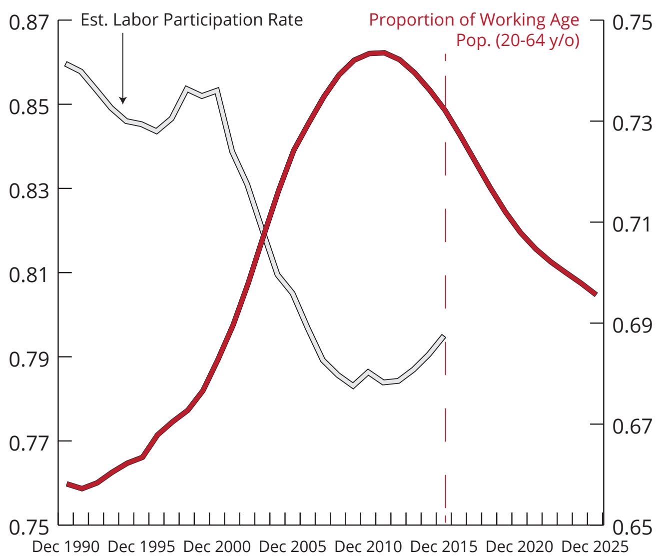
• More importantly, both the level and pace of growth to household debt relative to disposable income suggests that the rapid deterioration of the ability of households to service their debts (i.e. deleveraging) may be inevitable.

Why Chinese Household Saving is Declining

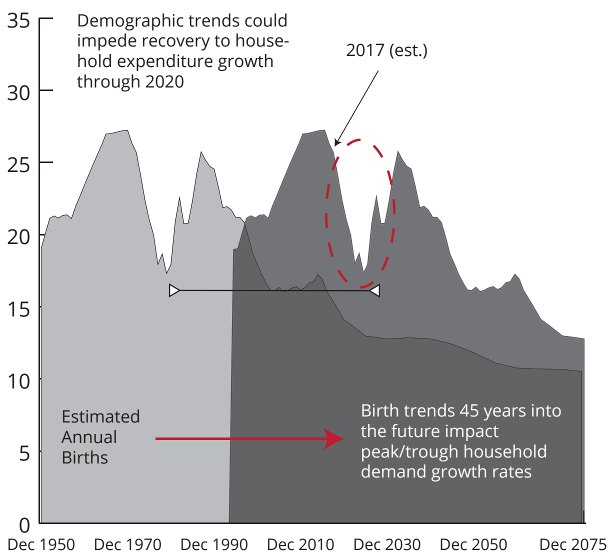
• Official estimates of the trend in household savings in China based on average disposable income and expenditure suggests that the household savings rate has been increasing steadily. We think this misrepresents what is actually taking place.

• Two major factors suggest that the household savings rate in China should have declined. First is China's unfavorable demographic profile. This has gotten some high-level attention just recently, as the official media ran stories highlighting that in just the past 5-years the population over 60 in China has increased by 25%, whereas family formation (measured by the number of new marriage licenses) has declined by

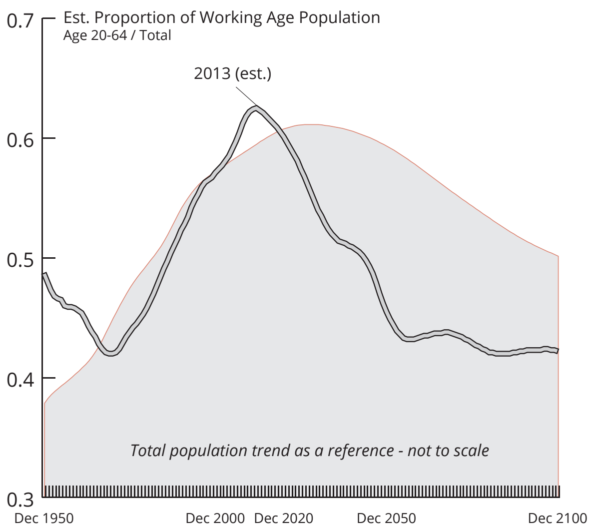
Labor Constraints On Growth Will Continue to Bite



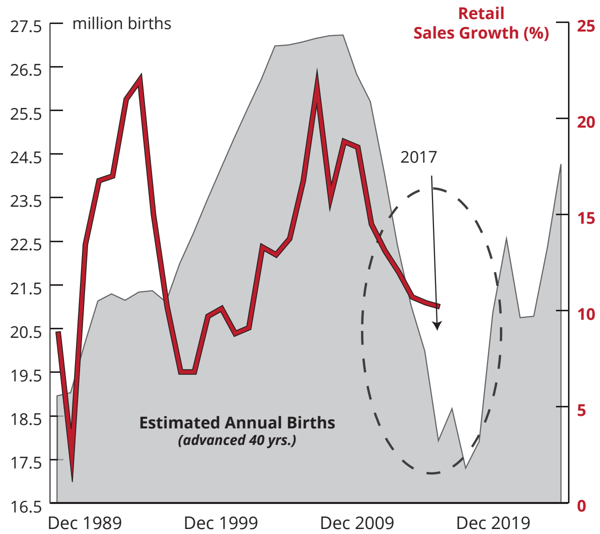
Annual Births, Advanced 45 Years in Time Translate Into Hypothetical Consumption Peaks
millions of births



Working Age Population is Past Peak
United Nations data - medium variant



China (Like Many Countries) Is Heading For A Demographic Air Pocket That Should Deflate Sales
Wind Data / PRC Macro



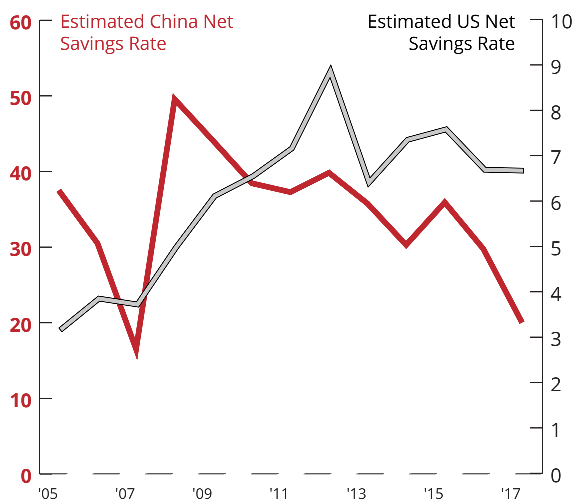
20%. The aging population and delayed family formation should theoretically lower the household savings rate.

• Second is the rapid increase to household debt and comparatively stagnant growth to disposable income. The ratio of household debt to deposits has increased from 40% in 2012 to over 60% at the end of 2017. The rapid increase to household debt is largely attributable to the acceleration of financial liberalization (i.e. availability of credit) and the related housing boom.

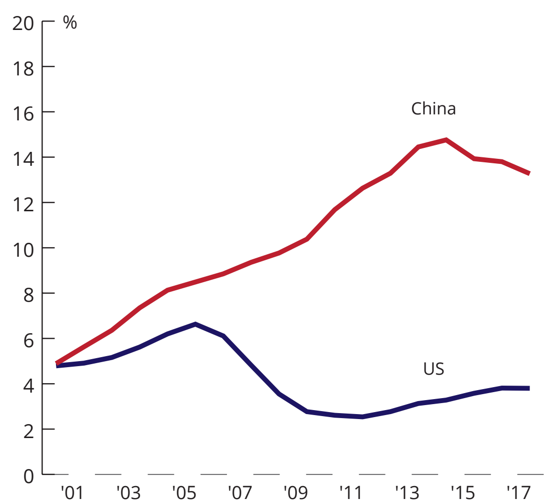
• At the same time, however, growth to household disposable income has lagged the pace of debt accumulation. This, along with the rapid increases to housing prices, has required that households allocate more income to down payments and debt service as opposed to saving. This should also lower the savings rate and also reduce consumption.

• Therefore, contrary to official estimates, we use total household bank deposits over aggregate urban disposable income to estimate the actual net savings for Chinese households. Moreover, considering that a large proportion of household savings were directed to WMPs after 2009 along with the rise of the shadow banking sector, we also include retail bank WMPs to derive an augmented household savings rate. Our result shows that the actual net saving rate in China has declined from 50% in 2008 to 20% in 2017. This means that on average the household savings rate in China has declined by 3% per year for the past decade.

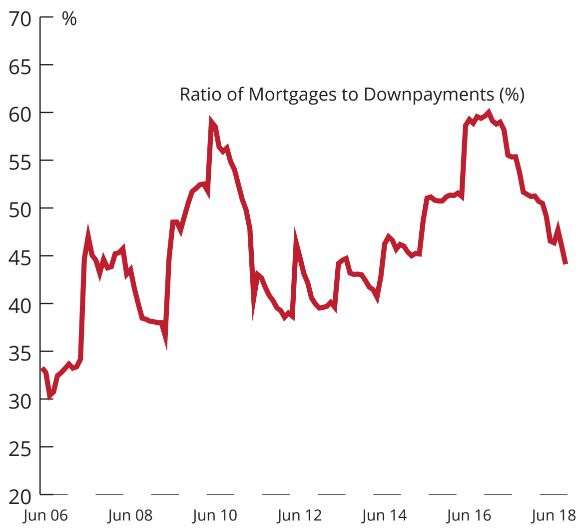
The Divergence of China and US Household Savings Rates Since the FInancial Crisis
Wind and PRC Macro



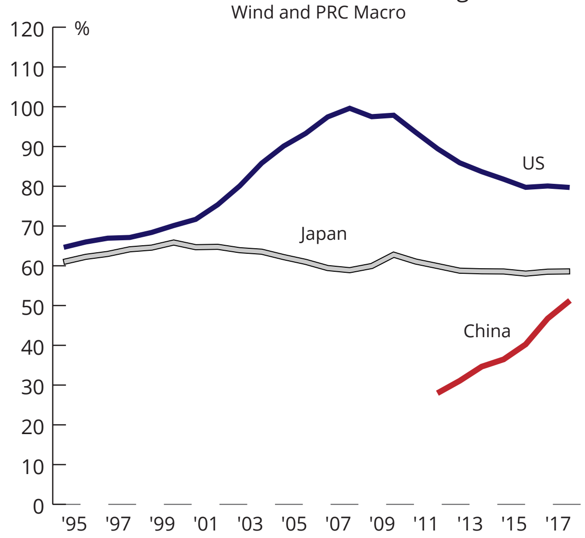
Housing FAI/Nominal GDP (%)
Wind and PRC Macro



Lower Property Leverage Means Less Available Funds for Consumption
Wind and PRC Macro



Household Debt GDP (%): HH Debt in China Crowded Out by Corporates and Government, But Rising Quickly and Understated Because of Contingent Debt
Wind and PRC Macro



• After these adjustments, our estimated savings rates better reflect changes to China's demographic profile. Delayed or lower family formation (associated with a lower birth rate) and an aging population have clearly contributed to the lower savings rate.

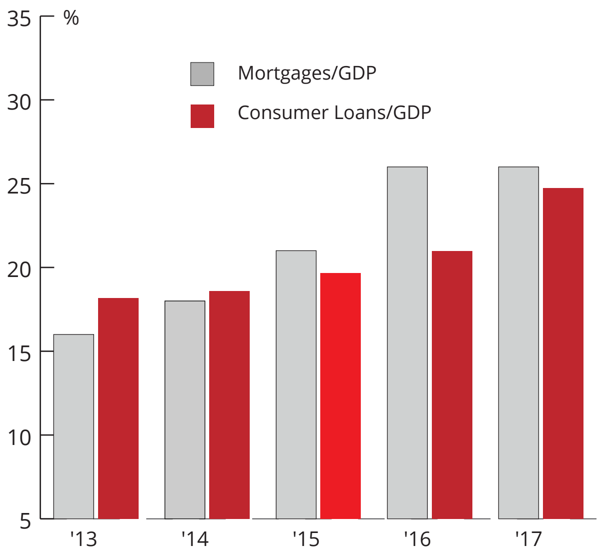
• Seen in comparison with US households, after a brief period of deleveraging (i.e. a higher savings rate) in the aftermath of the GFC, households in China soon began to take on more leverage, whereas those in the US increased their savings rate (albeit from a much lower base).

• Such a divergence in China's household savings rate helped China to recover quickly from the GFC, but the end result looks like an economy much more vulnerable to a potential reversal in the availability of credit and asset price corrections.

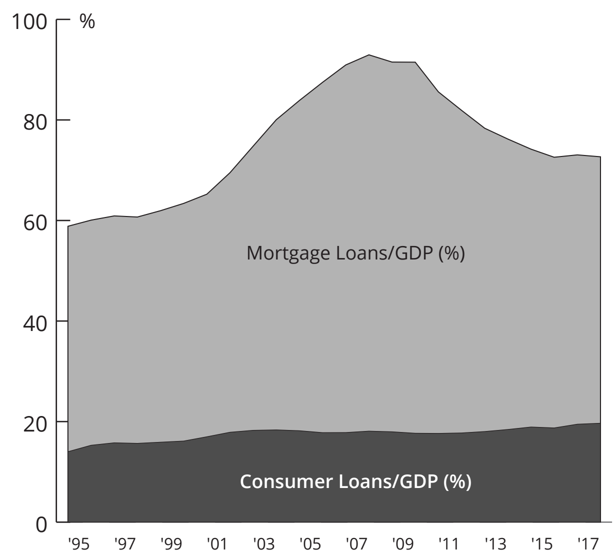
Shifting Leverage from Corporates to Households

• A more fundamental explanation for the rapid increase to household debt in China, in our view, is that it is the result of a policy shift directing leverage from corporates (including LGFVs) to households. This has been mirrored in the redistribution of national income away from households to corporates and the public sector.

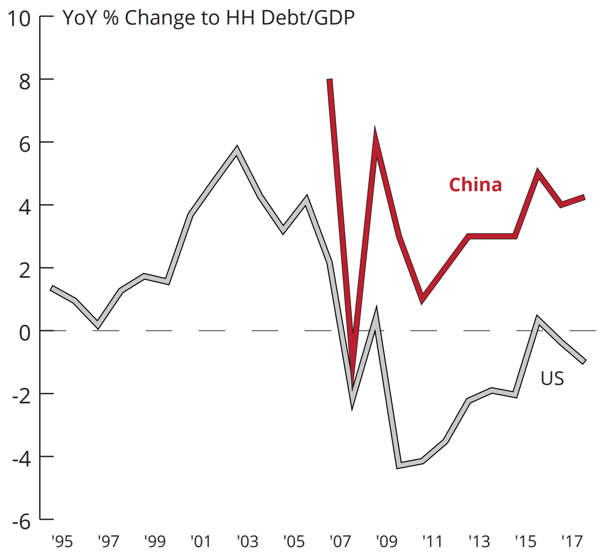
Decomposition of Household Leverage in China
Wind and PRC Macro



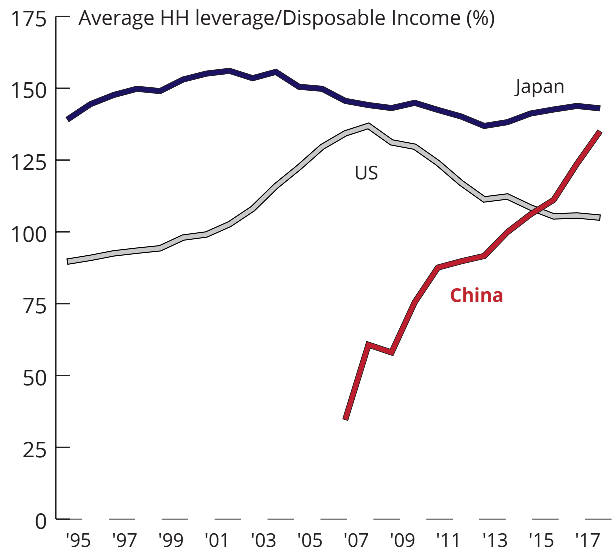
Decomposition of US Household Leverage
Wind and PRC Macro



Some Synchronicity to US and China HH Debt Growth
Wind and PRC Macro



Chinese Household Leverage to Disposable Income Has Increase by 100 Percentage Points in a Decade
Wind and PRC Macro



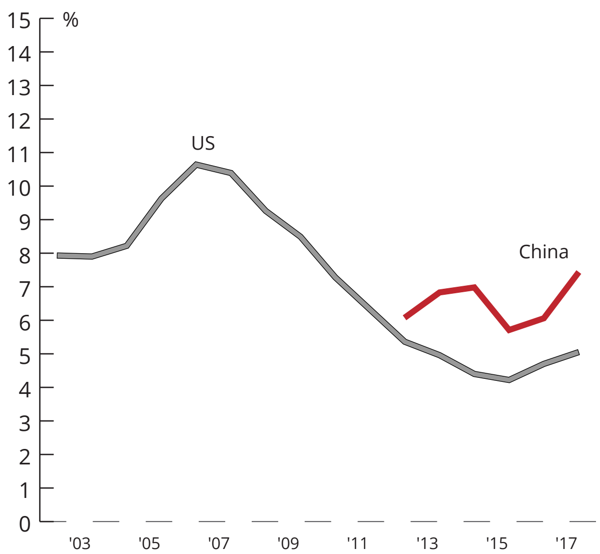
• For example, the share of bank loans to corporates declined from 73% in 2012 to 61% in 2017, whereas the share of bank loans to households has increased from 26% to 38%.

• As result, corporate leverage (measured as corporate loans to corporate deposits) remained largely unchanged from 2008 to 2018, whereas household leverage (measured as household loans to household deposits) has increased from less than 30% to over 60% during the same period.

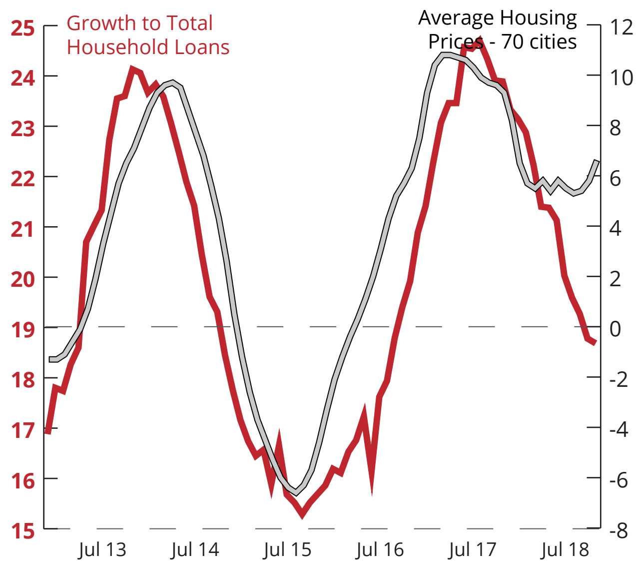
• What has enabled such a transfer of leverage between corporates and households is the real estate market. The housing boom has transferred wealth and income from households to developers, upstream industrial sectors, consumer goods manufacturers and local governments, leaving households with inflated property assets and more debt.

• At the macro level, this has made the economy even more reliant on housing investment and construction. As indicated in the chart above, the contribution of housing investment for both the US and China relative to nominal GDP was at ~5% in 2000. After 2006, however, this trend diverged sharply, with the

Chinese HHDebt Service Ratio on The Rise Since 2016 Housing Boom and PBOC Rate Hike
Wind and PRC Macro



How Long Current Housing Boom in Lower Tier Cities Can Last is a Big **?**
Wind and PRC Macro



housing investment share of GDP accelerating after 2009. As the Chinese economy continues to mature, the contribution of housing investment to nominal GDP should probably converge with average large economy levels in the medium-term.

• Another factor that could potentially accelerate this convergence is deleveraging by Chinese households. To some extent, decomposed data for developer funding shows that deleveraging has already been underway since 2016. However, we will read this result with caution because despite slowed growth to mortgage funding, Chinese households have substantially increased short-term consumer borrowing starting in 2017, some of the proceeds of which have gone into the housing market (which is not captured in official statistics).

• Anecdotally, the idea that short-term consumer loans have helped fuel property speculation is not controversial. But to back this up with the data, it is interesting to note that there is not a strong link between an increase to short-term consumption loans and actual consumption since 2017. If a lot of the proceeds of this borrowing are going into property, it would actually suppress households' propensity to consume (which has been observed).

Measuring Household Leverage in China

• To put the level and growth to Chinese household leverage in a global context, we use two measurements for household leverage. First is to calculate the ratio of household debt relative to nominal GDP and compare it with similar indicators for the US and Japan. A note of caution here, however, where it comes to using this measurement for comparative purposes because the labor share of GDP in China is much lower than it is in the US or Japan, so this ratio could potentially underestimate the relative risk of household leverage in China.

• As a result, we pay more attention to the rate of change to household leverage relative to nominal GDP. This is a better indicator of the risks from household debt. **Chinese household debt to nominal GDP has increased by over 30% in the last decade. Interestingly, US household debt to nominal GDP also increased by 30% from 2000-2007 before the housing bubble broke.**

• Decomoposing household leverage in China and the US, we note that Chinese household mortgage leverage probably peaked in 2017 as borrowers began to tap short-term consumer loans to bypass government purchase and lending restrictions. **A plateau to mortgage leverage growth, based on the US experience, seems like an ominous signal for a peak housing prices, as US household mortgage leverage also peaked in 2007 before the housing market softened.**

• However, there would be significant room for mortgage lending in China to grow if policymakers were to allow mortgage securitization on a larger scale. This would be equivalent to transferring mortgage debt via NBFs from banks to corporate and retail investors. But, we think this scenario is unlikely to occur any time soon.

• Another interesting observation is that growth to household leverage in the US and China has moved in lock-step since the GFC. The difference is that on a net basis, US households were repairing balance sheets, whereas households were adding leverage.

• Our favorite measure of household leverage for cross-country comparison is aggregate household debt to aggregate disposable income, as this better reflects households' ability to service debt.

• This measurement paints a gloomier picture for Chinese household leverage and the potential impact on housing prices. **It shows that household debt to disposable income in China has risen from less than 40% in 2006 to nearly 140% in 2017. Both the level and pace of increase to debt is both impressive and alarming. Note that the housing meltdown in the US occurred precisely when household leverage to disposable income reached 140% in 2007.**

• Similarly, the debt service ratio for households in China, measured as interest payments over disposable income, approached 8% in 2017. It only took the US household debt service ratio to reach 10% in 2007 before subprime borrowers began to default on a large scale.

We will discuss the potential impact on housing prices and consumption from household deleveraging in a future note.