Consumption thresholds

Accelerating into affluence

by Thomas Gatley

The Year of the Snake does not look auspicious for conspicuous consumption in China. The country's newly-installed top leader, Xi Jinping, is urging officials to curb their appetite for lavish banquets. A broader anti-corruption campaign has also hit the market for the expensive luxury goods used for gift-giving. But these are political ripples on the surface of a huge wave of rising Chinese consumer spending. Even if China's economic growth slows significantly, over the next decade hundreds of millions of people will join the modern consumer economy. And our model of China's income distribution indicates that the fastest growth in demand will no longer be for basic consumer goods, but for the products and services favored by the newly affluent, such as international air travel and high-end beauty products. Catering to the Chinese nouveau riche is a growth market for which the best days are yet to come.
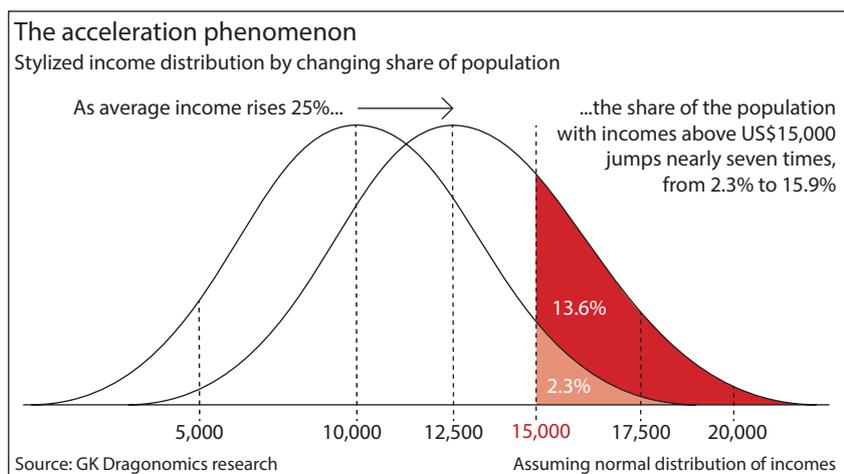
Step change in spending
Our framework for analyzing consumer spending starts with the simple observation that the propensity to spend on certain goods does not rise smoothly with income, but moves in steps: households just above a certain income threshold are much more likely to buy say, a car, than households just below it. This gives rise to what we have in our research called the "acceleration phenomenon": potential markets for consumer goods can grow many times faster than average income when many households are crossing one of those income thresholds. The acceleration phenomenon has clearly had powerful effects in China: passenger car sales grew more than 20% a year over the past decade, while real urban incomes rose just 9%.

The acceleration phenomenon occurs for different product categories at different income levels, with the biggest opportunities tending to come in the early stages of acceleration. To identify these dynamics, we need to know two things: the shape of China's income distribution curve and the relevant thresholds for consumer spending. Using income data from the National Bureau of Statistics and the World Bank, along with some of our own adjustments, we have estimated income distribution curves for China (see "Time to show our workings"). The main difference between theory and reality is that China's income distribution is not shaped as a smooth, normally-distributed hump. Rather, it has a long tail to the right, because so much of the country's wealth is concentrated among a small elite. One consequence of this is that the actual acceleration phenomenon will not be quite as dramatic as in our first, stylized diagram—although it is still substantial—because the slope of the curve is not as steep.

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Over the next decade, more than 400m people could join China's modern consumer economy

Thanks to the "acceleration phenomenon," car sales easily outpaced real income growth over the past decade

The acceleration phenomenon
Stylized income distribution by changing share of population

As average income rises 25%...

...the share of the population with incomes above US$15,000 jumps nearly seven times, from 2.3% to 15.9%

13.6%

2.3%

5,000   10,000   12,500   15,000   17,500   20,000

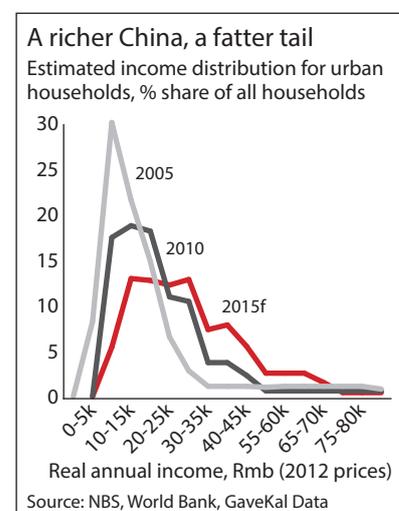Source: GK Dragonomics research   Assuming normal distribution of incomes

The income thresholds for different products will obviously vary quite a bit. We will focus on broad categories of consumption that change in recognizable ways. We borrow from useful work by Boston Consulting Group (summarized in the book *The $10 Trillion Prize*) on the sort of products and services that people start to consume once their income passes certain key thresholds. The BCG authors suggest that a household earning more than US$7,500 in 2010 qualifies as middle class in the Chinese context, as this is the level at which families start to buy mass-produced clothing and better housing. Different consumption dynamics emerge after a threshold of US$12,500, when households start to buy their first car, experiment with international brands, and spend more on non-essential goods like fruit juice, vitamins and alcoholic drinks. After crossing the threshold of US$19,000, households start to spend more on travel, recreation, fancier household goods, and small luxuries such as coffee and wine.
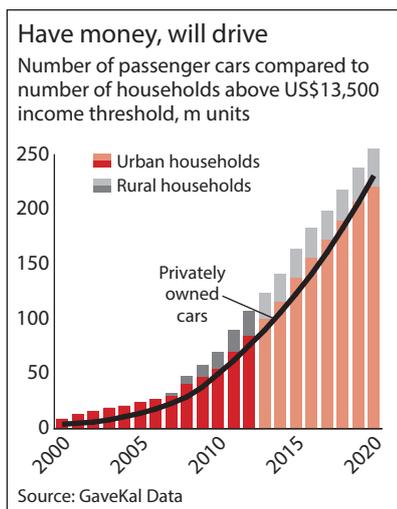
Three types of consumer
Our own, less detailed work indicates that BCG's thresholds are plausible, so we are comfortable using them, after adjusting for 2012 prices and exchange rates. We will adapt these thresholds to divide China's consumer population into three major categories: what we will call Emerging Consumers (with household income above US$8,100 but less than US$13,500), Established Consumers (US$13,500-$20,550) and Affluent Consumers (over US$20,550).

With these thresholds and our income distribution in hand, we can start to pinpoint just how the acceleration phenomenon has played out in China, and where it is headed next. On our estimates, in 2012 China was home to 182m Emerging Consumer households, 107m Established Consumer households, and 57m Affluent Consumer households—giving a total approaching 350m consumers. In forecasting the trajectory of these groups, we assume conservative rates of real income growth (falling to 5% by 2020 from over 10% in recent years), RMB appreciation of 2% per year (down from 3.3% during 2005-2012) and urbanization in

Chinese households enter the middle class once their income exceeds about US$8,000

A richer China, a fatter tail
Estimated income distribution for urban households, % share of all households

2005
2010
2015f

Real annual income, Rmb (2012 prices)
Source: NBS, World Bank, GaveKal Data

Have money, will drive

Number of passenger cars compared to number of households above US$13,500 income threshold, m units

Source: GaveKal Data

Watch out for the big spenders

Number of Chinese crossing each income threshold each year, 3ycma, m households


Source: GaveKal Data

line with UN projections. Given these assumptions, by 2020 the number of Emerging Consumer households is modeled to rise 85% to 337m, Established Consumer households to rise 138% to 256m, and Affluent Consumers to rise 223% to 184m. Within a decade, in other words, China will have nearly 800m consumers, with the fastest growth coming in the Affluent category.

The key variable in these projections, interestingly, turns out not to be assumptions on income growth or RMB appreciation, but the urbanization rate. This reflects the simple fact that moving from rural income standards to urban ones gives a household a significant boost: the lowest 10% of urban households in 2012 earned the same as the average rural household, and the next rung up earned 50% more. So the future growth of Chinese consumer spending clearly depends on the government's ability to continue effective urbanization. It is no surprise, then, that the new leadership has made encouraging urbanization a central plank in its policy platform.

From Kappa tracksuits…

For our entry-level Emerging Consumer households, the acceleration phenomenon was strongest during 2005-10, with about 20m households crossing the threshold each year and their total number growing at almost 30% a year. These years saw a boom in modern retailing and sporting goods: in 2009 alone the number of supermarkets and hypermarkets leapt by 12,000 to 43,800. The fast-growth phase for this category of consumers is already over, but the absolute numbers are still large: each year, around 20m households continue to cross this income threshold. To move a population the size of the UK each year into the modern consumer economy should not be dismissed lightly, but the growth rate will shrink from its peak of 27% in 2005-10, to an average of 10% during 2012-15 and to 7% in 2015-2020. The character of the new Emerging Consumers will also change, as the majority of those crossing this threshold in coming years will originate from smaller cities and rural areas.
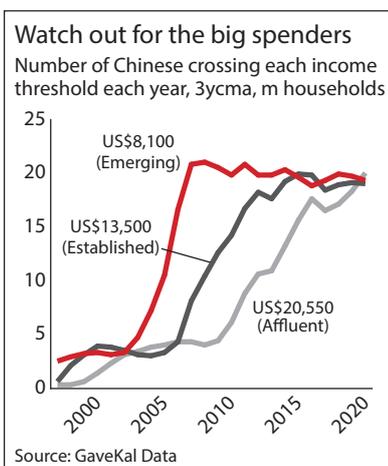
China's Established Consumers came into their own more recently, with the acceleration phenomenon kicking in strongly in the latter years of the last decade. Those were the boom years for China's auto market, and this is no coincidence: for these consumers the totemic purchase is a car. An international comparison of car ownership and income levels suggests that vehicle ownership takes off somewhere around US$4,000 or US$5,000 per capita—around the US$13,500 household income of our Established Consumers. And the stock of passenger cars in private ownership indeed corresponds well with our estimates for the number of households above this threshold.

Still, the high-growth phase is probably close to over for the Established Consumers as well: we project the 20%-plus growth in the size of this group will slow to 15% over 2012-15 and to 9% in 2015-2020. As with the Emerging Consumers, the annual increment in volume terms will

stabilize around 20m households. This looks to be sufficient to support continued growth in passenger car sales of around 8% a year for the next decade, based purely on income growth. There is of course no guarantee that China will follow the patterns of car ownership seen in other countries, but the limiting factors will be government policy and urban planning, not incomes or affordability.

…to cappuccinos in Rome

Markets for goods and services associated with more affluent consumers, on the other hand, are likely to experience the most intense part of the acceleration phenomenon later this decade. The number of households that pass the Affluent Consumer threshold each year will rise from 10m during 2010-2012 to around 15m by 2015 and hit 20m by 2020. The percentage growth of the total size of this consumer group will remain rapid, holding above 15% for most of the decade.

This shift means that affluent households will become the fastest-growing part of China's consumer economy, with significant implications for the type of products that will experience rapid growth. For Affluent

The number of households passing the Affluent Consumer threshold each year will rise to 20m by 2020

Time to show our workings

China's annual household survey covers 133,000 rural and urban households, and generates average per-capita income data for both urban and rural areas. Multiplying those averages (adjusted for inflation) by the number of individuals in the urban and rural population gives the theoretical total real disposable income for urban and rural China for any given year. The National Bureau of Statistics also produces annual statistics on how this income is distributed among households, but these figures are not very detailed.

For this project, therefore, we used the World Bank's PovCalNet database. It uses household survey data to calculate a decile-by-decile income distribution. We multiplied each decile's share by the total urban or rural income to calculate the income accruing to that group, then divided that figure by one-tenth of the urban or rural population to find the per-capita income for that decile.

Many observers doubt the accuracy of any information drawn from the official household surveys. Wang Xiaolu of the National Economic Research Institute famously argued that vast quantities of "gray" or "hidden" household income simply do not show up in the official statistics. Using Wang's estimates would raise total disposable income for urban areas by some 90%, and triple the per-capita income of the top 10%. While we think Wang's estimates are implausibly high, it is nonetheless now widely accepted that the official household survey under-estimates income, particularly for the best-off.

For this research project, therefore, we simply split the difference, adding 50% of Wang's missing income to each urban income bracket. This may not be an elegant solution, but it does not critically affect our analysis. Given that 60% of "gray income" by Wang's estimates accrues to the top 10% of households, and 80% to the top 20%, inflating for gray income has little effect on lower income thresholds. We are primarily interested in households crossing those lower income thresholds, and how much more money the very rich make is less relevant to our analysis.

So after coming up with average income per capita by decile, the following challenge was to simulate a frequency distribution—to estimate, for instance, how many individuals would have an income of Rmb9-10,000 in a given year. If our 10 data points were well-behaved and followed a normal distribution, it would be possible to create a smooth bell curve. Unfortunately, reality was far less tidy and no curve function fitted adequately.

Instead, we interpolated data points between each average, taking 75% of the first decile average for the bottom 1%, and assuming exponential growth for the top 5%. Given this frequency distribution—and assuming that each household contains three individuals—we were able to estimate what percentage of households should be over a given threshold in any given year. Simple!

Consumers, experiences begin to trump products as a source of satisfaction and prestige—from foreign travel to ballet classes for their darling youngsters. The first stages of this shift are apparent in some statistics from Boeing: air travel between China and Europe/North America grew 17% in 2011 to 179m trips. As China's Affluent Consumer households grow in number, this shift towards greater consumption of services should also accelerate. Unfortunately this trend will be difficult to monitor, as there are few high-frequency gauges of activity in China's service sector.

Over the next decade, hard-to-reach rural residents will become a major source of new entrants to the consumer class

In closing, it's important to emphasize that the size of the various consumer populations we have identified is only an indicator of the potential market size. If distribution channels cannot keep pace with spending power, those potential sales remain inaccessible. Over the next decade, hard-to-reach rural residents will start to become a major source of the new entrants into the consumer class. The companies that will do best in China's consumer market, therefore, will certainly include those who can position themselves to take advantage of the acceleration phenomenon of affluent households. But it will also include those who are adept at breaking down barriers to reaching lower-income consumers and translating China's great potential into sales.