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# China data: Making the numbers add up

Gabriel Wildau in Shanghai

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Scepticism about the accuracy of the official data has intensified. But what if the underlying figures are reliable?



A worker on the assembly line in a clothing factory in Bozhou, east China's Anhui province

**T**hat China's official economic data cannot be trusted is now received wisdom among western economists, investors and policymakers. To treat the numbers as authoritative is to invite ridicule: believers are naive at best and, at worst, stooges for Communist propaganda.

The problem with this conventional wisdom is that, aside from the closely watched and politically sensitive real gross domestic product growth rate, other official data vividly depict the slowdown in China's economy that sceptics insist is being concealed. If there is a conspiracy to disguise the extent of harder times in China, it is an exceedingly superficial affair.

The surprise devaluation of China's currency in mid-August fuelled scepticism about official GDP data, as many interpreted the move as evidence that Beijing was taking drastic action to rescue an economy in deep trouble.

China officially posted 7 per cent real GDP growth for the first half of 2015, bang on the

full-year target that Premier Li Keqiang announced in March. To the sceptics, it was both too convenient and incongruous with other data that suggested a deeper slowdown in manufacturing and residential real estate construction, the country's economic powerhouses.

Experts on China's national accounts data broadly agree that the quarterly real growth figure is subject to politically motivated "smoothing" aimed at reducing the appearance of sharp swings in the economy, especially in response to external shocks like the Asian financial crisis in 1998 and the global financial crisis in 2008.

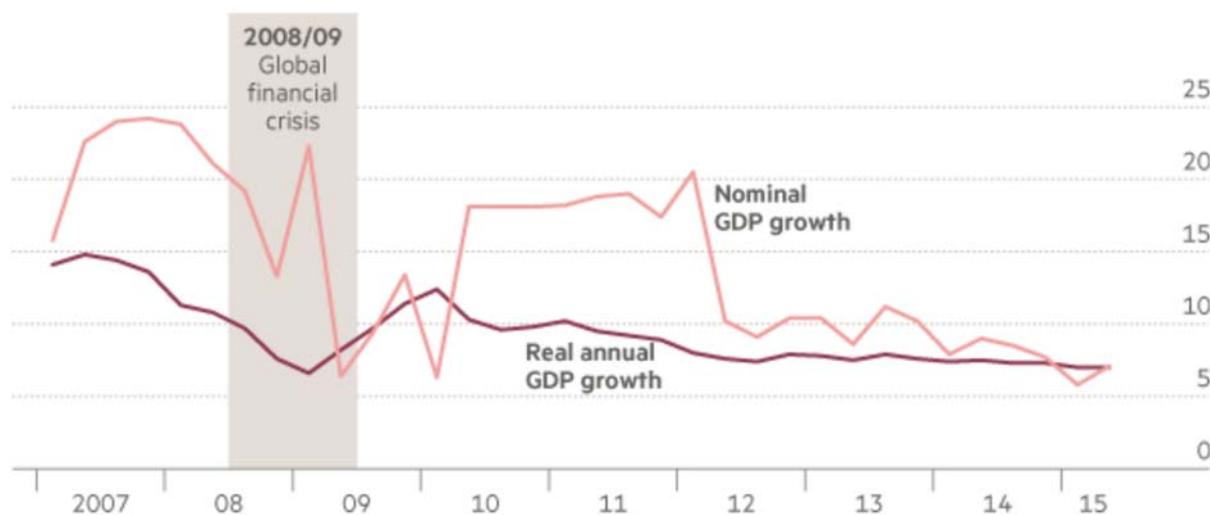
This goal is achieved mainly by tweaking the inflation metric used to convert between nominal and real growth, known as the "GDP deflator". By understating inflation, China's statistics masters can create the impression of faster real growth.

## Trend setting

Yet the shortcomings of this single data point do not seriously impede our understanding of trends in the Chinese economy. One need look no further than nominal GDP figures, which express economic output in current prices, without adjusting for inflation, to observe the bleak state of the country's main industries.

### Smooth operator: China deflate-gate

Deflator smoothes the volatility of real GDP (annual % change)



Sources: National Bureau of Statistics; CEIC; FT calculations

FT

"China has some of the least volatile real GDP growth of its kind in the world, but nominal GDP data look more reasonable in a number of key aspects," Wei Yao, China economist at Société Générale, wrote last month.

Nominal GDP growth in China's industrial sector, which includes manufacturing, mining and utilities, grew at a paltry 1.2 per cent in the second quarter of 2015, down from an average of 5 per cent in 2014. For construction, second-quarter growth was 4.1 per cent compared with 9.8 per cent last year. Meanwhile, services are now the fastest-growing sector of China's economy.

Nominal growth is more important than its inflation-adjusted counterpart for most purposes. A

company making revenue projections, for example, has little use for real growth rates.

Similarly, commodity exporters in Latin America and Africa see the slowdown in Chinese commodity imports reflected in customs data on both import volumes and product value.

Carsten Holz, an economics professor at Hong Kong University of Science & Technology who has also taught at Harvard and Stanford, is a stout defender of China's official data. He says Beijing's use of the deflator as a fudge factor is "intensely annoying to detail-oriented analysts but only marginally relevant for practical purposes".

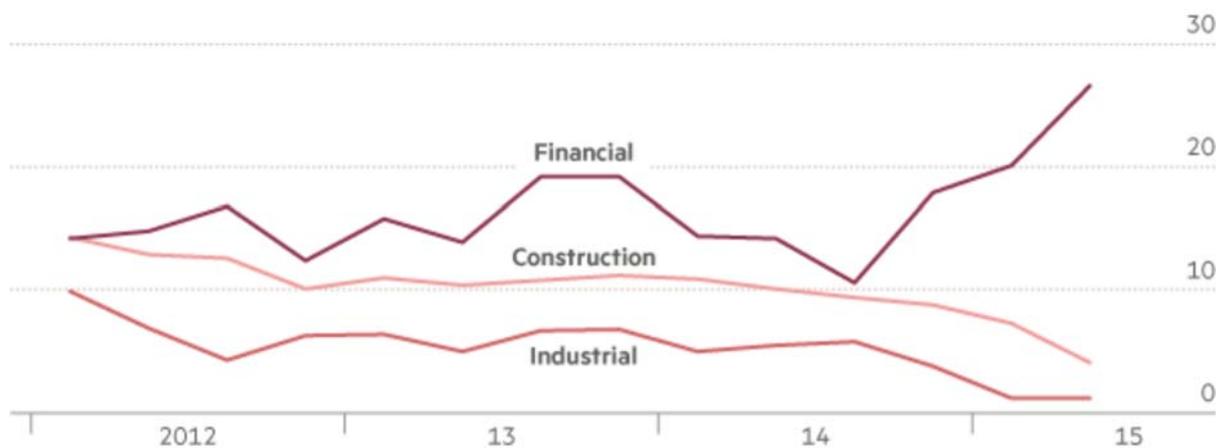
He doubts that Mr Li or his deputies directly instruct the National Bureau of Statistics to report a particular growth figure, but he acknowledges that the agency faces pressure to meet targets and avoid stoking economic pessimism. In theory the GDP deflator should be the broadest measure of inflation for all goods and services produced in China, including those not counted in the consumer price index. CPI covers consumables but not investment goods or services like logistics or law.

The official data are the best out there. There is a range of final [real GDP growth] figures, all of which are equally justifiable

- Carsten Holz, economics professor at Hong Kong University of Science and Technology

## Reversal of fortunes: official data reveal sharp slowdown in the 'old economy'

Nominal GDP growth by sector (annual % change)



Sources: NBS; Société Générale

FT

The official statistics agency provides few details on how the GDP deflator is calculated. But Mr Holz believes that only the five-person Communist party cell within the statistics bureau would be privy to final deliberations. That group includes commissioner Ma Jiantang and his three deputies, including Xu Xianchun, head of the national accounts department.

"Xu Xianchun sits at the table, and he knows, 'Well, we should push it up a bit if we can.' He looks at his documents and he says: 'We can use this deflator, or we can equally justify using that deflator. OK, we're going to use that one because it leads to a tiny bit higher growth rate,'" Mr Holz says.

This is hardly a confidence-inspiring vision of Chinese data compilation. Yet Mr Holz sees no better alternative. He has stress tested the official growth rates using several alternative deflators based on published price indices like CPI and the producer price index, which tracks wholesale goods.

He concludes that China's average annual real growth rate between 1978 and 2011 — officially 9.8 per cent — may have been as low as 9.1 per cent or as high as 11 per cent. That still leaves the official rate as the best guess.

“I prefer the official data. I think they are the best data out there. I agree that there's a range of final [real GDP growth] figures, all of which are equally justifiable. The 7.0 [per cent] figure for 2015 could be in an interval of 6.5 to 7.0 per cent or [even] 7.2,” says Mr Holz.

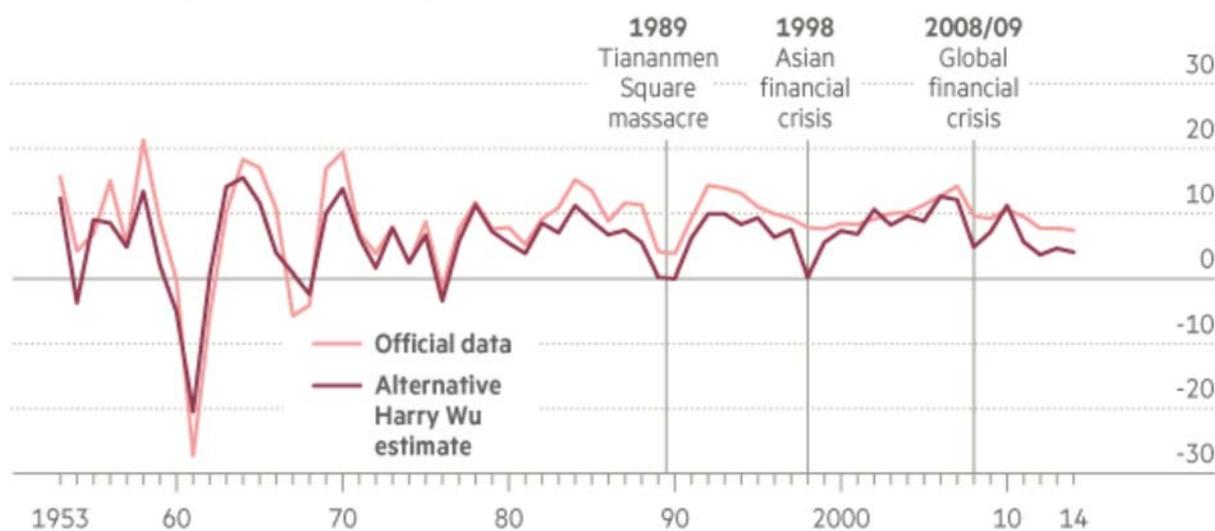
For his part, Mr Xu last month used the People's Daily, the Communist party mouthpiece, to defend his agency against accusations that the GDP deflator has understated domestic inflation in recent quarters by failing to adjust for the impact of falling commodity prices.

Mr Holz's most formidable intellectual antagonist is Harry Wu, economics professor at Hitotsubashi University in Tokyo. He first offered an alternative assessment of China's GDP data in 1995 and has spent 20 years refining his methodology.

His latest research finds that China's average annual real GDP growth for 1978 to 2014 was 7.1 per cent, 2.5 percentage points below the official estimate of 9.6 per cent. That is more than double the margin for error that Mr Holz calculates. Mr Wu says growth last year was 3.9 per cent, compared with the official figure of 7 per cent.

### Spot the difference: official v alternative GDP

China real GDP growth (annual % change)



Sources: NBS; Harry Wu

FT

Mr Wu initially mentored Mr Holz but their intellectual dispute later caused the two to fall out with each other.

“It got to a point where Harry Wu wasn't talking to me and wasn't citing my work,” says Mr

Holz. “I didn't agree with his work. It just didn't convince me. I thought it was actually wrong.”

As worries about China's economy have seized global headlines, analysts in London and Singapore — some new to the study of its national accounts — have weighed in on the data's reliability.

Michael Parker, economist for Bernstein Research in Hong Kong, is illustrative of that approach, but he disagrees with the sceptics. “The idea of getting tens or maybe hundreds of thousands of accountants and statisticians across China to march consistently in a crooked line — and to do that for a decade or more — sounds, to us, implausible,” he says.

To follow the debate between Mr Wu and Mr Holz, by contrast, is to plunge down a rabbit hole of benchmark revisions, input-output tables and competing hypotheses about productivity growth in the services sector. Few analysts have tried to score the match punch by punch. Yet what is striking is how much the two agree on. In particular, both point to problems with how the NBS, the statistics agency, measures the industrial sector, the backbone of the economy.

The NBS stopped publishing raw figures for industrial output in 2008. Glaring problems had become an embarrassment to the extent that by 2007 monthly production data from large-scale enterprises showed that such output was greater than the total industrial output reflected in quarterly GDP data. Logically, that is not possible.

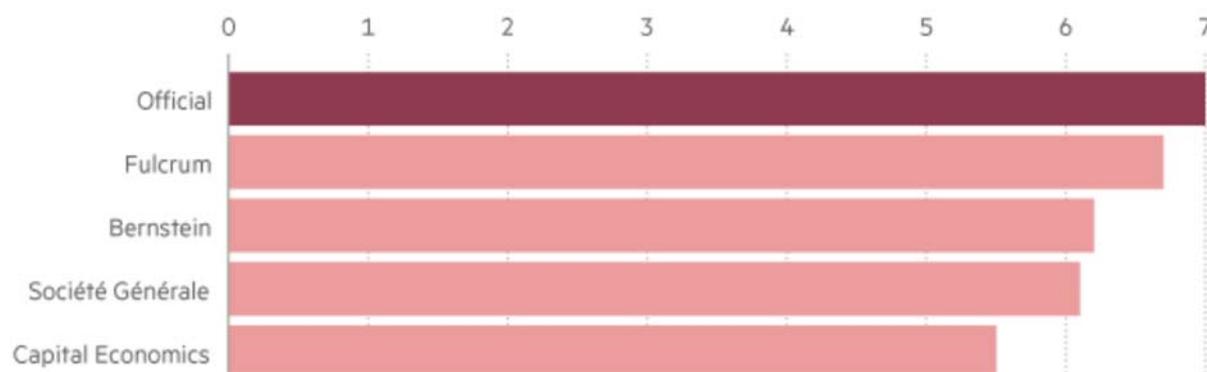
Such paradoxes are blamed on over-reporting of output by companies and local governments. Local GDP growth has traditionally been an important factor used by the Communist party to evaluate performance and decide who is to be promoted up the ranks, though that is slowly changing.

Where Mr Holz and Mr Wu differ is largely their response to these flaws.

Mr Holz broadly trusts that Mr Xu of the NBS, acting as a gatekeeper, is able to filter out the most glaring over-reporting when his national accounts division receives data from colleagues in the industrial statistics division and transforms it into the industrial component of GDP. For him, nominal GDP figures are mostly accurate, leaving the deflator as the main issue. Mr Wu, by contrast, considers the industrial GDP data irredeemably flawed by the need of local officials to hit targets.

## Visualising uncertainty: different estimates of China's growth

Estimates of China Q2 2015 real GDP growth (annual % change)



Both men see s [redacted] but Mr Wu's calculations diverge from the official data most acutely during crisis periods. His conclusion is that the error is "not mainly caused by [redacted] tead by political influences".

His scepticism propelled him to create a parallel data series for industrial output built around a Soviet-style list of names and quantities of industrial products manufactured in China each year from steel pipes to toasters.

"If local governments want to fabricate or manipulate commodity production stats, they can't do it. There are too many, and it's too complicated. You would need to be professional," he says.

## Industrious truth seeker

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To Mr Holz, Mr Wu's alternative series, which contributes to a much larger downward revision of China's real growth rates over decades, does not offer any improvement over the official data that both agree are flawed.

He argues that it is impossible to reliably derive industrial output in value terms because of difficulties in measuring improvements in product quality and assigning inflation-adjusted prices to newly developed goods. The quality question is crucial for whether price increases are interpreted as additional real output or simply inflation.

Mr Wu says his methodology incorporates reasonable assumptions about product quality and new development. Yet this is an awkward moment for his radical rejection of China's industrial production data. The monthly industrial output series, long viewed as suspect, shows a sharper decline than is reflected in the overall GDP growth rate. Indeed, this incongruity is the biggest source of scepticism about China's true GDP growth rate.

The likelihood that the growth rate is subject to manipulation reflects institutional weakness, notably the lack of independence of the NBS. But it also results from an analytical failing by those who assess China and other economies. If the emphasis on this single number were not so excessive, the incentive to massage it would be less.

The sooner real GDP growth loses its totemic significance, the sooner we are likely to receive more accurate data. For China and other governments for whom economic growth is the main guarantee of political legitimacy, the temptation to fudge will always exist. But in a scenario where China's economy is in such dire straits, that stability is threatened, relying on a single figure to persuade that things are great is unlikely to prove an effective political strategy.

### The Li Keqiang index: Services growth adds to doubt on alternative measure

The surest way to sound smart and hard-headed on the issue of Chinese growth in recent months is to cite the so-called Li Keqiang index.

This alternative growth metric is based on comments reportedly made by Mr Li, now premier, to then-US

ambassador Clark Randt in 2007, and revealed by WikiLeaks. Mr Li, then party secretary in the north-eastern province of Liaoning, reportedly said data on gross domestic product were 'man-made' and therefore unreliable. Instead, he preferred to use three direct indicators of economic activity supposedly less subject to exaggeration: electricity consumption, rail freight volume and bank lending.

Today, the Li Keqiang index is

exhibit 1 for the case that quarterly GDP data are soft-pedaling the extent of the economic slowdown. Other monthly indicators like fixed-asset investment, industrial production and retail sales — which have all slowed more sharply than real GDP over the past year — are similarly offered as evidence for the prosecution.

Yet these metrics fail to capture activity in the services sector, now the fastest growing area of the economy.

“Steel production, for example, is significantly more energy intensive than entertainment, so the demand for electricity has fallen sharply as the structure of the economy has evolved,” Nicholas Lardy, senior fellow at the Peterson Institute for International Economics and an observer of the Chinese economy, wrote last month.

“Assuming that electric power growth is a good proxy for China’s overall economic expansion is like trying to drive a car by looking in the rear-view mirror,” he added. Apart from the long-term evolution of the economy, one-off factors early in 2015 also enabled other sectors of the economy to make up for the decline in smokestack industries.

The stock market boom helped output from financial services increase 27 per cent annually in the second quarter. Yet such growth is certain to have slowed since the stock market rout that began in late June.

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