The Big Read Economic statistics

The growing problem with China's unreliable numbers

Beijing's GDP figures have drawn scrutiny for years but the questions have become more acute

Thomas Hale in Shanghai

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As he prepared to speak at a panel in Washington last December, Chinese economist Gao Shanwen tapped the microphone not once but twice, as though to make sure he would be heard. "We do not know the true number of China's real growth figure," he began.

After the Covid-19 pandemic, many people had doubts about the official GDP figures, which Gao thought were overstated. "My own speculation is that in the past two to three years the real number, on average, might be around 2 per cent, even though the official number is close to 5 per cent."

By January, Gao was no longer chief economist at SDIC Securities, his former employer in Hong Kong. In a WeChat group of Chinese economists, he went quiet. For almost a year, there was no sign of any public appearance.

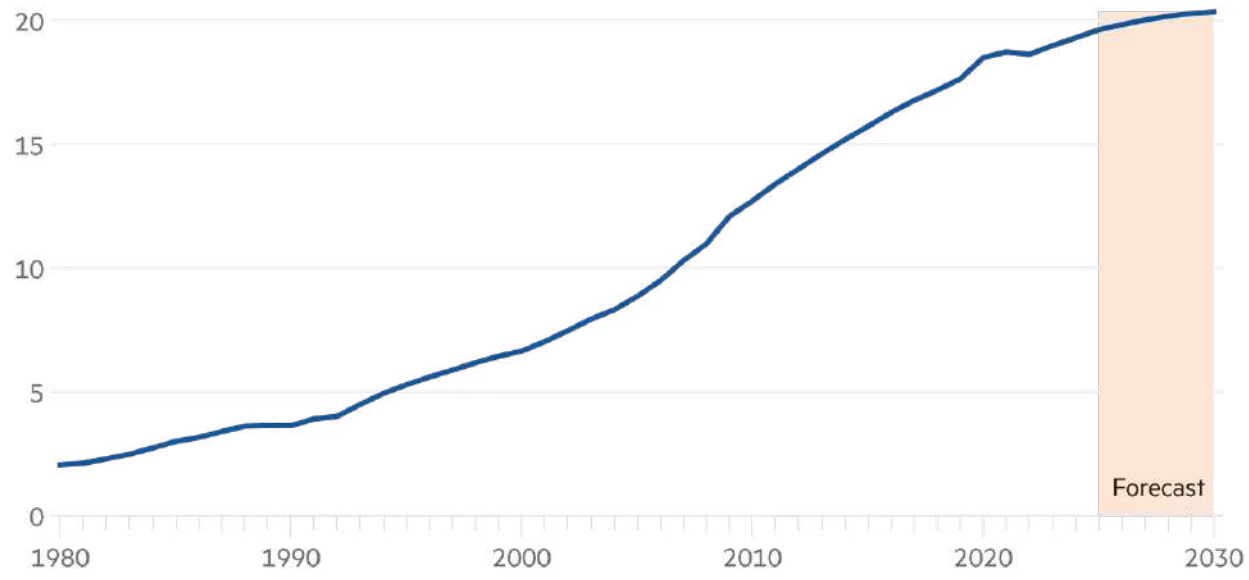
It is only in recent weeks that Gao has re-emerged, participating in a panel about savings and investment at a conference in Shanghai.

His almost year-long silence underlines the intense political sensitivity surrounding China's economic data.

Over the decades that its growth rates were the envy of the rest of the world, the reliability of its statistics drew scrutiny. But the questions have become even more urgent as the economy has lost momentum amid a property slowdown and trade tensions with the US.

China's importance in the world economy puts a premium on the quality of its data

China's share of global GDP, at purchasing power parity (%)



Source: IMF

Rather than addressing past concerns about its data, China has instead increased opacity by discontinuing a number of data series and further restricting access for researchers. At a time when governments, international businesses and financial markets are watching China's economy more closely than ever, their understanding is deeply constrained.

Eswar Prasad, a professor at Cornell University and former IMF official, points to "opacity in data collection", "lack of clarity on definitional issues" and "the absence of transparency on sampling methodology" across China's macroeconomic data.

China is one of the two biggest economies in the world, he says. "It would be nice to know what is really going on."

Such concerns come as the US is also facing scrutiny over data quality, especially after President Donald Trump sacked the head of the Bureau of Labor Statistics in August. But in the US, "we know what the problems are", says Prasad.

Unlike every other big economy, China does not produce a quarterly breakdown of GDP in terms of consumption, investment and net exports — an issue repeatedly raised by the IMF.

On an A-to-D scale for national accounts, the IMF's 2024 grade for China is C. The measure puts it on a par with India and below Vietnam, which also transitioned from a Soviet-style measurement system in the early 1990s.

Vast quantities of official data are still produced in China and are widely used to compile alternative estimates of economic growth. In some cases, they indicate weaknesses, including recent signs of deflation and falling home prices. The country's most widely used gauge of investment is negative this year for the second time in decades.

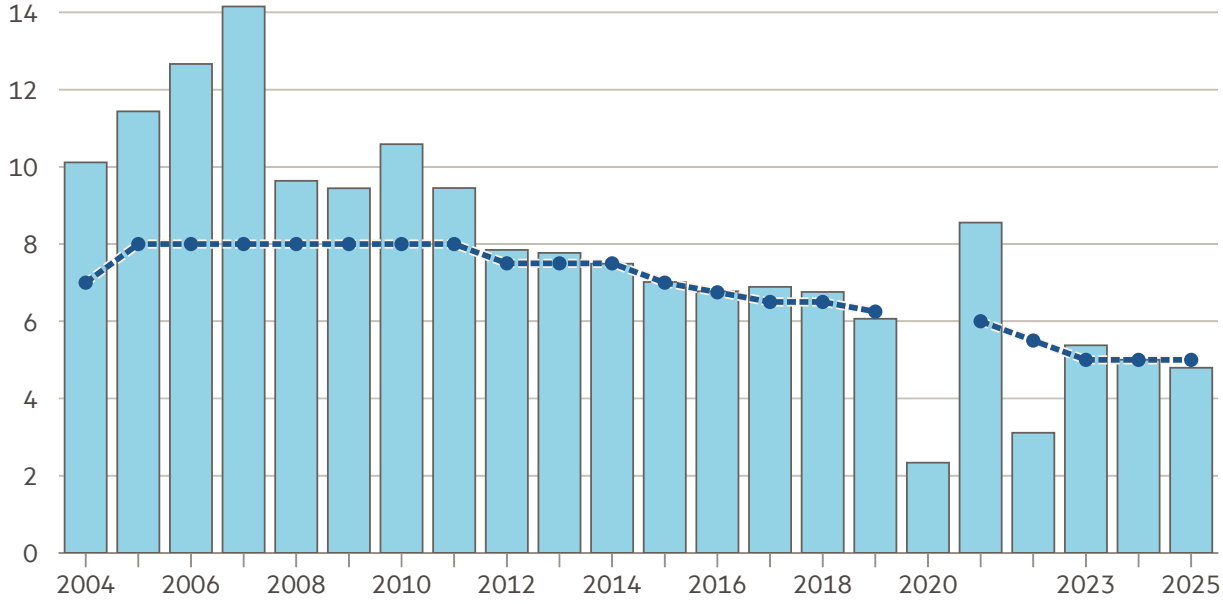
The question of how this contraction tallies with official growth figures poses a puzzle for analysts. Except during the shock of Covid, national GDP data has since its adoption typically hit or surpassed its overarching target, currently at about 5 per cent.

Following its entry to the World Trade Organization in 2001, China made efforts to upgrade its statistical methods and engage in dialogue, shedding light on the extent of the practical measurement challenges it faced across such a vast and fast-changing economy.

But as the political system has become more closed under President Xi Jinping, especially during his unprecedented third term, which was confirmed in 2022, efforts at outreach have dwindled. Sensitivity over data of all kinds soared during the pandemic and has remained elevated.

Chinese growth has been very close to the target in most years since 2010

Real GDP growth (%), actual (columns) and official target (line)



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Source: IMF; NBS; Haver Analytics • 2025 actual growth = IMF forecast. From 2013 the growth target was set at 'around' the figure shown, except 2016 (mid point of range 6 to 6.5%), 2020 (no target due to Covid) and 2021 (growth to exceed 6%)

What is "unquestionable", says Chang-Tai Hsieh, a professor at the University of Chicago's Booth School of Business, is that the lack of interaction with the country's National Bureau of Statistics (NBS) reflects "the big shift in terms of how all the other organs of the Chinese party state interact with the world . . . They have clamped down".

As for the GDP number itself, economists are increasingly relying on intuition to discuss how much the economy has really slowed.

"Regardless of what the number is, everyone knows in their bones that that number is low," Hsieh says. "When the government insists it's high, it's sort of playing this emperor's new clothes game . . . [Growth is] not the same, it's not 5 or 6 [per cent], it's a new economic reality now."

Calculating the size of any economy is a difficult task. Modern GDP accounting was developed in the US after the Depression of the 1930s, drawing on centuries of thought and practice.

Rather than one single number, statisticians usually produce three. The expenditure approach to GDP — which many countries consider the best way to capture activity in a modern economy — measures consumption, investment and net exports.

The production approach instead tries to capture companies' output minus their inputs. The income approach estimates what individuals and businesses earn and pay in tax. In theory, the three different approaches should equal each other.

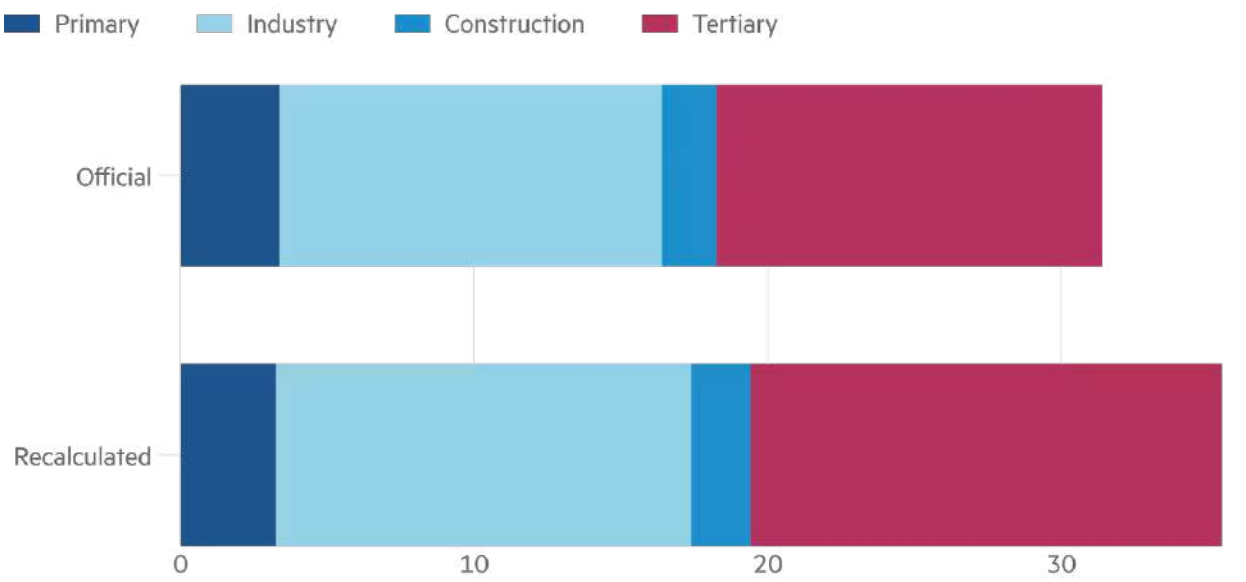
Until 1993, China went a fourth way. Its material product scheme, the offspring of an approach pioneered in the Soviet Union, counted commodities and goods produced across state-run factories.

Eager to understand its own growth as it reopened to global trade, and under pressure to improve its data, Beijing drew on international guidance. Canada's national statistical agency launched a partnership with the NBS in the 1990s.

Inevitably, historical contradictions and inconsistencies arose, including a notable jump in official employment from 1989 to 1990. As in other authoritarian systems, one of the big risks is misreporting by local officials looking to impress their superiors. In comments made in 2007 and released by WikiLeaks in 2010 Li Keqiang, who later became premier, described GDP figures as "man-made" — adding that he focused on electricity usage, rail cargo and bank lending.

Carsten Holz, a professor at Hong Kong University of Science and Technology, recalls pointing out an inconsistency in the expenditure GDP data to an NBS division head in the early 2010s. "He had to make a phone call to somebody else who was in charge of that series and try to figure out what was happening," says Holz. "As far as I could see, it could not be resolved."

Rosen and Bao found that China's economy was larger than the official numbers suggested



Source: Daniel Rosen & Beibei Bao: 'An Independent Look at China's Economic Size' (Center for Strategic & International Studies 2015)

Statistical methods were also being influenced by the growing numbers of Chinese economists who had studied overseas. One repatriated US PhD, who declined to be named, recalls working for a local government, also in the 2010s, to help sample the number of livestock on farms. Previously, the authorities had relied on informal estimates from elderly farmers.

A decade ago, the NBS was relatively engaged with outside researchers. In 2014, Daniel Rosen, co-founder of consultancy Rhodium, and researcher Beibei Bao drew on public databases to recalculate the national accounts for 2008.

The resulting book, *Broken Abacus?*, concluded China drew on a hybrid of the production and income approaches to GDP measurement and highlighted a host of data issues. It also suggested that the official growth figure for that year of 9 per cent was in fact an underestimate, although it was "pretty close to what we would have thought was a reasonable count of activity", Rosen says.

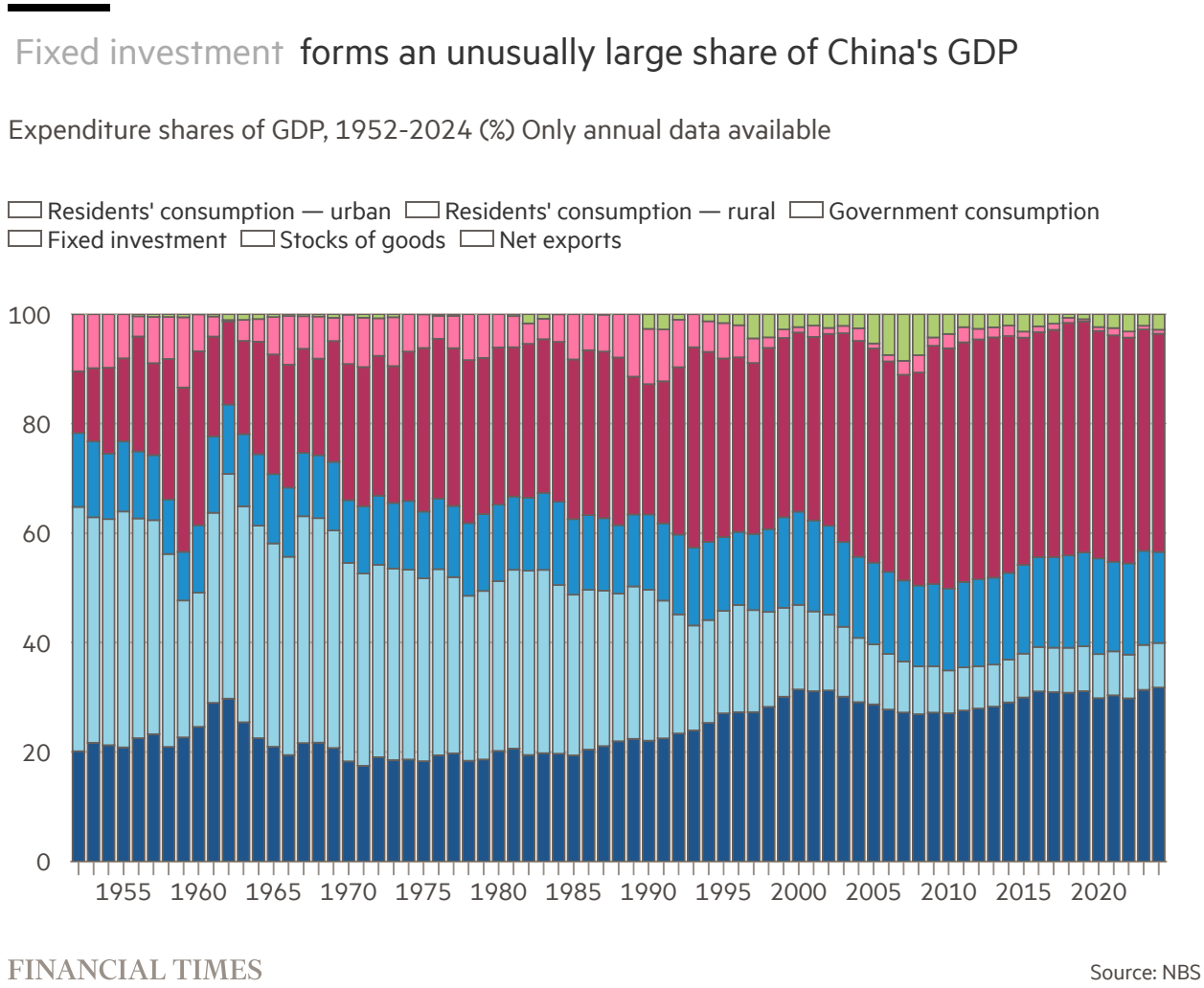
A decade later, transparency has in some ways gone backwards. One of the best examples is fixed asset investment, a statistic that dates back to China's planned economy era.

All other large economies publish quarterly breakdowns of the expenditure approach to GDP, including investment, consumption and net exports. They also publish subcomponents of those broad categories, which can provide useful insights into what is driving the headline figures. In the US, for instance, residential fixed investment plunged by 22 per cent in the fourth quarter of 2008, dragging down overall GDP.

China does not publish this data. Emerging Advisors, a consultancy, says that across 40 emerging economies it tracks, only four others do not publish such quarterly data, and they are countries with economies based on hydrocarbons. "We can't stress enough how abnormal this is for an economy of any significant size," noted economist Jonathan Anderson in a report this year.

Instead, China publishes quarterly data based on the production approach, which is harder to analyse. The expenditure GDP data is only published in nominal terms for the whole year.

However, Beijing does publish monthly figures for fixed asset investment. In its annual yearbook, the NBS states that this is made up of investment in real estate development, capital construction projects and *nonghutouzi* — or rural household investment. In 2023, it amounted to more than Rmb50tn ($7tn), equivalent to 40 per cent of China's GDP and over twice the UK's entire economy.



There is considerable overlap between fixed asset investment and the overall investment figure that is published with the annual GDP data, but they are not identical. The overall investment numbers do not include land sales, which are part of fixed asset investment, but do include changes in inventories of goods.

In 2025 so far, fixed asset investment is down 1.7 per cent and a property component is down 14.7 per cent. The latter has fallen consistently since 2022 throughout a housing slowdown.

But China's official GDP investment data, which does not provide any detailed breakdown of types of investment, shows no sign of declining.

Indeed, its contribution to annual growth has remained positive throughout the property slowdown and implying some significant source of new investment.

Logan Wright, who leads the China research team at Rhodium, argues that the NBS has not "as far as we know" explained this "offset".

Given the greater detail that is available, economists rely heavily on the fixed asset investment data to reconstruct the missing GDP data that they would get from other countries.

A recent study by the Reserve Bank of Australia, which cited the significance of Chinese demand for iron ore, used it as part of a series of calculations to estimate quarter-on-quarter expenditure breakdowns. A Brookings paper on provincial growth targets published in March also used it to derive infrastructure investment as a proportion of GDP.

My sense is the big shift that started in 2012-2013 is this view that China is surrounded by enemies and if we don't deal with this, the party state is going to crumble

But such an approach is far from straightforward, in part because of new gaps in the data. In 2018, the NBS stopped publishing sectoral breakdowns of fixed asset investment by value, leaving only growth rates. It also revised down historic totals, which had drawn scrutiny after growing rapidly, citing "error data found in inspections". In 2021, it discontinued a price series, which has been crucial to adjusting for inflation.

In a 2020 paper, Holz, the Hong Kong academic, identified a "pattern" whereby "the NBS removes data from publication that reveal the poor quality of PRC statistics" at times when the figures "should show significant slowdowns". Subsequent discontinuations have included the loss of a land sales data series in 2023 and the temporary suspension of youth unemployment data in the same year.

Hsieh at the University of Chicago has had no contact with the NBS since he co-authored a 2019 paper that used tax data to estimate that China's GDP had been overstated. He suggests series are discontinued for two reasons: "they no longer have confidence in the quality of the data", or "there's something they would rather people not know".

"One charitable interpretation of what they did [with the fixed asset investment data] is that they could just be saying none of this data should be used," he adds.

Retail sales — another monthly gauge — is, along with household surveys, used as a proxy for missing quarterly consumption GDP data. As with fixed asset investment, its exact relationship with the annual GDP data is not disclosed, raising questions of how any weaknesses would show up.

China's data is "low credibility" but people will not "throw . . . [it] out the window", says Rosen, pointing to the need for "reference points" for trillions of dollars of existing foreign direct investment in China.

There is evidence that the NBS has for years adjusted the data it receives from local governments, often downwards, to counteract regional over-reporting. Hsieh and his co-authors in 2019 estimated that these adjustments averaged 5 per cent of total GDP each year from the mid-2000s, but were still insufficient to counter such over-reporting.

Today, he suggests that, based on tax data, the "data problems in terms of pulling together the aggregate have gotten more serious over time".

In his experience, the NBS was "for the most part trying to do the right thing". The present clampdown, in his view, predates the pandemic and reflects a broader closure of the political system.

"My sense is the big shift that started in 2012-2013 is this view that China is surrounded by enemies and if we don't deal with this, the party state is going to crumble," he says. Like "almost everything we've seen since then", he adds, data is "just one small piece of strengthening control over all cadres of the party".

In China, like anywhere else, even the driest economic data can have political implications.

While the numbers themselves have confounded researchers, the relationship between institutions, such as the NBS, and the Communist party to which they ultimately answer is even more difficult to parse. On the party, "we know next to nothing", says Holz.

Beijing's relations with the west, from trade to co-operation over the architecture of its accounts, have deteriorated significantly. When the IMF delivered its C rating for China's national accounts in 2024, Beijing disagreed, arguing that its production-side GDP was the "appropriate primary approach".

The dispute hints at underlying ideological differences. Modern GDP accounting, especially expenditure data, is historically intertwined with market economies and their conventions of governmental and financial transparency.

China continues to emphasise "hard production data", says Frederic Neumann, chief Asia economist at HSBC. The government "actively sees the value in less information".

Even at a time of unambiguously high growth, the authors of *Broken Abacus?* noted that openness was treated with caution. Today, a sense of defensiveness has intensified.

"I can see how they look at it," adds Hsieh. "'We have tried openness, we have tried transparency, and all that does is bring out our enemies.'"

Public understanding of China's statistics risks becoming outdated, given its reliance on an earlier, more open era. "There is now extremely little [published] directly on NBS statistics quality," says Holz, even if its unknown adjustments are of critical importance to the final number.

At a separate speech in Shenzhen last December, which is still censored online, Gao, the Chinese economist, described a breakdown in the relationship between GDP and retail sales, as well as lagging fixed asset investment. He calculated the economic impact of real estate bubbles bursting in other countries and contrasted them to the absence of any impact on China's GDP figures.

This time, speaking his own language, his tone at times shifted towards deadpan irony.

"Perhaps this phenomenon exceeds our ability to understand," Gao said, of the various contradictions in the data. "This is possible," he went on, with a slight raise of the eyebrows. "But . . . we tend to think that we need to consider the growth data more carefully."

Data visualisation by Keith Fray