

A new set of Chinese economic figures adds up to yet another headache for statisticians

A study of industrial profits highlights more anomalies in official numbers, the accuracy of which has long been questioned

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China economy

This year, economists and analysts have been scratching their heads over an increasing number of statistical anomalies in some of the most watched data, such as industrial profits.

This is not a new problem for the NBS, whose results have been questioned by outside experts for years.

One of the most notorious examples is the long-standing problem with the country's gross domestic product figures, where the combined provincial figures do not tally with the NBS's national total. The bureau's calculations are vital for understanding and shaping policy towards the world's second largest economy – including the basis on which it can be described as such.

But the methodology that underlines the figures has been subject to intense questioning by statisticians, and sceptics have noted that the end results often prove to be politically convenient.

"In an authoritarian system there is definitely an incentive for statistics officials to publish data that will please the government.

"At the same time, however, economic policy that is based on unreliable data can only be deficient and thus leads to outcomes that will not please the government," said Carsten Holz, professor of economics from the Hong Kong University of Science and Technology, who has closely studied Chinese statistics for years.



The latest concerns centre on areas such as profits from large industrial companies, retail sales, electricity consumption, coal output, and company revenues in cultural and related industries. One of the perplexing issues is that the NBS has often reported positive year-on-year growth rates in percentage terms, while growth in absolute yuan terms has been negative.

This deviation, which barely happened in the past, has reinforced scepticism over the quality of the data and fuelled the suspicion that the NBS generates data outcomes that match the policy goals of the Chinese government leadership.

In July, profits from industrial enterprises with more than 20 million yuan (US\$2.9 million) in revenues rose 16.2 per cent year on year, according to the NBS.

But comparing this year's absolute yuan levels with last year's, profits dropped by 15.92 per cent, according to calculations by the *South China Morning Post*.

Cumulatively, the profits grew 17.1 per cent year on year in the first seven months, according to the official data, but fell 8.1 per cent in absolute terms.

The bureau explained in footnotes in its data report that it only compared firms that were included in the data sample both this year and the same time last year.

The bureau adjusts its sample periodically during the year, adding or deleting companies depending on whether they rise above or fall below the minimum revenue threshold.

Firms that are in only one sample appear to have been stripped out of the calculation, though the revisions in the samples used are not made public.

At the end of 2016, the number of industrial firms with revenues above the threshold stood close to 400,000.

Similar reasoning applies to first-half revenues from "above-scale" firms in cultural and related industries, which include tourism, media, libraries, and museums.

At the end of June, the NBS sample contained 59,000 companies as opposed to 54,000 during the same period last year.

Their operating revenues rose by 9.9 per cent year on year officially but dropped by 3 per cent in absolute terms.

Such methodology has drawn scorn from some observers for having special "Chinese characteristics" that are not used in other major countries.

But more importantly, it runs risks of overestimating or underestimating actual growth when the total number of firms in the sample drops or rises.

"If you are in a cycle where many companies exit or enter the pool, this methodology is problematic," Xu Jianwei, Hong Kong-based senior China economist from French Bank Natixis, said. "If it's an accelerating cycle, new companies will enter the pool. Are you going to kick out these new companies when you do the math? If so, you are probably underestimating growth."

As a consequence, Xu said, these official figures should be used only for reference. He tends to check audited books of large listed industrial firms to cross-reference for his economic analysis.

Failing to explain data discrepancies until the public raised the alarm was a major professional blunder by the NBS, Holz said.

On the other hand, he said, the changing methodology showed the NBS was desperate to find more reliable statistical measures.

A GAME OF CAT AND MOUSE

One China economist close to the NBS said there has been an internal debate over the clarification of data discrepancies.

It was very likely the NBS lowered last year's base figures to make this year's profit growth rate from industrial firms higher in percentage terms, the economist said.

The revisions form part of a campaign to clean false data from local authorities, who have been inclined to inflate figures to gain more fiscal support from the central government.

For instance, dividing this year's first-half profits of "above-scale" industrial firms from each Chinese province by their reported year-on-year growth does not align with last year's absolute numbers. The difference signals the extent of overstatement at the local level.

Based on calculations by the *Post*, the provinces and regions that inflated their industrial profit data by more than 30 per cent last year include Tianjin, Hebei, Inner Mongolia, Jilin, Jiangxi, Shandong, and Guangxi.

The result is not surprising because some of those provinces in question had already been exposed for forging data. For example, the Binhai New Area, an economic zone in Tianjin, was exposed for having inflated its 2016 GDP growth by a third.

Inner Mongolia also admitted earlier this year that it had overstated industrial output by 40 per cent and fiscal revenues by 25 per cent in 2016.

Another sign of the NBS cleaning up local data is the plunging growth of fixed-asset investment (FAI), a key part of national GDP.

During the first seven months of this year, figures show investment by state-controlled firms and private ones increased by 1.5 per cent and 8.8 per cent respectively, compared to 10 per cent and 6 per cent for the whole year of 2017.

"How can the partial year 2018 data have such an extreme flip compared to 2017? It is not credible that state FAI is growing at only one-sixth the pace of the private one, the lowest ratio ever, especially when the press is filled with stories on the difficulties of private firms getting bank loans," Nicholas Lardy, a senior fellow at the Peterson Institute for International Economics, said.

"For the FAI data, they are beginning to wring out some of the vast overstatement of capital formation so the per cent change reported most recently is calculated against a prior number that has been adjusted."

[China's official figures: lies, damned lies or just changing statistical methods?](#)

Ning Jizhe, the director of the NBS, told Bloomberg in a recent interview that China had done well in cleaning up problems with false data, with a special crew of 60 people now investigating local data methodology and practice.

However, the battle between local governments and Beijing over the accuracy of data, sometimes described as a cat-and-mouse game, is hardly over.

A [study](#) written by analysts from the US research firm Rhodium Group in 2015 found that because of different data reporting systems, local authorities tended to overstate growth, which it turn made the central government adjust its national calculations in an attempt to factor this in.

In the past, the NBS has tried different ways of containing local data misreporting, such as embedding tracking chips in excavators and other construction equipment to measure their operating times, which can be compared with reported data on construction activity. The bureau has also cut down on layers of local bureaucracy that might influence local data by asking industrial firms to report their profits directly to the NBS online. But this has been undercut by local officials who have been known to go directly to local companies to “help” them fill their numbers.



Even inside the NBS, there is a mistrust of the data generated by different departments. According to the 2015 Rhodium study, the department that calculates the headline figures does not trust the information provided by its own industrial statistics department, which compiles data directly reported by individual firms.

“The statistical system is target-driven, so if consumer spending is targeted to grow at 10 per cent, say, then the statistics collectors make adjustments in order to reach 10 per cent.

“That might [cause the NBS to] change the number of companies being sampled, change the standards for inclusion in the samples, or even (in a case we ran into) call companies and suggest that they reduce last year’s numbers to create a more attractive comparison,” Anne Stevenson-Yang, co-founder of J Capital Research said.

Being wary of the accuracy of official data, economists around the world have resorted to other indicators, such as monitoring satellite images of the intensity of artificial night lights or rises and fall in energy consumption, to monitor the country’s economic activity.

[Credit rating agency Dagong suspended in cash-for-ratings probe](#)

But even these alternative measures seem to be losing their appeal.

Last month, China’s National Energy Administration said the country’s primary industry (the official term for the agriculture sector) used 6.5 billion kilowatt-hours of electricity in June, an increase of 6.6 per cent from the same month in 2017.

But compared with the figures reported last June, that represented a drop of about 46 per cent. In the face of intense public suspicion, the agency later admitted that its calculations were based on a lower figure for last year, which excluded some support services based on a new definition of the agricultural sector.

It is the lack of transparency into data calculation methodology that most annoys economists. While NBS chief Ning now says China's official data is comparable to that of other countries, its reporting standards have yet to catch up with global standards.

In the United States, when a new methodology is introduced, data calculated using the old methodology is still made public for comparison.

"Indeed the US economy is less volatile than China's and its local data is more accurate," the economist close to the NBS said.

The economist said this raised the question why the NBS could not disclose its margin of error or release two sets of data using both the old and new methodology.

"I have repeatedly asked them about this, and they say they can't. I asked why. They said 'why invite confusion as it would take lots of effort to explain to laymen why you published two numbers?'."

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