China=s GDP Statistics - A Case of Caveat Lector?

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China enters the Year of the Snake celebrating the first increase in the rate of annual GDP growth since 1991/92. Although the international financial and business community generally accepts official growth measures at face value,[1] enthusiasm over China=s economic upturn is clouded by concern over the veracity of official data.

Recent research indicates that standard data may overstate China=s long-term GDP growth by several percentage points. This is not surprising to economists who have long maintained that official figures overstate industrial growth. Since official figures understate both the size and the long-term growth of China=s service economy, definitive conclusions about long-term GDP growth must await detailed analysis of the service sector.

Confirmation that GDP growth during 1978-1997 amounted to 7 percent rather than 9 percent would not negate the accomplishments of China=s economic reform. Nor would it undercut the reputation of China=s National Bureau of Statistics (NBS, formerly the State Statistics Bureau) as a dedicated organization that has modernized economic measurement while delivering a steady flow of generally accurate and increasingly comprehensive statistical information.

The more serious issue arises from evidence that, beginning in 1998, a broad array of economic information, including official measures of provincial and national growth, has succumbed to what Chinese authors describe as a Awind of falsification and embellishment@ (*jiabao fukuafeng*). Official reports indicating real output growth of 7.8 percent for 1997/98 and 7.2 percent for 1998/99 appear grossly exaggerated. Preliminary figures indicating 8 percent real growth in 1999/2000 may also include substantial Awater content@ (*shuifen*, the Chinese term for statistical overstatement).

What caused this explosion of falsification? What=s wrong with the GDP data for 1998 and 1999? Is the Awind of falsification and embellishment@ dying down? What=s the real story about China=s recent growth?

The current difficulties began when the Asian financial crisis threatened an economy already suffering from structural difficulties and from an overdose of anti-inflation medicine. Beginning in 1993, China applied monetary and fiscal brakes to cool the economy. When inflation abated with no big decline in growth, the government welcomed this Asoft landing,@ ignoring a steep decline in employment growth. As efforts to dismiss redundant workers moved into high gear - the number placed on furlough (*xiagang*) jumped from 3.6 million in 1994 to 5.6, 8.9, and 11.1 million during 1995-97 - China faced serious employment problems.[2] The 1997 crisis compounded the danger by stalling the growth of exports and foreign investment.

Faced with growing economic risk, incoming Premier Zhu Rongji launched a crusade for 8 percent growth in 1998. This campaign exposed overextended statistical agencies to Agreat pressures, under which it is not easy to preserve integrity.@[3]

The result was an epidemic of false reporting. As early as November 1998, a hard-hitting critique linked ambitious growth targets with false data:

> Some of the targets that come down from the higher levels are objectively impossible to reach, but since the leaders demand high speed, then the operating departments split up the responsibilities, and, in order to ensure the achievement of the result specified by the upper levels, the lower levels apply more pressure. . . . plan indicators that are based on the requirements sent down by the upper levels in reality are forced on the lower level statistical figures and then returned upwards.[4]

Beijing Aissued orders to every province and city.@ Shanghai, for example, was to Aensure economic growth of 12 per cent. To this end, the Shanghai government also issued quotas to each level . . . plans that cannot ensure 12 per cent growth must all be returned for amendment.@[5] Eight percent growth became a Agreat political responsibility.@[6] Subordinates, fearing that failure to deliver 8 percent might endanger their careers, forced statisticians into upward revisions or simply fabricated figures to document the required growth.

This shattered China=s statistical reporting network. A retired NBS Director Asaid that the challenge of keeping statistics accurate was particularly difficult@ in 1998, and added that "deceiving the nation and tricking the people can lead to untold disasters.@[7] False reporting continued after 1998. Premier Zhu himself complained in March 2000 that Afalsification and exaggeration are rampant.@[8] A July 2000 article in the influential journal *Jingji yanjiu* [Economic Research] noted that Amistaken analyses of the economic situation during the past few years are related to unrealistic statistics.@[9]

With increasing openness, it is often possible cross-check statistical claims. The *China Statistical Yearbook* is the skeptic=s bible. Examination of recent data reveals a host of contradictions.

Table 1 reproduces official data for GDP, industrial output, and energy consumption. The aggregate figures depict an improbable scenario in which GDP grew by 25.6 percent during 1996-99 despite a 12.2% reduction in energy consumption.[10] The implied drop in energy requirements prompted credulous American researchers to announce that AChina has dispelled a commonly held notion that economic growth and energy consumption are necessarily coupled.@[11] More sensibly, Chinese analysts believe that Asteady increase in electricity output@ during 2000 indicates Athat the national economy is coming out of a slow period.@[12] The same link between energy use and output growth undercuts official growth claims for
1996-99.

Figure 1. Can these statistics by any chance be related?
Indices of GDP, industrial output, and energy consumption, 1990-1999. 1995 = 100

National Totals: Indexes of GDP, Energy Consumption, and Energy Requirements

	1990	1995	1996	1997	1998	1999
GDP index	56.7	100	109.6	119.3	128.6	137.7
Aggregate national energy use	75.2	100	105.9	105.3	100.8	93.0
Annual % change			5.9	-0.6	-4.3	-7.7
Energy use per unit GDP	132.6	100	96.7	88.3	78.4	67.5
Annual % change			-3.3	-8.6	-11.2	-13.8

Industrial Sector: Indexes of Output, Energy Consumption, and Energy Requirements

Industrial Output index	36.7	100	116.6	131.9	146.0	162.9
Industrial energy use	70.3	100	104.3	104.0	98.1	90.6
Annual % change			4.3	-0.2	-5.7	-7.7
Industry: unit energy use	191.3	100	89.5	78.9	67.2	55.6
Annual % change			-10.5	-11.8	-14.8	-17.3

Source: China Statistical Yearbook 1996, 1999, 2000.

Moving to other areas expands the list of anomalies. Could farm output increase in all but one province during 1997/98 despite floods that rank among China's top ten natural disasters of the 20th century?[13] Could industrial output rise 10.75 percent in 1997/98 even though only 14 of 94 major products achieved double-digit growth and 53 suffered declining output?[14] Could investment spending jump 13.9% in 1997/98 even though steel consumption and cement output rose by less than 5%?[15] Could retail sales advance 6.8% in 1997/98 when urban and rural garment sales plunged by 7.6 and 10 percent?[16] Skeptical Chinese analysts point to many such puzzles.[17]

The figures for 1999 raise similar difficulties. Official figures show the annual growth of investment spending falling from 13.9 percent during 1997/98 to 5.1 percent in 1998/99. It is difficult to imagine investment spending, the main source of China=s recent economic momentum, lagging behind GDP growth in 1999, nor could GDP growth have avoided a big drop if annual growth of investment spending had plunged by nearly two-thirds in a single year. Total retail sales at and below the county level reportedly increased by 5.7 and 6.6 percent in 1998/99 even though surveys show a decline in rural households= per

capita income .[18] Along with exaggerated totals for retail sales, the yearbook figures include a steep and improbable decline in inventories.[19] With virtually all commodity markets in a state of excess supply, a report by Chinese researchers indicating that Astockpiles of finished products within the entire state sector rose by 30.5% during 1999" is undoubtedly closer to the mark.[20]

Chinese media often contradict official claims of rapid growth. Press accounts from 1999 and 2000 refer to Astagnant incomes,@ Aeconomic stagnation,@ and Athe current economic depression.@[21] One article applies the term Astagnation@ to China=s rural industries, which are officially credited with double-digit growth; another states that rural industry, Aonce the nation=s economic locomotive, continues to fade into oblivion.@[22]

Reports about household incomes are of particular interest. In April 1999, *China Daily* stated that APer capita income in urban and rural areas continued to fall in the first quarter of this year.@[23] A July 1999 report cited Aslashed income@ as one reason for Asluggish@ car sales.[24] In October 1999, A66 percent of consumers said their household incomes had either remained unchanged or had decreased during the previous 12 months.@[25] The share of consumers who Aexpected to improve their financial conditions@ or expected Ahigher incomes in the next 12 months@ was 39, 37, and 39 percent in January, February, and March 2000. The March survey found expectations among consumers at Athe highest level since August 1998.@[26] These observations, which appear to reflect urban circumstances, seem inconsistent with official aggregates showing that per capita disposable incomes of urban households rose by 5.1 percent in 1997/98, by 7.9 percent in 1998/99, and by 8.4 percent in the first three quarters of 2000.[27]

NBS publicly rejected provincial figures for GDP growth in 1998 and 1999. Since China=s statistical apparatus rests on an elaborate structure of vertical reporting, NBS is poorly equipped to create reliable growth estimates outside normal reporting channels. Despite NBS= claim to have Asqueezed out the over-reported part@ from provincial figures,[28] official announcements indicating national GDP growth of 7.8 percent for 1997/98 and 7.2 percent for 1998/99, as well as preliminary figures showing 8 percent growth for 1999/2000, have not escaped the Awind of falsification and embellishment@ that has engulfed China=s statistical system since 1998. This survey establishes a strong case for rejecting official Chinese measures of GDP growth for 1998, 1999, and in all probability, for 2000 as well. We reject these data not because of (inevitable) technical shortcomings, but because, to use Chinese terminology, they have lost touch with reality (*shizhen*).

What is the alternative to the flawed official aggregates? In the absence of plausible statistics, China=s size and heterogeneity make it extraordinarily difficult for outside analysts (and for Chinese policy-makers) to gauge economic trends with any degree of accuracy. How can we balance the reality of torrid growth in some sectors and regions with stagnation or decline elsewhere? Japan=s experience of information revolution amidst overall stagnation illustrates the range of possibilities.

Chinese commentators agree that deficit spending added about two percentage points to overall growth in 1998 and 1999.[29] If so, what was the underlying rate of growth for 1998? With energy consumption

down by 4.3 percent in 1997/98, the possibility of negative growth without or even despite the government=s deficit spending cannot be dismissed.

Air travel offers a plausible upper limit for GDP growth during 1997/98. Despite an economic process tilted toward upper income groups and the impact of price wars, which routinely slashed ticket prices by 30-40 percent during 1998, passenger miles grew by only 2.2 percent on domestic routes and 3.4 percent overall. It is difficult to imagine that GDP could have grown faster.

Based on these observations, a plausible guess would place real GDP growth for 1997/98 between -2 percent and +2 percent. There is no reason to doubt the observation, shared by official data and unofficial reports, that growth in 1999 was slightly lower than in 1998, in which case the previous logic would place 1998/99 growth somewhere between -2.5 percent and +2 percent. There is also no reason to question Chinese claims that growth during 1999/2000 surpassed the results for 1999, but speculation about plausible growth rates must await the publication of further information.

What of the future? The National Bureau of Statistics, which is the victim rather than the author of this episode, continues its efforts to revive honest reporting. This mission, however, cannot succeed without unwavering support from China=s top leadership. A return to statistical normalcy may require convergence of actual economic growth to the Apolitically correct@ level of 7-8 percent. In the meantime, a recent statement that Aforging false statistics@ is Anot as rampant as in previous years@[30] allows users of Chinese economic data to hope for further improvement.

1. Exceptions include Ian Johnson, ABeijing, Stung by Criticism, Promises to Issue More Accurate Economic Data,@ *Wall Street Journal* 25 February 1999, p. 2, which describes official data for 1997/98 as Aa series of feel-good figures,@ and Standard and Poor=s *Sovereign Ratings Service: China (People=s Republic of)*, which states that Aofficial growth statistics are widely discredited@ (September 1999, p. 2).

2 . Data on *xiagang* from Cheng Liansheng and Liu Xuemin, "China's Sixth Peak of Urban Unemployment and its Special Features," *Jingji yanjiu ziliao* [Economic Research Materials], no. 1 (2000), p. 5.

3. Zhang Lanping, AQuality Problems in Regional National Income Calculations,@ *Zhongguo tongji* [China Statistics], no. 7 (1999), p. 12.

4. Gan Xinmin and Li Tongyin, ATo Control Falsification, We Must Control its Foundations,@ *Zhongguo tongji* [China Statistics], November 1998, p. 21.

5. *Ming Bao* [Hong Kong], 10 July 1998, translated in BBC SWB FE/3278 S1/1, 14 July 1998.

6. *China Daily*, 19 September 1998, p. 4.

7. Comments by Zhang Sai quoted in *Keji ribao* [Science and Technology Daily], 7 March 1999, internet translation courtesy of David Cowhig.

8. ANation Moves Boldly Forward,@ *China Daily* 6 March 2000, p. 5.

9. Wang Xiaolu, ASystem Change and Sustainability of China=s Economic Growth,@ *Jingji yanjiu*

[Economic Research], no. 2 (2000), p. 11.

10. GDP and energy data from *Zhongguo tongji nianjian 1999* [China Statistical Yearbook 1999, abbreviated hereafter as Yearbook], pp. 57 and 247.

11. William K. Stevens, "Global Economy Slowly Cuts Use of Fuels Rich in Carbon," *New York Times*, 31 October 1999, p. 36.

12. Xie Ye, "Power Generation Progresses Steadily," *China Daily*, 6 December 2000, p. 5.

13. Agricultural output data from Yearbook 1999, p. 382. For classification of the 1998 floods among the ten top natural disasters of the 20th century, see *Zhongguo tongji* [China Statistics], no. 8 (1999), p. 38.

14. Industrial output value and physical commodity output for 1997/98 from Yearbook 1999, pp. 424 and 445-446.

15. Investment spending and cement output from Yearbook 1999, pp. 183 and 446; increased steel consumption of "about 4 percent" from *Zhongguo wujia* [China Price], no. 3, 1999, p. 8.

16. For garment sales, see *Zhongguo gongye jingji* [China Industrial Economy], no. 9 (1999), p. 34. For retail sales, see Yearbook 1999, p. 546. The retail price index for textiles and garments changed by less than one percent during 1998 (ibid., 297).

17. For further examples, see Meng Lian, "Analysis of Economic Conditions and Policies During the Past Several Years," *Gaige* [Reform] no. 3 (1999), pp. 73-82.

18. Yearbook 2000, pp. 334 and 553.

19. Yearbook 2000, p. 66.

20. "Statistical Analysis of 1999 Operating Results for China's State Enterprises," *Zhongguo gongye jingji* [China Industrial Economy] no. 9 (2000), p. 29.

21. "Reshuffle Supply-Consumption Structure," *China Daily* 24 October 2000, p. 4; Dong Fureng, "Flexible Policies Urged on State Input," ibid., 3 April 2000, p. 4; Zhu Qiwen, "Fiscal Policy Needs Adjustment," ibid., 15 July 1999, p. 4.

22. Zhao Huanxin, "Ministry: Stop Illegal Fining of Rural Firms," *China Daily* 10 August 1999, p. 5; Tan Hongkai, "Moderate Economic Growth Predicted," ibid., 12 June 2000, p. 4.

23. Wang Chuandong, AState to Bolster Demand,@ *China Daily*, 29 April 1999, p. 1.

24. Xue Cheng, ASupply and Demand Studied,@ *China Daily Business Weekly*, 19 July 1999, p. 1.

25. Bu Ran, AIncreased Renting Expected,@ *China Daily Business Weekly*, 6 December 1999, p. 6.

26. Chen Zhiming, ASurvey Says Buyers Catty as Economy Roars Ahead,@ *China Daily*, 28 March 2000, p. 5; AConsumers Upbeat About Economy,@ ibid. 28 April 2000, p. 1.

27. Income data from Yearbook 1999 and 2000, and from *China Monthly Economic Indicators*, no. 1 and no. 9 (2000), Table 3.14.1.

28. Xu Binglan, AStatisticians Seek Reliability,@ *China Daily Business Weekly* 15 February 1999, p. 1.

29. For example, Mark Landler, AA Chinese Leader Talks of Growth Around 7% This Year,@ *New York Times*, 5 January 2000, C3; Huo Yongzhe, "Proactive Fiscal Policy to Stay in 2001," *China Daily Business Weekly* 4 December 2000, p. 8.

30. Guan Yixin, APursuing Stable Development,@ *China Daily* 26 December 2000, p. 4.