

What's Happening to China's GDP Statistics?

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During a May 2001 conversation with several Chinese economists in Beijing, I expressed doubt that China's recent GDP statistics reflect actual economic performance. Without missing a beat, a Chinese colleague said, "Nobody believes recent GDP statistics." According to the *New York Times*, "many economists say the country's real economic growth rate is, at most, half of that reported" [Smith 2001].

What's going on? I believe that, beginning with 1998, standard GDP data contain exaggerations that extend far beyond the technical difficulties addressed in recent studies (e.g. Maddison 1998; Meng and Wang 2000; Ren 1997). This comment focuses on three matters: quantitative inconsistencies, qualitative information from Chinese commentaries, and suggestions about the possible magnitude of overstatement.

Quantitative Inconsistencies

Official figures for recent GDP growth appear in the top row of Table 1. The yearbook figures imply that real GDP grew by 24.7 percent between 1997 and 2000. During the same three years, energy consumption dropped by 12.8 percent. The implied reduction of 30 percent in unit energy consumption over three years seems implausible, despite the rapid growth of computer manufacture and other activities with low unit energy consumption. Rapid growth of energy efficiency is not a hallmark of China's economy: in 1997/98, for example, the efficiency of energy conversion in producing thermal electricity, coke, and refined oil products all declined, and the "total efficiency of energy conversion" was no better than the average for 1983/84.¹

[Table 1 About Here]

International comparisons highlight the implausibility of recent Chinese growth claims. Table 2 presents capsule summaries of several Asian economies during comparably short time periods going back to the 1950s. China's recent official growth story is an obvious misfit: in every other instance, including China's own experience ten years earlier, substantial GDP growth coincided with increased energy use, higher employment, and rising consumer prices.

[Table 2 About Here]

Returning to recent Chinese data, the clash between output and energy trends is only one of many unlikely elements. The figures for 1997/98 bristle with inconsistencies. Could farm output increase in all but one province despite floods that rank among China's top ten natural disasters of the 20th century?² Could industrial production rise 10.75 percent even though only 14 of 94 major products achieved double-digit growth and 53 suffered declining physical output?³ Could investment spending jump 13.9% even though steel consumption and cement output rose by less than 5%?⁴ Skeptical Chinese analysts point to many such puzzles (e.g. [Meng 1999]).⁵

Subsequent figures seem equally dubious. Data on consumption, which Chinese accounts identify as "a major driving force in the rapid development of the economy," are especially problematic.⁶ Table 3 compares national data on retail sales growth with survey figures showing changes in per capita outlays by urban and rural households. With one exception,⁷ national figures for retail sales grow more rapidly than per capita expenditure figures shown in household budgets. The difference is far too large to attribute to population growth, which is approximately one percent per year.

[Table 3 About Here]

A further difficulty is that, particularly in rural areas, retail sales rise more rapidly than household income, implying an increase in the average propensity to consume – i.e. the share of consumption spending in household income. However a recent studies finds a declining trend in the average propensity to consume among both urban and rural households through 1998 [[Zhang 2000], [Tao 2000]]; subsequent reports indicating that “moderate income growth has intensified people’s tendency to save money” [Bing 2001] point to a continuing decline in the ratio of consumption spending to income – the exact opposite of what the retail sales data imply.

Information from Chinese Commentaries.

Beginning in 1998, Chinese analysts complain that the statistics system has become enmeshed in a “wind of falsification and embellishment” [*jiabao fukuafeng*]. Extensive commentary in Chinese sources, including many specific and detailed accounts,⁸ leaves no room to doubt that intentional falsification of economic performance indicators is commonplace throughout the business community and at every level of government. The result is “universal falsification of statistics, as a ‘statistical bubble’ works its way up through the system, and provides mistaken reportage to the decision-making levels” [[Meng 1999], p.78]. Premier Zhu Rongji complained in March 2000 that “falsification and exaggeration are rampant” [Nation 2000, p. 5].

Starting in 1998, the National Bureau of Statistics [NBS] has rejected provincial growth data on economic growth, which it dismisses as “cooked local figures” [Xu 1999]. Despite recent efforts to create statistical networks that bypass local and provincial

governments, the Bureau lacks the capacity to collect data outside normal information channels, particularly since survey research remains subject to interference from lower-level officials (e.g. [Hu, Chen, and Zhou 2000], p. 24).

Chinese policy discussions often ignore the official growth scenario. A July 2001 account cites Wu Jinglian's view that "China has reversed its downward momentum in economic growth, which started in 1997" [Factors 2001]. An August 2001 summary of views on fiscal policy notes that deficit spending "was introduced in 1998 to overcome insufficient domestic demand and dwindling exports," and then observes that because "the economy has been revived, some economists say that the positive policy should be weakened" [Jia 2001], p. 1]. But official projections show that growth in the "revived" economy of 1999/2001 is slower than in 1997 and no greater than in the endangered economy of 1998. These (and other) texts suggest that prominent Chinese economists base their analysis on private maps of recent trends that differ substantially from the official picture sketched in Table 1.

In addition, many Chinese accounts directly contradict official figures. For example: "Per capita income in urban and rural areas continued to fall in the first quarter of this year" [Wang 1999]. "In October [1999], 66 per cent of [apparently urban] consumers said their household incomes had either remained unchanged or had decreased during the previous 12 months" [Bu 1999]. "In recent years, rural incomes have gone down year by year [*zhunian xiajiang*]" [Wang 2000].

Toward An Alternate View of Recent GDP Growth

Since abandoning provincial growth reports, the National Bureau of Statistics has offered no public explanation of how its central office derives the figures that serve as official estimates of China's national growth. Pressure to affirm official growth targets overwhelms local and provincial statistical bureaus, Chinese economic analysts, and even international bankers and market researchers whose firms pursue business ties with Chinese government agencies. Can we believe that the central offices of the National Bureau of Statistics remain untouched by these circumstances?

For readers who share this author's discomfort with the official data, analysis of recent economic trends must begin by exploring alternatives to the official figures in Table 1. The size and diversity of China's economy pose formidable obstacles to any such effort.⁹ Nonetheless, China's civil aviation industry offers a starting point for reassessing recent GDP growth.

Airline travel appeals to a high-income clientele. Since rising inequality is a prominent feature of China's economy in the 1990s [e.g. [Xu and Zou 2000]], income growth among the airlines' prosperous clientele surely exceeded the norm, probably by a large margin. A fierce price war slashed ticket prices during 1998.¹⁰ Airlines routinely offered discounts of 30-40 percent to travelers on domestic routes. With customers' incomes rising and ticket prices plunging, passenger traffic should have grown well ahead of disposable income and aggregate consumption, the largest components of aggregate income and expenditure. Yet the data for 1997/98 show that passenger miles rose by only 2.2 percent on domestic routes and 3.4 percent overall.¹¹

In the absence of major shifts in the structure of GDP, the elementary economics of demand and consumption points to 2.2 percent as a generous upper bound for overall

real growth during 1997/98. Declining energy use, output reductions in many branches of industry, mass layoffs, widespread excess capacity, inventory accumulations, and the impact of major floods make this a far more plausible measure of 1997/98 GDP growth than the official figure of 7.8 percent. And 2.2 percent is an upper bound. The actual result could have been far lower, perhaps even negative.

The (entirely plausible) qualitative picture presented in Chinese reports indicates that GDP growth declined slightly in 1998/99 and improved thereafter. The continuation of excess supply, downward price pressure, near-zero employment creation, widespread excess capacity, inventory build-up, and large-scale accumulation of idle bank deposits indicate that real growth remains well below the 7 percent level needed to absorb new urban labor force entrants [Ge 1999].

These considerations underlie the proposed alternate figures for GDP growth shown in Table 1. These figures represent little more than guesses about China's recent GDP performance. They are not firmly grounded in empirical data. But unlike the official figures, the alternate series does seem consistent with Chinese policy discussions and with official data on changes in employment, prices, and energy consumption.

Official performance measures for recent years imply that China's economy has entered an unprecedented interlude that combines high-speed growth with declining energy use, falling prices, minimal employment growth, widespread excess supply, rampant overcapacity, low expectations, and large-scale pump-priming. Even though recent growth claims defy economic logic and clash with a broad array of credible information from Chinese sources, economists both within and outside China have

continued the long-standing practice of routinely adopting official figures,. This “business as usual” approach is a recipe for bad policy and flawed research.

The alternative is to hypothesize that the National Bureau of Statistics has run afoul of the same political pressures that have caused local authorities to become “obsessed with. . . GDP growth rates – the leading criteria for evaluating cadre performance” ([Gilley 2001], p. 18), to conclude that official data showing 7-8 percent real GDP growth for recent years reflect official objectives rather than economic outcomes, and to continue the search for alternate figures that can provide a realistic appraisal of China’s recent economic performance.

Table 1
 Chinese GDP and Related Data, official and Alternate Figures, 1998-2001
 (Percentage change)

	1998	1999	2000	2001	Cumulative Growth 1998-2001
Real GDP					
Official	7.8	7.1	8.0	7.9	34.5
Alternate	-2.0 / +2.0	-2.5 / +2.0	2.0 / 3.0	3.0 / 4.0	0.4 / 11.4*
Energy Use	-6.4	-7.8	1.1	1.1	-5.5
Urban Formal Employment	2.3	1.6	1.2	1.2	0.8
Consumer Price Index	-0.8	-1.4	0.4	-0.5	-2.3

Notes: Figures for 2001 cover only the first two quarters. The cumulative growth calculations assume no change for the second half of 2001. Alternate figures are author's guesses - see text.

*Endpoints of cumulative growth range based on low and high annual growth figures.

Sources: data for 1997-2000 are from [Yearbook 2000], p. 21 (official real GDP), p. 118 (urban employment) and from [Abstract 2001], pp. 130 (energy) and 84 (prices).

Figures for 2000/01 are from *Monthly Indicators* vol. 16 (July 2001), pp. 14, 15, 32, and 70. The energy data for 2000/01 refer to production rather than consumption.

Table 2.
Episodes of Growth in Asian Economies, 1957-2001
(cumulative percentage change)

Cumulative Change in	Japan 1957/61	Taiwan 1967/71	Korea 1977/81	China 1987/91	China 1997/2001
Real GDP: official alternate	52.8	49.7	21.6	31.8	34.5 0.4 / 11.4
Energy consumption	40.1	85.2	33.6	19.8	-5.5
Employment	4.6	17.0	9.4	23.2	0.8
Consumer prices	10.6	20.6	111.7	46.6	-2.3

Sources: for Japan, [Ohkawa and Shinohara 1979], pp. 282, 389, 393 and www.stat.gov.jp/english/1431.htm (Table 9-20); for Taiwan, www.stat.gov.tw and [Taiwan 1983], pp. 103 (employment) and 209 (power consumption); for Korea, www.nso.go.kr/eng; Chinese data for 1987/91 are from Yearbook 2000, pp. 55, 118, 239, and 289; data for 1997/2001 are from Table 1.

Table 3.
Growth of Retail Sales and Per Capita Income and Expenditure, 1997-2001
(percentage change, nominal amounts)

	1998	1999	2000	2001	Cumulative Growth 1997-2001*
Aggregate retail sales	6.8	6.8	9.7	10.3	38.0
Urban data					
Retail sales	7.1	7.1	10.6	11.6	41.6
Per capita*					
income	5.2	7.9	7.3	6.7	30.0
living expense	3.4	6.5	8.2	4.6	24.6
Rural data					
Retail sales: County	5.2	5.7	8.3	9.3	31.6
Below county	7.0	6.6	8.3	7.4	32.7
Per capita*					
Net income	3.4	2.2	1.9	-7.5	-0.4
Cash outlay					
Series A	0.8	-0.9	-8.5	-6.8	-14.8
Series B	-1.5	-1.5	-0.7	-6.8	-10.2
Cash outlay for consumption					
Series A	0.2	1.4	12.2	6.6	21.5
Series B	-1.7	-0.8	5.9	6.6	10.1

* indicates data from household surveys

Notes: Figures for 2001 cover only the first one or two quarters. Calculated values for cumulative growth assume no change for the remainder of 2001.

Sources: Data for retail sales are from Monthly Indicators vol. 16 (July 2001), p. 34.

Urban income data for 1997/2000 are from [Abstract 2001], p. 94 and measure total income. The figures for 2000/01 are from Monthly Indicators vol. 16 (July 2001), p. 80; they cover 2 quarters of 2001 and refer to disposable income.

Rural income data for 1997/2000 are from [Abstract 2001], p. 100; they measure net income. The figures for 2000/01 are from Monthly Indicators vol. 16 (July 2001), p. 88; they measure cash income and cover only the first quarter of 2001.

Urban outlays for living expenses from [Abstract 2001], p. 93 and (for the first half of 2001) from Monthly Indicators vol. 16 (July 2001), p. 81.

Rural cash outlay and cash outlay for consumption: Series A from Monthly Indicators, vol. 16 (July 2001), pp. 88-89. Series B from [Abstract 2001], p. 98 (for 1997/2000); the figure for 2000/01 is taken from Series A.

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¹ [Yearbook 2000], pp. 55, 246; [Abstract 2001] pp. 7, 130.

² Agricultural output data from [Yearbook 1999], p. 382. For classification of the 1998 floods among the top ten natural disasters of the 20th century, see *Zhongguo tongji* [China Statistics], no. 8 (1999), p. 38.

³ Industrial output value and physical commodity output for 1997/98 from [Yearbook 1999], pp. 424 and 445-446.

⁴ 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.

⁵ For further examples, see [Meng 1999].

⁶ [Growth 2000], p. 1.

⁷ The exception is the figure showing that that rural per capita cash expenditure on consumption rose by 12.2 percent during 1999/2000. This result is inconsistent with reports that rural per capita net income rose by only 1.9 percent during 1999/2000 [[Abstract 2001], p. 96]. There is also an internal inconsistency in the source, which shows a drop in per capita cash outlay of RMB 197.7 or 8.4 percent during 1999/2000 together with increases of RMB80 and RMB140.1 in expenditure on production and on consumption respectively [[Indicators 2001], pp. 88-89].

⁸ For further examples and discussion, see [Rawski (2001a, 2001b)].

⁹ Commenting on an earlier paper (Rawski 2001a), an NBS official said something like: "If you believe that we at NBS cannot measure China's GDP, what makes you think you can do better?"

¹⁰ In February 1999, “the CAAC [Civil Aviation Administration of China] and the State Development Planning Commission issued an urgent circular that put a halt to selling domestic air tickets at unreasonable discount prices” [Zhao 1999].

¹¹ Note that both the number of overseas travelers arriving in China and China’s income from international tourism increased during 1997/98, although more slowly than in prior years [*Zhongguo tongji* [China Statistics], no. 11 (2000), p. 48].