2

Numbers that suck (and some that don't)

There has always been scepticism about Chinese statistics. A country which relies on a Soviet-style reporting methodology for most of its economic data invites political interference and manipulation into the reporting process. In recent years, however, there has been concern among independent economists that China's growth data are becoming less reliable, not more so. Sectoral statistics do not appear to tally with the official story of an economy growing at 7% to 8% a year. The arguments are complex - and beyond definitive resolution - but in the article that follows Tom Rawski pulls together the available evidence across everything from energy consumption to clothing sales. His conclusion is that overall growth has indeed been heavily overreported. A second article, focusing on China's external trade, contrasts the very real success of exporters with the sagging fortunes of the domestic economy.

I The credibility gap: China's recent GDP statistics

II Credibility still: the export economy that works

I. The credibility gap: China's recent GDP statistics

The author, Thomas G. Rawski, is a professor of economics at the University of Pittsburgh. He is the author of numerous books and articles about China's economy.

China enters the Year of the Snake celebrating the first increase in the rate of annual economic growth since 1991. Enthusiasm over China's economic upturn, however, is clouded by concern over the veracity of official data.

China's growth industry

Recent research indicates that standard data may overstate China's long-term gross domestic product (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 performance must await detailed analysis of the service sector.

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

But a serious issue does arise from evidence that, beginning in 1998, a broad array of economic information, including official measures of provincial and national growth, succumbed to what Chinese authors describe as a "wind of falsification and embellishment" (*jiabao fukuafeng*).[1] Official reports indicating real output growth of 7.8% for 1998 and 7.2% for 1999 appear grossly exaggerated. Preliminary figures indicating 8% real growth in 2000 may also include substantial "water content", or *shuifen* – the Chinese term for statistical overstatement.

What would cause an explosion of falsification? What is wrong with the GDP data for 1998 and 1999? Is the "wind of falsification and embellishment" dying down? In short, what is the real story of China's recent growth?

Headline first, story to follow ...

Nice landing, shame about the jobs

The current difficulties began when the Asian financial crisis threatened an economy already suffering from structural weakness 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 "soft landing", ignoring a steep decline in employment growth. As efforts to dismiss redundant workers moved into high gear – the number placed on furlough (*xia gang*) jumped from 3.6 million in 1994 to 5.6 million, 8.9 million and 11.1 million during 1995 to 1997 – China faced serious employment problems. 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% growth in 1998. It was this campaign which exposed overextended statistical

1. The colourful term *jiabao fukuafeng* occurs several times in recent issues of the semi-official *China Statistics* (*Zhongguo tongji*). See, for instance, Ye Fengxin, "Wind of Falsification and Embellishment: Origins and Responses", *China Statistics*, No. 5, 1998, p31 and Gan Xinmin and Li Tongyin, "To Control Falsification, We Must Control its Foundations", *China Statistics*, November 1998, pp. 21-22.

agencies to what Zhang Lanping, a Shandong statistician writing in the semi-official periodical *China Statistics*, describes as: "great pressures, under which it is not easy to preserve integrity".[2]

To put it bluntly, there was an epidemic of false reporting. As early as November 1998, a hard-hitting critique which was also published in *China Statistics* 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.*[3]

The command economy

The Hong Kong newspaper *Ming Pao* reported in July 1998 that Beijing "issued orders to every province and city" requiring higher growth. Shanghai was to "ensure economic growth of 12%". To this end, the Shanghai government also issued quotas to each level – "plans that cannot ensure 12% growth must all be returned for amendment," said *Ming Pao*. National growth of 8%, in the words of the official *China Daily* of 19 September 1998, became a "great political responsibility". Subordinates, fearing that failure to deliver 8% 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. Zhang Sai, the retired head of the NBS, was quoted in the *Science and Technology Daily* (*Keji Ribao*) in March 1999 saying that "the challenge of keeping statistics accurate was particularly difficult" in 1998. He added that "deceiving the nation and tricking the people can lead to untold disasters". Nonetheless, false reporting continued after 1998. Premier Zhu himself complained in the *China Daily* on 6 March 2000 that "falsification and exaggeration are rampant".

Half fiddled, all confusing

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

An under-energised expansion?

Figure 1 (on next page) reproduces official data for GDP, industrial output, and energy consumption. The aggregate figures depict an improbable scenario in which GDP grew by 25.6% between 1996 and 1999 despite a 12.2% reduction in energy consumption. The implied drop in energy requirements prompted credulous American researchers, quoted in the *New York Times* of 31 October 1999, to conclude that: "China has dispelled a commonly held notion that economic growth and energy consumption are necessarily coupled". More sensibly, the *China Daily* reported recently that a faster increase in electricity output during 2000 indicated "that the national economy is coming out of a slow period". The link between energy use and output growth undercuts official growth claims for 1996 to 1999.

Moving to other areas expands the list of anomalies. Could farm output increase in all but one province during 1998 despite floods that rank among China's top ten nat-

2. "Quality Problems in Regional National Income Calculations", *China Statistics*, No. 7 (1999), p12.

3. Gan Xinmin and Li Tongyin, op.cit.

Figure 1. Can these statistics by any chance be related?

Indices of GDP, industrial output, and energy consumption, 1990-99. 1995 = 100

National totals
Indices 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
Indices 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
Energy use per unit of industrial output	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

ural disasters of the 20th century?[4] Could industrial output rise 10.75% in 1998 even though only 14 of 94 major products achieved double-digit growth and 53 suffered declining output?[5] Could investment spending jump 13.9% in 1998 even though steel consumption and cement output rose by less than 5%?[6] Could retail sales (measured in nominal terms) advance 6.8% in 1998 when urban and rural garment sales plunged by 7.6% and 10% respectively?[7]

A fine return from falling investment

The figures for 1999 raise similar difficulties. Official figures show the annual growth of investment spending falling from 13.9% during 1998 to 5.1% in 1999. 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 were reported to have increased by 5.7% and 6.6% in 1999 even though surveys show a decline in rural households' per capita income.[8] Along with exaggerated totals for retail sales, *China Statistical Yearbook* figures include a steep and improbable decline in inventories.[9] With

4. Agricultural output data from *China Statistical Yearbook* 1999, p382. For classifying the 1998 floods as one of the ten top natural disasters of the 20th century, see *China Statistics*, No. 8 (1999), p38.

5. See *China Statistical Yearbook* 1999, pp424 and 445.

6. Investment spending and cement output from *China Statistical Yearbook* 1999, pp183 and 446; increased steel consumption of "about 4 percent" from *China Price* (*Zhongguo wujia*), No. 3, 1999, p8.

7. For garment sales, see *China Industrial Economy* (*Zhongguo gongye jingji*), No. 9, 1999, p34. For retail sales, see *China Statistical Yearbook* 1999, p546. The retail price index for textiles and garments changed by less than 1% during 1998 (ibid., p297).

8. China Statistical Yearbook 2000, p334 and p553.

9. China Statistical Yearbook 2000, p66.

virtually all commodity markets in a state of excess supply, an unofficial report by Chinese researchers indicating that "stockpiles of finished products within the entire state sector rose by 30.5% during 1999" is undoubtedly closer to the mark.[10]

Propaganda standards are slipping

Chinese media have often contradicted official claims of rapid growth. Press accounts from the *China Daily* in 1999 and 2000 refer to "stagnant incomes", "economic stagnation" and "the current economic depression". One article applies the term "stagnation" to China's rural industries, which are officially credited with double-digit growth; another states that rural industry, "once the nation's economic locomotive, continues to fade into oblivion".[11]

Show us the money

Reports about household incomes are of particular interest. In April 1999, *China Daily* stated that: "per capita income in urban and rural areas continued to fall in the first quarter of this year." A July 1999 article in the paper cited "slashed income" as one reason for "sluggish" car sales. In October 1999, reporting recent income survey results, *China Daily* noted that: "66% of consumers said their household incomes had either remained unchanged or had decreased during the previous 12 months." In an article last year, the share of consumers who "expected to improve their financial conditions" or expected "higher incomes in the next 12 months" was 39%, 37%, and 39% in January, February and March 2000 respectively. This survey found expectations among consumers at "the highest level since August 1998."[12] The 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% in 1998, by 7.9% in 1999 and by 8.4% in the first three quarters of 2000.[13]

Don't shoot the statistical messenger

The NBS publicly rejected provincial figures for GDP growth in 1998 and 1999. However, since China's statistical apparatus rests on an elaborate structure of vertical reporting, the NBS is poorly equipped to create reliable growth estimates outside normal reporting channels. A front-page claim in the *China Daily Business Weekly* of 15 February 1999 said that the agency had "squeezed out the over-reported part" from provincial figures. But official announcements indicating national GDP growth of 7.8% for 1998 and 7.2% for 1999, as well as preliminary figures showing 8% growth for 2000, have not escaped the "wind of falsification and embellishment" that has engulfed China's statistical system since 1998. The author's view is that there is a strong case for rejecting official measures of GDP growth for 1998, 1999 and, in all probability, for 2000. These data are rejected not because of normal technical shortcomings, but because, to use Chinese terminology, they have lost touch with reality – *shizhen*.

Alternative numbers

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

10. "Statistical Analysis of 1999 Operating Results for China's State Enterprises", *China Industrial Economy*, No.9, 2000, p29.

11. Respectively, from *China Daily* editions of 24 October 2000, 3 April 2000, 15 July 1999, 10 August 1999, 12 June 2000.

12. Respectively, from *China Daily* and *China Daily Business Weekly* editions of 29 April 1999, 19 July 1999, 6 December 1999, 28 April 2000.

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

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 recent experience shows that swift diffusion of computers and cell phones, which we now see in China, does not guarantee rapid overall growth.

Chinese commentators agree that deficit spending added about two percentage points to overall growth in 1998 and 1999. If so, what was the underlying rate of growth for 1998? With energy consumption down by 4.3%, the possibility of negative growth that year without – or even despite – the government's deficit spending cannot be dismissed.

Take to the air for a plausible proxy

Air travel offers a plausible upper limit for GDP growth during 1998. Despite an economic process tilted toward upper income groups and the impact of price wars, which routinely slashed ticket prices by 30% to 40% during 1998, passenger miles grew by only 2.2% on domestic routes and 3.4% 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 1998 between –2% and +2%. 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 1999 growth somewhere between –2.5% and +2%. There is also no reason to question Chinese claims that growth during 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 with the "politically correct" level of 7% to 8%. In the meantime, a recent statement that "forging false statistics" is "not as rampant as in previous years" allows users of Chinese economic data to hope for better times.[14]

A complete set of footnotes for this article, with additional source information, can be found at the author's web-site: http://www.pitt.edu/~tgrawski/papers2001/caveat.web.pdf

14. Guan Yixin, "Pursuing Stable Development", *China Daily*, 26 December 2000.

II. Credibility still: the export economy that works

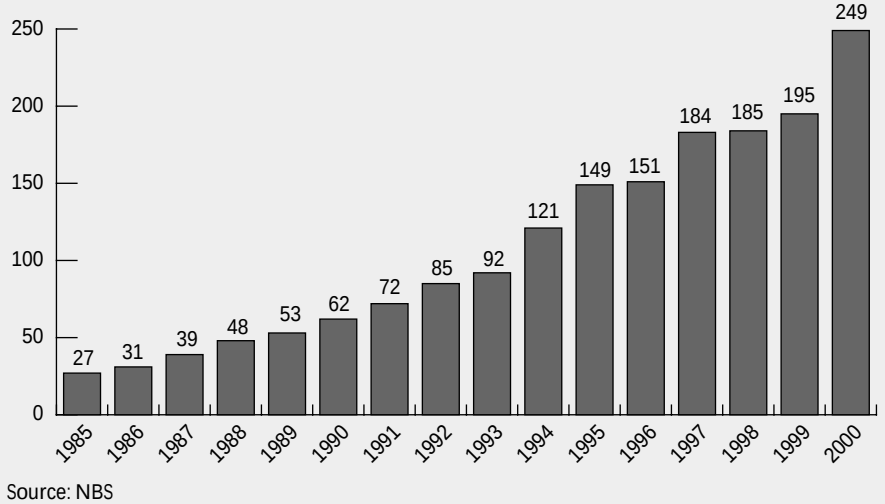
The author, Joe Studwell, is the Beijing bureau chief of the China Economic Quarterly.

Not much gets in the way of China's export economy. It expanded strongly through the post-Tiananmen recession of the early 1990s, blew off the Asian financial crisis of 1997 to 1998 and last year posted another record-beating performance (see Figure 1). Merchandise exports rose 28% in 2000 to US$249 billion. China notched up from the world's ninth-leading export country in 1999 to the number eight spot.

It is amazing what happens when you let the global market take charge, when contracts are enforced and when buyers pay their bills. Under these conditions, China has rapidly diversified what began as a purely low value-added export economy. Textiles and toys are still important – according to the Toy Manufacturers of America, an industry association, US$9.8 billion of US$14.6 billion in US toy imports in 1999 came from China – but new export categories are growing faster. High-tech exports increased by half last year to US$30 billion and the mainland's shipments of computer hardware exceeded Taiwan's for the first time. The mechanical and electrical products category (see Figure 2) – which comprises an array of goods of a somewhat higher value-added nature, such as consumer electronics – increased from 32% of total exports in 1997 to 42% last year.

These trends will continue and they are, unsurprisingly, most pronounced in the parts of China where government interferes least. In Guangdong, telecommunications companies Huawei and ZTE are exporting fixed and mobile digital switching equipment around the world. IBM, one of the biggest global personal computer (PC) makers, has in the past two years reengineered its Shenzhen PC assembly plant to serve the whole of Asia. Guangdong's dominance of the external economy continues, with the province accounting for 42% of all China's exports (see Figure 3). The eight districts of the Pearl River delta between Hong Kong and Guangzhou – which account for 90% of Guangdong's export production – sell more goods abroad than Thailand or Malaysia.

Figure 1. Chinese exports, 1985 to 2000. U$bn



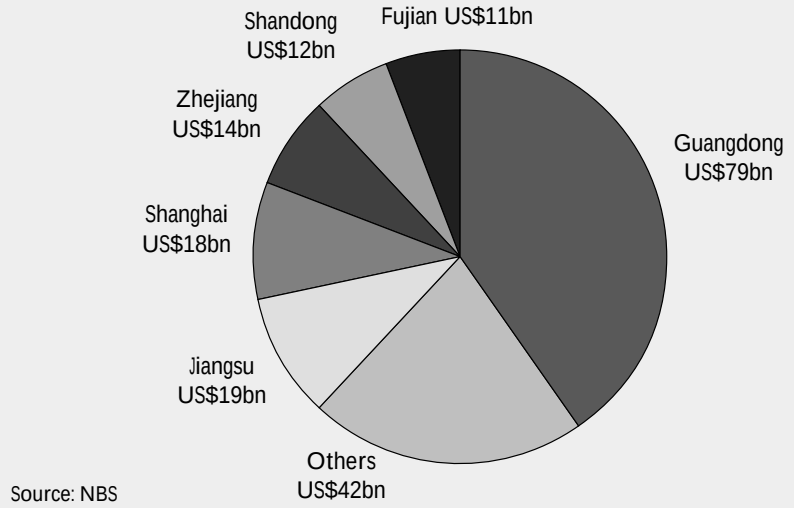
Source: NBS

Figure 2. Export categories worth more than US$0.8bn, 1999

	US$ bn
Aquatic products	1.9
Live poultry	1.0
Vegetables	1.5
Coal	1.0
Ships	1.6
Containers	1.5
Refined petroleum products	1.1
Rolled steel	1.4
Electric motors & generators	1.5
Static converters	1.2
Insulated wire & cable	1.3
Electrical switching or safety apparatus	1.4
Hand tools & tools for machines	0.9
Telephone sets	1.5
Sound-recording apparatus	2.3
Loudspeakers	0.9
Television sets	0.8
Cameras	1.0
Wristwatches	0.9
Medical & pharmaceutical products	1.7
Semiconductors	0.9
Furniture	2.7
Household pottery & porcelain	0.8
Cotton cloth	2.7
Polyester cotton cloth	1.0
Non-knitwear or crochet garments	14.4
Knitwear or crochet garments	11.0
Leather shoes	3.9
Cloth shoes	1.0
Plastic goods	3.9
Toys	5.1
Mechanical/electrical products	77.0
Total*	**150.8**

*77% of 1999 exports
Source: Customs statistics, *China Statistical Yearbook 2000*, p599

Figure 3. Top Exporting provinces, 1999. US$ bn



Source: NBS

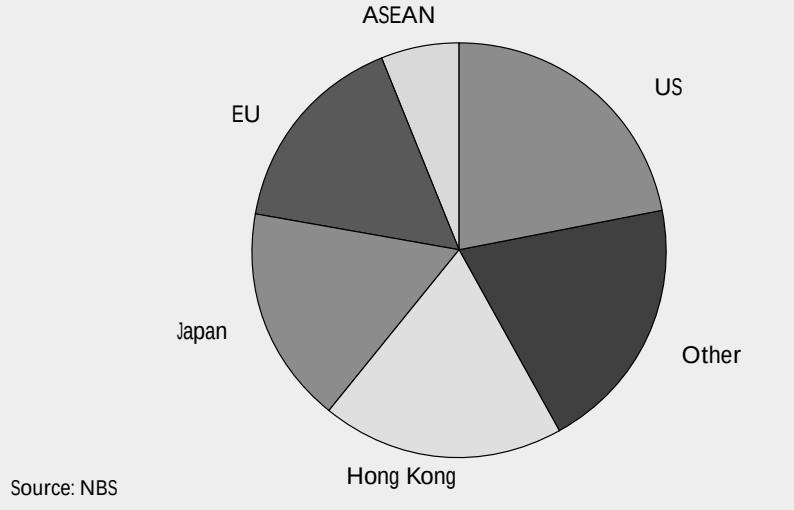
Hold on, Uncle Sam

It's not all about America

It is all good news, and with product diversification has come market diversification. As a single country, the United States is still important. According to US data, imports from China surpassed US$10 billion a month for the first time last August. But Chinese exports to other countries have been growing faster. Through the first half of 2000, the US was the slowest-growing of China's ten-biggest export markets. While the value of shipments to the US rose 30%, that of exports to the European Union increased 39%, to countries of the Association of South-East Asian Nations 51%, to South Korea 61% and to Russia 70%.

Fully 60% of China's exports now go to Asia. On paper this suggests that China need not suffer unduly from a recession in the United States. However, while it is certain that the relative exposure to the American economy is less than in the past, the prog-

Figure 4. Percentage of total Chinese exports going to leading export destinations, 1999. %



Source: NBS

nosis is uncertain. This is because there is no clear picture as to what proportion of exports to Asian countries ultimately depend on final demand in the United States. Japan may account for 17% of China's exports according to the National Bureau of Statistics (see Figure 4), but what part of all those cameras and micro-motors shipped first from Dalian to Japan end up being bought in north America?

Data from the past couple of months are not particularly encouraging. As the US economy's slowdown accelerated in the fourth quarter, the year-on-year increase in Chinese exports slipped to 14% in November and just 8.5% in December. This points to an uncomfortably strong link between China's trade prospects and the direction of the US economy. But it is too soon to draw any firm conclusions.

One-legged stools may fall over

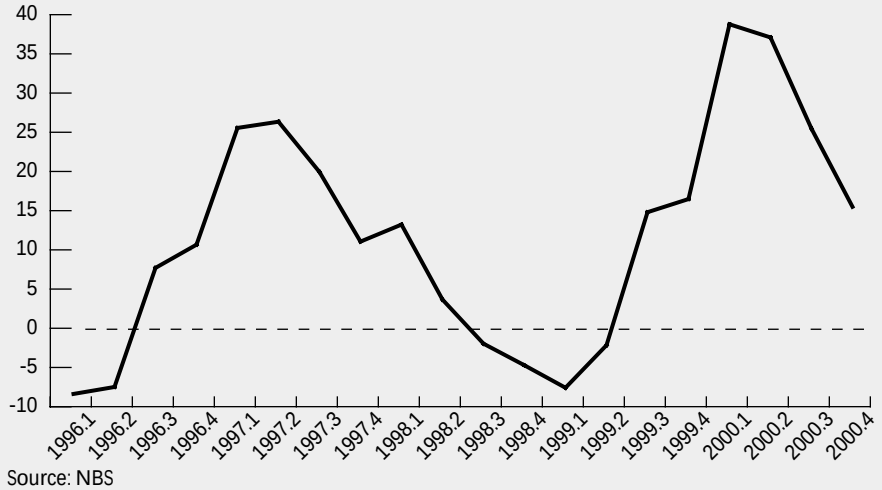
Over-reliant on exports

What can be said is that the Chinese government is playing a dangerous game by being over-dependant on exports for overall economic growth. In the medium term, the export economy is an entirely reliable provider of average double-digit expansion: after all, it has been doing this for 20 years. Exporters, however, cannot make their performance consistent from year to year. If, as Tom Rawski suggests, China's domestic economy is in a far weaker condition than official figures say, the country may be about to experience a cyclical downturn in export growth just as the broad economy is mired in recession.

The government's answer to the threat of this unholy coincidence has been to do all it can to pump the export machine to its limits. Value-added tax rebates for exports of machinery, toys, electronics, textiles and shoes have been pushed close to 100%. The record number of anti-dumping suits against Chinese exporters in the United States suggests state enterprises have been pressed to sell into international markets with or without profit margins.

Yet such policies make little sense. China is one of the world's leading exporters precisely because exports do create profits and those earnings should translate into much-needed tax for the government. To forego fiscal revenue and export at a loss

Figure 5. China's quarterly export growth, 1996 Q1 to 2000 Q4. %



Source: NBS

merely brings the madness of the domestic economy into play in the external sector. What the government should be doing is learning the lessons of the country's export success and employing them throughout the economy.

Why the real world works

It comes back to the points about market forces, binding contracts and getting paid. All these conditions are present in the export sector because it deals with the outside world. If the same type of environment prevailed in China's domestic economy, the exporters would not appear to be so remarkably successful. Making money would be normal, growth would be real and there would not be any need to massage statistics.