

Prepublication version of chapter for *SARS in China: Prelude to Pandemic?* Ed. Arthur Kleinman and James L. Watson. Stanford: Stanford University Press, 2005.

SARS and China's Economy*

By Thomas G. Rawski

Appraising the likely impact of SARS on China's economy involves a dangerous foray into economic forecasting. Forward projections are particularly risky for China because of massive institutional change and unusual structural elements (for example the extraordinary rise of domestic inequality), and because recent growth outcomes remain shrouded in controversy. I begin with observations about the economic and institutional background, examine available information about the immediate impact of the 2002/03 SARS outbreak, consider implications for analyzing China's economy, and briefly address longer-term perspectives.

China's Economy and Statistics System on the Eve of the SARS Outbreak

China's immense boom of the past quarter-century is a major episode in global history. Beginning in the late 1970s, China experienced two decades of extraordinary growth that raised every indicator of material welfare, lifted several hundred million from absolute poverty, and rocketed China from near autarchy into unprecedented global prominence. Despite claims that standard data overstate the dimensions of long-term growth, official statistics appear to provide a broadly accurate measure of national economic achievement during the first two decades of reform ending in 1997.

Broad agreement on economic performance terminates in 1997. Government statistics show growth continuing in the 7-8% range, but these figures appear to reflect official wishes rather than actual outcomes. In reality, China's growth slipped below the 7-8% range, especially during 1998 and 1999, when GDP growth may have fallen near or even below zero. This slowdown is partly attributable to the Asian financial crisis of 1997/98. The chief culprit, however, was domestic structural imbalance.

Figure 1 illustrates the gap between official performance data and this author's speculative estimates. Controversy continues over whether, and if so, by how much, official figures exaggerate recent performance.¹ Critics, including the present author, argue that recent growth claims clash with information about specific economic sectors

* Department of Economics, University of Pittsburgh. The author, who assumes sole responsibility for what follows, gratefully acknowledges information, comments and advice from Kam-Wing Chan, David Cowhig, Carsten Holz, Mo Ji, Nicholas Lardy, Guonan Ma, Dwight Perkins, Ruoen Ren, Werner Troesken, and Yifan Zhang, from participants at the September 2003 conference, and from members of the June 2003 Wianno Summer Study seminar sponsored by the John M. Olin Institute and the Weatherhead Center for International Affairs at Harvard University.

and conflict with abundant evidence of a major slowdown in 1998 and 1999 followed by gradual recovery of momentum. Numerous Chinese commentators have directly or indirectly questioned both the consistency and the veracity of recent official claims.²

Events surrounding the SARS episode lend credence to the claim that official agencies have intentionally exaggerated economic performance. Alan Schnur and Erik Eckholm recount how Chinese officials sought to deny the severity of the SARS outbreak until a Peking physician publicized accurate information. Official stonewalling by top public health officials could hardly have occurred without the knowledge of China's national leaders. Against this background, the May 2002 complaint by National Bureau of Statistics Director Zhu Zhixin that "the statistics system cannot effectively resist intervention" invites the conclusion that orders from the highest levels may oblige official agencies to issue false claims about economic as well as health outcomes.³

When official data "lose touch with reality" (*shizhen*), to cite a common Chinese term, statistics agencies typically appear to be victims of political pressure rather than perpetrators of fraud. Indeed, China's National Bureau of Statistics (NBS) has worked diligently and effectively to improve China's economic statistics over the past quarter-century. While maintaining a steady flow of statistical information to policy-makers, NBS has familiarized its staff with internationally-accepted methods of collecting and analyzing quantitative information, developed a system of regular household surveys, replaced Soviet-inspired systems with orthodox methods of national accounting, conducted a succession of national censuses, and developed a huge array of public information.

Despite these gains, and even without considering the "wind of falsification and embellishment" (*jiabao fukuafeng*) that rocked the statistics establishment beginning in 1998, it is widely agreed that the capacity of China's statistical authorities to produce accurate economic data has diminished over the past decade.⁴ Expansion of China's market system has brought a reduction in public cooperation. Cost pressures and commercial secrecy have encouraged many entities to withhold data. At the same time, data collection networks have suffered from reductions in both personnel and budgets. The growing prominence of quantitative indicators in evaluating the performance of local government and party leaders compounds these difficulties.⁵ When the incomes and career prospects of officials depend on data compiled under their own supervision, the temptation to manipulate crucial statistics is often irresistible - as is evident from information about American efforts to measure population, crime, aircraft reliability, and student dropouts.⁶

Whatever the exact dimensions of China's recent slowdown, there is no dispute over the economic situation on the eve of the SARS outbreak. After slowly gaining strength during 2000 and 2001, China's economy enjoyed a banner year in 2002, sparked by a nascent automotive boom, a world record level of national steel output, massive foreign investment, and rising private business activity.⁷ Rapid growth did not eradicate weaknesses that have burdened the economy in recent years: sluggish consumer demand, stagnation of farm incomes, slow employment growth. Despite these difficulties, China's

economy steamed ahead during the first quarter of 2003, and appeared en route to another strong year until the unexpected arrival of SARS.

Economic Impact of SARS: Short-term Effects

Historical experience indicates that direct economic consequences of one-time disease outbreaks are unlikely to extend beyond the short term.⁸ We therefore expect the main impact of SARS to manifest itself during calendar 2003.

As this is written in October 2003, the broad outline of SARS' economic impact is clear. Calculations by Ren Ruoan, for example, indicate that seriously affected regions, including Guangdong, Beijing, and provinces adjacent to the capital, accounted for 22.7 percent of China's 2001 gross domestic product (GDP). Peripheral regions accounting for 3.9% of GDP felt little effect from SARS. The remaining provinces, accounting for 73.4% of GDP, suffered only modest effects from the outbreak. Many accounts note that SARS mainly affected the tertiary or service sector, especially transport and communication, retailing, wholesale trade and catering. These hard-hit sectors accounted for approximately one-tenth of China's total output in 2001.⁹

These observations are not controversial. Despite occasional reports of factory closures, industry, the largest sector of China's economy, escaped major disruption. Official data for 15 categories of industrial goods show output declining for 8 items in May, 5 in June, and 10 in July. Industrial value-added dropped slightly in May and again in July. Output of thermal electricity, a key measure of manufacturing operations, dropped by 4.4% in April, fell a further 2.0% in May, then recovered slightly in June, when output remained 5.1% below the figure for April, followed by a big upward jump in July.¹⁰

Even though, as Ren Ruoan's analysis implies, the negative economic impact of SARS seems likely to be modest in scale and of brief duration, the politics of denial seems to have resumed control of China's national growth statistics in the second quarter of 2003. The predictable result was the announcement of statistics that strain credulity.

At the national level, official figures show that second-quarter GDP rose 6.7% above the comparable 2002 figure and 12.4% above reported output during the first quarter of 2003. The latter figure seems particularly improbable. The Chinese Entrepreneur Survey System's semi-annual poll of 2,000 companies found that "the volume of orders, production, exports and purchases all slipped during the second quarter" of 2003: "67 per cent of respondents said their orders dropped during the period, 67 per cent. . . said SARS increased their business costs and 65 per cent believe their profits have slumped."¹¹

Disaggregation reveals further inconsistencies. The increase in completed fixed asset investment reported for the second quarter of 2003 is more than double the reported increase in nominal GDP.¹² The sum of quarterly changes in completed fixed asset investment, retail sales of consumer goods, and China's balance of merchandise trade

(converted from dollars to *renminbi* at the official rate of Y8.28=\$1) is 46% larger than the reported change in total product.

SARS hammered China's entire retail sector. Damage was not confined to the regions with the largest concentration of disease victims: "Commercial sales dropped dramatically in the latter half of April following the outbreak of SARS in Beijing but a survey of 100 shopping malls across the country showed the sector to be recovering in May. . . . Sales. . . fell 35.66 percent year-on-year in the first week of May, 24.39 per cent in the second week, and only 14 per cent in the third week."¹³ Sales of electrical appliances during the spring "fell more than 45 per cent" in SARS-stricken regions of North China. "In other provinces, where the epidemic has had less impact, sales. . . fell an average 20 per cent."¹⁴ A survey conducted in May found that "47 per cent of Chinese mainlanders claimed. . . to. . . have deferred major purchases in the past six months" on account of SARS.¹⁵ With household incomes falling in rural areas, retail disruptions in the cities, airlines virtually grounded, and inter-provincial travel subject to intermittent blockages, it is hardly surprising to read that "private consumption dropped 0.6 per cent in the first half of this year."¹⁶

Despite these (and many similar) statements, official data show that second-quarter retail sales were 5.3 percent above comparable figures for 2002 – implying that sales of computers (+3 percent) and cell phones (volume and revenue down 3 and 10 percent respectively) lagged considerably behind overall retail sales!¹⁷ Retail sales typically drop between the first and second quarter. According to official data, the quarterly drop in 2003 (6.0 percent) was greater than in 2002 (1.2 percent), but smaller than in 2001 (6.4 percent). The implication that national retail sales during the SARS epidemic remained within the boundary of normal seasonal variation clashes head-on with overwhelming anecdotal evidence.

Among China's provinces, Beijing is uniquely dependent upon the service sector, which contributed 61.3 percent of the city's GDP in 2002, 10 percentage points higher than any other jurisdiction and 27 percentage points above the national average. The SARS outbreak prompted what Joan Kaufman describes as a "panic exodus" of students and migrant workers from the capital and essentially halted the normally huge influx of domestic and international travelers. As a result, Beijing's population dropped by perhaps 15-20 percent. Many public facilities and retail establishments closed their doors for several weeks. Despite these drains on economic activity, the municipality reported that total output during the first half of 2003 rose by 9.6 percent over the figure for 2002. Reported GDP for May was 4.8 percent above the figure for May 2002 and 14.4 percent above average monthly GDP for the first three months of 2003. Official reports place municipal GDP for the second quarter at 27.5 percent above results for the first quarter – more than double the comparable national figure, which shows a quarter-to-quarter increase of 12.4 percent.¹⁸ These data indicate a local revival of the "wind of falsification and exaggeration."

As with 1998 and 1999, it is readily apparent that official data do not reflect actual economic outcomes. But what is the alternative? How badly did SARS actually hit China's economy?

At the moment, the market for petroleum products, which reflects activity throughout the economy, may offer the best insight into short-term fluctuations. Consider the following reports:

May 26: "China's second largest crude oil importer. . . is going to reduce the import of crude oil in [June and July 2003] by 8%. . . . One official from Sinopec revealed that the company has taken emergency measures to decrease the crude oil processing amount in the coastal refineries. . . . in May the processing amount in these refineries will fall by 10%. . . . At present, most regions in China have been hit by SARS, for which China's demand for oil product went down, and it is said that this effect will not disappear in a short time, as a result, the oil product market showed a descendent trend."¹⁹

June 20: "China's crude oil imports in May were the lowest so far in 2003 as state refiners slashed throughput to compensate for falling domestic oil demand due to SARS. . . . Falling domestic oil sales led China to churn out more barrels for export. . . . 'Everyone will agree that the reason is SARS, which hit Chinese domestic oil products sales and led refiners to cut output, said a Beijing-based trader."²⁰

June 24: Two of China's largest refineries, Zhenhai [Zhejiang] and Qilu [Zibo, Shandong], plan to boost July production "due to expectations of a rise in domestic demand."²¹

June 27: "The third quarter will see a modest increase in China's oil products consumption as the threat of the SARS virus subsides, but demand still faces some pressure before returning to normal in the last quarter, a China-base oil analyst said."²²

July 2: "Singapore analysts predict that China's gasoline exports will rise in July "as soft domestic demand prompted traders to export more cargoes." These observers expect exports to fall in August due to "reduced crude run rates [i.e. lower production] and a recovery in domestic demand in China."²³

August 8: "China's second-largest refiner. . . is expected to reduce gasoline exports. . . . [according to a Beijing-based trader] 'We have problems now meeting the domestic demand, so exports for September are seen lower'."²⁴

With major refineries imposing "emergency measures" to scale back operations and diverting products to overseas markets because "China's demand for oil product went down," it is evident that, at the height of the SARS crisis, sales and consumption of petroleum products, and therefore the level of overall economic activity, experienced a steep decline. With pre-crisis growth plausibly reported in the vicinity of 9 percent during the first quarter, announcement of 10 percent output decline by major refiners suggests that the crisis pushed the economy toward a temporary standstill during May

and perhaps June, followed by a “modest” revival during the third quarter (amidst continued reductions in refinery output) and expectations of normal market conditions (i.e. resumption of rapid growth) toward the end of the year.

Thus a plausible guess about China’s economic growth during 2003 might include 9% expansion in the first quarter, a steep dive toward zero growth beginning in April and continuing into July, modest recovery during the third quarter and, if all goes well, further acceleration in the final three months.

Economic Impact of SARS: Analytic Perspectives

Ren Ruoan has produced what may be the most systematic analysis of SARS’ economic consequences.²⁵ Surveying various economic sectors, he observes that, as noted above, substantial negative consequences appear limited to specific segments of the tertiary or service sector, with other branches of the economy experiencing limited impact or, in the case of health services and pharmaceuticals, enjoying an unexpected boost to demand. In a worst-case scenario, Ren assumes zero output growth for the hardest-hit sectors – transport and communication along with wholesale and retail trade (including the catering industry). Since these sectors contribute approximately one-tenth of China’s GDP, and with annual GDP growth anticipated to reach 9 percent in the absence of SARS, Ren concludes that a reduction of 0.9 percentage points ($= 9 \text{ percent} * 1/10$) provides a generous upper limit to SARS-induced rollback of economic growth in 2003. Professor Ren anticipates actual GDP growth for 2003 of approximately 8.5 percent.²⁶

This would represent a remarkable outcome. Economic history provides no instance in which a major economy approaches double-digit growth despite suffering a major crisis that causes activity to plunge in sectors that employ massive segments of the labor force (restaurants, hotels, migrant workers) and in branches that maintain links across regions and industries (airlines, interprovincial transportation).

Regardless of the numerical outcome, the assumptions underlying Ren’s analysis deserve attention. Professor Ren projects national economic growth as a weighted average of sectoral growth rates, weighting each sector’s predicted growth by its share in total output. If SARS reduces expansion in transport, catering, and trade to zero, as specified in the worst case scenario, the overall effect, as noted above, is a reduction of 0.9 percentage points in national economic growth.

This approach, which ignores interactions that cut across sectors and regions, makes sense for evaluating the impact of small shocks – such as regional flooding or local damage from typhoons, drought, or insect pests. But the impact of SARS, although short-lived, was by no means marginal: official data show a steep drop-off in passenger transport, with May reaching less than half of the March figures, and totals for July remaining more than 10 percent below the March results. The reported decline in freight traffic is much smaller, in part because official figures appear to underweight highway

transport, which dropped by nearly one quarter between March and May and remained 5 percent below the March level as late as July.²⁷

As Figure 2 shows, SARS-induced obstacles to the movement of people and goods were sufficiently large to attract the attention of editorial cartoonists. Can we assume that agriculture suffers no ill effects and that manufacturing can bound forward at double-digit rates despite steep declines in transportation and in wholesale and retail sales?

In the same vein, Ren's analysis discounts any consequences of widespread income losses for production, investment, or sales. It does not explore the implication of reports showing that "evaporated jobs for rural migrant workers in cities and limited access to urban markets for agriculture produce. . . when SARS peaked all significantly added to the pressures on farmers' incomes," which appear to have declined in recent years²⁸ and reportedly dropped by RMB 35 per head during the second quarter, or that less than one-fourth of migrant workers who fled the cities to escape SARS had "returned to work in cities" by June 15.²⁹

In essence, Professor Ren's study visualizes the economy as an array of more-or-less self-contained units. Unexpected disruption affects only the sectors or regions directly involved, leaving the remainder to pursue an unobstructed path to fulfilling pre-shock expectations. Although I find it difficult to imagine that this perspective, which echoes the circumstances of a centrally planned system, fits China's increasingly marketized economy, Ren's approach mirrors a substantial body of international research that depicts China's economy as a collection of weakly connected boxes.

This emphasis on absence of economic integration dates from Audrey Donnithorne's 1972 article on "China's Cellular Economy," which argued that the economy "seems composed of a myriad of small discrete units. . . [which] often provide a high degree of administrative protection . . . to home producers."³⁰ This tradition commands considerable support today, despite staggering multiplication of domestic and international commerce in the intervening decades.

A 1994 World Bank report shows the expansion of domestic trade lagging behind the growth of total output.³¹ Christine Wong shows how official protection may lead to the proliferation of excess capacity, with sheltered factories operating below capacity.³² Andrew Watson and others provide detailed accounts of provincial and local barriers to domestic commerce.³³ Alwyn Young finds that inter-provincial differences in the composition of industrial output, notably small during the pre-reform plan era, have shrunk further during the reform era, presumably because China's provinces implement mercantilist policies intended to promote local self-reliance.³⁴ Sandra Poncet, working with provincial input-output tables, calculates that the share of local goods in provincial absorption, already high in 1992, rose further between 1992 and 1997, mainly at the expense of "imports" from other provinces.³⁵ Genevieve Boyreau-Debray and Shang-jin Wei conclude that the magnitude of inter-provincial capital movement resembles flows across the boundaries of autonomous nations rather than domestic transfers of funds in integrated economies like Japan or the United States.³⁶

Proponents understand that the cellular economy perspective remains controversial. Poncet remarks that “the claim of increasing fragmentation in China is received with skepticism by China specialists. Reports of rising regional trade barriers run strongly counter to the perceptions of informed observers. . . . Notably they fly in the face of the visibly successful efforts by both foreign multinationals and emerging Chinese enterprises to build national distribution networks and establish nationally recognized brands.”³⁷ Authors advancing the cellular perspective understand that “overturning conventional wisdom [of the China specialists] requires very solid empirical work” and take pains to offer detailed accounts of their analysis.³⁸

Here I join the skeptics. I anticipate that future research will undercut the picture of China’s economy as a loosely connected set of local systems. Dynamic new industries producing motorcycles, cars, computers, home appliances and an immense array of export goods display a high degree of regional concentration. Barriers to commodity trade appear episodic rather than systematic. Municipal officials can no longer exclude “imports” from other provinces. Manufacturers ridicule the suggestion that local politicians systematically prohibit inflows of low-priced, high-quality components and finished products. China’s burgeoning network of expressways represents the latest element in a transport revolution that has multiplied the circulation of commodities, people and information across China’s vast landscape.

Transportation statistics provide an obvious starting point for revisionist research. If official figures understate the actual volume of traffic, domestic flows of commodities, people, information and funds – the foot soldiers of economic integration – could be far larger than standard data have led cellular economy proponents to believe.

Underestimate of traffic volume appears endemic. Rawski and Robert W. Mead speculate that standard data “grossly underestimate the level and growth of transport activity.” For the 1990s, Ralph Huenemann finds that standard data “fail to capture a significant portion of the traffic, and the problem seems to get worse as the decade progresses.”³⁹ Difficulties cluster in two sectors: highways and water carriage.

As far back as the mid-1980s, Zhang Fengbo noted that with growing numbers of vehicles operating outside the network of official transport companies, “there is a vast underestimate of the actual haulage by motor vehicles, because the figures are based solely on freight haulage by the companies within the official transport system.”⁴⁰ Subsequent revisions appear to have corrected this particular oversight, but a recent 30-fold increase in official estimates of the number of vehicles used for commercial transportation⁴¹ suggests the likelihood of continuing large-scale underestimate of highway carriage. Private ownership or management of trucks and busses creates strong incentives for systematic underreporting of revenues (which attract taxation) and hence volumes: since individual entrepreneurs “keep no proper accounts, revenue and cost, profit and loss reside only in the mind of the operator, which creates grave difficulties for supervisors and tax collection and translates into big fiscal losses.”⁴²

Standard sources are filled with improbable data that confirm the diagnosis of underreporting. Construction of a growing network of expressways has not raised the share of highway carriage in official freight statistics – the reported share actually declined from 14.4% in 1998 to 13.3% in 2001 and 2002 – a level scarcely above the 12.8 figure reported for 1990.⁴³ Successive issues of China's national statistics yearbook indicate that highway freight haulage in Sichuan province peaked in 1995, the first full operating year for the expressway connecting the two major cities of Chengdu and Chongqing. Comparing the data for 1995 and 2001, we discover that the combined truck fleet for Sichuan and Chongqing (which was promoted to provincial status in 1997) increased by 65.4%, while highway freight carriage (measured in ton-kilometers) declined by 21.5%, which implies that average haulage per vehicle dropped by 52.5%.

Figures for water transport are equally suspect. Official data show the scale of water carriage growing slowly, with periodic annual declines – the tonnage of waterborne freight, for example, recorded a peak in 1996 which was not surpassed until 2001. The figures also show a large decline in both the overall number and, more improbably, in the number of privately-owned motor vessels and barges.⁴⁴

In 1996, when statistics showed that "water freight slipped 1.5 percent," the Ministry of Communication "suspended approval of new shipping companies to slow uncontrolled growth in waterway transportation."⁴⁵ This pattern continues, with slow growth of reported freight volume and fleet size coinciding with complaints of "blind entry into the market for water transport."⁴⁶ Reports of unlicensed vessels offer further evidence of underreporting: investigations around Changzhou, in Jiangsu province found that two-thirds of vessels were not properly licensed; the proportion of gypsy craft was even larger on the Yangzi River.⁴⁷ Existence of numerous shipyards – 96 in Sichuan alone – supports the view that, contrary to standard data, shipping fleets continue to expand.⁴⁸

Conclusion

SARS dealt a brief, but sharp setback to China's economy. The immediate decline in output occurred primarily in the tertiary or service sector and mainly during the second and third quarters of 2003. We can expect a continuing drag from slow export growth (orders for future output declined during the epidemic), higher inventories, and "increased employment pressure" because "many small and medium-sized enterprises suspended their operations or simply closed down, which has caused employment demand drastically falling and aggravated the already acute employment contradiction."⁴⁹ Fortunately, the hangover from SARS appears not to have affected foreign investment.

The SARS episode seems to have sparked at least a temporary return to the pattern of systematic overstatement of economic performance that emerged during 1998-2001.

Efforts to anticipate the economic impact of SARS focus attention on a surprising convergence of scholarly opinion linking immense economic growth with minimal progress toward domestic economic integration. Systematic studies by authors like

Kumar, Wong, Young, Poncet, Wei, and Boyreau-Debray appear to demonstrate the limited extent of domestic economic integration. Against this substantive body of work, evidence supporting the contrary, “integrationist” perspective remains scrappy and unsystematic.⁵⁰ Nonetheless, I venture to predict that further study of China’s market structures, division of labor, and interregional flows of goods, people, and funds will reveal a very substantial degree of integration. Despite remaining obstacles, as when “strong concept of planned economy. . . . too much government interference. . . . inconvenient traffic network and serious regional barriers” create “duplicated construction” and allow only a “sluggish economic integration process” in the region adjacent to the Bohai Sea,⁵¹ I anticipate that such research will provide convincing evidence that, whatever its merits in illuminating circumstances during the 1970s, the cellular economy perspective cannot provide a suitable framework for analyzing China’s present-day economic system.

The SARS episode permits broader observations about China’s economy and society:

Dynamic economies can survive substantial shocks without losing their momentum. China’s economy plowed through the 1989 Tiananmen massacre and the 1997 Asian financial crisis. Recovery from SARS will again confirm the deep roots of Chinese economic growth.

SARS provided an unexpected test of electronic networks as substitutes for the personal interactions that normally precede business deals. Results are mixed: in textiles, export orders dried up during the crisis. But elsewhere, electronic technology provided an unexpectedly good substitute for face-to-face encounters.

SARS shows that Chinese governments routinely ignore legal requirements. China’s 1989 Law on Prevention and Control of Contagious Disease prohibits concealment or distortion of information (Art. 22) and states that the “Ministry of Health should make timely and accurate public reports” about contagious disease conditions (Art. 23).⁵² Neglect of legal obligation is not unusual: the Aluminum Corporation of China anticipates that “local governments are likely to seek more investors to accelerate the development of their alumina resources” despite having “signed agreements with [those same] local governments giving it exclusive rights to develop ore resources.”⁵³

SARS also highlights beneficial aspects of authoritarian government. If we consider China’s limited medical capabilities, it would appear that the People’s Republic (and also Singapore) controlled the epidemic more effectively than Hong Kong, Taiwan, or Canada, apparently because China and Singapore did not hesitate to implement stringent quarantine regimens – measures that governments operating under individualist traditions cannot readily deploy.

Finally, SARS demonstrates China’s progress toward achieving a more open society. Nobel laureate A.K. Sen has often emphasized that India’s free press would prevent New Delhi from suppressing news of a national tragedy in the way that Beijing concealed the reality of China’s 1959-61 famine.⁵⁴ Although Sen is right about the Great Leap, times

have changed. Chinese publications took only a few months to denounce the 1998 deluge of false economic data. More recently, public pressure has forced China's health authorities to recognize China's growing AIDS problem. And in 2003, official efforts to deny the realities of SARS collapsed abruptly. All this shows how two decades of reform have dramatically curtailed the capacity of China's government to control the dissemination of important but unwelcome information.

Fig 1 – GDP growth chart

Fig 2 – CD cartoon

Anon. "China's Economy Not Overheated." *China Daily*, 9-10 August 2003, 4.

———. "Gas Exports Down." *China Daily*, 8 August 2003, 7.

Bai, Chong-en, Yingjian Du, Zhigang Tao, and Sarah Y. Tong. *Local Protectionism and Regional Specialization: Evidence from China's Industries*, 2003 [consulted 11 October 2003]. Available from

http://www.hiebs.hku.hk/working_paper_updates/pdf/wp1047b.pdf.

Boyreau-Debray, Genevieve, and Shang-jin Wei. *Can China Grow Faster? A Diagnosis on the Fragmentation of the Domestic Capital Market*, 2003 [consulted 10 October 2003]. Available from

<http://www.nber.org/~confer/2003/cwgf03/wei.pdf>.

Brainerd, Elizabeth, and Mark V. Siegler. *The Economic Effects of the 1918 Influenza Epidemic*, 2002 [consulted 2003]. Available from

<http://www.nber.org/~confer/2002/si2002/brainerd.pdf>.

China May Crude Imports Drop on Sars, Exports Jump, 2003 [consulted 20 June 2003].

Available from http://www.hindustantimes.com/news/181_285658,0002008.htm.

Chinese Firms Scrambling to Meet Surging Demand 30 June - 6 July, 2003 [consulted 10 October 2003]. Available from

<http://www.google.com/search?q=cache:7nNXZZF2sgEJ:www.oilandgasnewswo.rldwide.com/bkFeaturesF.asp%3FSection%3D1247%26IssueID%3D268+due+to+expectations+rise+domestic+demand+qilu+zhenhai&hl=en&ie=UTF-8>.

Christian, Nicole M. "All-out Fight in Detroit to Keep Census above a Million." *New York Times*, 2 May 2000, A18.

Da, Shan. "Rural Income Hit by Sars." *China Daily*, 18 July 2003, 7.

Dai, Yan. "Operations Expect Improvements." *China Daily* 2003, 5.

Dao, James. "Pentagon Says Lies on Osprey Arose from Pressure to Succeed." *New York Times*, 30 June 2001.

Donnithorne, Audrey. "China's Cellular Economy: Some Economic Trends since the Cultural Revolution." *China Quarterly*, no. 52 (1972): 605-19.

Forero, Juan. "Precinct's Rosy Crime Rate Was Distorted, Police Say." *New York Times*, 7 January 2000, A19.

Hubei Gonglu Yunshu Nianjian (1993 Nian). [Hubei road transport yearbook 1993] Translated by [Hubei Gonglu Yunshu Nianjian (1993 Nian)]. Wuhan: Wuhan chubanshe, 1995.

- Hubei Jiaotong Nianjian 2001*. [Hubei Yearbook of Transport and Communication] Translated by [Hubei Jiaotong Nianjian 2001]. Wuhan: Hubeisheng jiaotongting, 2002.
- Huenemann, Ralph W. "Are China's Recent Transport Statistics Plausible?" *China Economic Review* 12, no. 4 (2001): 368-72.
- Jiangsu Jiaotong Nianjian*. [Jiangsu Yearbook of Transport and Communication] Translated by [Jiangsu Jiaotong Nianjian]. Beijing: Zhongguo tielu chubanshe, 2001.
- Kumar, Anjali. *China: Internal Market Development and Regulation* [China: Internal Market Development and Regulation]. Washington: World Bank, 1994.
- Kwek, Irene. *China July Gasoline Exports Seen up Vs Jun; Aug Likely Down*, 2003 [consulted 20 July 2003]. Available from http://biz.yahoo.com/djus/030702/0452000399_1.html.
- Kynge, James. "China's Data Chief 'Confident' About Statistics." *Financial Times* (electronic archive), 1 March 2002.
- Lardy, Nicolas R. "Evaluating Economic Indicators in Post-Wto China." *Issues & Studies* 39, no. 1 (2003): 249-68.
- Liuzu Tongji Shuzi Beili, Zhuanjia Biaoshi Jingji Jiegou Yufa Shiheng* [Six Types of Data Show Deviations; Experts Indicate Deepening Structural Disequilibrium], 2003 [consulted 16 August 2003]. Available from <http://finance.sina.com.cn/g/20030809/1436400009.shtml>.
- Lu, Zhongyuan, Liqun Zhang, and Jianwei Li. "An Analysis of the Economic Situation in the First Half of 2003 and an Outlook for the Whole Year." *China Development Review* 5, no. 3 (2003): 36-43.
- Mai, Tian. "Alumina Business Booms." *China Daily*, 18 August 2003, 6.
- Meng, Yan. "Badly Hit Sectors to Get Support." *China Daily*, 29 May 2003, 6.
- Naughton, Barry. "How Much Can Regional Integration Do to Unify China's Markets?" In *Economic Policy Reform in China*, edited by Nicholas C. Hope, Dennis Tao Yang and Mu Yang Li. Stanford: Stanford University Press, 2003.
- Poncet, Sandra. "A Fragmented China: Measure and Determinants of Chinese Domestic Market Disintegration." 2002.
- . "Measuring Chinese Domestic and International Integration." *China Economic Review* 14, no. 1 (2003): 1-21.
- Rawski, Thomas G. "What Is Happening to China's Gdp Statistics." *China Economic Review* 12, no. 4 (2001): 347-54.
- Rawski, Thomas G., and Robert W. Mead. "On the Trail of China's Phantom Farmers." *World Development* 4 (1997): 28-39.
- Sichuan Jiaotong Nianjian 2001*. [Sichuan Yearbook of Transport and Communication] Translated by [Sichuan Jiaotong Nianjian 2001]. Chengdu: Sichuan kexue jishu chubanshe, 2001.
- Watson, Andrew, Christopher Findlay, and Yintang Du. "Who Won the Wool War? A Case Study of Rural Product Marketing in China." *China Quarterly*, no. 118 (1989): 215-41.
- Wen, Dao. "Sars Slows Computer Market." *China Daily*, 30 July 2003, 5.
- Winerip, Michael. "A 'Zero Dropout' Miracle: Alas! A Texas Tall Tale." *New York Times*, 13 August 2003, A19.

- Wong, Christine. "Fiscal Reform and Local Industrialization: The Problematic Sequencing of Reform in Post-Mao China." *Modern China* (1992).
- Xiao, Guo. "Develop Bohai Sea Rim Economy." *China Daily*, 4-5 October 2003, 2.
- Xin, Bei. "Refilling Farmers' Sars-Hit Pockets." *China Daily*, 2-3 August 2003, 4.
- Xu, Dashan. "High-Tech to Help Build Quality Information Network." *China Daily*, 16 May 2002, 6.
- Xu, Weizhong. "Nine Aspects of Sars' Impact on China's Economy." *Zhongguo wujia* [China Price], no. 7 (2003): 13-15.
- Xu, Xinpeng. "Have the Chinese Provinces Become Integrated under Reform?" *China Economic Review* 13, no. 2-3 (2002): 116-33.
- Xu, Yihe. *China Q3 Oil Products Demand to Rise as Sars Subsidies-Analyst*, 2003 [consulted 20 July 2003]. Available from http://biz.yahoo.com/djus/030627/0055000027_1.html.
- Yan, Xianbo. "Impact of Sars Contagion on Domestic Markets Is Not Easily Overlooked." *Guoyou zichan guanli* [Management of State Assets], no. 6 (2003): 8-10.
- Yan, Xianpu. "Rural Market Failing to Spur Domestic Demand." *China Daily Business Weekly*, 20-25 August 2002, 15.
- . "Virus' Impact on Sector Should Not Be Overdrawn." *China Daily Business Weekly*, 3-9 June 2003, 15.
- Young, Alwyn. "The Razor's Edge: Distortions and Incremental Reform in the People's Republic of China." *Quarterly Journal of Economics* 115 (2000): 1091-136.
- Yunnansheng, Shenji Ketizu. "Discussion of Evaluation Methods for Local Party and Government Leaders." *Zhongguo tongji* [China statistics], no. 5 (2003): 27-28.
- Zhang, Fengbo. *Zhongguo Jiaotong Jingji Fenxi* [Economic analysis of China's transportation] Translated by [Zhongguo Jiaotong Jingji Fenxi]. Beijing: Renmin chubanshe, 1987.
- Zhong, Wei. "Sars and China's Gdp Growth." *Zhongguo tongji* [China Statistics] 6 (2003): 1.
- Zhongguo Nongye Nianjian 2001*. [China Agricultural Yearbook] Translated by [Zhongguo Nongye Nianjian 2001]. Beijing: Zhongguo nongye chubanshe, 2001.
- Zhongguo Tongji Nianjian 2002*. [China Statistical Yearbook 2002] Translated by [Yearbook 2000]. Zhongguo tongji chubanshe, 2002.

¹ Thomas G. Rawski, "What Is Happening to China's Gdp Statistics," *China Economic Review* 12, no. 4 (2001), Nicolas R. Lardy, "Evaluating Economic Indicators in Post-Wto China," *Issues & Studies* 39, no. 1 (2003).

² Fan Gang writes that with both foreign and domestic investment rising sharply, "we can identify 2002 as the year when China's economy fully recovered from the trough of 1997/98; it is a turning point for genuine positive growth" (*Jiage lilun yu shijian* #1 (2003), p. 13). As is evident from Figure 1, the official figures show no "trough of 1997/98." Participants in an August 2003 symposium observed that "macro data for the first half of 2003 raise obvious issues that are difficult to explain or even self-contradictory." See *Liuzu Tongji Shuzi Beili, Zhuanjia Biaoshi Jingji Jiegou Yufa Shiheng* [Six Types of Data Show Deviations; Experts Indicate Deepening Structural Disequilibrium] (2003 [consulted 16 August 2003]); available from <http://finance.sina.com.cn/g/20030809/1436400009.shtml>.

³ Dashan Xu, "High-Tech to Help Build Quality Information Network," *China Daily*, 16 May 2002.

-
- ⁴ See the "Roundtable on Chinese Economic Statistics" in *China Economic Review* 12.4 (2001).
- ⁵ Shenji Ketizu Yunnansheng, "Discussion of Evaluation Methods for Local Party and Government Leaders," *Zhongguo tongji* [China statistics], no. 5 (2003).
- ⁶ Nicole M. Christian, "All-out Fight in Detroit to Keep Census above a Million," *New York Times*, 2 May 2000, Juan Forero, "Precinct's Rosy Crime Rate Was Distorted, Police Say," *New York Times*, 7 January 2000, James Dao, "Pentagon Says Lies on Osprey Arose from Pressure to Succeed," *New York Times*, 30 June 2001, Michael Winerip, "A 'Zero Dropout' Miracle: Alas! A Texas Tall Tale," *New York Times*, 13 August 2003.
- ⁷ Official data placing GDP growth at 8.0% for 2002 cast further doubt on the figures for 1998-2001, which show nearly identical growth rates (Figure 1) despite weaker performance.
- ⁸ On the (much more severe) influenza epidemic of 1919, see Elizabeth Brainerd and Mark V. Siegler, *The Economic Effects of the 1918 Influenza Epidemic* (2002 [consulted 2003]); available from <http://www.nber.org/~confer/2002/si2002/brainerd.pdf>. James L. Watson's chapter argues that SARS could indirectly restrict China's economic prospects by limiting the growth of global trade and investment networks, a possibility not considered here.
- ⁹ Ren Ruoen, "Feidian bingqing dui 2003 Zhongguo jingji yingxiang de chubu fenxi" [Preliminary Analysis of SARS' Impact on China's Economy in 2003, ms. dated 3 June 2003]. Professor Ren kindly provided a copy of this unpublished study.
- ¹⁰ *China Monthly Economic Indicators*, no.8 (2003), pp. 14, 16-17, 29.
- ¹¹ Yan Dai, "Operations Expect Improvements," *China Daily* 2003, 5.
- ¹² Discussion based on information in *China Monthly Economic Indicators*, no. 8 (2003).
- ¹³ Yan Meng, "Badly Hit Sectors to Get Support," *China Daily*, 29 May 2003, 6.
- ¹⁴ Xianpu Yan, "Virus' Impact on Sector Should Not Be Overdrawn," *China Daily Business Weekly*, 3-9 June 2003, 15.
- ¹⁵ Zhongyuan Lu, Liqun Zhang, and Jianwei Li, "An Analysis of the Economic Situation in the First Half of 2003 and an Outlook for the Whole Year," *China Development Review* 5, no. 3 (2003): 2.
- ¹⁶ Anon, "China's Economy Not Overheated," *China Daily*, 9-10 August 2003, 4.
- ¹⁷ Dao Wen, "Sars Slows Computer Market," *China Daily*, 30 July 2003, 5.
- ¹⁸ Based on file [prc/sars03/bjgdp.083103.xls](#) available from the author upon request.
- ¹⁹ <http://www.sinocheminfo.com/topnews/r200305261013.htm>, consulted 3 June 2003.
- ²⁰ *China May Crude Imports Drop on Sars, Exports Jump* (2003 [consulted 20 June 2003]); available from http://www.hindustantimes.com/news/181_285658,0002008.htm.
- ²¹ *Chinese Firms Scrambling to Meet Surging Demand* (30 June - 6 July 2003 [consulted 10 October 2003]); available from <http://www.google.com/search?q=cache:7nNXZZF2sgEJ:www.oilandgasnewswworldwide.com/bkFeaturesF.asp%3FSection%3D1247%26IssueID%3D268+due+to+expectations+rise+domestic+demand+qilu+zhenhai&hl=en&ie=UTF-8>.

-
- ²² Yihe Xu, *China Q3 Oil Products Demand to Rise as Sars Subsidies-Analyst* (2003 [consulted 20 July 2003]); available from http://biz.yahoo.com/djus/030627/0055000027_1.html.
- ²³ Irene Kwek, *China July Gasoline Exports Seen up Vs Jun; Aug Likely Down* (2003 [consulted 20 July 2003]); available from http://biz.yahoo.com/djus/030702/0452000399_1.html.
- ²⁴ Anon, "Gas Exports Down," *China Daily*, 8 August 2003, 7.
- ²⁵ Other analyses include: Weizhong Xu, "Nine Aspects of Sars' Impact on China's Economy," *Zhongguo wujia* [China Price], no. 7 (2003), Xianbo Yan, "Impact of Sars Contagion on Domestic Markets Is Not Easily Overlooked," *Guoyou zichan guanli* [Management of State Assets], no. 6 (2003), Wei Zhong, "Sars and China's Gdp Growth," *Zhongguo tongji* [China Statistics] 6 (2003).
- ²⁶ Ren Ruoan, op.cit.
- ²⁷ Transport data from *China Monthly Economic Indicators*, no.8 (2003), pp. 22-25.
- ²⁸ Official claims of slowly rising rural incomes draw skeptical comment from Chinese analysts. In 2002, a senior researcher in the State Council's Development Research Centre commented: "The official statistics say that peasants' income is going up but my opinion, and that of a lot of people that I have spoken to, is that actually their income is falling." An economist from the National Bureau of Statistics noted that rural incomes rose in 2001 "after having been frozen for four years," even though official data show per capita net incomes of rural households rising by 17.0 percent in nominal terms between 1996 and 2000. See *Zhongguo Nongye Nianjian 2001*, [China Agricultural Yearbook], ed. (Beijing: Zhongguo nongye chubanshe, 2001), 437, James Kynge, "China's Data Chief 'Confident' About Statistics," *Financial Times (electronic archive)*, 1 March 2002, Xianpu Yan, "Rural Market Failing to Spur Domestic Demand," *China Daily Business Weekly*, 20-25 August 2002, 15.
- ²⁹ Shan Da, "Rural Income Hit by Sars," *China Daily*, 18 July 2003, Bei Xin, "Refilling Farmers' Sars-Hit Pockets," *China Daily*, 2-3 August 2003.
- ³⁰ Audrey Donnithorne, "China's Cellular Economy: Some Economic Trends since the Cultural Revolution," *China Quarterly*, no. 52 (1972).
- ³¹ Anjali Kumar, *China: Internal Market Development and Regulation* (Washington: World Bank, 1994).
- ³² Christine Wong, "Fiscal Reform and Local Industrialization: The Problematic Sequencing of Reform in Post-Mao China," *Modern China* (1992).
- ³³ For instance, Andrew Watson, Christopher Findlay, and Yintang Du, "Who Won the Wool War? A Case Study of Rural Product Marketing in China," *China Quarterly*, no. 118 (1989).
- ³⁴ Alwyn Young, "The Razor's Edge: Distortions and Incremental Reform in the People's Republic of China," *Quarterly Journal of Economics* 115 (2000).
- ³⁵ Sandra Poncet, "Measuring Chinese Domestic and International Integration," *China Economic Review* 14, no. 1 (2003).
- ³⁶ Genevieve Boyreau-Debray and Shang-jin Wei, *Can China Grow Faster? A Diagnosis on the Fragmentation of the Domestic Capital Market* (2003 [consulted 10 October 2003]); available from <http://www.nber.org/~confer/2003/cwgf03/wei.pdf>.

-
- ³⁷ Sandra Poncet, "A Fragmented China: Measure and Determinants of Chinese Domestic Market Disintegration.", (2002). Ms. dated November 2002.
- ³⁸ Ibid.
- ³⁹ Thomas G. Rawski and Robert W. Mead, "On the Trail of China's Phantom Farmers," *World Development* 4 (1997): 775, Ralph W. Huenemann, "Are China's Recent Transport Statistics Plausible?," *China Economic Review* 12, no. 4 (2001): 372.
- ⁴⁰ Fengbo Zhang, *Zhongguo Jiaotong Jingji Fenxi*[Economic analysis of China's transportation], ed. (Beijing: Renmin chubanshe, 1987), 102..
- ⁴¹ *Zhongguo Tongji Nianjian 2002*, [China Statistical Yearbook 2002], ed. (Zhongguo tongji chubanshe, 2002), 553., where the number of trucks "used for business transport" increases from 124,800 to 4.09 million between 1998 and 1999.
- ⁴² *Hubei Gonglu Yunshu Nianjian (1993 Nian)*, [Hubei road transport yearbook 1993], ed. (Wuhan: Wuhan chubanshe, 1995), 263.
- ⁴³ Calculated from standard yearbook data in file \prc\sars03\transport.091203.xls available from the author upon request.
- ⁴⁴ Rawski and Mead, "On the Trail of China's Phantom Farmers.", *Hubei Jiaotong Nianjian 2001*, [Hubei Yearbook of Transport and Communication], ed. (Wuhan: Hubeisheng jiaotongting, 2002), 536, 54, 55.
- ⁴⁵ Rawski and Mead, "On the Trail of China's Phantom Farmers."
- ⁴⁶ *Hubei Jiaotong Nianjian 2001*, 318.
- ⁴⁷ *Jiangsu Jiaotong Nianjian*, [Jiangsu Yearbook of Transport and Communication], ed. (Beijing: Zhongguo tielu chubanshe, 2001), 172.
- ⁴⁸ *Sichuan Jiaotong Nianjian 2001*, [Sichuan Yearbook of Transport and Communication], ed. (Chengdu: Sichuan kexue jishu chubanshe, 2001).
- ⁴⁹ Lu, Zhang, and Li, "An Analysis of the Economic Situation in the First Half of 2003 and an Outlook for the Whole Year," 38.
- ⁵⁰ See, however Xinpeng Xu, "Have the Chinese Provinces Become Integrated under Reform?," *China Economic Review* 13, no. 2-3 (2002), Chong-en Bai et al., *Local Protectionism and Regional Specialization: Evidence from China's Industries* (2003 [consulted 11 October 2003]); available from http://www.hiebs.hku.hk/working_paper_updates/pdf/wp1047b.pdf, Barry Naughton, "How Much Can Regional Integration Do to Unify China's Markets?," in *Economic Policy Reform in China*, ed. Nicholas C. Hope, Dennis Tao Yang, and Mu Yang Li (Stanford: Stanford University Press, 2003).
- ⁵¹ Guo Xiao, "Develop Bohai Sea Rim Economy," *China Daily*, 4-5 October 2003, 2.
- ⁵² www.moh.gov.cn/wsflfg/fl/200205140007.htm, consulted 3 September 2003. Professor Jun Jing indicate that some information about specific categories of infectious disease is treated as a state secret, which indicates inconsistency between laws on disease and secrecy.
- ⁵³ Tian Mai, "Alumina Business Booms," *China Daily*, 18 August 2003, 6.
- ⁵⁴ See www.rediff.com/business/jul/08sen.htm, consulted 9 October 2003.