
The Short-Term Impact of SARS on the Chinese Economy*

Wen Hai

China Center for Economic
Research
Peking University
5 Yiheyuan Road
Beijing 100871
China
wenhai@cceer.pku.edu.cn

Zhong Zhao

China Center for Economic
Research
Peking University
5 Yiheyuan Road
Beijing 100871
China

Jian Wang

China Center for Economic
Research
Peking University
5 Yiheyuan Road
Beijing 100871
China

Zhen-Gang Hou

China Center for Economic
Research
5 Yiheyuan Road
Peking University
Beijing 100871
China

Abstract

During the peak of the outbreak of severe acute respiratory syndrome (SARS), we conducted a survey in Beijing on 18 April 2003 to determine the economic impact of SARS, in particular its effects on several service sectors in China. The survey indicated that SARS had significant negative impacts on China's economy. The tourism sector was hit the hardest. We estimated that by the end of 2003, China's tourism revenue from foreigners would decrease by about 50–60 percent (amounting to about US\$10.8 billion) compared with the tourism revenue in 2002 and revenue from domestic tourists would decrease by around 10 percent (amounting to about US\$6.0 billion). Thus, we predicted that the total loss to China's tourism industry would be around US\$16.8 billion by the end of 2003. We also concluded that SARS would cause, through a multiplier effect, a total loss of US\$25.3 billion to China's economy and that the growth rate of China's GDP in 2003 would be 1–2 percentage points lower than it would have been if the SARS outbreak had not occurred.

I. Introduction

The first case of severe acute respiratory syndrome (SARS) was identified on 16 November 2002 in Heyuan County in the Chinese province of Guangdong. This deadly disease rapidly infected most areas of China and spread around the world. It was not under control until mid-June of 2003.

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The World Health Organization (WHO) issued the first global alert about SARS on 12 March 2003, and on 2 April 2003 it issued its first travel advisory, which recommended that travelers avoid Hong Kong and the province of Guangdong.

Most of the economic losses caused by SARS were in the tourism industry, and several countries sustained considerable economic damage. In this preliminary analysis of the short-term economic impact of SARS on mainland China, conducted when the outbreak had not yet been contained, we focused on estimating the losses in the tourism industry and applied a simple multiplier effect theory to predict the overall impact of SARS on the Chinese economy. Based on a survey we conducted in Beijing and on relevant statistical data released at the time by the Chinese government, we estimated that the short-term cost of SARS to China's economy would be around US\$25 billion by the end of 2003, which would be equal to nearly 2 percentage points of China's GDP in 2002.

2. Short-term impact of SARS in China

We conducted a survey in Beijing on 18 April 2003. The survey sample included hotels, travel agencies, tourist attractions, airlines, railway stations, restaurants, retailers, exhibitions, and taxi companies. The survey results are summarized in table 1. Except for retail chain stores, all sectors surveyed suffered significant revenue losses attributable to the SARS outbreak, compared with the revenue they earned in the same time period in 2002. Hotels lost 80 percent of their guests. The revenue received by travel agencies from foreign and domestic tourists decreased by 60 percent and 50 percent, respectively. The number of foreign visitors to tourist attractions in Beijing fell by 80 percent, and the number of domestic visitors decreased by 50 percent. The number of air travelers dropped by 50 percent. Various retail stores (other than chain stores) suffered losses ranging from 10 to 50 percent. The number of railway passengers fell by 30–50 percent, Beijing's restaurants lost 30–40 percent of their customers, and taxi drivers lost 20–30 percent of their business.

2.1 Short-term impact of SARS on Beijing's tourism industry

Based on the data collected from our survey, we estimated that the number of foreign tourists visiting Beijing would decrease by about 80 percent by the end of 2003, compared with the number in the previous year. We considered it very unlikely that China's tourism industry would recover by the end of 2003 because of the seasonal nature of this sector and because most tourists make their travel plans well ahead of their time of departure. WHO's travel warning and the Chinese government's failure to give information on SARS to the public at the initial stages of the outbreak also had a negative impact on recovery. We estimated that in 2003 the revenue from foreign tourists would be reduced by 60–70 percent, amounting to US\$1.9 billion.

Table 1. Estimated loss of revenue in 2003 attributable to SARS for tourism-related sectors in Beijing

Estimated loss of revenue (%)	Tourism-related sectors surveyed									
	Hotels ^a	Travel agencies ^b	Tourist attractions	Airlines	Railways	Restaurants	Retailers	Exhibitions	Taxis	
	80	60	80	50	30-50	30-40	10-50	80	20-30	

Note: Estimated losses were based on the results of our survey conducted on 18 April 2003 in Beijing.

a. The percentage loss in revenue for hotels was estimated only for the four- or five-star hotels in Beijing, whose main guests are foreigners.

b. The estimated percentage loss for travel agencies was the estimated loss of revenue from foreign tourists. (The counterpart percentage for domestic tourists was 50 percent.)

To control the spread of SARS, the State Council canceled the Labor Day (1 May) holiday and imposed restrictions on people entering and leaving Beijing. Domestic-tourist revenue in Beijing during the week-long Labor Day celebration was US\$410 million in 2002, and the cancellation of the holiday resulted in a loss of US\$360 million. In 2001 domestic tourists from outside Beijing contributed 90 percent of the total domestic tourism revenue in Beijing (Beijing Statistical Information Net 2002). The new restrictions that forbade organized group tours in Beijing, plus the fact that Beijing had a high SARS infection rate, probably reduced domestic tourism by a further 25–35 percent (in addition to the impact of the cancellation of the Labor Day holiday), costing Beijing about US\$2.4 billion. Thus we estimated that Beijing's total loss of revenue from domestic tourists would be around US\$2.8 billion. The total losses to Beijing's tourism industry by the end of 2003 would be around US\$4.8 billion, or 12.8 percent of Beijing's GDP, which was about US\$37.7 billion in 2002.

2.2 Short-term impact on the Chinese economy

In the rest of China, as in Beijing, the industry that was hit hardest by SARS was tourism. We expected that the number of foreign tourists would decrease sharply in the rest of China during 2003, for three main reasons. First, WHO's travel warning had a significant effect on foreigners' travel decisions. Second, from the historical record, foreign tourists to Guangdong and Beijing (both seriously infected areas) accounted for 46 percent of the total number of foreign tourists visiting China (China National Tourism Administration 2003). Third, SARS spread quickly: it had infected 25 out of 31 Chinese provinces as of April 2003. We estimated that the revenue from foreign tourists would be reduced by 50–60 percent in 2003, a loss amounting to about US\$10.8 billion.

As was the case in Beijing, the tourism sector in China as a whole also lost most of its domestic revenue from the Labor Day holiday, which was probably as much as US\$2.41 billion. We predicted that SARS would result in a 10 percent reduction in China's domestic-tourism revenue in 2003, and the projected loss would be about US\$6.0 billion.

Based on our estimations, China's losses from the impact of SARS on tourism alone in 2003 would be as high as US\$16.8 billion.

2.3 Multiplier effect

SARS not only affected the tourism industry directly, it also had an indirect impact on other sectors through a multiplier effect. The consensus among Chinese economists is that the multiplier for tourism revenue in China was between 2 and 3 (Tang and You 1999; Zhang 2002). Because SARS began to have a significant impact on

China's economy only after March 2003, it seems reasonable to assume that the multiplier was 1.5 for the SARS impact in 2003. Under this assumption, we estimated that SARS would cause a total loss of US\$25.3 billion for China's economy in 2003, which is equal to about 2 percentage points of China's GDP in 2002 (which was US\$1,234 billion). Our assessment was that the SARS outbreak would lower the growth rate of China's economy in 2003 by 1 to 2 percentage points.

3. Concluding remarks

In conclusion, our survey results suggested that the economic impact of SARS in China would not be negligible. When we released a Chinese version of this report in April 2003, it was characterized as pessimistic. In retrospect, we think our estimates were not unduly high, given the information at the time and the stage of the outbreak. In July 2003, Mr. Qing Wang, a division chief from the Tourism Bureau of the Beijing Municipal Government, estimated that the total loss inflicted on Beijing's tourism was US\$4.82 billion, almost exactly the same as our estimate. He also predicted that Beijing's tourism industry would recover fully by the first half of 2004,¹ and we hope that he will be proved right.

References

- Beijing Statistical Information Net. 2002. Survey on the Beijing Domestic Tourists in 2001. Available at <http://www.bjstats.gov.cn/tjyl/tjgb/200209290007.htm>
- China National Tourism Administration. 2003. International Tourists by Locality 2002. Available at <http://www.cnta.com/tongjibanlan/2003/74.htm>
- Tang, Ming, and You Xiaolei. 1999. Some Thoughts on Starting Up the Chinese Economy. *Economics Highlights*, 19 February.
- Zhang, Ping. 2002. Distribution and Consumption: Empirical Study and Policy. Unpublished manuscript, Institute of Economics, Chinese Academy of Social Sciences, Beijing.

¹ See "SARS Costs Beijing Tourism RMB 40 Billions," *Beijing Youth Daily*, 22 July 2003.