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**CHINA'S ACCESSION TO WTO:
ITS IMPACT ON CHINESE EMPLOYMENT**

A.S. Bhalla and S. Qiu

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DISCUSSION PAPERS

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CHINA'S WTO ACCESSION: ITS IMPACT ON CHINESE EMPLOYMENT¹

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Abstract

It is often claimed that the WTO membership will benefit China by increasing exports and employment and forcing domestic firms to improve efficiency through competition. Benefits are expected to accrue through improved resource allocation and greater economic efficiency resulting from trade liberalization and greater global competition. In the paper we argue that although some sectors will benefit from competition others will suffer a great deal especially in the short and medium terms. The net overall benefits are likely to accrue only in the long run. During the transition period China will face enormous problems of restructuring of state-owned enterprises (SOEs), and banking, insurance and financial services, entailing significant loss of employment. The employment impact of the accession with special reference to SOEs is considered since they are generally less competitive than the non-state enterprises. Reduction in SOE employment may not be compensated by an increase in employment in the non-state sector. The experience of three specific industries is discussed: textiles and clothing, automobiles and household appliances

Besides the unemployment impact of the accession, the paper examines the possibility of a 'flying geese model' of trade and development working within China to maintain its global competitiveness on account of low labour costs in the hinterland. It also discusses China's possible response to global competition to protect employment, for example. Three types of response are considered: non-compliance of the WTO accord, devaluation, and a production shift from tradeables to non-tradeables.

INTRODUCTION

China's accession to WTO will affect its economy in the short, medium and long runs. The key areas of influence are: trade liberalization (tariff reductions and abolition of non-tariff barriers (NTBs); trade-related investment liberalization (TRIMs); protection of intellectual property rights (TRIPs); and anti-dumping duties. In this paper we will discuss mainly trade liberalization under WTO rules and its impact on employment in the Chinese economy with particular reference to the industrial sector. The WTO membership is expected to help China by increasing exports and employment and forcing domestic firms to improve efficiency through competition. However, competition could force weak domestic firms to close, thereby increasing unemployment at least in the short run. Some sectors will benefit from competition while others will suffer a great deal especially in the short and medium terms. The net overall benefits are likely to accrue only in the long run. Although trade will expand after the accession, a large-sized country like China with a huge domestic market will find foreign trade less important than the smaller economies. At any rate, depending on the particular sectors exports will expand with a time lag due to capacity and other constraints. During the transition period

¹ This paper is based on a field visit to China (Beijing and Guiyang in Guizhou province in Southwest China) in March–April 2001. We are most grateful to several officials in the Chinese governmental institutions for holding discussions and supplying data, notably, the State Economic and Trade Commission (SETC), the Ministry of Foreign Trade and Economic Cooperation (MOFTEC), the Development Research Centre of the State Council, and the Ministry of Labour. We owe a debt of gratitude to the Provincial Government of Guizhou for arranging our trip to a state-owned factory (Box 1). A large number of documents available only in the Chinese language and obtained by us in Beijing have been reviewed. In the References below, the original Chinese titles are presented in English alphabet.

China will face enormous problems of restructuring of state-owned enterprises (SOEs), and banking, insurance and financial services, entailing significant loss of employment.

Trade liberalization was accelerated in the second half of the 1990s compared to the first half, presumably to expedite the process of China's entry into the WTO. It is generally believed that China's tariff and non-tariff barriers are still very high. While this may be true of particular goods (e.g. automobiles) these barriers are not high compared to those in the Republic of Korea and Japan. In fact processing trade is exempted from import tariffs. Table 1 presents simulations of tariff and quota reductions in the post-accession period, which show that reductions will be generally higher for manufactured than for primary goods.

The first section of the paper discusses relationship between trade, competition and employment. The second section is devoted to the employment impact of the accession with special reference to SOEs. In this context, the future of textiles and clothing, automobiles and household appliances is analysed in the third section as specific cases. The fourth section discusses China's possible response to global competition in the form of non-compliance of the WTO agreement, devaluation to protect inefficient sectors, and a production shift from tradeables to non-tradeables. The final section makes some general concluding remarks.

Table 1
Tariff and non-tariff protection rates for China for its WTO accession
(Per cent)

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005– 2010 | Rate of reduction | Initial NTB |
|-----------------------------|------|------|------|------|------|---------------|----------------------|----------------|
| Grains and oilseeds | 27.7 | 26.2 | 24.6 | 23.0 | 21.5 | 21.5 | 22.5 | |
| Planted fibre | 73.5 | 67.7 | 61.9 | 56.1 | 50.3 | 50.3 | 31.6 | |
| Non-grain crops | 22.1 | 19.7 | 17.5 | 15.4 | 14.5 | 14.5 | 34.4 | |
| Livestock | 21.4 | 20.5 | 19.5 | 19.3 | 19.2 | 19.2 | 10.4 | |
| Dairy and meats | 16.7 | 14.9 | 13.2 | 11.5 | 11.4 | 11.4 | 31.8 | |
| Processed food | 34.3 | 31.1 | 27.8 | 24.7 | 22.4 | 22.4 | 34.8 | 2.7 |
| Tobacco and beverage | 50.0 | 44.8 | 39.6 | 34.4 | 29.2 | 29.2 | 41.6 | 2.7 |
| Forestry and fishery | 4.4 | 3.1 | 2.7 | 2.6 | 2.6 | 2.6 | 40.8 | |
| Mineral and energy products | 1.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 74.7 | 9.4 |
| Textiles | 25.4 | 22.0 | 18.5 | 15.2 | 12.4 | 12.4 | 51.2 | 7.0 |
| Clothing | 32.1 | 28.5 | 24.9 | 21.4 | 17.9 | 17.9 | 44.3 | |
| Leather and shoes | 12.2 | 10.5 | 9.1 | 8.6 | 8.6 | 8.6 | 29.6 | |
| Other light manufacture | 13.7 | 12.8 | 11.9 | 11.2 | 10.7 | 10.7 | 21.9 | |
| Wood and paper | 11.4 | 9.1 | 7.0 | 5.1 | 4.3 | 4.3 | 62.2 | 5.5 |
| Intermediates | 11.8 | 9.8 | 8.2 | 7.1 | 6.9 | 6.9 | 41.8 | 12.0 |
| Motor vehicles | 33.3 | 29.2 | 25.1 | 21.1 | 18.4 | 18.4 | 44.7 | 26.3 |
| Other transport | 4.9 | 3.8 | 3.7 | 3.6 | 3.5 | 3.5 | 29.1 | 11.2 |
| Electronics | 11.6 | 9.0 | 6.3 | 3.7 | 3.0 | 3.0 | 74.5 | 7.8 |
| Machinery | 13.5 | 11.4 | 9.6 | 8.1 | 7.4 | 7.4 | 45.5 | 5.1 |
| Traded services | 29.7 | 25.8 | 21.9 | 18.1 | 14.2 | 14.2 | 52.0 | |
| Average | 17.0 | 14.5 | 12.2 | 10.2 | 8.9 | 8.9 | 47.6 | |

Source: Wang and Ma (2000). Rates are estimated by aggregating China's tariff cuts from six-digit Harmonized Commodity Description and Coding System (HS) tariff schedules based on United States-China agreement (November 1999) and weighted by import data from China's Customs. Estimates on China's non-tariff barriers (NTBs) on industrial products are based on Zhang et al. (1998) and Li et al. (1998).

Note: These are estimates based on simulation exercises, rather than actual data for 2000. The import quotas for grains and plant fibres are assumed to grow at an annual rate of 5 per cent till 2005 when they will be eliminated and replaced by a uniform tariff of 15 per cent. All non-tariff barriers are assumed to be reduced by 20 per cent annually from 2001 reaching zero in 2005. The opening up of China's major services sector is taken into account by assuming a 50 per cent cut on sector's protection.

I. TRADE, COMPETITION AND EMPLOYMENT

A few years ago the debate on North-South trade and its implications for employment and income inequality (e.g. Wood, 1994) explained declining manufacturing employment in the North by exports of labour-intensive manufactures from the South. It was assumed that de-industrialization in such countries as the US resulted from a lack of industrial competitiveness in the global economy. However, Krugman and Lawrence (1994) argued that international trade was not the main cause of shrinking manufacturing employment and declining real wages of the less skilled workers in the United States. Instead, it was due more to such *domestic* factors as a shift of spending from manufacturing to services and to automation or labour-displacing technological change. Will these arguments apply to China after the WTO accession? In other words, will exports raise employment whereas increasing import competition and lack of competitiveness of Chinese SOEs reduce employment in its manufacturing sector? There is no simple answer to this question since all SOEs are not uncompetitive.

China is a semi-industrial developing country, and thus not a service economy like the United States. So while contracting of manufacturing employment will take place with or without the accession (due partly to technological unemployment and demand conditions) a substantial shift of spending away from manufacturing is unlikely to occur. The manufacturing trade balance – the difference between the amount of manufactured exports and imports, can measure an assessment of the overall impact of international trade on the size of the manufacturing sector. In the case of China, manufacturing trade balance has been growing since the mid-1990s with exports exceeding imports (table 2).

Table 2
Manufactured goods trade, 1991–1999
(\$ billion)

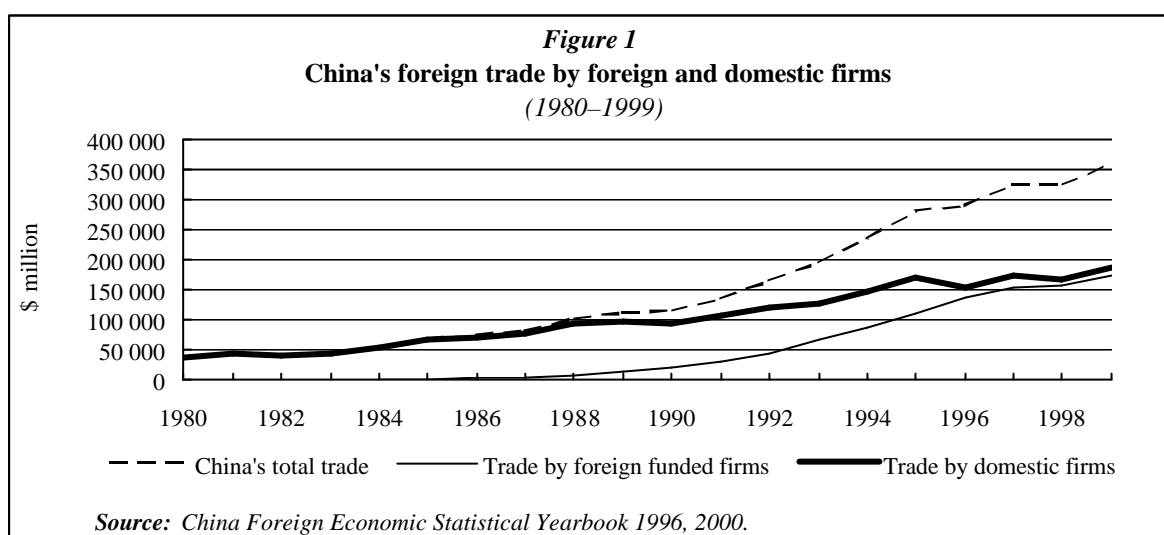
| Year | Total | | | Chemicals and related products | | | Goods classified chiefly by material | | | Machinery and transport equipment | | | Miscellaneous and other goods | | |
|------|---------|---------|---------|--------------------------------|---------|---------|--------------------------------------|---------|---------|-----------------------------------|---------|---------|-------------------------------|---------|---------|
| | Exports | Imports | Balance | Exports | Imports | Balance | Exports | Imports | Balance | Exports | Imports | Balance | Exports | Imports | Balance |
| 1991 | 55.7 | 52.96 | 2.74 | 3.82 | 9.28 | -5.46 | 14.46 | 10.5 | 3.96 | 7.15 | 19.6 | -12.45 | 30.28 | 13.58 | 16.7 |
| 1992 | 67.94 | 67.33 | 0.61 | 4.35 | 11.16 | -6.81 | 16.14 | 19.27 | -3.13 | 13.22 | 31.31 | -18.09 | 34.23 | 55.59 | -21.36 |
| 1993 | 75.08 | 89.75 | -14.67 | 4.62 | 9.7 | -5.08 | 16.4 | 28.53 | -12.13 | 15.28 | 45.02 | -29.74 | 38.78 | 6.5 | 32.28 |
| 1994 | 101.3 | 99.13 | 2.17 | 6.24 | 12.13 | -5.89 | 23.22 | 28.08 | -4.86 | 21.9 | 51.47 | -29.57 | 49.94 | 7.44 | 42.5 |
| 1995 | 127.3 | 107.67 | 19.63 | 9.09 | 17.3 | -8.21 | 32.24 | 28.77 | 3.47 | 31.41 | 52.64 | -21.23 | 54.55 | 8.95 | 45.6 |
| 1996 | 129.12 | 113.39 | 15.73 | 8.88 | 18.11 | -9.23 | 28.5 | 31.39 | -2.89 | 35.31 | 54.76 | -19.45 | 56.44 | 9.13 | 47.31 |
| 1997 | 158.84 | 113.75 | 45.09 | 10.23 | 19.3 | -9.07 | 34.43 | 32.22 | 2.21 | 43.71 | 52.77 | -9.06 | 70.47 | 9.46 | 61.01 |
| 1998 | 163.1 | 117.29 | 45.81 | 10.32 | 20.16 | -9.84 | 32.39 | 31.08 | 1.31 | 50.2 | 56.85 | -6.65 | 70.2 | 9.21 | 60.99 |
| 1999 | 174.99 | 138.85 | 36.14 | 10.37 | 24.03 | -13.66 | 33.26 | 34.32 | -1.06 | 58.84 | 69.45 | -10.61 | 72.52 | 11.05 | 61.47 |

Source: China Foreign Economic Statistical Yearbook, 1996, 2000 (original in Chinese).

Foreign competition to the Chinese industry can reduce domestic income and employment through the terms-of-trade effect. If the price of Chinese exports is lowered (relative to that of other countries due to foreign competition) and that of imports is raised, a reduction in real earnings would occur because China must sell its goods more cheaply but pay more for its imports. In fact, developing countries as a whole suffered from a decline in the terms of trade during 1985–1995; so did such Southeast Asian countries as the Republic of Korea, Singapore and Thailand (Yang and Vines, 2000).

The impact of industrial competitiveness on China's trade after the accession needs to be examined in the light of recent trends in trade growth, which are analysed below separately for domestic enterprises (state and non-state), SOEs and foreign-funded enterprises (FFEs). Figure 1 illustrates the relative importance of FFEs in China's rapid trade expansion. Table 3 gives the export and import growth rates for domestic enterprises and FFEs. The latter grew much more rapidly during

the 1980s and 1990s till 1997 when trade growth rates became quite similar for both. This may be explained by several factors: i). FFEs started with a very low base; ii) government policy required foreign enterprises to export a substantial proportion of their production. FFEs are required to balance their foreign exchange requirements, which induces export expansion as they have to generate foreign exchange to pay for imports; iii) many FFEs have secured markets and distribution channels by simply shifting production from home countries to China to take advantage of low labour cost; and iv) a large proportion of FFEs is engaged in processing exports in which export value is high but locally added value is low. In the post-accession period, FFEs and private enterprises are likely to become particularly important as channels of export and employment growth. Already FFEs play a more important role in export promotion than domestic enterprises.



The import growth of foreign-funded enterprises was generally much higher until 1996, presumably to ensure better quality inputs (particularly, machinery, which might not have been locally available). Greater global competition after the accession will call for substantial increases in labour productivity through technological modernization, which may further increase FFEs' import requirements, which may in turn discourage local sourcing of inputs, thus reducing their favourable employment impact.

A. Domestic and foreign competition

The market structure of the Chinese industry is characterized by different degrees of protection and competition. The industry ownership, technology level, entry barriers and the likely economic and social effects of the accession are illustrated in a stylized table 4. While such industries as electronics and shipbuilding are competitive and thus globally integrated, others like petrochemicals and automobiles are heavily protected. Generally, light consumer goods industries (e.g. bicycles, textiles, household appliances) are more open to competition than heavy industry.

Domestic competition in China has grown thanks partly to the policy of decentralization which induced local governments to compete with one another in order to seek profit-making activities. (However, in the early stages many local governments tried to set up trade barriers against potential competitors).² Increased competition in the domestic market may lead to an erosion of market shares of inefficient domestic enterprises involving loss of employment.

² Zhang, et al. 1998) state that 'protectionism often failed because efficiency gains from exchange significantly exceeded the net benefits of erecting trade barriers'. Barriers imposed by local governments included sales quota for local stores to sell locally-made goods, prohibition of non-local manufacturers and traders from opening shops, and forcing local enterprises to purchase goods and inputs from local producers and suppliers. Added to these, transport bottlenecks in China create barriers across regions.

Table 3
Trade, export and import growth rates for domestic and foreign firms, 1981–1999

| Year | Trade growth rate | | | Export growth rate | | | Import growth rate | | |
|------|-------------------|---------------|----------------|--------------------|---------------|----------------|--------------------|---------------|----------------|
| | Total | Foreign firms | Domestic firms | Total | Foreign firms | Domestic firms | Total | Foreign firms | Domestic firms |
| 1981 | 15.44 | 232.56 | 15.20 | 21.47 | 292.60 | 21.34 | 9.99 | 222.20 | 9.62 |
| 1982 | -5.50 | 130.07 | -5.94 | 1.41 | 63.43 | 1.32 | -12.40 | 149.32 | -13.22 |
| 1983 | 4.83 | 87.84 | 4.17 | -0.40 | 524.85 | -1.65 | 10.89 | 4.19 | 10.98 |
| 1984 | 22.76 | -24.27 | 23.44 | 17.59 | -79.13 | 19.05 | 28.14 | 38.61 | 28.00 |
| 1985 | 29.97 | 404.49 | 26.67 | 4.63 | 330.37 | 3.77 | 54.14 | 417.05 | 48.78 |
| 1986 | 6.11 | 27.57 | 5.35 | 13.13 | 96.17 | 12.22 | 1.56 | 17.74 | 0.73 |
| 1987 | 11.92 | 43.76 | 10.56 | 27.47 | 107.56 | 25.94 | 0.70 | 28.47 | -0.97 |
| 1988 | 24.37 | 89.45 | 20.77 | 20.49 | 103.33 | 17.87 | 27.91 | 84.06 | 23.54 |
| 1989 | 8.65 | 67.12 | 3.58 | 10.56 | 100.01 | 5.69 | 7.00 | 53.06 | 1.66 |
| 1990 | 3.37 | 46.76 | -2.71 | 18.18 | 59.04 | 13.96 | -9.79 | 39.91 | -18.47 |
| 1991 | 17.49 | 43.91 | 11.91 | 15.70 | 54.18 | 10.16 | 19.57 | 37.38 | 14.23 |
| 1992 | 22.05 | 51.02 | 14.18 | 18.23 | 44.07 | 13.03 | 26.34 | 55.98 | 15.65 |
| 1993 | 18.23 | 53.38 | 5.60 | 8.01 | 45.41 | -1.60 | 29.00 | 58.64 | 14.58 |
| 1994 | 20.91 | 30.68 | 15.82 | 31.91 | 37.55 | 29.76 | 11.21 | 26.54 | 0.88 |
| 1995 | 18.70 | 25.30 | 14.81 | 22.95 | 35.04 | 18.09 | 14.25 | 18.91 | 10.31 |
| 1996 | 3.21 | 24.85 | -10.68 | 1.53 | 31.21 | -12.13 | 5.11 | 20.12 | -8.55 |
| 1997 | 12.17 | 11.31 | 12.94 | 21.01 | 21.78 | 20.49 | 2.55 | 2.80 | 2.25 |
| 1998 | -0.37 | 3.31 | -3.63 | 0.50 | 8.09 | -4.77 | -1.50 | -1.29 | -1.74 |
| 1999 | 11.32 | 10.67 | 11.94 | 6.11 | 9.47 | 3.46 | 18.15 | 11.95 | 25.65 |

Source: China Foreign Economic Statistical Yearbook, 1996, 2000 (original in Chinese).

Note: The domestic-foreign dichotomy is not so clear-cut in China since the FFEs also include equity joint ventures with Chinese enterprises besides wholly foreign-owned enterprises. Thus the above table includes domestic enterprise element in the foreign-funded enterprises.

Table 4
Matrix of the impact of WTO accession on the Chinese industry

| Market structure | Ownership structure | Entry barriers (import tariffs, NTBs) | Government subsidy | Status and impact of the accession |
|---|--|---------------------------------------|--------------------|---|
| Globally integrated/competitive: Competition in both global and domestic markets (e.g. shipbuilding, textiles, clothing, electronics) | State-owned, collective, TVEs, joint ventures, or private. | Low or zero. | Low or zero. | (a) Economic: • higher efficiency; • better market access. (b) Social: • increase in employment through increase in exports. |
| Segmented/protected: domestic and export markets are segmented as the former is protected (e.g. machinery and chemicals, and automobiles) | State-owned, collective, TVEs, joint ventures or private. | Medium or high. | Low or medium. | (a) Economic: • improved efficiency; • better market access. (b) Social: Loss of employment in inefficient enterprises; increase in employment in efficient ones. |
| Insulated: Only domestic competition, closed to foreign entry (e.g. telecommunications, banking and financial services, and petrochemicals). | State-owned. | High. | Medium or high. | (a) Economic: • scope for raising efficiency; • better market access. (b) Social: Loss in employment due to import competition; increase in employment through better market access. |

During the reform period, China first opened up light consumer goods sector to competition. Although it maintained relatively higher import duties on these goods, entry barriers in light industry were low for both domestic and foreign enterprises. The ownership structure in light industry has become much more diversified due to the restructuring of SOEs and the establishment of new private domestic and foreign-funded enterprises. Many joint ventures have been established between domestic enterprises of different ownership types as well as between domestic and foreign enterprises. As a result, the output shares of SOEs and collectives have declined whereas those of foreign-funded enterprises (including those owned by overseas Chinese) and domestic private enterprises have substantially increased (table 5). Apart from the policies of reform and opening up, product differentiation and technology modernization also played an important part in diversifying the ownership structure of light industry. It is estimated that in 1998 investment in technology improvement by foreign firms was on average four times higher than that by domestic firms including SOEs. China attracts foreign companies for two main reasons – huge market potential and cheap labour, and is increasingly becoming a manufacturing base of the world because of these factors combined with modern technologies and low-cost transportation. This trend will accelerate after the WTO accession.

Table 5
Output shares of Chinese light industry by enterprise ownership
(Per cent)

| | 1991 | 1993 | 1995 | 1997 | 1999 |
|---|------|------|------|------|------|
| SOEs | 50.0 | 43.1 | 33.2 | 29.5 | 22.9 |
| Collectives | 42.4 | 39.9 | 39.2 | 38.4 | 24.8 |
| Enterprises funded by Hong Kong (China), Macao (China) and Taiwan Province of China firms | - | 5.1 | 8.7 | 8.3 | 9.5 |
| Foreign-funded enterprises | - | 4 | 7.9 | 10.9 | 15.6 |
| Others | 1.9 | 7.9 | 11.0 | 12.9 | 17.1 |

Source: China Light Industry Yearbook, various issues.

Note: - = not available.

The market access for China's products in the global market will depend, *inter alia*, on their *price* and *quality* competitiveness. The fact that China's exports of clothing, toys, footwear and electrical machinery continued to grow in the wake of the Asian financial crisis suggests the competitiveness of these products despite the depreciation and realignment of Asian currencies (Bhalla, 2001). Generally a static approach is adopted to compare costs of domestic producers against those of international producers. This method is not helpful in a dynamic setting with different levels and degrees of competition. Different methods of assessing competitiveness include a comparison of:

- Domestic and international costs and prices; for example, unit cost of labour in dollars (Mazumdar, 1993) which can be decomposed into: (i) wage-productivity ratios, (ii) ratio of domestic to foreign prices, and (iii) the rate of foreign exchange.
- Changes in market shares and comparative advantage, which may depend on cost, technology and information advantages (of brand name and quality, for example).

Given the data limitations, labour costs and labour productivity (or labour-output coefficient) are commonly used for estimating the employment impact of trade.

II. THE IMPACT OF THE ACCESSION ON EMPLOYMENT IN CHINA

To understand the impact of the accession on employment in China, we need first to examine the current unemployment situation and its causes, and inter-sectoral employment trends over time. These are discussed below.

A. The unemployment situation

Generally speaking, the total labour force in a country is composed of the employed and unemployed population. However, the official unemployment statistics vary in different economies and countries due to different definitions and concepts. It is particularly true when we consider unemployment in China. First, the official unemployment statistics refer only to the urban areas including towns, excluding vast rural areas where there are currently about 130 million redundant workers. Second, the unemployment figures take into account only those who have registered and exclude those who are still on the payroll but are not actually working (e.g. *xiagang*), whether they are paid or not, or paid fully or partially. Third, unemployment registration includes only those people whose age is between 16–50 for men and 16–45 for women, and those who have the ability to work and who want to work, whilst the official retirement age is 60 years for men and 55 years for women. Thus the registered unemployment age is 10 years shorter than the official working age. It understates the true level of unemployment.

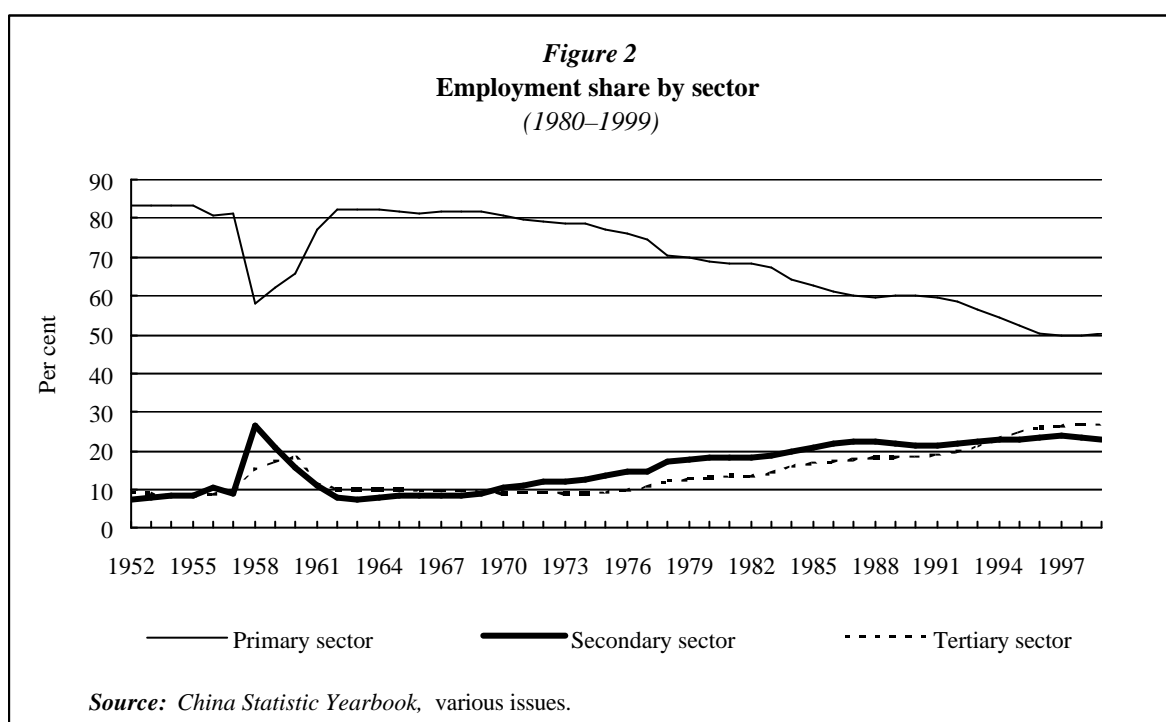
It is estimated that during the tenth Five Year Plan (2001–2005), the registered unemployment rate will reach 3.5 per cent. Half of the provinces will not be able to reabsorb more than 50 per cent of laid-off workers. Rural redundant labour will continue to increase. The loss of employment as a result of economic reforms and slimming down of the government services amounted to 4.3 million staff and workers. Urban unemployment in China has become more serious. The hidden unemployment in urban and rural areas is estimated to be around 27 per cent (Yang, 1998). Therefore, the real unemployment rate would be much higher and is estimated at over 8 per cent (see Hu, 1999).

Since the economic reforms, the following features characterize employment in China. First, reduction in employment in the state sector has to a very large extent been matched by an increase in employment in the non-state sector, especially the private sector, which is growing at an annual rate of more than 20 per cent with net job creation at about 6 million (*People's Daily*, 5 July 2001). Second, employment has been shifting from primary and secondary sectors to the tertiary sector. Many rural people migrated to urban areas to work in such activities as domestic help, cleaning, maintenance and repair, building and construction, restaurants and so on. There are 80 million so-called floating workers across the country. Although some of them are seasonal workers, many are staying permanently in the urban areas. Third, a large proportion of laid-off workers become permanently unemployed. It is increasingly difficult for these workers to be re-employed in conditions of labour over-supply. According to an official statistical bulletin, in the first half of 2001, out of 7.69 million laid-off workers, only 0.79 million succeeded in obtaining other jobs; the re-employment rate was only 11 per cent. A survey of labour demand and supply in 59 large and medium cities showed that there was only 0.65 job for every jobseeker (*People's Daily*, 30 July 2001).

Some studies argue that economic growth in China will involve a shift in production towards capital- and technology-intensive goods, which will require fewer workers implying a low employment elasticity of output. Although the Chinese economy maintains a 7–8 per cent growth rate, the employment elasticity has been declining. In 1980, 1 per cent of GDP growth rate led to an increase in employment by 0.33 per cent; during the ninth Five Year Plan period (1996–2000), the figure dropped to 0.16 per cent (*People's Daily*, 30 July 2001). Therefore, it is very difficult to increase employment simply by promoting economic growth.

B. Inter-sectoral employment trends

We need to examine the trends in inter-sectoral employment and shifts between primary, secondary and tertiary sectors to determine which tradeable and non-tradeable sectors will absorb the unemployed. Between 1952 and 1998, the primary sector remained the major absorber of labour, followed by the secondary sector until 1994 when its share was overtaken by the tertiary sector (figure 2). The trend for greater employment in the tertiary sector is likely to continue and to become more significant in the post-accession period. It is widely believed that the traditional labour-intensive sectors (e.g. textiles and clothing, food processing, construction and services) will benefit within five years after the accession.³



Obviously the impact of the accession will not be evenly spread across sectors and industries. Most observers believe that the potential for employment growth is minimal or negative in such sectors as agriculture, automobiles and machinery and instruments. Some estimate that employment in the agricultural sector will be reduced by 9.66 million (or 3.6 per cent of the total), automobiles 4.98 million, (14.5 per cent of current employed work force), and machinery and instrument, 5.82 million (2.5 per cent of current employment), in seven years after the accession (*Beijing Evening News*, 18 November 1999). Ianchovichina et al., (2000) compare changes in output and employment in selected Chinese industries with and without accession during 1995–2005 (table 6). They estimate that a gain in employment of unskilled workers will occur in the following industries: foodgrains, meat and livestock and dairy products, clothing, and electronics. On the other hand, employment will decline in beverages and tobacco, textiles, wood and paper, petrochemicals, automobiles, trade/transport, and utilities. Although estimated increases in agricultural output and employment are lower, we still believe that these estimates are over-optimistic considering that foodgrains, feedgrains and oilseeds are land-intensive crops in which China has no comparative advantage. Domestic prices for these commodities are much higher than the world prices. For example, domestic price for rice is 40 per cent higher than the world price, wheat, 10 per cent higher, maize, 60 per cent higher, soya bean, 40 per cent higher, and oil, 30 per cent higher. However, in other primary export products including meat, fishery products, vegetables, fruits, tobacco leaves, China will still maintain a comparative advantage as these products do not need much land and they can utilize redundant labour (Chen, 2001).

³ Employment estimates for these sectors are as follows: textiles 2,825 thousand, clothing 2,610 thousand, food processing 168 thousand, construction 928 thousand and service sector 2,664 thousand (*Economic Daily*, 11 July 2001).

Table 6
Output and employment changes in China's selected industries/sectors
 (Percentage change between 1995 and 2005)

| | Output | | Employment of skilled labour | | Employment of unskilled labour | |
|-----------------------|-------------------|----------------|------------------------------|----------------|--------------------------------|----------------|
| | Without accession | With accession | Without accession | With accession | Without accession | With accession |
| Foodgrains | 46.3 | 44.5 | 30.1 | 28.5 | 19.4 | 17.9 |
| Feedgrains | 28.9 | 26.9 | 14.4 | 12.6 | 7.2 | 5.5 |
| Oilseeds | 32.4 | 32.3 | 17.7 | 17.7 | 10.3 | 10.2 |
| Meat & livestock | 75.0 | 81.3 | 63.0 | 69.8 | 41.5 | 47.3 |
| Dairy | 74.9 | 84.4 | 60.6 | 70.5 | 35.0 | 43.2 |
| Other agriculture | 53.2 | 50.0 | 37.2 | 34.3 | 28.6 | 25.8 |
| Other food | 50.5 | 51.8 | -11.0 | -10.7 | -34.5 | -34.3 |
| Beverages/tobacco | 80.7 | 13.8 | 2.2 | -36.1 | -24.8 | -53.0 |
| Extractive industries | 61.9 | 60.2 | 63.7 | 60.8 | 54.9 | 52.2 |
| Textiles | 71.6 | 88.0 | 6.2 | 15.5 | -24.8 | -18.3 |
| Clothing | 57.0 | 263.5 | 2.4 | 134.4 | -27.5 | 65.9 |
| Wood & paper | 103.6 | 93.9 | 27.8 | 20.9 | -9.5 | -14.5 |
| Petrochemicals | 105.8 | 98.6 | 14.8 | 10.0 | -18.7 | -22.2 |
| Metals | 135.7 | 126.2 | 30.5 | 24.3 | -7.6 | -12.0 |
| Automobiles | 189.6 | -3.8 | 53.1 | -51.2 | 8.4 | -65.5 |
| Electronics | 142.5 | 169.1 | 38.2 | 52.1 | -2.2 | 7.6 |
| Other manufactures | 131.7 | 125.5 | 45.0 | 40.1 | 2.7 | -0.8 |
| Utilities | 103.2 | 101.2 | 0.4 | -1.5 | -28.9 | -30.3 |
| Trade/transport | 110.9 | 114.4 | 0.8 | 1.3 | -36.4 | -36.1 |
| Construction | 147.9 | 149.0 | 119.7 | 119.9 | 49.7 | 49.7 |
| Business/finance | 104.6 | 105.1 | 26.4 | 25.9 | -10.5 | -10.9 |
| Government services | 85.0 | 85.9 | 56.3 | 56.6 | 10.7 | 10.8 |

Source: Ianchovichina et al. (2000).

Note: The above simulations are based on a new version of the Global Trade Analysis Project (GTAP) model. Projections for population and unskilled labour were made by summing up the average growth rates between 1995 and the projected 2005 data. The skilled labour projections were based on forecasts of the growth in the stock of tertiary educated labour.

C. The employment impact of the accession

Estimates of the employment impact vary widely, from creating additional 12 million jobs to causing million of jobs losses. Zhang, et al. (1998) note that the short-term costs to China of trade liberalization will be substantial 'both in terms of the loss of domestic output (a drop of about \$40 billion, or 32 per cent of pre-liberalization output in the protected sectors) and lost jobs (about 11.2 million workers in the protected sectors). Salomon Smith Barney, the investment bank, estimates that within five years after the WTO entry, China will have 40 million people unemployed, 5-10 million rural workers, 10 million laid-off SOE workers, and 20 million non-SOE workers (*Far Eastern Economic Review*, 5 October 2000). These forecasts need to be viewed against the official benchmark for end-2001 of the total registered urban unemployment of nearly 7 million, not including 5.15 million worker lay-offs in SOEs (*China Daily*, 7 February 2002).

The employment impact will vary depending on the assumptions one makes about the employment elasticity of output, the extent to which imported goods will replace domestic goods and the magnitude of bankruptcies of inefficient state and non-state firms. Estimates of the employment elasticity by sectors and time periods show that it has declined in primary and secondary sectors (table 7). It is generally higher in the tertiary sector, which is likely to absorb the bulk of labour displaced as a result of the accession. On the basis of the average elasticity for 1995-1999 and the employment figure for 1999, we estimate that for every per cent of GDP growth, jobs in the primary sector will be reduced by 250 thousand, and those in the secondary and tertiary sectors will increase by 150 thousand and 970 thousand respectively. But this static analysis may overstate the increase in unemployment in the primary sector, since for every 1 per cent GDP growth rate this sector's contribution will be primary sector may simply nullify employment increase in the secondary sector so

Table 7
Employment elasticity of output

| <i>Period</i> | <i>Primary</i> | <i>Secondary</i> | <i>Tertiary</i> |
|---------------|----------------|------------------|-----------------|
| 1955-59 | -9.64 | 0.57 | 1.83 |
| 1960-64 | 2.70 | -0.15 | 0.99 |
| 1965-69 | 1.10 | 0.12 | 2.32 |
| 1970-74 | 0.50 | 1.35 | 0.39 |
| 1975-79 | -0.05 | -0.19 | 3.98 |
| 1980-84 | -0.09 | 0.89 | 0.70 |
| 1985-89 | 0.52 | 0.29 | 0.43 |
| 1990-94 | 0.22 | 1.00 | 2.00 |
| 1995-99 | -0.07 | 0.09 | 0.51 |

Source: Based on GDP and employment data calculated on the basis of data from the *China Statistical Yearbook*, and *China Labour Statistical Yearbook*.

Note: Elasticity in each period is an average of annual figures.

workers wishing to transfer out of agriculture (*People's Daily*, 26 March 2001). To absorb this magnitude of labour is a daunting task especially in conditions of world economic slowdown, which will adversely affect demand for China's exports and its overall economic growth. Lower GDP growth and more capital- and technology-intensive development will reduce the demand for labour. The government expects that registered unemployment will increase from 3.3 per cent to 5 per cent during 2001–2005.

However, one needs to bear in mind that some positive factors will help generate additional employment. First, the accession will encourage more foreign direct investment (FDI) into China as a result of which more jobs will be created. China has increasingly become the world's manufacturing base due to its abundant and cheap labour supply. Multinational companies have relocated many of their product lines from the developed countries to China (e.g. Toshiba TV and washing machines from Japan (see below)) to avail of China's cheap labour, low-cost production and a potentially very big market. So far FDI has concentrated mainly on industry and property development. In 1999, investment in these sectors accounted for 84 per cent of the total (Yu and Yu, 2001). Second, it is expected that such activities as retailing, distribution, and tourism will create more employment opportunities after the relaxation of restrictions on sectors in which foreign companies can invest. Third, China's service sector will expand to provide services related to different stages of exports. As more foreign companies set up business in China, various services to these companies will be required: e.g. accountants, lawyers, engineering and other consultants and supporting staff. Finally, China is a large economy and its size will enable it to be in a better position to face external shocks.

The Chinese economic cycle is not synchronized with the world economy as China has been growing rapidly in the past even when other countries grew slowly. The domination of labour-intensive goods in its export structure is likely to enable China to increase its exports since consumers in advanced countries may become more conscious of the value for money when their incomes and jobs are under threat. One good example of this is the success of China's expansion of exports to Japan when the Japanese economy was slowing down. Especially since 1993 China's trade with Japan soared from \$25.4 billion in 1992 to \$66.2 billion 1999, or an increase of nearly 161 per cent. Of the total trade, exports increased from \$11.7 billion to \$32.4 billion, and imports from \$13.7 billion to \$33.8 billion during the same period (*China Foreign Economic Statistical Yearbook*). According to the Japanese Ministry of Finance, the total trade between the two countries reached nearly \$86 billion in 2000: China exported \$55 billion worth of goods to Japan. The Chinese official estimates are somewhat lower (that is, \$83 billion and \$42 billion respectively) due to a different treatment of some trade volumes through third countries or regions such as Hong Kong (China) (Miyanori, 2001).

that the net increase for every per cent GDP growth would be just under 1 million. This estimate is more or less smaller than 1 per cent under current and future economic conditions. Employment reduction in the consistent with the job creation since 1993, that is, about 7 million new jobs every year (Niu, 1999).

According to official estimates, there will be 8 million new entrants to the job market each year in the urban areas and there will be 10 million SOEs laid-off workers during the tenth Five Year Plan (2001–2005). Therefore, the total labour supply from the urban areas will be about 50 million during this period. Apart from labour supply from the urban areas, there are 40 million rural surplus

D. Employment and lay-offs in SOEs and other enterprises

Employment data in manufacturing SOEs by type of industry are hard to find. Therefore, it is not possible to determine any time trend. However, data are available for 1998 to 2000, which show the importance of such industries as machinery manufacturing, textiles, petroleum processing and non-metal mineral products (table 8).

Table 8
SOE employment in manufacturing sectors

| <i>Sector</i> | <i>1998^t</i> | <i>Per cent of total manufacturing employment</i> | <i>1999^t</i> | <i>Per cent of total manufacturing employment</i> | <i>2000^t</i> | <i>Per cent of total manufacturing employment</i> |
|--|-------------------------|---|-------------------------|---|-------------------------|---|
| National total | 19,007 | 100 | 16,652 | 100 | 14,321 | 100 |
| Food processing | 974 | 5.1 | 836 | 5.0 | 677 | 4.7 |
| Textiles | 2,119 | 11.1 | 1,769 | 10.6 | 1,504 | 10.5 |
| Garments & other fibre products | 167 | 0.9 | 154 | 0.9 | 136 | 0.9 |
| Leather & related products | 86 | 0.4 | 74 | 0.4 | 64 | 0.4 |
| Timber processing (bamboo, cane) | 133 | 0.7 | 109 | 0.6 | 96 | 0.7 |
| Furniture making | 35 | 0.2 | 26 | 0.2 | 21 | 0.1 |
| Papermaking & paper products | 390 | 2.0 | 308 | 1.8 | 245 | 1.7 |
| Printing | 345 | 1.8 | 312 | 1.9 | 278 | 1.9 |
| Stationery, educational & sports goods | 41 | 0.2 | 31 | 0.2 | 25 | 0.2 |
| Petroleum processing | 508 | 2.7 | 486 | 2.9 | 429 | 2.9 |
| Chemicals & chemical fibres | 1,979 | 10.4 | 1,721 | 10.3 | 1,455 | 10.1 |
| Medical & pharmaceutical products | 440 | 2.3 | 408 | 2.4 | 364 | 2.5 |
| Rubber products | 172 | 0.9 | 152 | 0.9 | 133 | 0.9 |
| Plastic products | 146 | 0.8 | 119 | 0.7 | 94 | 0.6 |
| Non-metal mineral products | 1,493 | 7.8 | 1,305 | 7.8 | 1,132 | 7.9 |
| Smelting/processing of metals | 2,259 | 11.9 | 2,045 | 12.3 | 1,811 | 12.6 |
| Metal products | 314 | 1.6 | 270 | 1.6 | 196 | 1.4 |
| Machinery manufacturing | 2,554 | 13.4 | 2,188 | 13.2 | 1,832 | 12.8 |
| Transport equipment | 1,774 | 9.3 | 1,664 | 10.0 | 1,459 | 10.2 |
| Electric equipment & machinery | 643 | 3.4 | 557 | 3.3 | 469 | 3.3 |
| Electronics & telecommunications | 462 | 2.4 | 378 | 2.3 | 336 | 2.3 |
| Instruments, meters | 258 | 1.3 | 217 | 1.3 | 179 | 1.2 |
| Other manufacturing | 132 | 0.7 | 126 | 0.7 | 148 | 1.0 |

Source: China Labour Statistical Yearbook (original in Chinese).

Note: Percentages may not add up to 100 due to rounding. ^t(000).

A negative impact of the accession on employment will be felt through import competition and the resulting closure of inefficient domestic firms, especially SOEs, after the withdrawal of subsidies. However no estimates exist of the significance of such closures. Redundant labour is concentrated mainly in SOEs and urban collectives (Bhalla, 2001). This is not surprising considering that during the pre-reform period, the Chinese government used SOEs as a mechanism to ensure full employment. SOEs were expected to provide employment not only to workers who were not necessary for production but also to their children. The government subsidies continue to finance wages of such workers. The Chinese government is known to have discouraged SOEs from shedding surplus labour in the face of the problem of massive lay-offs and resulting social instability.

Although in theory, the Chinese government now allows SOEs to lay off workers, in practice labour market flexibility (hiring and firing) is not common due in part to the failure of a comprehensive social security system and limited resources for social welfare at the level of local governments. Labour mobility is restricted by the fact that workers forego social welfare benefits of housing, education and health services (and even pensions) once they leave SOEs. These benefits are not available to workers employed under other forms of ownership (e.g. joint ventures, collectives and private enterprises). Nevertheless, SOEs competing in the export market are increasingly permitted to hire and fire workers (Box 1 – a visit to an SOE factory in Guizhou province where guaranteed employment is not pursued). Restructuring of the labour market and a shift from

guaranteed permanent employment to more flexible contract employment is bound to become a common practice after the accession, especially as a means of reducing production costs.

Lay-offs are only one element in employment reduction, which the Chinese authorities do not include in estimating the unemployment rate. Other elements include early retirements, normal retirements, natural attrition, and unemployment due to technological, structural and cyclical phenomena.⁴ But '*xiagang*' (or furlough) policy of lay-offs was preceded by policies of labour redeployment not involving lay-offs: transferring redundant workers to such subsidiary enterprises as hotels and restaurants, and 'labour service companies' (Rawski, 1999). We mentioned earlier that more and more SOE workers have lost their jobs, as a result of restructuring, sale of enterprises or bankruptcies. Almost half of the laid-off or unemployed workers simply cannot find new jobs, and many prefer to take early retirement. Even when some get re-employed, they find jobs mostly in the non-state or private sector. Thus in the post-accession period, state sector in industry will be much smaller in respect of both output and employment. Additional jobs will be created mainly in the private sector. It is estimated that during 1995–1997 China's domestic private enterprises created more jobs than those in state, collective and town and village enterprises (TVEs). The contribution of the private sector to employment in the 1990s is known to have been under-estimated as some private enterprises are reluctant to register for fear of being taxed, and others are disguised as rural or urban collectives (Zhu, 1998). Therefore, a look at the employment situation over time in SOEs in isolation is not all that helpful. We need to compare the declining employment in SOEs with increase in employment in private sector and other ownership types (e.g. joint ventures, cooperatives, and limited liability corporations (figure 3). While employment in SOEs has been consistently declining since 1995 and in urban collectives since 1993, that in TVEs, private sector and other ownership categories has been rising, particularly in the last two categories. This trend (also noted below in the automotive industry) is likely to continue after the accession. The relevant question is whether the private sector and other forms of ownership will eventually make up for the loss of employment in SOEs. This is unlikely considering the rapidly growing urban unemployment in China noted above.

Box 1

Visit to a State-owned Enterprise in Guizhou Province (Southwest China)

On 9 April 2001, we visited the Zhenning Hongbeiyi Limited, a subsidiary of Guizhou Redstar Development Corporation. It was set up in October 1995 by its parent company, Qingdao Redstar Chemical Industry Group, a large state-owned company producing non-organic salt products. In 1994, the market conditions for chemical industry were not favourable. So the parent company decided to transfer the production of some products to locations close to natural resources and raw materials: Zhenning Bouyi and Miao Autonomous County with plentiful heavy crystal stone, lime stone, coal resources and power supply. As a nationally-designated poor county, it is a partner-county of Qiaodao in a scheme under which the cities in the Eastern areas help the Western region in alleviating poverty.

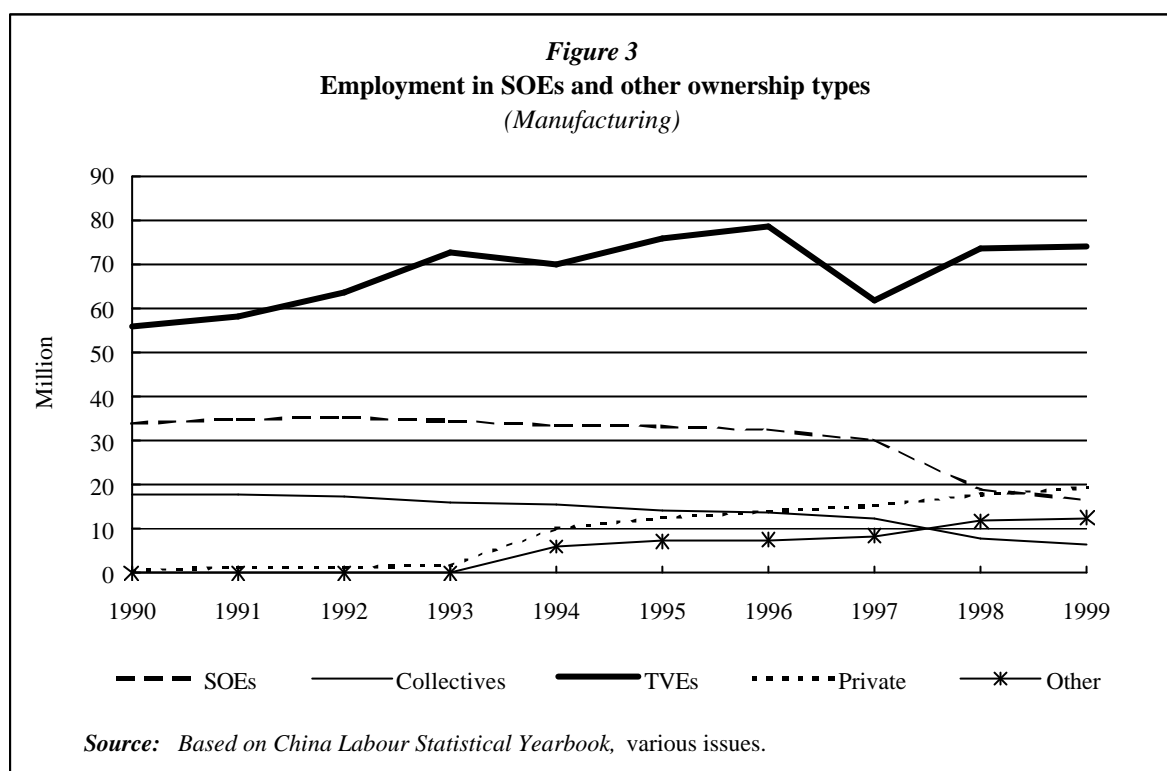
Zhenning Hongbeiyi company produces carbon-acid barium and carbon-acid strontium, products with wide industrial applications, especially for making TV or computer glass screens. Majority of its products are exported to the American, European and other international markets. The products of the factory are high quality and globally competitive. Many international suppliers of the products have stopped production to buy products from this factory.

The factory is run quite differently from its parent company. Workers are mainly employed locally and currently there are about 800 workers on the site we visited. They are employed on a contract basis and do not enjoy guaranteed employment for life as during earlier years. For new workers, a probationary period of three months has been introduced. No worker can be transferred to a contract position unless he or she fulfils the minimum performance requirements. Every year a comprehensive assessment of workers' performance is undertaken and 5 per cent of the top performers are awarded extra bonus. The bottom 5 per cent are placed on a three-month probation. A worker must leave the factory at the end of the probationary period if he/she cannot find an alternative job within it. Wage structure consists of a basic wage plus bonus: about one-third consists of basic wage and two-thirds, performance-related payment. Unlike many other SOEs, this factory had no obligation to provide such social services as health and education for workers.

The workforce is mainly recruited from among former retired soldiers, school-leavers and farmers. Extensive training is given to new workers.

The initial production capacity of 45,000 tons was raised to 80,000 tons in 1998. It is at present annual 120,000 tons.

⁴ Rawski (1999) divides Chinese unemployment into three categories: (i) cyclical unemployment depending on export boom or decline in foreign sales, (ii) transition unemployment which is unrelated to labour demand and supply conditions, and (iii) structural unemployment resulting from heavy industry built in the Northeast under the plan system.



The diversity of ownership in China's manufacturing sector noted above, is the direct result of a gradual marketization of the economy since 1980, which reformers believed would facilitate domestic competition. Indeed, initially China did not privatize but encouraged the growth of TVEs to provide competition to SOEs (Bhalla, 2001). However, since 1995 small SOEs have been privatized at the county level whereas large SOEs remain state-owned. The latter benefit from subsidies either directly by the government or by the commercial banks. There are two distinguishing features of SOEs compared to collectives and non-state enterprises. First, they are generally less profitable and competitive. Empirical estimates show that their total factor productivity has been rising although not as fast as that of collective enterprises and TVEs.⁵ Secondly, most large SOEs are concentrated in capital-intensive sectors whereas the non-state sector is engaged in labour-intensive activities in which China has a comparative advantage. China's trade sector is quite dualistic: TVEs and joint ventures account for a substantial value and volume of China's exports, whereas SOEs are less important exporters.

Various official and unofficial estimates of labour surplus in Chinese SOEs are now available. Two notable features of these estimates are: i) a very wide range and ii) their partial and micro nature. The estimates vary depending on the assumptions and the perceptions of enterprise managers since they are based on interview surveys. Lim, et al. (1996, p. 31) estimate labour surplus in Chinese industrial SOEs and other forms of ownership on the basis of an ILO field survey undertaken in February–March 1995. 'In job' labour surplus was estimated by asking enterprise managers whether the same level of output could be achieved with fewer workers, and if so, by what percentage. The responding enterprises noted that labour could be cut by 17 per cent of their current total workforce. Amongst all the ownership categories, the highest level of labour surplus was reported in joint stock companies (18.9 per cent) followed by labour service enterprises (16.4 per cent) and state-owned enterprises (15.6 per cent). One needs to be careful in interpreting the above data based on managers' responses. We do not question the existence of surplus labour but the feasibility of removing it at least in the short run in a labour surplus economy. This will be particularly difficult considering that WTO accession will add to the unemployment problem, as had been noted above.

⁵ Empirical estimates of total factor productivity in SOEs, collectives and TVEs vary a great deal as they are sensitive to the price deflators used for inputs and outputs. For review of this literature, see Huang, et al. (1999).

The official estimates of surplus labour, including lay-offs in different types of enterprises are presented in table 9.

In addition to the 'in job' labour surplus, a phenomenon peculiar to China is that of 'on leave' surplus labour (*xiagang* or lay-offs) which represents a phased labour redundancy in SOEs. Although these workers vacate their posts, they continue to be paid a partial salary or allowances during a specified period during which they are encouraged to look for alternative jobs. There were about 5.6 million such workers in 1995 whose number increased to 16 million in 1998 (Yang and Tam, 1999). This dramatic increase in 'on leave' workers may be explained by an increase in the number of SOE bankruptcies. Initially, *xiagang* applied to bankruptcies and closures only but its coverage gradually widened to include the following: (i) those with reduced salary; (ii) those who retired or left on prolonged leave; and (iii) those awaiting reassignment within the enterprise (Lee, 2000).

Table 9
Estimates of surplus labour in Chinese SOEs and other enterprises
(000)

| | 1993 | 1994 | 1995 | 1996 |
|--------------------|------|-------|-------|-------|
| All SOEs | 544 | 1,202 | 6,570 | 6,593 |
| Manufacturing SOEs | 308 | 677 | 4,314 | 3,233 |
| Urban collectives | - | 314 | 2,101 | 2,845 |
| Other enterprises | - | 61 | 155 | 212 |

Source: Data supplied by the Ministry of Labour.

Note: Surplus labour includes lay-offs. Data on surplus labour are not available since 1996 possibly because such data are replaced by those on lay-offs and unemployment. - = not available.

Table 10
Magnitude and characteristics of laid-off workers by ownership categories, 1998

| | SOEs ¹ | Per cent | Urban collectives ¹ | Per cent | Other firms ¹ | Per cent |
|--|-------------------|----------|--------------------------------|----------|--------------------------|----------|
| Lay-offs at the end of 1997 | 6918 | | 2665 | | 301 | |
| Additional lay-offs during 1998 | 5622 | | 1570 | | 197 | |
| Reduction of lay-offs during 1998 | 6592 | | 1721 | | 261 | |
| <i>Of which: re-employed during 1998</i> | 6099 | 100.00 | 1518 | 100.00 | 222 | 100.00 |
| SOEs | 1663 | 27.27 | 148 | 9.75 | 21 | 9.46 |
| Non state-owned firms | 1687 | 27.66 | 552 | 36.36 | 62 | 27.93 |
| Private self-employed | 2581 | 42.32 | 781 | 51.45 | 135 | 60.81 |
| <i>Total laid-off workers at the end of 1998</i> | 5948 | 100.00 | 2514 | 100.00 | 307 | 100.00 |
| Of which: female workers | 2684 | 45.12 | 1132 | 45.03 | 110 | 35.83 |
| Of which: 35 years and below | 2106 | 35.41 | 708 | 28.16 | 103 | 33.55 |
| 35-46 years | 2473 | 41.58 | 1129 | 44.91 | 117 | 38.11 |
| Above 46 years | 1368 | 23.00 | 677 | 26.93 | 87 | 28.34 |
| Of which: Middle school and below | 3301 | 55.50 | 1537 | 61.14 | 163 | 53.09 |
| Secondary school | 2211 | 37.17 | 822 | 32.70 | 119 | 38.76 |
| College and other higher education | 436 | 7.33 | 156 | 6.21 | 25 | 8.14 |

Source: Data supplied by the Ministry of Labour.
¹ (000).

Slow retrenchment no doubt eases social hardship, but it continues to remain a financial burden on SOEs. The total cost to SOEs of paying surplus workers is estimated to be Y96 billion which was twice the total SOE profits in 1997 (Lee, 2000). *Xiagang* workers continue to receive subsidies and social insurance fees from their employing SOEs apart from receiving a partial salary. In contrast, fully redundant workers do not benefit from such assistance although they may receive some unemployment benefits from the local labour bureaus.

Women accounted for a substantial proportion of lay-offs in SOEs, urban collectives and other enterprises. Older workers (35–46 years) predominate among the lay-offs. A substantial proportion of laid-off workers have low educational qualifications (table 10). The older age of laid-off workers, combined with low education, make it difficult to retrain and re-employ them.

Table 11
Employment and worker lay-off in coastal and non-coastal areas by ownership categories, 1999
(1000)

| | SOEs | | | Urban collectives | | | Other enterprises | | | Total employ-ment workers | Total laid-off workers | Per cent |
|------------------------------|--------------|------------------|-------------|-------------------|------------------|--------------|-------------------|------------------|--------------|---------------------------|------------------------|------------|
| | Employ-ment | Laid-off workers | Per cent | Employ-ment | Laid-off workers | Per cent | Employ-ment | Laid-off workers | Per cent | | | |
| National total | 85721 | 6,525 | 7.61 | 17118 | 2,589 | 15.13 | 18463 | 257.4 | 1.394 | 121302 | 9371.5 | 7.7 |
| I. Coastal areas | | | | | | | | | | | | |
| Tianjin | 1185 | 144.8 | 12.2 | 305 | 52 | 17.05 | 627 | 1.2 | 0.191 | 2117 | 198 | 9.4 |
| Beijing | 2876 | 29 | 1.01 | 497 | 2.8 | 0.563 | 950 | | 0 | 4323 | 31.8 | 0.7 |
| Hebei | 4474 | 196.8 | 4.4 | 686 | 55.5 | 8.09 | 592 | 2.6 | 0.439 | 5752 | 254.9 | 4.4 |
| Liaoning | 4472 | 678 | 15.2 | 1141 | 452.5 | 39.66 | 852 | 29 | 3.404 | 6465 | 1159.5 | 17.9 |
| Shanghai | 2197 | 98.5 | 4.48 | 394 | 36 | 9.137 | 1081 | | | 3672 | | |
| Jiangsu | 4555 | 170.5 | 3.74 | 1427 | 100.3 | 7.029 | 1379 | 11.3 | 0.819 | 7361 | 282.1 | 3.8 |
| Zhejiang | 2242 | 56.3 | 2.51 | 731 | 46 | 6.293 | 1111 | 2.5 | 0.225 | 4084 | 104.8 | 2.6 |
| Shandong | 5799 | 143.1 | 2.47 | 1207 | 82.7 | 6.852 | 1249 | 3.2 | 0.256 | 8255 | 229 | 2.8 |
| Fujian | 1795 | 29.3 | 1.63 | 371 | | | 1122 | | | 3288 | | |
| Hainan | 688 | 38.9 | 5.65 | 46 | 4.4 | 9.565 | 82 | 0.2 | 0.244 | 816 | 43.5 | 5.3 |
| Guangdong | 4499 | 135.1 | 3 | 1227 | 123.6 | 10.07 | 2210 | 7.2 | 274 | 7936 | 265.9 | 3.4 |
| Guangxi | 2442 | 127.6 | 5.23 | 311 | 5.2 | 1.672 | 313 | 1.8 | 0.575 | 3066 | 134.6 | 4.4 |
| Total | 37224 | 1847.9 | 4.96 | 8343 | 961 | 11.52 | 11568 | 59 | 2204 | 57135 | 2867.9 | 5.0 |
| II. Non-coastal areas | | | | | | | | | | | | |
| Guizhou | 1628 | 109.6 | 6.73 | 217 | 19.7 | 9.078 | 201 | 0.8 | 0.398 | 2046 | 130.1 | 6.4 |
| Sichuan | 4052 | 296.3 | 7.31 | 824 | 103.9 | 12.61 | 732 | 29.9 | 4.085 | 5608 | 430.1 | 7.7 |
| Chongqing | 1612 | 135.1 | 8.38 | 361 | 57.8 | 16.01 | 289 | | | 2262 | 192.9 | 8.5 |
| Yunnan | 2366 | 58.8 | 2.49 | 288 | 5.5 | 1.91 | 268 | | | 2922 | | |
| Hunan | 3864 | 524.5 | 13.6 | 623 | 226.8 | 36.4 | 270 | 7 | 2.593 | 4757 | 758.3 | 15.9 |
| Hubei | 4449 | 414.5 | 9.32 | 767 | 205.5 | 26.79 | 606 | 39.4 | 6.502 | 5822 | 659.4 | 11.3 |
| Henan | 4753 | 262.6 | 5.52 | 1458 | 121.9 | 8.361 | 1207 | 12.7 | 1.052 | 7418 | 397.2 | 5.4 |
| Anhui | 2866 | 287.6 | 10 | 741 | 136.4 | 18.41 | 589 | 4.6 | 0.781 | 4196 | 428.6 | 10.2 |
| Jiangxi | 2498 | 261.9 | 10.5 | 371 | 59.6 | 16.06 | 272 | 4.7 | 1.728 | 3141 | 326.2 | 10.4 |
| Heilongjiang | 4552 | 740.5 | 16.3 | 891 | 394.2 | 44.24 | 526 | 83 | 15.78 | 5969 | 1217.7 | 20.4 |
| Jilin | 2696 | 339.7 | 12.6 | 494 | 117.1 | 23.7 | 389 | 5.3 | 1.362 | 3579 | 462.1 | 12.9 |
| Inner Mongolia | 2133 | 129.2 | 6.06 | 304 | | | 393 | | | 2830 | 129.2 | 4.6 |
| Shanxi | 2945 | 200.5 | 6.81 | 523 | 49 | 9.369 | 453 | 1.9 | 0.419 | 3921 | 251.4 | 6.4 |
| Shaaxi | 2802 | 325 | 11.6 | 332 | 102.9 | 30.99 | 328 | 8.2 | 2.5 | 3462 | 436.1 | 12.6 |
| Gansu | 1704 | 156.9 | 9.21 | 269 | 17 | 6.32 | 134 | 0.04 | 0.03 | 2107 | 173.94 | 8.3 |
| Qinghai | 468 | 61.1 | 13.1 | 55 | 0.9 | 1.636 | 13 | | | 536 | 62 | 11.6 |
| Ningxia | 523 | 39.5 | 7.55 | 54 | 3.7 | 6.852 | 78 | 0.3 | 37 | 655 | 6.6 | 6.6 |
| Xinjiang | 2426 | 87.5 | 3.61 | 190 | 6.1 | 3.211 | 140 | 0.5 | 0.357 | 2756 | 94.1 | 3.4 |
| Tibet | 159 | | | 11 | | | 5 | | | 175 | | |
| Total | 48496 | 4430.8 | 9.14 | 8773 | 1628 | 18.56 | 6893 | 198.34 | 2.877 | 64162 | 6257.14 | 9.8 |

Source: Data supplied by the Ministry of Labour.

Note: The laid-off workers are the total figure at the end of year, which is the previous year-end total plus new lay-offs minus those who were re-employed during the year.

There are considerable variations in lay-offs by regions and by types of ownership of enterprises (table 11). Lay-offs are more significant among SOEs and urban collectives than among other ownership types (e.g. joint ventures, cooperatives). The latter types do not over-hire in the first place.

Lay-offs by SOEs in non-coastal provinces (e.g. Heilongjiang, Hubei, Hunan and Jilin) are generally higher than those in coastal provinces although there are exceptions like Liaoning. These four non-coastal provinces alone account for nearly 46 per cent of the total number of lay-offs in the non-coastal areas/provinces. Historically, heavy machine building and other industries such as textiles, armaments and chemical engineering were located in the hinterland for military and security reasons. These industries use old technology and production facilities, which are now being modernized, resulting in large-scale lay-offs. This process of technological modernization will become much more rapid after the accession.

III. CASE STUDIES OF SELECTED INDUSTRIES

How will exports, output and employment in particular industries be affected after the accession? To answer this question, three cases are discussed below: a) textiles and clothing, a global competitor; b) automobiles, a highly protected industry and c) household appliances, an industry in which domestic Chinese firms have improved market shares in the face of foreign competition.

A. Textiles and clothing

China is one of the largest producers of textile products in the world. The textile industry plays an important role in its economy. The total share of China's textile exports in the world exports of textiles increased from 2.6 per cent in 1970 to 13.2 per cent in 1998 (Shi, 2001). This increase in exports was achieved in a very difficult international market environment. The developing-country exports faced quantitative restrictions by the developed countries, which included global quotas, bilaterally negotiated quotas and unilateral quotas.⁶ The industry is still the biggest foreign exchange earner. The average annual trade surplus generated by these exports from 1994 to 1998 was more than \$2.4 billion dollars, higher than the surplus generated by any other sectors. However, the industry shows a declining trend in terms of shares of output, employment and export (table 12 and figure 4). Among the export sectors the ranking of the industry dropped from 1 to 2 (surpassed by electrical and machinery product exports since 1996).⁷

Rural non-state textile sector, including small-scale private sector, has been growing rapidly at the expense of large SOE sector especially during the mid-1980s and 1990s. Output of rural textile and clothing industry increased from over Y37 billion in 1991 (at 1990 prices) to Y104 billion in 1998 (table 12). The non-state sector out-performs the state sector due to lower labour costs, which make possible lower prices and greater flexibility in production and marketing. Higher labour costs in the SOE sector are due mainly to overstaffing. China's state-owned textile industry has made efforts to reduce over-capacity and check over-staffing by shedding labour in a drive to modernize. From the early 1998 to the end of 1999 China reduced spindles by 9 million and redeployed 1.2 million workers to other sectors (Shi, 2001; *China's Textile Economy*, Vol. 1, 2001). But the non-state sector continues to out-perform the state sector.

⁶ The most common form of quantitative restrictions is the bilaterally negotiated quota (e.g. between China and the United States), which is determined through negotiations of the total amount of textile products and categories to be traded. This quota is expected to be revised in the coming years.

⁷ Before the mid-1970s, China's textile industry served mainly the domestic market and the annual total export of textiles then was \$1 billion. Since the normalization of the United States-China relationship in 1979, China's export of textile products and clothing increased very significantly and the export to the United States market rose to \$550 million in 1979, \$1.04 billion in 1980, \$1.83 billion in 1981 and \$2.22 billion in 1982. This dramatic increase in exports to the United States caused concerns in that country and led to the imposition of quota restrictions on textile and clothing imports from China. The first agreement on imports of textile products from China was signed in September 1980. Under the agreement the United States applied quota restrictions on eight textile products and put a ceiling on annual growth rates of the quotas at 5-6 per cent, the product volume subject to quota restriction was 14 per cent in 1981 and 33 per cent in 1982.

Table 12
Basic economic data on China's textiles and clothing industry

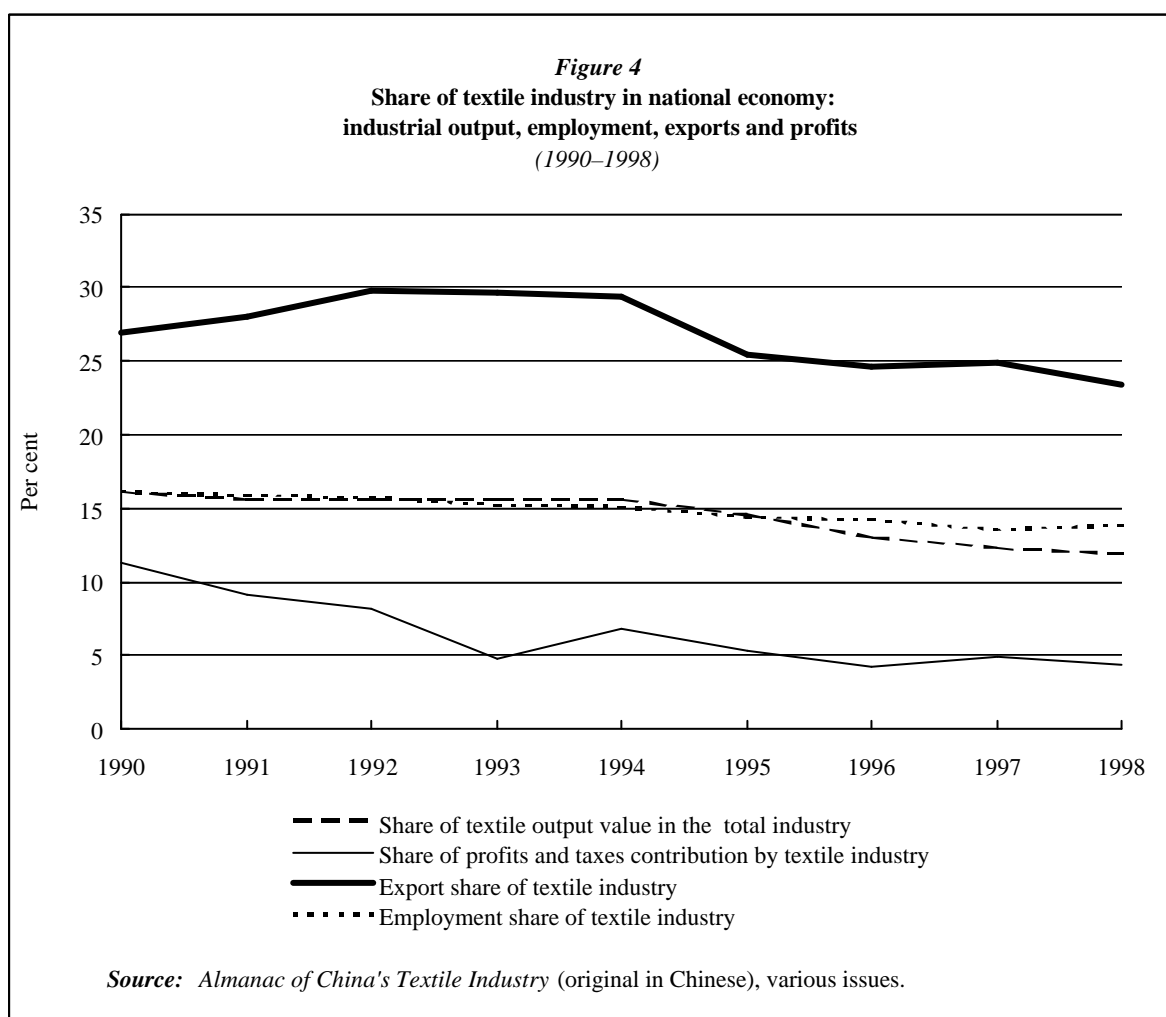
| | 1991 | 1993 | 1995 | 1997 | 1998 |
|--|--------|--------|--------|--------|--------|
| I. Enterprises with independent accounting system at township level and above | | | | | |
| <i>Textiles:</i> | | | | | |
| No. of enterprises (000) | 24.6 | 24.6 | 25.7 | 21.8 | 11.2 |
| Employment (million) | 7.56 | 6.8 | 6.7 | 5.96 | 3.93 |
| Output value (billion yuan) | 253.3 | 352.1 | 460.4 | 476 | 437.6 |
| Output value (billion yuan at 1990 prices) | 246.2 | 289.8 | 291.4 | 288.7 | 269.6 |
| Output per worker (yuan at 1990 prices) | 32,566 | 42,617 | 43,492 | 48,439 | 68,600 |
| <i>Clothing:</i> | | | | | |
| No. of enterprises (000) | 17.5 | 17.9 | 20 | 17.2 | 6.8 |
| Employment (million) | 1.72 | 1.64 | 1.75 | 1.62 | 1.27 |
| Output value (billion yuan) | 12.2 | 99.4 | 147 | 184.5 | 201.8 |
| Output value (billion yuan at 1990 prices) | 11.9 | 81.8 | 93.0 | 111.9 | 124.3 |
| Output per worker (yuan at 1990 prices) | 6,918 | 49,878 | 53,143 | 69,074 | 97,874 |
| II. Township and village enterprises | | | | | |
| <i>Textiles:</i> | | | | | |
| No. of enterprises | 29348 | 31530 | 29326 | 24839 | 21226 |
| Employment (million) | 3.21 | 3.37 | 3.22 | 2.73 | 2.31 |
| Output value (billion yuan) | 84.91 | 184.9 | 348.13 | 291.81 | 263.99 |
| Output value (billion yuan at 1990 prices) | 82.5 | 152.2 | 220.3 | 177.0 | 162.7 |
| Output per worker (yuan at 1990 prices) | 25,700 | 45,163 | 68,416 | 64,835 | 70,433 |
| <i>Clothing:</i> | | | | | |
| No. of enterprises | 18264 | 23254 | 30649 | 27483 | 22971 |
| Employment (million) | 1.30 | 1.57 | 2.34 | 2.27 | 2.14 |
| Output value (billion yuan) | 23.2 | 59.67 | 171.63 | 190.01 | 187.41 |
| Output value (billion yuan at 1990 prices) | 22.5 | 49.1 | 108.6 | 115.2 | 115.5 |
| Output per worker (yuan at 1990 prices) | 17,307 | 31,274 | 46,410 | 50,749 | 53,972 |
| III. Village enterprises | | | | | |
| <i>Textiles:</i> | | | | | |
| No. of enterprises | 16994 | 18886 | 17551 | 14879 | 12714 |
| Employment (million) | 1.11 | 1.21 | 1.15 | 0.98 | 0.83 |
| Output value (billion yuan) | 29.59 | 64.72 | 125.97 | 102.13 | 92.40 |
| Output value (billion yuan at 1990 prices) | 28.8 | 53.3 | 79.7 | 61.9 | 56.9 |
| Output per worker (yuan at 1990 prices) | 25,945 | 44,049 | 69,304 | 63,163 | 68,554 |
| <i>Clothing:</i> | | | | | |
| No. of enterprises | 11899 | 16278 | 22349 | 19238 | 16080 |
| Employment (million) | 0.62 | 0.79 | 1.23 | 1.14 | 1.07 |
| Output value (billion yuan) | 8.5 | 24.35 | 76.82 | 77.52 | 76.46 |
| Output value (billion yuan at 1990 prices) | 8.3 | 20.0 | 48.6 | 47.0 | 47.1 |
| Output per worker (yuan at 1990 prices) | 13,387 | 25,316 | 39,512 | 41,228 | 44,019 |
| IV. National total (I+III) | | | | | |
| <i>Textiles:</i> | | | | | |
| No. of enterprises | 41594 | 43486 | 43251 | 36679 | 23914 |
| Employment (million) | 8.67 | 8.01 | 7.85 | 6.94 | 4.76 |
| Output value (billion yuan) | 282.89 | 416.82 | 586.37 | 578.13 | 530.00 |
| Output value (billion yuan at 1990 prices) | 274.9 | 343.1 | 371.1 | 350.6 | 326.6 |
| Output per worker (yuan at 1990 prices) | 31,707 | 42,834 | 47,274 | 50,519 | 68,613 |
| <i>Clothing:</i> | | | | | |
| No. of enterprises | 29399 | 34178 | 42349 | 36438 | 22880 |
| Employment (million) | 2.34 | 2.43 | 2.98 | 2.76 | 2.34 |
| Output value (billion yuan) | 20.7 | 123.75 | 223.82 | 262.02 | 278.26 |
| Output value (billion yuan at 1990 prices) | 20.1 | 101.8 | 141.7 | 158.9 | 171.4 |
| Output per worker (yuan at 1990 prices) | 8,589 | 41,893 | 47,550 | 57,572 | 73,248 |

Source: Data for enterprises with independent systems come from *China Statistical Yearbook*, various issues and figures for TVEs come from *China's Township and Village Enterprises Yearbook*, various issues.

Note: The village enterprises' figures for 1997 and 1998 were estimated based on the average share of village enterprises as the total TVEs for 1991, 1992, 1994, 1995 and 1996. Output value at 1990 price was deflated by general price index.

Table 12 shows that employment declined in textile enterprises under the independent accounting system and TVEs. However it increased in TVE clothing enterprises. It is likely that this trend will continue after the accession. Output and employment data for the entire textile and clothing industry do not exist. We have, therefore, estimated these figures in table 12 on the basis of information available on enterprises with independent accounting system at township level and above (these are legal entities with fixed location, financial autonomy and authority to enter into contracts with other enterprises), TVEs, and village enterprises. The national output and employment figures are estimated by summing up data for enterprises under the independent accounting system and the village enterprises. These are lower-bound estimates since some township enterprises are not covered under the enterprises with independent accounting system. To that extent the national figures may be underestimated. An upper-bound estimate is obtained by assuming that no TVEs are included under the independent accounting system. Unfortunately, we have no information on the size of TVEs that belong under this system. Therefore, no precise estimates, which will be somewhere between the upper and lower bounds, can be made.

China imports such textile inputs as cotton, textile fibres (China was the largest importer of textile fibres in 1995 with total imports of US\$5 billion) and textile machinery. Its imports of clothing, yarns and fabrics, textile machinery, and high-quality dyeing equipment have increased. In 1995, the total textile machinery imports of \$2.55 billion equalled the total value of textile machinery products made in China. These imports were made under high import duties of 50–68 per cent.



In principle, with import liberalization and further decline in import tariffs after the accession, textile imports, especially of textile machinery will increase, as global competition will necessitate technological modernization to raise labour productivity. An increase in Chinese average incomes should witness a rise in the demand for imported high-quality brand names, which are already increasingly being produced within China. While imports of final textile products (e.g. brand names) will displace domestic consumption, that of necessary material inputs will actually raise domestic production. The import/export ratio in textiles and clothing (not including textile machinery) has been declining during the past few years (table 13), which indicates improved balance of trade in textiles.

Table 13

Import-export ratios for textiles and clothing

| <i>Year</i> | <i>Imports \$100 million</i> | <i>Exports \$100 million</i> | <i>Import/ export ratio</i> |
|-------------|----------------------------------|----------------------------------|---------------------------------|
| 1995 | 158.2 | 358.8 | 0.44 |
| 1998 | 143.9 | 404.6 | 0.35 |
| 1999 | 139.2 | 412.7 | 0.34 |

Source: Foreign Economic Statistical Yearbook (*Zhongguo Duiwai Jingji Tongji Nianjian*) (original in Chinese).

The textile sector underwent significant structural changes during the last two decades. From table 12 we can see that the number of textile enterprises was reduced by more than half from 24.6 thousand in 1991 to 11.2 thousand in 1998. Total employment in these enterprises declined from 7.6 million to nearly 4 million during the same period. In the case of clothing, the number of enterprises declined from 17.5 thousand to nearly 7 thousand, and employment, from 1.7 million to 1.3 million. The number of TVEs also declined. This situation reflects the reorganization of enterprises into more efficient entities and the closure of inefficient SOEs. However, while employment declined in textiles TVEs, it increased in clothing TVEs.

During the 1990s, SOE profitability in textiles declined due not only to growing competition from non-state enterprises, but also to loosening of government control on wages in the wake of greater enterprise autonomy, and on social burdens in the form of expenditures on workers' health and education and pensions. On the basis of a sample of 700 SOEs during 1980–1994, Zheng, et al. (2001) estimate that the efficiency levels were low: productivity growth was generally achieved through increase in capital investment rather than improvements in technical efficiency. The efficiency index for textile industry increased only marginally from 1.04 in 1980–1981 to 1.17 in 1993–1994.

The market shares for textiles are much higher for SOEs than for FFEs, but the reverse is the case for clothing. The shares of SOEs for textiles, however, declined over time whereas those of FFEs in textiles increased (table 14). As textiles require more sophisticated technology and greater investment than clothing SOEs have traditionally been engaged in this sector more than in clothing. It is not certain that an increase in FFEs, with better technology and relatively higher labour productivity (due to higher capital-labour ratio and overstaffing in SOEs) can compensate for employment losses resulting from the closure of domestic firms. However, most of the FFEs in textiles and clothing and other consumer goods belong to overseas Chinese from Hong Kong (China) and Taiwan Province of China whose technological levels may not be much higher. (FFEs in the assembly of automobiles are different since the world's leading manufacturers are involved) (see below).

Comparative data on efficiency indicators for SOEs and FFEs are not available. However, it appears that China's competitiveness in textiles and clothing has so far been maintained by shifting production from state-owned enterprises to non-state-owned enterprises including rural small enterprises, private enterprises, joint ventures and FFEs. TVEs play a very important role in China's textile and clothing exports (table 12). However, the growth of TVEs in China is very uneven across regions and provinces. Among the total output value in textile and clothing industry produced by TVEs in 1995, over 83 per cent came from only five provinces. Jiangsu and Zhejiang, the two provinces with a sizeable TVE production, account for 68 per cent of the national total.

Table 14
Sales and market shares by ownership for textiles and clothing

| | <i>Sales¹</i> 1993 | <i>Market share²</i> | <i>Sales¹</i> 1995 | <i>Market share²</i> | <i>Sales¹</i> 1997 | <i>Market share²</i> | <i>Sales¹</i> 1999 | <i>Market share²</i> |
|--------------------------|----------------------------------|---------------------------------|----------------------------------|---------------------------------|----------------------------------|---------------------------------|----------------------------------|---------------------------------|
| Textiles | | | | | | | | |
| Total sales | 310.1 | | 425.7 | | 416.2 | | 414.8 | |
| State-owned | 152 | 49 | 173.3 | 40.7 | 138.2 | 33.2 | 148.4 | 35.8 |
| Foreign-funded | - | - | 76.1 | 17.9 | 77.6 | 18.7 | 88.3 | 21.3 |
| Non-state-owned domestic | - | - | 176.3 | 41.4 | 200.2 | 48.1 | 178.1 | 42.9 |
| Clothing | | | | | | | | |
| Total sales | 81.8 | | 134.6 | | 160.2 | | 184.7 | |
| State-owned | 8.1 | 9.9 | 9.1 | 6.7 | 8.5 | 5.3 | 13.5 | 7.3 |
| Foreign-funded | - | - | 68.4 | 50.8 | 71.8 | 44.9 | 90.9 | 49.2 |
| Non-state-owned domestic | - | - | 57.1 | 42.4 | 79.7 | 49.8 | 80.3 | 43.5 |

Source: *China Statistical Yearbook*, various issues.

Note: Market shares are percentages of total sales. - = not available. ¹ Billion Yuan. ² Per cent.

Does China still have a competitive advantage in textiles and clothing sectors even after experiencing almost twenty years of rapid export growth? To answer this question, we need to examine where China's competitive advantage lies and where there is still potential for further growth. Many factors affect a country's competitive advantage in international trade: resource availability, unit labour cost, research and development, structural response to changes in international market and the exchange rate. China has a competitive edge in terms of materials for textile industry and currently it also enjoys a labour-cost advantage. It has the lowest unit labour cost in spinning and weaving after India and Indonesia (table 15). It produces one-quarter of the world's cotton output and is the top cotton producer in the world. It is also the largest producer of mulberry cocoons and silk materials, accounting for 70 per cent of the world output. The output of *ramie* fibre accounts for only 1 per cent of China's total fibre output but it accounts for 99 per cent of the world total. These factors, combined with an abundant rural labour force, will give China a head start in the foreseeable future. China cannot meet domestically the total demand for chemical fibre materials; about 20 per cent of which is met through imports from abroad. China's ability to raise production of chemical fibre materials will be enhanced after the accession.

Table 15
Labour cost comparisons in spinning and weaving in selected countries, 1980–1996
(US\$ per hour)

| | 1980 | 1984 | 1987 | 1990 | 1993 | 1996 |
|-------------------|------|------|------|------|------|------|
| China | 0.25 | 0.26 | 0.23 | 0.37 | 0.36 | 0.58 |
| India | 0.60 | 0.71 | 0.65 | 0.72 | 0.56 | 0.56 |
| Rep. of Korea | 0.78 | 1.89 | 1.77 | 3.22 | 3.66 | 5.56 |
| Hong Kong (China) | 1.91 | 1.65 | 1.93 | 3.05 | 3.85 | 4.90 |
| Indonesia | 0.22 | 0.23 | 0.20 | 0.25 | 0.43 | 0.52 |
| Mexico | 3.10 | 2.62 | 0.83 | 2.21 | 2.93 | 1.52 |

Source: Excerpt from *Almanac of China's Textile Industry* 1996. Figures for China and Indonesia for 1980 are taken from Shi (2001).

Note: Figures include social charges; based on the US dollar exchange rate on 7 May 1996. Data for 1980–1989 and 1996 are for spring and 1990 and 1993 data are for summer periods.

Currently China's regions (particularly the eastern coastal) where most textile and clothing exports are produced, do not have a comparative advantage in terms of labour cost compared to India, Indonesia and other developing countries. However, China's inland regions and provinces, which supply a large proportion of textile materials, still enjoy abundant labour supply at a very low labour cost. A combination of natural resources and cheap labour in the middle and western regions and a sharing of funds, technologies, marketing channels and experience with enterprises in the coastal areas (an explicit government policy to develop the hinterland) will, in principle, enable China to continue to enjoy a comparative advantage in the world textile and clothing market after the accession. In fact, this phenomenon may be similar to the 'flying goose model' of trade and development according to which the more industrially advanced countries with higher value-added and capital-intensive

industries pass on the older (mature) labour-intensive industries to less-developed and more labour-abundant countries where labour-costs are much lower (for early attempts at testing the model, see Panchamukhi, 1992; Rao and Das, 1995). A similar flying geese pattern may emerge within China involving relocation of production to the lower labour-cost hinterland. This is an interesting area for further research.

There is considerable controversy about the status of China's textile industry in terms of exports and employment in the post-accession period. Bach, et al. (1996) argue that China will benefit substantially through the abolition of the Multi-Fibre Arrangement (MFA) quotas restricting its exports of textiles and clothing. This may not necessarily be so at least in the short term for several reasons. First, the share of export products under the quota restrictions is quite small. According to Yang Donghui, Secretary-General of the Chinese Federation of Textile Industry (CFTI), quota restrictions account for less than 27 per cent of the total textile and clothing exports. He noted that Chinese exports after the accession were unlikely to increase significantly (*China Business Weekly*, 26 December 1999). Second, these restrictions will be lifted only gradually by 2005. Third, international competitiveness of the Chinese textile industry has been declining over time. A global competitiveness index for textiles estimated by GATT shows that for China it declined from 0.104 in 1989 to 0.014 in 1993. On the other hand, the index for Pakistan increased from 0.856 to 0.946, and for Indonesia, from 0.276 to 0.406. For clothing also the competitiveness index for China slightly declined whereas it increased slightly for Indonesia (cited in Yu, et al. 2000). These estimates are consistent with declining indices of China's revealed comparative advantage in textiles (Shafaeddin, 2002). Fourth, the inclusion of safeguard provisions to last till 2008 (as under the 1999 bilateral China-United States agreement regarding China's accession to the WTO) are heavily biased against China and possible anti-dumping duties can discourage its textile exports even after the phasing out of MFA. Finally, a global phenomenon of supply of textiles exceeding demand is likely to worsen in the wake of economic recession that is already looming.

Thus China may not be able to expand employment substantially through exports of textiles and garments. It may, however, be able to do so (as argued above) if it can exploit differences in labour costs across regions by relocating production in low labour-cost areas. Coastal areas are already attracting a lot of low-cost labour from the hinterland to overcome local labour shortages but freer labour mobility to these areas will be necessary.

The more optimistic estimates of Chinese exports and employment assume that a) low labour costs will provide China a substantial comparative advantage, b) a decline in the number of SOEs and an increase in non-state enterprises in textiles will improve competitiveness, and c) employment through clothing exports, which are more significant, will more than compensate for any loss of employment in textiles. For example Ianchovichina, et al. of the World Bank cited in table 6 estimate a decline in employment in textiles by 18 per cent between 1995 and 2005 but an increase in employment in clothing by 70 per cent during the same period.

B. Automobiles

Automobiles are quite different from textiles because they represent a sheltered domestic market. China does not export many automobiles. As noted in table 4, the industry is highly protected, which limits competition to firms producing and selling in the domestic market. The industry consists of a few large SOEs and joint ventures of SOEs with foreign manufacturers (e.g. Volkswagen, Honda, General Motors, and Citroen). The latter are more efficient; their presence raises the average efficiency of the industry despite lack of much domestic competition. The Chinese automotive industry is not young although it enjoys protection as an infant industry. The First Automobile Factory was established in July 1956, in Changchun, Northeast China. However, mass production of automobiles started only in the mid-1980s.⁸ The average annual output of the industry remains very

⁸ In March 1989, the State Council issued industry policy guidelines, in which automobile industry was listed as the government priority for investment. The government supported six automobile manufacturing bases, including the First Automobile Factory, Second Automobile Factory, and auto manufacturers in Shanghai, Tianjin, Beijing and Guangzhou.

low compared to that of the leading rival foreign firms. Labour productivity is also much lower compared to that of foreign manufacturers – only 2 to 4 vehicles per worker a year compared to 20 to 40 vehicles in the foreign industry (Yang, 1999). Much lower productivity means that the unit cost of production of a Chinese automobile and its price is higher, by about 40–50 per cent, than a similar model produced abroad (SETC, 1999, 2000).

China's automotive industry has experienced a fundamental change in terms of output composition, technology and market structure since the Government introduced the Automobile Industry Policy in 1994. Until the early 1990s, the industry produced mainly medium-sized trucks. Few automobiles or heavy trucks were produced at that time. In the late 1980s, production was switched from trucks to automobiles. In 1980, of the total automotive units produced in China, automobiles accounted for only 2.44 per cent, and trucks, nearly 61 per cent. By 1999, the share of automobiles increased to 31 per cent whereas that of trucks declined to less than 32 per cent (figure 5).

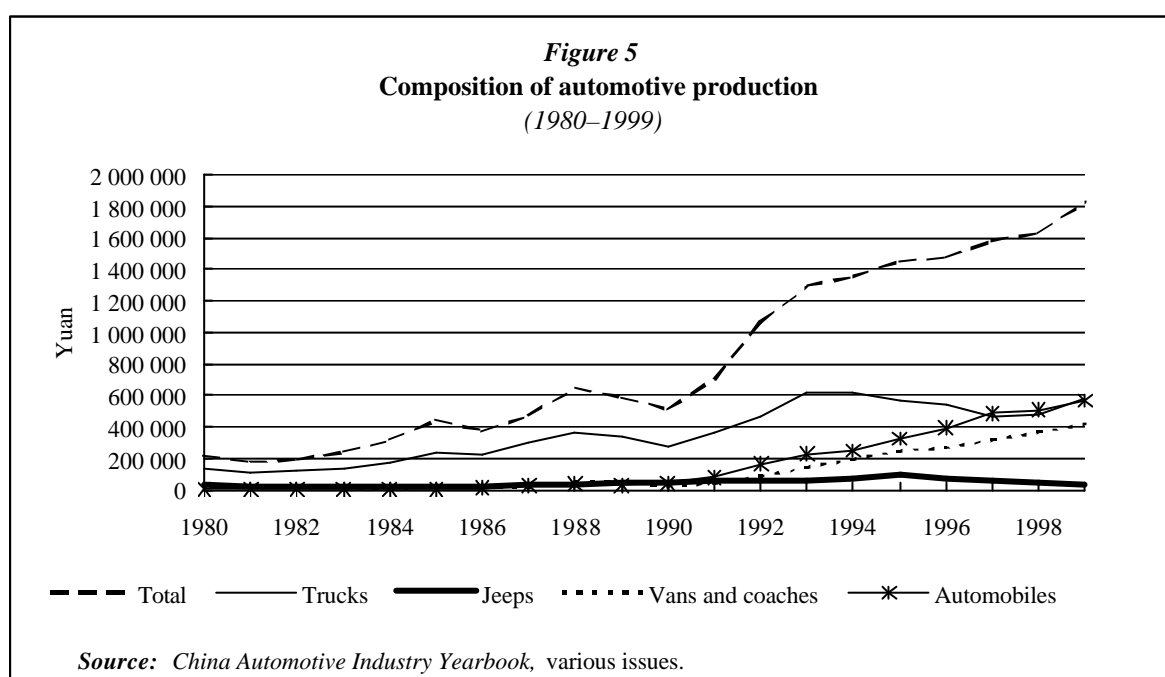


Table 16
Main economic indicators of China's automotive industry

| | 1986 | 1995 | 1999 |
|---|---------|---------|---------|
| Number of enterprises | 2422 | 2479 | 2362 |
| Total employment ¹ | 1290844 | 1952542 | 1806815 |
| Value of industrial output ² | 21.29 | 221.65 | 312.27 |
| No. of vehicles produced ³ | 372.75 | 1452.70 | 1831.60 |
| Industrial value added ² | 6.22 | 54.07 | 74.89 |
| Export value ² | - | 3.97 | 6.19 |
| Total profits ² | 2.4 | 8.56 | 10.65 |

Source: *China Automotive Industry Yearbook* (in Chinese), various issues.

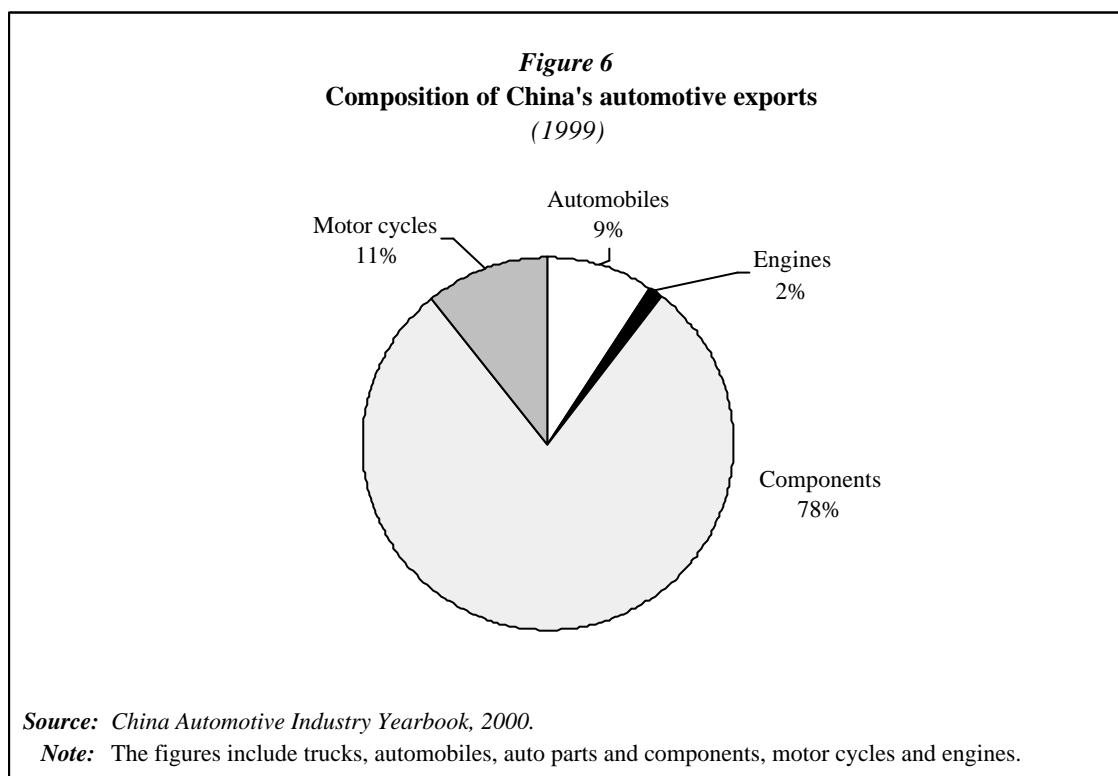
Note: The figures include motorcycle manufacturers.
¹ Number of workers. ² Billion Yuan. ³ (1000).

The automotive industry has made rapid progress since the early 1980s. From 1986 to 1999, the number of vehicles produced in China increased from 373 thousand to nearly 1832 thousand; value added, from Y6.2 billion to nearly Y75 billion; and employment, from 1.3 million in 1986 to 1.8 million in 1999 (table 16). The industry also generates *indirect* employment through such related activities as after-sales maintenance and repair services, gas stations and so on. Before the 1980s, demand for automobiles was met by imports as the industry produced only medium-sized trucks. In 1980, China produced 5,418 automobiles and imported 19,570, which was equivalent to 3.6 times the number of automobiles produced in China.

From 1981 to 1990, China imported 351 thousand automobiles, that is, more than twice the number produced domestically. By 1999, the number of automobiles produced in China reached 565.4 thousand with a total annual production capacity of more than 1 million.

The automotive industry remains heavily protected despite the periodic lowering of import tariffs. The level of import tariffs on automobiles is still twice the level of average import tariff (as of March 2001, the average level was 15 per cent). Import tariffs are much higher on automobiles than on auto parts and components. By July 2006, the import tariffs on automobiles will be reduced to 25 per cent (from the current level of 70–90 per cent) and on auto components, to 10 per cent (*China Automotive Industry Yearbook, 2000*).

As noted above, China's automotive industry is not export-oriented. In 1999, China exported a total number of 10,095 assembled vehicles, of which 3,868 were trucks and 326 automobiles, the rest being vans and other specialized vehicles. It was auto parts and components which captured the world market, accounting for 78 per cent of China's total exports of automotive products (figure 6).



1. *Implications of the WTO entry for China's automotive industry*

As the industry is currently heavily protected against foreign competition, a large tariff reduction after accession will create problems, which call for serious attention.

a) *Quality and cost considerations*

The current market structure of the industry is oligopolistic, with the bulk of marketing in the hands of a few large state-owned firms. In 1998, the top five firms accounted for 62 per cent of the total market (Liu, 2000). However, the number of automobile firms has declined from 283 in 1994 to 123 in 1998, with a subsequent substantial increase in average output per firm. Of the top five firms, only one is making losses. Nevertheless, pressure for quality, efficiency and cost will be intensified after the accession. Large joint-venture firms will strengthen their positions with the help of advanced foreign technology. Small high-cost firms will probably be squeezed out of the market.

It is interesting to note that the domestic industry succeeded in regaining market shares from foreign companies. The share of imported automobiles fell from 41 per cent of the total sales in 1994 to only 3.4 per cent in 1998 (Yang, 1999). One reason for this dramatic change despite low economies of scale and lack of modern technology seems to be the success of foreign automobiles assembled in China (e.g. Volkswagen and Peugeot) by joint ventures with Chinese SOEs. In an oligopolistic structure, large automobile firms compete with smaller ones for market shares by reducing price. The sale of automobiles in the domestic market depends on price, quality and technology. Although the price of Chinese automobiles is higher, their quality and technology need not be low considering that leading world producers of automobiles are based in China. Home-made foreign automobiles such as Peugeot and Volkswagen are capable of competing with imported vehicles.

There will no doubt be more imported automobiles in the Chinese domestic market in the post-accession period. But foreign manufacturers will face competition from 'foreign makes' produced within China. They will not enjoy a comparative advantage in selling in the Chinese market vehicles produced and imported from abroad. It is, therefore, not certain that imported automobiles will capture a significant market share even when the tariff is lowered. After all as noted above, between 1994 and 1998, the Chinese joint ventures with foreign firms succeeded in regaining market share even though during this period import tariff rates on automobiles were lowered from 110–150 per cent to 80–100 per cent (Yang, 1999). In the long run, the market shares will be maintained or expanded only by raising further productivity and technological levels and by reducing production costs. As labour costs are already very low in China, cost reduction by worker lay-offs will not be very significant. Instead, overall cost reduction will require a lowering of materials and overhead costs.

Some observers believe that China's automotive industry will be non-competitive after the accession because of lower productivity and higher cost per vehicle noted above. While this may well be true, Liu (2000) argues that the cost analysis is misleading because of the much lower labour costs in China, the existence of unutilized capacity and exaggeration of total production costs which include costs of components. Adjustments for the above factors reduce the cost per vehicle from the oft-quoted US\$15,300 to US\$11,500. In the post-accession period, lowering of tariffs will mean a fall in prices of imported vehicles and a much keener competition in the domestic market. This will result in squeezing of profits.

b) Unemployment

Closing down of inefficient firms will add to unemployment. The use of more modern technology will further reduce the demand for labour. This phenomenon has already been at work. There are two interesting developments: First, total employment dropped by almost 146 thousand between 1995 and 1999, representing 7.5 per cent of the sector's workforce, although the total sales value increased from Y218 billion to Y312 billion during the same period, or an increase of 43 per cent. This is the result of an increase in efficiency through the use of new labour-saving technology. Second, both sales and employment in SOEs and collectives declined in 1999 compared to 1995. SOEs accounted for 63 per cent of total sales and 77 per cent of total employment in 1995 and 37 per cent and 55 per cent respectively in 1999. On the other hand, joint ventures and other ownership types (joint stock and private companies) has shown an upward trend. In 1995, both sales by joint ventures and others represented about 39 per cent of total sales; by 1999 the figure increased to 59 per cent (figure 7). The employment shares rose from 13 per cent to 38 per cent during the same period (table 17). These changes reflected efficiency gains, which were brought about by a combination of factors, namely the introduction of new technology, foreign investment, privatization, and closure of some loss-making SOEs and collective firms. These trends will continue after the WTO entry, as the tariffs on imported automobiles and parts are lowered to 25 per cent by 2006.

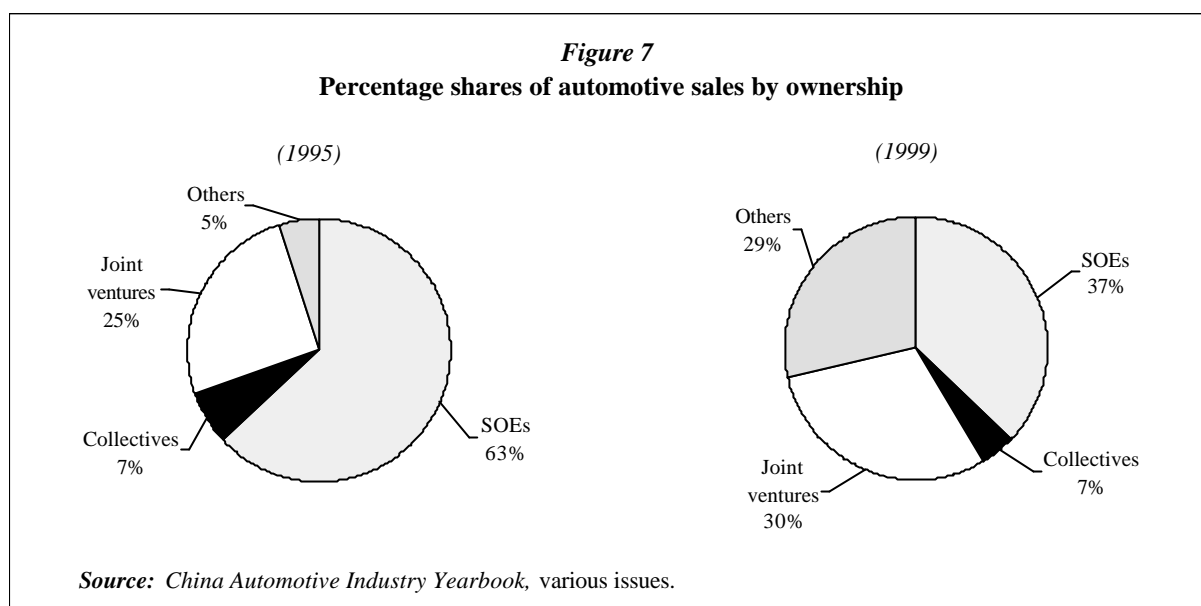


Table 17
Sales and employment by ownership in the Chinese automotive industry

| Year | SOEs | | Collectives | | Joint ventures | | Others | |
|------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|
| | Sales ¹ | Employment ² | Sales ¹ | Employment ² | Sales ¹ | Employment ² | Sales ¹ | Employment ² |
| 1995 | 137,101 | 1,507.6 | 14,396 | 196.2 | 54,953 | 129.4 | 11,064 | 119.2 |
| 1997 | 149,666 | 1,441.8 | 20,924 | 229.3 | 72,120 | 163.4 | 20,787 | 143.7 |
| 1999 | 115,754 | 996.9 | 12,815 | 125.8 | 94,122 | 176.6 | 88,777 | 507.5 |

Source: China Automotive Industry Yearbook (in Chinese), various issues.

Note: ¹ Million Yuan. ² (000).

Thus by 2005 employment in automotive industry is likely to decline considerably. Ianchovichina, et al. (2000) estimate that employment of unskilled labour in automobiles will decline by 65.5 per cent between 1995 and 2005, whereas it would have increased by 8.4 per cent in the absence of the accession. Employment of skilled labour is also estimated to decline by over 51 per cent during the same period. However, it would have increased by 53 per cent if there were no accession (table 6). Thus, lowering of tariffs and global competition would have a substantial negative employment effect in automobiles.

c) Technology gap

It is the Chinese government policy to encourage joint ventures and to make foreign brands in China in order to attract modern technology. Domestic automobile firms will gradually gain experience through learning by doing. Huge domestic market and a gradual decrease in tariffs will give China's automobile firms some breathing space. The manufacture of auto parts and components for foreign brands will impose high-quality standards that will make it necessary to use advanced technology. It is hoped that through this way the industry's technological gap with their international counterparts will be closed. This is what happened in the electrical and electronic sector. It is not certain whether the same success can be achieved by the automotive industry. There are limitations to the introduction of advanced foreign technologies through joint ventures. A foreign firm will be reluctant to transfer the most advanced technology to the joint-venture firm if its share in the joint venture does not allow it to exercise control over the firm.

A recent report notes that China's technological gap with developed countries in the manufacturing of conventional automobile powered by an engine is 20 years but the gap is only 4-5 years for producing electrical automobiles (*People's Daily*, 19 September 2001). This may give China some hope for competing with overseas automobile manufacturers (*Research Group, Development Research Centre of State Council*, 1998). After the accession, Chinese firms can export more labour-intensive products to the world market and import more intermediate and capital goods embodying higher technology at lower costs.

d) *National vs world brands*

There is still a long way to go for China to succeed in introducing a national brand in the international market. China faces a big challenge here. There is no evidence that China's automotive industry has the resources and the technology capability to design and develop a new automobile which can compete in the global market. However, this will not of course prevent the industry from being successful in producing good-quality foreign brands for the domestic and world markets.

China's automobile market is dominated by the world brands and it will continue to do so after the accession. In 1998, of the total automobile sales, 91.7 per cent were domestically assembled foreign brands, and 3.4 per cent were imported. Home brand models accounted for less than 5 per cent. Even these were produced by joint ventures with large foreign firms. It is clear that the potential market for automobiles in China is very large. Competition for obtaining a share in this market will be fierce.

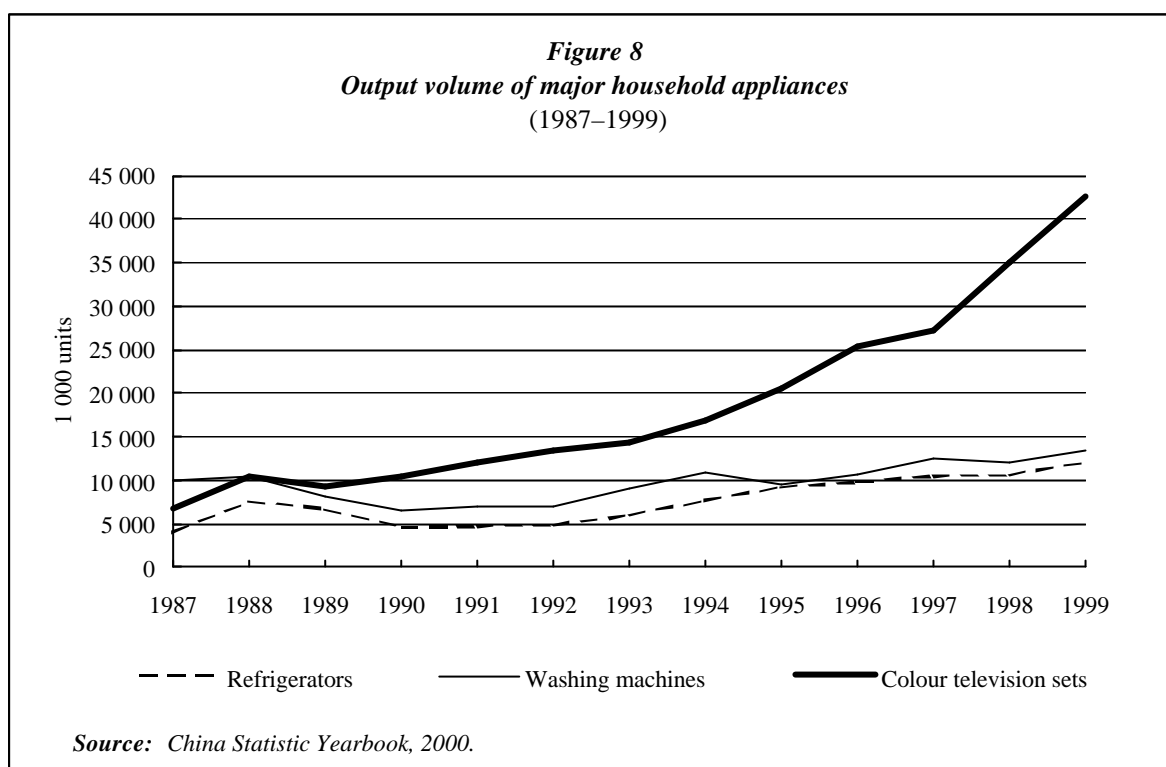
The accession has certainly shaken China's heavily protected automotive industry. Opinions vary about its future in the post-accession period. There are those who believe that the industry will not be able to face severe competition. On the other hand, the senior staff members of MOFTEC and SETC1 whom we met in April 2001 are more optimistic about the industry's future, considering the existence and growth of joint ventures with foreign firms with superior technology, marketing and access to global markets.

We believe that the future is not so bright for China's automobile industry. However, the industry will not collapse. It can survive as long as the government chooses the right policy to attract manufacturing capability to China for producing automobiles to satisfy large domestic and global demand.

C. Household appliances

China has a large domestic market for household appliances in which Chinese firms (both state-owned and private) compete successfully with foreign firms. China's household appliances production did not start until the early 1980s. At that time the household appliances market was dominated by foreign brands. The 1990s witnessed an extraordinary expansion of Chinese domestic production of these goods. Between 1996 and 1998 market shares of products manufactured by domestic firms, including SOEs increased at the expense of foreign brands. The large market share enjoyed by imported foreign goods gave way to Chinese brands. Such foreign brands as Sony, Panasonic, and Philips which dominated the market before, have now been replaced by national brands, e.g. Changhong TV, Haier refrigerator, and Small Swan washing machine.

China's household appliances sector expanded rapidly from the mid-1980s to the mid-1990s (figure 8). According to China's Household Appliances Association, China's output of household washing machines accounted for 24 per cent of the total world production, refrigerators, 16 per cent and air conditioners, 30 per cent. China has become the largest producer of refrigerators, air conditioners, washing machines, electric fans, microwave ovens, vacuum cleaners and electric rice cookers.



How have Chinese firms succeeded in improving their market shares in the face of foreign competition? First, Chinese firms imported new technology from abroad, which facilitated good-quality production. Second, the production costs are much lower in China, due partly to lower labour costs. Third, Chinese firms are adaptable to local demand and designs. They manufacture products according to Chinese consumer tastes and preferences. One example is Haier's market strategy and quick adaptation to consumer demand. Haier introduced a small washing machine which washes a little more than one change of clothing. It became very popular in places like Shanghai with cramped living conditions but with preference for wearing clean clothes. Further, washing machines were adapted to avoid clogging when it was discovered that Sichuan peasants used them for rinsing newly dug sweet potatoes (*The Economist*, 1997). Chinese consumers prefer big freezing compartments in refrigerators. Moreover, players for the Chinese consumers need to be more robust for the low-quality CDs and VCDs that are available in the market. Those produced by Sony and Philips are sometimes more sensitive and selective to the discs that can be played, which led to the gradual loss in their market share against their Chinese counterparts. Fourth, products are sold at very low prices. Tariff protection encouraged the domestic production of many consumer items that were formerly imported. Competition among Chinese firms is very fierce and many "price wars" (TV price war, refrigerator price war and air conditioner price war), have been waged in the past. Firms must increase their economic efficiency if they are to survive these price wars. Many small firms were closed or merged with large firms as they were unable to face competition.

Chinese firms have raised their market shares at the expense of foreign suppliers through price-cutting. Changhong, the top manufacturer of TV sets (previously a military firm) started a price war in March 1996 by reducing the price of a colour TV set by 18 per cent. By the end of 1997, Changhong raised its market share in colour television sets to 33 per cent, becoming the number one firm in colour television market. In April 1996, the market share of domestic brand was only 42.5 per cent. By April 1997, the big four firms (Changhong, Panda, Hessi and TCL) accounted for 65 per cent of the market (see Mo, 1999). Finally, many large firms set up national after-sales service networks with which Chinese consumers are more comfortable when something goes wrong with their purchased appliances. It is also easier to obtain spare parts and components for domestic brands. Labour cost of producing these parts in China is much lower which drives foreign suppliers out of the market.

Today several Chinese firms have already entered the American and European markets. After the accession, they will further expand into these markets facing more intense competition. Haier, the largest household appliances firm, has set up factories in Indonesia and the United States, and has captured 20 per cent of the United States market for small refrigerators.

The Chinese household appliances sector has experienced three development stages. The first, from late-1970s to mid-1980s represents the initial market entry of domestic firms. During this stage foreign products were predominant. The second consisted of fast growth of domestic firms during the mid-1980s and mid-1990s, with annual output growing at double digits. Since the mid-1990s, the sector has entered the third stage which is characterized by a period of slow growth (perhaps coupled with the economic cycle), more competition, and greater pressures on profit margins. Many manufacturers of television sets, VCD players, microwave ovens, air conditioners, washing machines and refrigerators have experienced a reduction in output and profits. Many Chinese firms have even been making losses.

1. Exports and employment

Domestic market growth has slowed down since the second half of the 1990s due to urban market saturation and the limited size of the rural market. These have forced Chinese firms to expand globally. Traditionally, the main export products to the foreign markets included small electric fans and hair dryers. But recently, air conditioners and microwave ovens have been added to the list of exports (table 18). Chinese firms export not only to other developing countries but also to the United States and European markets.

After the accession, reduction of tariffs on household appliances will have a marginal effect on foreign firms in the Chinese market. Imported goods will not have much advantage over local suppliers as many famous brand goods are already made or assembled by Chinese firms in the form of Original Equipment Manufacture (OEM).⁹ As Chinese domestic firms gain experience in manufacturing and services through learning by doing, they will look for external markets for their excess production capacity. The total production capacity for major household appliances is almost double that of domestic demand. Lower duties and access to international market may prevent at least some Chinese firms from extinction. Household appliances in China are already very cheap. Lower tariffs on imported parts and components will further help reduce production costs and expand exports.

Although the penetration rate of household appliances in urban areas has gone up substantially, the average penetration rate in China is still quite low. China's large market potential is a big attraction to foreign firms. However, these firms can no longer compete with local firms by shipping products manufactured abroad into China. Therefore, they have changed their production and marketing strategy and have set up joint ventures with domestic enterprises to produce refrigerators and TV sets in China.

Early in 2001, Toshiba, the Japanese household appliances producer decided to stop producing TV sets in Japan and to transfer all production to China. In August 2001 the company decided to move washing machines to China to be assembled by Little Swan, the largest Chinese washing machine

Table 18
Exports of household appliances, 1999

| | <i>Unit</i> (million) | <i>Value</i> (\$ million) |
|---------------------------|--------------------------|------------------------------|
| Electric fans | 140.08 | 650.82 |
| Air conditioners | 2.02 | 489.01 |
| Microwave ovens | 5.82 | 356.43 |
| Refrigerators | 2.13 | 164 |
| Washing machines | 0.64 | 59.32 |
| TV sets | 12.98 | 803.12 |
| Radios | 127.78 | 299.19 |
| Sound recording apparatus | 161.52 | 2337.02 |

Source: Data for electric fans, TV sets, radios and sound recording apparatus are taken from *China Foreign Economic Statistical Yearbook 2000* (original in Chinese). Other data are from Yu (2000).

⁹ OEM is contracted production or manufacturing of goods under which the product does not bear the name of the manufacturer. Instead it has brand names attractive to buyers.

manufacturer. In the initial stage, Toshiba will have 500,000 washing machines assembled annually by Little Swan. The total annual output is expected to double by 2005.

China's domestic appliances sector provides *direct* employment to 200,000 (*China Business Weekly*, 13 February, 2001), but the *indirect* effect on employment could be many times higher. For instance, the largest microwave oven maker, Glanz group, employs 11,000 people but according to Yu Xiaochang (company's Deputy Executive Director), Glanz provides indirect employment of 1 million jobs in such subsidiary operations as supply of spare parts and components and repair and maintenance services (see 21CN, 11 May 2001).¹⁰ In 2000, sales of microwave ovens made by Glanz Group accounted for 74 per cent of the domestic market and 35 per cent of the world market.

Table 19 gives employment for major household appliances but they are only a part of total employment in the sector. There are no detailed figures available for such appliances as air conditioners and microwave ovens, VCD and DVD players, for example. A large number of jobs are also provided in the manufacture of such small devices as hair dryers, kettles, toasters, fruit juice makers, food processors and kitchen smoke extraction fans.

Table 19
Employment in major household appliances
(000)

| | 1991 | 1993 | 1995 | 1997 | 1999 |
|---------------------------|------|-------|-------|-------|-------|
| Washing machines | 40.8 | 36.6 | 38.5 | 40.2 | 34.6 |
| Refrigerators | 60.0 | 53.4 | 42.3 | 47.5 | 43.5 |
| Electric fans | 59.9 | 43.6 | 33.5 | 31.0 | 9.1 |
| TV sets | - | 173.4 | 167.9 | 150.7 | 133.1 |
| Radios and auto recorders | - | 139.2 | 115.3 | 92.5 | 83.7 |
| Video recorders | - | - | 9.8 | 13.6 | 17.3 |

Source: Employment figures for washing machines, refrigerators and electric fans are from *China's Light Industry Yearbook*, various issues; Figures for TV sets, radios and audio recorders and video recorders are from *China's Electronic Industry Yearbook*, various issues.

The manufacturers of domestic appliances are under the control of different government departments. Some were under the responsibility of the Ministry of Light Industry, and others of the Ministry of Electronic Industry. These two ministries however have now been dismantled. Thus output and employment data from one source may not give a complete picture of the whole sector. The figures in table 19 are therefore understated.

It is difficult to assess employment prospects in the sector in the post-accession period. Although some efficient companies have increased their market share and employment, the sector as a whole has seen a reduction in employed workers. It is fair to say that the Chinese household appliances sector has made excellent progress in less than two decades; there should therefore be good prospects for creating additional employment if more export orders continue to arrive, which seems likely. Even if additional employment is not substantial, the increase in exports will at least maintain the present workforce.

2. Household appliances vs automobiles

A comparison between the household appliances industry and automobile industry highlights some interesting points. Features common to both industries are the introduction of foreign technology and the assembly of products in China using imported parts and components. Both were successful in manufacturing goods in China and in reducing dramatically the demand for imports. But their differences are also striking. In the household appliances sector Chinese firms have successfully

¹⁰ Internet paper, www.21Cn.com.

created the national brands which have replaced foreign brands to dominate the entire sector. They have expanded further into foreign markets and compete with foreign firms in their market place. The automobile industry, however, can only manage to assemble foreign brands to reduce importation.

The degree of protection presents another sharp contrast between the two. The household appliances market was exposed to competition much earlier than the automobiles market. Protection of household appliances was much lower than that of automobiles. This may be due to the following reasons. First, in the late-1970s and early-1980s, tariffs on imported household appliances were quite high. But the demand for these goods was also very high. The possibility of making large profits induced many local authorities to support the setting up of many factories assembling household appliances. However, over-capacity created strong competition as a result of which consumers benefited. A favourable market condition for the household appliances industry occurred much earlier than the automobile industry. Second, the technology required for the automobile industry is much more complex and the size of investment much higher than that for the household appliances. Third, government policy may partly explain different situations of the two industries.

One of the shortcomings in the Chinese automobile and household appliances industries is that core technology and core parts are still being imported. It will, therefore, take time and resources for Chinese firms to be able to compete with international giants on an equal footing. The accession will certainly offer Chinese firms good opportunities as well as big challenges.

IV. CHINA'S POSSIBLE RESPONSE TO GLOBAL COMPETITION

If trade liberalization and the resulting global competition hurts China's domestic industry, especially SOEs and employment, in principle, China may respond in several ways: i) non-compliance of the WTO accord or to a re-negotiation of the accord; ii) devaluation of the currency to make imports more expensive in order to discourage import competition and protect employment; and iii) shifting production from tradeables to non-tradeables.

A. Non-compliance

A general feeling is that China has given away too much to enter the WTO and that the domestic costs in terms of loss of employment and social hardships, at least in the short run, may be too high. It is assumed that in the absence of protection in the post-accession period, SOEs will incur insolvency, firm closures and unemployment. China has already started the process of SOE restructuring, which may take longer than the phase-in period of five to six years. Thus China may not be able to complete such restructuring during the transitory phase-in period under the Protocol of Accession.

China's major trading partners, such as the United States, believe that the phase-in period for China should be shorter considering the large size of the Chinese economy, rapid growth of its GDP and exports. Special Safeguard Provisions will also be applied to China until 2008 because of its status as a non-market economy. This, as noted above, is the case in particular of textiles and clothing exports.

Will China renege on its commitment to WTO rules? To answer this question, one needs to analyse what benefits China can derive from this possible action. Unless the social or/and economic conditions unexpectedly become very bad, it is unlikely that the Chinese government will renege since the cost of breaking WTO rules can be quite high in terms of penalties – the downgrading of credit rating and discouraging of FDI inflows. Moreover, China is aware of the legal retaliation mechanisms to which other WTO members can resort to in case of China's non-compliance.

Pessimistic views on China's WTO accession emphasize the failure of Chinese companies to meet foreign competition and massive unemployment as a result of companies' closure. An article in *The Economist* (15 September 2001) presents a rather gloomy picture. It states: 'It is impossible to honour the kind of promises China has made without upsetting a lot of people whose livelihoods will be undermined or whose privileges will be whittled away by the country's increasing exposure to foreign competition' (p. 49). Some scholars in China also feel that China has given away too much, that the Chinese leadership has taken a gamble in joining the WTO, and that in doing so China will allow foreign multinationals to take measures over China's market and turn China into a sub-factory of foreign companies (Han, 2000). They interpret China's WTO membership as a sell-out and a way for the United States to gain control of the Chinese economy and to speed up its westernization. Han presents an alarming picture of WTO membership resulting in rising unemployment because of the closure of uncompetitive enterprises, consumers' choice in favour of cheaper imported goods, and the domination of the Chinese domestic market by foreign multinational enterprises. He quotes the anti-globalization views in the West to support his criticism of the Government's decision to join the WTO. The fact is that what the anti-globalization supporters in the West are concerned with most is job losses as a result of expanding free trade and globalization. This kind of job threat will come precisely from such developing countries as China.

There is no doubt that joining the WTO presents a big challenge to Chinese companies as well as the government. Some implications of the WTO accession can be very severe, especially in agricultural and financial sectors. There are reasons to be alarmed about the difficulties facing Chinese companies and society. But the majority of the Chinese people still believe that China stands a good chance of success. China has accumulated valuable experience during the process of reform and opening-up during the last two decades. It has been involved in negotiations over its WTO membership for over 15 years. It is therefore more prepared now than before to take up new challenges. Besides, China reserves the right to take measures to protect vulnerable sectors which are allowed under the WTO rules. China has honoured its international commitments in the past. Scholars at the Georgetown University Law Centre in Washington, D.C. have compiled a record of China's compliance with recent international obligations which shows that China's record, though rather mixed, is no worse than that of many other developing countries (Rosen, 1999).

As noted earlier, SOEs' decline, bankruptcies of loss-making enterprises and lay-off of millions of workers have occurred. These are serious actions and responses of the Chinese government before joining the WTO. Through these measures the Chinese economy will make efficiency gains and improve its access to world markets. It is therefore difficult to envisage a situation wherein China would renege on the WTO agreement.

B. Devaluation

Some observers believe that in future China may be forced to devalue its currency in order to discourage imports and protect employment in inefficient non-competitive industries. Observers may again revive the suggestion that China will be tempted/forced to devalue after entry into WTO in order to maintain and/or expand its export competitiveness. For example, UNCTAD (1999) noted: '... if accession to WTO necessitates a devaluation of its currency to protect some of the country's less competitive industrial enterprises (particularly those still under state ownership) against an unexpected surge in imports, other countries of the region are likely to be affected in consequence.'

Devaluation would not be the suitable option for China in its determination to protect its less competitive industrial enterprises. It is a double-edged sword. While it will make imports more expensive and thus discourage import competition, it will make exports cheaper unless of course, other countries do not set in motion competitive devaluations. But increase in the cost of imports can raise the cost of production of export goods since such production is quite import intensive. China's export volume contains over 50 per cent of processed goods involving labour-intensive assembly in which it will continue to enjoy comparative advantage in the foreseeable future. Table 20 shows that processed exports shot up from \$5.6 billion (or 18 per cent) in 1986 to nearly \$138 billion (or 55 per cent)

in 2000. In the processing of goods (e.g. clothing and footwear), foreign firms provide to Chinese TVEs and other non-state firms components and imported inputs for production. They agree to purchase the output produced with these inputs for sale abroad. Lardy (1998, pp. 211–212) notes that ‘because there is no foreign equity position for the firms engaged in the assembly activity, these exports do not get reported as joint venture exports’. He estimates that these joint venture exports, combined with processing exports amount to about two-thirds of China’s total exports. This is a significant proportion of China’s total exports whose competitiveness would be adversely affected if China were to devalue. On the other hand, after the WTO accession, in the absence of such devaluation the lowering of tariffs would reduce the cost of imported processing materials.

Table 20
China’s processed and non-processed exports

| Year | Total exports (\$ billion) | Non-processed exports | | Processed exports | |
|------|-------------------------------|-----------------------|----------|-----------------------|----------|
| | | Value (\$ billion) | Per cent | Value (\$ billion) | Per cent |
| 1986 | 30.9 | 25.3 | 81.1 | 5.6 | 18.1 |
| 1987 | 39.4 | 29.6 | 75.2 | 9.0 | 22.8 |
| 1988 | 47.5 | 36.6 | 77.0 | 14.0 | 29.6 |
| 1989 | 52.5 | 31.6 | 60.1 | 19.8 | 37.6 |
| 1990 | 62.1 | 35.4 | 57.1 | 25.4 | 40.9 |
| 1991 | 71.8 | 38.12 | 53.0 | 32.4 | 45.0 |
| 1992 | 84.9 | 43.68 | 51.4 | 39.6 | 46.6 |
| 1993 | 91.7 | 43.20 | 47.1 | 44.2 | 48.2 |
| 1994 | 121.0 | 61.56 | 50.9 | 57.0 | 47.1 |
| 1995 | 148.8 | 71.37 | 48.0 | 73.7 | 49.5 |
| 1996 | 151.1 | 62.84 | 41.6 | 84.3 | 55.8 |
| 1997 | 182.8 | 77.97 | 42.7 | 99.7 | 54.52 |
| 1998 | 183.8 | 79.3 | 43.1 | 104.5 | 57.0 |
| 1999 | 194.9 | 84.0 | 43.1 | 110.9 | 57.0 |
| 2000 | 249.2 | 111.5 | 44.7 | 137.7 | 55.0 |

Sources: Lardy (2002); Yang (2000); *China Customs Statistics Yearbook*.

China relies heavily on import tariffs exemption for material inputs required for export production. This is a method for stimulating exports that discriminates against industries relying more on domestic inputs through high protective barriers. This partial and selective liberalization will be replaced by comprehensive liberalization after the accession which will reduce the cost of domestic inputs to exporters. This may shift production towards exports relying on more domestic rather than imported inputs (Ianchovichina, et al, 2000). Such a shift should have a favourable indirect effect on employment.

China currently has foreign reserves of US\$212.2 billion and the current account is in surplus. China’s foreign debt level is maintained at a healthy level and the structure of debt leans towards medium and long terms. The WTO accession and the hosting of 2008 Olympic Games in Beijing will stimulate more FDI inflows into China. Although the reduction of import tariffs will encourage imports, easy access to the world market will promote exports. Vast pools of cheap labour are expected to maintain the competitiveness of the Chinese labour-intensive manufactures. China’s domestic inflation rate is still quite low, due to overcapacity, oversupply and strong competition in the domestic market. These factors do not put any pressure on China to devalue. On the other hand, the recent weakness of the Japanese Yen (in December 2001 it fell by 7 per cent, to 132 Yen to the dollar (*The Economist*, 2002)) puts pressure on the Asian currencies, including the Chinese Yuan. The Chinese official position is critical of the Japanese policy of letting the Yen slide to fight deflation. China and the Republic of Korea have warned Japan that the Yen devaluation runs the risk of triggering competitive devaluations in the rest of Southeast Asia, thus giving rise to economic instability.

C. Production shift from tradeables to non-tradeables

China has a large and expanding domestic market to fall back on when world export markets are not favourable. It is quite possible that the failure to expand exports rapidly will induce the Chinese policy makers to shift production from tradeables to non-tradeables and to domestic market. This study had earlier already noted on the rapidly expanding domestic market for automobiles and household appliances. Even in the case of textiles and clothing, the domestic market for such higher-value added goods as designer clothes and brand names is expanding alongside rising per capita incomes. Massive government expenditure can boost domestic demand even if the Chinese economy slows down in future, which is likely during global economic recession. Indeed, during the past few years China has maintained its high growth rate at around 7 per cent precisely through such measures.

Indeed, for a large economy like the Chinese the export sector is not as important as for smaller economies. Large countries are likely to have lower trade ratios than small countries for several reasons: i) the largeness of domestic market favours economies of scale; ii) less dependence on imports of minerals and raw materials which are locally available; and iii) a natural protection to domestic producers because of higher transport costs. China's export to GDP ratio is exaggerated for several reasons. First, China's exchange-rate-based GDP could be underestimated. The purchasing power parity measure of GDP is much higher which would bring down the ratios.¹¹ Second, a very high proportion of exports are processed goods (table 20); if we use the value-added export figure, the export contribution to China's GDP would be very different. Third, China's prices of non-traded goods (particularly services) relative to those of tradeables are artificially low. Therefore, the contribution of the service sector to total GDP is relatively smaller than it would otherwise be. Although price liberalization has taken place in recent years, it has not gone far enough.

V. CONCLUSION

The analysis in this paper suggests that the impact on China of the accession to the WTO will be mixed. The degree of domestic and foreign competition varies from industry to industry. Many Chinese industries are already globally integrated and competitive, e.g. electronics, textiles and clothing and household appliances. These industries will continue to be competitive in the global market although controversy surrounds the future of textiles. Industries enjoying protected domestic market (e.g. automobiles) will lose after the accession and will have to accelerate the process of restructuring to attain competitiveness. At least initially, they are likely to incur substantial transition costs, and inefficient firms will disappear.

SOE ownership in industry is already declining. After the accession, joint ventures between Chinese non-state firms and foreign firms will become predominant. At present only SOEs in automobiles, for example, are allowed to enter into joint ventures. The process of industrial restructuring in general and reform of SOEs in particular, has already been underway for a number of years. The WTO accession provides a timely external pressure for furthering this process, which has met with opposition within China because of the heavy social costs involved. Unemployment in SOEs, which is already mounting, will increase further due to the process of technological modernization and bankruptcies. Future employment growth within the manufacturing sector is likely to occur in the dynamic non-state and private domestic enterprises, joint ventures and foreign firms. State enterprises will increasingly lose their importance as providers of jobs.

¹¹ Maddison's estimates based on GDP in terms of purchasing power parity show that Chinese exports rose from 1.7 per cent of GDP in 1978 to 4.3 per cent in 1995. These estimates are well below the official Chinese and World Bank estimates (Maddison, 1998).

While there is consensus that the accession will contribute to GDP growth, its contribution to employment growth is the subject of controversy. Optimistic and pessimistic estimates of employment prospects abound depending on the assumptions one makes about growth, export prospects, demand, employment elasticity and so on. The impending world economic recession does not augur well for China's future prospects of economic growth and export promotion. It is also worrying that the employment potential of Chinese growth is very limited because of the low employment elasticity.

Displaced labour from SOEs and inefficient non-state firms will need to be reabsorbed in other sectors. The private sector, whose contribution to output and employment has been underestimated in the past and various types of services, e.g. retailing, distribution, tourism and consultancy services will be the major sources of additional employment after the accession. There may also be some scope for employment growth in labour-intensive agricultural activities. China does not have a resource advantage in producing such staple crops as foodgrains, feedgrains, sugar and oilseeds which are land intensive. However, in other labour-intensive primary export products such as vegetables, fruits, and cut flowers, China will enjoy a comparative advantage. Resource reallocation within the primary sector will therefore be necessary.

Most of the estimates of the employment impact of the accession consider only *direct* employment. Direct employment is unlikely to increase significantly in view of the necessity to upgrade China's industry with modern technology. This is particularly so since the employment elasticities of output are very low in China. However, much of the additional employment is likely to increase *indirectly* through inter-industry linkages.

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